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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 03 October 2019. 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 18 October 2019.

The Secretariat's draft report was prepared for the Committee by Rauf Gönenç and Dennis Dlugosch under the supervision of Sebastian Barnes. Statistical research assistance was provided by Eun Jung Kim and editorial assistance by Heloise Wickramanayake. The *Survey* also benefitted from contributions by Selçuk Gül and Aleksandra Paciorek.

The previous *Survey* of Austria was issued in July 2017.

Information about the latest as well as previous Surveys and more information about how *Surveys* are prepared is available at http://www.oecd.org/eco/surveys.

Basic statistics of Country, 2018

(Numbers in parentheses refer to the OECD average)[1]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	8.8		Population density per km²	107.2	(37.8)
Under 15 (%)	14.1	(17.8)	Life expectancy (years, 2017)	81.6	(80.3)
Over 65 (%)	19.4	(17.1)	Men (2017)	79.3	(77.7)
Foreign born (%, 2017)	18.8		Women (2017)	84.1	(83.0)
Latest 5-year average growth (%)	0.9	(0.6)	Latest general election	September-2019	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	456.2		Primary sector	1.3	(2.4)
In current prices (billion EUR)	386.2		Industry including construction	28.5	(27.5)
Latest 5-year average real growth (%)	1.8	(2.3)	Services	70.2	(70.1)
Per capita (000 USD PPP)	55.5	(46.4)			
GENERAL GOVERNMENT Per cent of GDP					
Expenditure (OECD: 2017)	48.5	(40.3)	Gross financial debt (OECD: 2017)	95.9	(112.4)
Revenue (OECD: 2017)	48.6	(38.0)	Net financial debt (OECD: 2017)	51.5	(69.6)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.85		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.79		Machinery and transport equipment	38.5	
In per cent of GDP			Manufactured goods	21.2	
Exports of goods and services	54.6	(56.1)	Chemicals and related products, n.e.s.	12.4	
Imports of goods and services	51.0	(52.0)	Main imports (% of total merchandise imports)		
Current account balance	2.3	(0.3)	Machinery and transport equipment	34.8	
Net international investment position	3.7		Manufactured goods	16.2	
			Miscellaneous manufactured articles	14.5	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	73.0	(68.4)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	4.8	(5.3)
Men	77.5	(76.0)	Youth (aged 15-24, %)	9.4	(11.1)
Women	68.6	(60.9)	Long-term unemployed (1 year and over, %, 2017)	1.8	(1.7)
Participation rate for 15-64 year-olds (%)	76.8	(72.4)	Tertiary educational attainment (aged 25-64, %, 2017)	32.4	(36.9)
Average hours worked per year (OECD: 2017)	1 511	(1 746)	Gross domestic expenditure on R&D (% of GDP, 2016)	3.1	(2.5)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2017)	3.8	(4.1)	CO2 emissions from fuel combustion per capita (tonnes, 2016)	7.2	(9.0)
Renewables (%, 2017)	29.7	(10.2)	Water abstractions per capita (1 000 m³, 1995)	0.4	
Exposure to air pollution (more than 10 g/m³ of PM 2.5, % of population, 2017)	87.0	(58.7)	Municipal waste per capita (tonnes, 2017)	0.6	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2016, OECD: 2015)	0.284	(0.315)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2016, OECD: 2015)	9.8	(11.8)	Reading	485	(492)
Median disposable household income (000 USD PPP, 2016, OECD: 2015)	32.5	(23.3)	Mathematics	497	(490)
Public and private spending (% of GDP)			Science	495	(493)
Health care (2017)	10.3	(8.8)	Share of women in parliament (%)	34.4	(29.7)
Pensions (2015)	13.9	(8.5)	Net official development assistance (% of GNI, 2017)	0.3	(0.4)
Education (public, 2017)	5.2	(4.5)			

Note: The year is indicated in parenthesis if it deviates from the year in the main title of this table.
1. 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, World Bank.

Executive summary

The generally well-performing economy has slowed after a long recovery

Living standards and subjective wellbeing are among the highest across the OECD. Broad-based growth on the back of myriad entrepreneurial firms across all regions, supported by growth-friendly social partnerships, has underpinned Austria's strong well-being and social cohesion.

Economic conditions have improved in recent years, driven by domestic and external factors. Robust employment growth in the private sector has consolidated household confidence and fed into wage increases. Austria benefits from its close integration with globally competitive Germany-centred international value chains, and with rapidly growing Central and Eastern European economies.

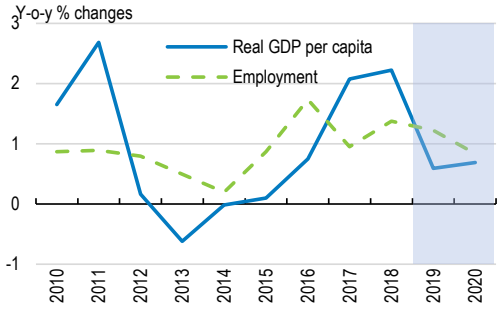
More people have moved into work and inward migration has been strong. Labour demand has been robust for three years in a row and has helped to increase women's and older workers' labour force participation. At the same time, a large share of newly created job positions has been filled by migrants or cross-border commuting workers. Amid recruitment difficulties and skill mismatches, the estimated rate of structural unemployment has increased. Though the long-term unemployment rate in the domestic labour market has recently fallen, it is still on relatively high levels.

Divergences in labour market outcomes raise social cohesion challenges. Increased skill differences in the population, combined with diverging productivity performance across Austrian firms, generate a higher range of outcomes for employment, job quality and market wages than in the past. Developments are also uneven across regions. This raises challenges for social cohesion. Traditional social expectations of steady job creation for all and high income equality augment claims for higher public spending, including on support and re-training for the unemployed, subsidised social housing, and to help those at risk of relative poverty, notably at old age.

The previous government had important reform objectives. In place from December 2017 to June 2019, it aimed at implementing several regulatory reforms to ease market entry and business conditions, a wide-ranging tax reform to support business investment and job creation, and started a restructuring of the education system. The vocational training system in particular, which has been a pillar of Austria's past performance, was part of the reform program. Catching-up with the international digitalisation frontier – where Austria has gaps – was emphasised as an overarching strategic objective.

The economy faces headwinds in the short term. The expansion is projected to slow despite supportive domestic conditions due to the weakening of external demand, especially from the key export markets of Germany and Italy (Figure 1). Skill shortages and recruitment difficulties are dragging on business investment. Uncertainties concerning international trade policies are weighing on business confidence, on investment and employment growth. The capital adequacy of banks, which are large for the size of the national economy and are highly exposed in Central, Eastern and South-Eastern Europe, is above regulatory norms but can be further strengthened.

Figure 1. After a strong improvement, growth is slowing



Source: OECD (2019) OECD Economic Outlook: Statistics and Projections (database).

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Table 1. The economy is projected to slow to below 2% in 2019 and 2020

Annual percentage change

	2018	2019	2020
Gross domestic product	2.3	1.4	1.3
Private consumption	1.1	1.7	1.8
Gross fixed capital formation	3.9	2.9	1.5
Exports	5.6	2.1	0.6
Imports	4.4	2.2	1.2
Unemployment rate (%)	4.8	4.6	4.5
Consumer price index	2.1	1.6	1.7
Fiscal balance (% GDP)	0.1	0.1	0.2
Public debt (Maastricht, % of GDP)	73.8	72.1	70.8

Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database).

Public finances have moved into surplus, but long-run sustainability and spending efficiency should be improved

Low interest rates and strong growth have helped to balance the government accounts. Further improvements were planned over the 2019-2020 horizon by the government in place after the 2017 elections. As cyclical conditions slow, automatic stabilizers should be allowed to operate and more active measures should be considered if developments get more severe. The tax reform of the previous government was supposed to be fiscally neutral in the long-term but may have slightly reduced the budget surplus in the short-term. Additional direct spending in areas contributing to improve the supply potential of the economy, social cohesion and environmental sustainability may help to provide a more rapid and more easily reversible stimulus.

The long-term impacts of population ageing call for further attention. Population ageing weighs heavily on the public finances and on the supply capacity of the economy. Despite parametric adjustments in the large public pension system - implemented through a long transition period - and the reduction of early retirement avenues, the average effective retirement age remains well below comparable countries. Pension replacement rates are high. Stronger work incentives, better-adapted life-long learning programmes, and a more supportive organisation of work would help older workers to stay longer in the labour force. Under the prevailing skill shortages, this would further facilitate the transmission of older workers' experiences and competencies to the new cohorts.

To manage the fiscal pressures and risks of ageing, Austria has opted for periodic legislative amendments rather than automatic adjustments to change the retirement age, contributions and benefits as needed. If longevity increases more than expected or there are other changes, this would require further adjustments to the pension system, which may prove politically demanding. Impacts on health and long-term care services should also be well anticipated and actively managed. Growing care needs of old age dependants – the majority of whom are taken care of by their families in Austria – should be addressed without restricting the labour force participation of their relatives. Austrian experiments with innovative approaches in this area include intense recourse to mobile and daytime services. These have the potential to improve the well-being of beneficiaries and to reduce the pressures on public finances in the long term.

More ambitious public sector and federal fiscal reforms are needed. The multilayer structure of the government ensures close relations with the population but raises challenges for cost efficiency, quality and long-term planning of public services. High-quality independent public spending reviews

can help improve the design and delivery of services. The spending and taxing powers of Federal, Länder and local governments are currently not harmonised and the average size of municipalities is small. Revenue raising and spending responsibilities should be aligned and economies of scale should be exploited through shared services or consolidation of government layers.

The revenue structure of the general government should be made more growth- and social inclusion-friendly. The tax reform could reduce further labour taxes (including social security contributions) for lower income households, widen the consumption tax base and raise environmental taxes. The authorities should also consider increasing recurrent property taxes and re-introducing inheritance taxes. Widespread VAT reductions should be replaced with direct transfers to low-income households – at lower fiscal costs.

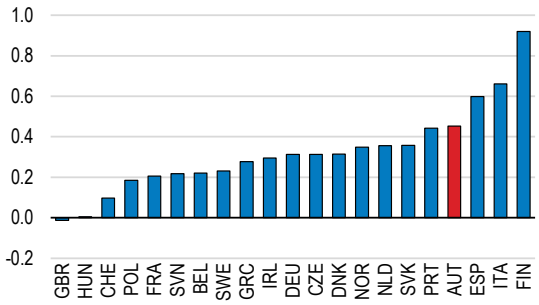
Framework conditions need to be improved to sustain long-term growth and facilitate businesses' digital transition

Austria is adapting to the global digitalisation frontier at a slower pace than in comparable countries. Upskilling the population across all ages in digital technologies (Figure 2), decreasing the restrictions on competition in product market regulations without reducing the quality of services, further reducing the remaining barriers to digital trade and investment, and fostering the provision of private venture and equity capital would accelerate the adoption of key ICT technologies (Figure 3). Austria's international leadership in e-government can be re-gained by generalising its use by all social and age groups. A stronger ultra-high speed internet infrastructure would enable more user-friendly services and contribute to faster catching-up.

Product market regulations can be made more supportive for start-ups and for international trade and investment. Service sectors are particularly affected by restrictive regulations and their productivity and innovation capacity appear to be hampered. Simplifying the licencing procedures, in particular for professions, and liberalising market entries in rail transportation, road freight and the distribution of pharmaceuticals would generate significant productivity and innovation gains. Lower prices, more choice and better services would benefit consumers and downstream manufacturing sectors.

Figure 2. Digital skill shortages are high

Shortage of knowledge of computers and electronics, skills scale between -1 and 1 (strongest), 2015 or latest year



Note: Positive values indicate skill shortage while negative values point to skill surplus.
Source: OECD (2018), OECD Skills for Jobs Database.

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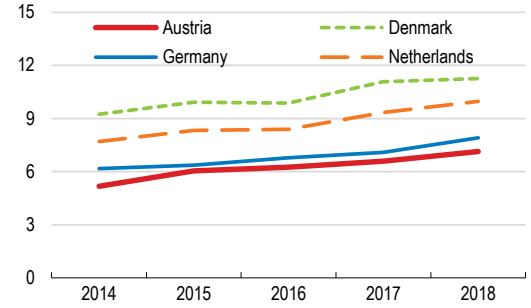
Figure 3. Digitalisation in Austria lags behind

Digital Economy and Society Index (DESI), use of Internet, composite index



Source: European Commission (2019), Digital scoreboard (database).

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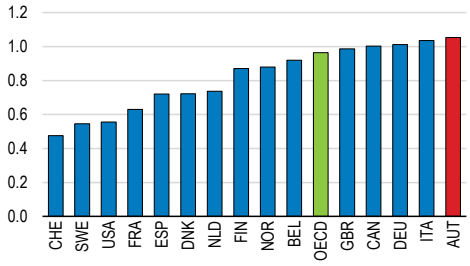
The corporate tax system is biased towards debt-financing and Austrian firms have one of the highest average debt-to-equity ratios among OECD countries. Credit markets are well developed and banks, with their close relations

with firms, contribute to the success of the business sector, but equity markets have lagged behind. The planned tax reform could reduce the existing biases towards debt finance (Figure 4). Further identifying and addressing the key constraints to the development of the ecosystem for equity investments in firms of all sizes would help. Private capital sources should complete the already large public financing sources for innovative start-ups. Private venture and growth investors can play a more important role in the development of high-potential ventures.

Figure 4. Debt-to-equity ratio is high

Non-financial corporations, 2018



Source: OECD (2019), OECD Financial Dashboard.

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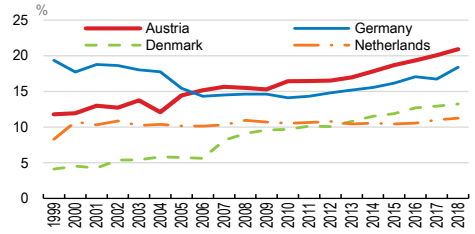
The success of ownership transmissions of family SMEs will be crucial for future economic performance. Enduring strong performance of medium-sized family-owned firms ("hidden champions") will be key, including through proper operation of 'family trusts' during transitions. The measures planned by the previous government to improve the framework conditions for business transfers, including by deepening the capital markets, should be taken up again. The development of both private and listed equity markets would help to facilitate ownership transmissions and contribute to SMEs' further commercial development, technological modernisation and international outreach.

Integrating all immigrants and improving environmental sustainability are important remaining challenges

Immigration is projected to help offset population ageing and sustain growth in the decades ahead. Effective integration of immigrants improve their contribution to economic development and social well-being (Figure 5). The integration of low-skilled foreigners and their families and children has proven relatively demanding to date. Their German language learning opportunities, the adaptation of their existing skills to labour market needs, and their participation in the labour force should be strengthened. The government also intends to attract more skilled foreigners into "shortage professions" and to retain a higher proportion of foreign graduates of local universities in Austria.

Figure 5. Migrants are sustaining higher employment

Share of migrants in the total employment, 15-64 year-old employed



Source: Eurostat (2019), LFS detailed annual survey results (database).

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Environmental challenges should be faced more actively. Austria is endowed with exceptional natural assets. Strong focus on employment and GDP growth may have overshadowed environmental priorities in the past. Low carbon prices and taxes in international comparison should be increased to pursue the National Climate Strategy 2030 in more economically efficient ways. Low-density developments around towns and cities have grown more than in comparable countries, worsening road congestions and transportation times and denting air quality. This urban sprawl calls for more effective and better integrated urban planning, transportation and housing development policies across government levels.

MAIN POLICY FINDINGS	KEY RECOMMENDATIONS
Fiscal and financial policy	
Domestic demand has remained robust, but GDP growth has peaked due to weaker external demand growth.	Continue to reduce the public debt ratio. If cyclical conditions worsen, let automatic stabilisers operate and consider more active measures if growth disappoints.
While house prices have risen less than in many countries, valuations have nevertheless reached elevated levels, particularly around Vienna.	Make the existing macro-prudential recommendations on mortgage lending compulsory.
Banks are large compared to the size of the national economy and highly exposed in the region. Their capital adequacy has improved and is in line with regulatory benchmarks, but stay somewhat behind the strongest banking systems.	Ensure that banks of all sizes are robustly capitalised.
The average effective retirement age is well below comparable countries and well below the official retirement age. Pension benefits are generous. The long-term path of pensions remains exposed to significant risks.	Ensure the long-term sustainability of the pension system, e.g. by linking retirement age to life expectancy. Closely monitor demographic and other structural developments and, accordingly, promptly increase the retirement age, raise contributions or reduce benefits as needed.
The current tax system is not employment friendly and plays a very limited role in income and wealth re-distribution.	Create room for substantial labour tax cuts for lower income earners by raising consumption, environmental and inheritance taxes. Consider replacing VAT rate reductions with targeted transfers.
The misalignment of the taxing and spending powers of federal, Länder and local governments and the very small average size of municipalities hamper the cost-efficiency and the quality of public services.	More closely align revenue raising and spending responsibilities of government levels. Seek economies of scale in municipal governance through shared services or consolidation of government.
The efficiency and allocation of public spending could be improved by reforms and better targeting.	Implement high-quality independent government spending reviews to improve the quality and cost-efficiency of services.
Business sector dynamism, jobs and skills	
Strict product market regulations create barriers to entry and to international trade and investment. Service sectors are particularly affected and their productivity is hampered. Economic performance is uneven across regions.	Make the licensing system more open to competition without undermining the quality of services and the training and skill standards of workers. Liberalise market entries in rail transportation, road freight and the distribution of pharmaceuticals.
Banks support the business sector effectively, including at local level, but equity markets have fallen behind.	Further identify and address the remaining shortages in the ecosystem for equity investments in firms of all sizes. Further draw on the completion of EU capital market union
The corporate tax system is biased towards debt-financing and Austrian firms have one of the highest average debt-to-equity ratios across OECD countries.	As intended in the tax reform strategy of the previous government, modify corporate taxes to reduce disincentive effects and the debt-bias.
Large proportions of SMEs will face ownership transmissions in the near future. The success of these transmissions will be crucial for the future performance of the economy.	Take up the measures planned by the previous government to facilitate business transfers. Improve the evidence base on business transfers. Increase awareness on the importance of successful transmissions and help disseminate best practices.
The quantity and quality of life-long learning programmes are behind needs, particularly in digital technologies.	Involve employer organisations more directly in the design and administration of life-long learning programmes.
Migration and cross-border workers play a major role in economic growth. However, recruitment difficulties have increased in all regions.	Continue to attract high-skilled foreign workers and retain more foreign graduates of Austrian universities by facilitating their access to red-white-red cards.
Well-being and social cohesion	
Gender gaps in career opportunities and pay remain deeper than in comparable countries.	Make high quality child care and full-day schooling a legal entitlement in the entire country.
The integration of low-skilled migrants and refugees and their families and children fall behind outcomes in other countries facing similar inflows.	Closely monitor the economic and social integration of low-skilled migrants and refugees. Strengthen the German language learning opportunities and the labour force participation potential of their entire families.
The National Climate Strategy 2030 is welcome. However, its carbon emission reduction goals for 2030 risk not being met.	Phase in additional measures if emission trajectories diverge from targets.
Carbon prices are too low and unequal across economic activities.	Raise and harmonise carbon prices across activities, along a predictable path supported by international co-operation.
Urban sprawl is excessive and is damaging Austria's natural assets, urban living conditions and air quality.	Improve co-operation between federal, Länder and municipal governments on joint urbanisation, housing, transportation and air quality plans.

1 Key Policy Insights

The Austrian economy has performed well over the recent decades. Real GDP per capita was the 11th highest in the OECD and 6th highest in the EU in 2018, slightly ahead of Germany, Finland and Belgium. It fell however behind the most rapidly growing OECD countries in the 2010s and the gap has widened more rapidly than in comparable countries. Available indicators of well-being remain nonetheless well above OECD averages, with limited discrepancy between population groups and regions, witnessing a high degree of social cohesion.

This chapter reviews the macroeconomic developments, the main outcomes in Austrian population's well-being, the underlying trends in the supply side of the economy, and the priorities for structural policies and reforms. The main messages are:

- For Austria's high well-being and social cohesion standards to be preserved and improved, the supply capacity of the economy should further be strengthened. Risks of increased social inequality in market outcomes, heightened mobility needs of workers between activities and living places, and intergenerational equity challenges will be easier to address with a stronger economy. This can be achieved with faster growth of high-potential firms, stronger productivity gains across the business sector and higher labour force participation by women and a more rapidly upskilling working age population.
- Small and medium sized firms have a special role to play in this process. They have been the core engine of Austria's productivity and competitiveness gains and regional development in the past, but their digital transition is now relatively slow, their participation in global value chains remains centred on continental Europe, and they face more severe skill shortages than international counterparts. Many medium-sized family firms face ownership transmission in the coming years. More open entry conditions favouring competition in domestic markets, additional risk-sharing equity capital and upskilling of workers at all levels would help all types of firms to keep pace with the global frontier.
- Long-acknowledged but repeatedly postponed public sector reforms should be pursued. The public sector contributed successfully to economic growth and social cohesion by narrowing inequality in the past, but its costs have gone up, its margin of action for new policy measures has narrowed, and, as a result, it risks falling short of delivering the services and infrastructures required to sustain high well-being in the face of new megatrends. On the side of revenues, there is large scope to change the composition of taxes to better support labour force participation, social inclusion and environmental sustainability.

