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Foreword

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries. The economic situation and policies of Austria were reviewed by the Committee on 15 November 2021. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 03 December 2021. The Secretariat's draft report was prepared for the Committee by Rauf Gönenç (Senior Economist) and Dennis Dlugosch (Economist), under the supervision of Isabelle Joumard (Head of Division). The Survey also benefitted from contributions by the staff of the Federal Ministry of Finance in Vienna and Michael Abendschein from the OECD. Statistical research assistance was provided by Eun Jung Kim and editorial assistance by Heloise Wickramanayake. The previous Survey of Austria was issued in November 2019. Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at www.oecd.org/eco/surveys.

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BASIC STATISTICS OF AUSTRIA, 2020

(Numbers in parentheses refer to the OECD average)

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	8.9		Population density per km²	108.1	(38.6)
Under 15 (%)	14.4	(17.8)	Life expectancy at birth (years, 2019)	81.8	(80.2)
Over 65 (%)	19.2	(17.4)	Men (2019)	79.5	(77.6)
International migrant stock (% of population, 2019)	19.9	(13.2)	Women (2019)	84.2	(82.9)
Latest 5-year average growth (%)	0.6	(0.6)	Latest general election	September-2019	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	432.0		Agriculture, forestry and fishing	1.3	(2.8)
In current prices (billion EUR)	378.6		Industry including construction	28.4	(26.3)
Latest 5-year average real growth (%)	0.2	(0.8)	Services	70.3	(71.0)
Per capita (000 USD PPP)	55.5	(46.3)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure	57.2	(49.8)	Gross financial debt (OECD: 2019)	112.3	(108.9)
Revenue	48.8	(38.9)	Net financial debt (OECD: 2019)	62.4	(67.9)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.88		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.76		Machinery and transport equipment	36.8	
In per cent of GDP			Manufactured goods	19.7	
Exports of goods and services	51.2	(50.6)	Chemicals and related products, n.e.s.	15.1	
Imports of goods and services	48.6	(47.1)	Main imports (% of total merchandise imports)		
Current account balance	1.9	(0.0)	Machinery and transport equipment	34.4	
Net international investment position	10.0		Manufactured goods	16.0	
			Chemicals and related products, n.e.s.	15.1	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	57.5	(55.1)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	5.4	(7.1)
Men	62.5	(63.0)	Youth (aged 15-24, %)	10.5	(15.0)
Women	52.7	(47.7)	Long-term unemployed (1 year and over, %)	1.3	(1.3)
Participation rate (aged 15 and over, %)	60.8	(59.5)	Tertiary educational attainment (aged 25-64, %)	34.2	(39.0)
Average hours worked per year	1,400	(1,687)	Gross domestic expenditure on R&D (% of GDP, 2018)	3.2	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe)	3.5	(3.7)	CO2 emissions from fuel combustion per capita (tonnes, 2019)	7.1	(8.3)
Renewables (%)	32.4	(11.9)	Renewable internal freshwater resources per capita (1 000 m³, 2017)	6.3	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	82.4	(61.7)	Municipal waste per capita (tonnes, 2019)	0.6	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2018, OECD: latest available)	0.280	(0.318)	Education outcomes (PISA score, 2018)		
Relative poverty rate (%, 2018, OECD: 2017)	9.4	(11.7)	Reading	484	(485)
Median disposable household income (thousand USD PPP, 2018, OECD: 2017)	34.1	(24.2)	Mathematics	499	(487)
Public and private spending (% of GDP)			Science	490	(487)
Health care (OECD: 2019)	11.5	(8.8)	Share of women in parliament (%)	39.3	(31.5)
Pensions (2017)	13.6	(8.6)	Net official development assistance (% of GNI, 2017)	0.3	(0.4)
Education (% of GNI, 2019)	5.0	(4.4)			

1. The year is indicated in parenthesis if it deviates from the year in the main title of this table.
2. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.
Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation, International Monetary Fund, United Nations, World Bank.

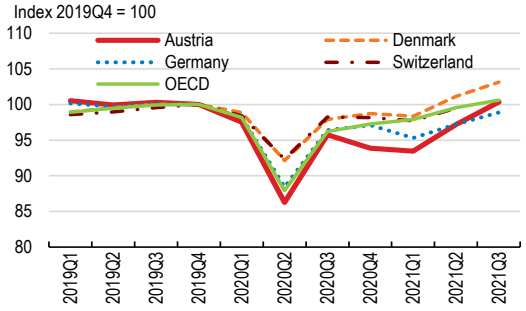
Executive Summary

The recovery has been strong until a resurgence in the pandemic

Austria has faced the successive waves of the pandemic with varying degrees of intensity. The human toll has been significant, despite the large health care resources. The vaccination campaign reached 66% of the total population by mid-November 2021. Shortcomings in health literacy may have slowed down the vaccination campaign, confirming the importance of the 2015 Health Literacy Strategy. The restrictions on mobility have generally led to significant drops in economic activity, before a strong recovery through summer 2021 (Figure 1). This reflected, particularly in certain periods of the year, the large share of tourism in economic activity, which has also led to regional differences in the impacts of the pandemic.

Figure 1. The drop in activity has been severe

Real GDP



Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

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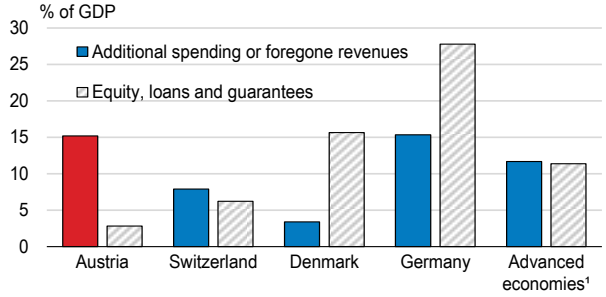
Economic policymakers reacted forcefully to the shock of the pandemic. They used the fiscal space made available by prudent fiscal management in the past, to implement a comprehensive support package. Austria's direct fiscal transfers after the start of the pandemic, including the measures planned until 2023 will reach 15% of GDP, above the OECD and peer country averages (Figure 2). Public loans and guarantees have been used more sparingly. This approach has mitigated further increases in corporate debt and preserved corporate investment capacity. The generous short-time working scheme has retained up to 1.2 million jobs, roughly 20% of total private employment.

Accelerating vaccination rates and the lifting of restrictions have led to a very strong recovery in 2021, until the strong fourth wave late autumn. GDP has surpassed its pre-pandemic level in the 3rd quarter of 2021. Business investment is boosted by bold fiscal support, including from Next Generation EU funds (Table 1). Private consumption is rising as households are reducing their saving ratio. The labour market is tight, with vacancy rates edging up. Without the severe supply chain disruptions and labour shortages, the recovery would be even stronger. Against this backdrop consumer price inflation soared above 3% starting from August. The intensification of the 4th wave through Fall and the lock-down of the non-vaccinated from mid-November is nonetheless expected to slow down the economy.

House prices have surged, exacerbating related financial risks. The stock of housing loans is still low in international comparison but is expanding rapidly. Guidance issued by the Financial Market Stability Board for a prudent management have been complied with only partially.

Figure 2. Fiscal support has been vigorous



1. According to the classification of economies in the IMF Fiscal Monitor.

Source: IMF Database of Fiscal Policy Responses to COVID-19, October, 2021.

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Table 1. A strong recovery

Annual growth rates %	2019	2020	2021	2022	2023
Gross domestic product	1.5	-6.8	3.7	4.9	2.5
Private consumption	0.6	-8.4	3.3	5.8	2.6
Government consumption	1.5	-0.4	3.1	0.2	0.6
Gross fixed capital formation	4.8	-5.0	7.4	4.9	3.1
Exports	3.3	-11.5	10.4	8.5	5.6
Imports	1.8	-9.3	11.6	6.9	5.3
Unemployment rate (%)	4.5	5.4	5.1	4.7	4.5
Consumer price index	1.5	1.4	2.7	3.2	2.4
Current account balance (% of GDP)	2.1	1.9	-0.2	0.3	0.5
General government fiscal balance (% of GDP)	0.6	-8.3	-6.3	-2.3	-1.1

Source: OECD *Economic Outlook 110* database.

The authorities should continue making fiscal support increasingly targeted to address post-pandemic supply bottlenecks and structural changes. Policymakers started to adapt the support programme from mid-2021 by withdrawing measures in areas where conditions are normalising. Income support has been shifted to the standard social safety net. Part of business supports are being phased out. An important "eco-social tax reform", combining a carbon pricing trajectory between 2022-25 with social transfers and cuts in personal and corporate income tax rates, has been sent to Parliament.

Firms' investment capacity would improve with a stronger equity basis. Debt leverage rose in several activities, in particular in tourism businesses. Tourism activities have a large weight in the economy and contribute significantly to employment and income generation in remote areas. Tourism businesses should regain their investment capacity in order to seize the new growth opportunities emerging after the pandemic.

The corporate financing bias towards retained earnings and bank loans should not hold up investments. Incentivising financing with external equity through the tax system would complement the otherwise successful banking model. Stronger corporate balance sheets would facilitate long-term investments and the post-pandemic technological and industrial restructurings.

Labour and skill shortages are holding up the recovery. They have been amplified as some immigrant workers have durably returned to their home country during the pandemic. These shortages invite new policy and business initiatives to better mobilise Austria's large labour reserves, including the high proportions of partially or entirely inactive women and elderly workers. Supports to the upskilling and employment of low-skilled workers, and to the tourism and hospitality sectors impeded by the fourth wave continue.

Policy frameworks and business practices that make the majority of women and of the healthy seniors participate only partially weigh also on long-term potential growth. Population ageing will be reflected in a decline in the share of the working-age population from around 76% of the total population in 2020 to 69% in 2060, intensifying pressures on labour markets. Facilitating the participation of female and older workers, including by promoting more attractive work organisations and workplaces, would help strengthen labour supply.

Training and investment needs to support climate transition and digitalisation, combined with population ageing, will put pressure on public finances. The share of public spending in GDP is already high. Additional demands for public investment and expenditure will require new prioritisation procedures to protect fiscal sustainability, including through a strengthened medium-term expenditure framework at general government level.

Moving to a greener economy

Assertive action is needed to reduce the carbon intensity of the economy which has failed to decline in the most recent years and to make progress toward zero net emissions by 2040. Plans to phase in carbon prices starting from 2022 are welcome. Reaching the ambitious 2040 goal – 10 years before the EU target date – will nevertheless be difficult on the basis of current policies. Additional greenhouse gas emission cuts will be needed across all sectors. The potential is particularly large in transportation, buildings and industrial processes. New emission regulations will need to be introduced, carbon prices will need to be increased and harmonised further, and R&D for emission-saving innovations will need to be boosted.

More rigorous climate policies would have substantial distributional impacts. The users of carbon-intensive goods and services (including fossil fuel cars and poorly insulated houses) would be strongly affected. Compensation for low-income households would need to be combined with forward-looking disclosure of the intended regulatory and price changes for after 2025, to improve medium-term predictability and help firms and households to adjust well in advance.

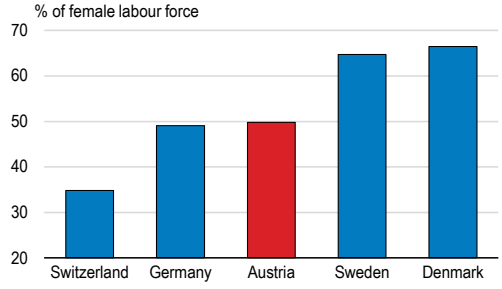
Social cohesion requires decisive policy action

The pandemic has exacerbated labour market vulnerabilities. Long-term unemployment soared during the pandemic, although from a relatively low rate, before declining partially. Skill mismatches have increased in all regions. The ongoing and expected acceleration of automation amplifies the employability challenge. Up-skilling the low-skilled and the long-term unemployed should be key priority to avoid long-lasting scars on labour markets. There is room for improving the quality and labour market relevance of life-long learning programmes.

The pandemic has amplified gender gaps. The double burden of work and care obligations affected women, in particular women teleworking from home, more than men. The proportion of women working in severely hit sectors was higher, resulting in sharper declines of their work hours and incomes. Child care services need to be quantitatively and qualitatively improved to allow mothers to work full-time. Adapting work organisations and rebalancing parental leaves between mothers and fathers would help transform the deeply rooted male breadwinner model. Recent gender balance-friendly reforms in the public sector may stimulate further progress in the private sector.

Figure 3. Labour force participation of women could improve further

Full-time female employment rate, 20-64 year-olds, 2020



Source: Eurostat (2021), Labour Force Survey Statistics.

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Workers with non-standard contracts have suffered most during the pandemic. The free-lancers and the self-employed have endured severe income losses. Their protection against systemic shocks appeared inadequate according to social protection standards prevailing in Austria. Promoting free-lance work would boost business dynamism, job creation and the training of apprentices.

Fostering productivity gains

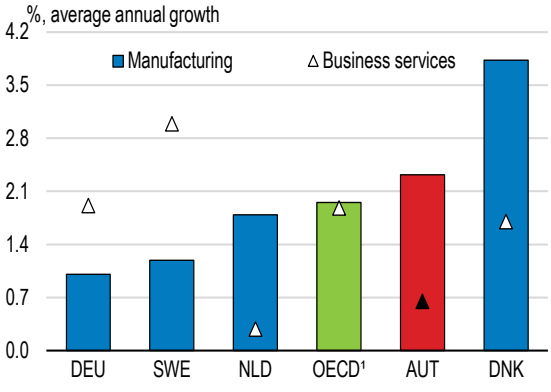
While the level of productivity is high, its growth has been disappointing since the Global Financial Crisis, as in many other OECD countries. Productivity growth in services has been one of the weakest across the OECD area over the past decade. While preserving high standards of service and consumer safety should remain a priority, fostering competition in all service activities would help to foster much-need productivity gains.

Reallocating resources across firms and sectors will be key for boosting productivity. In the past, Austria's high level of productivity has largely resulted from gains within firms and sectors rather than on productivity-enhancing reallocations across activities. While the entry rates of new firms have been on an upward trend, the relatively low overall business dynamism slowed down the diffusion of new technologies and weighed on productivity growth. The share of total employment in young firms remains low. In addition to product market regulations conducive to entrepreneurship, deeper markets for venture and equity capital would provide a more fertile soil for start-ups and young firms.

Innovative activity is not diversified enough across sectors. Austria succeeded in bringing national R&D expenditures above 3% of GDP. Compared to other OECD countries, R&D intensity is higher in traditional and already competitive industries, but lags behind innovation leaders in high-tech sectors. Public support for business R&D is generous compared with other OECD countries and is mainly provided through tax incentives. R&D grants may better support longer-term and risky investments. A better balanced support structure would help to invigorate Austria's activity portfolio.

Figure 4. Productivity in business services lags behind

Real gross value added per hour worked, 2010-2019 (or latest year)



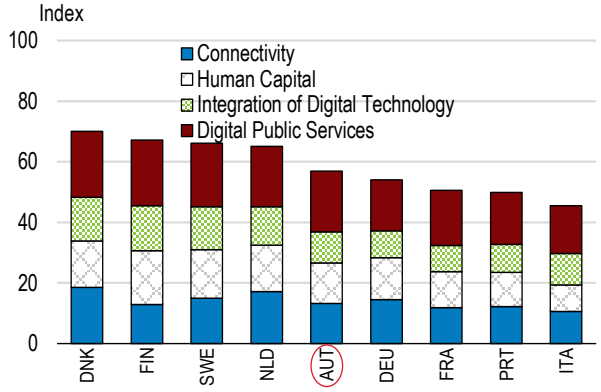
Note: Unweighted average for the OECD aggregate.
Source: OECD (2021), OECD Productivity Statistics (database).

StatLink https://stat.link/u9btvp

Austria was less digitalised than peer countries before the pandemic. Entry rates in ICT services were among the lowest in the OECD. The pandemic gave a boost to digitalisation in business enterprises, to teleworking and to digital interactions, including with government agencies. The authorities should leverage this push further.

Figure 5. Austria is less digitalised than peer countries

Digital economy and society index, scale from 0 to 100, 2020



Source: European Commission (2021), Digital Economy and Society Index.

StatLink https://stat.link/askg63

High-speed broadband coverage is lower than in most other European countries. Low-hanging fruits in deploying high-speed broadband appear to have been exploited. High capacity mobile technologies can offer alternatives to fiber infrastructures in low-density rural and mountain areas but they are not yet fully mature. The government's commitment to give access to Gigabit connectivity to all Austrian households by 2030, including via public-private partnerships in geographical areas where commercial incentives are not strong, is welcome.

MAIN FINDINGS	RECOMMENDATIONS
Health policies	
Around one third of the population appears to resist COVID-19 vaccination. Starting from mid-November 2021 non-vaccinated adults have been locked-down.	Monitor the impact of the lock-down on vaccinations. Boost vaccinations with an assertive awareness campaign drawing on the National Health Literacy Strategy.
Macroeconomic policies	
The post-pandemic upturn has been sharp but many activities are held up by labour, skill and other supply side shortages. In certain sectors demand continues to be hindered by low domestic and international mobility.	Concentrate public supports on overcoming supply-side shortages and on backing the still temporarily hampered activities such as tourism
Demand pressures, price surges and the rapid expansion of mortgage loans are exacerbating financial risks in the housing sector.	Make Financial Market Stability Board's prudential guidance for mortgage loans mandatory.
Public debt rose to a high level in national standards, due to the ample economic and social supports mobilised during the pandemic.	Prepare a medium-term fiscal consolidation strategy while sparing room for targeted supply- and demand-side supports as required. Implement this strategy as the recovery is fully self-sustained.
Green growth	
The carbon intensity of the economy is declining too slowly against the ambitious 2040 climate neutrality goal. The eco-social tax reform 2022 is highly welcome but additional measures will be indispensable.	Design and implement complementary regulatory and emission saving investment schemes to align the trajectory of emissions with targets.
Carbon prices and taxes will likely remain lower and more uneven than in peer countries for a while.	Increase and harmonise further carbon prices after 2025 by integrating the largest possible share of emissions in the national and EU emission trading system. Eliminate the diesel/gasoline tax gap.
Low-income households using carbon-intensive goods and services at high frequency will be heavily affected by carbon price increases.	Prepare methods and measures to identify and compensate the most vulnerable households to the planned and expected carbon price increases during 2022-25 and after transition to integrated national and EU emission trading systems.
Business dynamism, digitalisation and productivity	
Many service sectors have long been sheltered from full competition by regulations, self-regulations and trade and investment protections.	Reduce regulatory barriers in entering market services without undermining their quality and skill standards.
The low supply of private risk capital constitutes a bottleneck for business dynamism.	Improve the effectiveness of start-up and growth financing instruments, including by avoiding complexity, scaling up later stage funding and improving conditions for institutional investors to invest in venture capital.
Fixed broadband coverage, in particular at higher speed tiers, is lower than in most other European countries.	Increase access to high-quality internet throughout the entire country and achieve the national and EU goal of Gigabit connectivity for all households by 2030.
Both high- and low-educated Austrians participate less to life-long learning than in peer countries. Internal training within firms is also less developed.	Publicise the employment and income outcomes of various life-long learning programmes. Incentivise workers at all levels to participate in high-quality programmes, including with the help of individual learning accounts.
The share of business R&D in the high-tech sector is low and lags behind innovation leaders. Public support to R&D is provided mainly through tax incentives	Consider using well-designed direct R&D grants to support longer term, higher-risk research.
Social cohesion	
The traditionally low rate of long-term unemployment appears on a structural upward trend, in particular for the low-skilled, despite improvements during the post-pandemic upturn.	Up-skill the long-term unemployed, emphasising employer-driven schemes.
Employment costs are inflated by the still high labour tax wedges. Low-skilled labour demand is hindered.	Continue to reduce the employment cost of the long-term unemployed. Adapt the successful "Springboard" scheme of employment subsidies to the long-term unemployed.
The start-uppers and the self-employed have been comparatively less well protected by the social safety net and COVID-19 transfers than wage-earners.	Improve the social protection of the start-uppers and self-employed, drawing on ongoing consultations between social partners.
Quantitative and qualitative shortcomings in early child care infrastructures constrain women's life choices and economic participation.	Bolster the availability and quality of early child care services throughout the entire territory, in particular in rural areas.
The parental leave system as currently implemented helps to perpetuate separate gender roles. However, the provisions encouraging a balanced use between mothers and fathers are little used.	Encourage the balanced use of parental leaves between mothers and fathers to promote a more balanced sharing of paid and unpaid work between parents.
Full-time labour force participation expectations of women, higher geographical mobility of young cohorts and an increased incidence of age-related conditions call for adjustments in long-term care arrangements.	Develop a strategic plan for long-term care for dependent elderly, taking into account the private and social costs and benefits of alternative arrangements and making use of technological developments related to the provision of care.
Long-term public finances and public sector reform	
Population ageing puts pressure on public finances. Many elderly workers withdraw before the official retirement age.	Ensure the long-term sustainability of the pension system, e.g. by linking retirement age to life expectancy. Reduce early retirement pathways by further reforming the access to disability pensions, improving prevention and rehabilitation measures, and enhancing incentives to continue working at an older age while ensuring good working conditions.
There are saving, quality improvement and resource re-allocation potentials in existing public services and transfers.	Further strengthen the quality of public spending reviews and the implementation of proposed recommendations.
Perceived gaps with peer countries in the quality of public governance persist.	Continue activities to reduce the perceived gaps in the quality of public governance, including in fighting corruption.

1 Key policy insights

The Austrian economy has long performed well, with one of the highest GDP per capita in the OECD, a high productivity level, low-income inequality and low unemployment. In the years preceding the COVID-19 shock, the country suffered a relative decline in performance, with a slowdown of productivity growth, signs of skill mismatch despite a strong vocational training system, and environmental sustainability falling behind the best performers in the OECD, notably in reducing greenhouse gas emissions.

Austria's response to the Covid-19 shock has been vigorous. The geographic position of the country has raised the risk of cross-border contagions, and the structure of the economy, notably the share of the tourism and hospitality sectors, increased the vulnerability to mobility restrictions. The authorities decided to mobilise the fiscal buffer that they had built up through several years of cautious fiscal management to attenuate the impact of the shock and to support firms and households. Namely, policy support compensated, mainly through direct fiscal transfers, a large part of the income losses experienced by businesses and households for more than a year. These policies have supported domestic demand and mitigated the social impact of the crisis.

Austria needs to target support to people and firms to the most affected sectors until the pandemic subsides. At the same time, two major structural transformations provide opportunities and challenges: The transition to a net zero emission economy with stricter environmental regulations, higher carbon prices and broader-based green investments; and the generalisation of more advanced forms of digitalisation.

Austria is facing this new agenda with both strengths and certain weaknesses. The main messages of this Survey are:

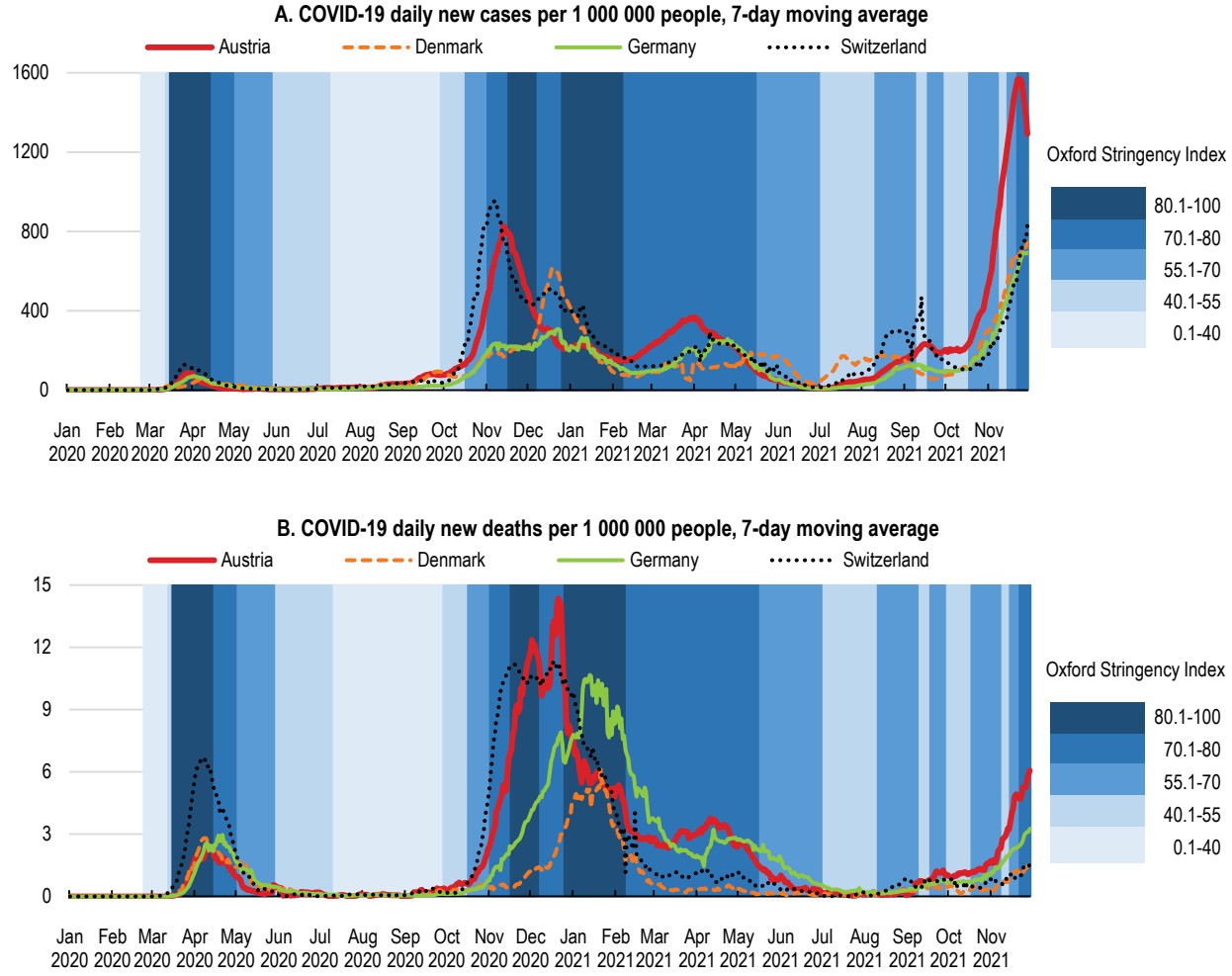
- Economic policy should remain supportive until the recovery is firmly under way. It should be increasingly targeted to tackling supply-side issues. Certain sectors, which are still significantly affected such as tourism and hospitality, should continue to be backed.
- More exits and entries in the business sector, more capital and labour re-allocation, and, arguably, greater geographic labour mobility will be necessary. This implies adaptations in several areas, including financial market, life-long learning and housing policies.
- The public sector is large and features a relatively high level of debt. It started to face wider claims for public investments and other expenditures after the pandemic, while population ageing weighs already on public finances. Public sector reviews and reforms would contribute to the prioritisation and effective allocation of public resources.

The pandemic hit Austria hard, requiring to adjust the sharing of health responsibilities across levels of government

Austria has faced the successive waves of the pandemic with varying degrees of intensity (Figure 1.1). It countered the first wave with tight restrictions in spring 2020, which permitted to curb the number of cases and fatalities more rapidly than in comparable countries (for purposes of this Survey, Austria's peer countries are Germany, Switzerland and Denmark). Subsequently, a swifter relaxation of restrictions fuelled a faster increase in contagions during the second and third wave in fall 2020 and spring 2021, respectively. A vigorous policy response permitted to better contain the epidemic through 2021. The fourth wave in autumn 2021 has triggered a stronger increase in the number of contagions and fatalities than in

comparable countries. After a sharp increase in the number of people tested positively for the virus and hospitalisations in October and November, the authorities have first announced a lockdown only for the unvaccinated, and then, following a continued worsening, a new 20-day country-wide strict lockdown starting from 22 November on (Figure 1.1).

Figure 1.1. The four waves of the pandemic differed in intensity



Note: The colour scale of the background reflects confinement stringency based on the Oxford Stringency Index. The population data refer to 2020. The latest data point is for 29 November.
Source: Hale et al., (2021). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government and Roser et al. (2021), "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org, https://ourworldindata.org/coronavirus.

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The human toll has been significant, as in most OECD countries (Figure 1.1), despite the large health care resources. Austria entered the epidemic with one of the OECD's best-equipped hospital systems, with 7.4 hospital beds for 1 000 residents and 29 intensive care units for 100 000 inhabitants, above most other countries. The hospital infrastructure was recently renovated, which has permitted to convert standard beds into intensive care units according to needs (Hofmarcher, 2020). The hospital infrastructure is also regionally well-balanced. As other small open economies, Austria could not, and did not, aim at suppressing the pandemic. The key objective has been to keep the number of hospitalisations below the available care capacity (Pollak et al., 2020). A five-step plan, announced in October 2021, continued this

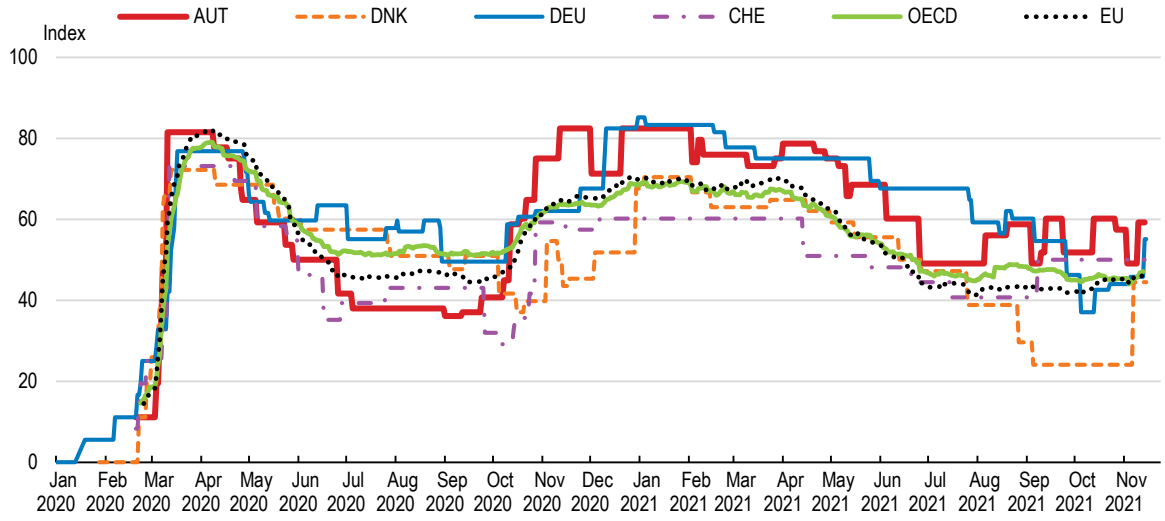
objective and made further restrictions depending on the evolution of hospitalisations. However, the sharp deterioration of the sanitary situation in the beginning of November required more decisive action than foreseen in the five-step plan, notably a country-wide lockdown for the vaccinated and unvaccinated.

The containment policy mix displayed certain specificities

Austria has a federal structure which vests the nine Länder with wide public health policy responsibilities. The policy response to COVID-19 was nevertheless largely centralised with the consent of sub-central authorities (Scott et al., 2021). A range of implementation responsibilities remained with the Länder (Hofmarcher and Singhuber, 2021). The composition of policies (the respective roles of mobility restrictions, school closures, contact tracing and vaccinations) has been similar to those of the peer countries, with a special focus on certain instruments. Restrictions on public transportation have been tight, given the weight of public transportation in passenger mobility. Austria has also been one of the most active proponents of mask use, and of individual upward tracing of contagion cases – a system which has served as a blueprint for certain other countries in the region (Haindl and Schmidt, 2020). School closures were limited in the first phase of the pandemic (later OECD assessments found that this was justified given long-term implications), but had to be generalised in the face of the severity of the second and third waves (Figure 1.2).The authorities have avoided school closures during the fourth wave so far. Parents are allowed to keep their children at home without attestations. On the first days of the lockdown in November 2021, more than 70% of children returned to class. Distance learning will, however, be re-introduced at a class-level for at least five days if more than two children have been tested positive for the virus.

Figure 1.2. Containment policies were more frequently adjusted than in comparable countries

Oxford COVID-19 Government Response Tracker, Index, from 0 (no restriction) to 100 (strictest), 7-day moving average



Note: The latest data point is for 29 November.
Source: Hale et al., (2021). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government and Roser et al. (2021), "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org, https://ourworldindata.org/coronavirus.

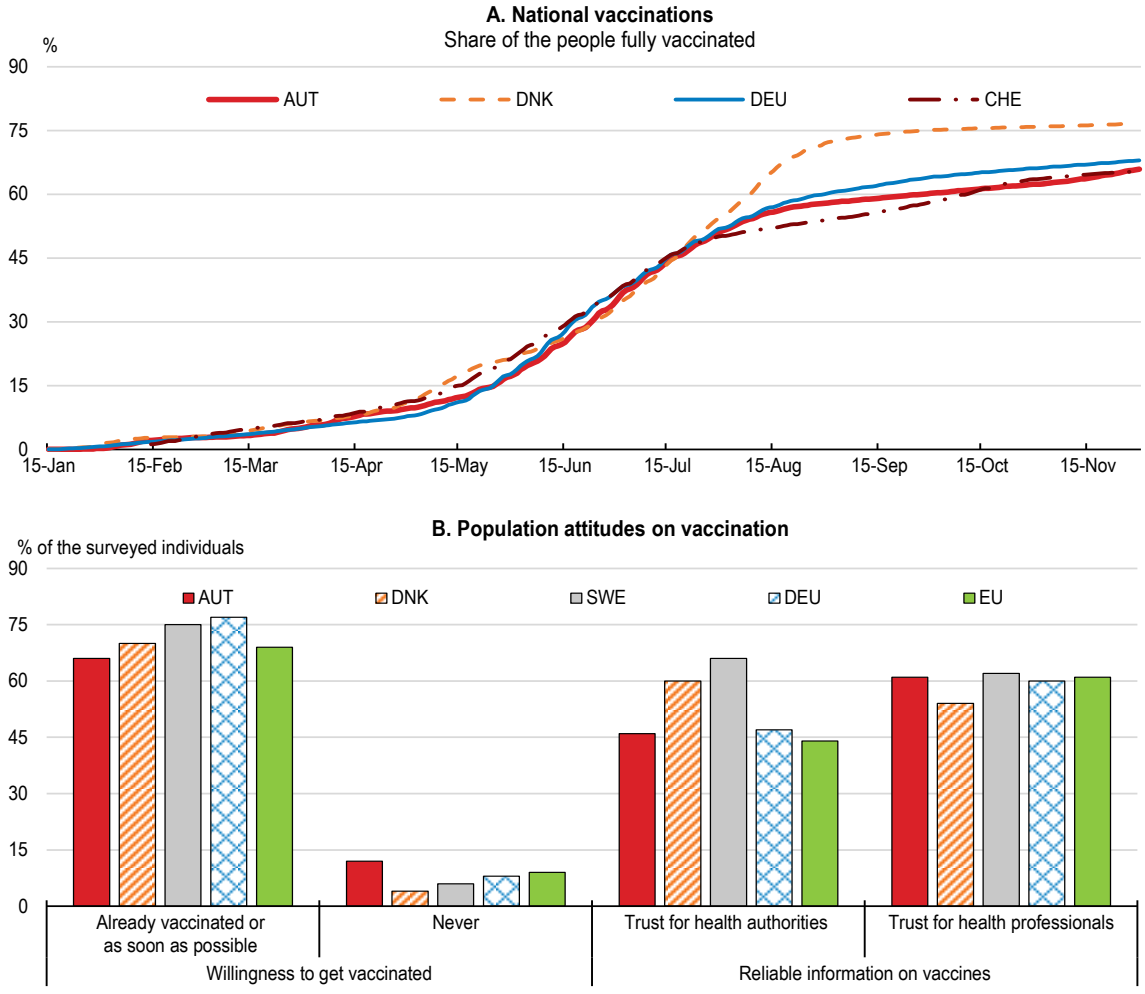
StatLink https://stat.link/3g06zc

Mass testing was strongly promoted, by distributing and administering tests in public places, private homes and workplaces. The compliance of the population has fallen somewhat short of targets. In April 2021, in a public campaign inviting the population to take free COVID-19 tests at least once a week, a quarter of the population complied. One third took only one or two tests over four weeks. The acceptance of the

mobile-phone based contact-tracing application “Stopp Corona”, freely-distributed, has also remained relatively limited (Zimmermann et al., 2020).

A strong emphasis has been put on mass vaccinations in 2021 (Figure 1.3). The rate of two-dose inoculations reached 64% of people above 18 by end of November. A University of Vienna Survey in mid-2020 found that only half of the population was ready to get vaccinated (Kittel et al., 2021). This subsequently improved as in other OECD countries, but, as of mid-2021, Austrians were displaying more vaccine scepticism than in comparable countries (Figure 1.3, Panel B). The lockdown for the unvaccinated, announced in mid-November, then followed by a lockdown for the whole population, may have helped to raise the rate of vaccinations. From February 2022 on, vaccinations against COVID-19 will be mandatory.

Figure 1.3. The massive national vaccination effort had to cope with scepticism in certain parts of the population



Note: In Panel A, the latest data point is for 30 November. Panel B are based on European Commission flash Eurobarometer 494: "Attitudes on vaccination against Covid-19", conducted from 21 to 26 May 2021. Respondents were asked to answer the first question: "When would you like to get vaccinated against COVID-19 (coronavirus)?" and the sixth question: "Among the following sources, which ones would you trust more to give you reliable information on COVID-19 vaccines?".

Source: Hale et al., (2021). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government; Roser et al. (2021), "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org, https://ourworldindata.org/coronavirus; and European Commission (2021), Flash Eurobarometer 494: "Attitudes on vaccination against Covid-19", May.

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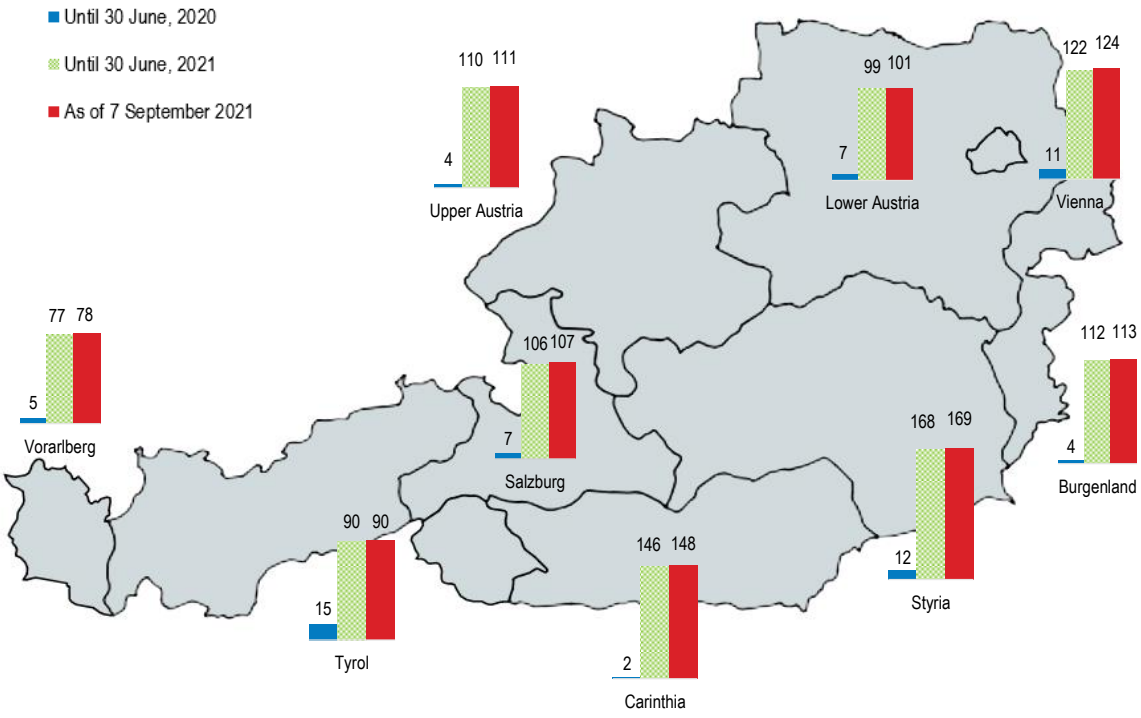
Differences between Länder and preliminary lessons from the management of the pandemic

The intensity of the pandemic has diverged across Austria's regions (Figure 1.4) This reflects differences in exposure to cross-border contagions, uneven urban densities and age structures, and, arguably, differences in local populations' compliance with public health recommendations (Bargain and Aminjonov, 2020). Local restrictions have been differentiated in response to uneven contagion rates, according to a federal government-guided "traffic lights" approach based on multiple indicators. This system has produced useful information. The federal government further refined it in mid-2021 by adding colours conveying additional nuances in risk levels (Midgley, 2021).

Figure 1.4. The intensity of the pandemic varied across Länder

Cumulative deaths per 100 000 inhabitants by Länder, September 2021



Note: Population data are based on the number of residents on 1 January 2020 and on 1 January 2021.
Source: AGES COVID19 Dashboard and Statistik Austria.

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A panel discussion organised for this Survey, to gather the experience of public authorities, health professionals and social partners in the fight against the pandemic emphasised certain specific issues. These issues will be relevant for the further course of the pandemic - and other public health emergencies:

- The quality of the individual health data infrastructure covering the entire population is crucial in managing a pandemic. Austria started from a relatively less developed infrastructure in this area than comparable countries at the onset of the pandemic (Oderkirk, 2021), but made progress since then (Health Hub Vienna, 2021). The legal and regulatory framework is well adapted, but certain organisational and technical features continue to keep the system relatively fragmented. Austria

can further improve this infrastructure by drawing on OECD recommendations on health data governance (OECD, 2019c).

- National public health and social research community's access to such data, under adequate privacy, ethical and anonymity standards, would support policymaking. Austria has a strong research infrastructure in medical, public health and social sciences and this capacity can be more fully mobilised in informing policymaking. There is currently a gap vis-à-vis peer countries in this area (Oderkirk, 2021). With the establishment of the "Austrian Micro Data Center" in 2021 official data is being made more widely available to researchers.
- The health literacy of the population should be improved. Gaps in this area were acknowledged and documented before the pandemic (Moreira, OECD, 2018) The government had introduced a Health Literacy Strategy in 2015 as a follow-up to the 2013 Health Reform, but the campaign had reached only part of the target population (Gesundheits Ziele, 2021) (Box 1.1). Progress along this strategy would enhance the responsiveness and compliance of the population in future testing, vaccination and tracing initiatives.
- Telemedicine made good progress during the pandemic (Bodomo, 2021; Atos, 2020). However, certain innovations risk being rolled back after the pandemic because of legal and regulatory uncertainties, and future developments can be undermined (Khalil, 2020). Health service suppliers' economic incentives may favour a return to physical contact-intensive procedures. Policymakers and health professionals should ensure that the full potential of telemedicine continues to be well exploited.
- The urgent fight against COVID-19 entailed a temporary centralisation of health policies. However, co-ordination with the Länder resulted in difficulties, which were tackled in ad hoc ways under the exceptional circumstances of the pandemic. Co-operation difficulties hindered notably the implementation of the contact tracing system and the full enforcement of the "traffic light" approach. Testing and mask bearing policies were under Länder responsibilty and this created fragmentation in these areas across the territory. Co-ordination between federal and Länder public health policy authorities should be improved (Hofmarcher and Singhuber, 2021).

Box 1.1. The Health Literacy Strategy

Following the first European Health Literacy Survey (2011) which pointed out that the population health literacy level in Austria was below the average of the 8 countries participating in the survey, Austria defined a national public health goal on health literacy in 2012. Subsequently, health literacy was integrated into the ongoing healthcare reform process in 2013. A *National Health Literacy Alliance* was implemented in 2015 to supervise, coordinate and further develop activities. The Alliance is chaired by the Austrian Minister of Health and has an intersectoral steering board.

Since 2015, the main aim of the alliance is to empower professionals in healthcare and other settings to improve their impact on the health literacy of their target groups. Since the foundation of the Alliance, the following focal areas have been addressed:

- Quality of communication in healthcare: a national strategy was developed and is now in the process of being implemented, among others through trainings for healthcare professionals.
- Quality of written and audio-visual health information: the platform issued a set of recommendations on high-quality health information as well as guidelines on how to apply the recommendations in commissioning, developing or selecting health information.
- Organizational health literacy: the Alliance provides self-assessment tools for organizational health literacy so as to support organizations to reflect and improve the impact of their structures and processes on the health literacy of staff and clients/patients.

- Citizen and patient empowerment: the Alliance works on strengthening the link between patients' rights and health literacy and at encouraging patients to ask questions in medical encounters (for example by applying an Austrian adaptation of the "ask me 3" campaign).
- Measuring health literacy: Austria participated in the 2nd European Health Literacy Survey (HLS 19). Results which were published in 2021 point towards a slight improvement in population health literacy over the last 10 years (improvement of good and excellent health literacy from 48% to 53% of the population).

So far, the activities of the *Austrian Health Literacy Alliance* have been implemented on a voluntary basis by health literacy champions (organizations joining the Alliance as members). Although some of the activities – especially those performed by the Ministry of Health, social insurance organisations or some of the Austrian Länder – already have high outreach, the activities do not yet systematically reach the population at large. As a step towards better population coverage, the Alliance is currently preparing the implementation of model regions for health literacy, with the aim to systematically apply the tools developed so far in a combined approach in selected regions so as to improve navigation of the health system and health literacy. Implementation of the regions approach is expected to start in 2024.

In parallel, activities to integrate health literacy into legal regulations are being pursued in order to strengthen the role of the healthcare system in improving population health literacy.

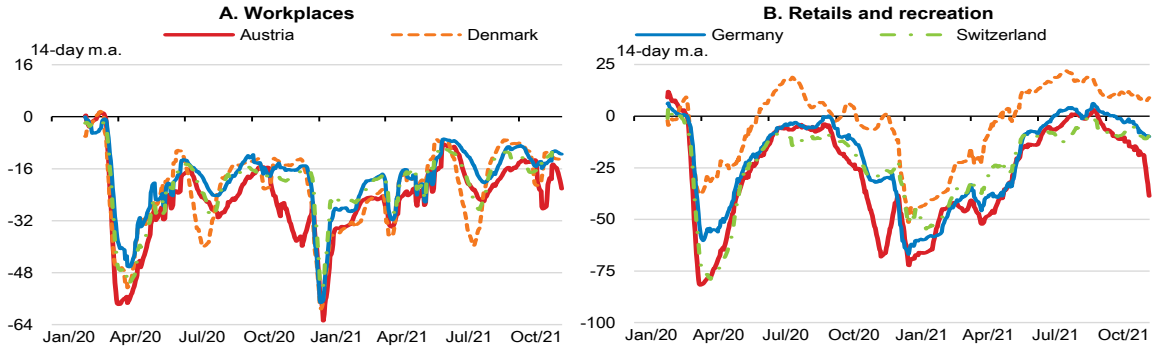
Source: Ministry of Labour, Social Affairs, Health and Consumer Protection; Gesundheits Ziele, 2021.

Macroeconomic outlook and risks

The recovery has started strong

Bold fiscal stimulus supported the resilience and recovery of the economy after the first shock of the pandemic (Figure 1.5). Economic activity grew faster than expected in the first three quarters of 2021 and in the third quarter aggregate output recovered its pre-pandemic level (Figure 1.6, Panel A). Both demand for goods and services had however contracted more strongly than in peer countries during the pandemic, congruent with more limited recourse to on-line shopping during the pandemic (Figure 1.7). Part of the accumulated savings are expected to be spent as the recovery takes hold, but only gradually as they are skewed towards high income groups with high saving rates and are perceived, generally, as additional wealth entailing a low marginal propensity to consume.

Figure 1.5. Workplace and retail mobility has fluctuated during the pandemic



Note: The latest data point is for 28 November.
Source: Google LLC, Google COVID-19 Community Mobility Reports.

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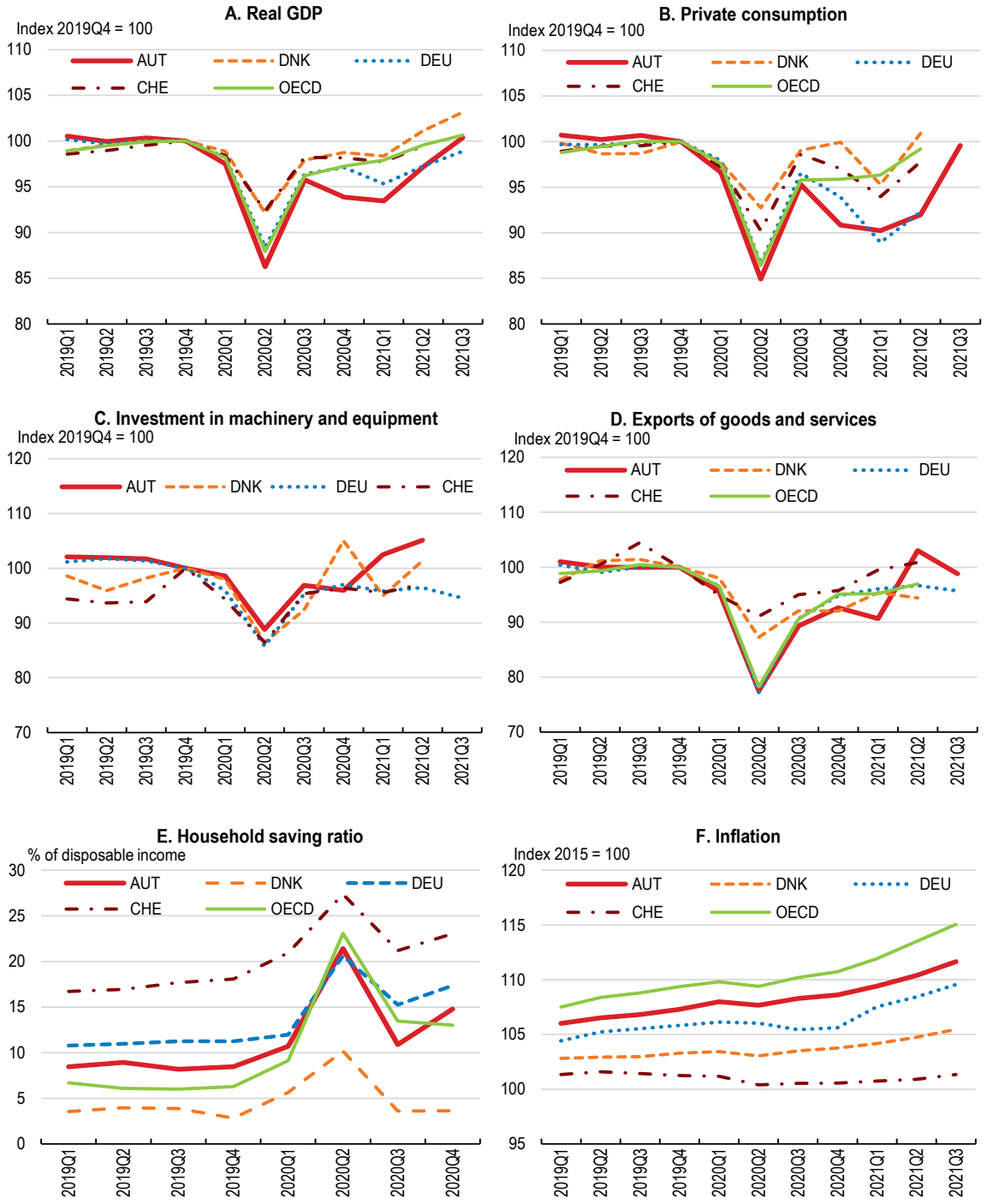
Figure 1.6. The drop in activity has been severe but the resilience of investment is encouraging



Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) as of 1 December 2021.