Domestic demand growth strengthened in recent years, but external conditions are weakening

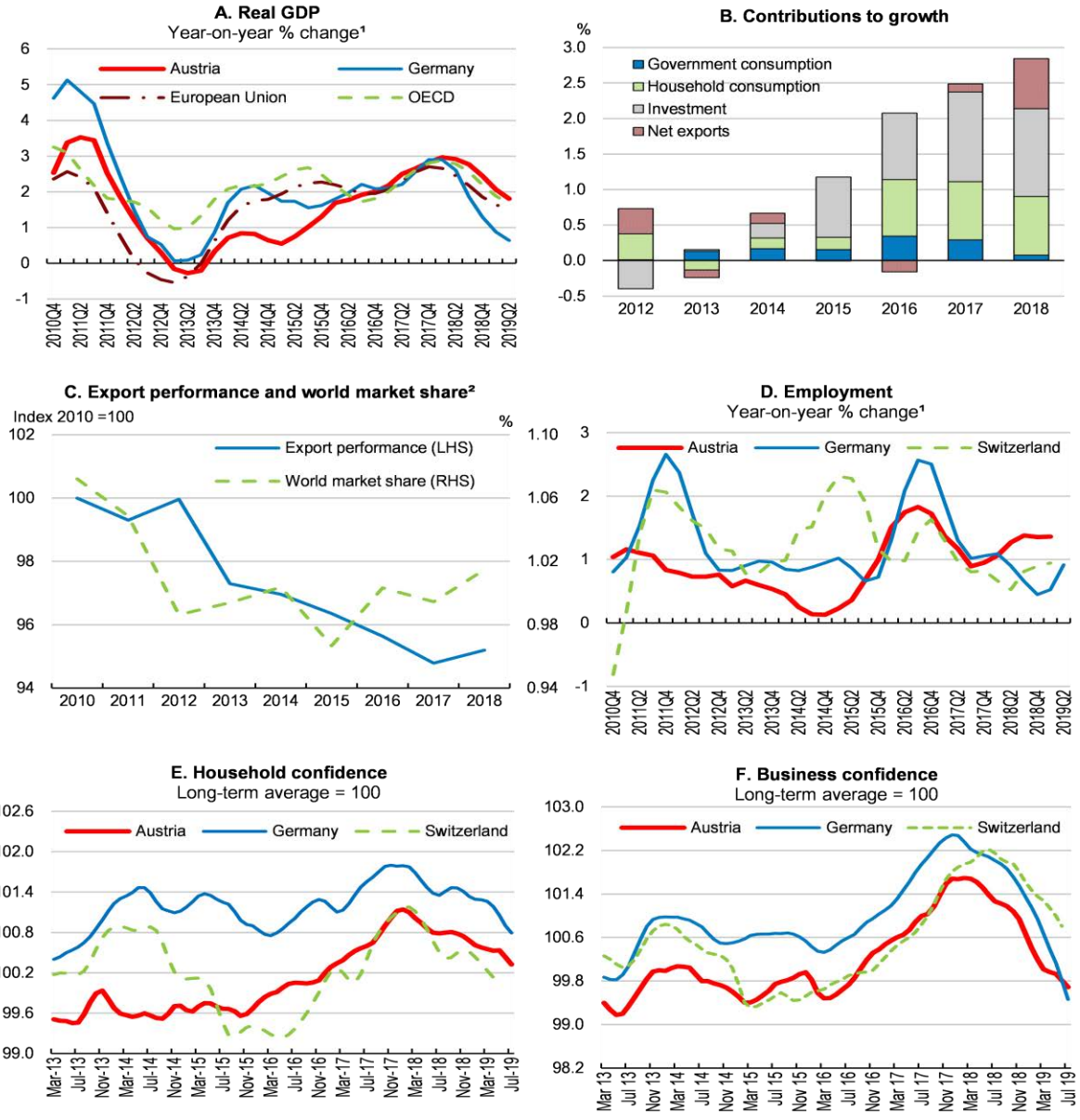
After a rapid recovery following the global financial crisis, the Austrian economy had stalled in comparison to other small open European economies in the 2010s but remarkably improved its performance in 2017 and 2018 (Figure 1.1). Both external and domestic demand strengthened. The vigour of the 'Central European manufacturing core' formed around Germany provided strong external stimulus until late 2018. Household consumption was backed by the 2016 tax reform, which reduced personal income tax rates for low and middle income households, and considerable wage increases negotiated in Autumn 2018. A steady improvement in household confidence supported private consumption. The increase in immigration, principally from other countries in the region, also supported domestic demand. Total employment has strongly increased and unemployment fell until early 2019 (Figure 1.1).

Business investment increased strongly in the past two years, more than in comparable countries. A large proportion of Austrian firms reported until recently that they increased investments in response to highly supportive external and domestic conditions but mentioned the shortage of skilled personnel as a binding constraint to further investments (EIB, 2018). Business representatives emphasised that the government programme 2017-2022 of the government in place after the 2017 elections, which included several growth-friendly reform objectives potentially stimulates investment (Box 1.1).

Euro area monetary policies have long been supportive, even if the recent surge in investments were financed more by retained earnings than external credit. Fiscal policy was fairly supportive in 2016 but no additional stimulus was provided in 2017 and 2018 (Figure 1.2). The previous government took a mix of restrictive and stimulus measures for 2018 and 2019. The net impact is estimated to be broadly neutral.

This stance appears adequate but should cyclical conditions worsen in the euro area, automatic stabilisers should continue to operate and more active measures can be considered if growth disappoints. Additional adjustments in the composition of spending and revenues may help strengthen this stimulus. The structural and fiscal policy recommendations of this Survey have been conceived in a fiscally neutral manner and would be compatible with this stance.

Figure 1.1. The strong recovery has peaked



1. Three-quarter moving average.
2. Export performance is measured as the ratio of actual export volume to the country's export market size. World market share is measured as the share of value exports of goods and services in world exports in USD.
Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database) and OECD Main Economic Indicators: Business tendency and consumer opinion surveys.

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Box 1.1. Reform priorities in the previous government programme

The programme of the previous government for 2017-2022 aimed at "enhancing Austria's competitiveness as a business location, with digitalisation as a major opportunity to position Austria on the international technology frontier". Several measures were implemented in the first year following the elections, including an increase in maximum daily working time from 10 to 12 hours, and in the maximum weekly working time from 50 to 60 hours. A number of the 5 000 business regulations were amended. From 2019 on longer-term initiatives would have been phased in. Three main orientations were intended to foster a more growth-friendly environment:

- "Doing business" conditions were meant to be made more attractive. Austria's strict product market regulations were acknowledged and the 2017-2022 programme intended to simplify them. An independent 'regulatory monitoring agency' was supposed to examine the costs and benefits of all regulations and to streamline proposals. Labour market rules were intended to be made more open to company-level agreements. The deepening of capital markets was intended to support firms in all phases of their lifecycle, including via initial public offerings (IPOs) in the secondary segment of the Vienna Stock Exchange. Further, the telecommunications infrastructure was supposed to be modernised, with the goal of becoming a 5G pilot country by 2021 and a mobile-5G country by 2025.
- A large tax reform was a key part of the programme. Its principal targets included: i) cutting the tax ratio towards 40% of GDP by 2022; ii) reducing the labour tax wedge, first for lower incomes and then for higher income groups, including by cutting social security contributions (see Table 1.8 for details), iii) reducing the corporate income tax rate, also in steps. These reductions were planned to be budget neutral thanks to additional revenues from digital taxes and cost reductions across all ministries.
- A comprehensive restructuring of the education system was targeted in all its layers. The objective was to maintain separate educational tracks but to boost academic standards in all of them. Schools were supposed to be granted a higher degree of autonomy against closer *ex post* performance monitoring. Another goal of the programme was to make the teaching profession more attractive to entrants. The adaptation of apprenticeship education (which trains 40% of each student cohort) to the digital revolution was especially emphasised.

These economic objectives were intended to be supported with new approaches in four social policy areas:

- Pension system parameters would have been re-visited in the light of international experiences, including concerning the official retirement age. The convergence of actual and official retirement ages was a priority, stressing elderly workers' staying in the labour force.
- Immigration policies were to be re-oriented according to the needs of the labour market. Issues concerning i) skilled immigration, ii) freedom of movement within the EU, and iii) asylum policies will be managed according to different priorities. Language and cultural integration of immigrant groups received a particular emphasise.
- A reform of the means-tested minimum income scheme has been adopted by Parliament in May 2019 in the "Sozialhilfegrundgesetz". This new law sets maximum rather than minimum benefit levels binding for Länder governments which administer these aids. Furthermore, benefit conditions have been made more restrictive, for example regarding the eligibility criteria for receiving the full amount of the benefit like language skills, completion of compulsory education in Austria or, proof of integration efforts years (EC, 2018). Further key points of the reform are the prioritisation of benefits in kind, increased incentives to work and a higher protection of assets. The process of implementation by the Länder, however, is still ongoing.
- New legislation was adopted to grant women temporarily interrupting their career for family responsibilities notional wage increases matching their peers' in employer firms and organisations.

The fiscal measures in the government programme 2017-2022

The previous government aimed to reduce the Maastricht debt ratio below 60%, to regain its triple-A credit rating lost after the global financial crisis. The central anchor to achieve this objective is the so-called debt-brake rule (cyclically-adjusted general government balance ≥ -0.45% of GDP). The partial recovery of the assets of the government-owned bad banks created after the global financial crisis is expected to help. General government debt reductions due to asset recoveries amounted to 6% of GDP between 2015-2018 and may further augment in the period ahead.

To attain its fiscal objectives, the government elected in 2017 announced three streams of measures that were restrictive on the spending side but also cut taxes:

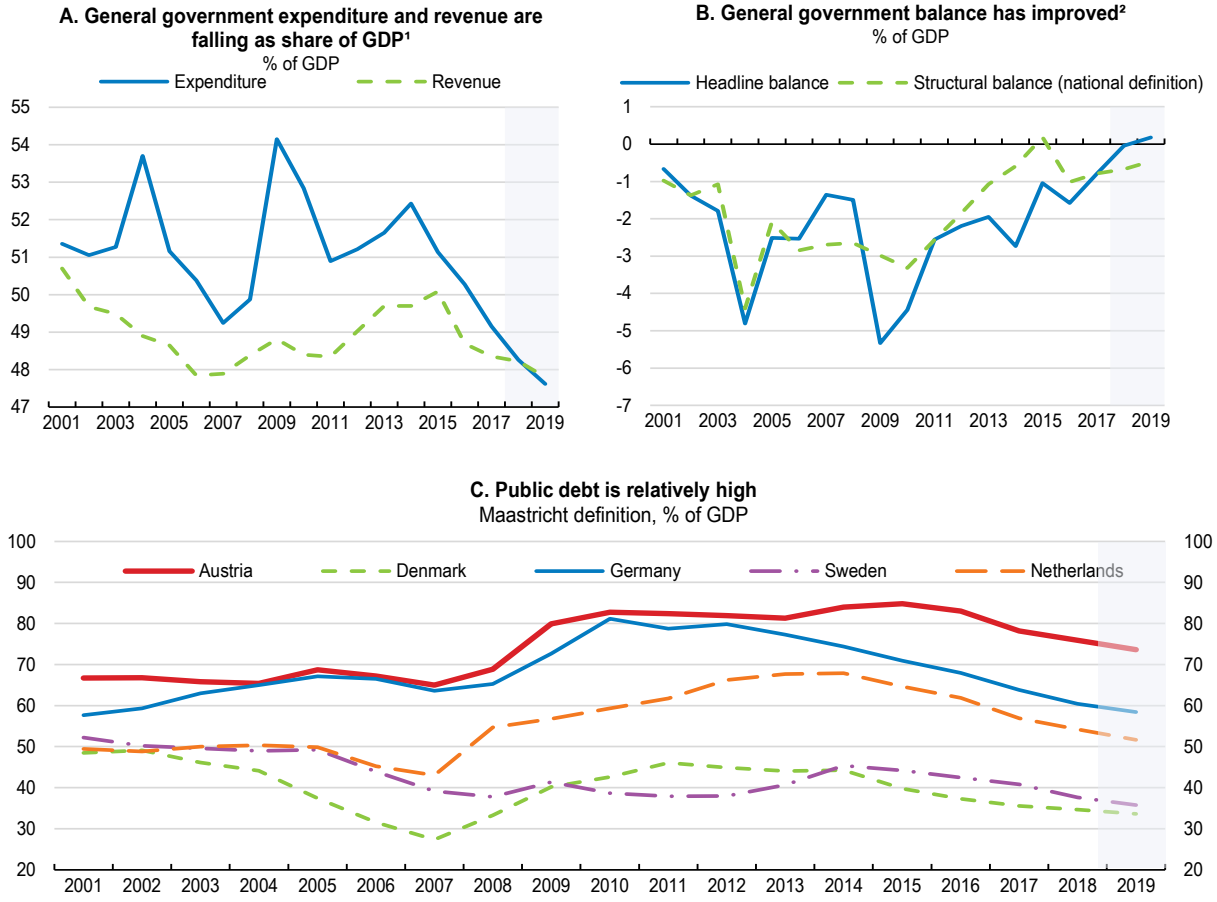
- The stimulus measures introduced in early 2017 by the government elected in 2013, and which had become pro-cyclical amid strong growth in 2018, were discontinued. These encompassed the "new hiring bonus" and other investment grants offered to enterprises, as well as the subsidies aimed at integrating the long-term unemployed, the elderly and the persons entitled to asylum protection in the labour market.
- A catalogue of cost-saving measures was announced in the public sector, including reductions in subsidies, cuts in personnel costs in government-owned entities, the merger of 21 different health, pension and accident funds to five, and the indexation of family allowances for children living outside Austria to their local living costs.[1]
- A number of tax cuts were introduced for 2018-19, including the reduction of contributions to unemployment insurance by low-income earners, the re-introduction of the super-reduced VAT rate on tourist accommodations, as well as a "Family Bonus plus" (a personal income tax relief per child in the order of EUR 1.5 billion over 2019 and 2020), while abolishing the deductibility of child care costs and the existing child allowance. These tax measures were intended to be fiscally neutral in the long-term but could slightly reduce the budget surplus in 2020 by around 0.3% of GDP.

While the direct impact of these measures on aggregate demand was estimated to be broadly neutral, they would have medium-term economic and social implications. The Chamber of Economy estimated that the government programme 2017-2022 addressed a large part of the proposals it had made to improve Austria's business environment, with an aim to raise Austria's rank in the World Bank Doing Business Indicators from 26th in 2019 to the top 10 by 2022 (Austria Economic Chamber, 2018). However, OECD evaluations suggest that economic gains from VAT reductions may not justify their high fiscal costs. Also, the replacement of the tax deductibility of child care costs and of the child care allowance by the Family Bonus may have a relatively weaker incentive effect for the labour force participation of women with children. The discontinuation of employment subsidies for the low-skilled may reduce their employment opportunities.

If the cyclical slowdown in the EU and in Austria takes hold more strongly, additional countercyclical measures such as temporarily increasing depreciation allowances for business investment would help. Re-installing well targeted wage subsidies for vulnerable workers may further support growth and social inclusion. OECD experience suggests that targeted wage subsidy programmes, if well-designed and monitored, can prove to be effective (Martin, 2017).

According to the OECD fall projections, the headline general government fiscal balance should shift from a surplus of around 0.1% of GDP in 2018 to a deficit of -0.1% in 2021, corresponding to an improvement of the cyclically-adjusted stance from neutral in 2018 to a surplus of 0.3% in 2021. The general government debt-to-GDP ratio is projected to decline from 73.8% of GDP in 2018 to 69.2% of GDP in 2021 with asset recoveries playing an important role. The national medium-term fiscal objective — a structural deficit of 0.5% of GDP was achieved in 2018 and was expected to be met from 2019 onwards.

Figure 1.2. Structural fiscal position has improved



1. 2004 revenues include remission of Austrian Federal Railways' (ÖBB's) debt to the federal government. Interest payments exclude swap transactions.
2. 2004 headline balance includes remission of Austrian Federal Railways' (ÖBB's) debt to the federal government.
Source: Statistics Austria, Austrian Ministry of Finance, Austrian Institute of Economic Research (GDP), European Commission and Fiscal Advisory Council's fall forecast (2018 and 2019); OECD (2019), OECD Economic Outlook: Statistics and Projections (database).

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The fast growth of the past two years has peaked in 2018. The economy is projected to slow over the 2019-21 period, similar to many euro area countries. Following the slowdown, the Austrian economy is growing roughly at its potential rate. Household demand remains strong but demand through international trade is decelerating, even if the relative strength of the Central and Eastern European economies offers some external support to the Austrian economy. Business confidence was nevertheless harmed more than in countries with similar characteristics (Germany, Switzerland, The Netherlands, Denmark and Sweden are considered as Austria's peer countries in this survey). Subsequently business investment has lost steam, despite abundant cash-flow within firms as well as the availability of low-cost bank credits (Figure 1.1 and Table 1.1).

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume (2015 prices)

	2015 Current prices (billion EUR)	2016	2017	2018	2019	2020
GDP	344.3	2.1	2.6	2.3	1.4	1.3
Private consumption	181.2	1.7	1.5	1.1	1.7	1.8
Government consumption	68.1	1.7	1.1	0.8	0.8	0.9
Gross fixed capital formation	78.1	4.0	3.9	3.9	2.9	1.5
Housing	14.6	2.3	6.0	1.2	5.5	3.1
Final domestic demand	327.4	2.3	2.0	1.7	1.8	1.6
Stockbuilding[1]	3.8	0.0	0.1	0.1	-0.2	0.0
Total domestic demand	331.2	2.2	2.1	1.8	1.5	1.6
Exports of goods and services	182.9	3.2	5.3	5.6	2.1	0.6
Imports of goods and services	169.9	3.7	4.9	4.4	2.2	1.2
Net exports[1]	13.0	-0.1	0.4	0.8	0.0	-0.3
Other indicators (growth rates, unless specified)						
Employment	. .	1.7	1.0	1.4	0.9	0.8
Unemployment rate	. .	6.0	5.5	4.8	4.6	4.5
GDP deflator	. .	1.7	1.1	1.7	1.7	1.4
Consumer price index (harmonised)	. .	1.0	2.2	2.1	1.6	1.7
Core consumer prices (harmonised)	. .	1.6	2.1	1.8	1.5	1.4
Household saving ratio, net[2]	. .	7.8	6.8	7.5	7.2	7.2
Current account balance[3]	. .	2.7	1.5	2.3	1.4	0.7
Government primary balance[3]	. .	0.1	0.7	1.4	1.2	1.0
General government fiscal balance[3]	. .	-1.5	-0.8	0.1	0.1	0.2
Cyclically-adjusted balance[4]		-1.0	-0.8	-0.7	-0.5	
General government gross debt (Maastricht)[3]	. .	82.7	78.0	73.8	72.1	70.8
General government net debt[3]	. .	58.3	54.7	51.6	49.9	48.6
Ten-year government bond yield, average	. .	0.4	0.6	0.7	0.1	-0.1

1. Contribution to changes in real GDP.
2. As a percentage of household disposable income.
3. As a percentage of GDP.
4. National definition. As a percentage of GDP.

Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database), October; Statistics Austria, Austrian Ministry of Finance, Austrian Institute of Economic Research (GDP), European Commission and Fiscal Advisory Council's fall forecast (2018 and 2019).

Inflation remains moderate and is set to grow by 1.6 and 1.7% in 2019 and 2020. Austria is exposed to risks including further deteriorations in global trade conditions, which may reduce the demand and prices for Austria's exports and dent activity and employment (30% of Austria's exports go to Germany as intermediary goods processed and forwarded to global markets). Moreover, additional uncertainties in the EU – related to the developments in the UK and in Italy – may lead to a weakening in business and consumer confidence. The lower probability events mentioned in Table 1.2 may also lead to major changes in the outlook.

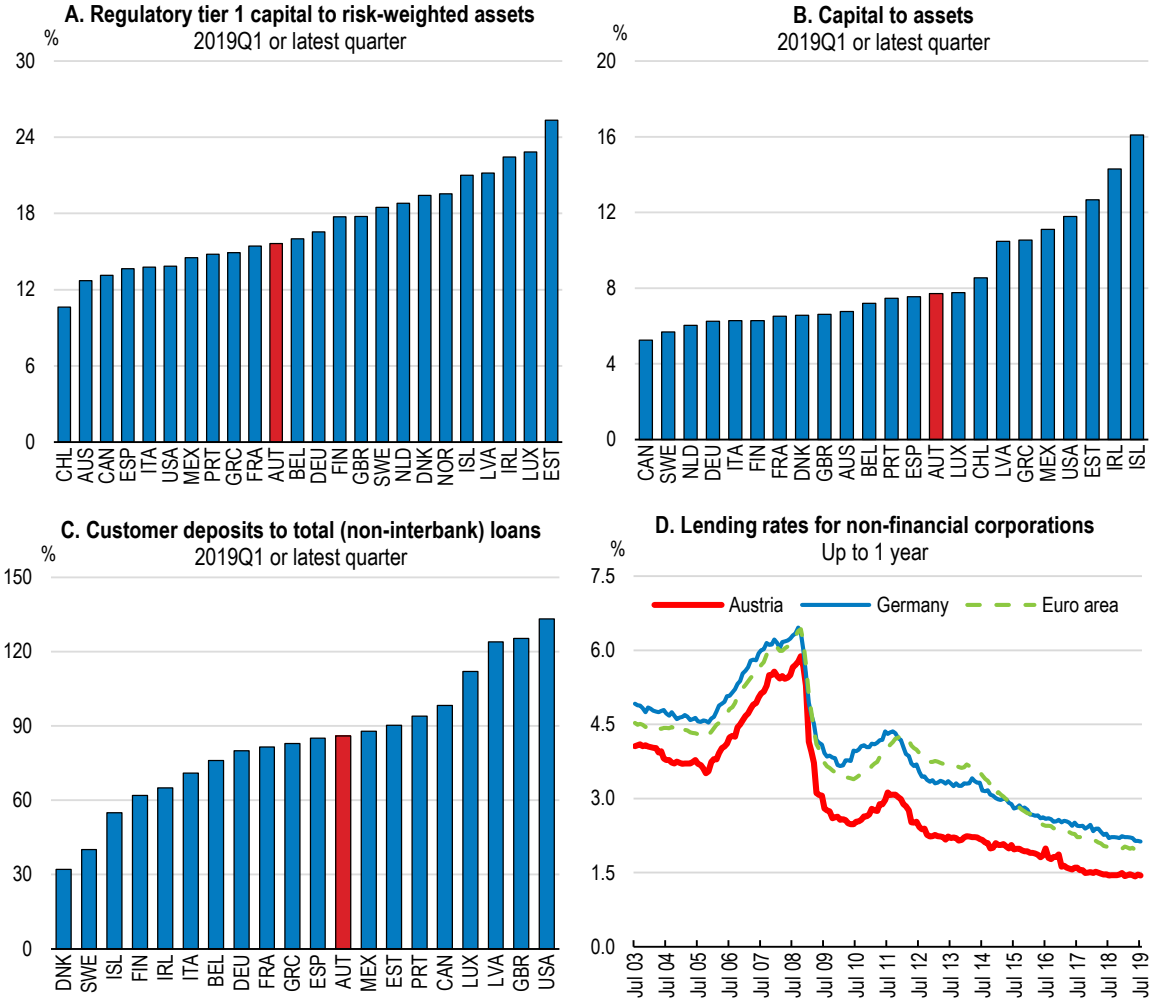
Table 1.2. Low probability events that could lead to major changes in the outlook

Vulnerability	Possible outcomes
Elevated asset prices and growing credit risks may lead to global financial tensions.	Austrian banks have reduced their exposure to EM markets but remain exposed to Central, Eastern and South-Eastern Europe. Severe international financial strains would affect them.
Brexit-related uncertainties and concerns over Italian sovereign debt may constrain bank lending in Europe.	Austrian firms, which depend heavily on bank loans, could be more vulnerable.
An acceleration of the technological and structural transformation of the car industry may impact car value chains in Central Europe.	The significant segments of the Austrian manufacturing connected to global German car firms would face an adjustment shock, with second-round regional and inter-industrial effects.

The financial system remains bank-focused and banks' balance sheets have improved

Financial stability is a high priority in Austria. The authorities consider that rehabilitation of the banking sector after the global financial crisis is now largely completed. A part of the related fiscal costs are being recouped due to ongoing realisation of bad assets, which were transferred to special government institutions before. The capital adequacy of the banking sector has considerably improved in the low-interest environment and capitalisation is slightly above the EU average, but, structurally, there is further room for productivity and capital strength convergence with stronger banking systems (Figure 1.3). Bank lending rates are nevertheless duly kept at lower levels than in several other euro area countries and effectively transmit monetary policy.

Figure 1.3. Austrian banks' balance sheets can be strengthened further but monetary transmission works well



Source: IMF (2019), IMF Financial Soundness Indicators Database and ECB (2019), MFI Interest Rate Statistics.

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Five aspects of the Austrian financial sector have implications for policies to improve financial resilience (OeNB, 2018). Future financial policies will need to encourage structural adjustments in the banking sector in the light of these trends, while helping preserve banks' unique relational assets:

- Commercial banks dominate financial intermediation (Figure 1.4). Their competition and complementarity with alternative financing channels is limited. Their dense retail networks and labour-intensive organisations put pressure on financial sector productivity and profitability (OECD 2017). They also expose them to a looming re-organisation potential in the future as a result of digitalisation and competition from fintech service providers. Upgrading their capital base under these circumstances may constitute a challenge.

- Banks have built-up large regional networks, and, even after the consolidations which followed the global financial crisis, their assets and liabilities remain relatively large in comparison to the size of the national economy. At the end of June 2019, the consolidated foreign claims of banks in Austrian majority ownership totalled EUR 357 billion (78% of GDP), with claims on Central and Eastern European countries accounting for around 60% of this amount. Global financial tensions may therefore pose additional risks (Kakes and Nijkens, 2018).

- At the same time, Austrian banks started to face emerging cross-border competition from the banks of neighbouring countries, some of which bear lower operational costs and lower tax liabilities. According to Eurostat figures, cross-border deposit and lending transactions with neighbouring banks, although still at low absolute levels, have increased in the most recent years. Regional and global competition in fintech services will also likely augment.

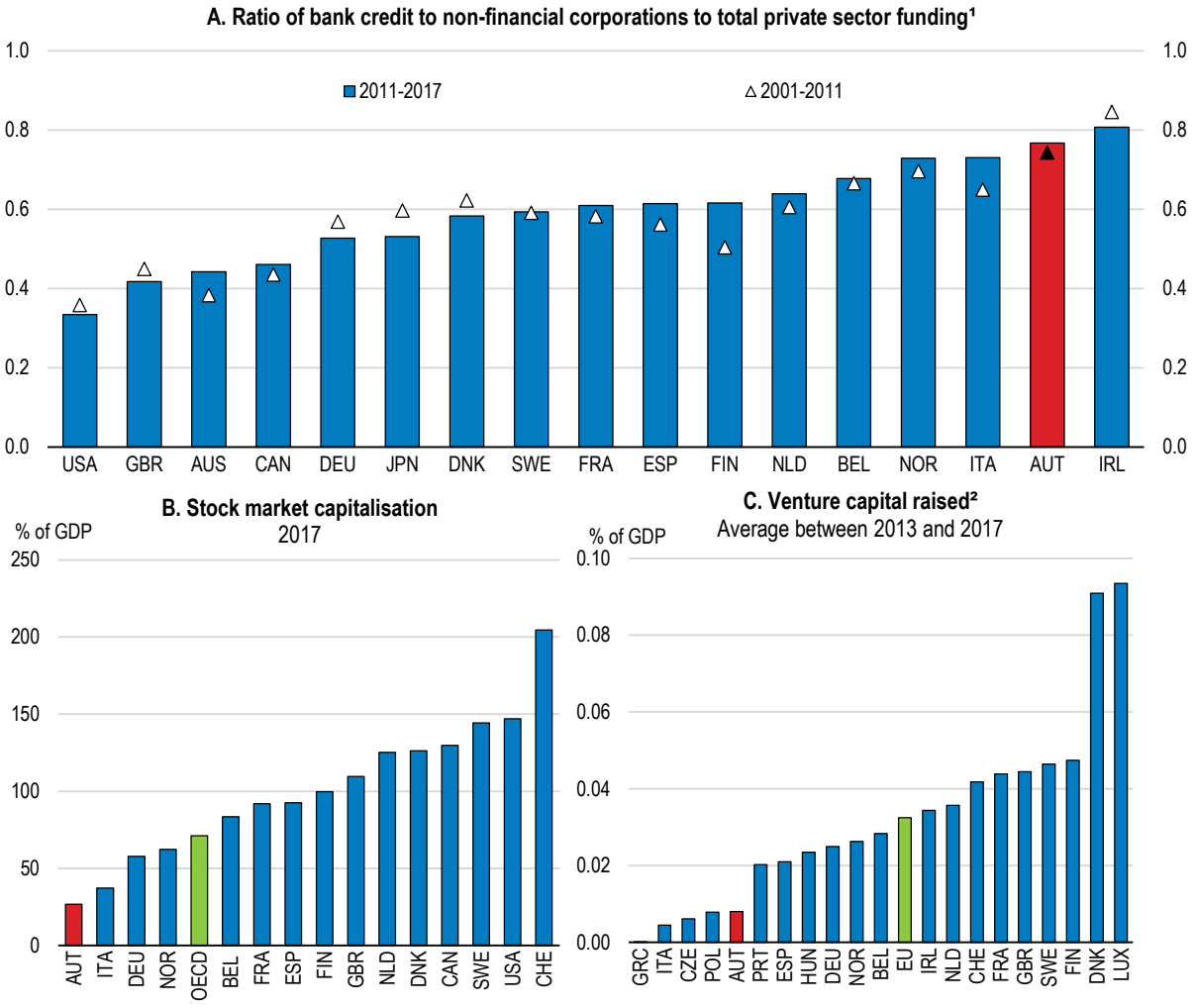
- The *Hausbank* (main bank) system, centred around local cooperative banks and their national associations, boasts massive tacit and informal knowledge on myriad small-and-medium sized firms and their regional economies. This information base is a source of resilience in the Austrian financial system, provided that these banks operate under competitive and transparent governance conditions.

- The provision of equity capital and tradable securities to the business sector remains much less developed than in comparable countries. This concerns both listed equity capital, listed bond, as well as non-listed private equity, venture and growth capital sources (Figure 1.4). Recent policy initiatives aimed at stimulating equity investment, with the adoption of a law facilitating "crowdfunding", new legal forms for investment firms, and the opening of a secondary market for smaller firms in the Vienna Stock Exchange. The ecosystem for equity investing is however still emerging.

Concerning the future of prudential supervision, the planned implementation of the organisational change of banking supervision (which intended to move 180 staff and a range of supervisory powers from the Central Bank to the Financial Market Authority (FMA)) was not realized.

The ecosystem for equity investing should be boosted. Measures to improve the markets for risk capital, apart from initiatives at the European level, should promote financial literacy among Austrian investors and entrepreneurs. They should also encourage the growth of the services required for the effective operation of equity markets (information, analysis, corporate governance and financial and legal counselling services). Addressing the debt bias of the corporate tax system can help to level the playing field between debt- and equity-financing.

Figure 1.4. Financial intermediation remains centred on bank credits



1. The ratio of bank credit to non-financial corporations is expressed as a percentage of the sum of bank credit plus private bond and equity market capitalisation.
2. Panel C records venture capital according to the location of the managing office and includes both domestic and foreign investments (industry statistics).
Source: OECD (2018), OECD Financial Dashboard, Invest Europe, European Private Equity Activity Data 2017. World Bank Global Financial Development Database, BIS Credit Statistics, BIS Debt Securities Statistics, Refinitiv, and OECD calculations.

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Housing market risks have been kept under control so far but may increase in the future

Housing markets are exposed to risks of exuberance in the current low interest-rate environment. However, only a small share of households is exposed to the fluctuation in housing prices and this restricts financial vulnerability. Social housing represents more than 25% of the housing stock, second only to Netherlands in the OECD and reaches much higher levels in certain urban areas such as Vienna where it represents more than 60% of residential housing. It has specific features, including the involvement of different government layers and private structures, such as housing associations (co-operatives) funded by the Länder, and dwellings owned and let by municipalities (most pronounced in Vienna). Rental markets

prevail in urban areas, while rural areas (40% of the population live there) are characterised by high proportions of personal ownership but thin housing transactions and markets.

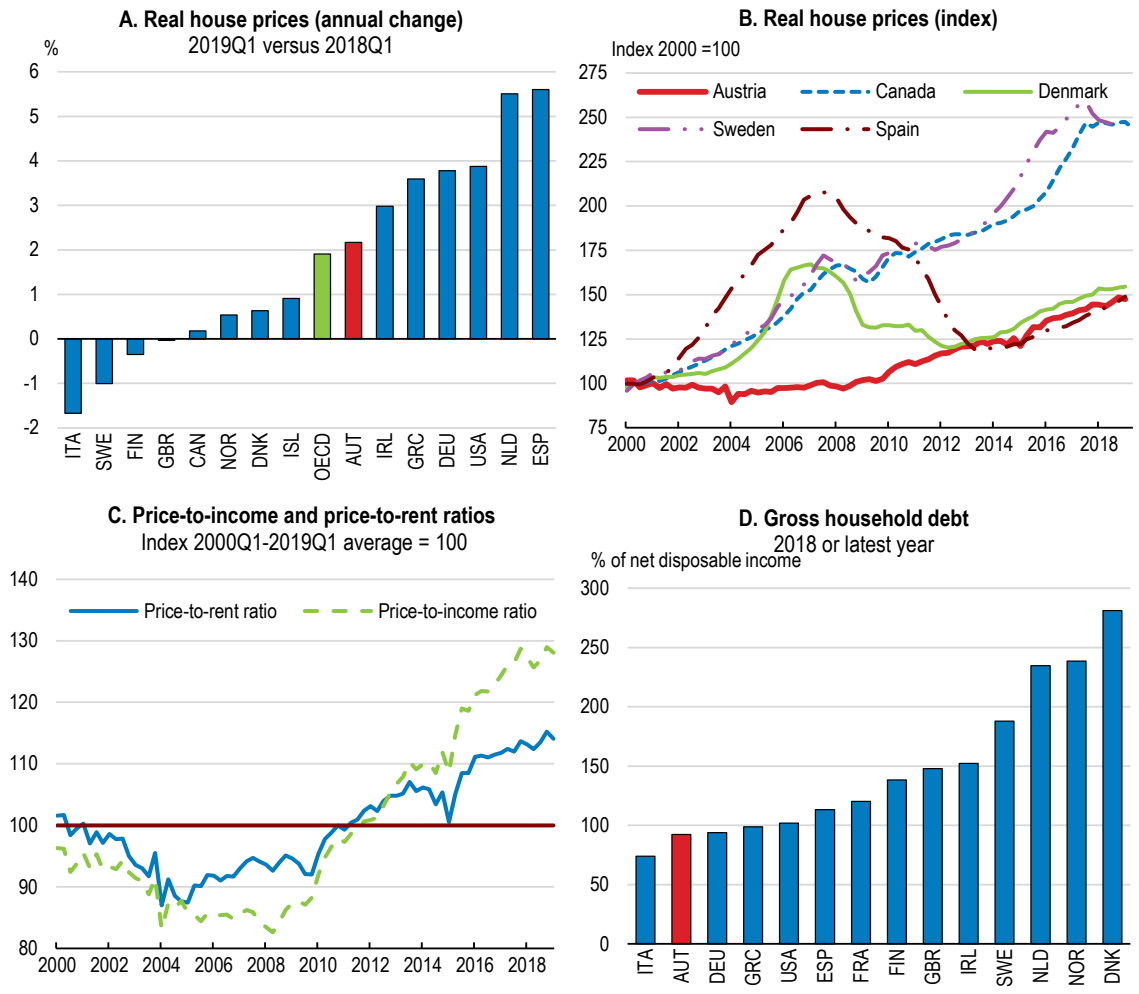
Social housing has provided affordable high-quality housing for large parts of the population, but it now faces challenges. When entitlements are based on open-ended non-portable long-term contracts with low rents, they may impede the geographical mobility of beneficiaries. In other segments, differences with free market rents are lower than in other OECD countries. Many beneficiaries have also reached middle- and upper-middle income categories, which may lead to bottlenecks if demand from lower-income and younger applicant households expands (Mundt, 2018; Geymüller and Christl, 2013). According to a recent international estimate, the overall housing supply has a low long-term elasticity to demand conditions (Geng, 2018; IMF, 2018). Other recent domestic research has however suggested that such elasticity is not particularly weak (Schneider, 2019, forthcoming). Mixed findings may reflect uneven conditions in urban vs. rural housing markets in different regions.

Beyond short-term cyclical developments, the housing market will likely face long-term pressures from domestic and international migration, changing family patterns and the expansion of the population of low-income earners, while urban sprawl has already attained harmful levels. This requires more effective land planning, urban development and public transportation policies through better integrated co-operation between government levels.

High social expectations in the area of housing and the multi-dimensional character of new policy challenges invite a comprehensive long-term housing and social housing strategy. The related initiatives and experiences of other OECD countries such as Sweden (Hansson, 2018), which have also tried to increase the supply elasticity of housing without aggravating social segregation, by means of reforms in urban planning, building codes and public infrastructure development can be drawn on.

Independently from domestic market conditions, foreign home purchasers have recently exerted upward pressure on house prices in Vienna and in certain Western Länder (EC 2018). This has made existing residences and constructible land very expensive for average households. There has been an average 40% increase in house prices over the past decade, but price levels remain still below comparable countries. The mortgage debt stock and related financial vulnerabilities are also lower (Figure 1.5). Nonetheless, observing that rapid growth of new mortgage lending may raise challenges to financial stability, the Financial Market Stability Board, drawing on Central Bank analysis, issued a communication in 2018 on sustainable lending standards to keep systemic risks at bay also in the future.[2] These safeguards should be made compulsory, as in some other OECD economies like Norway (Norwegian Ministry of Finance, 2018).

Figure 1.5. Housing market risks have been contained so far but may be increasing



Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database) and OECD Analytical Housing Prices database.

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Table 1.3. Past financial policy recommendations

Past OECD recommendations	Actions taken
Rigorously supervise large and small banks.	
Facilitate digitalisation, restructuring and cost reduction in the banking sector.	
Continue to support venture capital investment and reduce tax and other disincentives for equity investments.	A Start-up Package was introduced May in 2019, with i) additional risk-finance through a public Digitalization and Growth Fund (which will co-invest in start-ups together with private venture-capital funds) and ii) more credit guarantees. It comprises regulatory sandboxes, which shall remove certain administrative burdens from start-ups, and new educational streams to ensure the availability of skilled workforce. The Vienna Stock Exchange launched in January 2019 a new market segment "direct market plus" as an initial and easy access to the stock market. 8 companies are already listed.

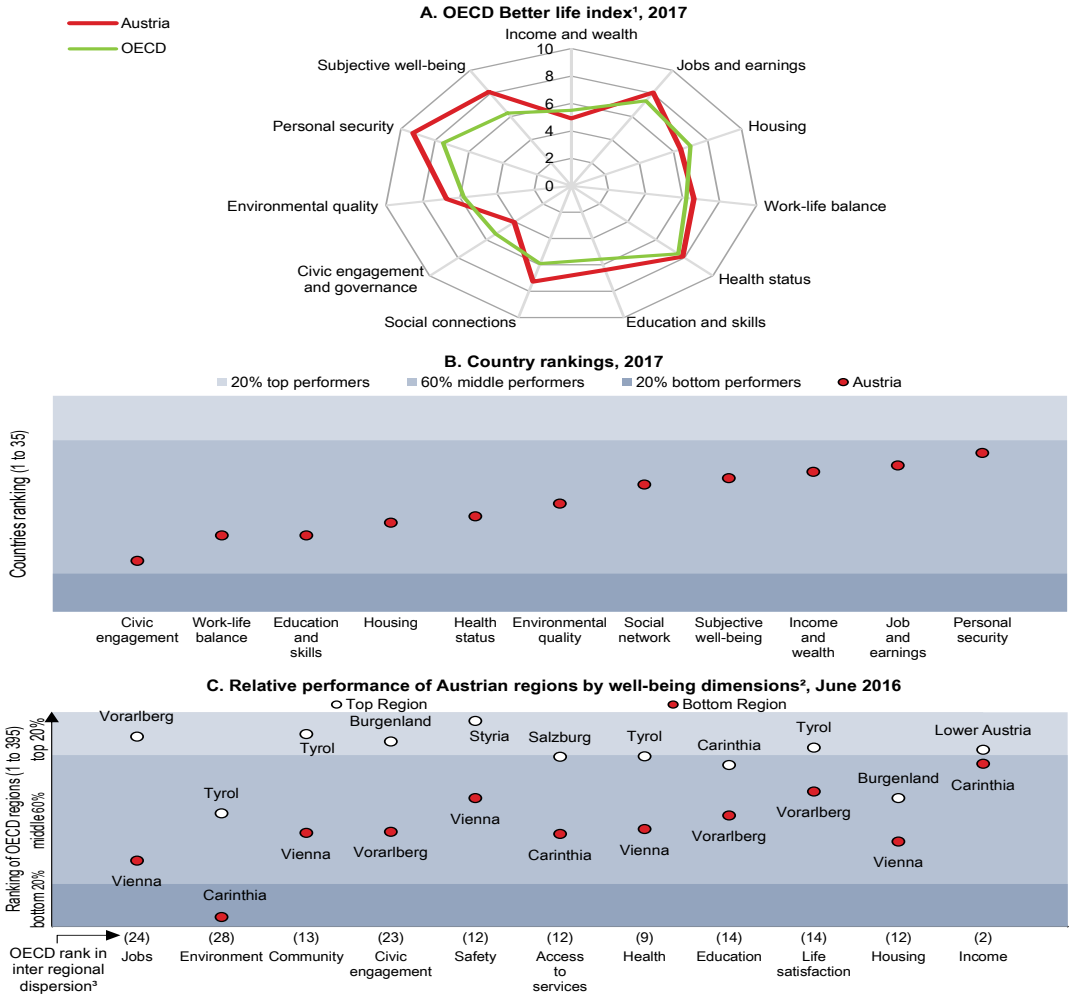
Employment performance, well-being and social cohesion are strong but come under pressures

Broad-based growth on the back of myriad entrepreneurial firms across all regions and supported by growth-friendly social partnership has underpinned Austria's strong well-being and social cohesion so far. It has helped to create well-paid jobs for workers with different education levels, generally well trained according to labour market demands through a multitude of vocational education streams. The generous welfare system insures against labour market risks and provides very good retirement incomes. Higher proportions of children and elderly than in comparable countries are taken care of by their families.

The typical well-being outcomes include (Figure 1.6):

- The broad-based growth of employment for prime age men who are generally satisfied with their working conditions despite long average work hours.
- In contrast, full-time labour force participation and career engagement of women carrying out family responsibilities are restricted, and a high share of low-skilled elderly withdraw from the labour force as soon as this is legally possible - these issues are addressed in the new OECD Jobs Strategy.
- Household incomes have increased regularly at top, median and bottom deciles, with relatively low inequality and poverty.
- A high degree of safety has been achieved in the daily life of citizens, with low levels of crime.
- Local social connections are highly appreciated, with strong support networks among friends and family.
- As a result, subjective well-being has attained one of the highest levels in the OECD area, both in terms of long-term life satisfaction and short-term affect balances (balances of positive and negative feelings).
- However, as basic human capital is transmitted principally within families, intergenerational social mobility remained particularly low, notably for migrant families.
- Social partners and policymakers being focused on employment growth, environmental impacts have been less prominently integrated in policymaking.
- Regional variations in well-being remained smaller than in most other OECD countries. Vienna, where nearly a quarter of the population lives, is regularly ranked among the most attractive living places in the world, even if it faces starker tensions on its service infrastructure. The dispersion of well-being indicators between regions is low (Figure 1.6, Panel C).