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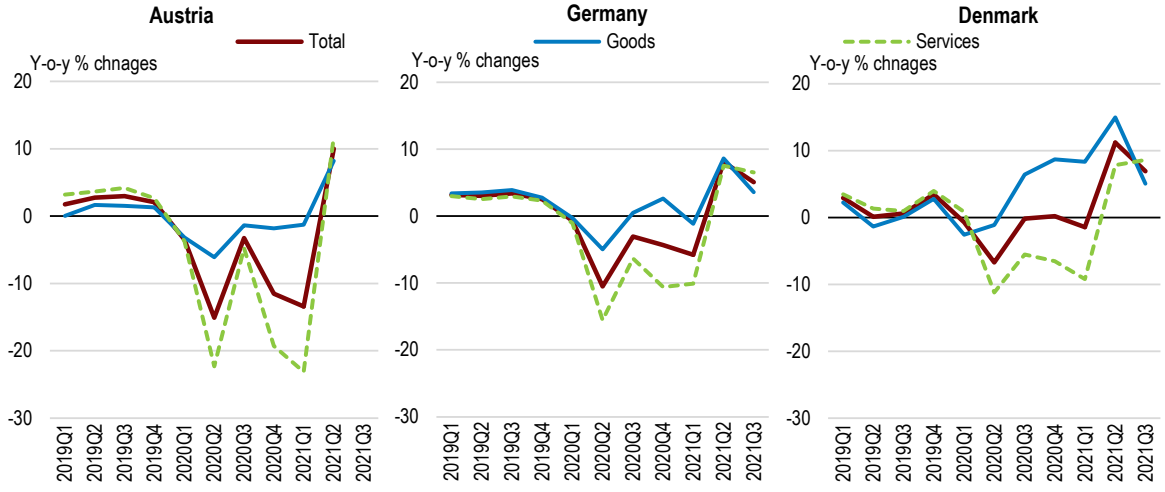
Figure 1.7. The consumption mix has dropped more and changed less than in peer countries

Household consumption expenditure



Note: Data refer to household consumption expenditure (domestic concept).
Source: OECD (2021), OECD National Accounts Statistics (database) as of 1 December 2021.

StatLink https://stat.link/v8shd0

Business investment (proxied by machinery and equipment investment in Austrian statistics) has contracted less than in other OECD and peer countries during the shock (Figure 1.6, Panel C). Investment subsidies have certainly played a role. The composition of the capital stock appears to have shifted towards subsidised green and digital technologies.

Export performance during the pandemic has suffered from the sharp contraction of tourism exports (which account for 30% of service exports). Service export performance was hurt more strongly in the second wave, which crushed the entire winter tourism season, before recovering strongly through summer 2021 (Figure 1.6, Panel D). The resurgence of the 4th wave in autumn, combined with renewed lockdowns for the entire population in November re-increased the uncertainties for the outlook of the winter tourism season.

Manufacturing exports plunged from the second quarter of 2020, but bounced back faster than services, pulled by buoyant value chain demand from Germany. Exports to Germany account for one third of total exports, driven by strong Austrian participation in Germany-centred value chains. Austrian industry benefits therefore from Germany's global performance in machinery and car sectors. In contrast, exports to China and exports of ICT goods and services remain limited (Figure 1.8). A long-term analysis of export performance found that exporters climbed up successfully quality and price ladders, but remained confined to the geographical and product markets which tend to expand below the global average (Federal Ministry of Digital and Economic Affairs, 2020). Austria's share of world markets remained relatively constant around 1%, including in the pandemic year 2020.

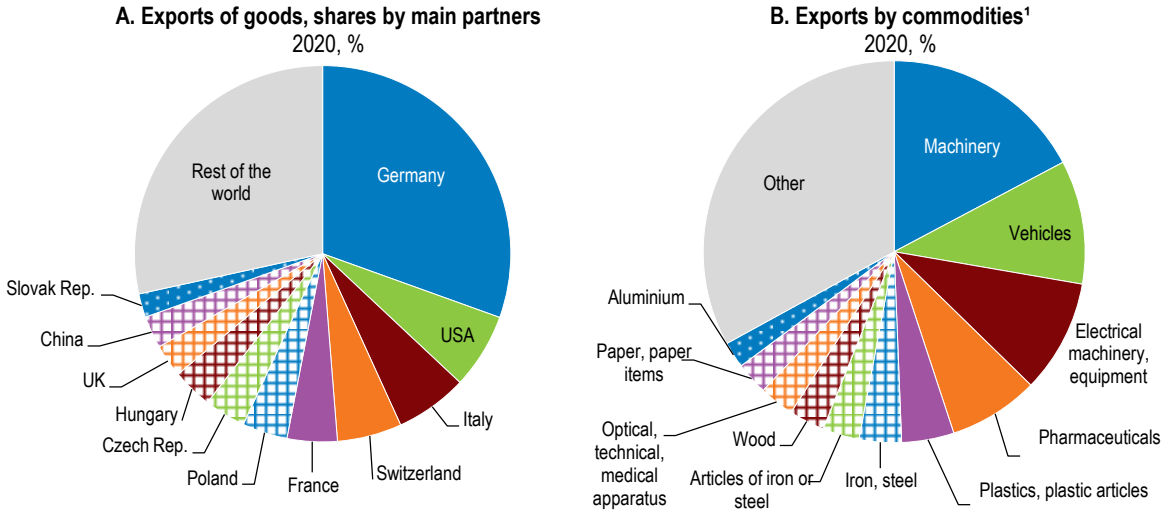
The re-allocation of export potential to greener and higher technology products, and stronger presence in Asian markets, would improve aggregate export performance. A new foreign trade strategy, adopted in 2018, focuses on innovation and technology, digitalisation, and emerging markets. An addendum is being prepared to emphasise the potential in the area of green technologies.

The current account surplus shrank moderately during the pandemic and, after a short-term deterioration, is expected to revert back to its pre-crisis level once the hospitality sectors fully recover. The decline in the

current account resulted mainly from a deterioration in the income balance. While a drop in travel exports weighed on the trade balance, the balance remained nevertheless positive (European Central Bank, 2021).

The 2020 trade agreement between the EU and the UK is expected to counterbalance most of the losses in goods trade due to Brexit. Nevertheless, bilateral trade with the UK will decline, though Austria will maintain a positive balance. The agricultural sector is most affected. The reduction of agricultural exports of the European Union to the United Kingdom implies that Austrian agricultural exporters will face more competition from other European countries.

Figure 1.8. Exports remain closely linked to European value chains



1. Based on the two-digit Harmonized System 2012.
Source: OECD (2021), OECD International Trade by Commodity Statistics (database).

StatLink https://stat.link/i80w13

Supply bottlenecks

With the strong recovery in 2021 a number of sectors faced labour bottlenecks, notably in hospitality activities. This compounded the skill shortages and the recruitment difficulties which had been bearing on the economy before the pandemic, and are analysed in Chapter 2 as structural constraints on Austria's potential growth. A distinct aspect has been a sub-group of immigrant workers' having gone back to their home country not coming back and resuming work during the recovery. This affected the activities employing a large proportion of immigrant workers such as tourism - where they account for 40% of the labour force. Shortages affected also other sectors. This is inciting many businesses to solicit senior age cohorts (28% of persons between 60-64 are in the labour force as of 2021) and part-time female workers - 40% of whom declare that they would be prepared to work full-time if their child and elderly care responsibilities were alleviated.

This bottleneck is more straightforward to tackle for high productivity firms which are in a position to offer more attractive work and pay conditions to their workers. This might nurture employment transfers to such activities after the pandemic (De Smet at al., 2021; Cook, 2021).

Supply-side bottlenecks arose also in international value chains. Delivery delays, material shortages and price increases in a range of intermediate products and raw materials have dampened activities in Austria. According to an investigation by the central bank, disruptions concern in particular semiconductors and microchips, and various raw materials including copper, aluminium and lithium (OeNB, 2021). They may have caused a shortfall of up to EUR 750 million (amounting to 0.3 to 0.4 percentage points of GDP) in

Austria's economic output in the second and third quarters 2021. Supply chain disruptions are expected to fade by the latter half of 2022.

Inflation pressures

Inflation increased more than in the peer countries during the pandemic, but less than the international average (Figure 1.6, Panel F). Before the pandemic Austria was experiencing inflation above the euro area average, but no special pressure was observed immediately after the COVID-19 shock (Beer et al., 2020). The previous OECD Economic Survey had related Austria's inflation gap to less strict competition and lower productivity growth and stronger wage growth in services (OECD Economic Survey of Austria, 2019).

Price pressures increased in the post-pandemic recovery, due mainly to disruptions in cross-border value chains. Tensions are expected to subside by the latter half of 2022. Other pressures will arise from the normalisation of the VAT rates (notably in restaurant services which account for 8% in the consumer basket) and from the introduction of carbon prices (see below). The latter will augment each year and will diffuse throughout the economy. Under these influences inflation could stabilise at a higher level than before.

Wage increases do generally not feed into an inflation spiral in Austria as settlements are based on previous year's inflation, irrespective of ongoing developments. Unions tend to internalise the impacts on Austria's international competitiveness. According to years, they may prioritise improvements in work organisations and work hours over nominal increases. Wage settlements were kept moderate in 2020 and are expected to remain broadly commensurate to productivity gains in the Fall 2021 negotiations. Prevailing labour shortages and skill scarcities will nevertheless put pressure on wages in several market segments. Aggregate outcomes for 2022 remain uncertain.

The fourth wave of the pandemic generated a faster upturn in contagions than in comparable countries (Figure 1.1 above) but did not alter substantially cyclical developments (as of late October). The winter tourism season and broader economic conditions may still be affected. The short-term macroeconomic outlook and risks are outlined in Box 1.2.

Box 1.2. Short term macroeconomic outlook

The new lockdown introduced in November 2021 will temporarily weigh on activity, but GDP is projected to recover, growing by 4.9% in 2022 and 2.5% in 2023. Economic activity in the first three quarters of 2021 grew faster than expected. Following the gradual easing of sanitary and travel restrictions and progress with the vaccination campaign in the first half of 2021, output in service sectors severely hit by the pandemic has rebounded. Business investment is supported by a significant increase in international trade, continued relatively low financing costs and the investment premium. Private consumption is expanding as households lower their saving ratio. Supply bottlenecks and labour shortages hold back an even faster expansion of economic activity. Inflation is set to increase to above 3% in 2022 but will moderate over 2023. While the fiscal deficit is decreasing, the funds from the European Recovery and Resilience Facility support further public investment, mostly in the areas of digitalisation and greening the economy.

The outlook remains nonetheless uncertain and dependent on the evolution of the pandemic and the length of the new lockdown, especially in hospitality sectors. The number of people tested positively for the virus and hospitalisations have sharply increased in October and November. A five-step plan by the government foresees new restrictions conditional on the evolution of hospitalisations. On 8 November, step 4 has been activated, mandating that access to contact-intensive services, restaurants, hotels and cultural and sport activities is restricted to people fully vaccinated or fully recovered from the virus. On 14 November, the authorities introduced a lockdown for the unvaccinated, the last step of the five-step plan. A further worsening of the pandemic combined with continued strong pressures on the capacity of intensive care units, notably in the Salzburg region and Upper Austria required however the authorities to re-introduce a country-wide lockdown for the entire population lasting

for 20 days, starting on 22 November. Furthermore, the authorities have announced that vaccinations against the virus will be mandatory after February 2022.

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume (2015 prices)

	Current prices (EUR billion)	2018	2019	2020	Projections		
	2017				2021	2022	2023
Gross domestic product (GDP)	369.6	2.4	1.5	-6.8	3.7	4.9	2.5
Private consumption	194.0	1.1	0.6	-8.4	3.3	5.8	2.6
Government consumption	72.0	1.2	1.5	-0.4	3.1	0.2	0.6
Gross fixed capital formation	87.1	4.5	4.8	-5.0	7.4	4.9	3.1
Housing	16.6	1.9	3.9	1.8	5.9	4.0	2.5
Business		. .	. .	. .	. .	. .	. .
Government	11.5	. .	. .	. .	. .	. .	. .
Final domestic demand	353.1	1.9	1.9	-5.9	4.4	4.2	2.3
Stockbuilding[1]	4.8	0.5	-1.2	0.1	0.0	0.0	0.0
Total domestic demand	357.9	2.4	0.6	-5.8	4.2	4.2	2.3
Exports of goods and services	200.8	4.8	3.3	-11.5	10.4	8.5	5.6
Imports of goods and services	189.1	4.8	1.8	-9.3	11.6	6.9	5.3
Net exports[1]	11.7	0.2	0.9	-1.5	-0.3	1.0	0.3
Other indicators (growth rates, unless specified)							
Potential GDP	. .	1.5	1.7	1.6	1.4	1.4	1.3
Output gap[2]	. .	0.7	0.5	-7.8	-5.8	-2.5	-1.4
Employment	. .	1.4	0.8	-1.3	1.3	1.8	0.6
Unemployment rate	. .	4.8	4.5	5.4	5.1	4.7	4.5
GDP deflator	. .	1.8	1.6	2.3	1.5	2.9	2.2
Consumer price index (harmonised)	. .	2.1	1.5	1.4	2.7	3.2	2.4
Core consumer prices (harmonised)	. .	1.8	1.7	2.0	2.4	2.8	2.0
Household saving ratio, net[3]	. .	7.7	8.5	14.4	11.3	7.4	7.2
Current account balance[4]	. .	0.9	2.1	1.9	-0.2	0.3	0.5
General government fiscal balance[4]	. .	0.2	0.6	-8.3	-6.3	-2.3	-1.1
Underlying general government fiscal balance[2]	. .	-0.2	0.3	-2.9	-2.7	-1.0	-0.6
Underlying government primary fiscal balance[2]	. .	1.1	1.5	-1.9	-1.8	-0.3	0.0
General government gross debt (Maastricht)[4]	. .	74.1	70.6	83.4	83.1	79.6	77.8
General government net debt[4]	. .	50.9	49.5	62.4	60.9	56.8	54.4
Three-month money market rate, average	. .	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5
Ten-year government bond yield, average	. .	0.7	0.1	-0.2	-0.1	-0.2	-0.1

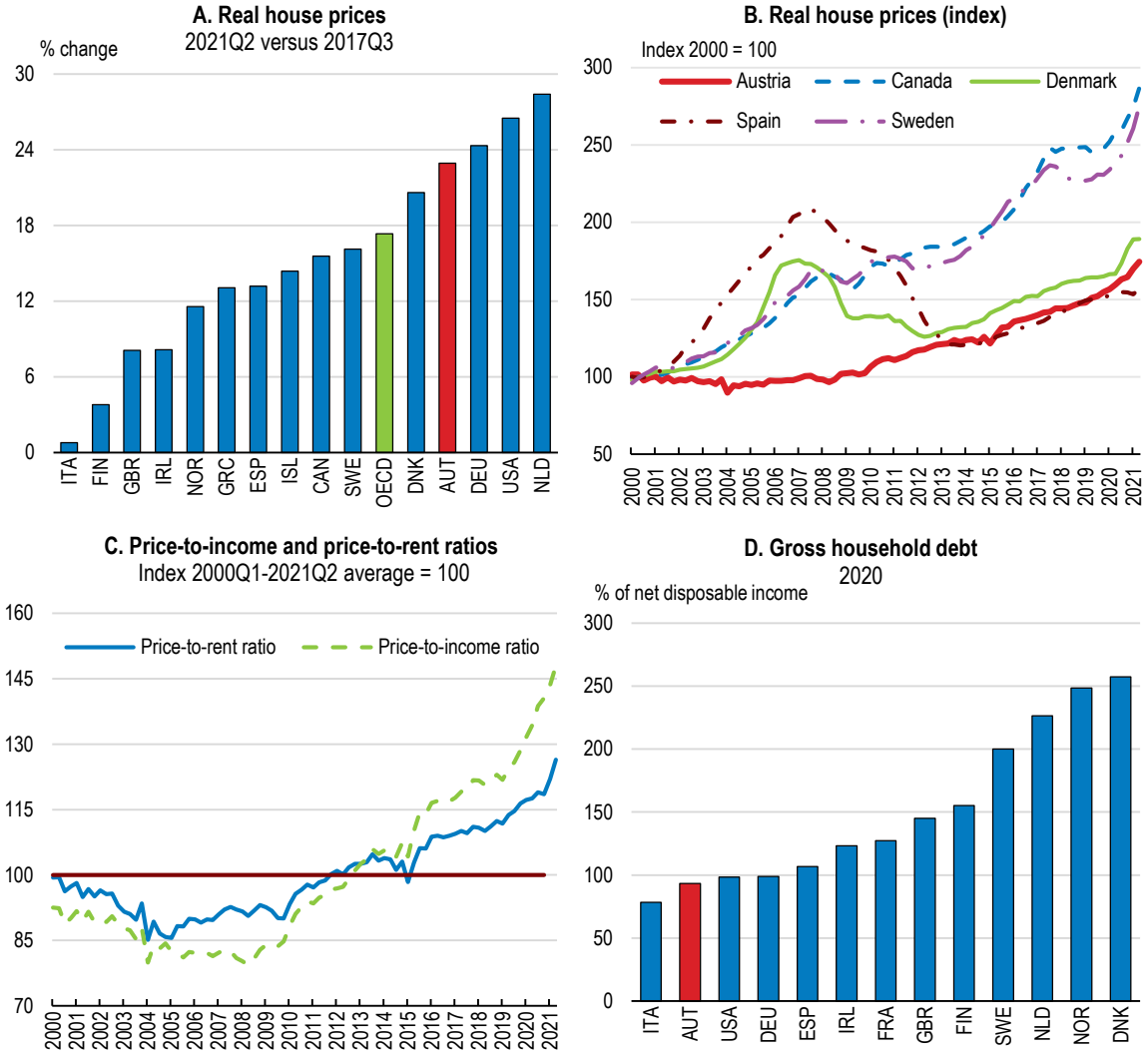
1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of household disposable income.
4. As a percentage of GDP.
Source: OECD (2021), OECD Economic Outlook 110: Statistics and Projections (database).

Housing and banking sector risks

The COVID-19 shock has augmented financial risks in the housing and banking sectors. Housing markets, after staying relatively immune to global house price inflation in the 2000s, have come under pressure in recent years (Figure 1.9). Low global interest rates, combined with the relatively low starting level of prices, have attracted international investors, notably in residential real estate (Artner, 2017). Domestic demand for houses has also increased, in particular by young households. The movement has accelerated during the pandemic. With the expansion of teleworking, but also due to the rise in savings and disposable

incomes enabled by policy support and lower consumption demand, housing demand has risen, notably in small semi-rural settlements (OGM, 2021).

Figure 1.9. House prices have soared after a long period of moderation



Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database) and OECD Analytical Housing Prices database.

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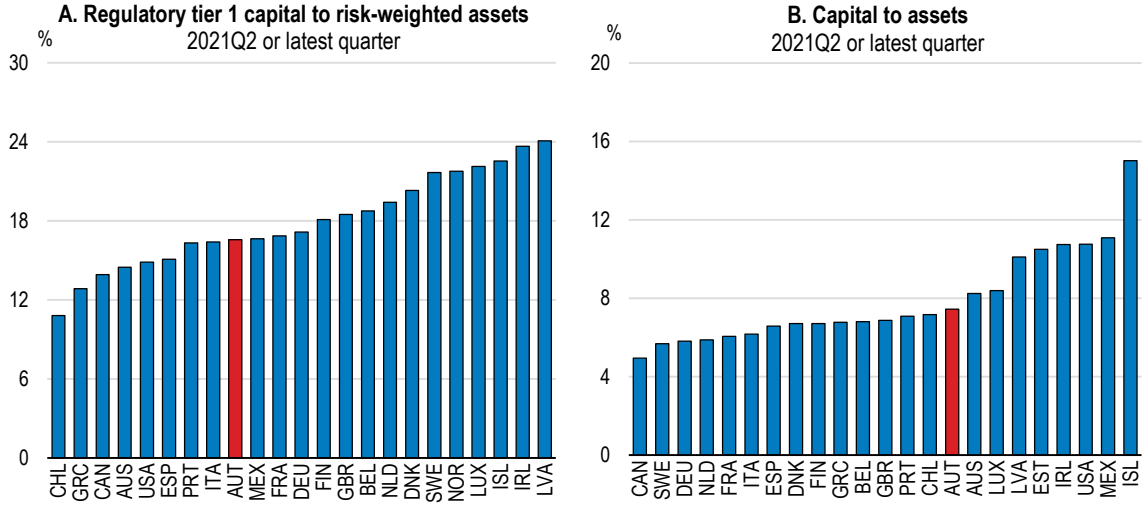
House price increases create financial risks. The Financial Market Stability Board (FMSB) issued guidelines in 2018 to cap the maturity of mortgage loans and their loan-to-value and debt service-to-income ratios. However, a substantial share of new lending did not comply with these guidelines - more than half of loans have less than 20% own financial contribution, and one fifth have a debt-service-to-income ratio above the recommended 40% (OeNB, 2021). Although the stock of housing loans is still low, it is expanding rapidly and the bulk is provided by banks rather than specialised financial institutions. Half of the new mortgage loans are extended to borrowers aged 35 years or younger.

In mid-2021, FMSB, on the basis of analysis by the central bank, reiterated that housing related risks are increasing, and again urged banks to comply with its quantitative guidance (Financial Market Stability

Board, 2021). The guidance for housing loans recommends maximum values for their maturity (loans with maturities of more than 35 years should be granted only in exceptional cases), requiring a down payment of at least 20% of total financing needs and a benchmark for the debt service to income ratio of borrowers (debt service should not go above 30-40% of household net income. Although compulsory enforcement may raise operational challenges, financial authorities should consider making their mortgage guidelines mandatory in order to avoid weakening the quality of banks' portfolios.

Banks themselves faced the pandemic in relatively healthy conditions, but also with room to improve their capital ratios (Figure 1.10). FMSB asked banks not to distribute dividends during the pandemic in order to increase their capital buffers. The shock strained their asset quality less than feared, as customers, both businesses and households, were well protected by public policies. There was still a spike in the loans under close surveillance (Stage 2 loans). Part of these fragile credits may turn non-performing when government support is phased out and when standard loan classifications are restored. These standards were temporarily relaxed during the pandemic, along European Banking Authority guidelines.

Figure 1.10. After the pandemic banks' capital should be strengthened



Source: IMF (2021), IMF Financial Soundness Indicators Database.

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Banks have anticipated these risks in 2020 and 2021. Risk provisioning quadrupled in 2020 and absorbed half of banks' operating profits on that year. Uncertainty over average asset quality remains nonetheless high. The Central Bank estimated in June 2021 that "more than a year after the COVID-19 pandemic spread, its effects on the banking sector are still not fully assessable". As recommended by the Central Bank, focussing on a solid capital base would be prudent.

Bank services were carried out smoothly during the pandemic, without technical bottlenecks during lockdowns, as demand for tele-banking soared. Banks increased their limits for contactless payments and adopted innovative digital identification solutions. There is room for consolidating the distribution channels (e.g. domestic branches) and back-office operations (e.g. information technology applications) as current systems have accumulated through time, are not fully integrated, and place banks at a technological gap against fintech firms. Banks' retail network is also too dense and offers room for rationalisation at both branch and network levels. Operational costs are high and risk overstretching the sector's profitability and investment capacity. Banks' competitiveness may come more at risk when retail lending open fully to cross-border and on-line competition. Banks face also skill shortages, as experts commanding simultaneously

state-of-the-art software and banking knowledge are in short supply. Banks started to co-operate with fintech firms to tackle this bottleneck.

Some key developments and events which may lead to major changes in the baseline outlook are shown in the following Table 1.2

Table 1.2. Events that could lead to major changes in the outlook

Vulnerability	Possible outcomes
An extension of the lockdown announced on 22 November and continued outbreaks of the pandemic due to the emergence of new variants.	Economic activity would be reduced considerably and businesses could fail, with negative impacts on employment, consumption and business investment. Contact-intensive service sectors, especially hospitality sectors are particularly exposed to the sanitary situation and restriction measures.
Financial strains and debt overhang in groups of businesses and households may rise, when policy support is phased out and the credits contracted during the pandemic come to maturity.	Insolvencies and non-performing loans may increase more than expected, harming business confidence and causing financial strain and credit rationing in the banking sector.
New trade tensions and international supply chain bottlenecks.	Output, investment and trade growth can be curbed and price and wage pressures may increase.

Table 1.3. Fiscal policy, public finances, debt sustainability: past OECD recommendations and government follow-ups

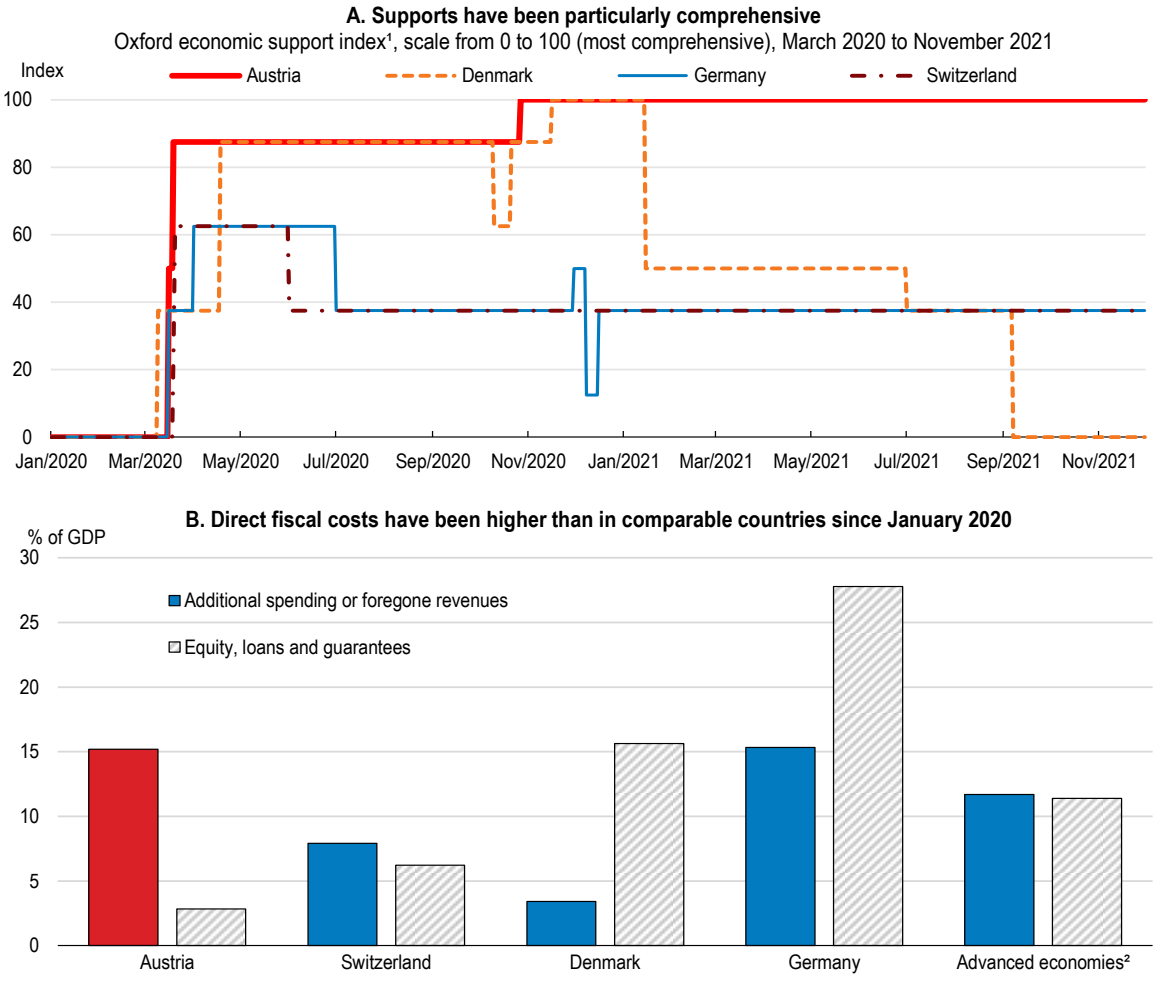
Past OECD recommendations	Follow-ups
Continue to reduce the public debt ratio. If cyclical conditions worsen, let automatic stabilisers operate and consider more active measures when growth disappoints.	Prior to the outbreak of the pandemic, budget planning envisaged a gradual reduction in the public debt ratio, with the aim of falling below the 60% Maastricht benchmark by 2023. In 2019, the ratio was still 70.6%, and, due to the pandemic, it was 83.2% in 2020. Its decline, which started in 2021, will continue in 2022 according to the Draft Budgetary Plan, to reach 79.1 % in 2022.
Monitor demographic developments and promptly increase the retirement age, raise contributions or reduce benefits as needed. Link the retirement age to life expectancy.	The effective retirement ages for both women and men have constantly increased in recent years and the government intends to raise them further. Furthermore, the female statutory retirement age will be gradually raised to 65 between 2024-2033 (by ½ years steps),
Make macro-prudential recommendations on mortgage lending compulsory.	The Financial Market Stability Board (FMSB) requested the Central Bank to prepare a comprehensive analysis of the systemic risks in housing finance. This analysis will inform a possible FMSB recommendation to the Financial Market Authority.
Ensure that banks of all sizes are robustly capitalised.	As of June 2021, Austrian banks reported a consolidated common equity tier 1 ratio of 16.1% (50 basis points higher than at end-2019). Compared with levels before the 2008 global financial crisis, the sector has more than doubled its capital ratio, in line with tighter prudential regulations. In 2020, banks markedly reduced their profit distributions to increase their overall capital.

Economic and social supports are being adapted to the recovery

A comprehensive support package

Economic policymakers reacted forcefully to the shock of the pandemic. They drew on the fiscal room regained by prudent fiscal management after the global financial crisis, to phase in a comprehensive support package (Figure 1.11, Panel A). According to the IMF's COVID-19 database from October 2021, Austria's direct fiscal transfers will reach 15.2% of GDP from the beginning of the pandemic, including the measures planned until 2023. This amount is above the OECD average and above the peer countries. According to the same database, Austria has relied less on "below-the-budget-line" support (including concessional loans by public banks, loan guarantees and equity injections).

Figure 1.11. Austria's economic support during the pandemic



1. The index gauges the income support and the debt relief measures for households. A composite indicator is composed of two economic policies indicators: Income support (E1) and Debt or contract relief (E2) measured by the Oxford COVID-19 Government Response Tracker (OxCGRT). A score of each indicator is calculated using the ordinal value and adding an extra half-point if the policy is general rather than targeted, if applicable and then is rescaled to range between 0 and 100. Rescaled scores are averaged with equal weights to calculate the composite indicator. The latest data point is for 30 November.
2. According to the classification of economies in the IMF Fiscal Monitor.
Source: Hale et al., (2021). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government and IMF (2021) IMF Database of Fiscal Policy Responses to COVID-19, October.

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These below-the-line supports, in particular concessional loans, are difficult to document on an internationally comparable basis. Private institutions provide part of the credit-centred support to their customers and support them in difficult times. They have continued to support them during the pandemic. Available data on total loan moratoria offered by public and private banks (in compliance with the European Banking Authority guidance) and the total loans and advances that they extended under government guarantees suggest that Austria's banking system mobilised these instruments at a higher rate than in comparable countries (OECD Economic Survey of the European Union, 2021).

The federal government support through direct transfers rather than public loans was positive for the business sector. Firms have not been further burdened by additional debt and can therefore invest more freely on the way out of the pandemic. One original instrument has been direct public subsidies to business

investment. New investments have benefitted from a standard 7% subsidy, which was doubled to 14% for investments in the areas of greening, digitalisation, and health projects and life sciences Climate-damaging investments, including in equipment and installations that directly use fossil fuels are excluded. Businesses responded and general-purpose, green and digital investments have accelerated during the pandemic.

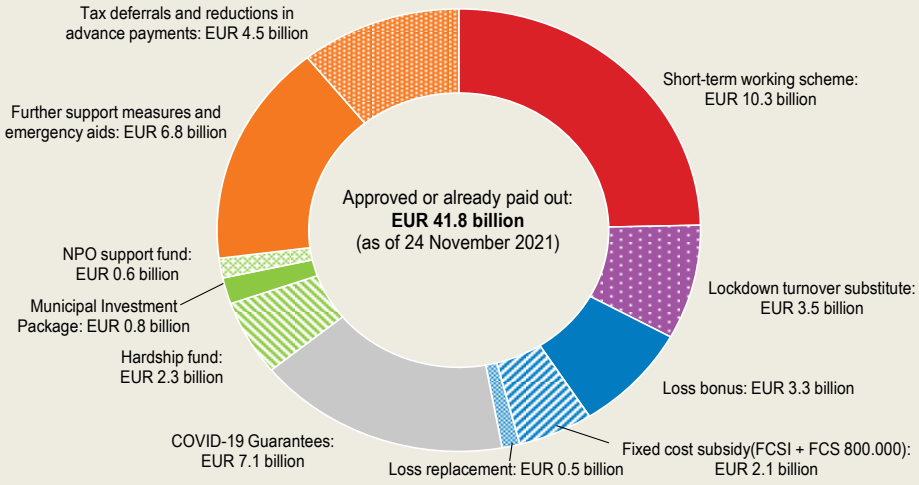
Support to households was channelled mainly through the "short-time working scheme" (Box 1.3) It partially compensated the working time losses of wage earners, especially at low-to-middle income levels. The intention of the scheme was to preserve the firm-specific human capital embodied in stable employment relations. Employment in industry declined by only 1.3% in 2020, against an average contraction of work hours of 6.6%. Up to 1.2 million jobs in spring 2020 (20% of total private sector employment) are estimated to have been conserved through this scheme. The total drop in wage and salary incomes remained moderate at -0.4% in 2020. One estimation found that around 88% of income losses were compensated (Christl et al., 2021). The standard social safety net also provided substantial support. The unemployment insurance, unemployment assistance and anti-poverty transfer schemes – automatic social stabilisers - contributed around 2.8 percentage points of GDP in 2020 and a projected 3.4 percentage points of GDP in 2021 (European Commission, 2021). Certain sectors affected in particularly acute forms, such as culture and sport activities, benefitted from special supports (Box 1.4).

Box 1.3. Policy support measures in response to the pandemic

Since mid-March 2020, a budget envelope of initially EUR 38 billion (10% of GDP) has gradually been spent. Furthermore, the government mobilised additional support and committed to expand it, if needed. On 16 June 2020, the package was increased to EUR 50 billion (13% of GDP), including stimulus measures. The budget envelope included also guarantees of around EUR 10.7 billion with no immediate impact on the public deficit. As of 24 November 2021 COVID-19-support measures amounting to EUR 41.8 billion have been provided, including guarantees and tax breaks (Figure 1.12). The actual budgetary expenditure amounts to EUR 28.6 billion as of 24 November 2021.

Figure 1.12. Budget costs of Corona aid measures

(as of 24 November 2021)



Note: Guarantees represent approved maximum, of which parts have already expired; guarantees and tax deferrals have no immediate effect on public deficit. Rounding errors can occur.
Source: Ministry of Finance of Austria

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Expenditure

The major crisis management measure was the **short-time working scheme ("Kurzarbeit")**. As of 24 November 2021 the total volume of approved short-time working scheme applications summarized to EUR 10.3 billion. Based on actual hours worked, paid-out short-time work aid amounted to EUR 9.1 billion as of 24 November 2021. The short-time working scheme has been extended four times and is expected to expire in June 2022. In five phases, the government reimbursed employees for a share of their last year's net income, including social security contributions. The eligibility and the share of income reimbursed depend on the specific phase.

- Phase I and Phase II (16 March – 30 September 2020): Working hours could be reduced by 10%-90% on average over a given period. The reimbursement rate was 80% (over EUR 2 685 gross salary), 85 (EUR 1 700 to EUR 2 685) or 90% (below EUR 1 700) of net salary. Salaries of apprentices were fully reimbursed.
- Phase III and IV (1 October 2020 – 30 June 2021): Similar to Phase I and II, but the reduction in working hours eligible for support was narrowed down to 30%-80%.
- Phase V (1 July 2021 – June 2022): Phase V offers two possible variants. The first type addresses firms hit hard by the economic effects of the pandemic and runs until the end of March 2022. It is available for businesses that suffer a loss in revenue of more than 50% compared to 2019 or that are directly affected by the reintroduced containment measures. These firms could tap the same reimbursement rate as in the previous phases. The second type is open for all other businesses and runs until the end of June 2022. In this case, the reduction of working hours was further limited and the reimbursement rate further reduced.
- In addition, the government recently announced two bonuses related to short-time work. First, seasonal businesses are granted 65% of labour costs of staff hired between 3 November 2021 and the end of the recent lockdown measures. Second, employees who were in short-time in November 2021 and in total at least ten months since March 2020 receive a one-off bonus in the amount of EUR 500.

The Corona aid-fund ("Corona Hilfs-Fonds") aimed at upholding corporate liquidity. An envelope of EUR 15 billion was reserved. It provided (i) state guaranteed loans and (ii) subsidies for firms' fixed costs.

- The government guaranteed up to 100% of eligible loans through the newly established COFAG agency ("Covid-19 Finanzierungsagentur des Bundes GmbH"). Overall, the government assumed guarantees amounting to EUR 7.1 billion, of which EUR 6.1 billion were still outstanding as of 24 November 2021.
- Lockdown-turnover substitute: The lockdown-turnover substitute was granted to firms directly and indirectly affected from the lockdowns in November and December 2020. Depending on the business sector, firms could receive 20% / 40% / 60% / 80% of their turnover loss in November and 12.5% / 25% / 37.5% / 50% in December. Indirectly affected firms additionally had to have incurred a turnover shortfall of at least 40% as compared to 2019. As of 24 November 2021 EUR 3.5 billion of lockdown-turnover substitutes have been paid out.
- Fixed cost subsidy: The fixed cost subsidy covered a share of firms' fixed costs. The first phase of this subsidy (Fixed cost subsidy I) covered the period from 16 March 2020 to 15 September 2020. Firms were subsidized up to 75% of their fixed costs, depending on the magnitude of revenue losses above a threshold of at least 40% as compared to 2019. The second phase (Fixed cost subsidy 800 000) covered the period from September 2020 to June 2021. The loss in revenue as compared to the previous year needed to be above 30% to qualify. Applications were possible until end of August 2021 in the first phase and are still possible until end of March 2022 for the second phase. As of 24 November 2021 EUR 2.1 billion fixed cost subsidies have been paid out.

- Loss replacement ("Verlustersatz"): The loss replacement has been created specifically for larger companies. It originally covered the period from September 2020 to June 2021 and replaced up to 90% of the allowable loss, depending on the size of their turnover and head count. Prerequisite was a revenue loss of at least 30% as compared to 2019. The loss replacement has been prolonged two times. Phase II covers the period July 2021 to December 2021. In line with the economic rebound, firms are now eligible if their revenue loss compared to 2019 amounts to at least 50%. Against the backdrop of reintroduced lockdown measures, the loss replacement has recently been prolonged once again. Phase III covers allowable losses (up to 90%) incurred in the period January to March 2022, provided that the revenue loss compared to the months in 2019 amounts to at least 40%. The volume of applications amounted to EUR 1.4 billion as of 24 November 2021, of which EUR 0.5 billion have been already paid out.
- Loss bonus ("Ausfallsbonus"): The loss bonus is a monthly liquidity assistance covering the months from November 2020 to September 2021 and again from November 2021 to March 2022. Firms can apply if they incur a revenue loss of at least 40% as compared to 2019, except for the months July, August and September 2021 for which the threshold has been raised to 50% as well as for November and December 2021 for which the threshold has been lowered to 30% revenue loss. Depending on the specific month, the replacement rate and the cap vary. Starting from July 2021 onwards also the sector in which the applying firm operates affects the replacement rate. As of 24 November 2021 an amount of EUR 3.3 billion has been already paid out.

Besides the short-time working scheme and the above mentioned grants, the government provided more targeted support through **relief funds for specific industries** for bridging finance for firms which could not apply to the Corona aid-fund. In addition, the government adopted **aid packages** for families as well as for municipalities and increased spending on medical equipment and research related to the pandemic:

- Hardship Fund: The hardship fund for smaller firms originally covered the period from March 2020 to September 2021 and recently has been reintroduced for the period November 2021 to March 2022 (Phase IV). The government disbursed funds to sole proprietors, small firms and agricultural businesses of up to EUR 1 000 (Phase I), EUR 2 000 (Phase II and IV) or EUR 600 (Phase III) per month, depending on last year's net income. As of 24 November 2021 the federal government provided EUR 2.3 billion for the hardship fund.
- Municipal Investment Act 2020: Via the Municipal Investment Act 2020 the government provides EUR 1.0 billion to promote public investments by municipalities. As of 24 November 2021 the federal government paid out EUR 0.8 billion.
- NPO support fund: For non-profit organizations (among others in the area of sports and culture) the government set up a support fund with an envelope of EUR 0.8 billion (has been recently increased by EUR 125 million). As of 31 October 2020, EUR 0.6 billion have been paid out by the federal government.
- Further support measures and emergency aids sum up to EUR 6.8 billion and include among others the child bonus (EUR 665.3 million, paid out in 2020), two one-off payments for unemployed persons (EUR 368,7 million, payments made to a great extent in 2020), the Family hardship compensation allowance and measures to fight poverty (in total EUR 216.1 million as of 24 November 2021), the bridging finance for self-employed artists (EUR 140 million paid out of federal budget of which EUR 135,9 million were disbursed to beneficiaries as of 31 October 2021), or the special purpose grant for long-term care (in total EUR 150.0 million were reserved, of which EUR 135.0 million had been already paid out as of 24 November 2021). The remaining expenditure is mainly related to health care measures (including medical equipment).

Around EUR 5 billion are allocated to an **investment premium** to stimulate business investment:

- The basic premium subsidized 7% of all business investments.
- An additional 7% was granted for investments in health care, environment and digitalisation.

Tax measures (distinguishing tax deferrals from other measures)

The authorities granted **deferrals of VAT, corporate and personal income taxes, as well as social security contributions** from March 2020 to end of June 2021. EUR 10 billion was budgeted for these deferrals.

A **loss carry-back tax offset** was introduced. Businesses had the possibility to lower corporate income tax by offsetting losses suffered in 2020 and 2021 against profits from 2019 and 2018. A budget of EUR 2 billion was reserved for this offset.

VAT rate reductions from 10% to 5% were introduced for specific sectors (hospitality and recreational and publishing sectors) from July 2020 to December 2020. Around EUR 900 million were disbursed. Moreover, the VAT rate on non-alcoholic beverages was cut from 20% to 10%, amounting to additional EUR 500 million of fiscal costs. The VAT rate on repair services was also temporarily reduced from 20% to 13%.

A **reduction of personal income taxes** for low-income earners from 25 to 20% was already implemented.

Further **tax reliefs** were granted for the **agricultural and forestry sectors**, amounting up to EUR 500 million.

Box 1.4. Special measures in support of culture and sports during the pandemic

Arts and culture play important roles in Austrian society and economy and have been among the most affected sectors by the COVID-19 shock. They encompass various activities involving close physical contacts and large proportions of free-lance employees. Contact- and mobility-restricting measures triggered a sharp contraction of activities, revenues and employment in these sectors and, in response, the authorities introduced a range of measures to assist the affected organisations and workers in addition to the general support measures described in Box 1.2.

Culture was among the first sectors that had to lock down and among the last sectors that were allowed to reopen again. The sector's aggregate revenue losses approached EUR 2 billion in 2020 (about a quarter of the year's value added) with additional challenges for restauration and conservation activities. Museums for example, whose visitors come traditionally for more than 60% from abroad, lost 70% of visits and 80% of proceeds.

The following sector-specific measures were implemented by the Federal Government (with Lander and municipal authorities allowed to phase in additional specific supports):

- **Reduction of the value-added tax (VAT).** The rate was cut from the standard 20% to 5% for gastronomy, culture and publishing/book trade from July 2020 until end 2021. This was estimated to have generated significant additional local demand for these activities.
- **Bridge funds for artists.** EUR 150 million were allocated to artists in financial emergency.
- **COVID-19 Fund for artists and educators.** EUR 40 million were allocated to artists and educators not eligible for the cross-sectoral hardship fund and the bridge funds for artists.

- **Protective shield for events.** EUR 300 million were dedicated to event organisers in the fields of culture, sport, congresses and fairs.
- **Comeback grant for film and TV productions.** EUR 25 million offset the financial risk of stopped or postponed shootings.

The sport sector, estimated at around 4% of GDP (according to the so-called "Vilnius definition"), is larger in Austria than in other EU countries and represents nearly twice the 2% EU average. This is due notably to more than yearly 60 million sport-related overnight stays (summer and winter). The COVID-19 pandemic and respective mitigation efforts, have led to a very difficult period for the Austrian sport sector with an estimated 19% value added contraction in 2020 and estimated 63 000 net job losses.

The following measures were mobilised to tackle the special consequences of the shock in the sector:

- **COVID-19 funds for sport leagues.** This intends to secure the current structures within professional and semi-professional high performance Olympic team sports – volume 2021 EUR 35 million.
- **#Comebackstronger programme.** This initiative aims to support the comeback of sport activities, including via: i) A *Long day of sport* programme to promote awareness and increase the physical activity level of the population; and ii) a *Sportbonus* to back sport clubs to gain and regain members (the Federal government is funding up to 75% of the membership fee under a cap).
- **A new special website.** The website www.nachhaltiger-sport.at was set up by the Federal Ministry for Arts, Culture, the Civil Service and Sport in cooperation with the Federal Environment Agency to promote the more sustainable development of sport clubs in the future. A tool in the website will help sport clubs to survey their current sustainability and identify further potentials and measures towards improvements.

Source: Federal Ministry for Arts, Culture, the Civil Service and Sport.

Transition policies out of the pandemic

Policymakers started to adapt the support programme from mid-2021. Measures were withdrawn from areas where conditions were normalising, and were targeted to the sectors and regions still bearing impacts from the pandemic. Fixed cost subsidies were phased out for most activities. Income support for households was shifted to the standard social safety net. Still, resources remain available in the Hardship Fund for exceptional distress cases. Short-time work subsidies were prolonged for heavily hit firms until the end of 2021 or summer 2022 for some cases. The worsening of the sanitary situation and the introduction of a new country-wide lockdown may require additional economic support for the affected firms and households.

The authorities should adjust support measure as sanitary conditions evolve. The extension of the short-working scheme and the fix-cost subsidy to the end of March 2022 is therefore welcome. It will help to cushion the impact of the lockdown on economic activity. Going forward, the authorities will be faced with a double-agenda: i) avoiding that economic scars from the pandemic undermine the macroeconomic recovery; and ii) facilitating the reallocation of capital and labour resources to more promising activities in the structural transformations of the post-pandemic era.

These two agendas overlap in the management of corporate debt. As in other OECD economies, the issue was somewhat concealed by the exceptional measures taken during the pandemic. Tax and other liability deferrals, postponement of insolvency and bankruptcy procedures, and public and private creditor leniency offered reliefs. The challenge is compounded by the already high leverage that Austrian businesses had

before the pandemic (OECD Economic Survey of Austria, 2019) and additional lending provided by local co-operative banks and *Hausbanken*.

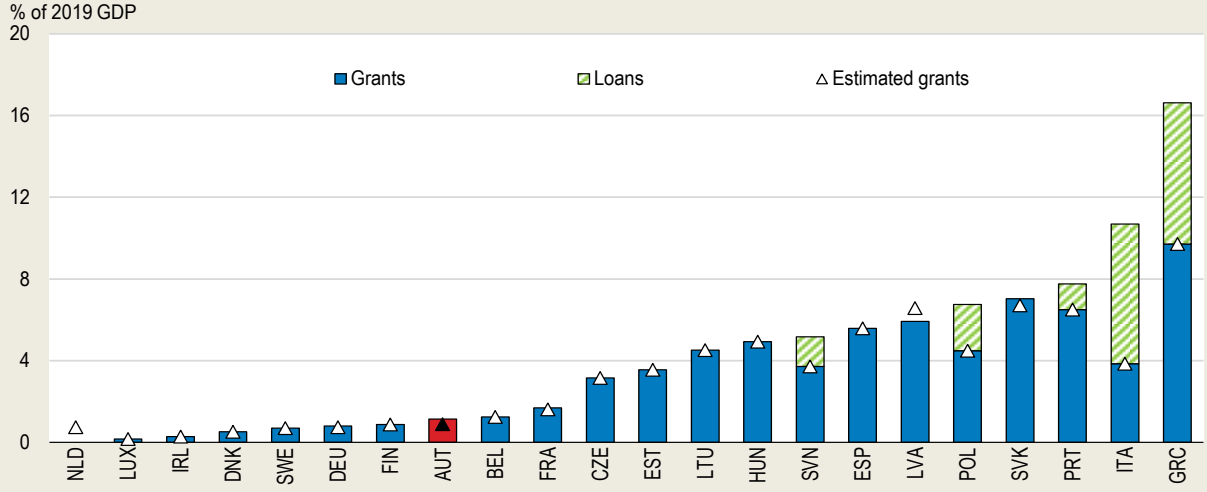
Insolvency risks do not appear very high, but excessive leverage may hold up capital formation on the way out of the pandemic. If the projects of high-potential firms cannot be financed, the growth and productivity potential of the economy would be durably hampered. As discussed in detail in Chapter 2, policymakers' challenge is to address balance sheet strains by separating promising from non-viable businesses.