Figure 1.6. Well-being is high and regionally balanced



1. Each well-being dimension is measured by one to four indicators from the OECD Better Life Index set. Normalised indicators are averaged with equal weights. Indicators are normalised to range between 10 (best) and 0 (worst) according to the following formula: (indicator value - minimum value) / (maximum value - minimum value) x 10. The OECD aggregate is population-weighted. It excludes Colombia and Lithuania.
2. Relative ranking of the regions with the best and worst outcomes in the 11 well-being dimensions, with respect to all 395 OECD regions. The 11 dimensions are ranked according to the size of regional disparities in the country. In order to increase the sample size, all the annual waves of the Gallup survey between 2006 and 2014 are pooled together.
3. Gap between top and bottom regions. Austria's rank between 34 OECD countries is shown, 34 (highest dispersion), 1 (lowest dispersion).
Source: OECD Better Life Index database, www.oecdbetterlifeindex.org and OECD Regional Well-being database, www.oecdregionalwellbeing.org.

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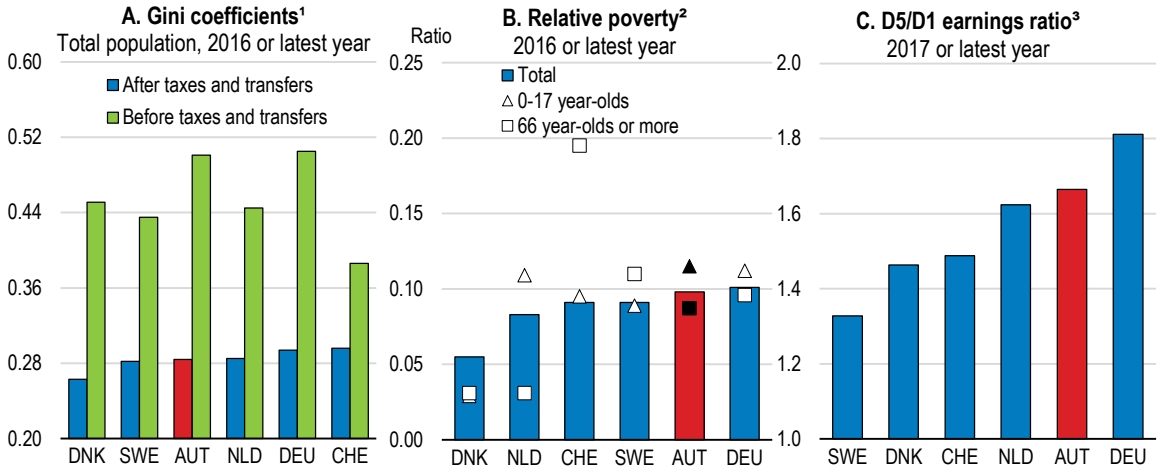
Austria has indeed long been among the OECD countries with the lowest income distribution inequalities (Figure 1.7). Collective wage bargaining, founded on a social partnership system that the OECD has termed "organised decentralisation" and identified as an international good practice has helped reduce differences in market wages. Collective negotiations have taken into account the interests of the self-employed and of the farmers. However, against this favourable background, recent market developments (including increased divergences between more and less well performing employer firms) have negatively affected income distribution (OECD, 2018; World Inequality Database, 2018).

Figure 1.7. Income inequalities are relatively low



1. Scale from 0 (perfect equality) to 1 (perfect inequality).
2. The poverty line is 50% of the median household income of the total population. Household income is adjusted to take into account household size.
3. The ratio of 50% of people with highest earnings to 10% of people with lowest earnings.
Source: OECD (2019), OECD Social and Welfare Statistics (database) and OECD Employment and Labour Market Statistics (database).

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The tax and transfer system helped reduce income inequalities, even if redistribution has somewhat weakened in the face of growing divergences in market incomes (Guger and Rocha-Akis, 2016). Social transfers are large and progressive, while taxation is rather neutral and regressive in certain areas. The earnings ratio between the 9th and 5th and the 5th and 1st income deciles remain high (Figure 1.7). A recent study, which took into account all direct and indirect taxes and social security contributions, found that the households between the 30th and 80th income percentiles face a broadly flat tax rate (aHumer and Moser, 2016).

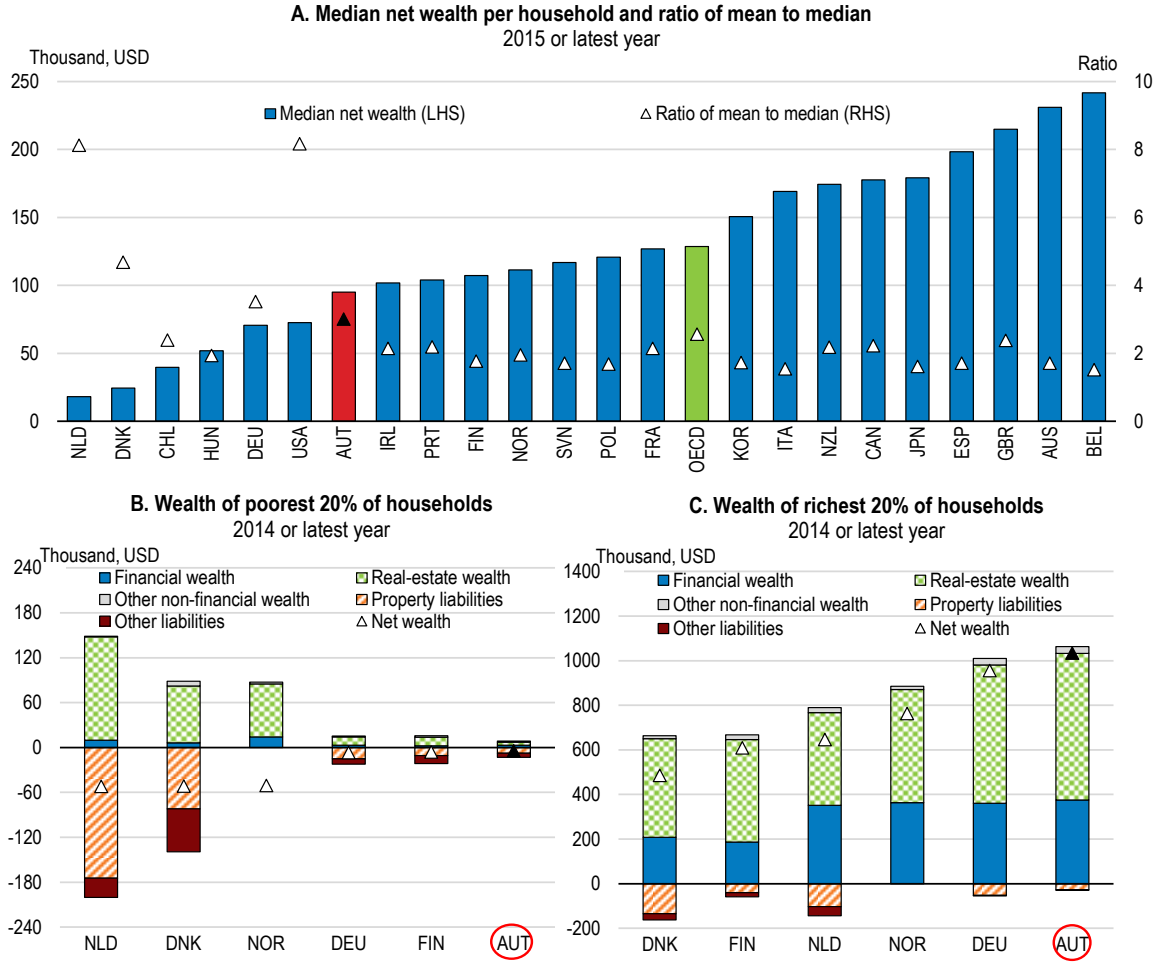
Wealth distribution has long been less equal than income distribution (Figure 1.8). In Gini indicators of equality Austria comes 7th in income distribution, and 14th in wealth distribution among 35 OECD Member countries. At the top end of wealth distribution, the 10% wealthiest Austrian households hold the 4th highest share of national wealth in the OECD area. Yet, the wide coverage of social protection and the availability of social housing reduce the incentives of low-income households to accumulate family wealth during their working lives. Home ownership, the most important asset of households in market economies, is less widespread than in comparable countries. Features of long-term tenure contracts may also be making housing unattractive as a financial investment.[3] Taking into account these factors, actual wealth inequality was found to be slightly better than its statistically expected level (Pham Dao, 2016; see also Fessler and Schürz, 2015).

Intergenerational transmissions of wealth are not taxed, as Austria has *de facto* abolished inheritance taxation in 2008 after a legal stalemate between the Constitutional Court and Parliament. It is currently one of the very few OECD countries without inheritance taxes. Recent studies showed that, in the absence of inheritance taxation, bequests play a larger role in wealth accumulation than in other EU countries (Leitner, 2018). As OECD research identified the taxation of immovable assets as a growth-compatible and inclusive form of revenue collection (Akgun et al., 2017), re-introducing inheritance taxation in Austria can be expected to help reduce wealth inequalities and improve intergenerational social mobility without undermining the economy's growth potential. OECD's Center for Tax Policy suggested recently that

"growing wealth inequality may increase the need for well-designed inheritance taxes" and is starting an internationally comparative investigation of inheritance taxation practices (OECD, 2019). Adverse effects on the transmission of well-performing family firms can be handled by special provisions, such as those implemented in Switzerland (Sandbu, 2019).

Four new trends are likely to challenge the existing well-being model: i) disruption risks in the labour market from technological changes and digitalisation, ii) pressures on gender balances from tensions between improving professional opportunities and continuing family responsibilities of women; iii) the challenges of integrating increased numbers of migrants, and iv) lower tolerance for environmental harms, also as a consequence of Austria's international commitments.

Figure 1.8. The distribution of private wealth is more unequal than the income distribution



Note: Wealth values are expressed in 2011 USD by expressing values in prices of the same year (2011) through consumer price indices and by converting national values into a common currency using PPPs for household consumption. They do not include discounted pension entitlements.

Source: C., Balestra and R. Tonkin (2018), "Inequalities in household wealth across OECD countries: Evidence from the OECD Wealth Distribution Database", OECD Statistics Working Papers, No. 2018/01 and OECD Wealth Distribution Database.

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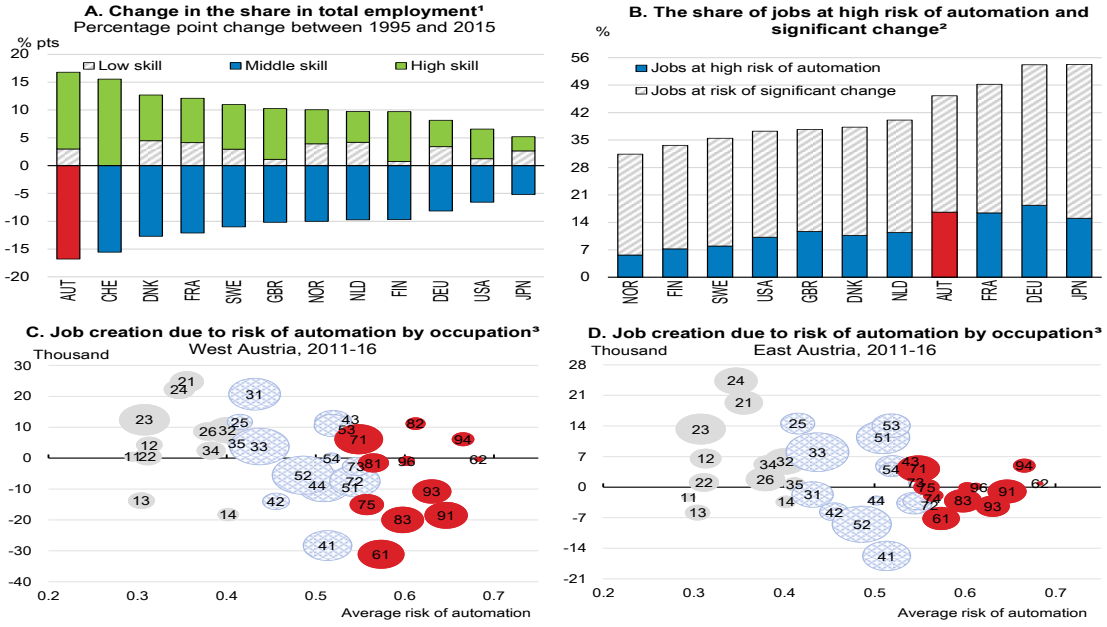
Changing skills needs in the labour market and digitalisation

Creation of well-paying jobs for the majority of the population has long been the foundation of well-being and social cohesion in Austria. However, new megatrends, including digital transitions and shifts in global production networks, started to disrupt this labour market regularity. The shift of the employment structure from middle to higher skill activities has been one of the largest among OECD countries (Figure 1.9). This adjustment has unfolded relatively smoothly so far, a majority of workers preserving their long-term employment contracts and few showing concerns about their job security (Stiglitz et al., 2018). This reflects good employment relations within firms, where large-scale restructurings can be carried out internally. It may also be due to the more disrupting transformations unfolding with some lag in Austria. Available indicators suggest indeed that many job restructurings are still pending, partly along skill lines, but not only. As shown on Figure 1.9, non-routine high and middle skills remain in high demand but demand for automatable qualifications, irrespective of their educational requirements is contracting rapidly.

Figure 1.9. Structural changes in employment went smoothly so far, but more is to come



1. Based on International Standard Classification of Occupations (ISCO-88). High-skilled occupations include legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skilled occupations include clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skilled occupations include service workers, shop and market sales workers (group 5), and elementary occupations (group 9).
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%.
3. The numbers in bubbles indicate the job category based on ISCO-08 and bubble size represents the share of jobs in the occupation with respect to total employment in the region. Occupations are ranked from low (grey bubbles) to high risk of automation (red bubbles) along the horizontal axis. Changes in the number of jobs for each occupation are reported along the vertical axis.
Source*: OECD (2018), Job Creation and Local Economic Development 2018*: Preparing for the Future of Work, OECD (2017), OECD Employment Outlook 2017, 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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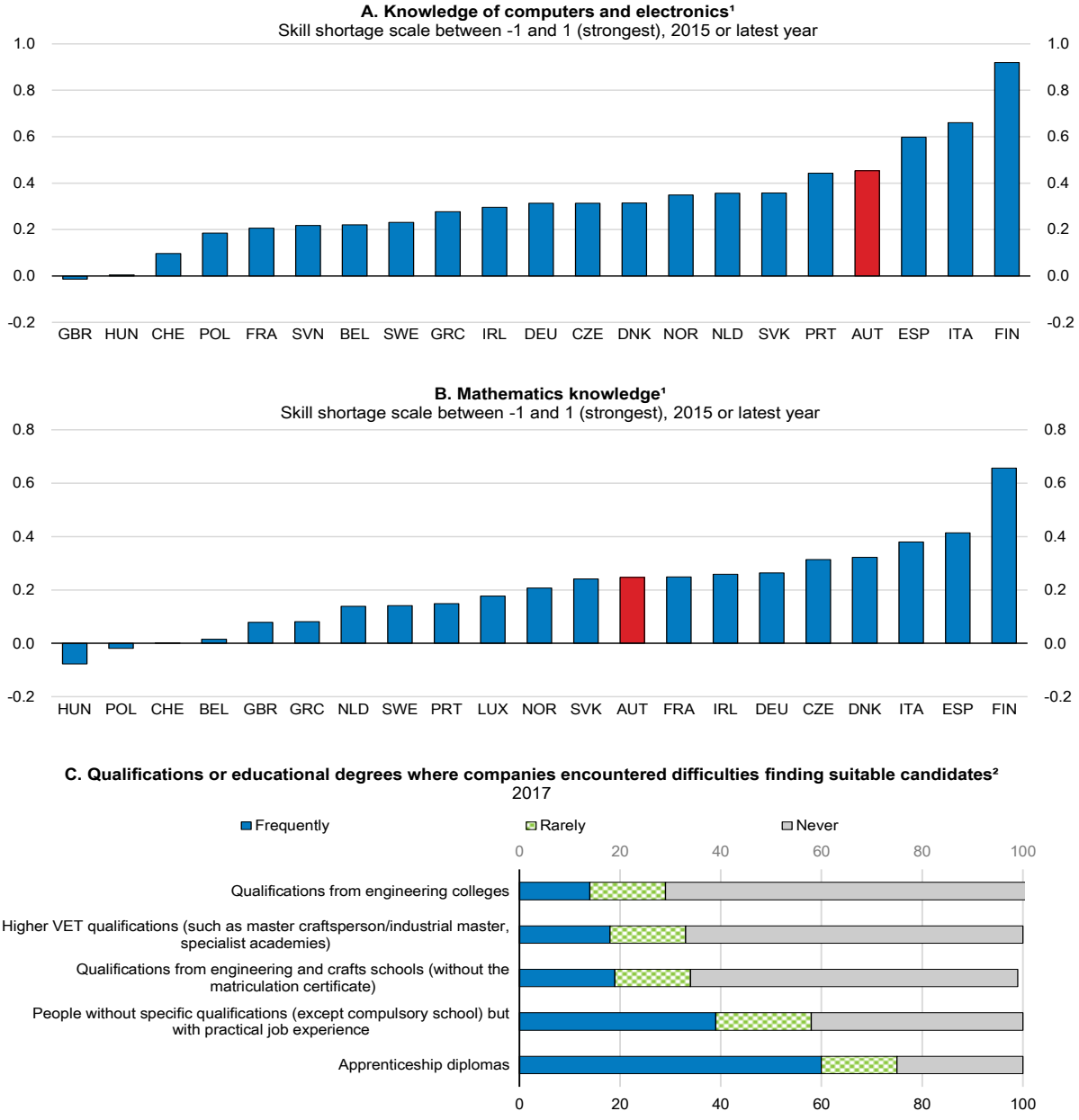
A recent development in the labour market is the emergence of severe recruitment difficulties. The proportion of firms reporting skill shortages, not only in high-technology professions but also for a wider range of qualifications (spanning from finishing skills in building construction to cooks in restaurants) reached unprecedented levels in Austrian standards (Figure 1.10). According to an employer survey of the Federal Ministry of Digital and Economic Affairs and Austrian Federal Economic Chamber, 87% of the 4 500 companies questioned reported a skill shortage, an increase of 12 percentage points compared to the previous year (Dornmayer and Winkler, 2018). Results from the most recent EIB investment survey show also that 81% of Austrian companies of all sizes refrain from capacity increasing investment due to a lack of skilled staff, which is above the EU average and a strong increase compared to the year before (EIB, 2018). Further, 60% of the Austrian firms experiencing skill shortages reported a drop in sales due to the shortage (ibw, 2018).

In digital technologies, as many as 90% of human resource managers of Austrian firms report that their firm have “significant training needs”. In response, the entire apprenticeship system (including more than 200 professional profiles) is being modernised with new focus on digital and green technologies. Symmetrically, employment opportunities have narrowed for workers in the vulnerable segments of the labour market. The rate of unemployment for the low-skilled and the elderly increased more than in comparable countries, despite the strong economic cycle. The corresponding rate for the long-term unemployed decreased recently to the level of Germany, however is still relatively high compared to peer countries such as Denmark (Figure 1.11). The rate of structural unemployment increased more rapidly[4]. The Beveridge curve which captures labour market mismatches displays a distinct outward shift. These developments, of an unaccustomed magnitude, form a challenge to Austria’s traditional pattern of well-being and social cohesion.

Figure 1.10. Skills could be improved to ease recruitment challenges



1. Positive values indicate skill shortage while negative values point to skill surplus. The larger the absolute value, the larger the imbalance. The maximum value +1 reflects the strongest shortage observed across 31 OECD countries and skills dimensions.
2. Based on the ibw company survey conducted in April 2018 on demand for/lack of skilled labour. Companies respond to a question such as "In case of which (formal) qualifications or educational degrees did you encounter difficulties when looking for suitable staff last year?"
Source: OECD (2018), OECD Skills for Jobs Database and H., Dornmayr and B., Winkler (2018), "Skilled Labour Shortage in Austria", ibw research brief, issue No. 101, September.

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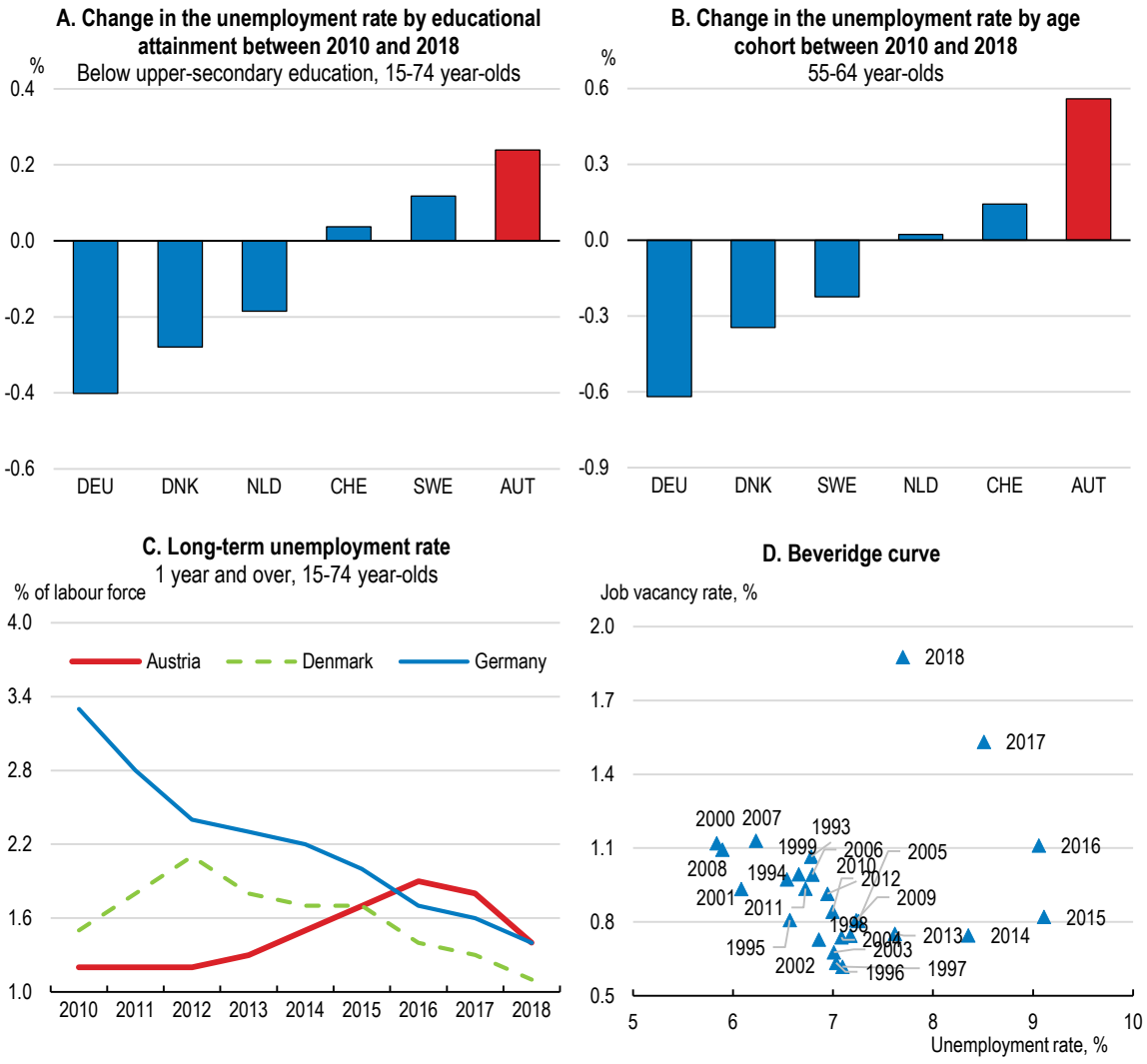
Figure 1.11. Increased mismatch in labour supply



Source: Eurostat (2019), "Labour force structure" and "Employment and social policy indicators" in Tables on EU policy (database), OECD (2019), Labour Force Statistics (database) and Arbeitsmarktservice (AMS).

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Education and life-long training need to adapt to this changing world

Against these transformations, the upskilling of the population is key (OECD, 2019). It concerns the full spectrum of working age cohorts as well as the children and youth in education, and is the fundamental condition for strong and socially inclusive growth in the future. This common challenge to OECD countries is especially salient in Austria, as the fully publicly funded and vocational training-centred education system which supported the country's post-war economic and social development needs to adapt at a large scale. Better integration and continuity between all education layers from childhood to life-long education, and more operational articulation between vocational, tertiary and life-long professional training are on the cards.

These well-known challenges include the adaptation of the numerous apprenticeship streams, the adjustment of the academic and vocational secondary school curricula to the digital revolution, and a

stronger focus than in the past on life-long learning capacities of all. Tertiary education should better respond to the new qualification needs of the economy. The promotion of entrepreneurship education is also particularly important in Austria, in order to support innovation and improve efficiency in the productive sector (OECD, 2019[5]). A fundamental facet of the agenda is significantly improving early childhood education, not only as a form of care but in order bring up children from a large variety of family, cultural and language backgrounds to the same strong basic education standards. This would help to ensure a strong workforce, help achieve low inequality and contributes to equality of opportunity.

Education policymakers are addressing these challenges across all school layers and technical specialisation fields throughout Austria. New classes are being opened for early childhood education and further resources are engaged in their pedagogical quality. Secondary education is being made less segmented through “new secondary schools” offering more general educational content. Universities of Applied Sciences are growing in number, to respond to labour market demands for high-level but application-oriented professionals. Public apprentice workshops are opened for candidates not finding apprenticeship positions in enterprises – or who are not sufficiently trained for such positions. Co-ordination between government layers and government Ministries in charge of different age cohorts and general versus vocational education is becoming more crucial.

After recognising the earlier efforts for fostering education policy co-operations between government layers, an OECD review of Austria’s school system in 2016 had recommended to allocate each school layer to one government level (OECD, 2016). A more recent OECD analysis of pedagogical co-operation and complementarity between pre-school education (municipal government responsibility in Austria) and school education (managed in co-operation between federal and Länder governments) hinted at the innovative experiences of several other OECD countries in integrating these policies, with important benefits for the development of children such as in Norway (OECD, 2017 and Box 1.2 below).

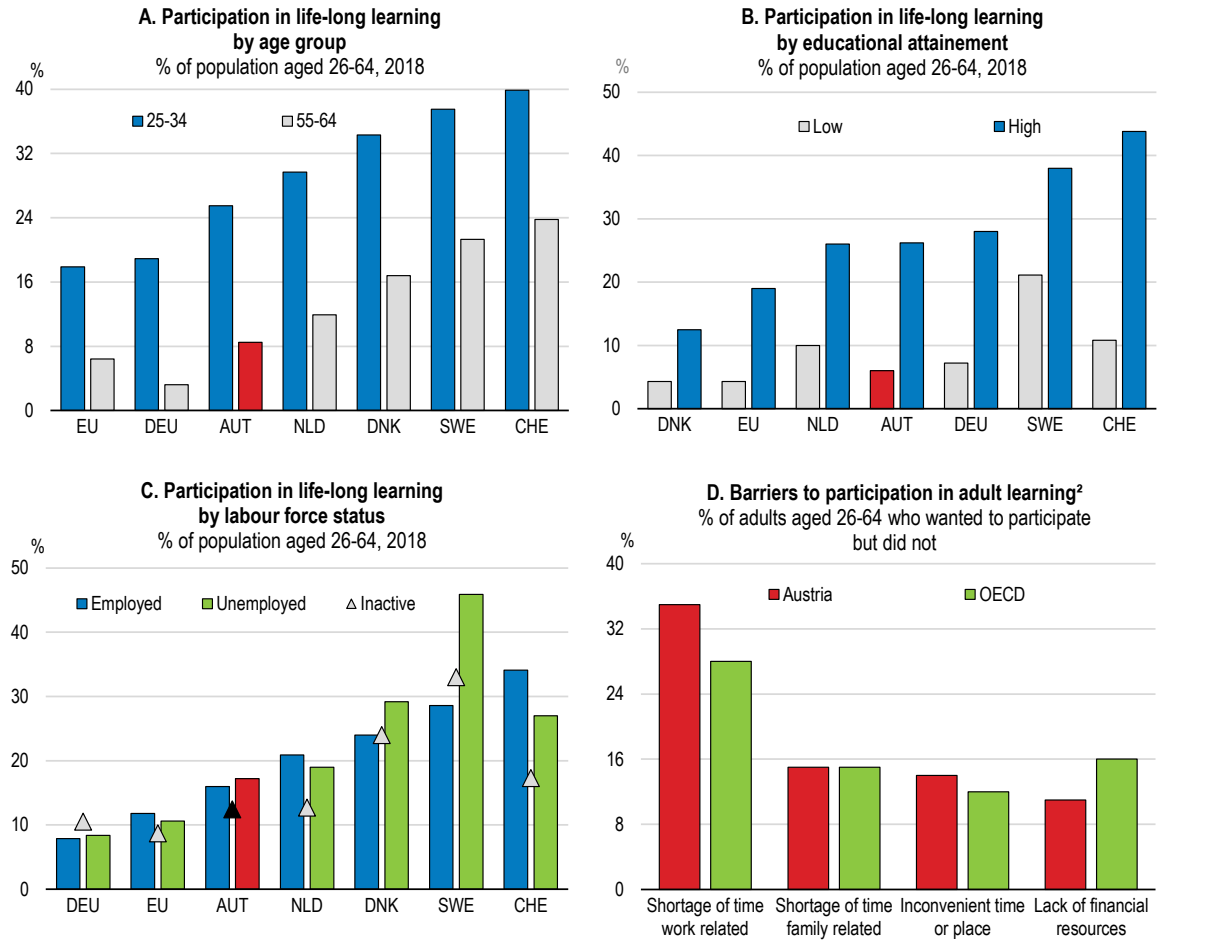
The government in place after the 2017 elections was initiating a comprehensive reform of the education system in all its layers (Box 1.1). The reform contained an increase in the autonomy of schools against a stricter monitoring and management of their performance, while taking into account the socio-economic and other characteristics of their students. The Ministry of Education started to draw on the experience of other OECD countries (Bruneforth et al., 2019). For example, Denmark has built a data warehouse on student and school performances (with 35 indicators per student including national test results, school examination results, student well-being surveys) to analyse the relations between inputs and outputs and to train a pool of experts capable to advice central and local policymakers on this basis. Austria can draw on this experience (Nusche et al., 2016).

The Ministry for Digital and Economic Affairs launched also 15 new apprenticeship occupational profiles, enriched with digital content. They include “IT system technicians”, “IT operation technicians”, "e-commerce professionals" and “application coders”. These new profiles are expected to provide companies with the technicians they need. Further modernisation of apprenticeship profiles is ongoing, with employer firms participating in the definition of new needs and in the elaboration of new profiles. These co-operative projects are completed and implemented rapidly (at most within one year).

Systematically monitoring and reporting the labour market outcomes of existing and new education streams, on the basis of individual micro data, will be key for evaluating the adequacy of policies to goals. Policymakers intend to make prominent use of such data resources. PISA and PIAAC type surveillance exercises can be used systematically and Big Data techniques create new policy evaluation opportunities. Austria’s national proficiency tests for all young students, put in place with pedagogical adjustment purposes, are a foremost step in this direction. The rich data generated through these exercises can be analysed by researchers of various disciplines. All OECD countries have started to build up micro data based performance evaluation systems, but for these efforts to be fruitful, results should be fully open to the independent research community (Charbonnier, 2019). Austrian reformers are engaged to make this data fully accessible (privacy protection safeguards notwithstanding).

There are some concerns about the labour market relevance of life-long learning programmes for the low-skilled. The participation rates of Austrian adults to these programmes is above OECD averages, but below peer countries (Figure 1.12). The participation rate can be increased and the existing concerns on the quality of part of these programmes should be addressed (OECD, 2014). Active participation of employer organisations to the administration of these programmes may help (Martin, 2018). Additional government support can also be offered for the inclusion of low-skilled and elderly workers, whose participation is particularly low in Austria. It is possibly subject to market failures arising from firms' uncertainties on investment returns above certain age thresholds (Dauth and Toomet, 2016). Work organisations in employer firms should be adapted and made compatible with life-long learning activities (Figure 1.12).

Figure 1.12. Participation in life-long learning can be raised further



1. Includes formal as well as non-formal education and training. The reference period for the participation is the four weeks prior to the interview. Low education refers to below upper secondary education (ISCED 0-2) and high education refers to tertiary education (ISCED 5-8).
2. Based on the survey of Adult Skills (PIAAC, 2012, 2015). Average of countries participating in PIAAC for the OECD aggregate.
Source: OECD (2019), OECD Adult education and learning (database), and Eurostat (2019), Education and training (database).

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Table 1.4. Past education policy recommendations

Past OECD recommendations	Actions taken
Make schools and education tracks more inclusive. Strengthen the early socialisation of children from disadvantaged backgrounds.	Intermediary apprenticeship qualifications have been created to facilitate integration and further training opportunities.
Ensure that tertiary and vocational education adjust to changing needs.	All education streams and curricula will be screened in 2019 to advance their adaptation to the digital revolution. More than 50 occupational profiles and their vocational curricula will be modernised in the first year.
Allow universities to re-introduce tuition fees and accompany them with grants and income-contingent student loans.	
Continue to modernise ICT-related curricula and teaching methods in schools.	In 2018, the Federal Ministry for Digital and Economic Affairs introduced 13 new 4 year-long apprenticeship streams enriched with digital content.
Enhance incentives for businesses to offer apprenticeship positions.	New funding support has been made available to firms and apprentices to increase the quantity and quality of apprenticeship places, including via language support, additional coaching services and internships abroad.

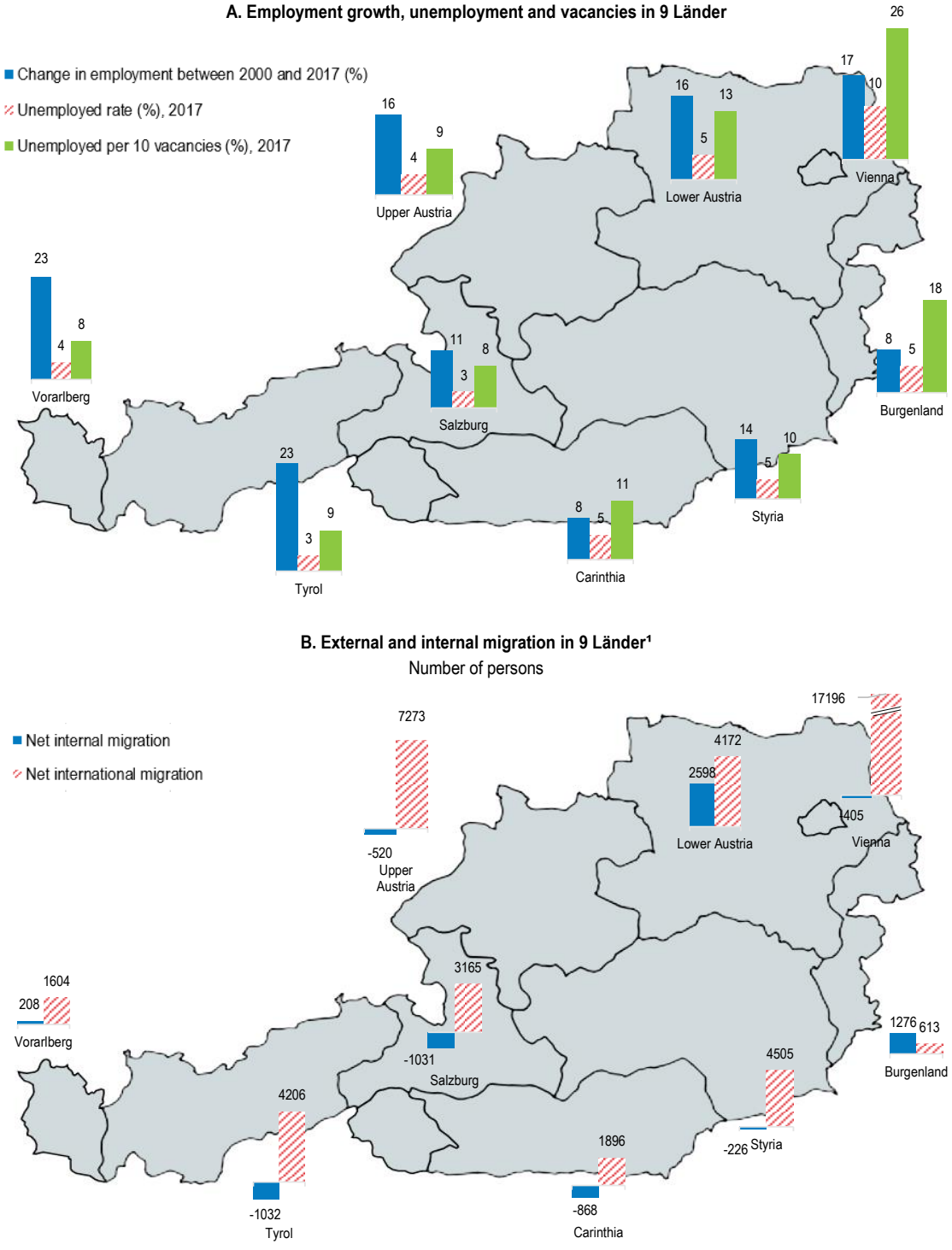
Regional aspects of labour market imbalances

Regional labour market imbalances are relatively new in Austria (Figure 1.13). Skill shortages grew in particular in Western regions. In contrast, in Vienna where more than 20% of national employment is concentrated, the rate of unemployment, and the number of applicants per vacancy are well above national averages. This excess labour supply in Vienna against labour shortages in much of the rest of the country may be revealing the reluctance of parts of the population to move between regions, but also perceived risks of inconsistency between short- and long-term employment and career prospects under changing industrial structures in different regions. The related uncertainties may be particularly high for families with double earners. Vienna and large cities are in this regard more attractive.

Population ageing compounds regional skill shortages. Most Austrian regions can expect declines in the working-age population, although Carinthia and Styria will be particularly affected (Dornmayer and Winkler, 2018). The regional heterogeneities in the projected development of 20- to 60-year olds goes hand in hand with large disparities in skill shortages (Dornmayer and Winkler, 2018).

Public policies should facilitate the geographical mobility of citizens by eliminating all policy-related factors hindering mobility. Evaluating and addressing the obstacles arising from the non-portability of local housing benefits, from uneven rent regulations, and from insufficient oversight over and control of social housing entitlements should be a priority. To stimulate the inter-regional mobility of young workers and reduce interregional skill mismatches, a new “b.mobile” programme was recently introduced to facilitate cross-regional apprenticeship placements.

Figure 1.13. Regional imbalances in labour market



1. Internal migrations are changes of main residence within Austria. External migrations are cross-border changes of residence. The duration of residence must not be shorter than 90 days in terms of effective registration of main residence.
Source: Statistik Austria, and WKO Fachkräfteradar, ergebnisse einer untersuchung des ibw.

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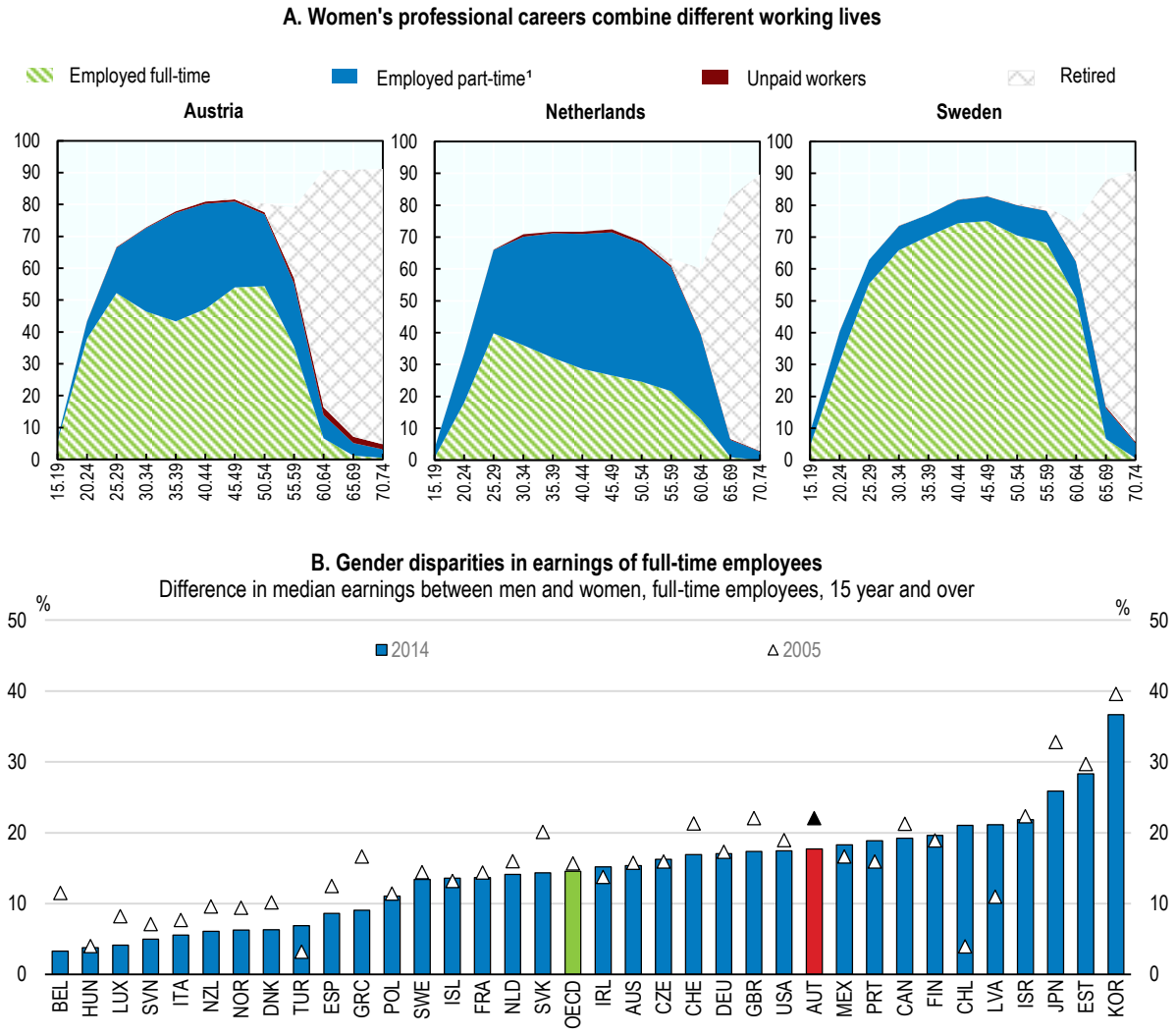
The new OECD Jobs Strategy provides a comprehensive framework and policy recommendations to help member countries, including Austria, address these labour market challenges. It goes beyond job quantity and considers job quality and inclusiveness as central policy priorities. The central message is that flexibility-enhancing policies in product and labour markets are necessary but not sufficient. Policies and institutions that protect workers, foster inclusiveness and allow workers and firms to make the most of ongoing changes are needed to promote good and sustainable outcomes (OECD, 2018)

Increased pressures on gender balances

Austria has a long-established "male breadwinner/separate gender roles" model in work, family and life arrangements (OECD, 2015). There is growing consensus in society to shift to a better balance of opportunities and life choices between genders. Expectations augmented as women caught up with men in educational enrolment and achievements. The fact that a large share of women with children withdraw fully or partly from the labour force (irrespective of their educational and professional background) until their children reach upper secondary school age (OECD, 2015) deprives society from existing talent, higher household incomes and stronger growth and fiscal revenues (Figure 1.14). However, working part-time can also reflect preferences on work-life-balance. In-depth studies tend to conclude that it often results from insufficient public service support and tax disincentives (OECD 2015). The recent replacement of the tax deductibility of child care costs and of the child care allowance with a generally available tax credit per child may provide a weaker incentive for labour force participation of women with children. Despite several policy initiatives in recent years, including the inclusion of gender budgeting in the federal constitution and the adoption of a "National Action Plan on Gender Equality in the Labour Market", actual progress with gender rebalancing has fallen behind comparable EU countries (EIGE, 2018).