Policymakers' structural task on the way out of the pandemic is supporting Austria's transition to a greener and more digitalised economy. As in other EU economies, Austria has framed new initiatives under the Next Generation European Union (NGEU) plan Box 1.5). The investment cash subsidies introduced during the pandemic and leveraged with an additional premium for green and digitalisation investments played already an important role. Their extension via planned investment tax allowances will continue to stimulate transformational investments.

Box 1.5. Austrian Resilience and Recovery Plan

Austria's recovery and resilience plan was submitted to the European Commission in April 2021 (EC, 2021a). It was approved by the European Council in July. It has an envelope of EUR 4.5 billion (1.1% of 2019 GDP). EUR 3.5 billion will be financed from EU grants. The specific financing amount will not be determined until 2022. Measures that cannot be covered by EU grants will be financed from the national budget. Austria has not applied for EU loans for complementary funding (Figure 1.13).

Figure 1.13. Grants and Loans in the Recovery and Resilience Facility



Note: Calculations based on Bruegel RRP database of July 14 where there is no data for Netherlands who did not yet submit their plan. Estimated RRF grants is from Annex IV of the Recovery and Resilience Facility Regulation, which is based on the Commission's Autumn 2020 forecast. According to the Regulation, the final amount of grants will be calculated by mid-2022.
Source: Bruegel RRP database based on European Commission (2021) and Eurostat (2021), "Gross domestic product at market prices" in National Accounts Statistics.

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The plan aims at supporting green growth and digitalisation, with a special focus on social inclusion. It contains mutually reinforcing reform measures and investment projects in four areas:

"Sustainable recovery" aims at reducing GHG emissions according to the European and Austrian climate targets:

1. *Renovation wave* (EUR 209 million) contains a reform measure 'Renewable Heating Act', and investments to reduce the use of fossil resources for heating, while minimising the social costs of these conversions.
2. *Eco-friendly mobility* (EUR 849 million) contains two reforms: the 'Mobility Masterplan' and the '1, 2, 3 Ticket' (a low-cost pass for public transportation at local, regional or national levels) and investments in emission-free vehicles and the railway network.
3. *Biodiversity and circular economy* (EUR 350 million) will help with the development of a new legal framework to increase collection rates for plastic beverage packaging and recourse to reusable containers, principally in the food sector.
4. *Transformation towards climate neutrality* (EUR 100 million) includes a reform 'Renewables Expansion Law' and an investment package 'Transforming industry into climate neutrality'.

"Digital recovery" addresses digital connectivity and social cohesion issues:

1. *Broadband expansion* (EUR 891 million) contains a reform ('Creation of the Internet Infrastructure Austria 2030), and an investment plan ('Gigabit enabled access networks and Gigabit connectivity in areas with particular socio-economic priorities').
2. *Digitalisation of education* (EUR 172 million) includes measures to improve the digital skills of lower secondary students, and investments in digital school equipment.
3. *Digitalisation investment in public administration* (EUR 160 million).
4. *Digitalisation and ecological transformation of businesses* (EUR 605 million) will support digital and green investments by private businesses.

"Knowledge-based recovery" will support initiatives in research, innovation and upskilling:

1. *Research* (EUR 212 million) contains a 'Research, Technology and Innovation Strategy 2030' and will support investments in universities and research centres.
2. *Re-skilling and up-skilling* (EUR 277 million) will support the re-training of the unemployed.
3. *Education* (EUR 129 million) contains a reform ('Improving Access to Education') and will co-fund investments in primary schools and in remedial education.
4. *Strategic innovation* (EUR 250 million) includes two projects of common European interest (IPCEI): 'Microelectronics and connectivity' and 'Hydrogen technologies'.

"Just recovery" addresses various social cohesion challenges:

1. *Health* (EUR 125 million) will invest in primary health centres and in an electronic mother-child passport, and will offer 'early aid' for socially disadvantaged pregnant women and their little children up to three years.
2. *Resilient municipalities* (EUR 104 million) contains two reforms: a new 'Soil strategy' and 'Care provision', together with investments to foster 'climate-fit town centres' and 'community nursing'.
3. *Arts and culture* (EUR 67 million) contains two reforms: 'Development of a building culture' and 'Development of a national strategy for the digitalisation of the cultural heritage'.
4. *Resilience through reforms* entails no budget spending. It includes reforms in the areas of multi-level governance in the federal system, carbon taxation, and the development of a new legal form for start-ups.

The tourism sector is facing particular challenges

The two main objectives of post-pandemic economic policies (repairing the scars of the shock and facilitating structural changes) entail new measures for the tourism sector. The sector generates substantial economic value by drawing on Austria's outstanding cultural and natural resources. It accounts directly for more than 7% of national GDP and the Austrian Institute of Economic Research (WIFO) estimates that it generates 2% of GDP of additional "first round indirect" (via foreign tourists' local purchases) and 2% of GDP of "first round induced" effects (via tourism workers' spending). The sector contributes prominently to employment and incomes in rural areas. It has accumulated high-quality professional know-how and a strong international brand image in around 11 800 hotels and 21 300 restaurants, often family-owned.

The sector was heavily affected by the pandemic and special support has been granted. Due to seasonal employment patterns, part of tourism workers were protected by supplementary provisions to standard unemployment insurance, rather than through short-time working. Hotels and restaurants made also large use of "fixed cost subsidies" (Box 1.2) and special credit guarantees were offered by the Austrian Bank for Tourism Development (ÖHT). Debt leverage of tourism firms, which was already above the national average before the pandemic (three-star hotels had a median equity-to-asset ratio of 10% and four and five-star hotels a median ratio of 17%) increased further – including as a result of large maintenance works undertaken during the pandemic.

The additional debt that tourism businesses took during the pandemic is becoming a challenge. Part of it will mature from 2022. Some businesses may then face bankruptcy risks, and more of them may face debt overhang. Yet, to seize new growth opportunities, hotels and restaurants will need to regain their investment capacity. Discussions on debt conversion schemes to replace part of the accumulated debt by long-term quasi-equity instruments, without subverting ownership structures, are ongoing. It is also planned to address the equity situation of tourism businesses in the new tourism funding guidelines that will come to effect in the course of 2022. Local private banks may constitute good partners in these operations. They can help to identify the most promising firms and to overcome informational asymmetries. Balance sheets in the tourism sector may indeed be underestimating the existing assets, through hidden reserves, undervalued real estate properties and as assets in use may have been already fully depreciated.

The tourism sector also faces a number of structural challenges in the post-pandemic world One is the potential decline of business travel, by both nationals and foreigners. Transition to on-line meetings during the pandemic may partially persist afterwards. Another challenge is the strains arising for winter tourism from climate change in medium-altitude areas. To facilitate the recovery of the sector and address the most pressing challenges, the Ministry of Agriculture, Regions and Tourism has developed a "Comeback Plan" in 2021. An action plan is also being developed on the basis of the national tourism strategy - "Plan T". Increasing the adaptability, innovativeness and value-added generation capacity of tourism businesses is an important objective. High value-adding firms not only can re-build their investment capacity more easily, they can also offer more attractive pay and working conditions to their workers and therefore better overcome labour shortages.

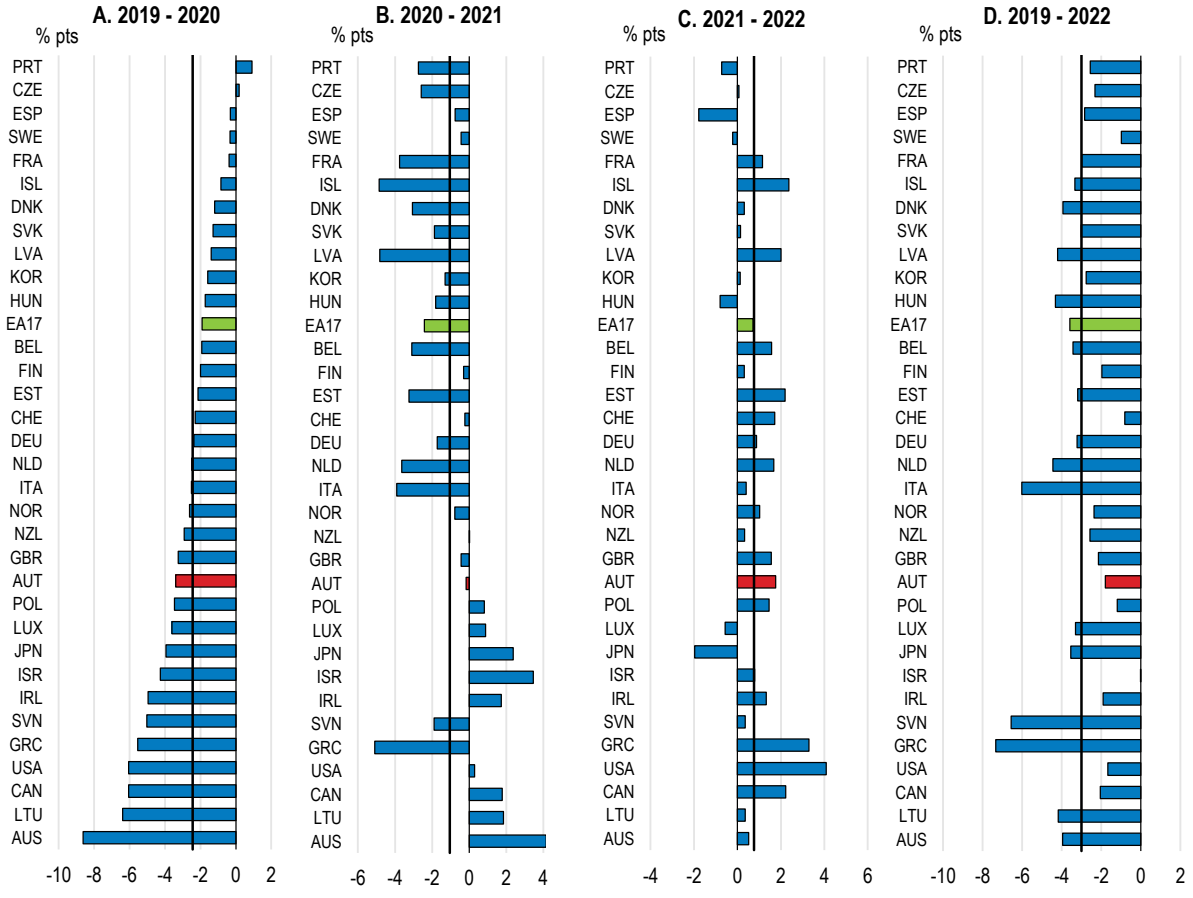
Consequences and outlook for public finances

A significant share of the anti-COVID-19 discretionary transfers are being rolled back from the second half of 2021 (Figure 1.14). After the sizeable loosening of the primary budget balance by 9% of GDP and of the cyclically-adjusted general government balance by 3.4% in 2020, and smaller additional stimulus in 2021, both are expected to tighten in 2022, by respectively 4.4% and 2.3% of GDP over 2021. Austria's Medium-Term Stability Programme published in spring 2021 was already aiming at a firm consolidation in 2022 and 2023. Stronger than expected growth in 2021 makes consolidation goals easier to attain. According to the Draft Budgetary Plan submitted in October 2021 the growth outlook for 2021 and 2022 has improved even further.

Fiscal policymakers' aim at resuming convergence with the temporarily suspended Maastricht target. Public debt sustainability remains a central goal of national economic policymaking and the government aims at reining in the post-pandemic growth of government debt as fast and as growth-friendly as possible (Figure 1.15 Panel E). Thanks to debt-break rules agreed between Federal and Länder governments, public debt had been put on a declining path after soaring in the wake of the Global Financial Crisis (when the government had to bail out Austria's over-exposed banking sector in Central and Eastern Europe), but the public debt ratio was still above the 60% Maastricht reference threshold.. The authorities estimate that the current size of government debt is restricting their fiscal margins of manoeuvre and may increase their future borrowing costs. Therefore, the goal is to bring public finances back to a sustainable level as quickly as possible.

Figure 1.14. The massive fiscal stimulus will be followed by a strong consolidation

Change in the underlying primary balance, % of potential GDP



Note: Vertical lines indicate the medians of the shown countries. EA17 refers to the seventeen Euro Area countries which are OECD member countries.
Source: OECD (2021), OECD Economic Outlook 110 database and OECD calculations as of 2 December 2021.

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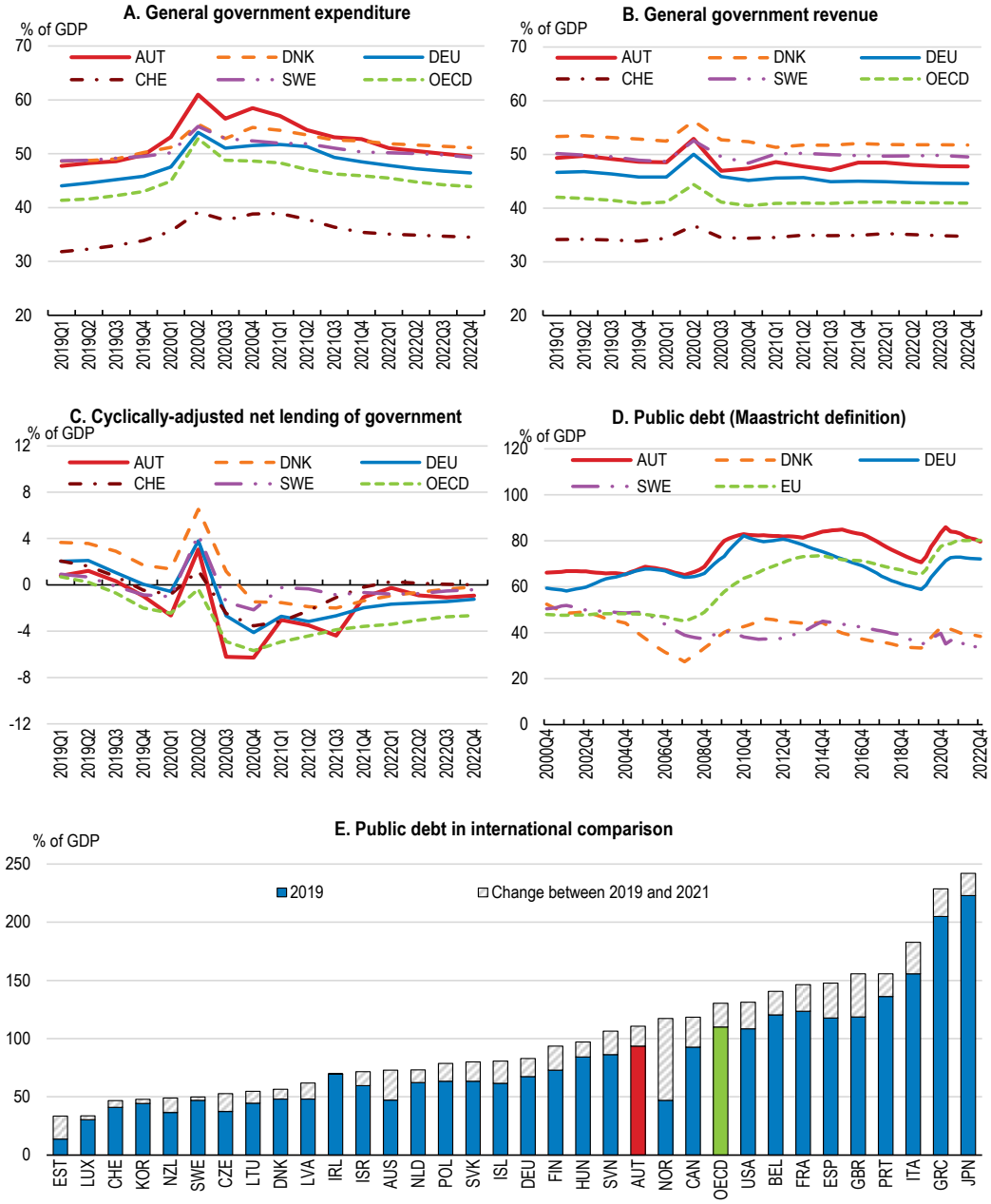
Two further factors incite policymakers to re-constitute fiscal buffers sooner rather than later. First, contingent liabilities grew as a result of the loan guarantees provided during the pandemic. Granted through various government institutions, they increased from 16.1% of GDP in 2019 to 19.1% in 2020. They can be fully or partly called in when COVID-19 supports are phased out. Second, the low government borrowing

rates will increase in the medium-term. Debt roll-overs will come at higher costs. The Ministry of Finance estimated that the interest cost of Austrian public debt may vary between 0.9% and 1.5% of GDP already from 2023, compared with 1.4% in 2019, depending on global monetary conditions. However, Austria is less at risk than many other OECD countries as the residual maturity of public debt is above average. Should the short-term macroeconomic circumstances or high priority public investment needs require it, it can create additional fiscal room.

Figure 1.15. Public finance dynamics are less favourable than in peer countries



Note: In Panels A, B, C and E, the OECD aggregate is an unweighted average of data for available countries. In Panel D, EU refer to 24 OECD countries, which belong to European Union. All panels include projected data from OECD Economic Outlook 110 database.
Source: OECD (2021), OECD Economic Outlook 110 database and OECD calculations as of 2 December 2021.

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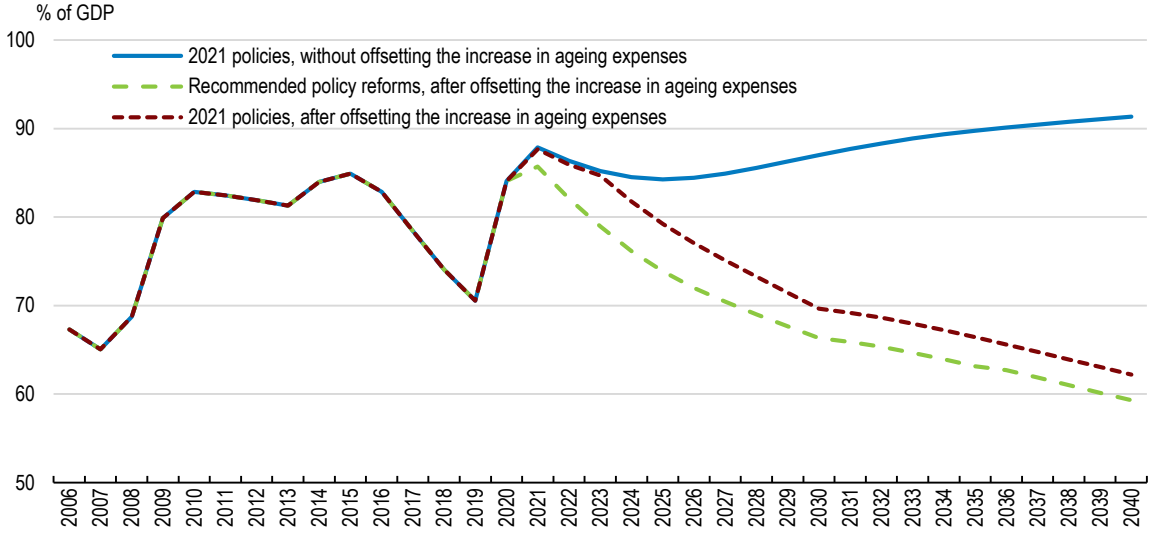
Long-term challenges for public finances invite nevertheless caution. Demographic change is a heavy challenge and will start to put pressure on public finances already in the 2020s (see below). There will be other investment needs, notably in in education, environmental sustainability and digitalisation (re. below), which the Recovery and Resilience Facility will fund only partially and only in the short term.

Long-term fiscal projections carried out for this Survey suggest that caution is needed in a baseline scenario, where the current policy framework is maintained and the cyclically-adjusted primary balance is kept constant except for ageing-related expenditures. Ageing-related expenditures will drive a steady increase in general government deficit and debt, which can only be reversed with reforms and durable saving measures (or tax increases). Structural reforms would improve debt sustainability in the longer term (Figure 1.16). There are upward risks on interest rates, which may require a lower primary deficit target. If further structural reforms succeed to lift trend growth, additional fiscal room may be created for new investments or tax reductions, or for swifter debt reduction.

Figure 1.16. Structural reforms can help to lower public debt

General government gross debt as % of GDP, Maastricht definition



Note: Policy scenarios are described in Table 1.Y. Interest rates are assumed to rise to 2.0% by 2030 and then slowly increase over the rest of the projection horizon.
Source: Calculations based on several OECD Economics Department Working Papers: Guillemette and Turner, 2018; Guillemette et al., 2017, Cavalleri and Guillemette, 2017; Guillemette, De Mauro and Turner, 2018.

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Important structural changes are pending after the pandemic

As in all OECD countries, labour and capital reallocation is expected to accelerate in the period ahead, but its actual magnitude remains uncertain. More recourse to teleworking, more digital interactions between firms and their customers and suppliers, as well as with banks and government agencies have accelerated systemic digital changes. Chapter 2 discusses these transformations and their policy implications.

The firming up of climate policies is creating a thoroughly new environment. The welcome more binding national and international commitments to lower greenhouse gas emissions alter the technological frontier, and the cost structures, creating new markets and growth opportunities, but also thorough adjustment challenges. The section below summarises this agenda.

The intended fast shift to carbon neutrality will have important economic impacts

The Austrian government, in place since January 2020, includes a green coalition partner and has ambitious environmental goals. In particular, it aims at achieving climate neutrality (zero net emissions) by 2040, 10 years before the EU target date. Reaching this goal will require substantial efforts across all sectors (IEA, 2020). Relying on nuclear power is not an option as the Parliament voted on a ban in 1978 which was subsequently confirmed by a Federal Constitutional Act in 1999 (OECD, 2016).

Austria entered the millennium with low carbon intensity in international comparison (Figure 1.17, Panel A) thanks to the high share of renewables in energy production (Figure 1.17, Panel B). Subsequently, the decoupling of emissions from GDP growth has been slower than the OECD average and significantly slower than the most advanced peer countries. Absent a structural inflexion, the country will fail to comply with its 2030 Paris agreement emission commitments (Figure 1.17, Panel C). Two recent assessments, by the International Energy Agency in 2020 (IEA, 2020) and the European Commission in 2021 (European Commission, 2021) suggest that the carbon neutrality goal set for 2040 will be very difficult to attain under present trends. The Ministry of Environment is working on a Long-term Energy Strategy designed to attain the 2040 zero emission goal and the Austrian Climate and Energy Plan is being updated. In October 2021 the authorities announced an Eco-Social Tax Reform which represents a welcome step forward in the pricing of carbon emissions, fostering a market-oriented approach to climate policies (Box 1.6).

Box 1.6. The Eco-Social Tax Reform

The government has announced a eco-social tax reform in October 2021, which includes the introduction of carbon prices throughout the economy starting from 2022. Revenues from carbon pricing are intended to flow back to the population and the economy via compensation transfers.

The Plan is currently a Ministerial decision which has been further detailed and presented to the public as a draft law in November 2021. The legislative procedure is expected to commence in December 2021 and the law may enter into force in 2022. All currently untaxed carbon emissions (those not included in the European emission trading system) will be priced EUR 30 per tonne starting from July 2022 and prices will rise to EUR 35 in 2023, EUR 45 in 2024 and EUR 55 in 2025. Compensation transfers of EUR 100 per person and per year will be granted to the entire population, together with an additional premium of up to EUR 100 for rural residents. Two intermediary compensation levels are foreseen according to the degree of accessibility of living places to the public transportation network. A supplementary benefit of 50% per child will be granted. The compensation transfers will increase in 2023 to 2025, as will revenues from CO_2 pricing.

In parallel, the personal income tax rate will be cut from 35% to 30% for persons earning between EUR 18 000 and EUR 31 000 per year. From July 2023, the rate will drop from 42% to 40% for those earning between EUR 31 000 and EUR 60 000. Health insurance contributions for low and medium incomes will be reduced and the Austrian “Family Bonus Plus” (a tax-deductible amount per child and year) will be increased from EUR 1 500 to EUR 2 000. The additional child allowance, which applies for low-wage earners with children as a negative tax, will be increased from EUR 250 to EUR 450.

Businesses will benefit from a reduction of the corporate income tax rate from 25% to 24% in 2023 and to 23% in 2024. Further measures to relieve the tax burden on labour and the economy as well as additional greening measures (e.g. an ecological investment allowance as well as tax incentives for the replacement of fossil heating systems and the thermal renovation of buildings) are also foreseen.

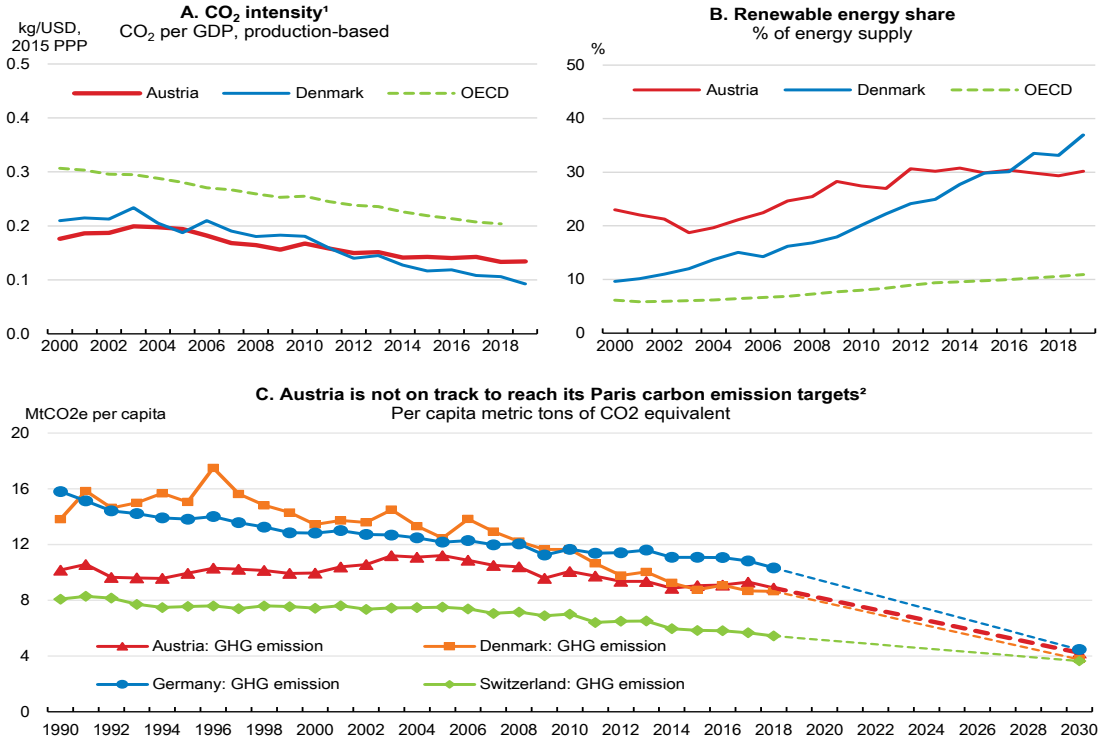
The intended CO_2 price trajectory mimics broadly the scheme introduced in Germany in 2021. The synchronism is meant to keep a balance between prices in the two countries to avoid “carbon leakages” between their highly integrated industrial sectors. Announced prices remain nonetheless below the market prices currently in vigour in the EU Emissions Trading Scheme (ETS), which allocates tradeable allowances to big industrial polluters and power generators. The ETS price attained EUR 65 in

November 2021 and may increase further. International estimations suggest that a price of EUR 120 per tonne of carbon will be required by 2030 to set European economies on track for reaching their zero emission goal by 2050.

Transition to a fullly market-based system will entail a shift from fixed prices to fixed quantities in managing emissions. The phase of *fixed prices* within the trading scheme will end by 2025, followed by a *market phase* from 2026 onwards. By then, preconditions either for a transition to a possible EU trading system or for free trading in national allowances will need to be completed. Austria is in favour of the first approach and sees the second as a subsidiary solution. An efficient framework for the supply of emission quotas will be important for a successful transition.

The net fiscal cost of the Eco-tax reform is projected to be around 0.5% of GDP in 2022 and 1% of GDP in 2023.

Figure 1.17. There is potential for progress in reducing carbon emissions



1. Includes CO2 emissions from combustion of coal, oil, natural gas and other fuels. Gross domestic product (GDP) expressed at constant USD using purchasing power parity.
2. Total GHG emissions exclude LULUCF (land-use, land-use change and forestry). Scatters in 2030 indicate IMF implied unconditional nationally determined contribution (NDC) economy-wide target levels on GHGs excluding LULUCF. The population estimate for 2030 is based on the UN population data with the medium-variant projection. Dotted lines refer to the linear emission trajectories required to reach the announced targets in 2030.
Source: OECD (2021), Green Growth Indicators (database) and OECD calculations based on IMF Climate Database, and United Nations (2019). World Population Prospects 2019, Online Edition. Rev. 1.

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Reducing the carbon intensity of the economy beyond 2025 will require wider policy instruments. Firmer emission regulations, higher carbon prices and additional public and private investments in climate friendly technologies can deliver such a shift of trajectory. The experience of leading countries (OECD Economic Survey of Denmark, 2021) and detailed cross-country evaluations by the International Energy Agency (IEA, 2021) endorse this outlook. Austria has distinct assets in this area but also a number of specific structural impediments that it will need to tackle.

High political commitment and social sensitivity to climate transition will be best served by Austria's well-developed research, development and innovation (RDI) capabilities in environmental technologies. In its 2020 country review, the IEA observed that Austria has "impressive" capacities for green innovations (IEA, 2020). The country has also a strong record in mobilising private funding for RDI. For each public euro dedicated to environmental research, an estimated EUR 2.5 in private funding is mobilised. The multiplier could go to up to ten in solar projects. Austria has also published a first report on the energy research expenditures by private firms broken down by technology fields – a best-practice among IEA countries which helps steer mission-oriented research projects. These efforts show in environmental patents representing around 10% of all national patent applications, above OECD averages.

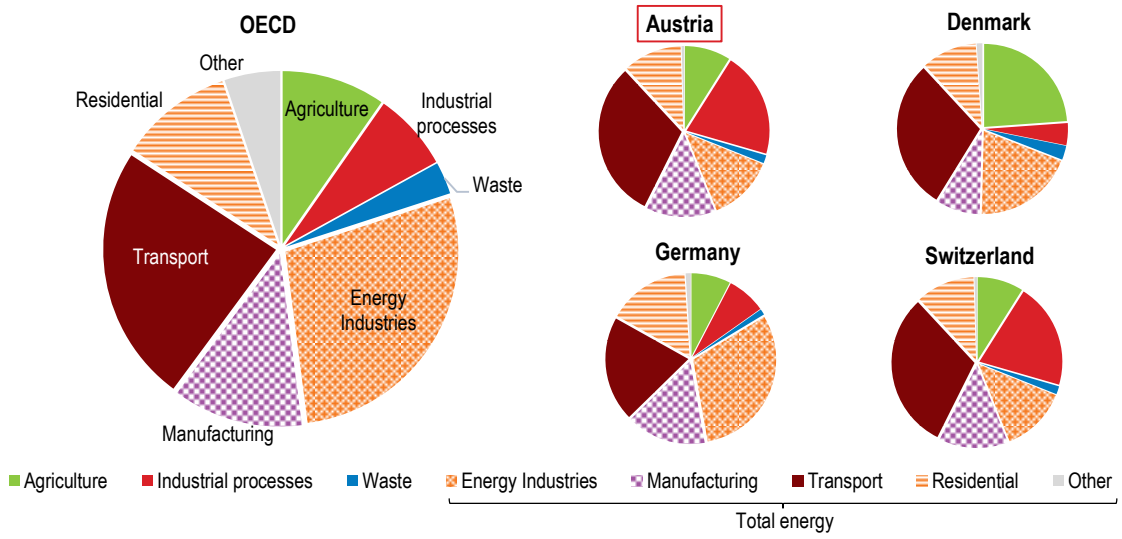
Policymakers aim at developing further these capabilities as a basis for international supply of new products and services. The Ministry of Economy has an industrial location strategy "Chancenreich Österreich" which aims at drawing on digitalisation and environmental technologies for making Austria one of the top 10 business locations in the world by 2040. A global pioneering role is intended in green technologies and green materials.

A number of impediments arise from the prevailing activity mix and the consumption and life habits of the population. Industrial activities account for a higher share of the economy than in comparable countries, including emission-intensive sectors such as iron and steel, paper and pulp, refineries and petrochemicals. In aggregate, industrial processes contribute more to carbon emissions than in comparable countries (Figure 1.18). Life habits interfere mainly through emissions originated in transportation, principally from passenger cars. These emissions are amplified by the weight of highly polluting vehicles (notably diesel cars, the utilisation of which has been stimulated by low diesel prices). The share of electrical cars has been very low until recently, but a sharp acceleration in market demand occurred in the second half of 2021. Carbon emissions from the construction sector are also high, reflecting genuine settlement patterns (a large share of the population living in individual houses in rural and semi-rural areas) and the low energy efficiency of buildings, notably in the public sector.

Emission reduction challenges are amplified by urban sprawl (OECD, 2019). The introduction of a low-cost multi-modal public transportation pass at urban, regional and national levels (*1,2,3 Climate-Ticket*) and the introduction of subsidies to replace fossil fuel-burning heating systems (see below for details) have been noticeable policy responses. The Ministry of Environment estimates that emission savings from these measures will be amplified when higher carbon prices are phased in and the public transportation infrastructure is developed further.

Figure 1.18. Industrial processes and transportation account for a large share in emissions

GHG emissions share (excluding LULUCF) for selected countries



Source: OECD (2021), OECD Green Growth Database.

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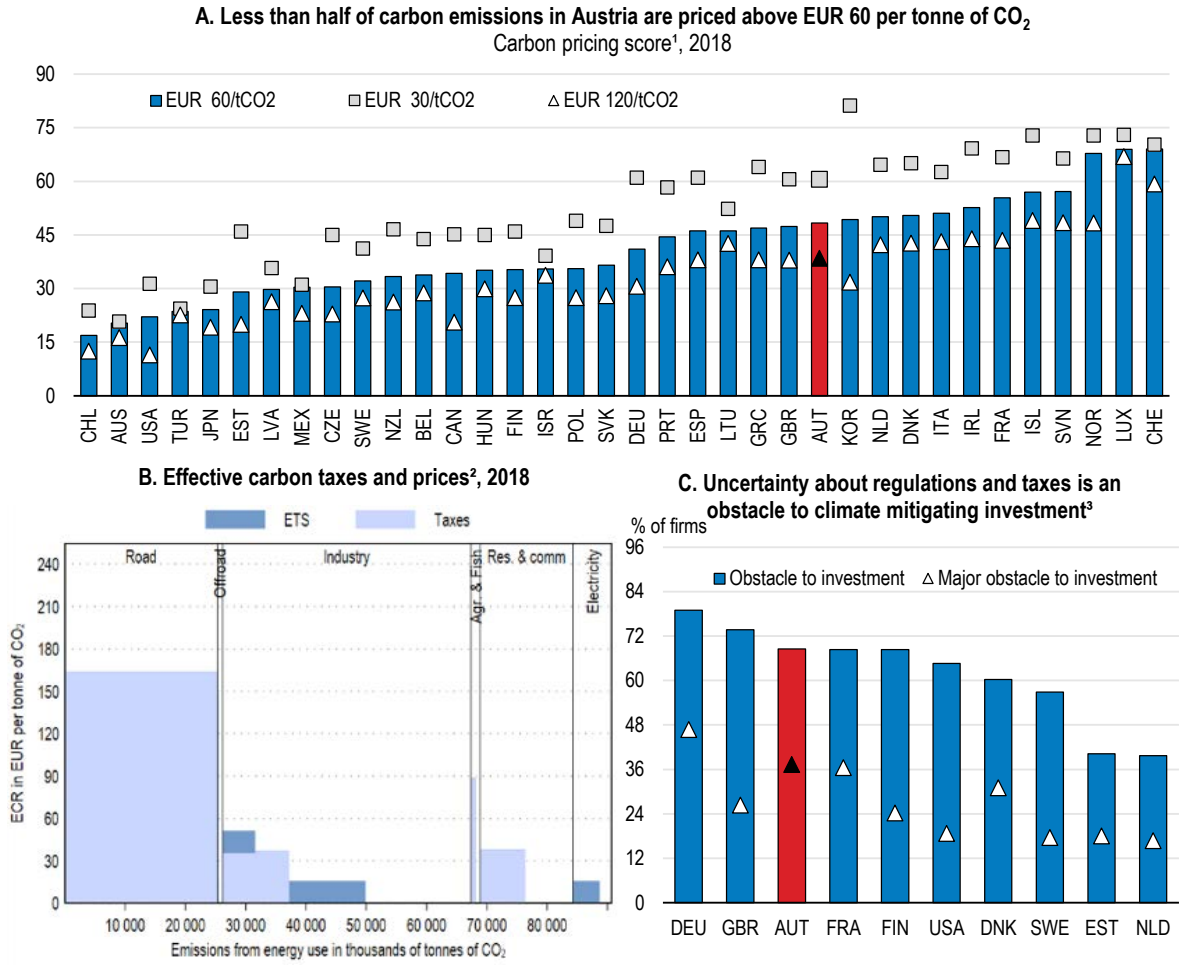
Emission regulations

Emission regulations are considered to be in line with OECD good practices. Additional measures will nevertheless be required in the main leakage areas. The most critical issue is the prohibition of highly polluting cars. Austria may need to ban all internal combustion driven new vehicles by 2030-2035, along with front running countries. Policymakers should also consider stricter speed limits on roads, reinforced building and construction material codes, firmer electrical appliance standards and more frugal heating temperature regulations for offices and default cooling temperatures for air conditioning units. In turn, the existing ban on carbon capturing technologies, which was initially introduced for safety reasons, may need to be relaxed in the light of technological developments. They could play an important role in reducing net carbon emissions in the future.

Carbon prices

The current level of CO_2 prices and taxes are within international averages but well below leading countries. They are also more dispersed between market segments (Figure 1.19). So far, only emissions from road transportation have been priced above the OECD and EU recommended benchmark of EUR 60 per tonne of CO_2, while diesel and petrol taxes (including VAT) are among the lowest in the EU. Emissions from electricity production and manufacturing have also been priced below international benchmarks. Many Austrian firms estimate that uncertainties about the expected path of carbon prices are an important impediment to their investments, and hinder climate-mitigating strategies – a challenge which appears to be more disquieting in Austria than in comparable countries (Figure 1.19, Panel B). The new eco-social tax plan (Box 1.6) is a major step in pricing emissions and Austria is prepared to harmonise the national trading scheme with the European Emission Trading System (EU ETS) after 2025. The highly-polluting sectors transportation and buildings, currently excluded from EU ETS, will therefore need to be integrated by 2026, entailing higher carbon prices.

Figure 1.19. The room is large for harmonising and raising carbon prices



1. It measures the extent to which countries have attained the goal of pricing all energy related carbon emissions at certain benchmark values for carbon costs. EUR 30 per tonne of CO2 is a historic low-end price benchmark of carbon costs in the early and mid-2010s; EUR 60 per tonne of CO2 is a low-end 2030 and mid-range 2020 benchmark according to the High-Level Commission on Carbon Pricing; and EUR 120 per tonne of CO2 is a central estimate of the carbon price needed in 2030 to decarbonise by the mid-century under the assumption that carbon pricing plays a major role in the overall decarbonisation effort.
2. The emissions include biofuels. It should be noted that ETS prices have increased since 2018. The ECRs are measured separately for six economic sectors: road transport, off-road transport, agriculture and fisheries, residential and commercial energy use, industry, and electricity generation.
3. Share of firms citing uncertainty about the regulatory environment and taxation as an obstacle to investing in activities to tackle the impacts of weather events and emissions reduction.
Source: Calculations based on Effective Carbon Rates database and OECD (2021), OECD Economic Outlook, Volume 2021 Issue 1.

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Emission saving technologies and investments

Investing in emission-saving technologies is the third pillar for progressing towards carbon neutrality. It encompasses public and private investments in energy producing, distributing and using activities, and in research, development and innovation, in particular:

- Investments in electrification. The IEA has estimated that the role of electricity in Austria's energy mix will need to increase to reach carbon neutrality by 2040. A new "Renewables Expansion Law" was adopted in 2020 to increase the share of carbon-free electricity to 100% by 2030.

- Investments in clean vehicles. Fossil fuel-powered cars and water and air vessels should be gradually replaced by electrical, hydrogen etc. powered alternatives. The infrastructure required for the new vehicles should be put in place. A good practice is Norway's charging network development policy (Box 1.7) (IEA, 2021).
- Energy-saving building rehabilitations and energy-efficient building constructions (IEA, 2021). A *Renewable Heating Law* started to fund the substitution of fossil-fuel heating systems with electrical alternatives (households in the two lowest income quintiles are subsidised by up to 100%).
- Investments in myriad research and development activities have augmented. Successful R&D projects will claim additional resources for market tests, pilot implementations and broader-based promotion – including training investments (IEA, 2021).
- The temporary 7% cash investment subsidy introduced during the pandemic had an additional premium of 7% for green investments and the market response was strong. According to a review by the Institute of Industrial Sciences three quarters of companies reported that they would not have submitted investment projects without this measure. More than 165 000 of the 244 000 applications came from micro-enterprises and a quarter of new investment was dedicated to green projects.

Box 1.7. Norway's policies to promote electrical vehicles

Norway fosters actively the transition to electrical vehicles. It has the largest number of electrical cars among European countries (16% of total annual sales in 2020). Its experience suggests that: i) transition to zero-emission vehicles is a long-term endeavour, calling for persistent policies; even in Norway, at current trends, greening the entire car fleet will take decades; ii) incentives should be structured in a way to encourage the replacement of the oldest and most polluting cars, rather than subsidising simply the purchase of new electrical vehicles (tax incentives should be capped and taxes should continue to be charged on luxurious electrical cars); and iii) the development of an adequate recharging stations network is key.

Policy support for charging stations has been in place since 2010 and the current scheme aims for fast charging stations every 50km on a road network of 7 500 km. In 2021, there were around 5 700 charging points, up from 800 in 2015. Commercial operators have been building stations without subsidies in recent years, especially in larger cities and along major highways. While un-subsidised stations are expected to become increasingly viable, government support will continue to be needed for availability in remote areas.

Policymakers consider replacing the current taxation of vehicles by a GPS-based distance, location and time-contingent road charge. This type of taxation is expected to incite road users to internalise congestion costs and related externalities. It can also help offset the fuel-tax revenue losses arising from the transition to electrical vehicles.

Sources: OECD EPC Working Party No. 1 (2021); OECD Economic Survey of Norway, 2021; OECD Economic Survey of France, 2021.

Austria's Recovery and Resilience Plan is fostering several carbon-saving investments in the above areas (Box 1.5) above. Climate-related projects involve EU grants of around EUR 2 billion in the ongoing first phase, capturing 60% of total funds dedicated to Austria. They include zero-emission buses, building renovations and rehabilitations, thermal refurbishment of around 2 000 family houses, and the exchange of oil and gas heating systems for around 30 000 dwellings by new technologies such as biomass, heat pumps and district heating.

Green investments are funded concurrently by private and public investors at national and local levels, and by public-private partnerships. Austria is not among leading countries in the use of public and private "green" financing instruments but the authorities have started to evaluate them.

Mitigating social impacts

Stricter environmental policies will have distributional impacts. Low-income households will be affected more as they tend to use a higher proportion of their income on carbon-intensive products than higher income households. The purchasing power of users of highly polluting cars and energy-inefficient houses will be affected particularly. The compensation of severely affected social groups would mitigate the shock and facilitate the social acceptability of stricter carbon pricing. The eco-social tax reform embodies a bonus to low-income and rural households (Box 1.6 above). In the future, the compensation may need to follow the increase in carbon prices and be made more targeted. The Chamber of Labour (AK) suggested that micro-level information on household budgets and expenditures in government databases could be used to devise more targeted and less costly compensation schemes. Such an approach could raise constitutionality issues, but has already been used in the standing system of commuter tax credits which are based on place of residence, income levels, transportation times and access to the public transportation network.

Policymakers and social partners are also keen to minimise adverse trade, output and employment impacts from higher carbon pricing via trade diversion (carbon leakage) towards countries with less strict practices. They support the "border adjustment mechanism" envisaged by the European Union, as a second best and less demanding alternative to global emission regulations and global carbon prices. Border adjustments may help reduce leakages from imports into the European market, but do not address competition distortions in third-country markets. Their compliance with global trade rules would also need to be secured.

Social cohesion is under pressure

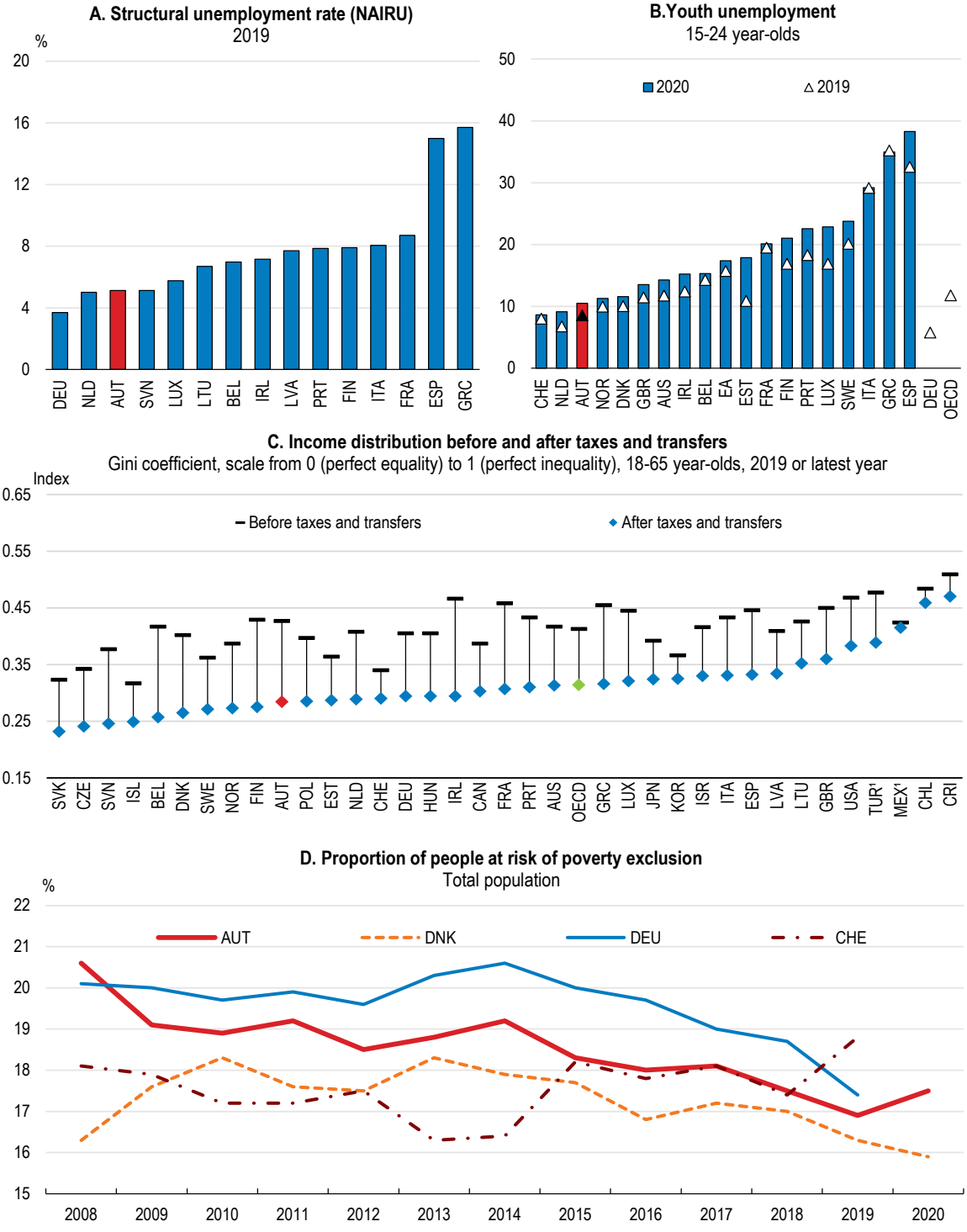
All OECD countries face social cohesion challenges on the way out of the pandemic, as the temporary hardship that the shock has put on the vulnerable segments of the population was compounded by a durable decline in demand for certain categories of labour. Austria faces these challenges in special circumstances. On the one hand, the high social cohesion standards of the population create expectations of a high degree of public support through post-pandemic structural changes. On the other hand, a number of labour market vulnerabilities already present before the pandemic have been exacerbated.

Austria entered the pandemic with a high degree of social cohesion with certain weaknesses

Austria's rate of structural unemployment and rate of youth unemployment were among the lowest in the OECD before the pandemic, even though aggregate performance was masking vulnerabilities in certain segments such as female and elderly employment (OECD Jobs Strategy, 2018) (Figure 1.20, Panels A and B). Taxes and transfers were reducing income inequalities, and the standard social safety net had put poverty risks on a declining trend (Figure 1.20, Panels C and D). Transfers during the pandemic have been progressive and the Gini coefficient has somewhat diminished in 2020 (over a hypothetical non-Covid counterfactual scenario) (Christl et al., 2021). The pandemic shock on the labour market was largely cushioned: 35% of the 40% fall in total work hours was buffered by the short-time working scheme, and only 5% passed through to unemployment (Figure 1.21).

At the same time, specific labour market segments - which were already vulnerable before the pandemic - were exposed to significant strains (OECD, 2020). In accommodation and food services (where non-standard employment accounted for 45% of employment before the shock) work hours fell by 90%, and 40% passed through to unemployment. In arts, entertainment and recreation (where non-standard contracts dominated at 55%) work hours fell by 50% and 15% passed through to unemployment (WIFO, 2021; Böheim and Leoni, 2020). The fragmentation of the minimum income benefit rules across Länder, resulting in support gaps for those with very low earnings, continued to be a weakness in the support system (OECD, 2020).

Figure 1.20. Aggregate labour market performance and social transfers were upholding social cohesion before the pandemic



1. After taxes and before transfers for Mexico and Turkey.

Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database), OECD Labour Market Statistics (database), and OECD Social and Welfare Statistics (database) and Eurostat (2021), People at risk of poverty or social exclusion by age and sex (database).

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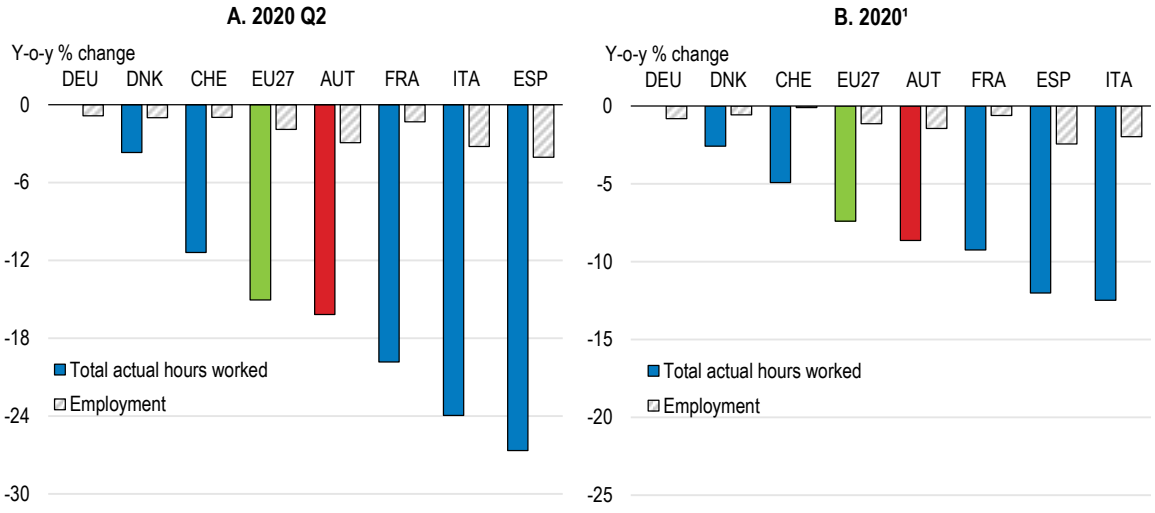
Figure 1.21. Social protection has prevented employment losses during the pandemic

Decline in actual hours worked and decline in employment



Note: Total actual hours worked refer to working hours in main jobs of 20-64 year-old employees. Index 2006 = 100.
1. Average of data from the first quarter to the third quarter of 2020.
Source: Eurostat (2021), Labour Force Statistics.

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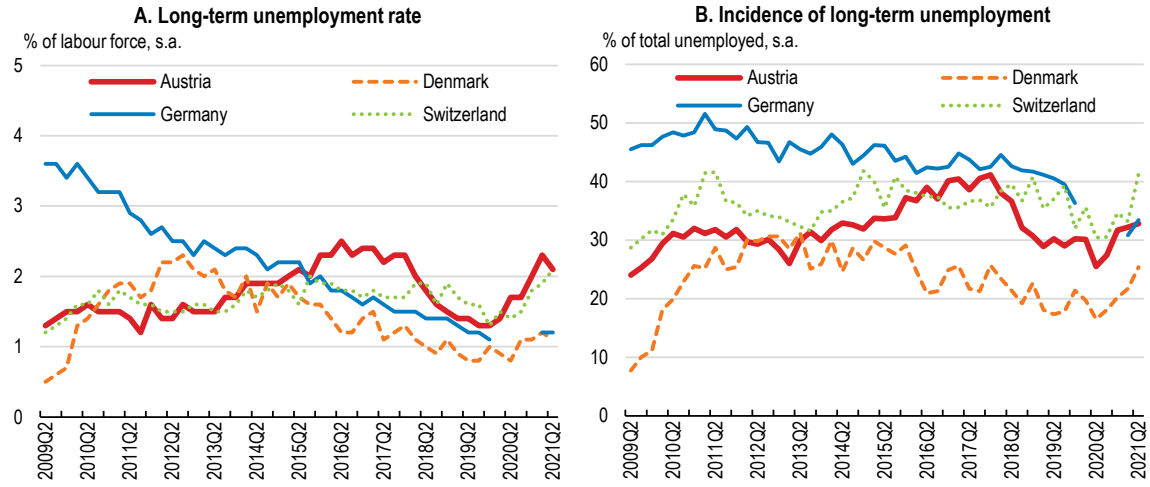
The pandemic has exacerbated existing vulnerabilities on the labour market

Re-integrating the long-term unemployed

Long-term unemployment increased over the past decade, albeit from a low level. An improvement occurred during the macroeconomic upswing between 2017 and 2019. A share of those who lost their jobs during the pandemic did not benefit from the first phase of the recovery, lifting up the rate of long-term unemployment to historical heights (Figure 1.22). However, many found employment under the ensuing tighter labour markets, also with the help of new government schemes (including the *Corona Job Offensive* and *Stepping Stone* initiatives which are estimated to have stimulated the creation of significant numbers of new jobs) and average outcomes improved. There are, nonetheless, several signs of a structural challenge building up.

Figure 1.22. The increase in long-term unemployment

Long-term unemployment, 20-64 year-olds



Source: Eurostat (2021), Labour Force Survey Statistics.

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A statistical analysis before the pandemic had identified three key influences on long-term unemployment: low education, advanced age and poor health. Almost 40% of the long-term unemployed had no more than compulsory schooling, 50% were aged above 55 and 53% had health problems (WIFO, 2018). As many as 40% were aged between 25 and 40, well below the natural retirement age. The share of young long-term unemployed could increase further in the future as the hiring rate of youth (their hiring-to-employment ratio) decreased by 4 percentage points in 2020, more than in the peer countries (where it decreased by one percentage point) and more than the OECD average (a decline of 2 percentage points).

The entrenchment of long-term unemployment would be a severe threat to social cohesion. There are still avenues ("tunnels") from long-term unemployment to early retirement, but they are being reduced.

International experience suggests that skill mismatches increase during deep recessions, as vanished demand for obsolete skills does not fully come back in subsequent recoveries (Jaimovich and Siu, 2018). Chapter 2 highlights the apparition of such a problem already before the pandemic (an outward shift in the Beveridge curve) and hints at a possible worsening in 2020 (Figure 2.14). A comparative review of the Beveridge curve across Austrian regions found a trend deterioration in all of them (Böheim and Christl, 2021). A local simulation in 2020 found that while occupations processing complex information will not be prone to automation in the decade ahead, many clerical routine jobs may be automated. Demand for a number of qualifications will decline, increasing the risks of increase in long-term unemployment (Stephany and Lorenz, 2021).

Policymakers have started to respond along four directions (OECD, 2021):

1. Up-skilling the long-term unemployed is the prime policy response (OECD, 2021). It is implemented as part of the general life-long learning policies. The special difficulty with the long-term unemployed is the extra erosion of their skills, motivation and reputation. Potential employers are in the best position to help the long-term unemployed upskill and become productive again. This also calls for special treatment by the public employment service (OECD, 2021). Its caseload ratio (number of job-seekers per client-facing personnel) is average in international comparison and there are certain signs that there may be a shortage of specialised personnel dealing with difficult

cases (ICON Institute, 2016). The recent "Corona initiative" aims at reinforcing professional guidance and counselling, taking into account individual requirements.

2. Reducing the cost of employment of the long-term unemployed, with either temporary employment subsidies or cuts in social security contributions can boost demand for their services. The latest OECD Employment Outlook suggests that such measures can help to prevent detachment of individuals from the labour market, while avoiding that money is spent for workers who would have been hired anyway. Chapter 2 shows that employment costs are inflated in Austria by a high labour tax wedge. Targeted employment subsidies to long-term unemployed were introduced in 2021 (notably the *Springboard* program which aims at reintegrating 50 000 long-term unemployed with a total of EUR 300 million of employment subsidies).
3. Start-up incentives promote entrepreneurship by encouraging the unemployed to launch their own business (OECD, Jobs Strategy, 2018). The 2021 OECD Employment Outlook stresses their distinct potential to contribute to the job recovery after the pandemic (OECD, 2021). There is room for more self-employment in Austria as discussed below (Figure 1.24).
4. The "Corona initiative" includes start-up incentives. Complementary reforms to foster competition and new entries in service activities would help.
5. Public sector job creation schemes subsidise temporary, non-market jobs which would not be created without public intervention (OECD, 2021). While the long-term ability of these schemes to bring participants durably back to the labour market is questioned (Card et al., 2017), recent OECD assessments suggest that they may be of some help in extreme circumstances (OECD, 2021). Austria introduced a small scale but innovative job guarantee scheme in 2021. Rather than offering standard guaranteed jobs in the public sector, it combines the previous three options in an individualised framework (Kasy and Lehner, 2021). It deserves to be closely monitored (Box 1.8).

Box 1.8. The Lower Austria universal job guarantee programme

A universal job guarantee experiment, run by the Austrian Public Employment Service and designed in co-operation with Oxford University economists started in the town of Marienthal in 2021 (home to a path-breaking sociological study of the consequences of long-term unemployment in the 1930s - Jahoda et al., 1931).

The scheme guarantees a fully-paid job to every Marienthal resident who has been unemployed for more than 12 months. As well as getting training and assistance, all participants are guaranteed paid work, at least at a minimum wage level, in either the public or the private sector, or as self-employed, for a duration of up to three years. Participation is entirely voluntary.

Participants start with a two-month preparatory course, which includes one-to-one training and, for those who need it, support from experienced social workers and psychologists. They are then helped to find a suitable and subsidised private sector job, or supported to create their own micro-business based on their skills and their knowledge of their community's needs. Options include: i) jobs in a newly founded enterprise (carpentry, renovation, gardening, support for elderly and childcare); ii) projects created by participants themselves (for example putting in place a local bike trail); iii) a subsidised job in the regular labour market.

The Public Employment Service funds the project, which will cost EUR 7.4 million. A year of unemployment support is estimated to incur fiscal costs of around EUR 30 000 per recipient in Austria. The project is calculated to cost EUR 29 841 per participant. The designers of the project consider that the newly created jobs may generate fiscal revenues of more than EUR 380 000.

The project includes very detailed evaluation provisions. It will be monitored by an international team of researchers. An assessment plan has been registered with the American Economic Association. A detailed evaluation report will be published by 2024.

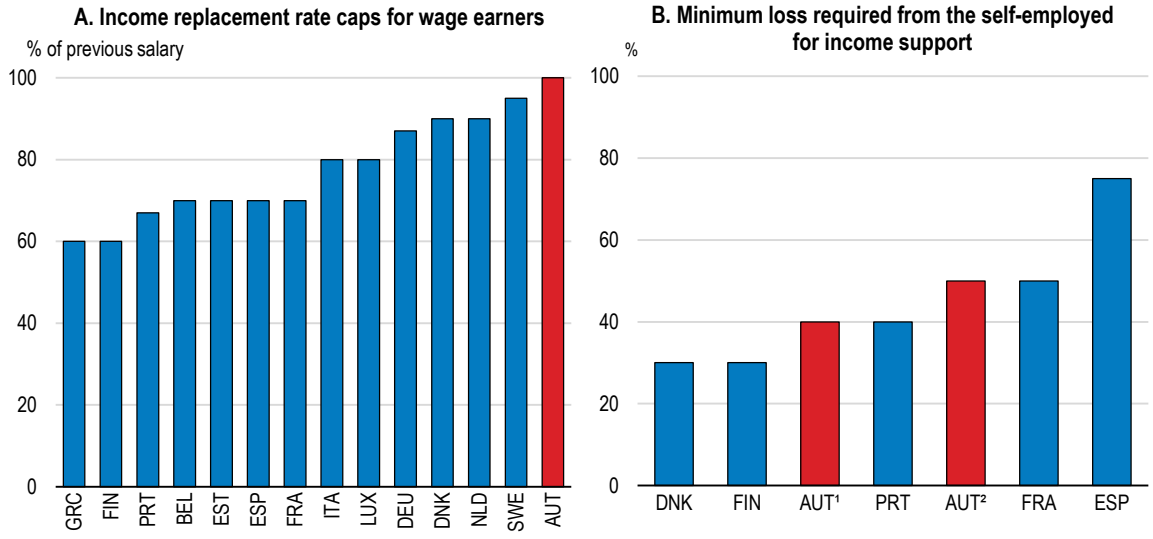
Table 1.4. Labour market, social partnership, collective agreements: past OECD recommendations and government follow-ups

Past OECD recommendations	Follow-ups
Labour utilisation remains low. Minimise the tax distortions that penalise transition from part-time to full-time work.	Lowering fiscal burdens on minor or part-time employment is seen by the authorities as the most efficient tax measure to incentivize participation on the labour market. The *eco-social tax reform*, (presented to the public in October 2021) contains tax rate reduction targets for various income brackets (Box 1.6). Health insurance contributions of low income earners will also be reduced.
New forms of work blur the lines between dependent and independent work. Adapt labour law and social partnership to enhance representation and protection of platform workers.	No action so far. A consultation is initiated between social partners for policy recommendations in this area.
Create room for labour tax cuts for lower income earners by raising consumption, environmental and inheritance taxes. Consider replacing VAT rate reductions with targeted transfers.	Austria gained some experience with an "inheritance tax" levied until 2008 and a "wealth tax" abolished in the 1990s. Authorities report that models simulating the effects of such taxes suggest that they would be counterproductive and would not generate sufficient revenues compared to administrative costs. The *eco-social tax reform* plans to introduce incrementally increasing carbon taxes from July 2022 (Box 1.6).
Enhance incentives for businesses to offer apprenticeship positions, notably in professions affected by digitalisation.	An apprenticeship bonus introduced in 2020 helped fund 25 000 new apprenticeship places. The "Digi Scheck" subsidy introduced in 2021 as a funding opportunity in the company-based apprenticeship funding scheme supports company-based apprenticeships in digital technologies, sustainability, energy efficiency, circular economy and entrepreneurship.
Further develop special life-long learning schemes focussing on digital skills. Involve employer organisations more closely in the design and management of these programmes.	Various related programmes including "Digital Skill Vouchers", "Innovation Camps" and "Digital Pro Bootcamps" were introduced in 2020-21, in addition to "Fit4internet", an initiative started in 2019.

Better supporting the free-lancers and the self-employed

Workers with non-standard contracts have suffered more during the pandemic, as they were comparatively less protected by the standard social safety net and Covid-specific measures than regular wage earners (OECD, 2021f). The self-employed -- who represent a low proportion of the labour force in Austria but employ more apprentices than in other countries -- have faced the most serious strains. Since 2009, they were given the possibility to take voluntary unemployment insurance, but only a negligible proportion (0.3%) had done so before the pandemic. Take-up rates picked up somewhat after spring 2020. Their rate of compensation for lost income, and their take up rates of COVID-19 measures fell below wage earners and below their counterparts in the peer countries (Figure 1.23). Financing livelihoods through borrowing was also difficult, as many had a narrow equity base which restricted their access to bank loans. While severe distress cases benefitted from transfers from the *Hardship Fund*, more than 30% of the self-employed have endured significant income losses. Children in families with self-employed parents, especially two self-employed parents, have suffered in particular (University of Vienna, 2020; WIFO, 2020).

Figure 1.23. The self-employed have received less support than wage earners



Note: In Panel B, Austria¹ refers to the company subsidy for fixed costs and Austria² refers to the hardship fund for self-employed people and microentreprises. Finland¹ refers to financial aid for self-employed people.
Source: Eurofound (2021), "COVID-19: Implications for employment and working life", Publications Office of the European Union, Luxembourg.

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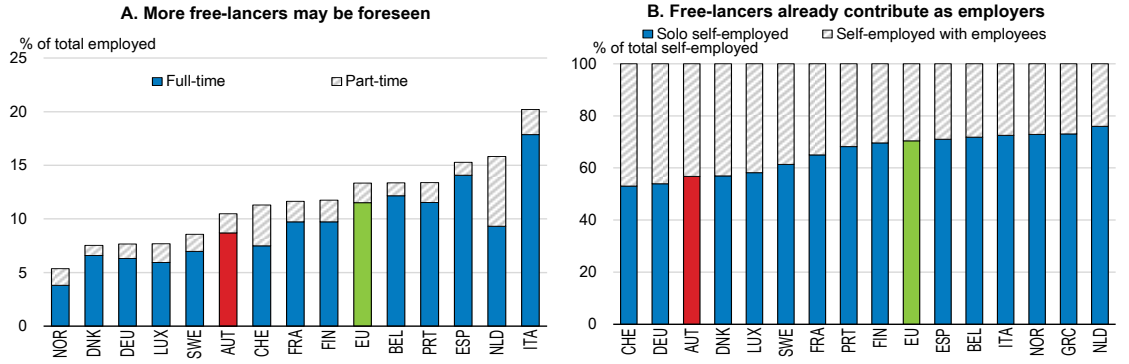
Discussions on the economic circumstances of the self-employed during the pandemic concluded that their protection against systemic shocks is inadequate in comparison to the prevailing standards of social protection in Austria. Social partners started consultations on the issue with a view to make joint policy recommendations. This is not only a strain for social cohesion, but also discourages potential start-uppers. Individuals envisaging to shift from wage-earning to an entrepreneurial experience, as well as new labour force entrants considering to create their own business are exposed to high risks. The OECD has emphasised the distinct role that this group can play as an engine of job creation and social inclusion after the Covid-19 shock (OECD, 2021). They should also be expected to contribute more to the Austrian economy in the future (Figure 1.24). Their social protection should be aligned with other social groups.

Figure 1.24. Self-employment may become more frequent in the future

Share of self-employed people, 15-64 year-olds, 2020



Source: Eurostat (2021), "Employment by sex, age, professional status and full-time/part-time" in the EU Labour Force Survey Statistics.

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Re-addressing gender inequalities

The pandemic has amplified gender differences in Austria. The double burden of work and care obligations affected women more than men (WIFO, 2021; Böheim and Leoni, 2020). Employment losses were slightly higher for men during the pandemic, due notably to the contraction of construction activities. However, aggregate income losses were higher for women, as a result of sharper losses in work hours. Income replacement schemes have compensated women's and men's losses in a fairly balanced way (Christl et al., 2021). Nonetheless, during the pandemic the highly skilled women were particularly squeezed between workplace and family responsibilities (Bock-Schappelwein et al., 2020).

Gender gaps were wide before the pandemic, as a result of the deeply rooted traditional family and work arrangements (OECD, 2015). The so-called "separate gender roles" model persists despite many policy initiatives to balance the roles. While young women have on average higher education than young men, the majority of women with children withdraw fully or partly from the labour force until their children reach school age and, for some, until they complete high school. In Austria's Recovery and Resilience Plan (RRP) a reform measure aims at a compulsory sharing of pension contributions (*Pensions-splitting*), which should mitigate the resulting gender gaps for retirees. The parental leave system which permits an asymmetric use of leaves between genders helps to perpetuate this pattern. Women carry also currently the main responsibility for caring for dependant elderly (Unbehaun et al, 2014). These liabilities constrain women's life choices and deprive the society of existing talent. Life-time career opportunities, income paths and participation opportunities in public life diverge, generating dissatisfaction in growing segments of society, among both women and men.

Just before the pandemic, women's full-time labour force participation rate was one of the lowest among comparable countries (Figure 1.25) and their part-time employment rate one of the highest. The shortcomings of the childcare infrastructure became more visible during the pandemic (Figure 1.26). A stronger social and political consensus may emerge from this experience in support of a more rapid catching-up with advanced country standards of childcare infrastructure.

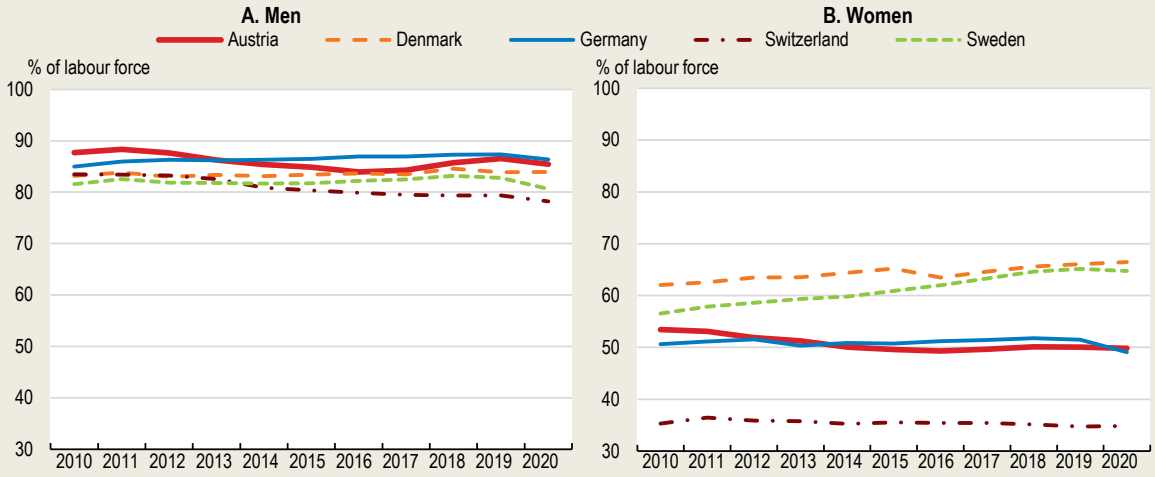
The legal entitlement of parents to publicly available childcare from the child's first birthday is an option discussed in Austria. Earlier OECD analyses recommended anintegrated policy framework to reduce gender imbalances through four streams: i) making the tax and benefit system more employment friendly; ii) making the parental leave system better balanced between mothers and fathers; iii) significantly upgrading the child and elderly care infrastructure (while maintaining the enrolment age of very young children flexible according to parental preferences, and developments in pedagogical research); and iv) encouraging more flexible workplace practices (OECD, 2015). An OECD simulation suggested that if the labour force participation gap between men and women were eliminated by 2030, annual GDP could increase by an additional 0.7% per year in Austria (one of the highest simulated gains of the OECD area, (OECD, 2012). It confirms that more, better and flexible childcare options, including via innovative services such as certified nannies and childminders (Figure 1.26 and Box 1.9), would benefit growth, well-being, social cohesion and the long-term sustainability of public finances.

The parental leave system was enhanced in recent years with more incentives to the balanced use of leave entitlements between mothers and fathers. These provisions are however not yet broadly used. A comprehensive empirical analysis of Austria's parental leave and child care support policies published in 2021 concluded that public policy measures have a stronger impact on gender gaps in labour markets when they are backed by supportive changes in social norms and preferences regarding the family-career choices of men and women (Kleven et al., 2021).

Box 1.9. Norwegian, Swedish and German experiences in facilitating mothers' return to work

Figure 1.25. Women's labour force participation can improve significantly

Full-time employment rate by gender, 20-64 year-olds



Source: Eurostat (2021), "Employment by sex, age, professional status and full-time/part-time" and "active population by sex, age and citizenship" in the EU Labour Force Survey Statistics.

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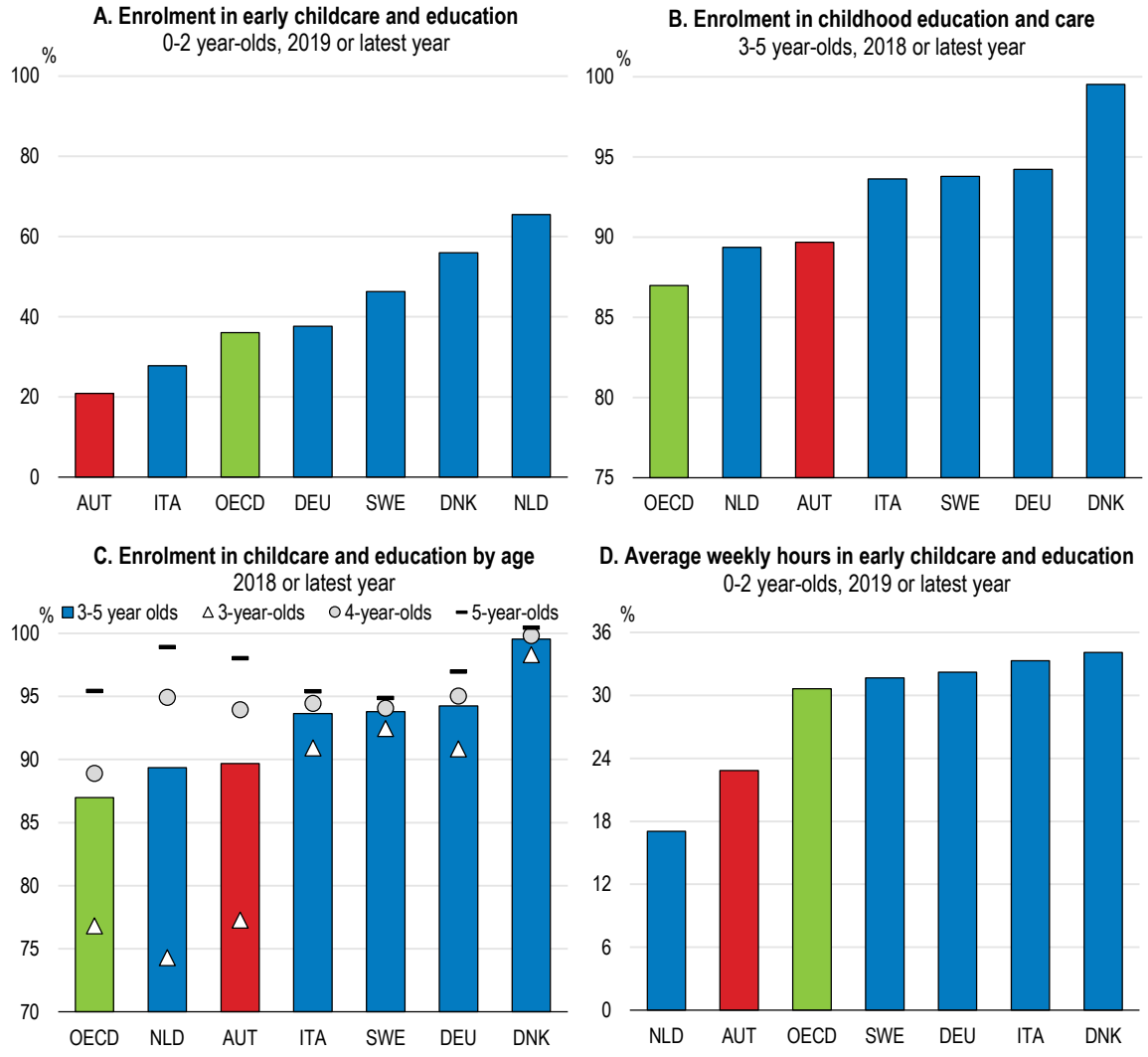
International experiences suggest that wider access to and reduced cost of early childcare improve considerably women's labour supply. For example, a reform expanding access and reducing the cost of childcare in Norway in the 2000s facilitated the increased uptake of one- and two-year-olds from 40% in 2002 to 80% in 2012. The reform boosted women's employment and earnings and enabled more women living in couples to move into full-time work. Attitudes vis-à-vis early childcare changed also since the start of the reform, with the share of mothers estimating that full-time centre-based childcare is the best type of care for three-year-olds increasing from 41% in 2002 to 72% in 2010. Sweden is another country where centre-based childcare expanded in tandem with both an increase in women's employment and a steady increase in the share of women working full-time.

Well-designed and balanced parental leave entitlements also enable parents to pursue both career and family responsibilities from an early stage. Incentives to split parental leave between mothers and fathers more evenly than in the traditional asymmetric systems help foster a more equitable distribution of paid and unpaid work within a family, also after the parental leave period. Germany's "partner bonus" system is an interesting example. The parental leave system includes three options (Basic Allowance, Allowance Plus and Partner Bonus) which offer additional benefits when parents i) share the leave entitlements in more balanced ways, and ii) go both back to the labour market at the end of the leave period. Benefits range from a minimum of EUR 300 to a maximum of EUR 1 800 depending on pre-birth incomes of both parents. A "parental allowance calculator" is available on a web-based family portal permitting parents to simulate their entitlements under various arrangements.

Sources: OECD Economic Survey of the Netherlands, 2021; Germany's Partner Bonus, 2021).

Figure 1.26. The childcare infrastructure should be considerably strengthened



Note: In Panel C, potential mismatches between the enrolment data and the coverage of the population data may generate some inconsistencies in enrolment rates. Data in Panel D are estimates based on EU-SILC. Data refer to children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by professional childminders. See the source for more details.

Source: OECD (2021), "Public policies for families and children (PF)" in OECD Family Database.

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Table 1.5. Gender equality: past OECD recommendations and government follow-ups

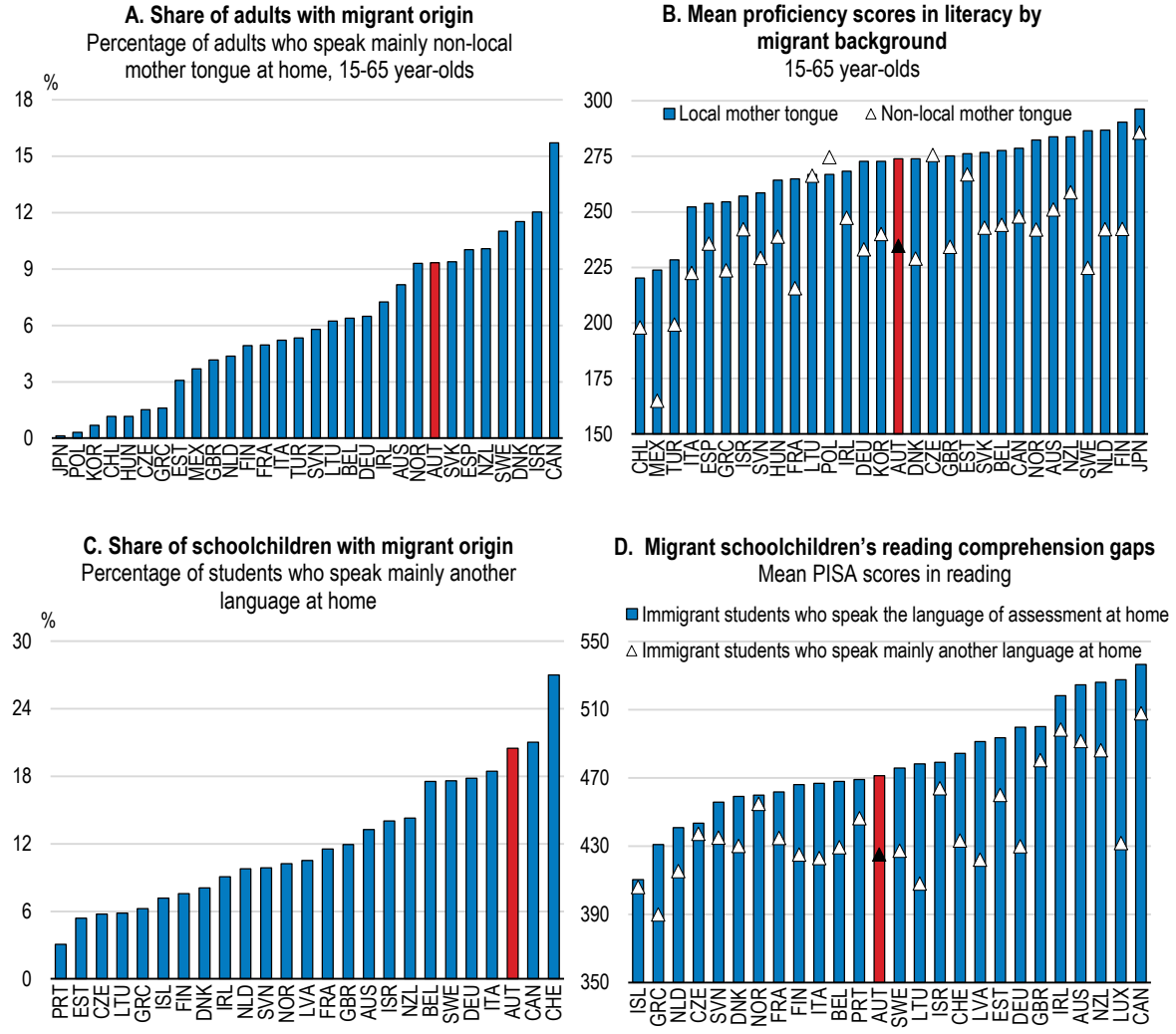
Past OECD recommendations	Follow-ups
Enhance the availability of full-day care centres and schools. Consider introducing legal entitlements for these services.	An agreement between the federal government and the Länder for 2018-22 helped to improve care offerings for children under 3, to promote qualified child-minder offerings, and to prolong opening hours during the year. New childcare places for 3 to 6-year-olds were funded. The government is also investing in expanding all-day schooling, aiming to have 40% of children attending all-day schools by 2025. Funds are allocated in co-operation with Länder authorities, on the basis of numerical indicators.
Keep the regulatory framework open for new providers and capacity growth in child care, under proper quality and security standards. Subsidies to these services should be granted on a level-playing field between public, non-profit and commercial providers to stimulate competition and innovation.	The current agreement between the federal government and the Länder which regulates child education and care, early language support, and compulsory attendance in the last year of kindergarten will expire in August 2022. The federal government is starting new negotiations to improve the accessibility and quality of childcare services and of early language support for children in need.
Reduce the implicit taxation of transition from marginal and part-time to full-time employment.	The authorities estimate that Austria has already one of the most flexible childcare allowance systems in Europe. Nonetheless, an evaluation is ongoing.
Transform childcare allowance and parental leave schemes into a unique childcare account that allows parents to allocate subsidised absence from work flexibly over time. Reserve a sizeable part of this account, at least 33%, for the exclusive use of fathers.	An agreement between the federal government and the Länder for 2018-22 helped to improve care offerings for children under 3, to promote qualified child-minder offerings, and to prolong opening hours during the year. New childcare places for 3 to 6-year-olds were funded. The government is also investing in expanding all-day schooling, aiming to have 40% of children attending all-day schools by 2025. Funds are allocated in co-operation with Länder authorities, on the basis of numerical indicators.
Develop a comprehensive data base on social transfers or a comprehensive panel survey to assess the impact of alternative family policy schemes on child care use and labour supply and adjust policy packages in the light of this information.	

Boosting the inclusion of low-skilled immigrants and their children

Immigrants have suffered more from the pandemic due to their more vulnerable position in the labour market, in contact-intensive services such as tourism, and poorer housing conditions (OECD, 2020d). Before the pandemic, 37% of foreigners working in Austria (a sub-group of the total population of immigrants, OECD, 2015) were exposed to poverty risks, against a national rate of 13%. Following the COVID-19 shock and in terms of labour market impacts, the number of unemployed foreigners increased by 67%, against 54% for Austrians. By July 2020, these averages had settled respectively at 42% and 29%.

Populations with another mother tongue than German are large, and have long been facing integration challenges. This challenge increased after the inflow of new cohorts of immigrants from crisis countries in the second half of 2010s. Pupils speaking another language than German at home constitute more than 20% of the school population, and experience difficulties with local language, as also experienced by their parents (Figure 1.27). Shortcomings in reading, understanding and writing are recognised as key obstacles to socio-economic integration and mobility, in both education ladders and in the labour market (OECD, 2017).'

Figure 1.27. Foreign-language speakers have a large share in the population and face integration challenges



Note: Panel A and B are calculations based on OECD PIAAC databases and Panel C and D are calculations based on OECD PISA databases.
Source: OECD PIAAC and PISA databases and OECD (2019), PISA 2018 Results (Volume II): Where All Students Can Succeed and OECD PISA databases.

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As the early transmission of human capital takes place principally within families in Austria, rather than through childhood education, human capital gaps tend to entrench across generations and low-skilled migrants are particularly affected (OECD, 2019). The high concentration of children of immigrants in schools, and their limited interaction with German-speaking children constitute an additional obstacle. The Ministry of Education introduced several measures in recent years to improve the language proficiency of children of immigrants - including an additional year of compulsory pre-school education with targeted language assistance.

The disruption of school presence by all age cohorts during the pandemic created new headwinds with long-term consequences (Kocher and Steiner, 2020). Effects have been more serious for children of immigrants, due to uneven on-line teaching capabilities across schools and the uneven pedagogical support capacity of parents. A panel of education experts suggested that systematic and long-lasting support is needed for pupils who had severe problems during lockdowns and distance learning (Schober,

Lüftenegger and Spiel, 2021). The Ministry of Education introduced a *Covid support package* with additional hours of learning support. The expert panel emphasised the need to address in particular generic learning aptitudes. It recommended individual learning plans, with the participation of pupils, teachers and parents, and supporting instruments such as mentoring and summer schools. High-frequency individual learning outcome data available in the education system makes such individual targeting possible.

Table 1.6. Immigrants' economic participation and social inclusion: past OECD recommendations and government follow-ups

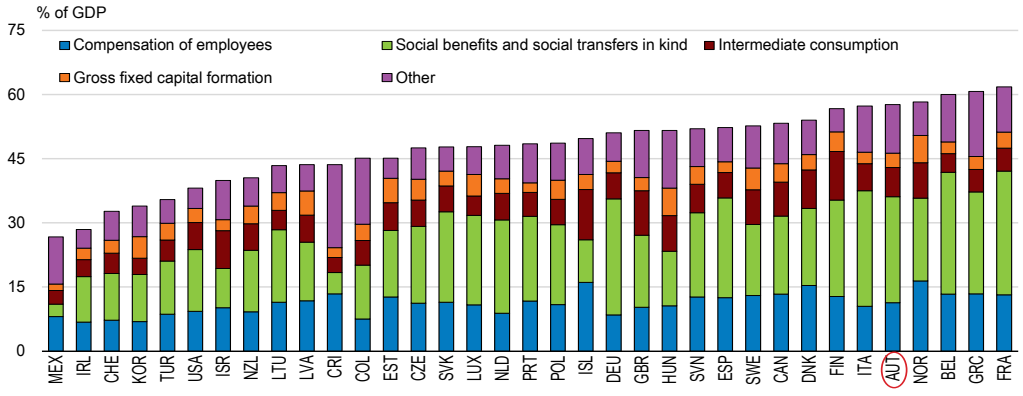
Past OECD recommendations	Follow-ups
Strengthen the German language learning opportunities and the economic participation potential of low-skilled immigrants and their entire families. Support the early socialisation as well as language and cognitive development of children from disadvantaged backgrounds to improve their intergenerational education mobility.	Since the 2018-19 school year new initiatives were implemented to reinforce the teaching of German: - Primary education: 15 hours per week of intensive language training. - Lower secondary education: 20 hours per week of intensive language training. - Summer school 2020-21: a two-week individual program for targeted students, to reinforce their capacity to follow the lessons in the coming school year. This was introduced in the wake of the Corona crisis and will continue in summer 2022.
Open social partnership institutions to immigrant groups to enhance immigrant families' capacity to support their children's education and other socialisation needs.	

Public sector reforms become more compelling

Beyond the short-term fiscal policy issues, Austria faces medium-to-long term public finance challenges. These result from demographic developments and from public investment needs to ease the transition to a greener and more digitalised economy. The conjunction of these two agendas strengthens the case for public sector reforms. These reforms, started with the introduction of "impact orientation" innovations in public administration by the Ministry for Arts, Culture, Civil Service and Sport, should identify and exploit the potential for savings in the already very large public sector (Figure 1.28). They should help deliver the public services and investments which will be in high demand in the period ahead as efficiently as possible.

Figure 1.28. Public spending is already high

Government expenditure, 2020 or latest year, % of GDP



Note: Colombia, Costa Rica, Israel, Korea, Mexico, New Zealand, Switzerland, Turkey and USA for 2019.
Source: OECD (2021), OECD National Accounts at a Glance and OECD Government expenditure by function (COFOG) in the National Accounts Statistics (database).

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Fruitful public sector reforms would bolster both the potential growth rate of the economy and social cohesion, helping to diffuse productivity gains through the society, and increasing the labour force participation of women, elderly and the low-skilled.

Table 1.7. Public sector reforms (including education reforms): past OECD recommendations and government follow-ups

Past OECD recommendations	Follow-ups
Implement high-quality independent government spending reviews to improve the quality and cost-efficiency of services.	Nine spending reviews were completed since 2016 and two further reviews will be launched: i) Family Judicial Assistance and Adult Protection programmes by the Ministry of Justice, ii) Analysis of the climate finance landscape including climate-related grants and incentives.
More closely align revenue raising and spending responsibilities between government levels.	A pilot project in the field of housing subsidies has furthered Länder's tax autonomy. A "Long-term care taskforce care" was created to assess the evolving needs in this area and to evaluate policy options, including concerning the financing and delivery responsibilities of different levels of government.
Seek economies of scale in municipal services through shared services or consolidation of government.	
Re-assess the present school infrastructure, class sizes and teaching personnel against demographic trends and develop a rationalisation plan.	The Education Reform Act 2017 provided schools more autonomy in staff recruitment and performance management, and allowed school mergers.

Handling the fiscal costs of ageing

Pensions

Past pension reforms have improved the long-term sustainability of public pensions amid welcome increases in life expectancy (European Commission, 2021). At the same time, the share of public pension spending and pension contributions in GDP, and the average number of years in retirement are among the highest in the OECD. The size of the system exposes it to large risks in case the parametric assumptions underlying its financial balances come under pressure. While the equilibrium between life-time pension contributions and benefits improved after reforms, effective retirement ages for men and women fall below official ages due to unattractive working conditions for senior workers and the persisting early retirement avenues (Chapter 2). The authorities have decided to re-install the financial disincentives to early retirement that they had temporarily waved in 2019, and which had led to an upsurge in early withdrawals from the labour force. Rehabilitation policies for senior workers with health issues are also being reinforced. Future financial balances of the pension system are very sensitive to i) average life expectancy, ii) the employment rate of senior workers, iii) immigration trends, and iv) average productivity gains in the economy (European Commission, 2021). Recurrent parametric adjustments are requisite according to developments in these areas, as discussed in the previous OECD Economic Survey of Austria (OECD, 2019). The long-term sustainability of the pension system should be ensured including e.g. by linking retirement age to life expectancy and enhancing financial and workplace incentives to continue working at an older age.

Health spending

Public health insurance is generous and public health spending, at 8.8% of GDP in 2020, is one of the highest in the OECD. Additional pressures will arise from population ageing, the rising incidence of age-related chronic diseases, and more costly medical technologies and pharmaceuticals. The latest Ageing Report of the European Commission suggests that baseline pressures (the trend increase in public health spending as a share of GDP) and underlying risks (additional spending entailed by risk scenarios) are

higher in Austria than in comparable countries (European Commission, 2021). In the years immediately preceding the COVID-19 shock, policymakers have stabilised public health expenditures with budgetary caps. This is a transitory approach and, if prolonged, can generate access bottlenecks and quality tensions in health services (Bachner etal., 2018). Structural reforms, such as aligning health spending and financing responsibilities across government layers and better balancing preventive and curative services, could promote spending effectiveness. Telemedicine innovations, which helped sustain and improve health services during the pandemic, should be consolidated and further developed. Their adoption by all health professionals may call for adjustments in regulations and payment systems. According to some stakeholders this will require legal and regulatory clarifications (CMS, 2020).

Long-term care

Long-term care for dependent elderly displays distinct features. The predominance of family care, of government cash transfers (rather than in-kind services), and the special role of foreign care workers characterise Austria. About 75% of dependant elderly are taken care by their families, 20% by care institutions, and 5% by foreign care workers. These arrangements came under pressure during the pandemic. Care responsibilities increased within families and became more demanding, while travel restrictions constrained the mobility of foreign care workers.

In the post-pandemic period, expanding incidence of chronic age-related diseases, combined with full-time labour force participation expectations of women and higher geographical mobility of young cohorts, will call for adjustments in long-term care arrangements. Digital techniques, which facilitated communication and surveillance during the pandemic, may help make home-based care - the preferred living arrangement of the majority of dependant elderly in Austria - more convenient, safer and less costly. A strategic plan for long-term care would help evaluate policy options. A "Long-term Care Task Force" created in 2020 and gathering various stakeholders has provided a consultation platform. This Task Force has already inspired and initiated a pilot project: the appointment of 150 community nurses with an aim to increase the health literacy of senior citizens above 75 and help them live in their own home for longer periods and in safer conditions. It is funded by the European Recovery and Resilience Fund, with a view to be generalised to the territory if successful.

A core issue concerns labour shortages in the provision of care. This is already a challenge whilst the majority of dependant elderly are still being taken care of by their families. Working conditions are demanding and the prevailing work organisation and pay conditions are not attractive. Demand projections suggest that the challenge will expand: Mobile and in-patient care may require up to 24 000 additional staff by 2030 (Famira-Mühlberger and Firgo, 2019). Short-term shortages appear to have become more acute after the pandemic - as part of immigrant labour has found alternative employment opportunities in Austria or abroad.

Short- and medium-term labour shortages will need to be tackled under fiscal constraints. According to detailed projections (after the legal abolition of fiscal recourse to elderly dependants' own assets to co-fund their care costs) public spending for both cash transfers and benefits in kind could increase from EUR 5.1 billion in 2018 to EUR 7.5 billion in 2030 (in constant prices). This amounts to an increase of EUR 600 million (0.12% of GDP) per year. Technical and organisational innovations in the delivery of services, including by drawing on digital techniques and improved working conditions, may be compelling.

Fiscal implications of the transition to a greener and digitalised economy

The transition to a greener and digitalised economy will require additional public investments. Medium-term fiscal costs are difficult to quantify. Adjustment needs of the public capital stock imply a broad range of projects with positive economic and social returns - which may surpass the available and borrowable public financial resources.

Skills and capabilities to be built up throughout childhood, primary, secondary, vocational, tertiary and lifelong education are extensive (OECD, 2021). The 2017 OECD Education Policy Outlook of Austria, after reviewing the strong achievements of public education, notably in vocational education, concluded that i) implementing significant governance reforms, ii) continuing to increase spending, and iii) improving resource efficiency should be key goals for Austria. An evaluation of school resources that the 2017 review drew on (OECD, 2016) estimated that existing governance arrangements create structural challenges for the management of school resources, due to a complex distribution of responsibilities between Federal and Länder levels, and, as clear lines of accountability and integrated monitoring systems are lacking, that they foster over- and misspending. Evidence-based assessments of the costs and benefits of various school structures, education streams, methods and curricula, including following the introduction of on-line teaching applications during the pandemic, are desirable. As discussed in Chapter 2, there is also significant potential for improving the quality and employment benefits of public support to life-long learning, including more active recourse to user choice and competition in the provision of related services.

Climate transition policies will have sizeable public finance implications, on both revenue and spending sides. The recently proposed carbon taxes are planned to be revenue-neutral, as revenues will be re-distributed as transfers to address its distributional effects. In the medium-term, additional spending needs will likely increase in this area as public green investments will form the third key instrument of green development strategies together with higher carbon prices and stricter emission regulations.

Policymakers and the research community are notably engaged in a range of medium-term technological projects to reduce greenhouse gas emissions. They are well-funded in the short-term, but may require wider resources when shifting to fuller scale implementation (European Commission, 2021).

Investment needs in the physical infrastructure of the digital economy are also large as discussed in Chapter 2. Further development needs of the broadband infrastructure have been well-identified and are being addressed through public and private investments. Some analysts suggest that additional public capital will be needed (WIFO, 2021). On the other hand, new technologies may permit savings, for example if high-speed mobile communications reduce the need for fibre networks in low-density areas (see Chapter 2). New projects, including those under the European Economic Recovery and Resilience Plan (Box 1.5 above) are addressing some of these needs.

Managing competing public expenditure and investment projects will require new spending prioritisation procedures, given limited resources. A two-legged approach could help to tackle potential imbalances between available and borrowable resources on the one hand, and the portfolio of suitable spending projects on the other:

- The economic and social benefits and costs of existing and proposed projects should be documented rigorously, according to standard methodologies. In addition to existing government measures to promote efficiency in public services, sector-specific spending reviews would help with these assessments. The area of education and life-long learning lends itself, in particular, to an in-depth review of the efficiency of allocation of public resources. Spending reviews should be based on good international practices, ensure the participation of all stakeholders, and be conducted in an arms-length and independent perspective. The European Resilience and Recovery Programme entails also some spending reviews.
- Policymakers may consider medium-term spending ceilings at the general government level, as have been applied by Finland, the Netherlands and Sweden to sustain political and social consensus around a total spending envelope in the past. Recent evaluations in the European Commission (European Commission, 2020) and in the OECD (OECD Economic Survey of the Euro area, 2021) are favourable to such rules in the context of the fiscal policy challenges of the post-pandemic period. In addition to the existing spending caps included in the annual budgets and reaching out to the subsequent two years on a rolling basis, Austria's multi-yearly spending frameworks can be strengthened by anchoring them in government programmes and keeping them

constant during their entire period of execution. Broadening them to the general government sector (beyond the central government budget) would also make them better in line with international good practices and more binding (Ljungman, 2008).. They may be defined at different aggregation levels, and must be compatible with the projected tax revenues and the targeted public debt trajectory.

Strengthening public governance, integrity and trust

The trust of the population in public institutions surfaced as a key issue in all OECD countries during the pandemic. The assumed link between public trust in institutions and compliance with COVID-19 policies has been confirmed by empirical research (Rodriguez-Pose and Burlina, 2021). Country- and region-specific findings for Austria have not yet been published, but cross-country findings hint at room for progress in this area. Surveys in Austria confirm that public trust in the key institutions involved in the management of the pandemic started strong in the early phases of the shock, but then weakened (Waibel et al., 2020; Kowarz and Pollak, 2020). Strengthening trust may facilitate population's compliance with future policies (see Figure 1.3 Panel B). Improving the health literacy would help as discussed earlier.

Beyond the challenges of the pandemic, recent research, including by the OECD (OECD, 2018), confirms the existence of a link between the perceived quality of public governance institutions, public sector size, and economic performance. Earlier OECD Economic Surveys of Austria had suggested that, given the very large public sector, the credibility of governance institutions should be strengthened to offset adverse impacts on economic performance (OECD, 2019). Recent international indicators suggest that the perceived gaps in the quality of governance institutions vis-à-vis peer countries are persisting (Worldbank, 2021). This Survey's growth simulations suggest that Austria's catching-up in this area may deliver growth gains.