Gender pay gaps are high. Divergences between men's and women's professional choices go deeper than in comparable countries, with men prioritising scientific and technical disciplines and women social service fields leading to less well-paid occupations – reflecting probably their uneven prospects for subsequent full-time career engagement (OECD, 2018). Still, as a result of co-ordinated wage negotiations, gender pay gaps are not bigger for lower income groups as in other OECD countries (OECD, 2017).

Figure 1.14. Gender gaps remain large



1. Part-time is defined as less than 30 hours worked per week.
Source: OECD (2018), OECD Employment Outlook 2018.

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Limited availability of childcare, full-day schooling and long-term elderly care in much of the country is recognised as the single biggest constraint on women's life and professional choices (Buxbaum and Pilkbauer, 2015). More than 90% of 3-5 year old children are now taken care of in pre-school facilities but the participation of under 3 year-olds, which stands at around 25%, is much lower than in most peer countries where it reaches 50-80%. Also, only less than half of available services are offered for more than 30 hours a week, which is required for full-time labour force participation by under 3 year-olds' main carers (Smidt, 2018; EC, 2018). Lack of full-day schooling for more than 50% of school children aged 6-15 (Nusche et al., 2016) creates an additional need for high-quality options for their care and education outside school hours. Not only sufficient quantity but also satisfactory quality of childcare services is a pre-requisite to free-up women's labour force participation. In this respect, some concerns about the pedagogical achievements of kindergarten education have started to be addressed through new educational programmes for kindergarten teachers.

A similar challenge emerges in the area of elderly care (Grossmann, 2017). A higher proportion of the dependant elderly than in peer countries – around 80% of them - are taken care of by their families (OECD, 2015, Survey). The welcome lengthening of average life expectancy, together with the rise of more complex care needs raised by chronic diseases expand the demand for long-term care. These needs have to be addressed without unduly restricting the labour force participation of relatives. Austria has already a well-developed public support framework in this area, and is experimenting with innovative approaches, including growing recourse to mobile services and daytime care assistance. A recent prospective study of long-term care needs and their financing modalities concluded that under the current care arrangements the fiscal costs of public support to long-term care will increase by more than 4% per year for several decades, with an acceleration due to demographic cohort effects after 2025 (Famira-Mühlberger, 2017). More recourse to institutional care would increase these costs, while higher recourse to family-supported mobile services could reduce them by around 10%. The latter type of services may also be favoured by a large proportion of beneficiaries. The previous government was working on a long-term care strategy combining these different modalities with alternative financing options.[6]

A consequence of the tensions arising between professional and family care responsibilities, concerning mostly women in practice, are particularly low fertility and child rearing levels. Despite a slight increase in the last few years, the total rate of fertility is the 4th lowest in the OECD and is lower than in comparable countries in Europe (OECD, 2019). Better educated women have experienced the strongest retrenchment. This reduces the life choices and the well-being of the current cohorts, and dents the long-term demographic vigour of society. In its long-term fiscal projections, the Ministry of Finance projected a gradual recovery in fertility, adding that a stronger increase would be welcome and would underpin more favourable macroeconomic scenarios (Ministry of Finance, 2016).

Table 1.5. Past recommendations to promote gender equality

Past OECD recommendations	Actions taken
Transform childcare allowances and parental leaves into a unique childcare account that allows parents to allocate subsidised absence flexibly over time.	The existing childcare allowance is being evaluated by taking into account the EU Directive on work-life balance. Results will be available in early 2021.
Reserve a sizeable part of this account, at least 33%, for the exclusive use of fathers.	
Further increase capacity for full-day schooling and childcare.	
Introduce legal entitlements for these services.	
Develop care capacities for dependent elderly according to a national plan.	A long-term masterplan for long-term care was adopted by the former government in 2018 and a further study was commissioned to evaluate the alternative instruments available for its financing.

The challenge of integrating migrants

Austria has become an immigration country following economic and geopolitical developments before and after the fall of the Berlin wall. More than 15% of the resident population is born abroad and, as of 2018, 16% was of foreign nationality against 10% a decade earlier. If natives with foreign-born parents were taken into consideration, around one third of the population is of migrant origin (OECD/EU, 2018).

Baseline demographic projections posit that the net immigration rate - which was around 0.8% of the total population in 2016 - is expected to stay about this level in the coming decade, gravitating at around 0.6% by 2030, before gradually declining in the following decades and stabilising at around 0.2% by 2060. These projections are subject to upward and downward risks, in particular under EU mobility.

Integration of immigrants raises challenges for some groups, especially for those who arrived in Austria with low educational capital - in both recent and more distant past. Their integration and well-being depend primarily on their labour market position, which in turn depends strongly on their education and skills

(OECD, 2012). The average schooling background of migrants is not lower than in other countries (Figure 1.16, Panel A), however, their position in the Austrian labour market is generally less favourable. They are more concentrated in low-skill occupations, are less represented in higher-skilled positions, and a larger proportion of them are overqualified for their present occupation (Figure 1.16, Panels B and C).

At the same time, migrants are adequately covered by the well-developed pension, health, long-term care and social protection systems. Even if their comparatively weak labour market position keeps their rate of relative poverty above peer countries (30% of migrant workers earn less than 60% of the average wage, against less than 25% in Germany and Switzerland), the national collective bargaining system helps maintain the earning gaps between skilled and unskilled migrants at the same level as natives (as a difference from other countries where these gaps are usually larger) (OECD, 2018).

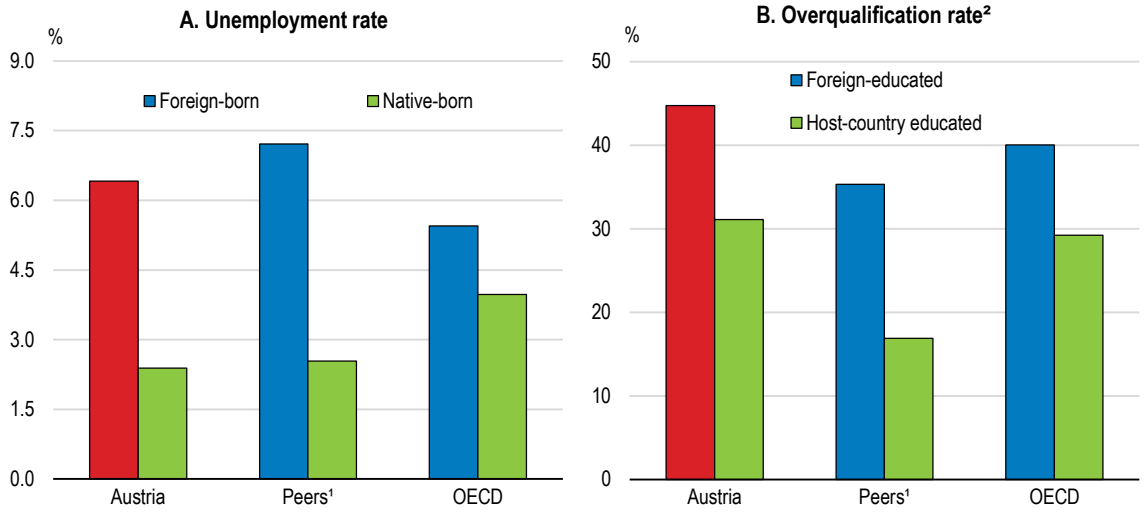
The integration of migrants is particularly disappointing when it comes to the advancement of their children in the education system. As transmission of human capital takes place more within families than through formal early childhood education in Austria, human capital gaps tend to entrench across generations and low-skilled migrants are particularly impacted. The share of low performing students and the share of early school leavers remains too high for the more vulnerable migrant groups (Figure 1.16, Panel D). (OECD, 2017). Children's being oriented to different educational tracks according to their early academic performance amplifies the challenge. The high concentration of migrant children in certain schools and their limited mixing with other social groups constitute a further obstacle (75% of migrant pupils are educated in schools hosting more than 25% of migrant pupils, against less than 60% in Denmark and the Netherlands), as social mixture is a key driver of convergence in educational development (OECD, 2018; OECD, 2011). Policymakers introduced several measures in recent years to improve the language proficiency and the learning capacity of migrant children (including a further year of compulsory pre-school education with targeted language assistance, as well as several pedagogical programmes to better prepare migrant apprentices to their workplaces). The planned education reform of the government in place after the 2017 elections intended to strengthen these policies with nationally standardised language tests at pre-school age. Such language tests can help to implement remedies to persisting language deficiencies, which bear heavily on the subsequent school performance of pupils.

Austria faced a significant inflow of asylum seekers during the 2015-16 international migration crisis (OECD, 2016). The number of applicants attained 200 000 in the 2014-18 period (2.3% of total population). Not all aspirants have been granted asylum, however, and numbers have declined considerably since 2016. As of 2017, accepted asylum seekers formed 0.3% of the labour force and the proportion is projected to reach 0.7% by 2020. Two thirds of refugees came from Syria, Iraq and Afghanistan and 60% of them have less than upper secondary education (OECD, 2019)).

The share of university-educated is also significant in migrant communities, at 20%. They represent a major resource for Austrian economy and society, provided that their skills are well used. There are signs of delays in this area. In Austria, migrants are currently more likely to be unemployed or over-qualified for their jobs than in comparable countries (Figure 1.15, Panel A or B). The unemployment rate of highly-educated migrants stands at 6.4% compared to an unemployment rate of 2.4% of highly educated natives (Figure 1.15, Panel A). Furthermore, slightly more than 30% of the highly educated native Austrians are over-qualified, which is above the average of peer countries and the EU but slightly less than the OECD average of around 31% (OECD, 2018h). In contrast, more than 40% of highly-educated migrants with foreign degrees are over-qualified for their current occupation, a significantly higher share than the average of peer countries or the OECD (Figure 1.15, Panel B).

Figure 1.15. High-educated migrants are more likely to be unemployed or overqualified for their jobs

Unemployment and overqualification rate of highly educated migrants, 15-64 year-olds, 2017



1. Unweighted average of Denmark, Germany, Netherlands, Sweden and Switzerland.
2. The over-qualification rate is the share of the highly educated (ISCED Levels 5-8), who work in low- or medium-skilled occupations (ISCO Levels 4-9).
Source: OECD (2019), "Indicators of immigrant integration: Introduction and overview", in Settling In 2018: Indicators of Immigrant Integration.

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All in all, the integration of refugees raises similar challenges to the integration of earlier immigrant cohorts. Austria should draw on its own experience, as well as on the experience of other OECD countries which hosted large numbers of refugees in the recent past, for their more effective economic and social integration. In addition to the labour market participation of breadwinners, the educational and social integration of accompanying and reunifying families is essential (Box 1.2). A recent OECD review of the integration policies in the city of Vienna suggested also that better co-ordinating integration programmes between federal, Länder and municipal governments can help[7] (OECD, 2018).

Box 1.2. Labour market integration of immigrant women: international experiences

Austrian policymakers could draw on certain interesting initiatives in Norway, Australia and Sweden to increase labour force participation of immigrant and refugee women (OECD, 2018). These experiences aim at cultivating further the existing skills of immigrant and refugee women in the areas of child and elderly care and catering, and to make these skills more attractive and relevant for the labour market:

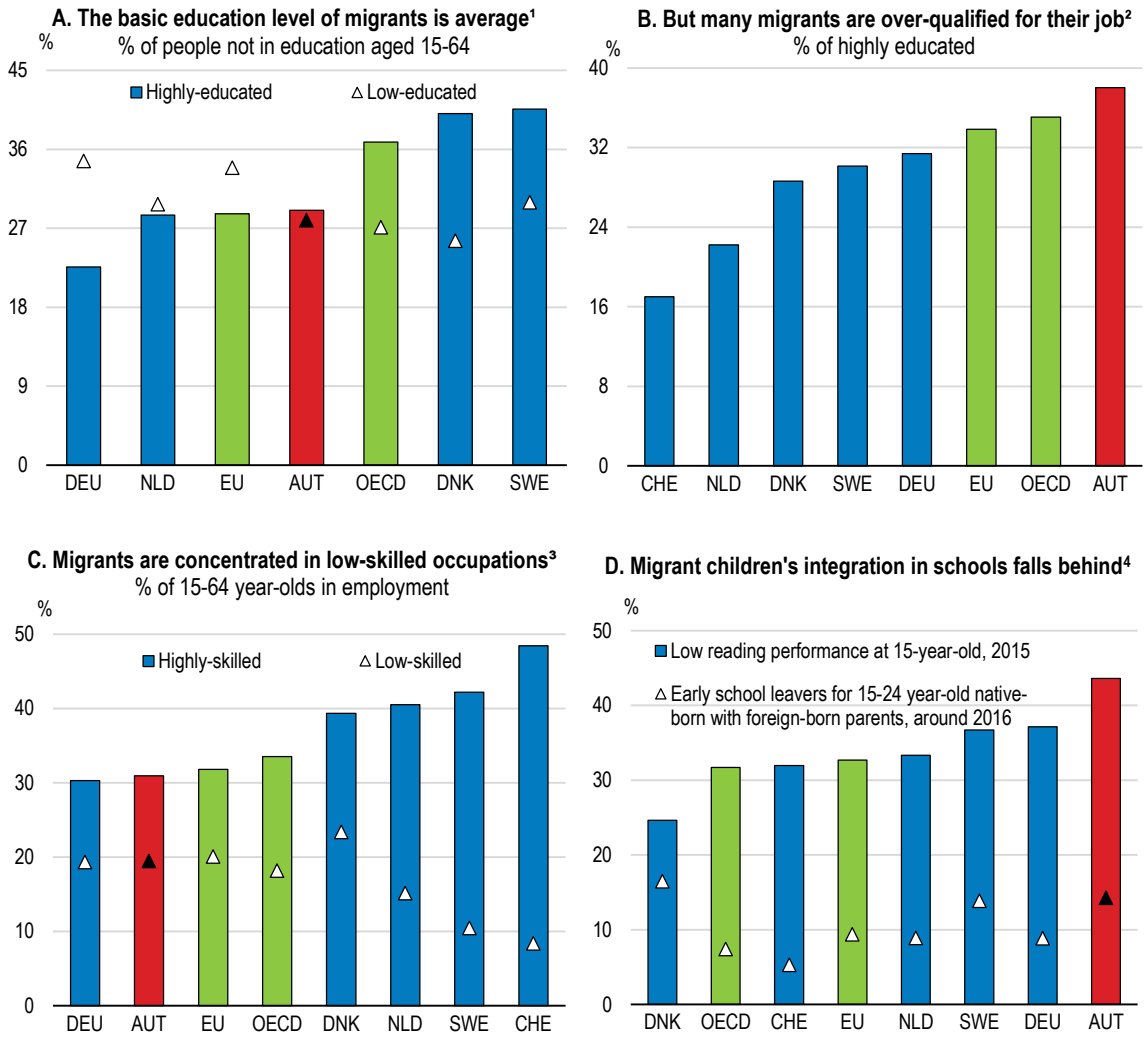
In the Norwegian municipality Levanger, local authorities, employers and the public employment service have worked with the adult teaching centre to run a pilot scheme that assists low-educated migrant women in obtaining a qualification and accessing regular work. Between 2014 and 2016, the "Levanger Arena Work" scheme helped participants to obtain a qualification and subsequently eased their entry into lower-skilled occupations in health, cleaning, kindergarten and gastronomy. The curriculum was developed jointly with professionals from the relevant sectors.

Australia has developed similar programmes to help migrant women build new skills and increase their labour market participation. The New Futures Training Program run by the Victorian Cooperative on Children's Services For Ethnic Groups (VICSEG) trains women from non-OECD countries to become certified childcare workers. The programme draws on mentoring from community members working in the childcare sector and has been successful in increasing labour force participation and employment for participants.

In Sweden, Yalla Trappan programme in Malmö is a co-operative which provides employment opportunities in catering, cleaning and tailoring to long-term unemployed immigrant women with little to no formal education. Many have limited Swedish language proficiency. Participants are referred to the co-operative by the public employment service. They work on permanent contracts in a personal and close-knit female environment and have the opportunity to obtain a qualification in their field. The project started in 2010 with financial support from the European Social Fund, the City of Malmö and the adult education association of Malmö. Since then, it has grown at an average annual rate of 30% in both revenue and employment.

Figure 1.16. Migrants' integration can be improved

Foreign-born, 15-64 year-olds, 2017 (unless specified)



Note: The OECD aggregate covers available countries. The country coverage for OECD varies across the presented panels. See the source for more details.

1. Low education refers to below upper secondary education (ISCED Levels 0-2) and high education refers to tertiary education (ISCED Levels 5-8).

2. The over-qualification rate is the share of the highly educated (ISCED Levels 5-8), who work in low- or medium-skilled occupations (ISCO Levels 4-9). See the following footnote for the definition of occupation classification by job skills.

3. Based on International Standard Classification of Occupations (ISCO-88). High-skilled occupations include legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skilled occupations include clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skilled occupations include service workers, shop and market sales workers (group 5), and elementary occupations (group 9).

4. Pupils who lack basic reading skills at 15 years old are those who score no higher than Level 1 (or 407 points) in PISA assessments of reading proficiency. The share of early school leavers is the proportion of young people aged 15-24 who are neither in education nor training and have gone no further than lower-secondary school.

Source: OECD/EU (2018), Settling In 2018: Indicators of Immigrant Integration.

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Table 1.6. Past recommendations to facilitate the integration of migrants

Past OECD recommendations	Actions taken
Emphasise labour force participation of immigrants and refugees as their main avenue of social integration.	Immigrants and refugees are invited to take further responsibility for their integration, with additional support from public language and orientation courses. Different Länder implement different support programmes.
Accelerate the recognition of qualifications of skilled migrants and refugees.	A new Law on the Recognition of Qualifications facilitated the access of immigrants and refugees to myriad different procedures for certifying their professional aptitudes and academic degrees in different areas.
Remedy to the educational handicaps of migrant children from low-educated families, by facilitating their catching-up in pre-school and primary education.	A comprehensive language training support model is specified for low-educated migrant children at their schools as well as in pre-school education.

Environmental tensions

Austria's environmental performance is good overall (Figure 1.17). Citizens are satisfied with their environmental quality of life. Water quality is among the best in the world, a large part of the land is under some form of nature protection, and the share of organically farmed agricultural area is the highest in the EU (OECD, 2013) However, most of the Austrian population is exposed to more small particle pollution than the World Health Organisation recommended limit of 10 micrograms per m3 and this share is larger than the OECD average (Figure 1.17, Panel D). 4 000 Austrians are estimated to die prematurely because of outdoor air pollution per year. Relative to population, premature mortality from this source is higher than in many high-income OECD countries and has not fallen over the past 10 years (Roy and Braathen, 2015). Within metropolitan areas, air pollution is likely to affect low-income households the most. Children are particularly strongly affected by pollution. Air pollution was found to affect education outcomes of young children markedly and lastingly (Heissel, Persico and Simon, 2019).

Austria is part of the EU engagements to meet the Paris Climate Change Agreement (EC, 2018) and engaged to reduce them by 36% compared to their 2005 level. The carbon intensity of the economy is lower than in the OECD overall, reflecting lower energy intensity and a large share of renewable energy supply (Figure 1.17, Panels A-C). However, the relative decoupling of CO_2 emissions from GDP experienced over the past decade was mainly due to the slowdown of industrial activities after the global financial crisis and stalled in the last three years of strong growth. Against this backdrop, Austria adopted a new national climate strategy in 2018, spelling out how policymakers plan to fulfil their Paris Agreement commitments (Box 1.3).

Box 1.3. The 2018 National Climate and Energy Strategy

In May 2018, the government issued a new Climate and Energy Strategy as required by the EU from all member states. The strategy sets out plans to achieve the greenhouse gas emission targets agreed on in the Paris Accord. The previous coalition had not reached a consensus on the issue.

The main ambition is in the energy sector, with a goal inherited from the previous government: to achieve 100% electricity generation from renewable sources by 2030. Three quarters of electricity generation was from renewable sources in 2017, mostly hydroelectric and biomass firing. The share of wind and solar is small, around 10%. Full decarbonisation of the economy is targeted for 2050, all energy supply coming then from renewables, compared with 33% in 2017. Achieving this goal will require additional infrastructure, energy storage and energy efficiency investments.

The second key sector is transportation. Transport emissions rose by about 70% since 1990, and accounted for about 30% of emissions in 2015. To reduce emissions from transport, the authorities target alternative fuel vehicles and a shift of freight traffic from road to rail. The potentially effective but

politically contested measure of cutting subsidies to long-distance car commuting has not been included in the strategy. These subsidies should be phased out according to a pre-announced schedule.

The third important sector is buildings. They account for more than 10% of emissions. Although their emissions have fallen by nearly 40% since 1990, the authorities see room for a further 40% reduction in building emissions by 2030.

The previous government admitted that actual CO2 emissions may exceed targets. More concrete measures, for example in transport to roll out an electric charging infrastructure, would help strengthen prospects. The plan foresees an evaluation, and if necessary adjustments from 2023. It also announces more specific "integrated plans" to be prepared according to the forthcoming "Energy Union Strategy" at the EU level.

Economically efficient reductions of carbon emissions require more adequate carbon pricing. Carbon emissions are generally priced low and unevenly, harming cost-effective emission reduction. Energy tax revenues as percentage of total tax revenues are well below the OECD average. Most emissions are priced below EUR 30 per ton of CO_2 (Figure 1.17, Panel H), a low-end estimate of the current climate related external costs of these emissions. Austria is 16th among 28 EU countries in the taxation of diesel and 17th in the taxation of gasoline. Emissions in the industrial sector are also priced unevenly. Coal use in industry is substantial but is taxed at low rates (OECD, 2018). Some emissions are subject to both the EU emissions trading scheme (ETS) and are priced by energy taxes, while others are only subject to the ETS (OECD, 2018). Still others are neither covered by the ETS nor by energy taxation. These differences are generally larger in Austria than in comparable countries (Figure 1.18).

More consistent pricing of carbon emissions would boost environment-related innovation, as evidence from emissions trading suggests (Calel and Dechezleprêtre, 2016). Austria's lead in environment-related innovation has diminished in recent years (Panel I). To improve predictability and investment incentives, carbon pricing should follow a pre-announced path supported by international co-operation.

A recent simulation by the Austrian Institute of Economic Research (WIFO) confirms that there is scope for increasing carbon prices in Austria (Kettner-Marx et al., 2018). Scenarios for an Austrian CO_2 tax were developed on the basis of the carbon taxation experiences of other EU countries, including variants with tax revenues recycled into labour cost reductions or into lump sum eco-transfers to households. Obvious gains result for environmental sustainability, but there is also a positive growth effect if the additional tax revenues are fully recycled into labour tax reductions. Fuller pricing of environmental externalities, if supported with adequate adjustments in the overall price and tax structure, can be growth- and employment-friendly (Köppl, 2018).

The behaviour of consumers and producers can also be improved through channels other than carbon pricing. Infrastructure deployment consistent with decarbonisation and optimised land use programmes help. Austria's policies in support of organic agriculture play a positive role in this regard, as they incite producers and consumers to shift to less carbon-intensive products.

Austria's dispersed settlement patterns, once considered a pillar of national well-being, raise also new challenges. Built-up areas have considerably grown since 2000 (Figure 1.17, Panel F and Figure 1.19). More than 40% of the population live outside urban areas (with fewer than 50 000 inhabitants) as against the OECD average of 30%, and only 47% of national employment is in metropolitan agglomerations (with more than 500 000 inhabitants) against the OECD average of 60%. Settlements sprawl more strongly than in other countries (OECD, 2018). This fosters car dependency and traffic congestion and worsens pollution, energy consumption and CO_2 emissions.

Cities and municipalities face land planning challenges in areas requiring strong co-ordination. The space planning and management responsibilities of federal, Länder and municipal layers should be clarified. Little has been achieved in this area so far, and more ambitious initiatives are needed (Ahrend et al., 2014;

OECD, 2018; and Anexlinger et al., 2018). Coordinating municipal land use and transport policies within travel-to-work areas and creating shared governance mechanisms to this purpose would help local governments lower traffic congestion through better spatial organisation, transportation and housing(OECD, 2015). Such reforms have reduced urban sprawl, boosted productivity and reduced energy consumption, pollution and CO_2 emissions in other OECD countries (OECD, 2015).

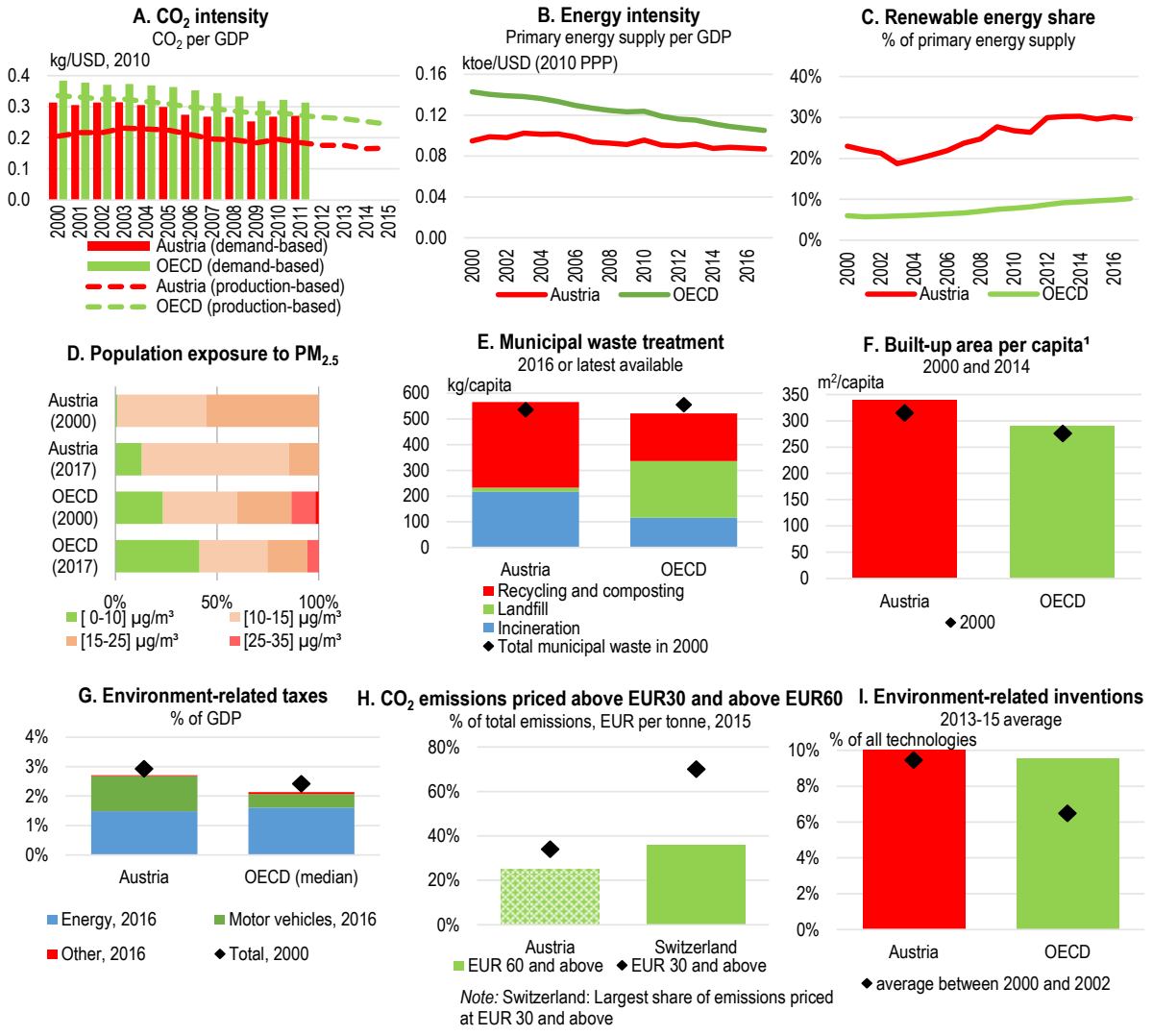
Reaping the full mitigation potential in urban transport will also require an integrated policy for the adoption of shared and electric mobility (ITF, 2018[1]). Digital-based ride sharing, as recently modelled for Dublin (ITF, 2018[2]) can lower CO_2 emissions and deliver on substantial reductions of congestion and pollution, while improving connectivity and accessibility, especially for low-income households, at low cost to the public purse, provided it replaces individual car use. Where emissions and congestion charges were introduced, they have reduced local CO_2 emissions by around 15% and congestion by 20-30%. Electric mobility can be strengthened with better incentives and public service requirements on charging infrastructure.

Notwithstanding the welcome recent progress in the development of environment-friendly rail freight (European Court of Auditors, 2016), Austria needs to make faster progress in decarbonising road freight to reduce emissions consistent with the objectives of Paris Agreement (International Energy Agency, 2017). In the near term, reducing emissions from trucking will require improvements in supply chains, logistics and routing. To fully decarbonise the economy by 2050, as the previous government intended, zero-emission infrastructure will have to be rolled in the coming decade. As an important road freight transit country Austria needs to coordinate such initiatives with its neighbours.

The volume of household waste is also large and has increased, although much waste is recycled (Figure 1.17, Panel E). Reducing waste lowers natural resource and energy consumption and resulting pollution, and also reduces greenhouse gas emissions, including CO_2 emissions generated in the production of imported goods and services (demand-based emissions). As in other high-income countries, an option to avoid waste and to increase recycling is to reinforce policies to extend producers' responsibility at the end of the life of their products (OECD, 2016). These policies can include product take-back requirements on retailers, refundable deposits, or disposal fees levied at purchase based on the estimated costs of treatment. Austria could consider making use of such instruments for a broader set of waste streams.

To help finance public and private investment in green infrastructure, energy storage, energy efficiency and clean technologies, Austrian policymakers are encouraging the development of "green finance" instruments. Green bonds emissions (backed by the 'sustainability ratings' of the projects granted by independent experts) can facilitate the financing of long-term projects. A EUR 500 million emission by the Austrian Export Credit Agency (ÖKB) in Spring 2019 has been the largest initiative so far and will be followed by other emissions in the financial and non-financial sectors.

Figure 1.17. Environmental indicators



1. "Built-up" is defined as the presence of buildings (roofed structures). This definition largely excludes other parts of urban environments and the human footprint such as paved surfaces (roads, parking lots), commercial and industrial sites (ports, landfills, quarries, runways) and urban green spaces (parks, gardens). Consequently, such built-up area may be quite different from other urban area data that use alternative definitions.

Source: OECD Green Growth Indicators database; OECD Environment Statistics database; OECD National Accounts database; IEA World Energy Statistics and Balances database; OECD Exposure to air pollution database; OECD Municipal waste database; OECD Land cover database; OECD Effective Carbon Rates database; and OECD Patents in environment-related technologies: Technology indicators database.

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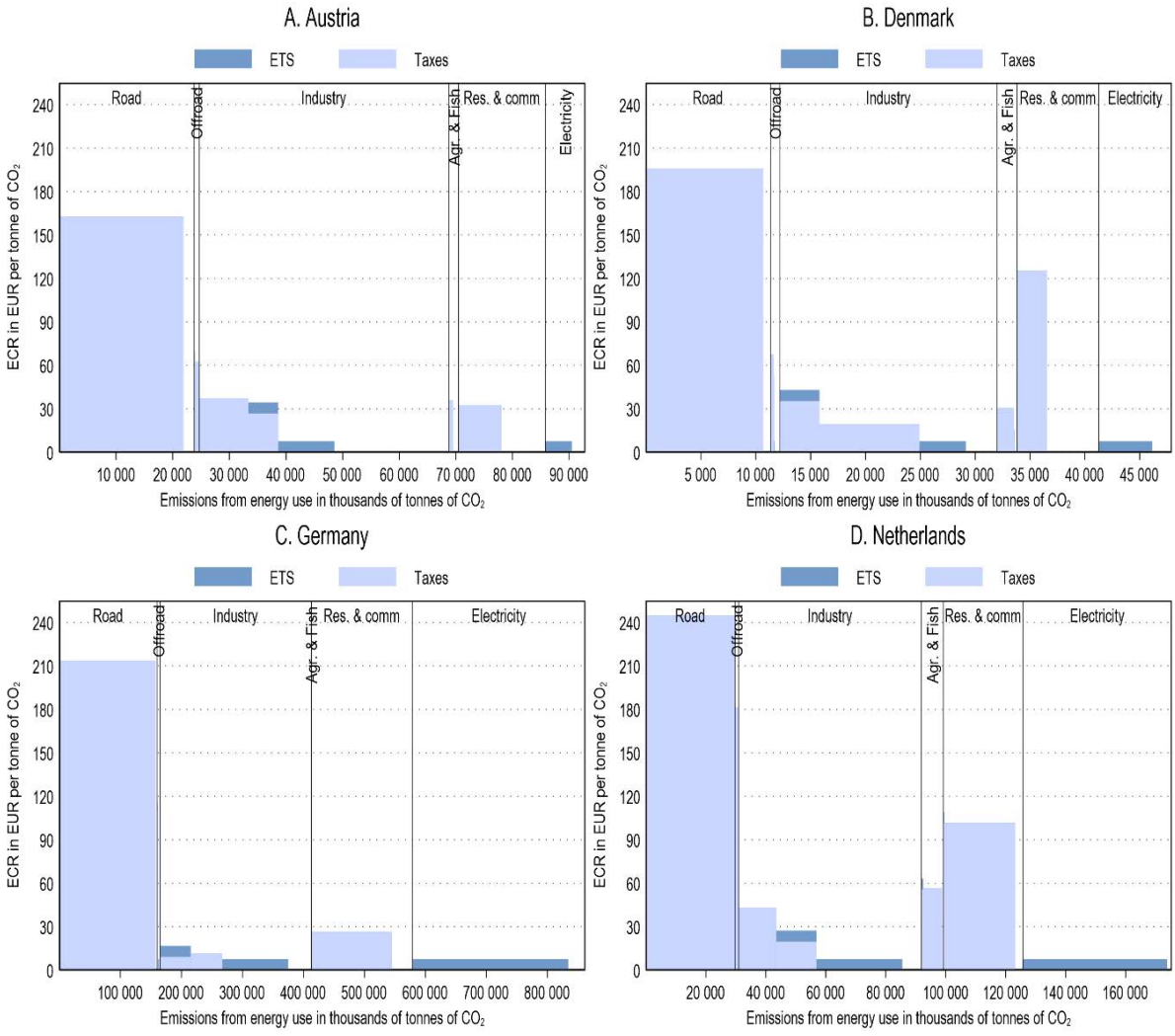
Figure 1.18. Effective carbon rates in Austria and selected countries by sector and component

Average effective carbon rates across sectors, 2015



Note: The emissions shown on this figure include biofuels. It should be noted that ETS prices have increased since 2015. 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.
Source: OECD (2019), Supplement to effective carbon rates 2018.

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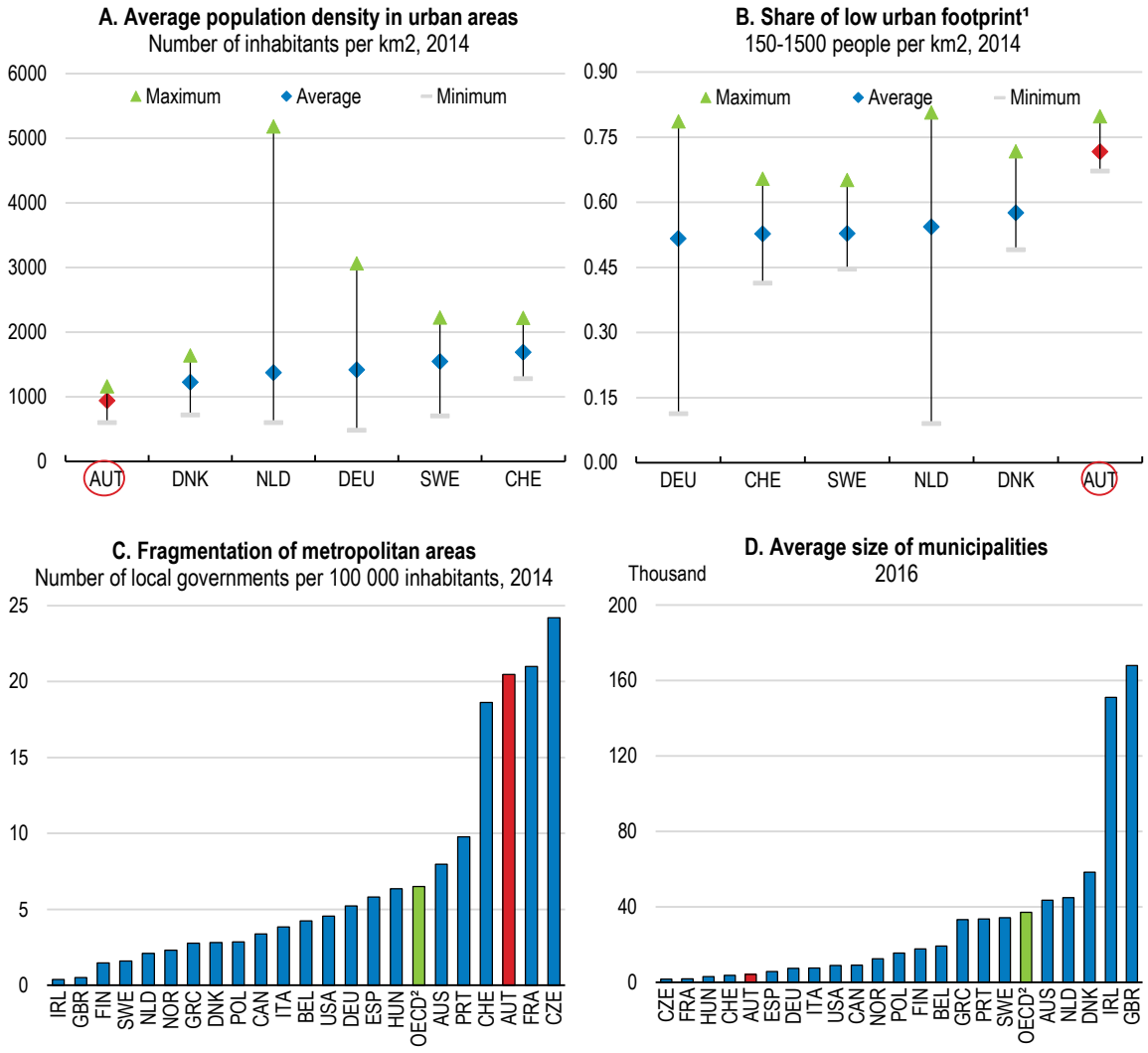
Figure 1.19. Urban sprawl and municipal fragmentation



1. Urban footprint is defined as the share of urban land occupied by areas in which population density is between certain thresholds, here 150 and 1 500 inhabitants per km².
2. Unweighted average.
Source: OECD (2018), Rethinking Urban Sprawl: Moving Towards Sustainable Cities, OECD (2019), Regions and Cities Statistics (database), and OECD (2018), OECD Metropolitan Areas Database (https://measuringurban.oecd.org/#story=0).

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Table 1.7. Past environmental policy recommendations

Past recommendations	Actions taken
Use environmentally-related taxes in all sectors to provide more consistent carbon price signals across the economy.	Green taxes will be introduced in the next steps of the tax reform to support the National Climate Strategy 2030, including differentiated taxation of road vehicles according to their carbon emission intensity.
Phase-out long-distance car commuting subsidies according to a pre-announced schedule.	

Achieving and sustaining stronger and broader-based growth

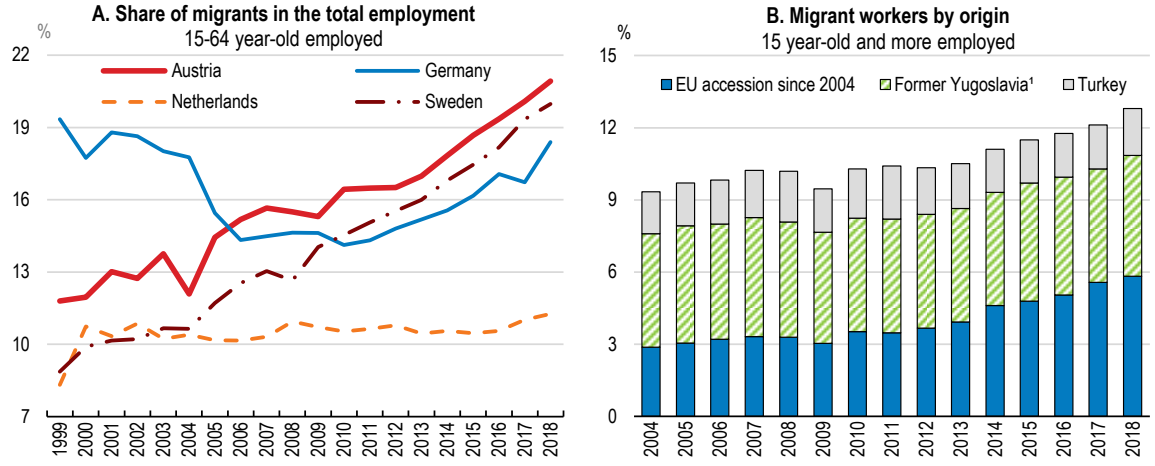
In order to firm up the main pillars of Austrian well-being and social cohesion, the economy's capacity to create good quality jobs for the majority of the population, and the public sector's ability to offer high-quality social services and protection for all population groups should be strengthened. This requires wider labour force participation by an upskilled working age population, broader-based entrepreneurial dynamism throughout the country and higher fiscal resources to push through ambitious structural reforms.

Room for increasing employment

Inward migration is particularly dynamic

The acceleration of immigration contributes significantly to Austria's supply potential. The proximity of neighbouring EU populations with suitable education levels makes an important contribution to the Austrian economy through both immigration and cross-border commuting. The share of migrant workers in employment, which had stayed around 10% in the 2000s surged after the liberalisation of intra-EU inflows in 2012 and has now reached 20% - the second highest proportion in the EU (Figure 1.20). Whereas migrants from former Yugoslavia and Turkey had formed the majority of migrant labour until the 2000s, the lion's share is now taken by workers coming from Central and Eastern Europe. Around 103 000 of the 157 000 net new jobs created in Austria between 2016-2018 are estimated to have been filled by immigrant workers. Migration flows are expected to flatten as Eastern and South Eastern neighbours develop further, and Austrian authorities may need to increase efforts to attract highly skilled foreigners in the future.