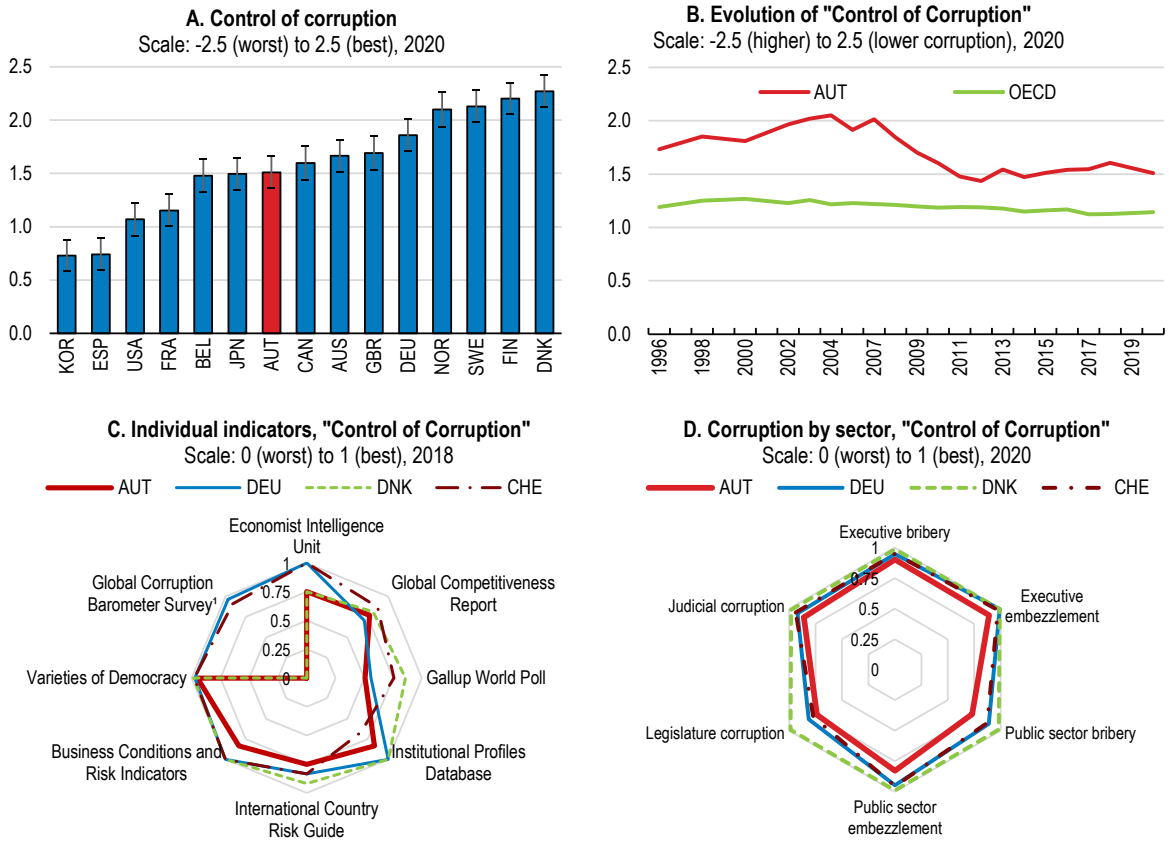
One key dimension of public governance is the efficacy of fight against corruption (Figure 1.29). The previous OECD Survey had noted, on the basis of assessments by the OECD's Working Group on Bribery, that Austria's policies could be strengthened. The perceived efficacy of anti-corruption policies may have weakened in recent years (Figure 1.29, Panel B). The complex multi-layer structure of the government, the multitude of public procurement authorities, and the presence of myriad Länder- and municipality-owned entities widen the exposure to corruption risks.

From a legal perspective Austria has already a relatively strict criminal law against corruption. The Federal government adopted the Austrian National Anti-Corruption Strategy in 2018 and implemented yearly National Action Plans in 2019 and 2020. There are civil service employment law provisions to help prevent corruption, and ensure ethical behaviour in public services. An Austrian Code of Conduct for the Prevention of Corruption in the Civil Service was adopted by the Council of Ministers in November 2020.

Certain observers estimate that prosecution authorities should be further emboldened to enforce the existing ani-corruption laws and rules in a more rigorous manner. Transposing the EU Whistleblower Directive into national law by end-2021 requires an acceleration of preparations. The "leniency programme" (offering special protection to key witnesses in penal law proceedings), which was adopted in 2016 with a 5 year sunset clause, could be converted into a permanent law to consolidate the legal infrastructure for public integrity.

Other longstanding issues include elements of bank secrecy and vulnerability to money laundering (OECD, 2019). The authorities state that the revised Austrian Banking Act is not anymore an obstacle to detecting criminal activities and tax evasion. Since Austria's accession to the EU, exemptions to secrecy rules have been incorporated, permitting to fight criminal activities. Nonetheless, financial sector's exposure to transactions with countries carrying risks in this area invites special policy attention to reducing vulnerability (Financial Times, 2021a; Financial Times, 2021b). Austria has taken steps to address a number of these issues. The next evaluation of Austria by the OECD Expert Group on Bribery is planned for 2024.

Figure 1.29. Improving public trust



Note: Panel A shows the point estimate and the margin of error. Panel C shows individual indicators which underlie the "Control of Corruption" indicator by the World Bank. Panel D shows sector-based subcomponents of the corruption indicator by the "Varieties of Democracy" Project.
1. Data for Austria and Denmark are not available regarding the indicator "Global Corruption Barometer Survey".
Source: Panels A & B: World Bank, Worldwide Governance Indicators. Panels C & D: the Economist Intelligence Unit; the World Economic Forum; the Gallup Organisation; the French Ministry of Economy and Agence francaise de Developpement; Political Risk Services; Global Insight; Varieties of Democracy Institute, University of Gothenburg and University of Notre Dame; Transparency International.

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Illustrative medium-to-long term growth scenarios and policy recommendations

The structural reforms recommended in this Survey would boost business sector dynamism, improve resource re-allocation and improve labour force participation in all labour market segments. Table 1.8 sets out illustrative macroeconomic scenarios and shows the impacts on medium-term growth trajectories, based on the OECD cross-country reform impact assessment model.

A package of structural reforms combined with stronger economic institutions could boost the level of the real GDP per capita by around 11% after a 10-year horizon. Table 1.8 sets out five reform scenarios. Table 1.9 presents the estimated fiscal costs of some reform recommendations:

- The baseline trajectory is based on ongoing medium-term trends and assumes no changes to structural policies and economic institutions. It projects an increase in the level of real GDP per capita of 12% after 10 years. The estimation framework underpinning the baseline trajectory rests on data prior to the COVID-19 pandemic.
- A first set of structural reforms would remove anticompetitive regulatory barriers in product markets by improving the Austria's indicators to the average of the five best-performing OECD countries. This would boost labour efficiency but also improve employment and the capital stock. After 10

years, the level of real GDP per capita would increase by an additional 2.1 percentage points as compared to the baseline.

- A second wave of reforms would prioritise labour markets and shift the tax burden away from labour towards a less distorting base. Labour tax wedges for singles and couples would be reduced to the OECD average. This reform scenario would lift the level of real GDP per capita by 2.2 percentage points compared to the baseline after 10 years.
- While Austria has already an institutional framework conducive to growth, in a third reform scenario improving the rule of law to the level of the best performing OECD country (Norway) could raise the level of real GDP per capita by 0.4 percentage points after 10 years.
- The fourth scenario simulates reforms that bolster child-care services and the re-balancing of parental leaves, helping reduce the labour force participation gap between men and women by half by 2030. This would increase the level of real GDP per capita by around 6% after 10 years.
- In a fifth scenario, a reform package consisting of the removal of anticompetitive regulatory barriers, a reduction in tax wedges, improving on the rule of law and aligning the labour force participation of men and women (a combination of the Scenarios 1-4) may yield a boost to the level of real GDP per capita of around 11 percentage points as compared to the baseline after 10 years.

Table 1.8. GDP impacts of reforms

Scenario	Policy action	Increase in the level of real GDP per capita over ten years as compared to a no-policy baseline
Scenario 1: Competition reform	Close the gap in product market regulations to the average of the five best performing OECD countries over a 10-year horizon.	2.1 percentage points
Scenario 2: Labor market reform	Reduce tax wedges for singles and couples to the OECD average.	2.2 percentage points
Scenario 3: Institutional progress	Improve the institutional framework conditions (rule of law) to the best performing OECD country (Norway) over a 10-year horizon.	0.4 percentage points
Scenario 4: Raising female participation in the labour force	Reduce the labour force participation gap between men and women by half by 2030	6 percentage points
Scenario 5: Competition, labor market and institutional reform and progress package	All reforms from Scenario 1, 2, 3 and 4.	10.7 percentage points

Note: Model results should be seen as illustrative. Policy changes in the model are based on comparing the policy settings in Austria with other OECD countries. The model assumes that any spending increases are offset such that reforms are fiscally neutral. The model does not capture policy-induced changes in deep-rooted preferences like risk aversion and their subsequent effects on economic variables.

Table 1.9. Estimated fiscal costs of selected policy recommendations

Policy recommendation	Estimated fiscal costs
Introduce an allowance for corporate equity, applicable to both internally and externally raised new additions to equity.	Roughly around 0.05-0.1% of GDP (based on a notional return of 1.5% applied to additions to equity only)
Reduce the employment cost of the long-term unemployed.	0.07% of GDP (maximum direct fiscal cost of halving the social security contribution rate of all re-hired long-term unemployed).
Up-skill and re-skill the long-term unemployed in line with labour market needs.	No cost increase (re-training costs per unemployed is already the highest of the OECD area, there is room to improve allocation).
Bolster the early child care and education infrastructure to reach advanced country standards.	1 - 1.2% of GDP (convergence of enrolment rates and of spending per pupil on a PPP basis with Sweden).

Policy recommendations (key recommendations are bolded)

MAIN FINDINGS	RECOMMENDATIONS
Health policies	
Around one third of the population appears to resist COVID-19 vaccination. Starting from mid-November 2021 non-vaccinated adults have been locked-down.	**Monitor the impact of the lock-down on vaccinations. Boost vaccinations with an assertive awareness campaign drawing on the National Health Literacy Strategy.**
Individual health data infrastructure has improved during the pandemic but remains relatively fragmented. Research community's access to individual health data falls behind peer countries.	Continue to draw on the OECD Council recommendations on health data governance. Improve the access of researchers to individual health data under adequate ethical and professional safeguards.
The co-ordination of the fight against the pandemic between Federal and Länder governments faced certain challenges.	Clarify the prerogatives of the Federal and Länder authorities in the face of pandemics and other public health matters.
Macroeconomic policies	
The post-pandemic upturn has been sharp but many activities are held up by labour, skill and other supply side shortages. In certain sectors demand continues to be hindered by low domestic and international mobility.	**Concentrate public supports on overcoming supply-side shortages and on backing the still temporarily hampered activities such as tourism.**
The low labour force participation of elderly workers heightens labour and skill shortages in several sectors.	Support businesses to improve their work organisation and workplaces to make job positions more attractive for elderly workers.
Demand pressures, price surges and the rapid expansion of mortgage loans are exacerbating financial risks in the housing sector.	**Make Financial Market Stability Board's prudential guidance for mortgage loans mandatory.**
The capital base of the banking sector as a whole is adequate, but some banks may need additional capital on the way out of the pandemic.	Secure a solid capital base for all banks.
Public debt rose to a high level in national standards, due to the ample economic and social supports mobilised during the pandemic.	**Prepare a medium-term fiscal consolidation strategy while sparing room for targeted supply- and demand-side supports as required. Implement this strategy as the recovery is fully self-sustained.**
Green growth	
The carbon intensity of the economy is declining too slowly against the ambitious 2040 climate neutrality goal. The eco-social tax reform 2022 is highly welcome but additional measures will be indispensable.	**Design and implement complementary regulatory and emission saving investment schemes to align the trajectory of emissions with targets.**
Carbon prices and taxes will likely remain lower and more uneven than in peer countries for a while.	**Increase and harmonise further carbon prices after 2025 by integrating the largest possible share of emissions in the national and EU emission trading system. Eliminate the diesel/gasoline tax gap.**
Low-income households using carbon-intensive goods and services at high frequency will be heavily affected by carbon price increases.	**Prepare methods and measures to identify and compensate the most vulnerable households to the planned and expected carbon price increases during 2022-25 and after transition to integrated national and EU emission trading sytems.**
Social cohesion	
The traditionally low rate of long-term unemployment appears on a structural upward trend, in particular for the low-skilled, despite improvements during the post-pandemic upturn.	**Up-skill the long-term unemployed, emphasising employer-driven schemes.**
Employment costs are inflated by the still high labour tax wedges. Low-skilled labour demand is hindered.	**Continue to reduce the employment cost of the long-term unemployed. Adapt the successful "Springboard" scheme of employment subsidies to the long-term unemployed.**
Quantitative and qualitative shortcomings in early child care services constrain women's life choices and economic participation.	**Bolster the availability and quality of early child care services throughout the entire territory, in particular in rural areas.**
There is potential for increasing the share of the free-lancers and self-employed in the labour force.	Help the long-term unemployed to start their own business in new market niches, drawing on ongoing pilot experiments.
The parental leave system as currently implemented helps to perpetuate separate gender roles. However, the provisions encouraging a balanced use between mothers and fathers are little used.	**Encourage the balanced use of parental leaves between mothers and fathers to promote a more balanced sharing of paid and unpaid work between parents.**
Disruption of school presence during the pandemic affected more children and teenagers from immigrant and disadvantaged households, due notably to uneven technical endowment and pedagogical support.	Introduce individual support and learning programmes for children and teenagers from immigrant and disadvantaged households who fell behind in their educational development during the pandemic.

MAIN FINDINGS	RECOMMENDATIONS
Long-term public finances and public sector reform	
Population ageing is putting pressure on public finances. Many aged workers withdraw before the official retirement age.	**Ensure the long-term sustainability of the pension system, e.g. by linking retirement age to life expectancy. Reduce early retirement pathways by further reforming the access to disability pensions, improving prevention and rehabilitation measures, and enhancing incentives to continue working at an older age while ensuring good working conditions.**
There is potential for saving, quality improvement and resource re-allocation in existing public services and transfers.	**Further strengthen the quality of public spending reviews and the implementation of proposed recommendations.**
Perceived gaps with peer countries in the quality of public governance persist.	**Continue activities to reduce the perceived gaps in the quality of public governance, including in fighting corruption.**
Proposals for new public programmes to support green growth and digitalisation are expanding. They may further expand in the future.	Evaluate the costs and benefits of the new public programmes to support green growth and digitalisation according to rigorous common methodologies.
There are saving, quality improvement and resource re-allocation potentials in existing public services and transfers.	**Further strengthen the quality of public spending reviews and the implementation of proposed recommendations.**
Investment, spending and revenue raising responsibilities remain still highly dispersed across government levels.	Better align revenue raising and spending responsibilities across government layers. Start with health spending.
Full-time labour force participation expectations of women, higher geographical mobility of young cohorts and an increased incidence of age-related conditions call for adjustments in long-term care arrangements.	Develop a strategic plan for long-term care for dependent elderly, taking into account the private and social costs and benefits of alternative arrangements and making use of technological developments related to the provision of care.
In its last evaluation of Austria, the OECD Working Group on Bribery in International Business Transactions recommended stronger policies.	Comply with the recommendations of the OECD Working Group on Bribery in International Business Transactions.

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2 Helping the business sector to cope with new opportunities and challenges

The economic shock induced by the COVID-19 pandemic is accelerating structural changes and is posing new challenges. Austria faces wider growth opportunities and new adjustment challenges related notably to two major structural transformations: transition to carbonless growth and the generalisation of more advanced forms of digitalisation. These imply new entries and exits in the business sector, more capital and labour re-allocations and greater geographic mobility of labour. A better activation of the existing talent pool, in particular female, elderly and migrant workers is also needed to address the ageing of the society. In this context public policies should aim at further stimulating business dynamism by facilitating market entries; supporting firms' capacity to invest by helping strengthen their balance sheets; better adapting skills to jobs for all categories of workers; and providing the right incentives to R&D to boost long-term innovation.

COVID-19 induced structural change, adaptation to climate change and population ageing pose challenges to the Austrian growth model

COVID-19 will accelerate structural change

The economic shock induced by the COVID-19 pandemic will accelerate structural change and pose new challenges. Lockdowns and other sanitary measures gave a big push to the use of digital technologies and act as a catalyst for further digitalisation. Additionally, preferences of consumers, workers and firms are likely to change. More remote work, greater use of automation and e-commerce are just some examples of possible results of such shifts in consumer preferences (Chernoff and Warman, 2020; OECD, 2021a).

The adaptation to these shifts will likely lead to durable adjustments to the Austrian growth model. On top of that, adapting to climate change and ageing will continue to shape the evolution of long-term growth. Stricter national and international commitments to environmental sustainability will be more demanding for business activities, but will also create new opportunities. The central conversion concerns greenhouse gas emissions. Regulations will be tightened and additional green investments will be needed. Higher carbon prices and higher costs of carbon-intensive inputs are expected to generate a cascade of quantity and price adjustments.

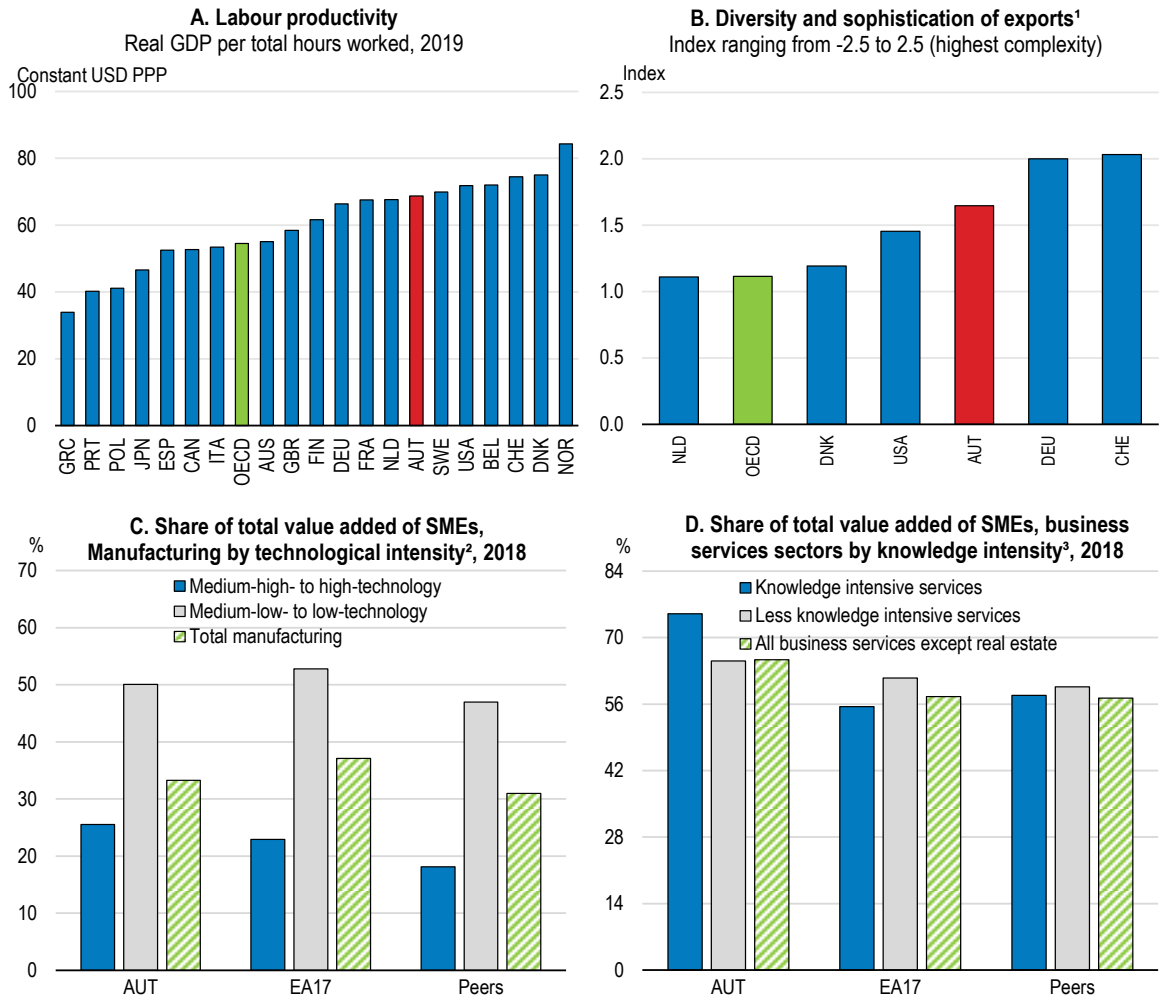
This chapter analyses the impact of these structural transformations on the Austrian growth model and discusses how public policy can manage these challenges to maintain robust, sustainable and inclusive economic growth. It is structured around the factors that shape potential output, capital and labour markets as well as innovation. After examining some relevant strengths and weaknesses of the Austrian economy, it focusses on five major policy challenges: adapting business framework conditions to improve productivity growth, an efficient allocation of resources and investments; making the most out of digitalisation; securing firms' capacity to invest even though COVID-19 may have weakened balance sheets; unleashing the full potential of the work-force by better integrating available talent and providing the right incentives to R&D to boost innovation.

The Austrian growth model has proven successful

Austria has a technologically sophisticated and export-oriented economy with a comparatively high level of labour productivity (Figure 2.1 Panel A and B). The share of manufacturing industries is one of the highest in the OECD. The contribution of market services to total output is roughly equal to the OECD average. However, ICT industries play a smaller role than in other OECD countries and contribute only around 4% to total value added.

A vibrant SME culture is an important feature of the Austrian economy. As analysed in-depth in the 2019 OECD Economic Survey of Austria (OECD, 2019), SMEs, in particular medium-sized firms, are more export-orientated than in other OECD countries and account for higher shares of value added in medium-high and high-technology manufacturing sectors and knowledge-intensive service sectors (Figure 2.1 Panel C and D). The labour productivity of the manufacturing sectors is one of the highest in the OECD (OECD, 2019). Many Austrian SMEs are often key players or innovation leaders in highly specialised and niche international markets (Schneider, 2014).

Figure 2.1. Labour productivity is high



Note: Peer countries is the unweighted average of Germany, Switzerland, Denmark, Sweden and the Netherlands. OECD is the unweighted average of available OECD countries depending on the database.

1. The economic complexity index measures the diversity of an economy's export and their sophistication. The index is net of the sophistication of imported inputs (see Hausmann and Hidalgo 2014). Unweighted average of available countries for the OECD aggregate.

2. It consists of the following NACE Rev.2. sections: (1) medium-high- to high-technology manufacturing sectors refer to the sections 20, 21, 26 and 27 to 30, (2) medium-low- to low-technology sectors refer to other manufacturing sections.

3. It consists of the following NACE Rev.2. sections: (1) knowledge-intensive services refer to the sectors 50 to 51, 69 to 71, 73 to 74, 78 and 80. (2) less knowledge-intensive services refer to the sectors 45 to 47, 49, 52, 55 to 56, 77, 79, 81, 82 and 95. Business services exclude both real estate and financial services.

Source: OECD (2021), OECD Productivity Statistics (database), OECD Structural and Demographic Business Statistics (database) and the Observatory of Economic Complexity.

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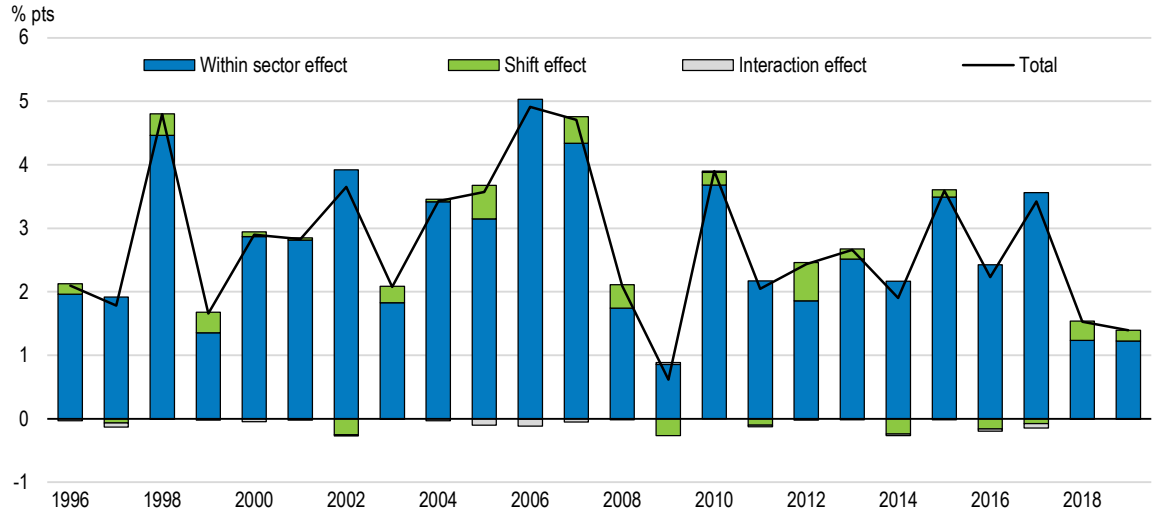
Within-sector improvements are a key driver for this success

Steady productivity gains within sectors constitute a key strength of the Austrian economy (Schneider, 2014). As opposed to other OECD countries, resource allocation from less to more productive sectors contributed only little to aggregate productivity growth (Figure 2.2; Molnar and Chalaux, 2015; Fenz et al., 2020). However, the pandemic will entail some structural transformation (OECD, 2021a) and thus challenge this growth model.

Figure 2.2. Productivity-enhancing reallocation is low

Contribution to aggregate gross value added over hours worked, percentage points



Note: Based on a shift-share analysis (e.g. Kierzenkowski et al., 2018). Growth in gross value added over hours worked is decomposed into three different components: "within sector effect" representing the intra-industry productivity growth, "shift effect" capturing the shift in labour between sectors with different productivity levels and "interaction effect" representing the effect of labour reallocation across sectors with different productivity growth rates. The sum of effects may not completely correspond to the actual aggregate growth of gross value added over hours worked.
Source: OECD calculations based on OECD (2021), OECD Annual National Accounts database.

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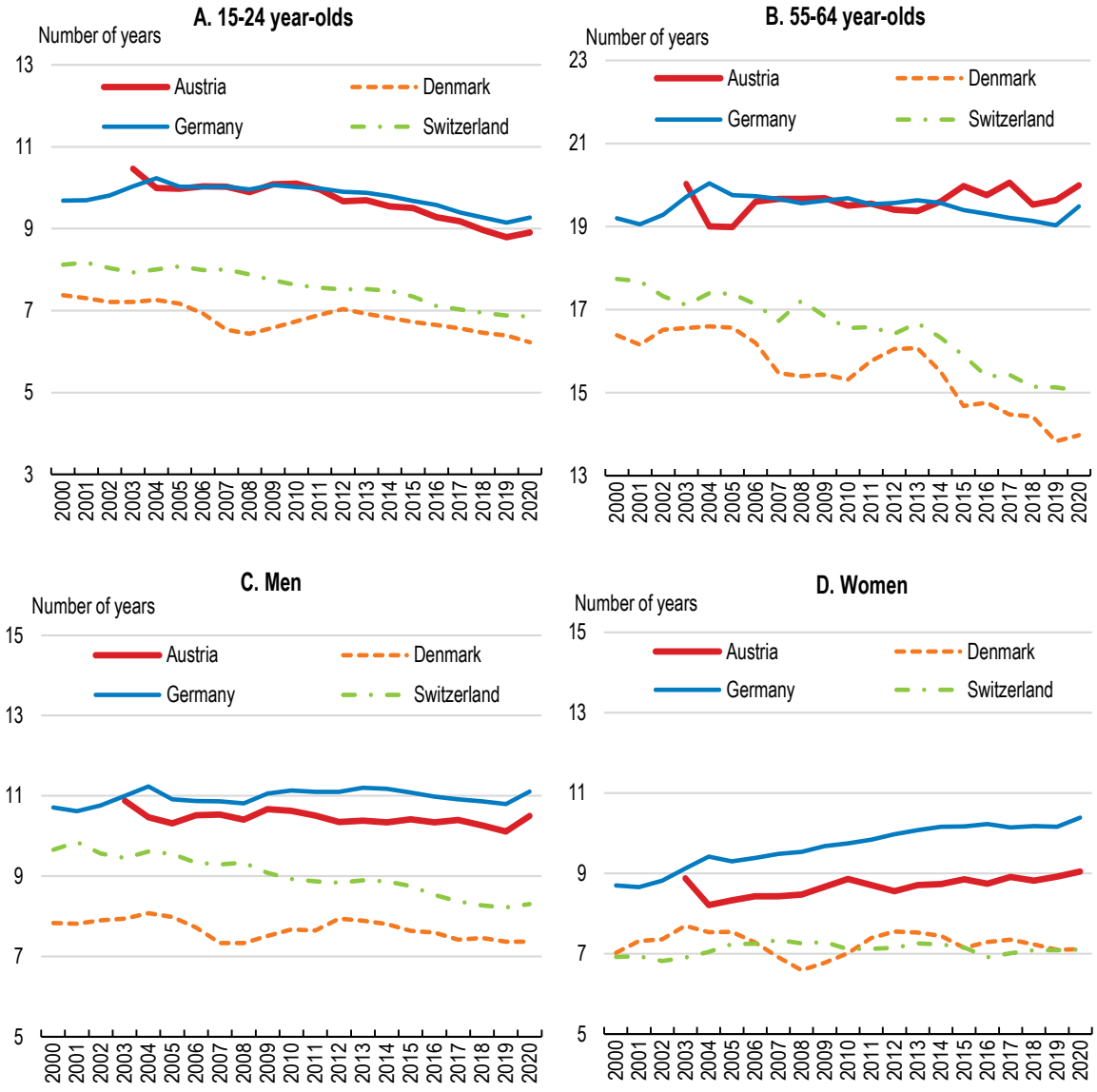
Steady productivity tends to be based on relatively long employment spells (Figure 2.3). Austria's business culture and practices draw on the long-term stability of business organisations, employment relations and living places. Owner-manager families' accumulated knowledge in specific technological areas, together with employees' firm-specific human capital built-up through long-term tenures foster highly competent "hidden champions" (OECD, 2019).

Figure 2.3. Job tenure of employees is high

Average job tenure of employees, by age cohort and gender



Note: Job tenure is measured by the length of time workers have been in their current or main job or with their current employer.
Source: OECD Labour Force Statistics (database).

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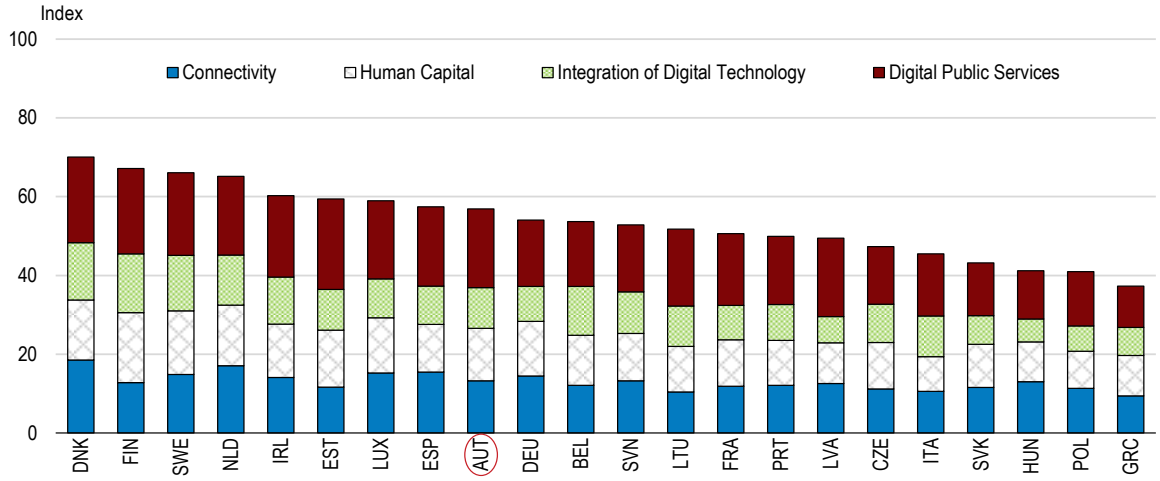
Fostering Austria's digitalisation potential

Despite its relatively high income per capita, Austria experiences a lag in digitalisation. It ranks 10th in the EU according to a synthesis indicator developed by the European Commission, and is considerably less digitalised than peer countries (Figure 2.4). The lag in digitalisation to the top-performing countries mirrors aggregate ICT investment. The share of investment devoted to IT equipment and purchases of software and databases, at around 18% in 2017, was elevated but below that of the top performers (Figure 2.5).

Further, it only increased by roughly 4 percentage points as compared to 1995, while the share grew by around 7 percentage points in Switzerland and France and more than 13 percentage points in the Netherlands.

Figure 2.4. There is room for progress in digitalisation

Digital economy and society index, scale from 0 to 100, 2021



Note: A composite overall index is calculated as the weighted average of the four main dimensions: connectivity (25%), human capital (25%), integration of digital technology (25%) and digital public services (25%).
Source: European Commission (2021), Digital Economy and Society Index, https://digital-agenda-data.eu/.

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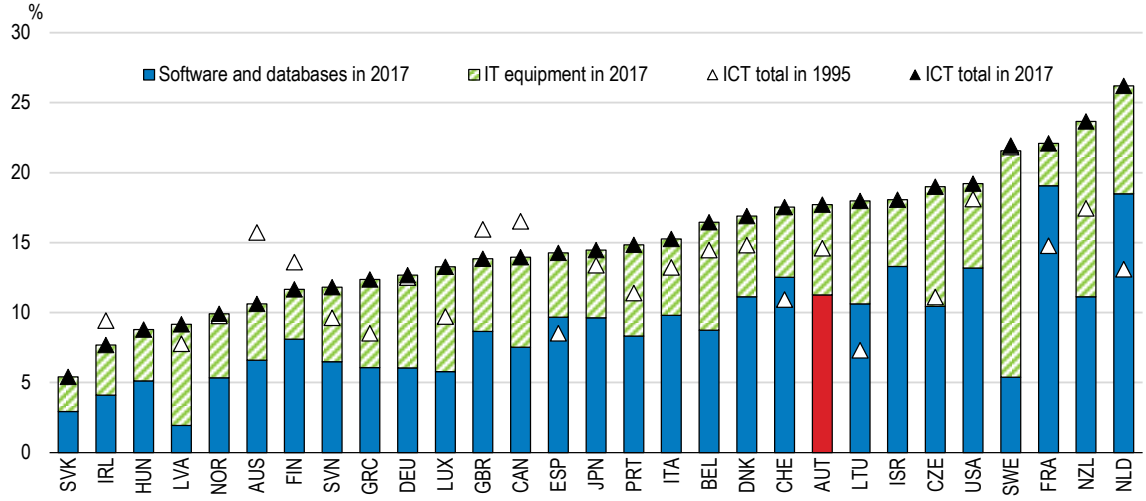
Figure 2.5. The share of ICT investment is elevated but below the top-performers

Total economy, current prices, as a percentage of total non-residential investment



Note: Data on ICT, software and databases and IT equipment for Denmark, Japan, Latvia, Norway, Portugal and Spain correspond to 2016. Data on IT equipment for Sweden correspond to 2017, data for software and for total ICT correspond to 2016. Data on IT equipment for Greece correspond to 2017, data for software and for total ICT correspond to 2015. Data on software and databases for Poland correspond to 2015.
Source: OECD Compendium of Productivity Indicators 2019 and OECD National Accounts database.

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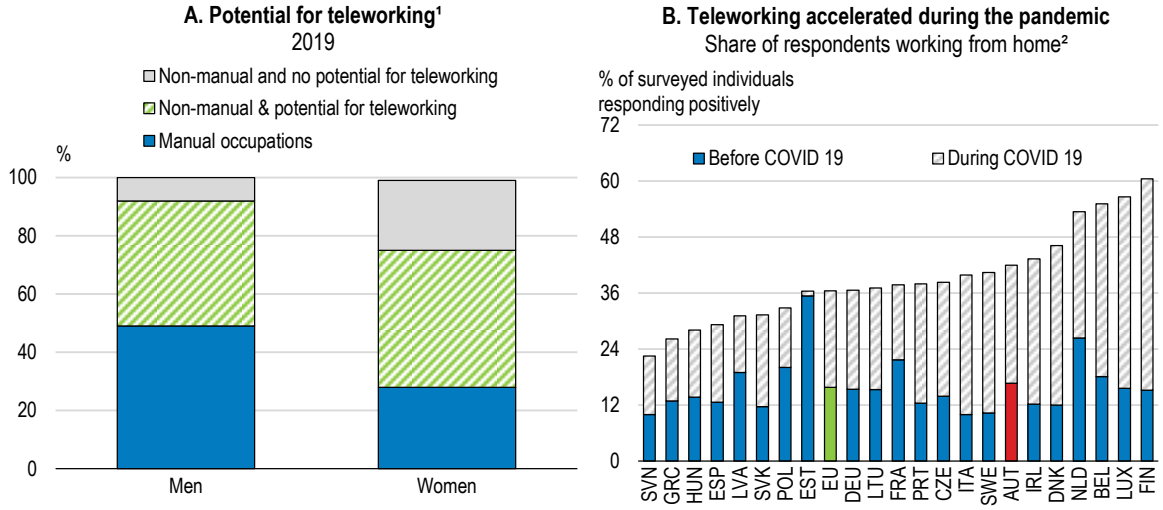
The COVID-19 pandemic has provided a much-needed push for digitalisation in Austria. Lockdowns and other measures to avoid physical interactions have increased digital activity through social media and communication platforms of households. Government incentives during the pandemic and institutional innovations, including collective agreements facilitating teleworking, have helped to kick-start the catching-up process and should continue, if more supportive conditions are put in place. Teleworking and e-commerce activity have increased the priority of digitalisation for many Austrian firms (EY, 2021). While before the pandemic around 15% of all employees were working from home, a bit more than 40% of all dependent employees did so during the pandemic (Figure 2.6). The potential for teleworking is even higher than that (Figure 2.6). The share of firms which believe that digitalisation does not provide a significant potential for their businesses was only 3%, whereas it stood at 20% in 2018 (EY, 2021).

Figure 2.6. The pandemic has boosted teleworking



1. Based on the labour force survey conducted by Statistik Austria and WIFO calculations. The sum of shares do not correspond to 100 % for Women due to small differences decimals.
2. Respondents were asked to answer a question: "Have you started to work from home as a result of the COVID-19 situation?". "During COVID 19" requires careful interpretation as the period following the survey is not taken into account. Unweighted average for the EU aggregate.
Source: J. Bock-Schappelwein, "Welches HomeOffice-Potential birgt der österreichische Arbeitsmarkt?" , WIFO Research Briefs 4/2020 and Eurofound (2020), Living, working and COVID-19 dataset.

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Adapting to climate change will transform the business sector

Faster transition to climate neutrality is expected to foster the supply of related goods and services. Both local demand dynamics and international market share gains are expected to contribute. Austria's Ministry of Environment has estimated that for example, for every million Euro of government help for building rehabilitations and insulations, five net new jobs are created. Knowledge- and skill-formation dynamics and spill-overs may play an even more important role.

Prospects are particularly promising in renewable energy clusters. Austria is a world leader in this area, especially in hydropower and in bio energies. Austrian designers and producers of related goods and services start to face highly supportive domestic and international market conditions. Their capacity to seize ensuing growth and job creation opportunities, including in privately owned small-size niche firms, will contribute to the aggregate supply performance of the economy. Technological start-ups should be able to mature into fully-fledged business organisations in domestic and international markets. With the

recently passed “Renewables Expansion Law” Austria has committed to a strong growth path in renewable energies. The business environment should support this path.

There are also adjustment challenges in carbon-intensive sectors, i.e. industrial activities using emission-intensive processes or inputs, or producing goods and services servicing emission-intensive activities. Austria hosts a wide range of such sectors, including iron and steel, stone and earth, paper and pulp, refineries and petrochemicals. They employ large numbers of workers and may be the principal employer in certain regions. Under stricter emission regulations and higher carbon prices, they can either renew their production processes, or scale down their operations. In turn, synergies may arise between emission-saving endeavours and digitalisation. This is exemplified by the optimisation of fertiliser use in Austrian agriculture with the help of digital management tools. All in all, both investment needs and skill adjustments are bound to be large, as illustrated by the ongoing transformations in the car cluster (Box 2.1).

Box 2.1. Restructuring in the Austrian car cluster

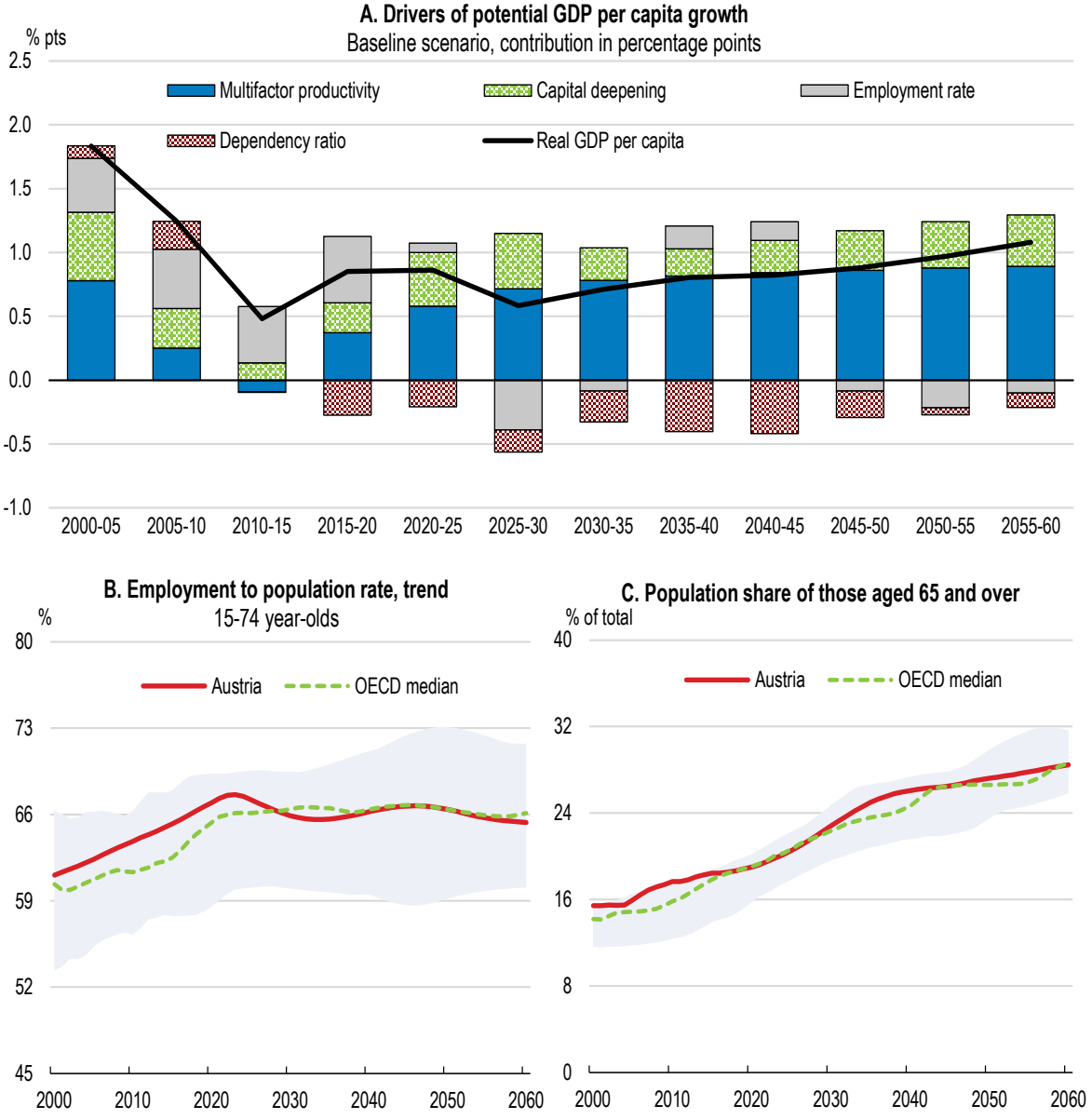
The transition to a more effervescent business environment is exemplified by Austria’s large car cluster. The sector employs nearly 10% of total manufacturing employment and is specialised in the production of high-quality car and car engine parts. It works principally, but not only, for German global car brands. The ongoing transition to electrical traction is overhauling the entire value chain. It is reducing demand for mechanical parts and boosting demand for electro-mechanical and electronic components. Several Austrian firms are well-resourced and are already positioning themselves in these new niches. Projections suggest that Austria’s total value-added in the sector will grow through 2030 and beyond. However, part of the sector’s know-how, production capacity and skilled labour is turning obsolete. Winners and losers are different people and firms, and are located in different regions. Policymakers will need to cater, in the period ahead, to the specific co-operative research and development project proposals of emerging businesses and to their specific vocational training needs. They will also have to accompany the adjustments in the shrinking parts of the sector. Upcoming technologies such as hydrogen engines and synthetic fuels are also in sight and Austria invests in these new frontiers. For example, the city of Graz is planning to put the first hydrogen buses into operation. Synthetic fuels are being investigated in firms using or producing heavy commercial vehicles. New business opportunities and restructuring are emerging in the value chains.

Sources: Streicher et al. (2020); Frauenhofer Austria (2021); Friesenbichler et al. (2021); Keil (2021); McKinsey (2021).

The population is ageing

Advances in medicine and healthier lifestyles lead to longer and healthier lives. While this development increases happiness and well-being, ageing also constrains the growth of the working-age population and thus has a direct negative effect on output growth. Fertility rates declined from around 2.7 births per woman in 1960 to 1.5 in 2020. Life expectancy rose at the same time from 67 years for new-borns in 1960 to more than 80 years in 2020. Going forward, the share of the working-age population, the 15-74 years old according to OECD’s new definition, in the total population is projected to decrease from around 76% in 2020 to around 69% in 2060 (Figure 2.7, Panel B and C).

Figure 2.7. Productivity growth set to be the main driver of GDP growth



Note: In Panels B and C, the shaded area denotes the 25th to 75th percentile range of available data for OECD countries.
Source: OECD calculations based on OECD Economics Department Long-term Model and United Nations (2019), World Population Prospects: The 2019 Revision, Online Edition.

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The smaller and older working-age population will intensify pressures on labour markets. Ageing limits the talent pool and exacerbates existing skill shortages. Through its relationship with health, ageing has a further constraining effect on the potential workforce. The share of 80-year olds will double by 2045. It will amount to around 15% of the total population by 2060. Rising female participation has offset some of the negative ageing effects in recent decades, but without reforms that further incentivise the uptake of work by women, these gains are projected to be exhausted by the end of the 2020s. If well managed, labour migration can alleviate the negative effects of ageing. Ageing requires a better allocation of workers across occupations and firms to compensate the impact of the declining workforce on potential growth. This needs to be combined with measures to address skills mismatches.

The aggregate productivity effects of ageing are undetermined. A smaller workforce and an intensified search for suitable talent may push employers to be more innovative in organising work and may thus lead to higher productivity (Goodhart and Pradham, 2020). Ageing may also come with a change in tastes and preferences and thus expand existing markets or create new business opportunities for entrepreneurs (Lewis and Ollivaud, 2020). However, ageing could weigh on multifactor productivity growth (Aiyar et al., 2016) through a reduction in innovative capacity resulting from a decline in up-to-date skills, knowledge and adaptability (Dixon, 2003; Aksoy et al., 2015).

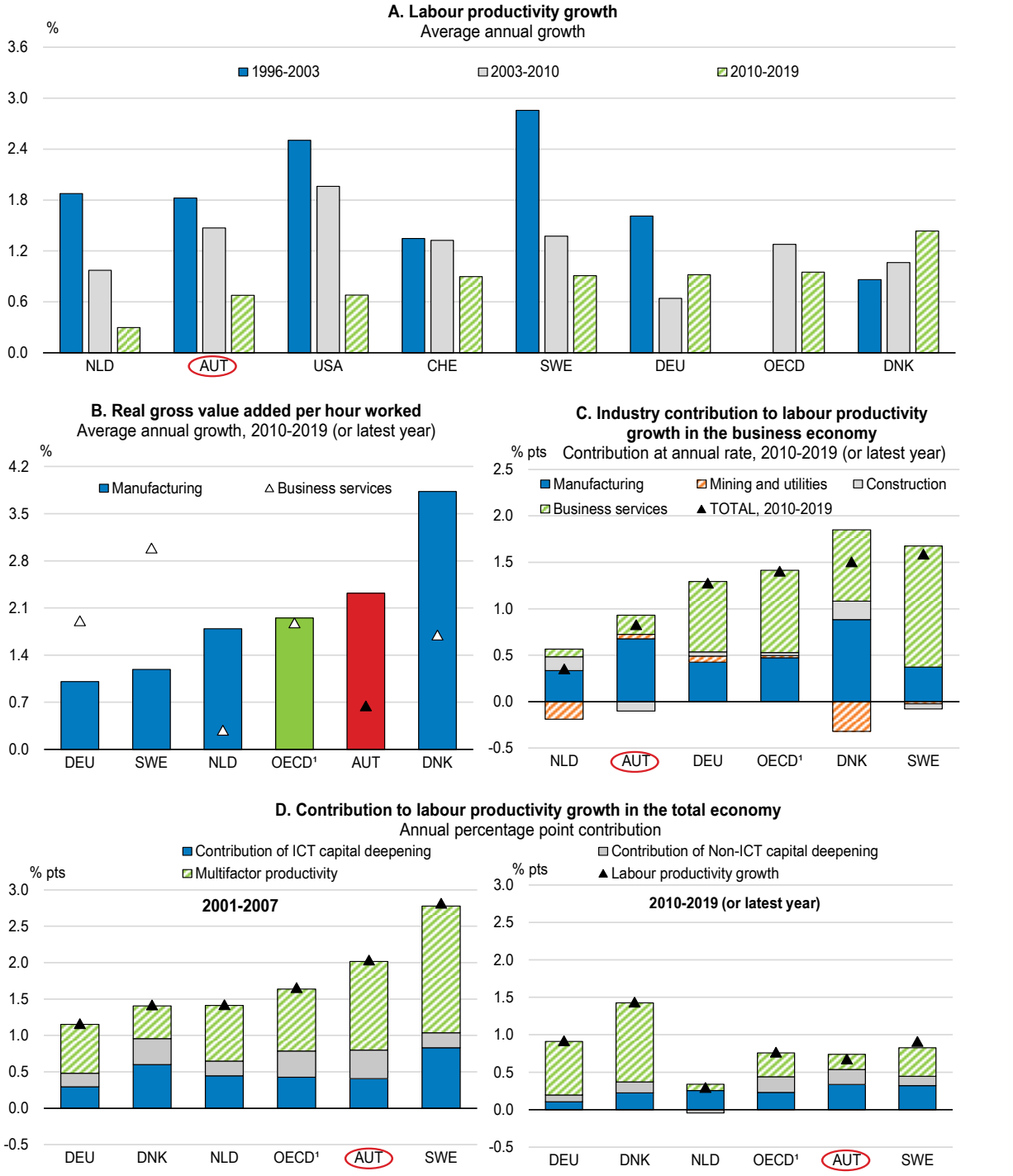
Adapting business framework conditions to promote productivity growth, an efficient allocation of resources and investments

Productivity growth before the pandemic has slowed down

While the level of productivity is high, productivity growth, as in many other OECD countries, has been disappointing since the Global Financial Crisis (Figure 2.8). A major factor in explaining this slowdown relates to the increasing share of service sectors (European Commission, 2020; Fenz et al., 2020). The productivity growth of Austrian service sectors over the past decade was one of the weakest in the OECD (Figure 2.8). This results, at least partly, from relatively rigid regulation of professional services. While preserving high service standards and consumer safety norms should continue to be a high priority, an increase of competition in service sectors would benefit productivity (OECD, 2019).

There is considerable heterogeneity in productivity across service sectors. Sectors like financial and insurance activities are highly productive in Austria. The more labour-intensive service sectors, in particular accommodation and food services, lag behind (Fenz et al, 2020). However, the relatively low productivity growth in tourism activities should not necessarily be interpreted as a weakness. Room for productivity improvements in these sectors appears limited given that there is only some leeway for increasing output with the same number of inputs while preserving high quality standards. In international rankings of the competitiveness of tourism, e.g. the World Economic Forum's tourism competitiveness ranking, Austria ranks favourably.

Figure 2.8. Productivity growth has slowed down



Note: In Panel A, labour productivity refer to GDP per hour worked at constant prices (USD, 2015 PPPs). In Panel B and C, business services refer to business services sector excluding real estate. Unweight

1. Unweighted average for the OECD aggregate.

Source: OECD (2021), OECD Productivity Statistics (database) and OECD (2021), OECD Compendium of Productivity Indicators (online Webbook).

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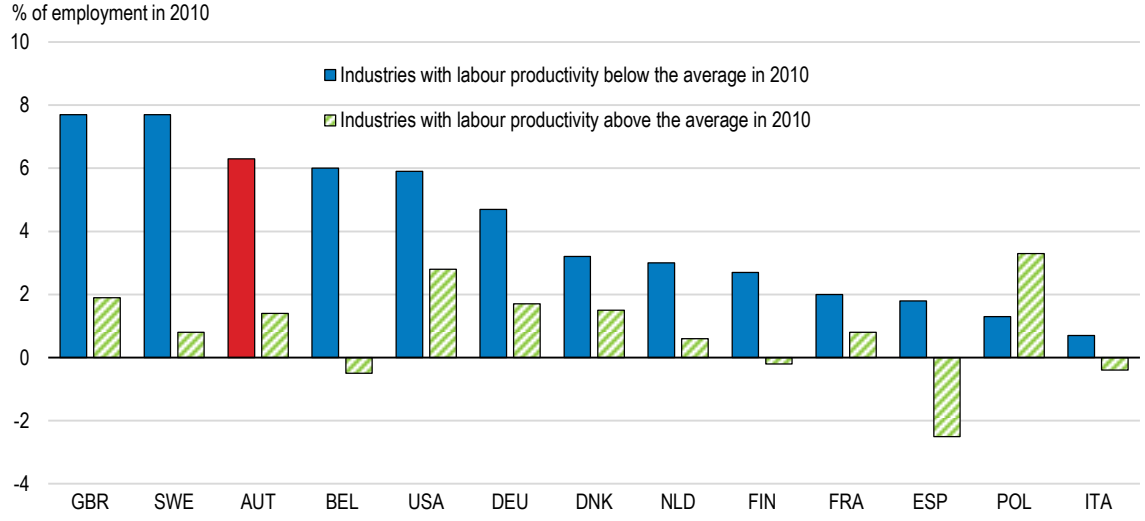
The reallocation of resources to more promising sectors and firms tends to be low (Figure 2.9). The efficiency of resource allocation can be evaluated by comparing employment growth of more and less productive sectors. While business sectors that had a below average level of productivity in 2010 saw an increase in their employment of around 6%, employment in sectors with above average productivity only grew by 1.4%. Analysis based on more granular data, e.g. from the OECD's DynEmp Database, confirms this finding but also suggests that the impact of reallocation is heterogeneous across sectors (OECD, 2019c). While its impact on productivity is positive and significant for non-financial market-services, it is negative for manufacturing sectors (Peneder and Prettner, 2021). Long employment spells, low levels of regional mobility but also, possibly, a high coverage of workers in centralised collective bargaining systems may be factors that constrain a faster pace of reallocation (Huber et al., 2017).

Figure 2.9. More productive industries grew less than other industries

Change in total employment, 2010-17 or latest year



Note: Industries are separated into two groups: below and above the average of labour productivity in 2010. Average labour productivity is measured as gross value added per person employed. Data for France, Germany, Italy, Poland, Sweden and the United States refer to the period 2010-16. See the source for more details.
Source: OECD (2019), OECD Compendium of Productivity Indicators 2019.

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Foundations based on the 1993 Private Foundation Act constitute a peculiarity of the Austrian economy (see also Box 2.2). Foundations were granted certain tax advantages upon their introduction and were intended to counteract capital outflows and facilitate business transfers, in particular across the numerous small- to medium-sized family businesses. Over the years, foundations lost most of their tax advantages. Distributions from a foundation are taxed with a 27% withholding tax.

After various reforms of the Private Foundation Act, the governance of foundations appears overly restrictive. A series of leading decisions of the Austrian Supreme Court have brought relatively far-reaching curtailments of beneficiaries' rights of influence, supervision and control (Österreichischer Stiftungsverband, 2021). A foundation's initial purpose may be in contradiction with the business objectives and needs the foundation is holding or building up. Potentially, this could hamper firms' upscaling and growth. To what extent this rather rigid framework of private foundations constitutes an impediment to business dynamism requires an in-depth analysis. This would provide the necessary information base and thus complement the reform agenda on "making the private foundation law more attractive in an

international comparison while strengthening the position of beneficiaries" of the current government programme.

Box 2.2. The role of private foundations

The 3 014 private registered foundations hold interest in around 10 200 companies, which account for 350 000 workers, roughly 10% of total employment. The 1993 Private Foundation Act created the legal base for private for-profit foundations, which are legal entities without a proprietor. This complemented legislative rules for non-profit foundations, which have been in place in Austria before, as in many other OECD countries.

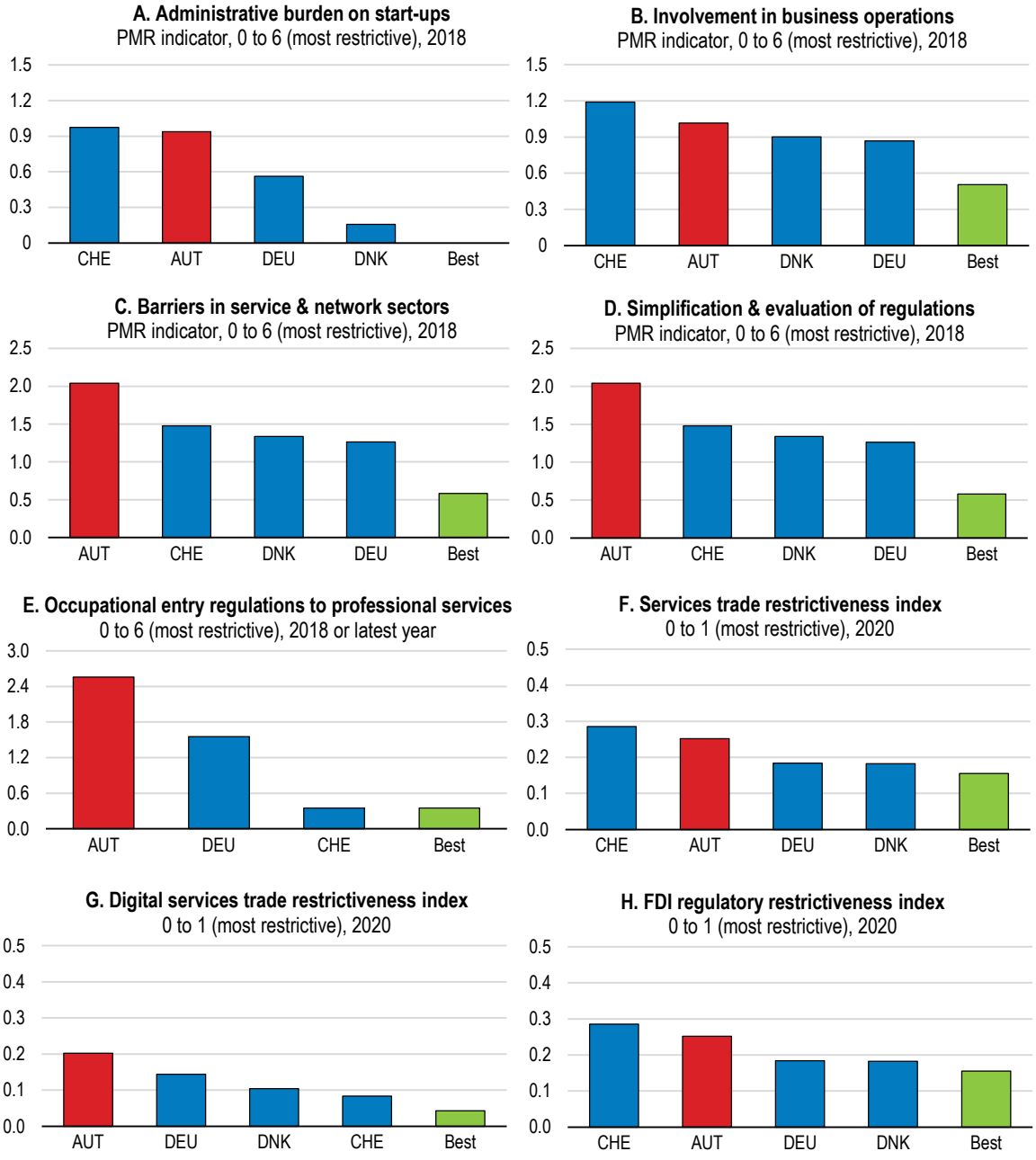
At their introduction, foundations were granted certain tax advantages. The asset transfer to a foundation was taxed at a reduced inheritance and gift tax flat rate. Changes in Austria's tax system, in particular the abolishment of inheritance and gift taxes in 2008, have reduced the attractiveness of private foundations. Asset transfers to private foundations are subject to a transfer tax of 2.5% and in addition –if applicable- to land transfer taxes. While the income of private foundations is subject to corporate income taxes, income in the form of domestic and foreign dividends are exempt from corporate taxation. Distributed donations from a foundation to a beneficiary are subject to a withholding tax of 27.5% (Österreichischer Stiftungsverband, 2021).

A main motivation of introducing private foundations was to provide a highly flexible framework for private wealth planning, in particular for family-owned businesses to ensure business continuity within the family (Österreichischer Stiftungsverband, 2021). The founder enjoys great flexibility in setting up the foundation deed and in determining the purpose of the foundation, which is then implemented and executed by the Board of Directors of the foundation. Private foundations created for the benefit of a natural person can be set up for a maximum period of 100 years, which can be extended by the ultimate beneficiaries for another 100 years. A private foundation allows to keep the business within the family, i.e. protects assets within the family, and can help to avoid split-ups in case successors disagree about the future of the business (Österreichischer Stiftungsverband, 2021). Similarly, foundations can also be used to withhold business assets from heirs and thus protect the assets from the family. A further motivation was to counteract an outflow of capital and subsequent employment and to attract foreign capital (AK, 2009).

More vibrant service markets would spur productivity growth

Overall regulatory barriers to competition are broadly in line with the OECD average, but are higher than in the peer countries (Figure 2.10 and Figure 2.11). The 2018 OECD review of product market regulations underlines that regulations in several areas are close to international best practice, notably the governance of state-owned enterprises, regulations in e-communication sectors but also the assessment of impacts of new reforms on competition. While administrative barriers to start-ups are overall similar to the OECD average, they pose a consistent hurdle and lifting remaining barriers would help to increase business dynamism.

Figure 2.10. Austrian competition rules are restrictive in several market segments



Note: Data in Panel E are based on Von Rueden and Bambalaite (2020). The occupational entry regulations (OER) indicator is highly correlated with the PMR indicator for the professional services, resulting from the inclusion of the information embedded in the 2018 vintage of the PMR indicator. The sample of the analysis covers 18 OECD countries only.

Source: OECD (2020), OECD 2018 Product Market Regulation Database; Von Rueden, C. and I. Bambalaite (2020), "Measuring occupational entry regulations: A new OECD approach", OECD Economics Department Working Papers, No. 1606; OECD (2021), "Service Trade Restrictions Index by services sector" and "Digital Services Trade Restrictiveness Index" in OECD Industry and Services Statistics (database); and OECD FDI Regulatory Restrictiveness Index (database).

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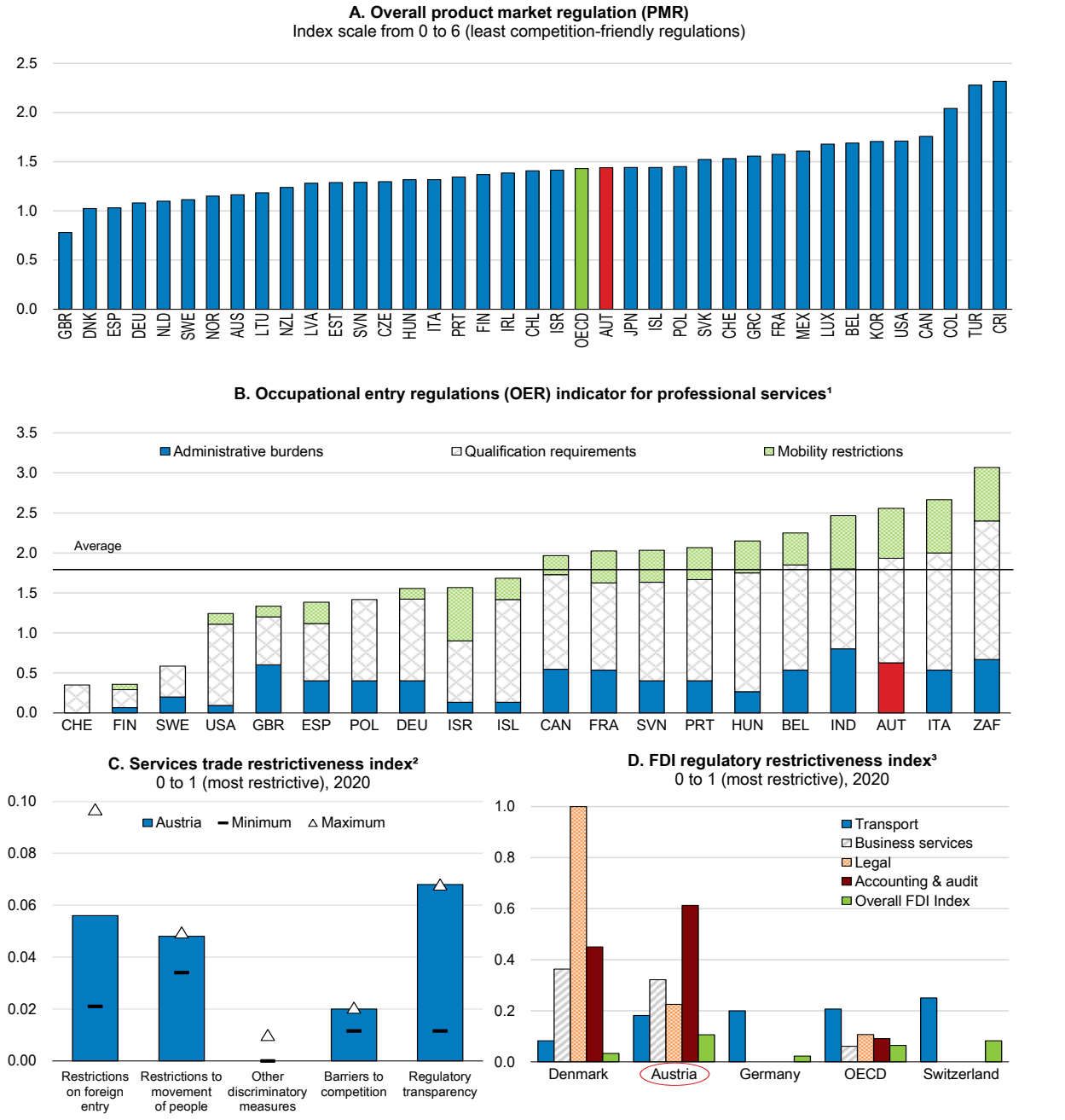
There is ample room for improvement regarding barriers to competition in service and network sectors. While earlier reforms in network sectors had opened them to competition, the framework remains restrictive in rail transportation, road freight, retail trade and the distribution of pharmaceuticals.

Occupational entry regulations for professional services are among the most restrictive in the OECD area (Figure 2.10 and Figure 2.11). The share of the workforce subject to occupational licences is elevated as compared to other European countries (Bambalaite et al., 2020). Making the licensing system more open to competition, while preserving high quality standards, would improve the efficiency of labour allocation and benefit aggregate productivity.

Restrictions to trade in services are slightly above the OECD average and significantly tighter than in the peer countries (Figure 2.10 and Figure 2.11). The share of services in inward foreign direct investment is elevated. Services play an important role in adding value to Austria's exports (OECD, 2020). More open markets for service trades would help to boost the productivity of the service sectors. This pertains particularly to market need tests applied to foreign service firms' workers. They constrain the mobility and inward migration of high-skilled labour, ultimately impeding productivity-enhancing inward foreign direct investments.

Barriers to foreign investment are higher than the OECD average (Figure 2.10 and Figure 2.11). In particular, peer countries like Germany and the Netherlands rank better than Austria. Reducing these barriers would help to address the sluggish growth rates of inwards FDI in recent years and thus underpin investment, employment and productivity growth. The sectoral breakdown of FDI restrictions confirms that Austria tends to be more rigid in terms of regulations regarding professional services, in particular regarding audit, legal, accounting and engineering professions. Reducing these restrictions to the EU average would help to spur resource allocation and ultimately productivity.

Figure 2.11. Business regulations are in line with OECD averages but professional service restrictions remain high



1. Based on Von Rueden and Bambalaite (2020). The occupational entry regulations (OER) indicator is highly correlated with the PMR indicator for the professional services, resulting from the inclusion of the information embedded in the 2018 vintage of the PMR indicator.
2. In Panel C, national median is calculated over the 22 subsectors. The minimum and maximum for each category are chosen as the corresponding STRI score among Austria, Denmark, Germany, Netherlands and Sweden.
3. The index scores for business services, legal and accounting and audit are registered as the least restrictive (zero) for Germany and Switzerland.
Source: OECD (2020), OECD Product Market Regulation Database, Von Rueden and Bambalaite (2020), "Measuring occupational entry regulations: A new OECD approach", OECD Economics Department Working Papers, No. 1606, OECD (2021), "Service Trade Restrictions Index by services sector" in OECD Industry and Services Statistics (database); and OECD FDI Regulatory Restrictiveness Index (database).

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Austria has a well-functioning insolvency and restructuring system

The number of corporate insolvencies in Austria has decreased by around 40% in 2020 (OeNB, 2021a; OeNB, 2021b). A similar decline has been observed in many other OECD countries, too. While this appears counter-intuitive at first sight, the decrease in insolvencies can be attributed to two factors. First, the government support package has helped to prevent a widespread liquidity shortfall by supporting the financing of working capital (OeNB, 2021a). Across all support measures, deferrals of corporate taxes and social security contributions had the biggest dampening effect, followed by fixed costs subsidies and short-time work (OeNB, 2021b). Second, the authorities have lifted the obligation to file for bankruptcy from March 2020 to June 2021, similar to other OECD countries (OECD, 2021a). The decrease in insolvencies was more pronounced in the most hard-hit sectors, which have also received substantial government support (Elsinger et al., 2021). Insolvency rates for smaller firms also tended to be lower than for larger firms, underlining that SMEs have benefitted relatively more from the government support package (Elsinger et al., 2021).

Austria has a well-functioning insolvency and restructuring system and would be prepared for an elevated number of COVID-19 related insolvencies. Corporate insolvencies are expected to increase with the full rolling back of the government support package. Further, the requirement to file for insolvency in case of over-indebtness has been resumed since June 2021. Besides the comparatively high recovery rate, about one third of all insolvent firms are restructured successfully. The Insolvency Act, implemented in 2017, provides the legislative framework for bankruptcies and re-organisations of commercial entities and private individuals. Across legal entities, limited and unlimited partnerships, incorporated businesses but also municipalities are subject to insolvency proceedings. Austrian insolvency law is debtor friendly. It supports the restructuring of debtors and aims to achieve a high recovery rate for creditors. On average, Austrian insolvency law leads to relatively strong efforts for helping debtors to continue their business, thereby not excessively punishing business failure.

The insolvency system has been adjusted during the pandemic. While suspending insolvencies helps to preserve precious human and organisational capital of viable firms, the authorities should encourage timely debt restructurings of unviable firms to accelerate productivity-enhancing resource allocation (Demmou et al., 2020). Austria has implemented the EU Directive on Preventive Restructuring Frameworks and Second Chance in July 2021. The preventive restructuring proceedings allow for a version of pre-pack proceedings. Preventive proceedings can occur if a business insolvency is likely, for example if the share of equity capital over total assets falls below a certain threshold or if it would take a long time to pay back existing debt. If the debtor agrees with a majority of financial creditors on a restructuring plan, the business can opt for a simplified procedure that does not involve going through a formal bankruptcy procedure. The simplified procedure is not part of the EU Directive and thus not available for claims against foreigners. The initiative to introduce this simplified procedure alongside preventive restructurings is welcome and should contribute to alleviate pressure on the insolvency system if a wave of insolvencies materialises. Further simplifying and speeding-up insolvencies and restructurings would help to prevent congested courts. This is important because empirical evidence highlights that insolvency systems are less efficient when courts are congested. Congested courts are positively associated with the liquidation of a higher number of viable firms than desirable (Iversion, 2018). For example, Sweden could improve the prevention of potentially costly and time-consuming restructurings through viability tests, which screen for eligible businesses before undergoing a procedure (OECD, 2021a).

Stimulating the adoption of key digital technologies

Relatively low business dynamism constrains the diffusion of digital technologies

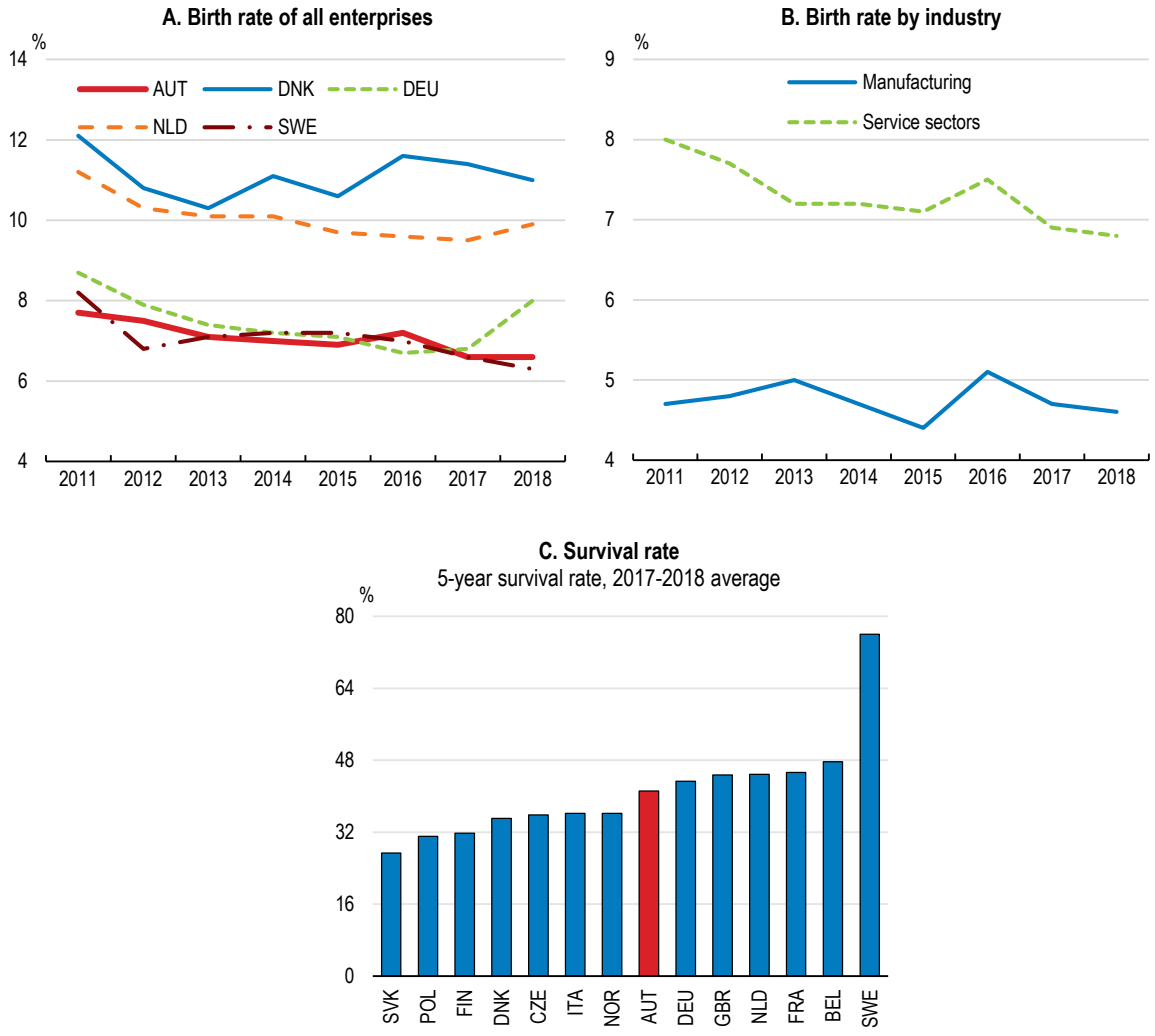
Entrepreneurship and a dynamic business sector are crucial for the diffusion of new technologies and are closely linked to digitalisation and innovative capacity (OECD, 2015; European Commission, 2020). Young firms are often the first adopters of new technologies, in particular regarding digital tools and services and business models, and are a vital factor in making them more broadly available for the rest of the business sector (OECD, 2017). Further, young firms also tend to engage more in very risky break-through innovations and thus account for a significant part of aggregate innovative activity (Farnstrand Damsgaard, 2017).

The entry of new firms has been on an upward trend recently but overall, the low level of business dynamism prevails (OECD, 2019c; Figure 2.12). Survival rates of start-ups are elevated, though the share of total employment in young firms is low pointing to barriers to upscaling (OECD, 2021b; Figure 2.12).

Entry rates in service sectors, notably in ICT service sectors, are among the lowest in the OECD (Figure 2.12). The service sector also lags behind with respect to the upscaling of existing firms. The gap in labour productivity of SMEs to large firms in service activities is higher than in peer countries. This is in contrast to manufacturing where the gap is relatively low (OECD, 2019). Besides framework conditions and skills, the relatively small size of markets for risk capital, which includes venture, growth and equity capital, are also key reasons behind the low level of business dynamism. Despite that, the number of dependent employees in information sectors increased in the wake of the pandemic by almost 12% in two years.

Figure 2.12. Business dynamism is lagging behind

Total business economy



Note: The total business sector refers to total industry, construction and market services, except holding companies. Manufacturing refers to ISIC Rev.4 Divisions 10 to 33. Services refer to business sector services: Divisions 45 to 82 excluding 642 (activities of holding companies).
Source: OECD (2021), OECD Structural and Demographic Business Statistics (database).

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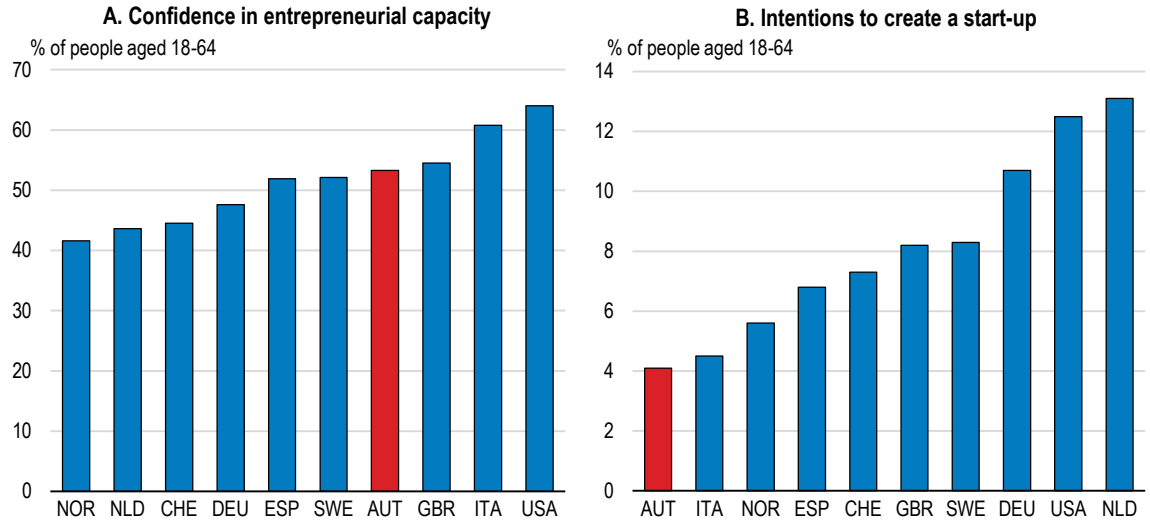
Figure 2.13. Austrians display high entrepreneurial self-confidence but limited willingness to start a business

Entrepreneurial behaviour and attitudes indicators, 2020



Note: Based on the 2020/2021 Global Entrepreneurship Monitor (GEM) Global Report. Data in Panel A refer to the percentage of respondents who believe that they have the knowledge, skills and experience required to start a business. Data in Panel B refer to the percentage of respondents who are expecting to start a business in the next three years. People involved in any stage of entrepreneurial activity are excluded.
Source: Global Entrepreneurship Monitor (2020/2021).

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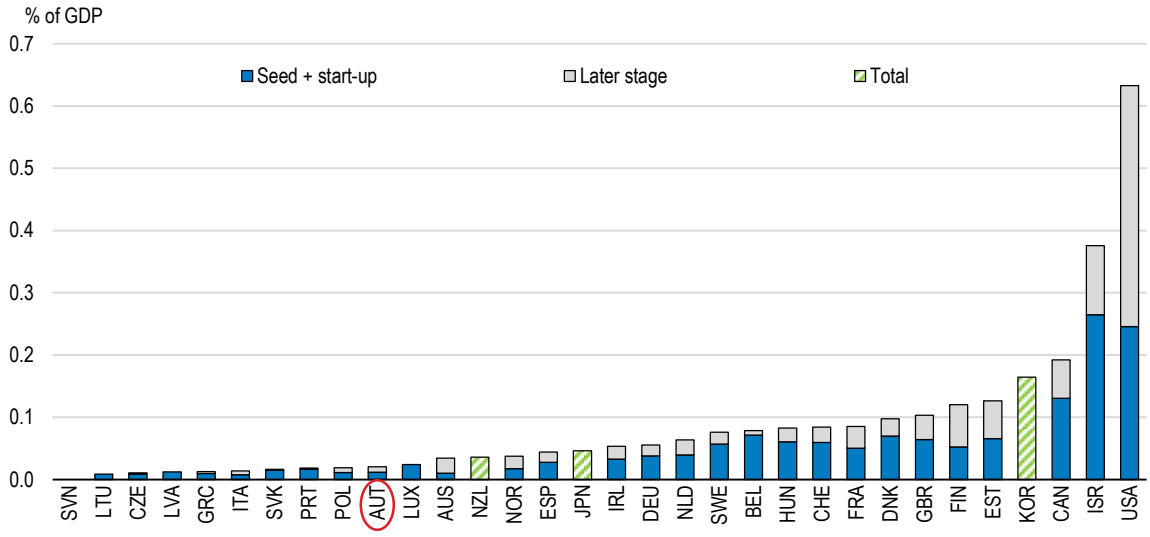
The low supply of risk capital for Austrian start-ups and young firms constitutes a major bottleneck (Figure 2.14). The authorities stimulate venture and growth capital through public subsidies and several initiatives. While the public hand provides around one-half of venture capital funding in Austria, the supply of risk capital from private investors falls short (OECD, 2018b). The lack of private venture and growth capital also impedes the development of an equity eco-system. Venture capital investors often not only contribute financially, but provide leadership and support in areas like marketing and thus benefit business development beyond finance (Bottazzi et al., 2008; Colombo and Grill, 2010). A new corporate form is under way and should help a faster scaling-up of start-ups and young firms. The new capital company form will combine aspects of stock corporation law and limited liability law. Further, it allows for less bureaucratic founding procedures, more flexible capital measures and greater employee participartion in the company's business success. While this new initiative is welcome, the authorities should also consider tax incentives to stimulate the provision of private risk capital, including by experienced foreign venture capital investors. The United Kingdom's Enterprise Investment and Seed Enterprise Investment schemes, which grants tax breaks for investments in start-ups and other eligible firms, has been successful in stimulating the financing of young firms (European Commission, 2017).

Figure 2.14. Early and later stage venture capital is underdevelopped

Venture capital investments, 2019 or latest year



Note: Venture capital (VC) is private equity capital provided to young enterprises not quoted on a stock market. VC stages are defined according to the OECD VC Harmonised Stages Definition and include support for pre-launch, launch and early stages under "Seed/start-up/early stage", which also includes support provided by angel investors, and support for expansion and growth stages under "Later stage". Data refer to 2019, except for Slovenia (2018), Japan (2018) and Israel (2014).
Source: OECD (2021), OECD Enterprise Statistics (database).

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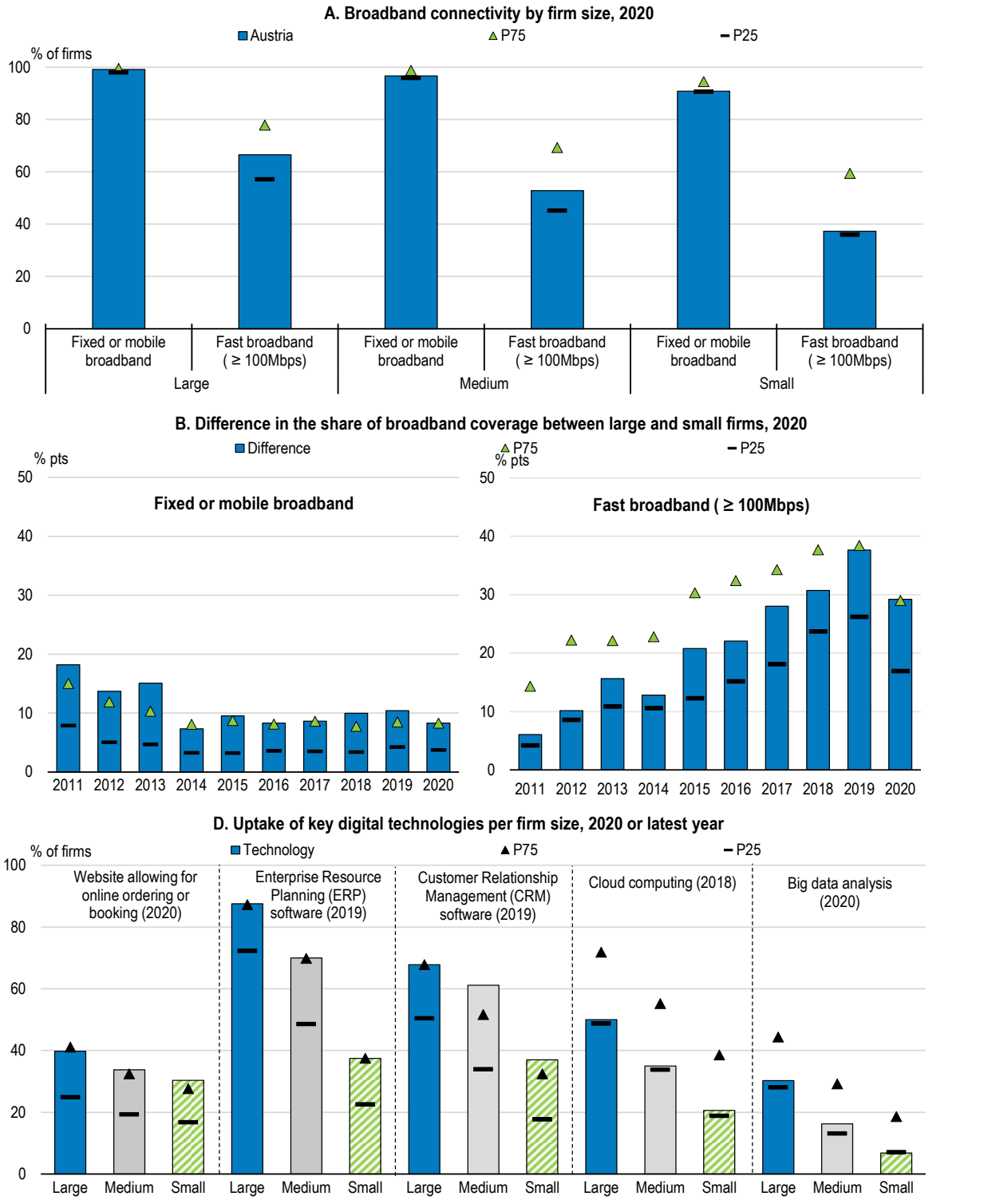
The adoption of digital technologies lags behind innovation leaders

The diffusion of digital technologies constitutes a key productivity lever (Gal et al., 2019; OECD, 2021b). Digitalisation can help SMEs to tap international markets and talent but also to balance some of their disadvantages (OECD, 2017; WTO, 2019). The potential dividends from higher adoption rates to key digital technologies are high (Sorbe et al., 2019). Policymakers have different tools at hand to boost adoption rates, like better availability of high-speed broadband, lower regulatory barriers to competition and better financing options for young innovative firms. The COVID-19 pandemic has underlined the crucial importance of well-developed and fast broadband networks for economic resilience. E-commerce and teleworking have helped to avoid a more severe downturn.

Digitalisation is a key priority for the Austrian government and a central element in the Next Generation EU package. The new business location strategy "Chancenreich Österreich" sees digitalisation as a key priority and aims at establishing Austria as one of the top 10 business locations in the world by 2040. Further, the "Digital Roadmap" includes a set of 12 overarching ambitious targets and seeks to position Austria as a leading digital business location. While progress has been made since the first "Digital Roadmap" in 2016, the digitalisation of businesses lags behind the European innovation leaders (Holzl et al., 2021; Figure 2.15). Differences in broadband subscriptions, especially at higher speed tiers, between large and small firms tend to be larger and have decreased less than in other OECD countries over the last years (Figure 2.15).While the use of corporate software solutions, like ERP and CRM systems, is relatively widespread across Austrian firms of all sizes, they tend to have the lowest adoption rates of cloud computing services and big data analysis, two promising technologies for productivity growth (Sorbe et al., 2019; Figure 2.15).

Figure 2.15. Digitalisation of businesses lags behind innovation leaders



Note: Firms with at least 10 employees. Small firms are those having 10-49 employees, medium-sized firms 50-249 employees, and large firms 250 employees or more. P75 and P25 refer to the 75th and 25th percentile of the distribution of each bar.
Source: OECD (2021), ICT Access and Usage by Business (database).

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Better access to high-speed broadband and improving digital skills promise large gains

Policymakers should build on the increased readiness for digitalisation and increase efforts to advance digitalisation. Recent OECD simulations suggest that increasing access to high-speed broadband promises large productivity gains (Sorbe et al., 2019). Part of these gains are indirect.

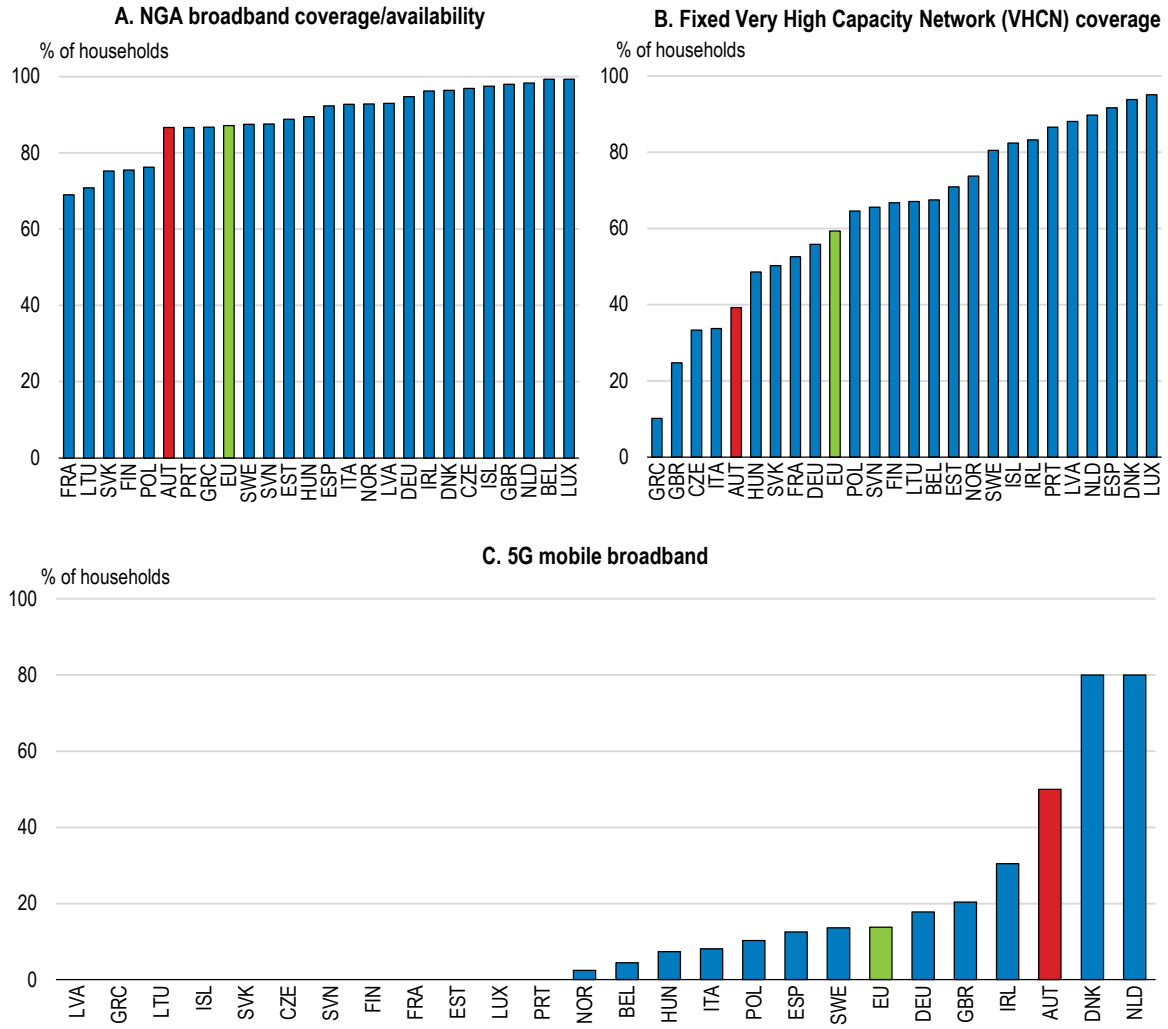
Broadband coverage in Austria has been improving significantly in recent years, notably by around 8 percentage points in 2020 as compared to 2019. While the coverage of very high capacity networks has also improved from 14% to 39% in 2020 as compared to 2019, it still lags behind the EU average (Figure 2.16, Panel B). However, Austria performs very well on mobile coverage, in particular regarding 5G networks (Figure 2.16, Panel C). Despite the relatively good availability of fixed broadband, the overall take-up is below the EU average. Moreover, with only 12% of its households subscribing to offers of at least 100 Mbps, Austria is far below the EU average. Broadband prices do not appear to be excessive. Nevertheless, facilitating more entries in the broadband service market could help to lower prices by increasing competition.

The authorities continue to provide fiscal support for a better broadband coverage. The “Breitband Austria 2020” (Broadband Austria 2020) project has boosted coverage across the country but did not fulfil its ambitious target with respect to high-speed broadband (Neumann et al., 2020; Hölzl et al., 2021). The new “Breitbandstrategie 2030” (Broadband strategy Austria 2030), adopted in August 2019, parallels the 2025 EU Gigabit goals and intends to achieve a nationwide access to Gigabit-capable broadband services (fixed and mobile) by the end of 2030.Therefore, the authorities announced that EUR 1.4 billion, supported by EUR 891 million from the EU Recovery and Resilience Facility, will be invested in the deployment of fibre broadband connections throughout the whole country.

Austria’s topography combined with its comparatively low population density constitutes a challenge for a more widespread broadband coverage. This pertains especially to high-speed broadband in more rural and mountain areas and impedes a faster digitalisation of SMEs. The low-hanging fruits with respect to the deployment of high-speed broadband appear to have been exploited already. In more rural and mountain areas, the roll out of fibre broadband may not be commercially feasible (OECD, 2014). This suggests a bigger role for the public hand, including through public-private-partnerships, in which the public sector builds the infrastructure and rents it to private firms (Hölzl et al., 2021). While developments in high capacity mobile communication technologies could offer alternatives to fiber infrastructures in low-density rural areas, these are not expected to be available in the coming 10-15 years. Besides infrastructure investments, fostering competition and innovation in broadband deployment and reducing digital divides and barriers to broadband deployment would help (OECD, 2021c). Regular assessments of the broadband markets would contribute to identifying bottlenecks and ensuring a competitive framework for broadband service deployment and provision (OECD, 2021c).

Figure 2.16. Access to high-speed broadband needs to be improved

2020



Note: In Panel A and B, data are based on components of broadbank take-up and coverage indicator for the Digital Economy and Society Index (DESI). In Panel C, data are based on one component of mobile market. The EU refers to the average of EU member countries including the United Kingdom. Next Generation Access (NGA) includes the following technologies: FTTH, FTTB, Cable Docsis 3.0, VDSL and other superfast broadband (at least 30 Mbps download).
Source: European Commission (2021), Digital Economy and Society Index, October.

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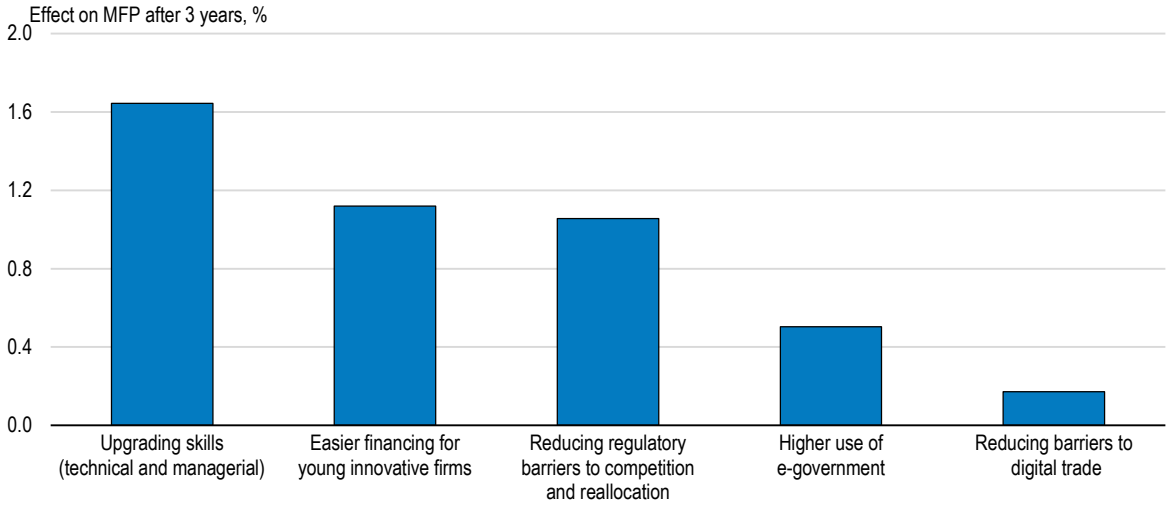
Apart from better access to high-speed broadband, structural policies that stimulate the upgrading of technical and managerial skills, easing access to financing for young innovative firms and reducing regulatory barriers to competition and reallocation have been found to have the highest potential for productivity gains in Austria (Figure 2.17). Contrary to many other OECD countries, potential gains from a more widespread use e-government services are estimated to be very low in Austria. This is because Austria is already a leader in many areas of e-government applications, in particular regarding the provision of digital public services for citizens (European Commission, 2021a). A new composite indicator, the eGovernment maturity score, further underlines that Austria performs very well with respect to e-government as compared to other European countries (European Commission, 2021b). The provision and

use of e-government applications has several advantages, including a more efficient use of government resources, increased transparency and is positively correlated with adoption to key ICT technologies by firms (Sorbe et al., 2019). Continued efforts to maintain Austria's strong position would be welcome.

Figure 2.17. Estimated productivity gains from higher adoption to key ICT technologies

Effect of higher digital adoption on productivity closing quarter of the gap to best performers



Notes: Estimated effect on multi-factor productivity (MFP) (Panel B) of the average firm resulting from higher adoption to key ICT technologies incentivised by the closing of one-fourth of the gap to best-performing countries across a range of policy and structural factors (see Box 1 in Sorbe et al., 2019). "Reducing regulatory barriers to competition and reallocation" includes lowering administrative barriers to start-ups, relaxing labour protection on regular contracts and enhancing insolvency regimes. "Easier financing for young innovative firms" covers the development of venture capital markets and the generosity of R&D tax subsidies. "Upgrading skills" covers participation in training, quality of management schools and adoption of High Performance Work Practices. "E-government use" is measured by the share of the population that uses the internet to interact with authorities (source: OECD Science, Technology and Industry Scoreboard). "Reducing barriers to digital trade" includes lowering barriers to cross-border data flows and online sales and enhancing regulatory regimes for data privacy and security.
Source: Sorbe et al. (2019), "Digital dividend: policies to harness the productivity potential of digital technologies", OECD Economic Policy Papers, No. 26.

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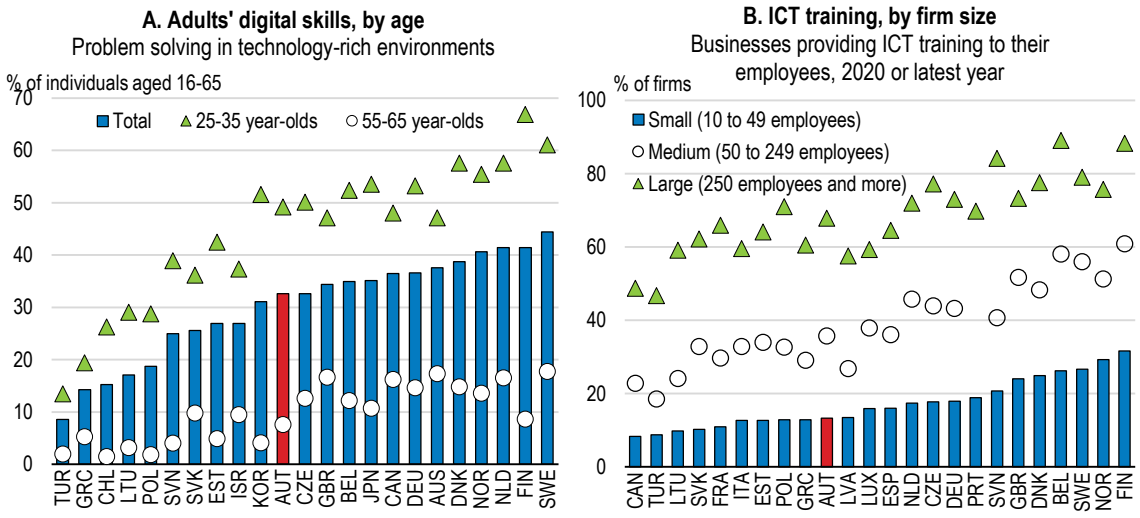
Problem-solving skills of adults for technology-rich environments fall short of top performers, though they are higher than the OECD average (Figure 2.18). This goes hand in hand with the share of firms which provide ICT training (Figure 2.18). Across all size classes, many Austrian firms provide adequate training though significantly below European innovation leaders like Finland or Norway. Developing digital skills is a major priority for the government. Programmes like the "Digital Competence Pact" aim at improving digital skills across all age groups. Various programmes, like "Digital Skills Vouchers", "Innovation Camps" and "Digital Pro boot camps", target SMEs specifically. Awareness campaigns complement efforts to improve skills. Besides the "know how", awareness of the potential gains of digitalisation is important to increase diffusion of ICT technologies, in particular across SMEs (ACR, 2021).

Improving the skill base should also consider importing skills from abroad. However, this would require making the existing Red-White-Red card -- a criteria based avenue for permanent immigration for highly-skilled talent in shortage occupations from non-EU countries – more attractive, for example by lowering administrative obstacles and better promotion of Austria as a destination for professional migration.

Figure 2.18. Adults' skills and ICT training in firms lag behind top performers



Note: Data for Panel A are based on OECD Survey of Adult skills (2012 and 2015). Problem solving in technology-rich environments refers to Level 2 or Level 3 of PIAAC proficiency and measures adults' abilities to solve the types of problems they commonly face as ICT users in modern societies: co-ordinated use of several different applications, evaluating the results of web searches, and responding to occasional unexpected outcomes. For most countries, data refer to 2012; for Chile, Greece, Israel, Lithuania, Slovenia and Turkey, data refer to 2015. For Panel B, firms with at least 10 employees that provided any type of training to develop the ICT related skills of their employees within the last 12 months. Data for Canada, Greece and the UK refer to 2019.

Source: OECD (2019), How's Life in the Digital Age?: Opportunities and Risks of the Digital Transformation for People's Well-being. OECD (2021), ICT Access and Usage by Businesses (database) and OECD (2021), OECD Telecommunications and Internet Statistics (database).

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Strengthen digital security

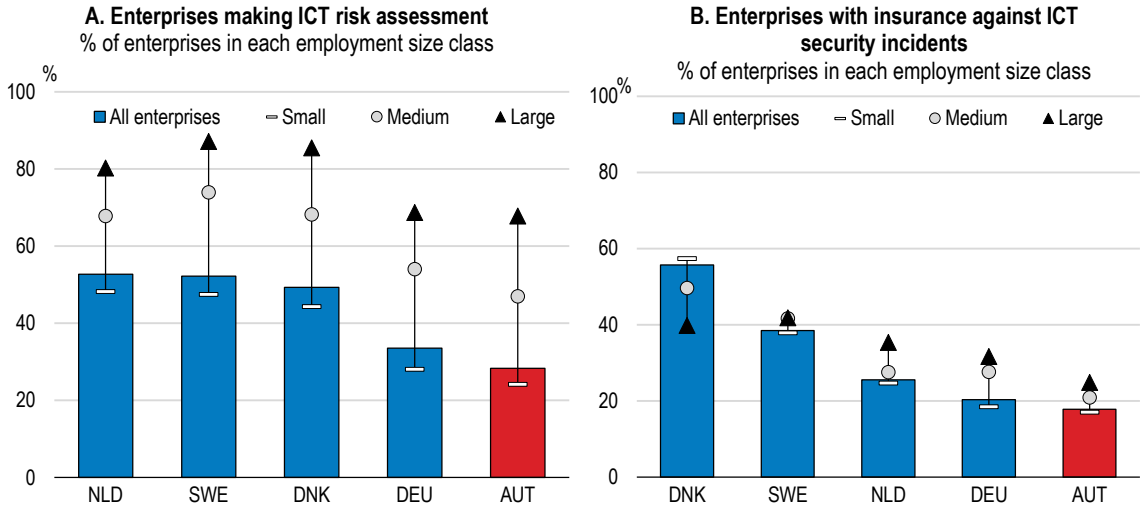
Strong digital security provides the necessary ground for a reliable use of digital technologies and services. Risks to digital security emerge from intentional exploits of existing vulnerabilities but can also result from unintentional threats, such as human errors. The COVID-19 pandemic has come hand in hand with an increase in the number of cyber attacks and consumer fraud related to the use of online shops. This results from a combination of higher use of digital technologies and intentional temporary lowering of IT security barriers of firms to enable workers to work remotely from home (Bundeskanzleramt, 2021). According to a survey of 500 firms in Austria, 60% of them were victims of cyber attacks in 2020 (KPMG, 2021). This coincides with a low development of digital security risk management practices across Austrian firms, in particular smaller ones, as compared to peer countries (Figure 2.19). Moreover, the Internet Ombudsman for online consumer protection, an independent body supported by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection, has registered a 37% increase in consumer complaints and a 55% increase in reports about fraudulent websites during 2020.

The Austrian authorities have put in place a digital security strategy in 2013. It aims at building a "culture of cyber security" through various measures to secure a trustworthy ground for the digital society to operate, international cooperation at the European and global level and by increasing awareness amongst consumers and firms. The 2016 Network and Information Security Directive of the European Union, which ensures common security measures of networks and information in the European Union, was implemented into Austrian law in 2019. Nevertheless, an awareness campaign on digital security targeted at smaller businesses could help to address lagging practices in digital security risk management. For example, the Netherlands have spent around EUR 5 million in 2019 on building more awareness of threats to digital

security. Their Digital Trust Centre regularly organises workshops for smaller businesses and gives independent advice on enhancing digital security.

Figure 2.19. Digital security risk management of smaller firms needs to be improved

2019



Source: Eurostat (2021), Digital Economy and Society Statistics.

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Reinvigorating investments for a resilient recovery

Investment in intangible assets lags behind top performers

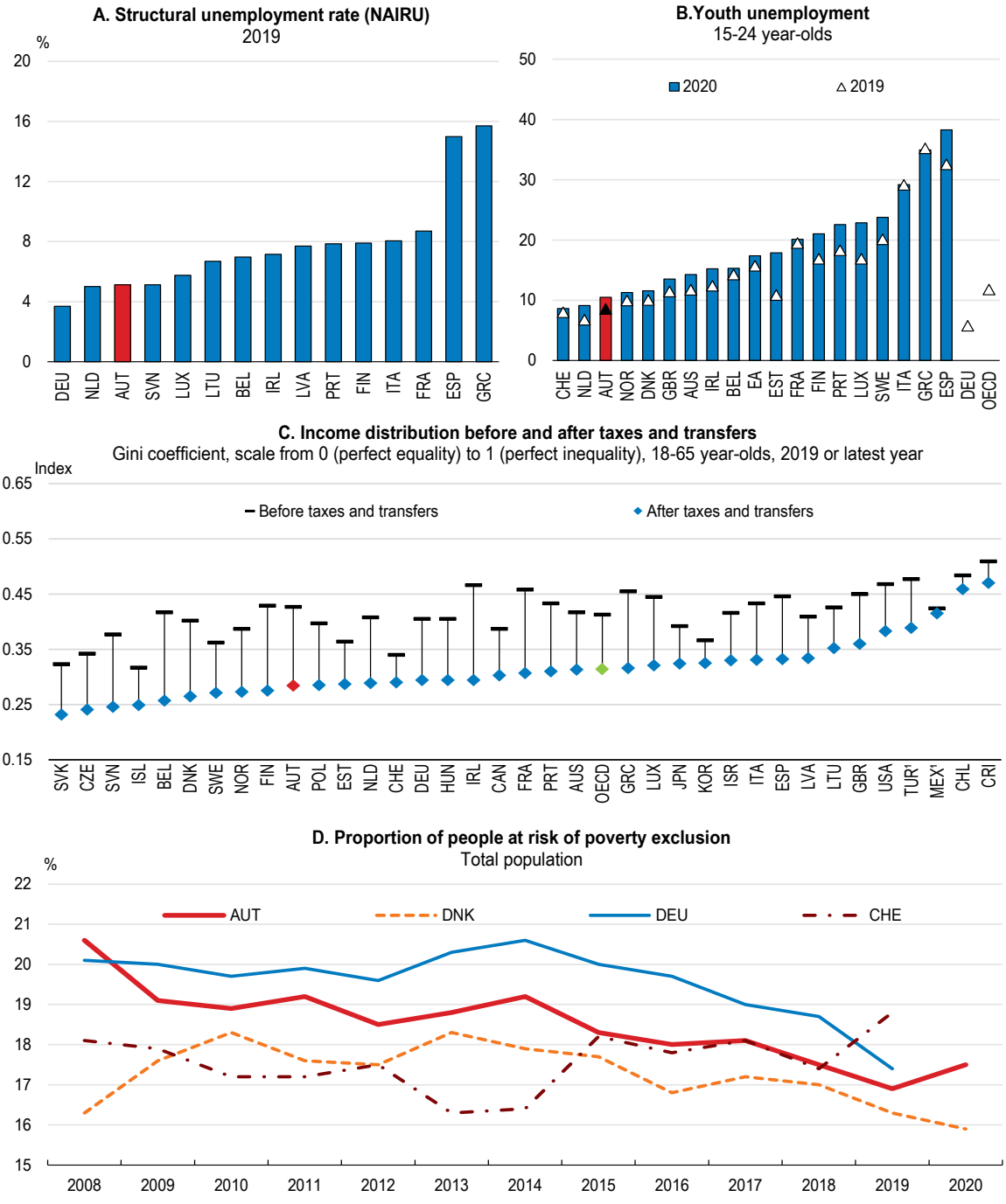
Investment activity in Austria is high but still less concentrated in intangible assets, e.g. software, databases and R&D, as compared to the top performing countries (Figure 2.20, Panel A and B). However, given Austria's higher investment rate, the share of investments in intellectual products over GDP is significantly higher than the OECD average, but still below the top performing countries. Due to an elevated share of manufacturing, manufacturing industries account for more investment than in most other OECD countries (Figure 2.20, Panel C). This extends to the regional pattern of investment. Regions where manufacturing accounts for a higher share of local GDP, with the notable exception of the Land Salzburg, have seen larger increases in investment since the Great Financial Crisis (Figure 2.20, Panel D). FDI inflows have been lagging behind the OECD average and the peer countries in recent years (Figure 2.22, Panel E). A large part of foreign direct investment in Austria is concentrated in financial and real estate activities, while foreign investment in Austrian information and communication sectors lag behind (WKÖ, 2019).

The composition of investment is changing. While investment in intellectual property products has risen significantly in the recent decade, investment in tangible assets has remained at their 2000 level (Figure 2.21, Panel B and C). Service sectors, where productivity growth has been small and the resulting productivity gap with the international frontier is largest, have only seen modest investment activity, in particular driven by an expansion of intellectual property products (Figure 2.21, Panel A).

Skills shortages and stringent regulations pertaining to product and labour markets are the major factors holding back higher investment activity (EIB, 2020). Seven in ten firms in Austria already operate at full or

above full capacity, significantly higher than the EU average of 61% (EIB, 2020). Lifting these constraints would spur growth.

Figure 2.20. Aggregate labour market performance and social transfers were upholding social cohesion before the pandemic



1. After taxes and before transfers for Mexico and Turkey.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database), OECD Labour Market Statistics (database), and OECD Social and Welfare Statistics (database) and Eurostat (2021), People at risk of poverty or social exclusion by age and sex (database).

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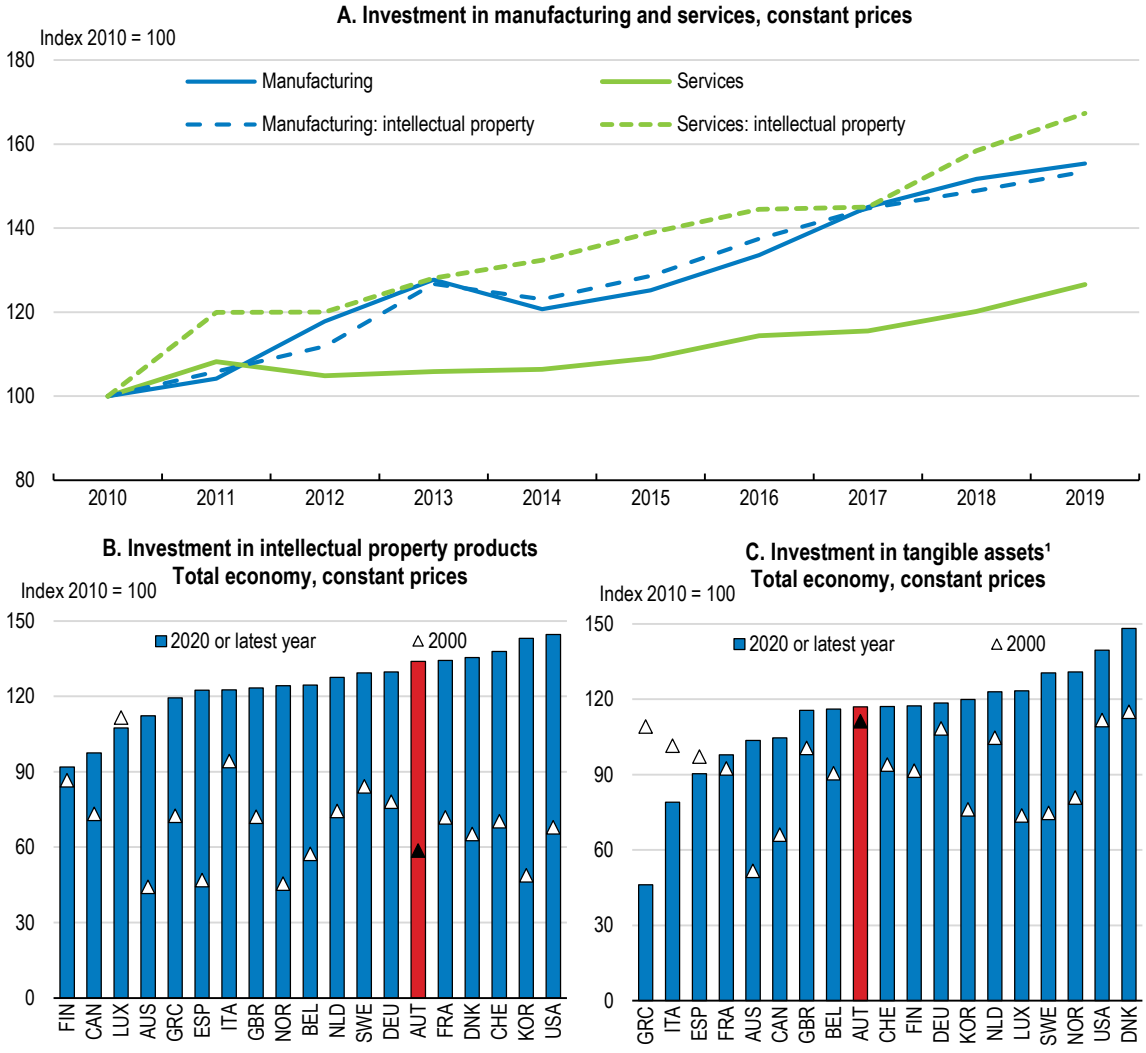
Figure 2.21. Investments have risen fastest in manufacturing sectors and intellectual property assets



1. Tangible assets inlcude dwellings, non-residential construction, machinery and equipment and cultivated assets. The sum of components in constant prices may not fully correspond to real aggregate tangible assets. Services refer to the business sector services.
Source: OECD (2021), OECD National Accounts Statistics (database).

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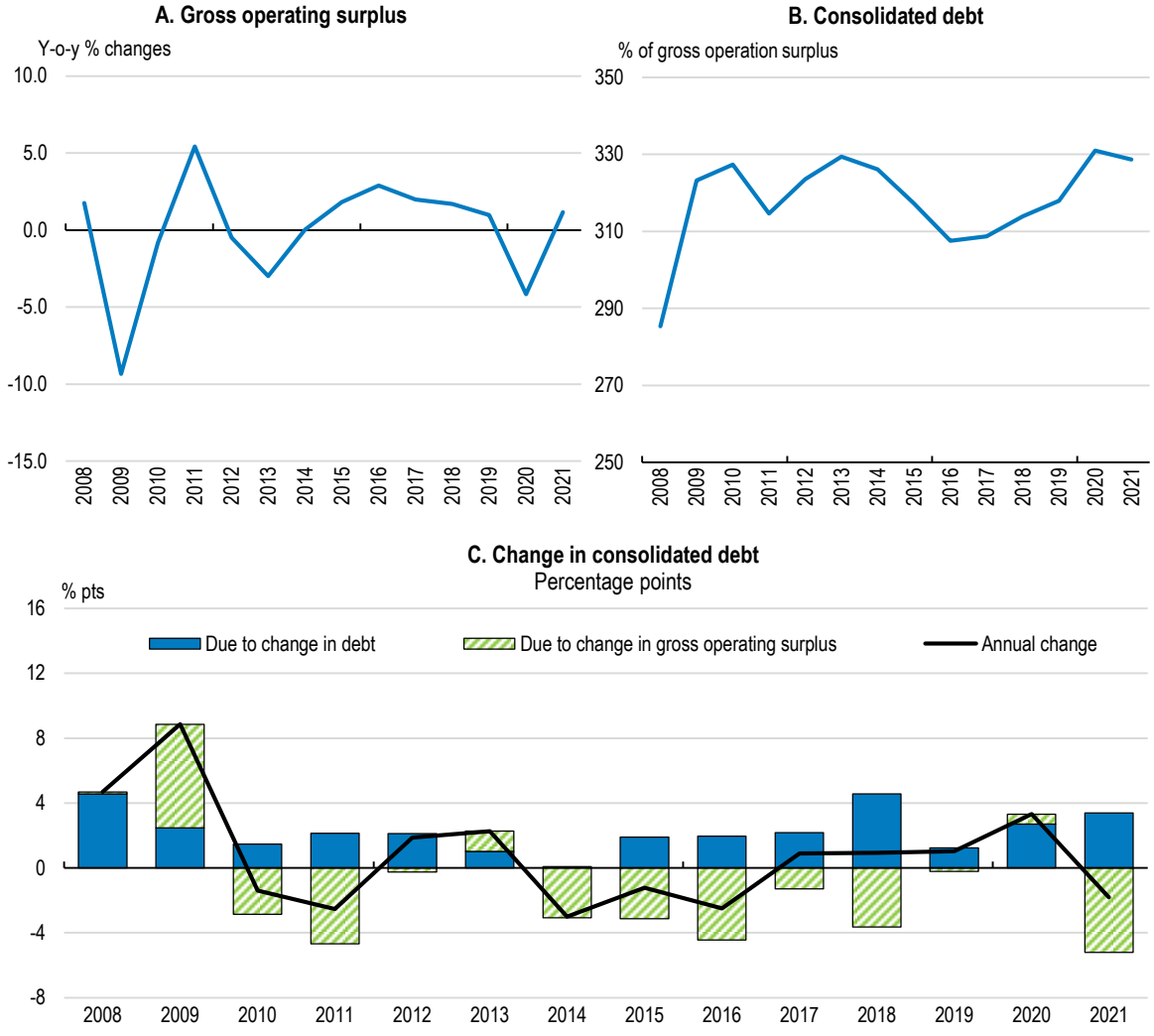
Corporate balance sheets have weakened

The impact of the COVID-19 pandemic on corporate revenues has been uneven across sectors. Contact-intensive service sectors have been hit hardest. According to preliminary estimates, output contracted by more than 30% in 2020 as compared to 2019 in arts and entertainment sectors and accommodation and food services. In manufacturing sectors, which account for around 19% of total value added in Austria, above the OECD country average, output only dropped by roughly 6%.

Figure 2.22. Support measures have upheld profitability and contained a faster rise of corporate debt

Austrian non-financial corporations



Note: Based on the average of four quarters. Consolidated gross debt is the sum of total loans granted to and debt securities issued by nonfinancial corporations net of intra-sectoral lending. Debt data for 2020 and 2021 are preliminary.
Source: Statistik Austria and OeNB.

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Due to the generous support package and despite strains on corporate balance sheets, aggregate profitability only decreased slightly in 2020. (OeNB, 2021). The loss in aggregate gross operating surplus of nonfinancial firms was only 1.4% throughout the year 2020 and less than the fall in aggregate economic activity (Figure 2.22). While corporate debt has increased by more than 13 percentage points in 2020, Austrian firms could also build up new liquidity buffers (OeNB, 2021). The increase of corporate debt as compared to before the crisis does not appear to significantly challenge corporate debt sustainability as the strong recovery will further stabilise corporate debt ratios. Besides liquidity support, the authorities have also provided a generous premium for corporate investments, which subsidised up to 14% of the underlying amount of investments in green and digital technologies as well as health projects and life sciences Preliminary evaluations show that this subsidy was successful in stimulating investment. Roughly

half of the support was channelled to smaller enterprises and around three quarters of the companies state that they would have not carried out the submitted investment project without public funding - partly not at all, partly not to the same amount and partly later.

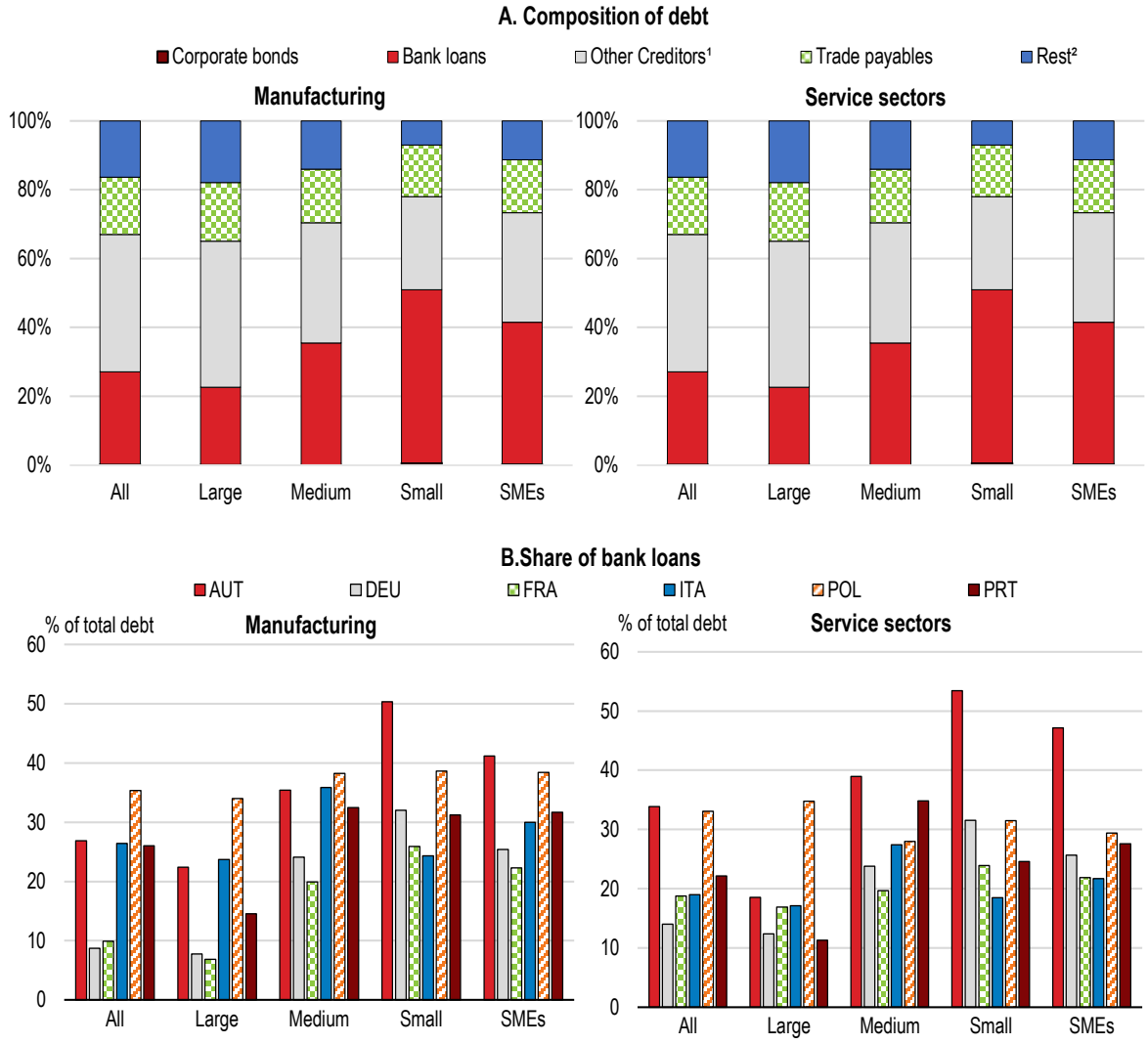
SMEs are particularly vulnerable to the ramifications of the COVID-19 crisis. They have usually limited or no access to capital markets and thus have fewer options to accommodate a liquidity shortfall (OECD, 2020d). A wide range of simulation studies point to the fact that SMEs are particularly concerned by risks related to over-indebtedness and insolvency (Demmou et al., 2021a; Demmou et al., 2021b; Gourinchas et al., 2021; Elsinger et al., 2021). This constitutes a key challenge for the Austrian economy.

The capital structure of Austrian businesses risks constraining investment

The likely increase in bank borrowing costs and the weakened corporate balance sheets may pose a challenge for the recovery of business investment. Austrian firms, in particular SMEs, have a strong preference for internal sources of financing (EIB, 2020). Any deterioration in corporate debt sustainability may make the use of internal sources of financing more difficult in the near future. The second major pillar of investment financing in Austria are bank loans. The use of bank loans is more prevalent than in other European countries (Figure 2.23, Panel A and B), notably for SMEs. However, bank loans will likely be costlier in the aftermath of the pandemic. On the one hand, increased corporate leverage will tend to increase corporate borrowing costs. Reclassifications of some corporate loans under IFRS 9 stage 2 and increased provisioning for bad loans tend to increase the cost of risk and could reduce the ability of banks to provide loans at pre-pandemic costs (ERSB, 2021).

Figure 2.23. Bank loans are the most important form of external credit for small- and medium-sized firms

2018



1. Other creditors include intra-group debt, accounts payables (except trade payables and payables to other financial creditors), mainly tax and social security payables, staff debt and active dividends to be paid. Rest includes payments received on account of orders and deferred liabilities.
2. Rest includes payments received on account of orders and deferred liabilities.
Source: Bank for the Accounts of Companies Harmonized (BACH) database.

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A resilient banking sector will play a key role in financing investments. While insolvencies are expected to increase, the banking sector appears resilient to withstand a significant in increase in insolvencies (Box 2.3).

Box 2.3. Banking sector resilience and expected insolvencies

Austrian banks are well-capitalised (OeNB, 2020a; OeNB, 2020b) but could improve capital adequacy and structural deficiencies, e.g. high operating costs (IMF, 2021). The ratio of non-performing loans stood around 2% at the onset of the pandemic, highlighting the good quality of loan portfolios. An in-depth stress test of the Austrian financial sector by the IMF confirmed the resilience to pronounced macro-financial shocks (OeNB, 2020a).

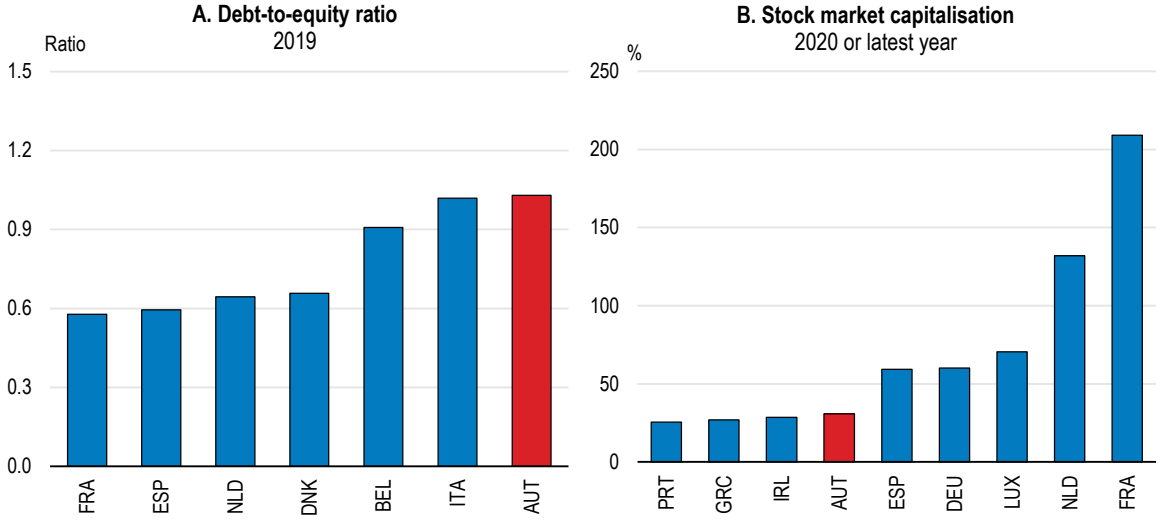
While the impact of the COVID-19 crisis can be seen in increases in loans classified as stage 2 under IFRS, even in a severe scenario where half of the loans supported by the government were to default, the ratio of non-performing loans would only jump from 2% to 5.6% (OeNB, 2021a). As a result, the risks of capital depletion and sudden deterioration of lending conditions to firms, due to stress in the Austrian banking sector with significant adverse effects on corporate investment, appear small (IMF, 2021). There is nonetheless a case for raising banks' capital adequacy in response to other vulnerabilities (such as mortgage risks as discussed in Chapter 1), which would further reinforce their lending capacity.

As analysed in-depth in the 2019 OECD Economic Survey of Austria, markets for equity capital are smaller than elsewhere (Figure 2.24). While the average equity ratio of Austrian nonfinancial companies has improved significantly since 2005 (Breyer et al., 2021), corporate leverage is elevated as compared to other OECD countries (Figure 2.24). This finding holds for both manufacturing and service sectors. Additionally, the sensitivity of investments to debt owed to banks tends to be higher for SMEs than larger firms (see Box 2.4). As a result, higher borrowing costs will disproportionately affect the investments of SMEs.

The main impediments to a more widespread use of externally raised equity capital pertain to the aversion to lose control of business owners and the debt bias of the corporate tax system (OECD, 2019; Breyer et al., 2021). A comprehensive survey of business owners and other major stakeholders further suggests that a lack of information regarding the various options of raising equity and misalignments of the reporting practices of smaller firms with the information needs of external investors hinder a more widespread use of equity capital (Breyer et al., 2021). A new market segment at the Vienna Stock Exchange, introduced in January 2019, is geared towards smaller listings and comes with less stringent disclosure requirements.

While making it easier for SMEs to tap external equity capital, policymakers need to address the information gaps of business owners by improving financial literacy. Higher financial literacy constitutes an effective tool to better understand advantages and disadvantages of equity financing and can thus foster its use (Boschman and Pissareva, 2017). Moreover, higher financial literacy has also found to increase stock market participation (v Rooij, Lusardi and Alessie, 2011), thereby potentially also benefitting the supply of equity capital. Results from various surveys suggest that Austria has overall above average financial literacy as compared to other OECD countries (Cuprak et al., 2018; Reiter and Beckmann, 2020). Further, the financial literacy has improved over the past five years (Fessler, Jelovsek and Silgoner, 2020). In October 2021, a new national financial literacy strategy for Austria was disclosed to the public. The strategy aims at increasing financial literacy but also at raising the awareness of existing and potential entrepreneurs with regard to the existing alternative financing options on the capital market. It is further complemented with advisory services for SMEs and start-ups.

Figure 2.24. Corporate leverage in Austria is elevated and the stock market is less developed



Source: OECD (2021), OECD Financial Dashboard and World Bank.

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Box 2.4. Investment of smaller firms is more sensitive to higher leverage

The empirical framework developed by Dlugosch and Gul (2021) can be used to evaluate the sensitivity of investment to demand and debt owed to banks for different firm sizes.

Data

The underlying dataset rests on the Bank for the Accounts of Companies Harmonized Database (BACH) maintained by the Banque de France. It provides annual balance sheet data of European non-financial companies aggregated at the NACE2 industry level and by size -- for every sector the dataset provides aggregate information for small, medium and large firms. The estimation sample includes 74 non-financial industries in Austria over the 2000-2016 period. All regression variables are cleaned for outliers by winsorizing them at the 1% percentile symmetrically to avoid large outliers.

Modelling the investment to capital ratio

The empirical model rests on an error-correction framework, i.e. a long-run specification for firms' demand for capital derived from the optimisation problem of profit maximising firms but also short-run deviations from this equilibrium. Covariates to capture debt owed to banks are added to all specifications. The estimation of the dynamic panel model addresses the endogeneity that arises from the correlation of the unobserved cross-sectional fixed effect and the lagged dependent variable by using the Arellano/Bond/Blundell-Bond system GMM approach.

Empirical results

The regressions are well-specified and pass the usual specification tests (see Table 2.1). The estimated coefficient for the capital-to-output ratio is negative and significant across all specifications. This implies that firms invest if the long-run value of the desired capital-output ratio differs from its actual value. Sales growth and cash-flow are positively associated with investment, higher amounts of debt owed to banks scaled by lagged capital, i.e. bank-based leverage, is negatively associated with investments.

The same amount of debt owed to banks is associated with less investment for small and medium- -sized firms than for large firms. For large firms, an increase of debt owed to banks by one standard deviation leads to a fall by around 11 percentage points, whereas a similar increase reduces the investment-to-capital ratio of small firms by roughly 16 percentage points.

The analysis also suggests that the sensitivity of investment to demand of smaller firms tends to be higher than that for larger firms, though the difference 0.5% is relatively small.

Table 2.1. Results for empirical investment models for different firms' size

	All sizes	Large firms	Medium-sized firms	Small-sized firms
Investment (t-1)	-0.3633***	-0.2666**	-0.4791***	-0.4699***
	(0.0848)	(0.1197)	(0.1264)	(0.1750)
Sales growth (t)	1.2302***	1.2537***	1.3546***	1.2607***
	(0.0865)	(0.1205)	(0.1462)	(0.1653)
Sales growth (t-1)	0.2317	0.4358**	0.4497	0.4386
	(0.1570)	(0.1737)	(0.2701)	(0.3667)
Capital-output ratio (t-1)	0.2604***	0.2852***	0.3842**	0.5128*
	(0.0805)	(0.0836)	(0.1905)	(0.2722)
Cashflow / K (t-1)	1.1660**	0.1110	0.9277	1.3925
	(0.4883)	(0.5344)	(0.7051)	(1.1959)
Debt owed to banks / K (t-1)	-0.3021***	-0.1796*	-0.2487**	-0.3234**
	(0.0814)	(0.1015)	(0.1103)	(0.1488)
Constant	-0.0535	-0.1554	-0.3000*	-0.0796
	(0.1026)	(0.1945)	(0.1674)	(0.1255)
Observations	2,554	653	889	1,012
Number of id	193	55	67	71
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
# of instruments	100	83	95	99
AR(1)	0	1.22e-05	3.73e-05	0.00417
AR(2)	0.836	0.117	0.777	0.252
Hansen p	0.996	1	1	1

Note: Cluster robust standard errors in parentheses. *** denotes significance at the 1% level, ** at the 5% level and * at the 10% level.

Tax incentives to stimulate equity financing

Deep markets for equity capital improve access to finance for firms. They should complement the relatively strong banking sector rather than substitute bank loans. The banking sector, which champions relationship banking through the so-called *Hausbank* model, constitutes a strength of the Austrian economy. The very close relationship between bankers and business owners decrease information asymmetries and thus ensures very good access to bank loans for firms of all sizes with comparatively lower borrowing costs (OECD, 2019). The Hausbank tends to continue to support firms in dire financial situations and may thus even take up some of the functions equity capital provides elsewhere (Dirschmid and Waschizcek, 2005).

Incentives in the corporate tax system can stimulate the financing of new projects through equity, either internal, i.e. retained profits, or external. As in many other OECD countries, the corporate tax system incentivizes debt-financing (Table 2.2). This is because interest payments can be deducted from pre-tax earnings and thus give rise to a lower tax liability. Usually, the returns on equity capital cannot be deducted. Consequently, financing the same investment project with debt yields a higher post-tax return than equity. An allowance for corporate equity (ACE) can help to alleviate the debt-bias. Apart from the incentives in

the corporate tax system, full neutrality across debt and equity financing would require addressing the differential treatment of interest, dividend income and capital gains in the personal income tax system. However, even without such changes to personal income taxes, an allowance for corporate equity would help to moderate the debt-bias.

Table 2.2. Effective average and marginal corporate tax rates for different investment projects and financing options

EATR (in %) EMTR (in %)	Manufacturing Equity	Manufacturing Debt	Software Equity	Software Debt
Austria	29.1	18.4	34.2	24.4
	27.3	-2.1	40.1	9.8
Germany	32.5	22.2	34.2	24.7
	36.1	-2.5	39.8	10.8
Denmark	20.4	12.7	22.3	16.0
	12.8	-34.3	19.6	-9.0
Italy	24.7	20.9	33.1	21.6
	4.8	-21.4	34.8	24.6
Sweden	19.7	12.6	29.1	22.0
	14.3	-25.0	39.3	21.9

Note: Effective average and marginal corporate tax rates were calculated based on the simulations of the costs of a "hypothetical investment project", assuming real interest rates of 5% and a rate of inflation of 2%. See Hanappi (2018) for details on the calculation and model assumptions (higher inflation and investment scenario).
Source: OECD Corporate Tax Statistics Database and Hanappi (2018).

A few OECD countries have implemented an ACE (Zangari, 2014; Hebous and Ruf, 2017). Austria has experimented with a tax incentive to equity financing during the 2000-2004 period (Genser, 2002), where a reduced corporate income tax rate applied to the return on equity. This stimulus became less attractive after a statutory corporate income tax rate cut and was abolished soon after. Italy also has a tax allowance for corporate equity which has reduced corporate leverage by 11 percentage points for manufacturing firms over the period 2011-2014, corresponding to the first three years of implementation (Branzoli and Caiumi, 2020). Across firm sizes, the reduction in leverage was more pronounced for micro- and small corporations. Evidence from the Belgian and the Austrian variant of this allowance tends to confirm its effectiveness (Hebous and Ruf, 2017; Frühwirth and Kobialka, 2011).

The ACE has at least three key design features, which determine its efficacy, the associated fiscal costs and potential negative side-effects. First, a notional return on equity needs to be determined. This notional return determines the deductible amount from taxable income and therefore the attractiveness of the tax incentive. In practice, the notional interest rate is usually proxied with the interest rates on long-term government bonds. A slightly higher notional interest for SMEs, e.g. 50 basis points like in Italy, would be welcome to incentivize small and medium-sized businesses. Second, the base of the allowance must be established. This can encompass the existing stock of equity or only additions in the form of newly issued equity with respect to a reference year. The additions can also include internal sources of equity, i.e. retained earnings. Granting the allowance to the whole stock of existing equity can entail sizeable fiscal costs. Third, the implementation requires a careful design to avoid any incentives to cross-border tax planning. Here, effective anti-avoidance frameworks, as in Italy, can help to prevent intra-group lending and contribute to limit tax planning in multinationals (Zangari, 2014; Hebous and Ruf, 2017; Zangari, 2020).

Estimates of an ACE for Austria granted to the stock of existing equity capital suggest a yearly fiscal loss of around EUR 1.3 billion, around 10% of the corporate tax revenues in 2019 (EcoAustria, 2021). The estimates for Austria are based on a notional return of 1.5% and an allowance limited to equity capital of up to EUR 1 million. Limiting an ACE to additional equity capital would give rise to much lower fiscal costs.

As a comparison, the ACE in Italy, which was initially used by 20% of incorporated firms, generated a loss in corporate tax revenues of around 1.3% of total corporate income tax revenues in 2011.

As part of the COVID-19 support programme for firms, Austria has introduced a carry-back provision for tax losses for 2020. This complemented the provision granted by Austrian tax law which allows to carry forward losses indefinitely to offset up to 75% of future profits. The tax loss carry-back provision allows to offset profits generated in 2018 and 2019 up to a maximum amount of EUR 5 million. Firms that have been profitable in the past could thus restore their corporate working capital and means of internal financing. The loss-carry-back measure is countercyclical and thus effective in times of crises. It also comes at possible large costs for governments and potentially, could be used for tax planning. Therefore, the carry-back provision should be discontinued once the recovery is firmly underway, but kept in the policy toolkit as a discretionary measure to support firms' working capital in times of crisis.

Making the most out the available pool of talent

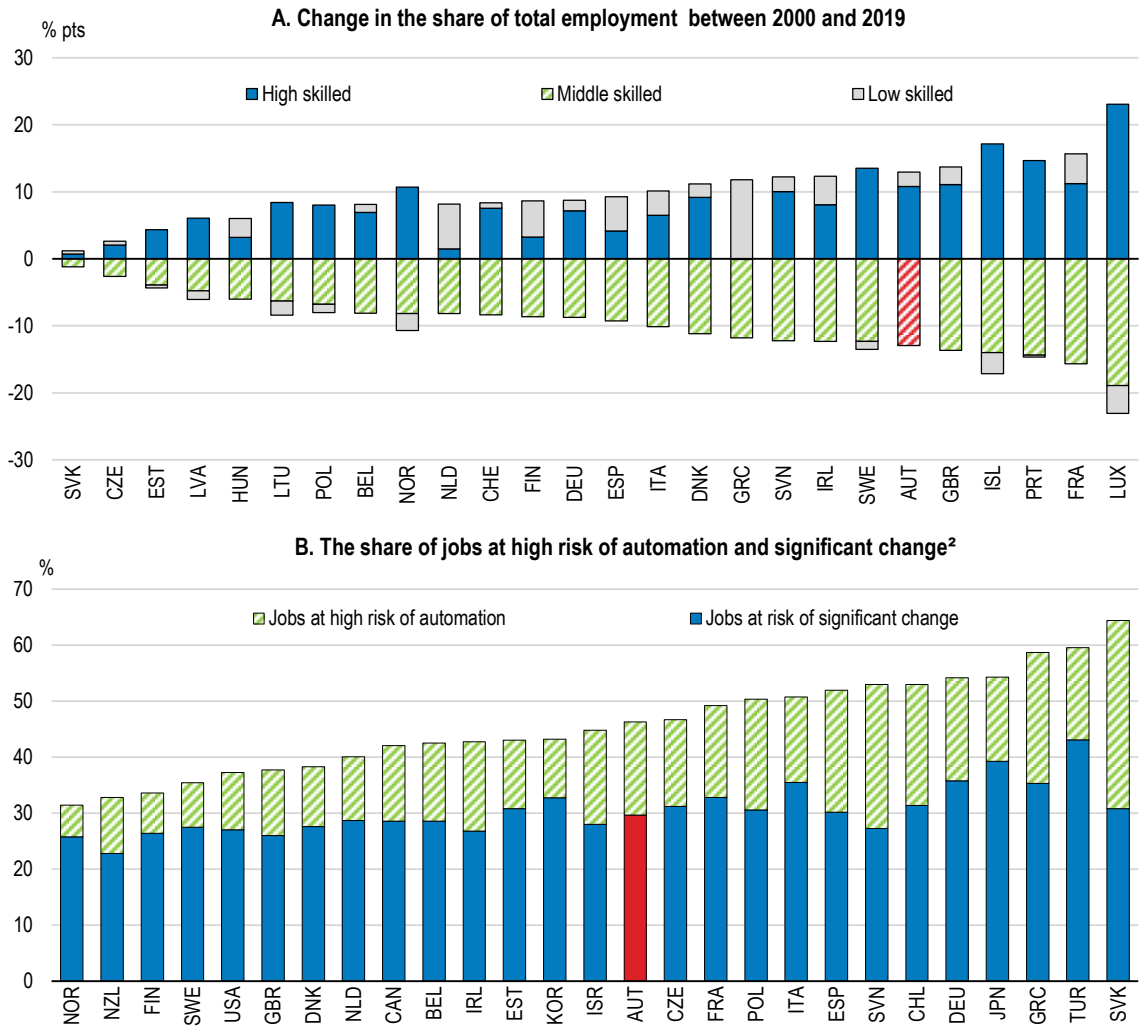
Structural change will require a more efficient allocation of labour

The COVID-19 induced structural change and the digital transition will likely accelerate the polarisation into high- and low-skilled jobs at the cost of middle-skilled jobs (OECD, 2020e). High-skilled workers benefit from an increased use of digital technologies, which tend to complement their skills and help them to become more productive (Goos et al., 2009). Many non-routine manual tasks, in particular in service-oriented sectors, are usually very difficult to automate. Further, long-established preferences of customers may limit the potential for efficiency enhancing digitalisation or automation in close-contact service sectors. On the contrary, many middle-skill jobs, e.g. those of clerical workers, are at risk or have already disappeared (OECD, 2017b). In the last two decades, the loss of middle-skilled jobs in Austria was more pronounced than in peer OECD countries (Figure 2.25). Moreover, the rate of long-term unemployment has increased since 2010 as discussed in Chapter 1.

Employment rules do not seem to be a major obstacle to resource reallocations. Still, while employment legislation is formally flexible, collective agreements, depending on their terms, may make resource re-allocations more difficult in specific sectors and businesses. In the past, collective agreements have not hindered structural changes. On the contrary, consensual employment relations contributed to flexibility. Co-operative arrangements between employers and employees (for example, the so-called "labour foundations") facilitated the re-skilling and upskilling of redundant workers in declining activities (Winter-Ebmer, 2001). More sweeping employment adjustments due to digitalisation and green growth may however become more challenging in the future. The ongoing re-organisation in the car cluster has, for example, triggered labour tensions, including a rare strike.

The COVID-19 shock led to a revival of social partnership in Austria. The Chamber of Economy (WKÖ) and the Chamber of Labour (AK) co-operated to adapt the short-time work scheme to the circumstances of the pandemic; to facilitate teleworking with adjustments in social security law, tax law and accident insurance; to adapt the safety and hygiene rules for the continuation of work in the construction sector; and to establish mask-wearing and testing protocols in workplaces. An international survey identified Austria as the country where social partnership has been particularly active during the COVID-19 shock (Eurofund, 2021). This momentum should be extended to the policy design needs of the more re-allocation intensive economy.

Figure 2.25. Set of jobs available continues to change



1. The panel shows the percent point change in employment shares by skill intensity between the fourth quarter of 2000 and the fourth quarter of 2019. High-skilled occupations include jobs classified under the ISCO-88 major groups: legislators, senior officials, and managers, professionals, and technicians and associate professionals. Middle-skilled occupations include clerks, craft and related trades workers, and plant and machine operators and assemblers. Low-skilled occupations include service workers and shop and market sales workers, and elementary occupations.

2. Based on the survey of Adult Skills (PIAAC, 2012). Jobs are at high risk of automation if the likelihood of their job being automated is at least 70%. Jobs are at risk of significant change if the likelihood is between 50 and 70%.

Source: Calculations based on Eurostat (2020), Employment by occupation and economic activity (database) and L., Nedelkoska and G. Quintini (2018), "Automation, skills use and training", OECD Social, Employment and Migration Working Papers, No. 202.

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Ageing risks exacerbating labour market mismatches

Mismatches in labour supply have been increasing (Figure 2.26). Since 2014, the Beveridge curve, i.e. the relationship between the job vacancy rates and unemployment rates, has shifted outwards. This shift can result from several factors including a significant increase in labour supply due to the EU enlargement process (Schiman, 2020) or, a decreasing efficiency in matching suitable talent to jobs or skill shortages (Christl, 2020). Empirical evidence from the OECD Survey on Adults Skills, underlines that qualification mismatches are elevated. Roughly 4 out of 10 workers are either over- or underqualified for their current

job. Skill mismatches are highest in areas related to verbal reasoning, reasoning and quantitative abilities and mainly pertain to high-skilled jobs (OECD, 2018). Moreover, the vibrant economic recovery in 2021 has amplified recruitment difficulties and require businesses to make the most out of the available pool of talent to remedy skill- and labour-shortages.

Figure 2.26. Labour supply mismatches have been increasing

Note: In Panel B, qualification mismatch occurs when a worker has a higher or lower level of qualification than is required for his/her job. In Panel C, field-of-study mismatch occurs when a worker has a qualification in a different field than required for his/her job. Panel D shows the difference between the actual allocative efficiency and a counterfactual outcome based on lowering the skills mismatch in each country to best practice. Mismatch indicators are aggregated for 11 market industries using a common set of weights based on the industry employment shares for the United States. Skills mismatch is captured using the 2012 and 2015 waves of PIAAC data.

Source: OECD (2021), OECD Skills for Jobs Database, Statistik Austria and Arbeitsmarktservice (AMS) and Adalet McGowan, M. and D. Andrews (2017), "Skills mismatch, productivity and policies: Evidence from the second wave of PIAAC", OECD Economics Department Working Papers, No. 1403.

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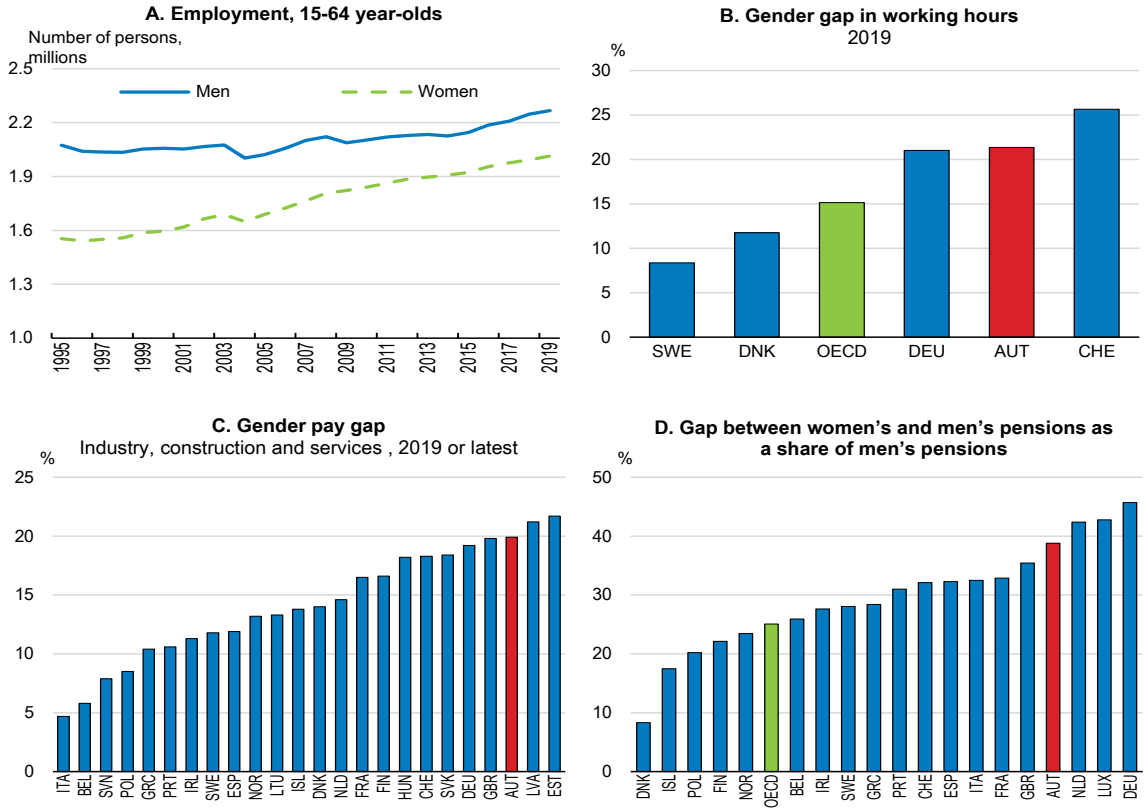
The shrinking of the Austrian workforce may exacerbate these mismatches. Sustaining relatively high levels of material well-being in the future necessitates a more efficient allocation of so far underutilised labour resources, in particular female, migrant and older workers. Their integration lags behind other peer countries. This should be flanked with steady efforts across all layers of the educational system and policies to promote life-long learning programmes to equip workers with the most relevant skills.

Underutilised labour resources need to be better mobilised

Gender gaps in career attainment and wages remain high. As discussed in Chapter 1, the deeply entrenched male breadwinner model but also the limited availability of childcare and full-day schooling throughout the whole country impede full-time employment of female workers (OECD, 2019). Further, women tend to take on more caretaking responsibilities within the family. As a result, a large share of women only work part-time leading to a large gender gap in part-time employment, undermining the supply of labour but as well as retirement incomes (Figure 2.27).

Figure 2.27. Gender differences in retirement incomes and salaries are high



Note: Panel B refers to the gap between women's and men's average usual weekly working hours on the main job as a share of men's working hours, total declared employment. Panel C refers to the unadjusted gender pay gap which is the difference between average gross hourly earnings of male and female paid employees as a percentage of male paid employees' earnings, irrespective of the type of work performed, the number of hours worked and the duration of the contract. For Panel C, the sector excludes public administration, defense and compulsory social security. For Panel D, calculations based on EU-SILC, 2016, version: March 2018. Data refers to population aged 65 or older. Gender gap in pensions calculated using the following formula: 1 – women's average pension / men's average pension. It includes persons who obtain old-age benefit (public or private), survival pension or disability benefit. 2014 for Iceland.
Source: OECD (2021), OECD Labour Force Statistics (database), OECD (2019), Pensions at a Glance 2019: OECD and G20 Indicators and Eurostat (2021), Gender pay gap in unadjusted form by NACE Rev. 2 activity.

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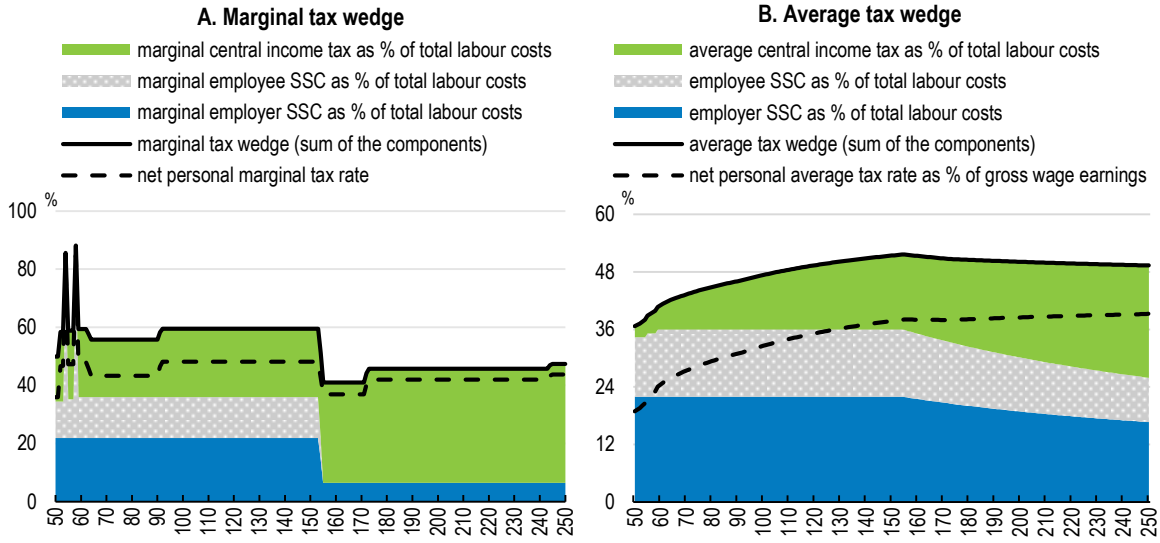
The COVID-19 crisis has somewhat put the spotlight on gender gaps in labour market outcomes. Since the share of women on part-time jobs is elevated and part-time work in the most hard hit sectors tends to be higher, female workers have been more affected by the pandemic. They have also been more likely to get unemployed instead of benefitting from short-time working (Bock-Schappelwein and Famira-Mühlberger, 2021). Nevertheless, both female and male employment surpassed the pre-crisis level in May 2021 and have been growing since then. Policy action is needed to avoid that the pandemic effects this setback turn into a deeper scar.

The Austrian personal income tax system is dual-earner friendly but taxation is high and steep labour tax wedges hamper full-time work (Figure 2.28). Second earners, which are often women in Austria, do not face higher net personal average tax rates than singles. Labour tax wedges are nevertheless the third-highest across OECD countries and contribute to the entrenchment of part-time work, in particular of women (OECD, 2017). A reduction of income taxes, initially planned for 2022, was brought forward and lowered the labour tax wedge for low-income earners. Employer social security contributions were reduced. Nevertheless, the Austrian tax system rests on relatively elevated taxes on labour.

Figure 2.28. Labour tax wedges are high

Tax wedge decomposition by level of gross earnings as % of the average wage, one-earner married couple without children, 2020



Source: OECD (2021), Taxing Wages 2021.

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Employment rates of elderly workers are lower than in other European countries. Their unemployment rate has increased more than in peer countries and they account for nearly half of all long-term unemployed, as discussed in Chapter 1. The authorities are aware of this problem and provided EUR 50 million in 2019 and 2020 in the form of extended financial subsidies to incentivise firms to hire older workers. The so-called “Eingliederungsbeihilfe” appears to be successful.

Policymakers need to take a comprehensive approach to boost employment at older ages. As specified in the OECD Recommendations of the Council on Ageing and Employment Policies, this approach should encourage employers to retain and hire older workers to boost labour demand, augment the employability of older workers by improving their skills and by enhancing incentives to continue working at an older stage.

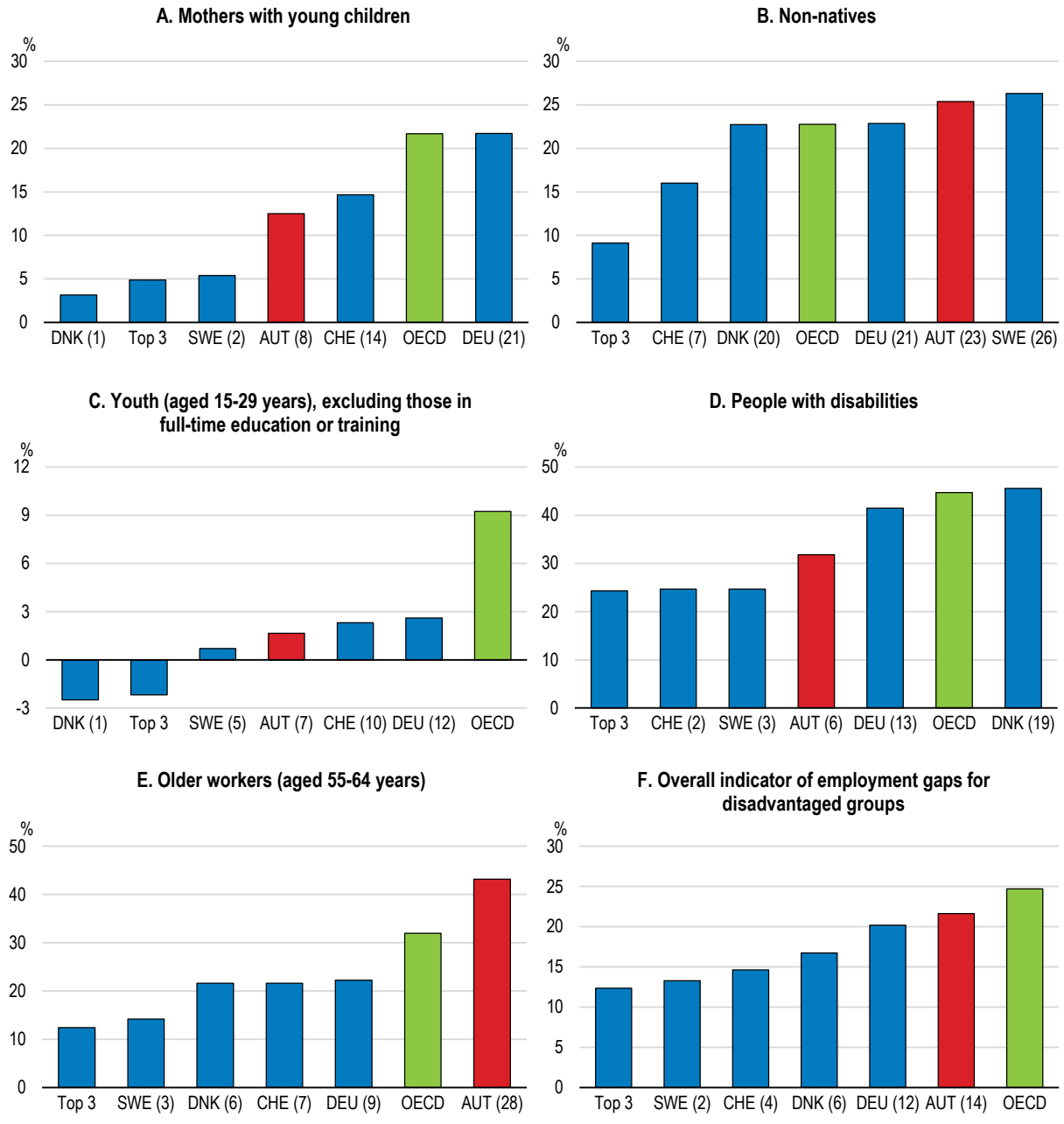
An important part of these incentives pertains to the pension system. While the official retirement age for men and women is 65 and 60 respectively, men retire effectively at around 63 and women at 60. The main motivation for different retirement ages for men and women was to counterbalance the higher share of household tasks, including childcare. However, besides the lower lifetime employment incomes of women, the earlier retirement age for women is the second major driver of the elevated gender pensions gap (Mairhuber and Mayrhuber, 2020). The alignment of retirement ages of men and women until 2033 is therefore welcome. Moreover, linking retirement age to life expectancies, either automatically or through continued legislative changes, would allow older workers to participate longer in labour markets while alleviating pressures on public balances and thus contribute to a more sustainable retirement system. Restricting the use of publicly-funded early-retirement schemes, which incentivise older workers to leave workforce earlier, would also help. The recent reform from December 2020, which abolished a pathway to early retirement for workers of certain occupations without deductions, was a step in the right direction. The abolishment of deduction-free early retirement pensions will enter into force as of 31 December 2021. It will be accompanied by the so-called “Early Starter Bonus”, which adds to the pension amount each month up to 60 EUR for workers who have started working between the ages 15-20. The expenditure calculated for the “Early Starter Bonus” is significantly lower than for the deduction-free early retirement pension scheme.

Unemployment rates and labour market mismatch of migrants are high (Figure 2.29). The employment gap of migrants in Austria as compared to prime-age male nationals is among the highest in Europe (European Commission, 2020). This results predominantly from lower employment rates of foreign-born female workers and older foreign-born male workers. Employment gaps of prime-age foreign and native born men are lower than in the peer countries. At the same time, educational outcomes in Austria are heavily dependent on socio-economic status, impeding social mobility (OECD, 2019). Due to travel restrictions and their elevated share in the most hit sectors, in particular in the food and accommodation sectors, migrant workers have been more affected by the COVID-19 crisis than nationals (Bock-Schappelwein et al, 2020). Factors like long employment spells combined with an emphasis of steady within-firm adjustments, in particular in SMEs, may complicate the integration of outsiders, e.g. migrants. As discussed in more detail in Chapter 1, policymakers need to continue to improve German language capabilities and make educational outcomes less dependent on their parents’ background. A higher availability of full-day childcare and schooling could thus provide a double-dividend.

The Federal Ministry of Labour has announced during the summer 2021 that it envisages a significant reform of the unemployment system. The ultimate goal of the reform is to “durably reduce unemployment rates”. A concrete reform proposal, based on substantive discussions with all important stakeholders, notably social partners and national and international experts, is expected at the end of the first quarter of 2022. A faster and more efficient transfer of unemployed workers into new and good quality jobs, one goal of the reform, is welcome and could help to better activate available talent.

Figure 2.29. Employment gaps are sizeable for disadvantaged groups

Employment gaps with respect to prime-age men for selected disadvantaged groups, 2016 or nearest



Note: Countries are sorted in ascending order of the employment gap (i.e. from best to worst performing). Number in parenthesis indicates the rank from best performing. For each group, the employment gap is the difference between the employment rate of prime-age men (aged 25-54 years) and that of the group, expressed as a percentage of the employment rate of prime-age men. Panel A: Mothers with young children refer to working-age mothers with at least one child aged 0 to 14 years. Panel B: Data refer to all foreign-born people with no regards to nationality. Panel C: In the case of youth, those that are in full-time education are excluded from the denominator of the employment rate. Panel D: Data refer to 2011 except for Norway (2016). Panel F: The overall indicator is a weighted average of the employment gaps for each group. Unweighted average of 36 countries except the average of 32 countries in Panel D.

Source: OECD (2018), Good Jobs for All in a Changing World of Work: The OECD Jobs Strategy, https://doi.org/10.1787/9789264308817-en.

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Upgrading and adjusting skills

The professional and technical skills of business owners, managers, engineers and workers will need to be updated more frequently than before. Up-lifting skills in all professional areas subject to technological changes will help businesses to remain close to the global frontier. Human resource upgrading is therefore not only a skill matching challenge for the low-skilled, but an agenda for the entire workforce. The productivity and employment performance of the economy will depend on this process (OECD, 2021e).

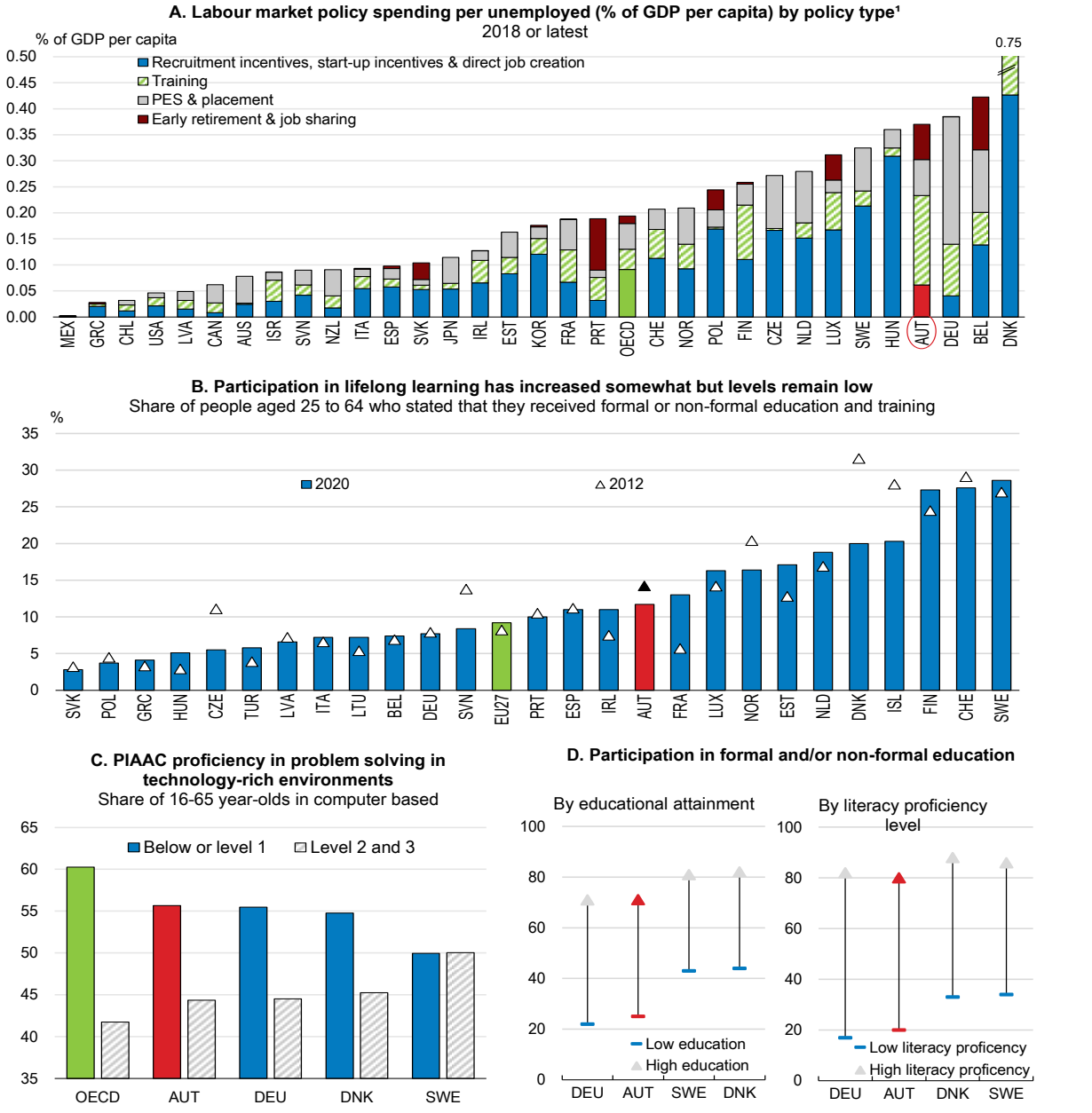
A fine-tuning of life-long learning policies and institutions appears desirable in Austria. While training spending per unemployed person is the highest in international comparison (Figure 2.30, Panel A), average participation stays low (Figure 2.30, Panel B). A comparison of lifelong learning costs per participant in different countries revealed that two Austrian programmes are among the costliest. Austria's active labour market policies devote also more resources to early retirement and job sharing, compared to re-skilling and upskilling (Figure 2.30, Panel A).

Highly educated Austrians participate less in life-long learning than counterparts in the peer countries. The gap for the low-educated is even larger, while their generic skills are comparatively weaker (Figure 2.30, Panels C and D). While relatively high compared to the OECD average, internal training within firms falls also somewhat behind peer countries: Both large and small businesses engaged a lower share of their employees in lifelong learning in 2020, despite the room offered by short-time working schemes. The gap is relatively small for large businesses (less than 70% of large Austrian firms offered training programmes, against 80% in Denmark and Sweden) but the gap is larger for firms employing less than 50 workers (around 15% in Austria, against nearly 30% in Denmark and Sweden). The Economic Chamber (WKÖ) emphasises that there is room for progress in business owners' realising the potential of digitalisation "as a strategic transformation lever".

There is a strong case for fostering life-long learning. Three avenues are available:

- Supporting employers via tax deductions for the re-training of their workers, either in activity or newly hired, and at all hierarchical levels. Deduction rates for eligible spending may be adjusted to reflect technological, sectoral, regional and social priorities. They could go above 100%.
- Individual training accounts can be put in place to create a competitive market for re-skilling services. International experience from various countries, notably France (see Box 2.5), is encouraging, provided that policy guidance secures reliable information and quality safeguards for all participants (OECD, 2021f). Austria has individual learning accounts at the Länder level since the early 1980s. However, the criteria for the accreditation to be able to supply trainings eligible for individual learning accounts may create entry barriers for foreign and domestic training providers and should be evaluated regularly. In particular, the criteria to be active on Austrian markets for at least for three years could be reduced to lower entry costs. A further key design feature pertains to replacement incomes. The experience from France shows, that the provision of replacement incomes can lead to higher participation rates, in particular across temporary and lower-skilled workers (OECD, 2019e).
- On-line courses made major progress in recent years. They were actively used by many motivated participants during the lockdowns, but Austria appears to have faced a gap in this area. The population's lower familiarity with ICT media may have been an impediment. Publicly supported pedagogical research on on-line adult education could help make progress.

Figure 2.30. Austria dedicates considerable public resources to life-long learning, but participation by the high-skilled remains average and participation by the low-skilled is low



1. Spending on public employment services (PES) includes funding for authorities that connect jobseekers with employers through information, placement and active support services. Unweighted average for the OECD aggregate.
2. Low literacy proficiency refers to the lowest PIAAC proficiency in literacy (below or level 1) for below upper secondary education and high literacy proficiency refers to the highest PIAAC proficiency in literacy (level 4 or 5) for tertiary education. Low education refers to below upper secondary education and high education refers to tertiary education.
3. Low education refers to below upper secondary education and high education refers to tertiary education. Panel D shows the share of adults who participated in at least one learning activity, in formal and /or non-formal education in the previous year of the interview on the Survey of Adult Skills.
Source: OECD (2021), Labour Market Programmes (database); and OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

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Box 2.5. Individual training accounts in France

The French individual training account system, *Compte Personnel de Formation* (CPF), is frequently cited as a promising approach to help to improve participation in adult learning programmes. CPF allows to accumulate training rights over time at two different rates, conditional on the starting level of education. Workers with at least a lower secondary degree get allocated EUR 500 per year. They can accumulate up to EUR 5 000 in total. Workers who do not have a lower secondary degree get EUR 800 per year, up to a maximum of EUR 8 000. Additional funds are disbursed for workers who need professional retraining. The CPF covers employees, jobseekers and the self-employed. The funds for the CPF are financed by firms, through a compulsory training levy of 0.2% of gross wages. The self-employed contribute an equal amount of their turnover to a training fund.

Initially founded in 2015, a main goal was to promote access to training opportunities, in particular for lower-skilled individuals and workers, who are likely to switch jobs often. The initial CPF system was complex and not transparent enough and implied a relatively costly learning phase for all participants. A reform in 2018 addressed these shortcomings. Notably, the number of actors involved was reduced.

Source: OECD (2017c), OECD (2019d) and OECD (2019e).

A lack of geographical mobility impedes a better allocation of workers to jobs

Removing barriers to geographical mobility can improve the allocation of workers to jobs and thus reduce mismatches (OECD, 2015). A more flexible economy will likely entail more geographical mobility of the population. Progress in tele-working will reduce commuting needs and will offer wider settlement choices to the population. The so-far successful housing policies may deserve a re-evaluation (Box 2.6).

Box 2.6. Re-evaluating housing policies

Social housing represents nearly 25% of the housing stock in Austria, second only to the Netherlands in the OECD area. The share reaches higher levels in large urban areas, notably in Vienna where it represents more than 40% of all residential dwellings: 22% of households live in municipal houses and 21% in housing provided by limited-profit housing associations. In rural areas (where more than 40% of the population live, a higher proportion than in comparable countries) owner-occupied houses dominate. Rural housing markets are thin and owners' mobility is made difficult when local activities decline. A cross-country OECD study found an inverse relationship between home ownership and residential mobility (outright owners are less mobile than owners paying mortgages, who are less mobile than tenants paying subsidised rents, who, in turn, are less mobile than tenants paying market rents. This pattern seems to prevail also in Austria.

Social housing has provided affordable high-quality housing for large parts of the population in the past. It may now be facing certain challenges. As tenures are based on open-ended, non-portable, long-term contracts, they may be denting geographical mobility. Many beneficiaries have also reached upper-middle income status, which may create bottlenecks when demand by lower-income and younger cohorts expands. Low-income households may also be constrained by the deposit that is required at entry into social dwellings (to co-finance a share of construction and land costs) (OECD, 2020h). Concerning private rental housing, rent control over dwellings in buildings constructed before 1945 (which form the majority of the rental housing in historical cities) keep rents at artificially low levels (significantly below levels for recently constructed commercial rental housing). An OECD analysis found that the price elasticity of total long-term housing supply in Austria remains particularly low (OECD, 2019a).

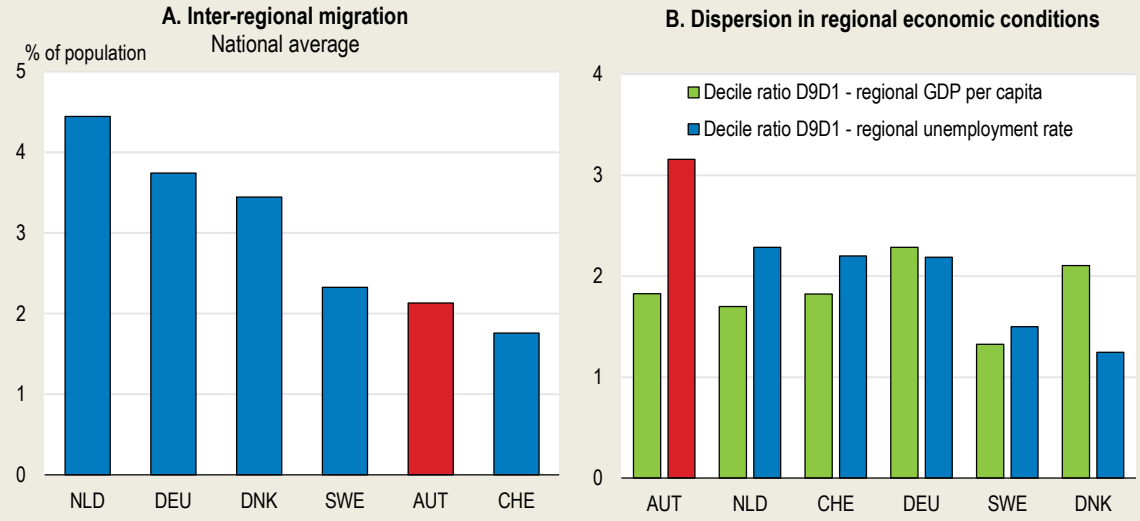
OECD's Horizontal Housing Project has documented Austria's positive aggregate outcomes: "housing costs, comprising actual and imputed rents, make up a smaller share of the household expenditures than in the average OECD country. House price volatility, a standard indicator of vulnerability, has been relatively low". Overall, Austria's housing sector is indeed relatively affordable and sustainable and has not experienced the same volatility as in many other OECD countries. Emergency measures adopted during the COVID-19 shock supported both tenants and landlords, with forbearance for rent arrears for tenants and tax depreciations for landlords (OECD, 2021g). An in-depth examination of the responsiveness of Austria's housing market institutions and policies to new needs, based on the information being gathered in the OECD Horizontal Housing Project may be informative for policymakers.

The inter-regional migration in Austria is lower than in peer countries. The stability of economic activities across regions, de-centralised manufacturing clusters, and strong service activities in regional urban centres sustained this relative stability. At the same time, regional disparities in unemployment rates are elevated (see Box 2.7). New OECD analyses sheds lights on the policy levers that are associated with higher regional mobility (Causa et al., 2021). In particular, the study looks at structural policies, which increase intra-country migration towards regions with higher economic growth. It suggests that reducing barriers to innovative entrepreneurship would have the biggest positive impact on labour mobility in Austria.

Box 2.7. Inter-regional migration and labour market dynamism in Austria

Inter-regional migration can spur economic growth, for instance by enhancing labour market dynamism, but also social mobility by allowing people from disadvantaged areas to move to areas that give them better opportunities. This is likely to be particularly relevant in the COVID-19 crisis context where workers' relocation may help a smooth and inclusive labour market recovery. With an annual inter-regional migration rate[1] of around 2%, the Austrian population is less mobile than its European neighbours are such as Germany and the Netherlands (Figure 2.31, Panel A). At the same time, Austria exhibits relatively high regional inequalities, especially in terms of unemployment (Figure 2.31, Panel B). In this context, enhancing the responsiveness of inter-regional migration to regional labour market conditions could contribute to enhance labour market dynamism and potentially reduce regional inequalities.

Figure 2.31. Inter-regional migration and regional economic conditions: Austria in a comparative perspective, 2015-2018



Note: For Panel A, the national average is calculated as the sum across regions of new residents from another region divided by the sum across regions of regional population one year before. Average of years 2015-2018 or closest period i.e.: DEU (2015-17), DNK (2015-19). Regions are defined as small (TL3) regions based on the OECD regional classification scheme. For Panel B, regional dispersion is measured as the ratio of the 90% and 10% decile of the distribution of regional GDP per capita (unemployment) over the period 2015-2018. Regional GDP per capita is measured in constant US-Dollar as of 2015 and based on small (TL3) regions according to the OECD regional classification. Unemployment rate is based on large (TL2) regions

Source: Calculations based on OECD Regional database and Causa et al. (2021), "The laws of attraction: Economic drivers of inter-regional migration, housing costs and the role of policies", OECD Economics Department Working Papers, No. 1679.

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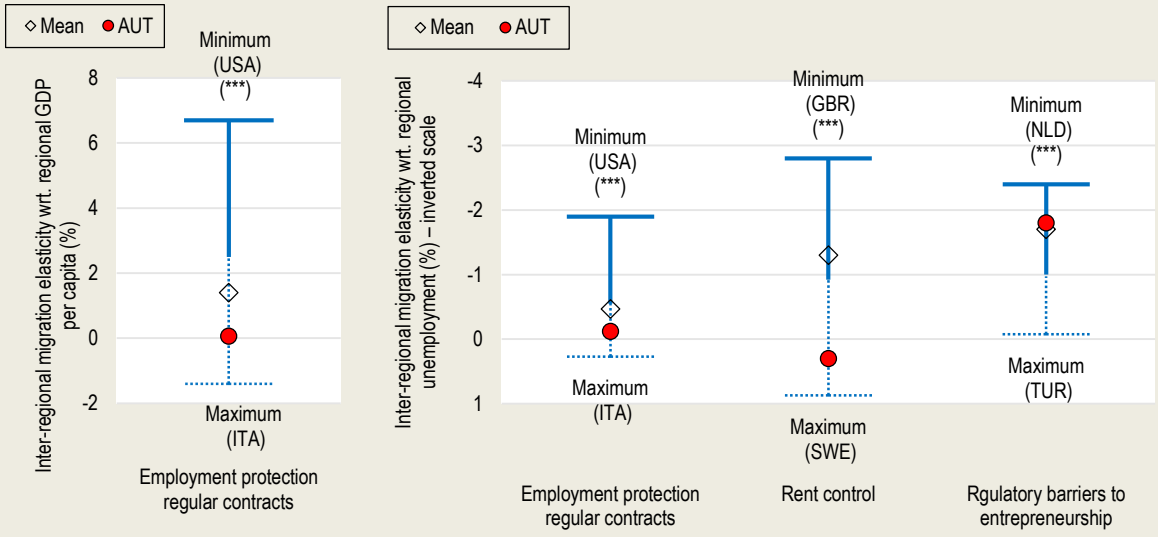
New empirical evidence by the OECD (Causa et al., 2021) shows that a number of housing-related and structural policies influence the responsiveness of inter-regional migration to regional economic conditions. This evidence makes it possible to identify major areas of policy reforms that Austria could consider implementing to increase the pass-through from regional economic conditions to inter-regional migration. (Figure 2.32) provides an illustrative quantification exercise in the following areas:

- Reducing job protection on regular contracts, as too high levels of protection may discourage job mobility.
- Easing rent control regulations insofar as those can reduce incentives to move among tenants in rent-controlled dwellings and also spur inflation in local house prices, reducing affordability and in turn the economic returns to inter-regional migration.
- Reducing barriers to entrepreneurship to foster the entry of new firms, job creation and labour market dynamism.

Figure 2.32. Policy reform proposals to foster the responsiveness of inter-regional migration to local economic conditions in Austria



Note: OECD calculations based on selected interaction effects included in a regression of inter-regional migration on regional GDP per capita, regional unemployment and further regional variables and controls. The dot is the estimated in-migration elasticity evaluated at the average policy. The distance between the Min/Max and the average is the change in the estimated elasticity associated with a policy change. Dashed line means that the estimated elasticity is no longer statistically significant. *** denotes to the statistical significance of the estimated elasticity at 1%.

How to read: An increase in regional GDP per capita by 10% is estimated to trigger a rise in in-migration in that region by 1.4 % at the mean of the cross-country distribution of employment protection of regular contracts, 6.7 % at the minimum and -1.4% at the maximum. A decline in regional unemployment by 10% is estimated to trigger a rise in in-migration in that region by 0.47% at the mean of the cross-country distribution of employment protection of regular contracts, 1.9% at minimum and -0.27% at the maximum. The policy indicators used refer to 2017 or the latest available year.

Source: Calculations based on OECD Regional database and Causa et al. (2021), "The laws of attraction: Economic drivers of inter-regional migration, housing costs and the role of policies", OECD Economics Department Working Papers, No. 1679.

StatLink https://stat.link/84ekc3

Inter-regional mobility is not an end in itself, however it can create depopulation in some areas that are left behind and that sometimes suffer from the closure of essential public amenities, and it can create congestion, hence contributing to environmental and health damages. There is no ideal level of inter-regional mobility and the extent to which policies should encourage people to move from one area to another will depend on country-specific context and social preferences. The implication is that structural policies to encourage mobility can only be one pillar of a policy agenda to promote a smooth and inclusive recovery from the COVID-19 crisis. There is a need for articulating structural policies with place-based policies that focus on improving local economic conditions. Creating opportunities in less-developed regions can be about deploying quality infrastructure and amenities, for instance to allow individuals to live there and work elsewhere, especially in a context of rising digitalisation and teleworking. Place-based policies also allow tailoring policy interventions to the local context, which can enhance the effectiveness of policy interventions. One example is designing active labour market and training programmes targeted to the characteristics of the local workforce, of local firms and of industrial structure.

"Place-based policies" cater to social preferences for the stability of living places when economic activities are re-shuffled. They aim at attracting investment and jobs to replace lost local activities. OECD's Economic Policy Committee suggested recently that geographical mobility increases microeconomic efficiency, but also generates externalities which may not be properly priced, making excessive geographical concentration of activities undesirable (Chair conclusions of the EPC WP/1 discussion on regional mobility, 18 March 2021). Loss of social connections and social capital is also not accounted for. Place-based policies may improve collective outcomes under such circumstances. Länder and municipal authorities have long been implementing such policies in Austria, via specialised educational facilities and technology parks (OECD, 2017d). These initiatives may successfully stimulate local activities and employment. Still, in the future, social policies may also need to facilitate and support the mobility of workers and their families when conditions require it. Social partners may contribute to the discussion and design of such policies (Bax, 2020).

Fostering knowledge creation and R&D to boost innovation

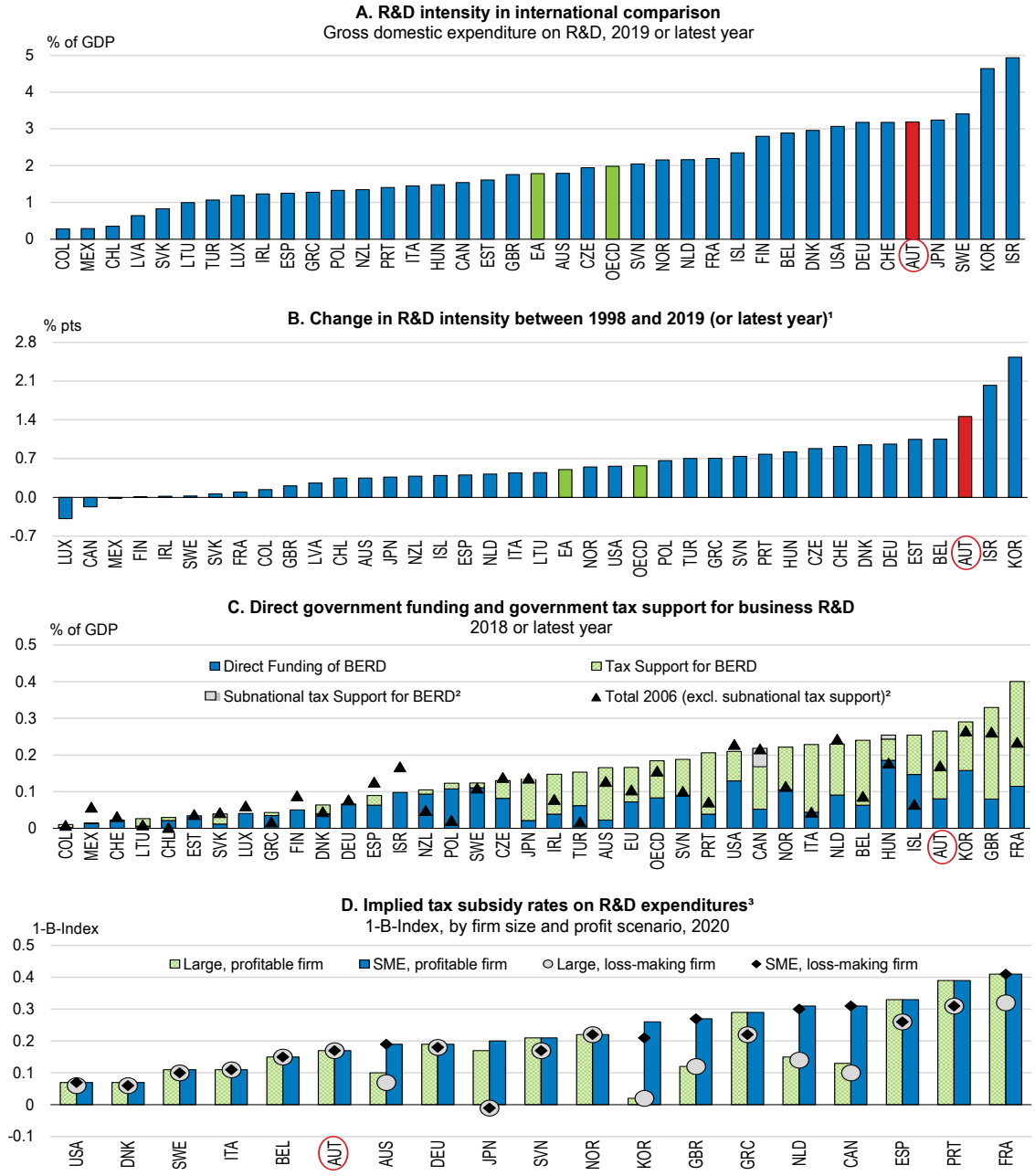
Innovative activity is concentrated in well-established sectors but not diversified enough

Empirical evidence supports the view that higher shares of equity financing significantly improves innovative activity like patenting and R&D expenditure (Hsu, Tian and Xu, 2014). Thus, improving the development of risk capital markets would not only diversify the composition of sources of external financing but also foster R&D and therefore entail a double dividend.

R&D intensity in Austria is high and saw one of the largest increases since the end of the 1990s (Figure 2.33). Implied tax subsidy rates for R&D expenditure have increased steadily throughout the last two decades (OECD, 2020f). Public support for business R&D is generous compared with other countries and is mainly provided through tax incentives (Figure 2.33). As a result, Austria reached the European Union's target to bring R&D expenditure above 3% of GDP already in 2014. The majority of this increase was accounted for by the private sector (OECD, 2020f). The strong increase in R&D intensity has also benefitted from an above-average share of R&D expenditures in the form of foreign direct investments. Boosting R&D continues to be a key lever for the government to position Austria as an innovation leader.

R&D activity in Austria fortifies specialisation in established industries but falls short of developing new markets, in particular in high-tech industries (OECD, 2018b). Compared to other OECD countries, Austria has a significantly higher R&D intensity in the historically grown and already competitive industries (Janger et al., 2017), mainly across low- to medium tech industries (Figure 2.34). The share of business R&D in the high-tech sector is low and lags behind the innovation leaders (Figure 2.34). The distribution of R&D activity across sectors goes hand in hand with an economic model that favours the steady upgrading within sectors.

Figure 2.33. R&D intensity is high and R&D tax incentives generous



1. Due to a lack of data in 1998, data for Colombia, Luxembourg and Switzerland refer to 2000 and data for Greece, New Zealand, Norway and Sweden refer to 1999.
2. Data on subnational tax support are only available for a group of countries. Depending on the data availability, data for the closest year to 2006 are also used instead of 2006.
3. Implied marginal tax subsidy rates, presented for different firm size and profitability scenarios, are calculated based on headline tax credit/allowance rates providing an upper bound value of the generosity of R&D tax support, not reflecting the effect of thresholds and ceilings that may limit the amount of qualifying R&D expenditure or value of tax relief.
Source: OECD (2021), OECD Main Science and Technology Indicators (database) and OECD, R&D Tax Incentives Database, http://oe.cd/rdtax, March 2021.

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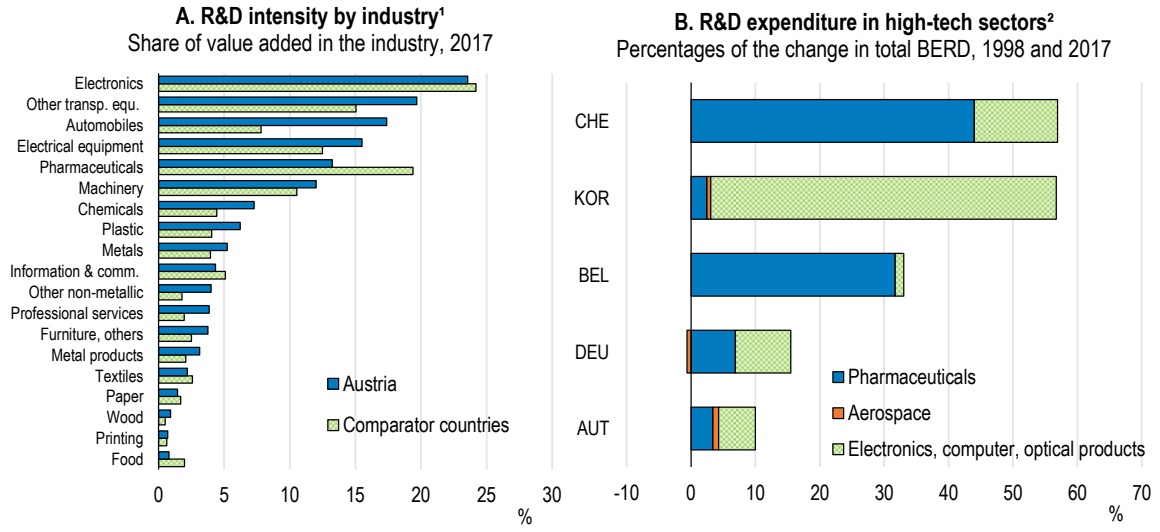
Figure 2.34. R&D activity specialised in medium to low R&D intensive industries



1. According to ISIC rev. 4. Comparator countries refer to the unweighted average of industry R&D intensities for Belgium, Denmark, Finland, Germany, Netherlands and Sweden. Data for Sweden refer to 2018.
2. Data for Aerospace are not taken into account for Belgium and Switzerland due to a lack of data.
Source: OECD (2021), Main Science and Technology Indicators (database) and OECD calculations based on the ANBERD database, http://oe.cd/anberd (March 2021) and OECD STAN and National Accounts Statistics.

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Going forward, Austria should attach a high priority on increasing the efficiency and effectiveness of its investments in research and innovation (OECD, 2018b). The "new RTI Strategy 2030", adopted in December 2020, which aims at catching up with international leaders, is therefore welcome. The strategy could benefit from changing the composition of public support towards more well-designed R&D grants. This would help to better diversify Austria's research portfolio and potentially also increase its share in high-technology intensive sectors. While well-designed R&D tax incentives tend to be better suited to boost R&D projects that are already close to hit the market, grants have been found to support longer-term and riskier research but also benefits innovations that either generate public goods, e.g. in the area of health or climate transition, or have a significant potential for knowledge spillovers (OECD, 2020g). While identifying best practices regarding well-designed R&D grants is challenging given that these grants are usually very specific to the context in which they are used and therefore replication in other country settings may be difficult, the US DARPA programme is widely considered a success. The "OECD Mission-Oriented Innovation policies online toolkit" provides detailed explanations and a wide range of country examples in order to help countries with some of the elements of well-designed R&D grants, e.g. how to achieve a specific goal within a defined timeframe, with a clear direction to innovation and a strategic orientation and strong policy co-ordination.

MAIN FINDINGS	RECOMMENDATIONS
Adapting business framework conditions to promote productivity growth, an efficient allocation of resources and investments	
Many service sectors have long been sheltered from full competition by regulations, self-regulations and trade and investment protections.	**Reduce regulatory barriers in entering market services without undermining their quality and skill standards.**
Strict product market regulations in rail transportation, road freight and the distribution of pharmaceuticals create barriers to entry and to international trade and investment.	Liberalise market entry in rail transportation, road freight and the distribution of pharmaceuticals.
Enterprise birth rates are lower than in peer countries, though a large proportion of Austrians state that they have the entrepreneurial capacity to create their own business.	Continue reducing regulatory barriers for start-ups.
The growth rate of inward FDI has been sluggish in recent years. Barriers to inward foreign direct investments are higher than the OECD average.	Reduce barriers to inward FDI across all sectors to the OECD average.
Foundations hold interest in an elevated number of companies, accounting for around 10% of total employment. The governance of foundations may appears too rigid in certain aspects and may hamper firm growth.	Assess whether the governance of private foundations weighs on the upscaling of firms to guide the envisaged legal reform of private foundations.
Time-consuming restructurings can congest courts and may lead to the liquidation of otherwise viable firms.	Introduce viability screens for firms before initiating restructuring procedures.
Stimulating the adoption of key digital technologies	
The low supply of private risk capital constitutes a bottleneck for business dynamism.	**Improve the effectiveness of start-up and growth financing instruments, including by avoiding complexity, scaling up later stage funding and improving conditions for institutional investors to invest in venture capital.**
Fixed broadband coverage, in particular at higher speed tiers, is lower than in most other European countries.	**Increase access to high-quality internet throughout the entire country and achieve the national and EU goal of Gigabit connectivity for all households by 2030.**
The uptake of of fixed broadband is lower than in most other European countries.	Facilitate new entries and stimulate further competition in broadband services.
The Broadband Strategy 2030 aims at considerable nation-wide investments in Gigabit connectivity but Austria's topography combined with its comparatively low population density constitutes a challenge for the deployment of high-speed broadband.	Regularly assess the state of connectivity through the collection, analysis, performance and publication of data on connectivity services and infrastructure deployment to determine whether public policy initiatives are appropriate, and whether and how they should be adjusted.
Skill shortages, in particular regarding skills of adults in technology-rich environments, are elevated. Importing skills from abroad would help to alleviate these shortages.	Continue to attract high-skilled foreign workers by facilitating their access to red-white-red cards.
Digital security risk management of smaller firms lags behind practices in peer countries.	Consider launching a digital security management awareness campaign, targeted at small- and medium-sized enterprises.
The provision and use of e-government services can help to use government resources more efficiently, increase transparency and is positively related with the adoption of key ICT technologies by firms. Composite indicators on e-government show that Austria performs very well in a European context.	Continue the already strong efforts in e-government to remain a best performer.
Reinvigorating investments for a resilient recovery	
The loss carry-back provision comes at a large fiscal cost and could be used for tax planning.	Discontinue the loss carry-back provision for corporate taxes once the recovery is fully underway but keep it in the policy toolkit as a discretionary measure for times of crisis.
Keeping up with structural change requires a more efficient allocation of labour and improving skills	
Both high- and low-educated Austrians participate less in life-long learning than in peer countries. Internal training within firms is also less developed.	**Publicise the employment and income outcomes of various life-long learning programmes. Incentivise workers at all levels to participate in high-quality programmes, including with the help of individual learning accounts.**
Employment rates of elderly workers are lower than in other European countries and their unemployment rate has increased more than in peer countries. Working conditions of seniors can be improved.	Address discrimination in employment on the basis of age and take a balanced approach to employment protection by ensuring that age is not a criterion in determining the level of protection.
The quality and labour market relevance of life-long learning programmes can be improved, particularly regarding digital technologies.	Involve employer and employee organisations more closely in the design and management of life-long learning programmes to improve quantity and quality of life-long learning programmes and consider reducing entry barriers for training providers to foster competition.
Fostering knowledge creation and R&D to boost innovation	
The share of business R&D in the high-tech sector is low and lags behind innovation leaders. Public support to R&D is provided mainly with tax incentives	**Consider using well-designed direct R&D grants to support longer term, higher-risk research.**

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Austria is set to overcome the COVID-19 shock and its economic scars with the help of genuine sanitary, health and economic support policies. The country faces the opportunities and the challenges of two major structural transformations: transition to a net zero emission economy, and the generalisation of more advanced forms of digitalisation. New entries and exits in the business sector, more capital and labour re-allocations, and greater geographic mobility of labour invite new policy measures to boost social cohesion by improving the adaptation of skills to jobs, improving the social protection of free-lance workers, and accelerating the social, economic and educational integration of groups of migrant origin. A better activation of Austria's talent pool, in particular female, elderly and migrant workers is needed to address the ageing of the society. As the public sector is already large, the level of public debt is elevated and population ageing weighs on public finances, high-quality public sector spending reviews and a strengthened medium-term public expenditure framework would help with the prioritisation and effective allocation of public resources.

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