Figure 1.20. Migrants are sustaining higher employment



1. Excludes Slovenia and Croatia.
Source: Eurostat (2019), LFS detailed quarterly and annual survey results (database) and Statistik Austria.

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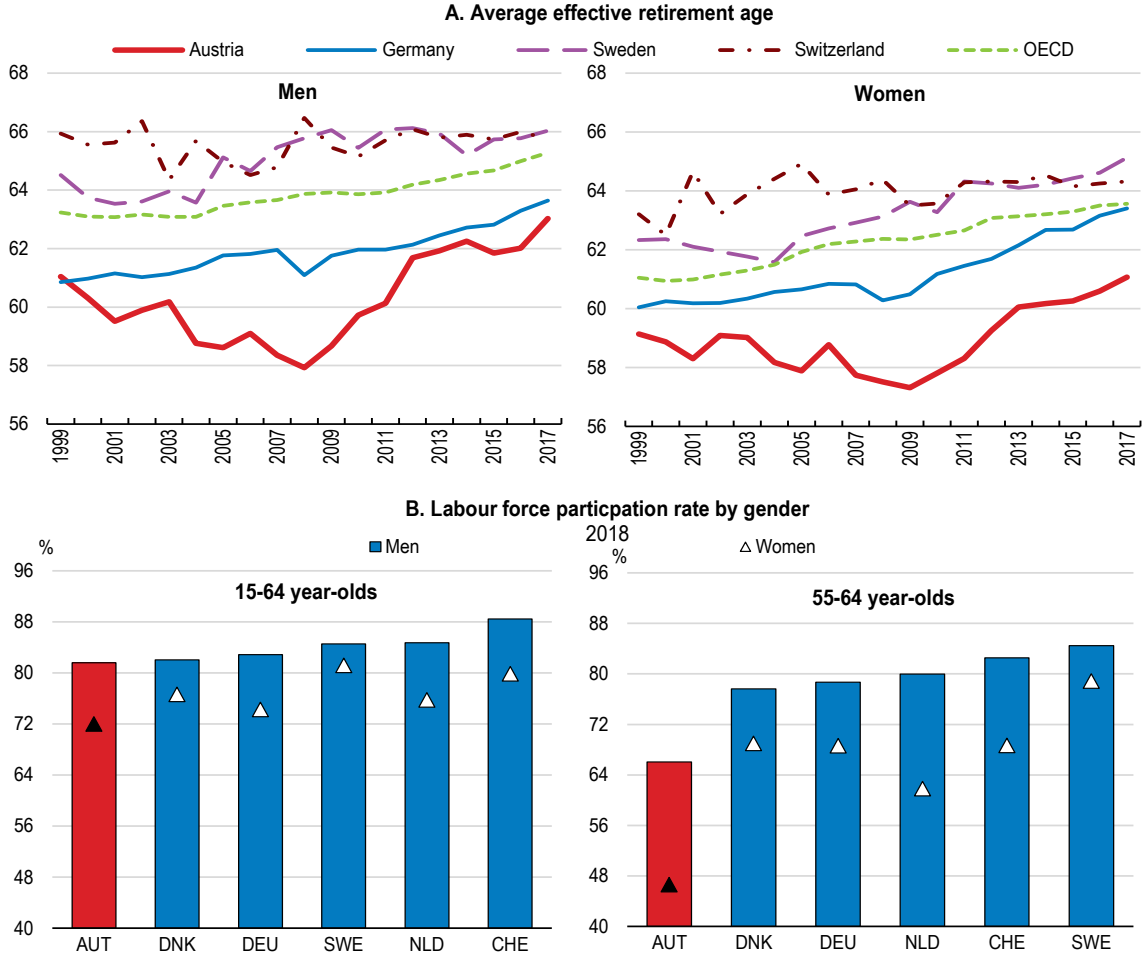
Cross-border commuting is a special feature of the Austrian labour market. The country shares 1 300 kilometres of borders with new EU member states, where four to five million persons (equivalent to half of total Austrian population) live near the border. Large cities such as Brno, Bratislava and Maribor are close to the agglomerations of Vienna, Graz, Linz and Klagenfurt. Commuters combine higher earnings in Austria with lower cost of living at home and are highly attracted to the Austrian labour market. Their number is estimated to have reached the daily average of 160 000 in 2017 (4% of total employment).

A further form of external labour supply is foreign contracting firms offering services in Austria by temporarily employing foreign workers, in particular in the construction sector. This form has expanded in recent years and tended to raise some challenges concerning compliance with minimum wage and employment rules and causing competition distortions (Pfister, 2018). The Court of Justice of the EU has, in two cases, judged legislation intended to prevent fraud and illegal forms of employment by foreign contractors as too burdensome (2018 and 2019) and thus as unduly impeding the EU principle of freedom to provide services. The Austrian government should address these challenges and amend the measures and legislation accordingly.

Labour force participation has considerable room to increase

In contrast, labour force participation within Austria is weaker than in comparable countries (Figure 1.21). The participation of older workers is lower, in particular for women, and the share of part-time work is particularly high. As a result, despite working hours of full time workers being longer than in comparable countries, the number of work hours per working age person remains one of the lowest in OECD.

Figure 1.21. Labour force participation is still low



Source: OECD (2019), OECD Labour Force Statistics (database) and OECD Statistics on average effective age of retirement (http://www.oecd.org/els/emp/average-effective-age-of-retirement.htm).

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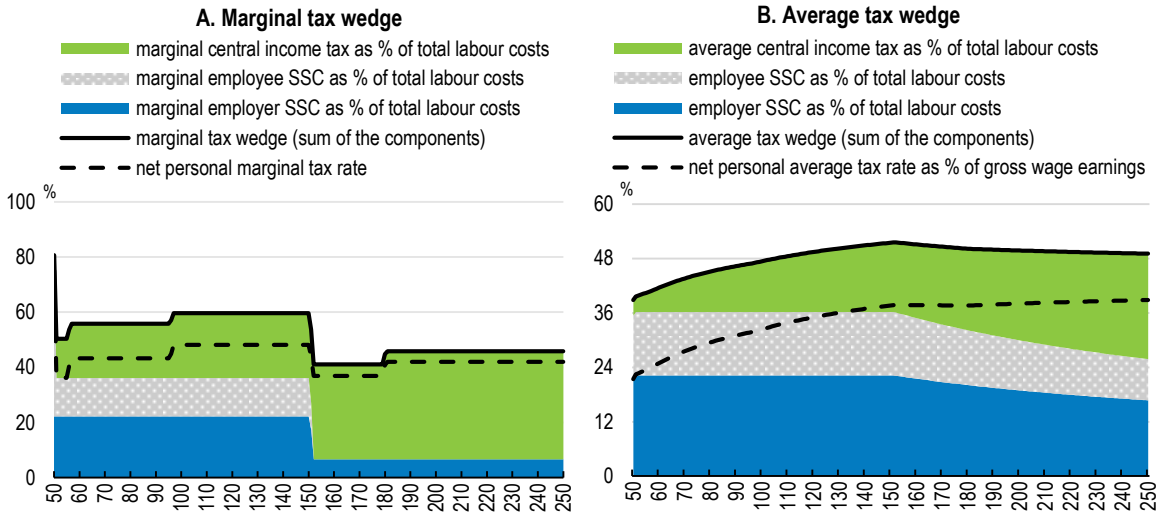
The number of hours worked is also held back by a number of barriers created by policy. Austria has one of the highest tax wedges on labour that the government programme 2017-2022 was aiming a reducing. The employee and employer social security contributions and the income tax represent together nearly 43.1% of the labour cost for low income workers (at 67% of the average wage), the 5th highest wedge among 35 OECD countries. Workers with gross earnings less than EUR 17 360 are exempt from income tax. Earnings below are entitled to a refund of part of their SSC even. The marginal income tax rate increases to 223% up to EUR 21 000 - taken into account the flat rate regime on holiday remuneration – and then to 30.9% up to EUR 36 167 (Figure 1.22). The Marginal Effective Tax Rate (METR) is low for a spouse moving from inactivity to part-time employment, but is higher in transition from part-time to full-time employment. Employers also face increased employment costs due to high employer social security contributions.

Figure 1.22. Marginal and average tax wedges hinder labour force participation

Tax wedge decomposition by level of gross earnings as % of the average wage, one-earner married couple without children, 2017



Source: OECD (2018), Taxing Wages 2018.

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The tax framework could be made more employment friendly and supportive of inclusive growth. Reform efforts have periodically tried to reduce the existing labour tax wedges. However, they have remained relatively marginal to date. The 2015-2016 tax reform increased the capital income and the capital gains tax rates from 25% to 27.5% (with an exemption for interest income from bank deposits), and the tax rate on real estate gains was increased to 30%. The tax base was also broadened for certain real estate transactions. As the other OECD countries facing similar long-term reliance on labour taxes, Austria should now dare to undertake a more ambitious shift of the tax system take from labour onto alternative sources such as environmental, consumption, inheritance and wealth taxes (Hagemann, 2018).

The official retirement ages for men and women are, respectively, 65 and 60, and their average effective retirement ages are 63.2 and 60.4 in the pension system, and 55.7 and 52.2 in disability pensions.[8] The average age of withdrawal from the labour force is, as a result, 62 for men and 60.6 for women. This raises risks of old-age poverty, in particular for women with short or fragmented work histories living alone.[9] After the closure of several early retirement windows, and their replacement with rehabilitation programmes, the

effective retirement age increased by about one year in the past five years for both genders, but remains still low in international comparison.

Income replacement and contribution rates of the pension system are among the highest in OECD (OECD, 2017). Parametric reforms adjusted the benefit accrual rate and increased women's retirement age – albeit gradually, with convergence with men's retirement age to be achieved between 2024-2033. High contribution and benefit rates may be seen as a collective choice favouring high pension contributions during working life, in order to secure high incomes during long retirement periods. However, the current design of the system is likely to require future increases in the statutory retirement age, and augmentations in contributions or reductions in benefits, in order to adapt to changes in life expectancy and to other demographic changes.

Austria has opted to implement these changes through legislative amendments rather than automatic adjustments. Workers' retirement benefits are linked to their life-time contributions by legislation. Participants are informed of their pension entitlements. Pension entitlements in the last ten years of activity have been safeguarded in the past. Reform measures affected only the people who were reaching the statutory retirement age in more than 10 years after the introduction of the reform. The process is transparent and democratic, but is open to sustainability risks if legislative decisions in Parliament lag behind needs. The pension system parameters could be automatically adjusted to demographic changes as in some other OECD countries, for example by linking the retirement age to life expectancy. Otherwise legislators need to closely and continuously monitor demographic and other structural changes, and promptly adjust the parameters of the system.

The long-term projections of the previous government, co-ordinated with the European Union's Working Group on Ageing, foresaw a limited long-term increase in public pension disbursements as a share of GDP (from 13.8% in 2016 to 14.9% in 2040 and 14.3% in 2070). There are also risk variants but these cover only high-probability risks identifiable and quantifiable ex-ante (Figure 1.23) (Ministry of Finance, 2018; EC, 2018). The consequences of future demographic developments will have to be closely monitored and actively managed.

As in all OECD countries, Austria's public debt trajectory as a whole is exposed to various risks where population ageing and demographic developments play an important but non-exclusive role. Long-term public debt sustainability will be affected by developments in three main areas:

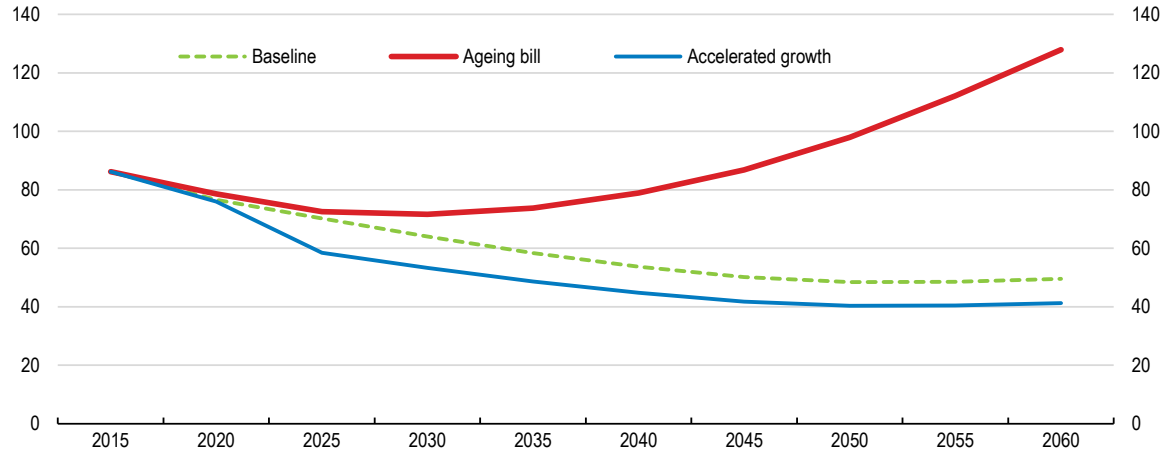
1. The long-term growth performance of the economy will bear strongly on debt sustainability, together with interest rates. The employment and productivity trajectories driving GDP growth will depend on national policies and international developments.
2. Ageing and demographic dynamics will bear on pension, health and long-term care systems. Their impact will depend on fertility and migration, average life expectancy, effective retirement ages, health technologies and costs, and demand for publicly-funded long-term institutional care.
3. Other tensions may arise from societal and ecological developments. If inequality in market incomes increases at its recent pace, stronger demands may result for public transfers and supports. If environmental pressures increase, higher mitigation and adaptation investments may become necessary.

Fiscal projections for this Survey (Figure 1.23) consider a baseline scenario and two alternative paths for public financial balances and public debt. First, the baseline debt/GDP ratio rests on ongoing trends in employment and GDP growth, baseline ageing costs and the stability of other government spending and revenue policies. Second, the 'accelerated growth' scenario takes the same assumptions, but more ambitious structural reforms lift trend employment, GDP growth and public revenues, creating additional fiscal space. Third, the 'higher ageing bill' scenario assumes the baseline growth but retirement, health and long-term care costs grow more rapidly but still at a pace considered plausible in the EU's Ageing Group's standard risk scenarios. These scenarios highlight the significant fiscal risks associated with

ageing. They do not take into account a range of other pressures from social or ecological developments (Figure 1.23).

Figure 1.23. There are risks on long-term public finance

General government gross debt as % of GDP, Maastricht definition



Note: The baseline corresponds to the base variant 1 based on BMF (2016). The scenario "ageing bill" includes an increase in life expectancy (for men to 89.6, for women to 92.3) and an increase in spending on public health and caretaking to 9% and 3% of GDP until 2060. The growth reform package simulates a half-way decrease of the PMR gap to the average of the 5 best performing country, an improvement of government efficiency to the level of the best-performing country and a decrease in the labour tax wedge for low earnings equivalent to 0.65% of GDP financed through a 0.4% of GDP reduction in production subsidies and a 0.25% increase in receipts from environmental taxes. The accelerated growth scenario corresponds to scenario 4 from the reforms scenarios in Table 1.9.The scenario "Ageing bill + accelerated growth" combines the increase in spending on public health and caretaking due to an increase in life expectancy and the growth reform package.
Source*: Calculations based on OECD (2019), OECD Economic Outlook*: Statistics and Projections (database).

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Table 1.8. Past recommendations to strengthen labour force participation and employment

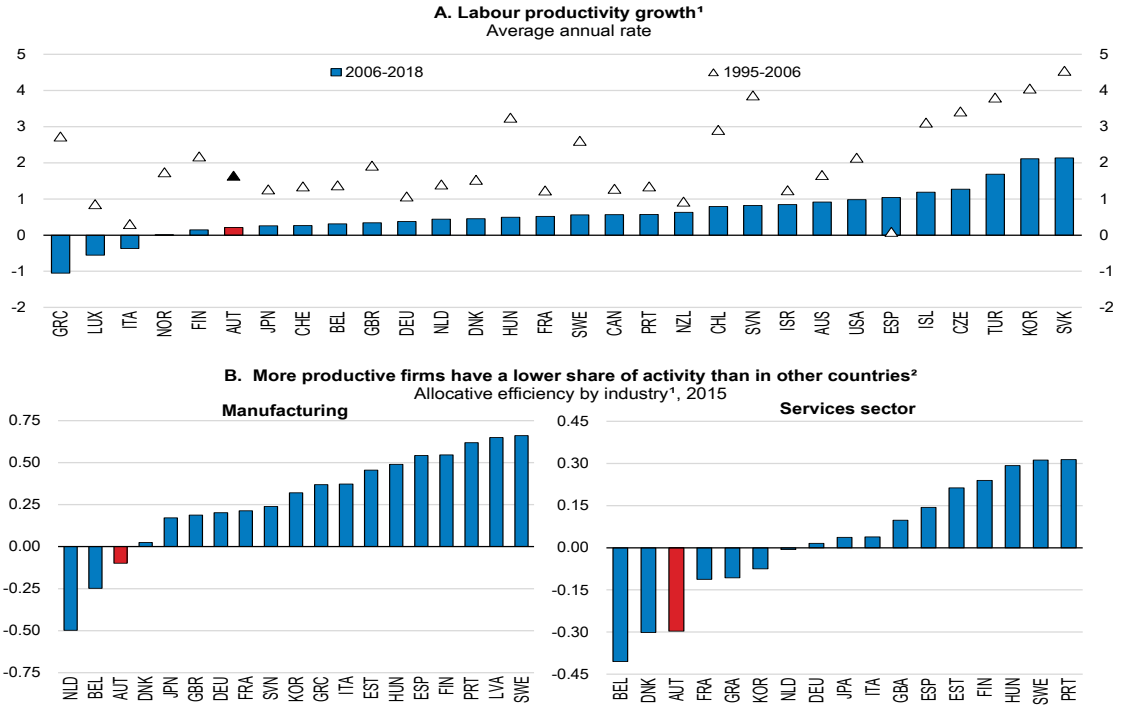
Past recommendations	Actions taken
Further reduce the labour tax wedge for low-income earners by partly or fully waiving social security contributions, financed by a broadening of the tax base and increases in consumption, environmental and property taxes	The contribution of low-income earners to unemployment insurance was reduced in 2018. The tax reform announced in April 2019 cuts the personal income tax (PIT) rate of the lowest income bracket (annual income between EUR 11 000-18 000) from 25% to 20% starting from 2021, and the PIT rate of the next two income brackets (EUR 18 000-31 000 and EUR 31 000-60 000) from 35% and 42% respectively to 30% and 40%, starting from 2022.
Align the official retirement age for women with that for men. Eliminate all remaining subsidised avenues to early retirement. Tighten eligibility to disability pensions also for those above 50 and help partially-disabled workers to better use their remaining work capacity.	Disability reforms started to apply to persons between 50-55. In 2017, additional vocationally oriented medical rehabilitation measures were introduced to facilitate the return of the partially disabled to the labour market.

Turning around recent weak productivity growth

Productivity growth has decelerated in Austria over the past decade more markedly than in other OECD countries taken as a whole. Average labour productivity growth per worker, which was the highest among peer countries between 1995-2005, decelerated to the lowest between 2005-2016 (Figure 1.24, Panel A). Weaknesses in resource allocation efficiency, measured on the basis of per hour productivity, appear to

have played a special role. This reflects a less favourable distribution of employment between high and low productivity activities than in comparable countries[10] (Panel B). There is potential for enhancing average productivity by reviving the dynamism of the business sector, fostering the convergence of enterprises with the global digital frontier, and deepening their integration with global value chains.

Figure 1.24. Productivity growth has slowed down



1. Real GDP per person employed.
2. It is measured as a covariance between firms' market shares and labour productivity at the industry level based on the Olley-Pakes measure of allocative efficiency. Higher values indicate better resource allocation. The productivity is defined as GDP per hour worked and market shares are computed as share of employment. For more details, see Andrews and Cingano (2014).
Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database), D., Andrews and F., Cingano (2014), "Public policy and resource allocation: evidence from firms in OECD countries", Economic Policy, Volume 29, Issue 78, and OECD calculations based on ORBIS.

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Firm demographics can be made more dynamic

The traditionally high level of productivity in Austria's business sector was founded on the relatively good performance of a set of SMEs specialising in medium-high and high-technology sectors and active in regional value chains. In contrast, the rate of entry of new firms and the rate of exit of underperforming firms have remained lower than in comparable countries. The rate of entry of new firms in high-technology sectors and the share of additional jobs that they have added to total employment have been lower.

The Austrian economy would benefit from more vibrant entry, smoother exit and higher scaling-up rates, notably in high-technology sectors. As discussed in the thematic chapter, more private equity engagement in restructuring firms, and the deepening of the stock market as a source of equity capital would boost further business dynamism in Austria. Private venture capital and private equity sources should complete the large public financing resources already available for start-ups, as they play a unique role in the development of high-potential ventures – as previously documented in empirical research in Austria (Peneder, 2010). A "Start-Up Package" with new subsidies (including the establishment of a new

Digitalisation and Growth Fund, and more credit guarantees), regulatory sandboxes and new educational programmes were introduced in May 2019 - without tax incentives. Tax incentives for such investment can indeed be an effective way to boost the provision of risk capital. The United Kingdom's Enterprise Investment and Seed Enterprise Investment schemes -which provide income tax deductions and reliefs on taxation of capital gains- are examples which succeeded to stimulate investment and employment in small firms (EC, 2017; Cowling et al., 2008).

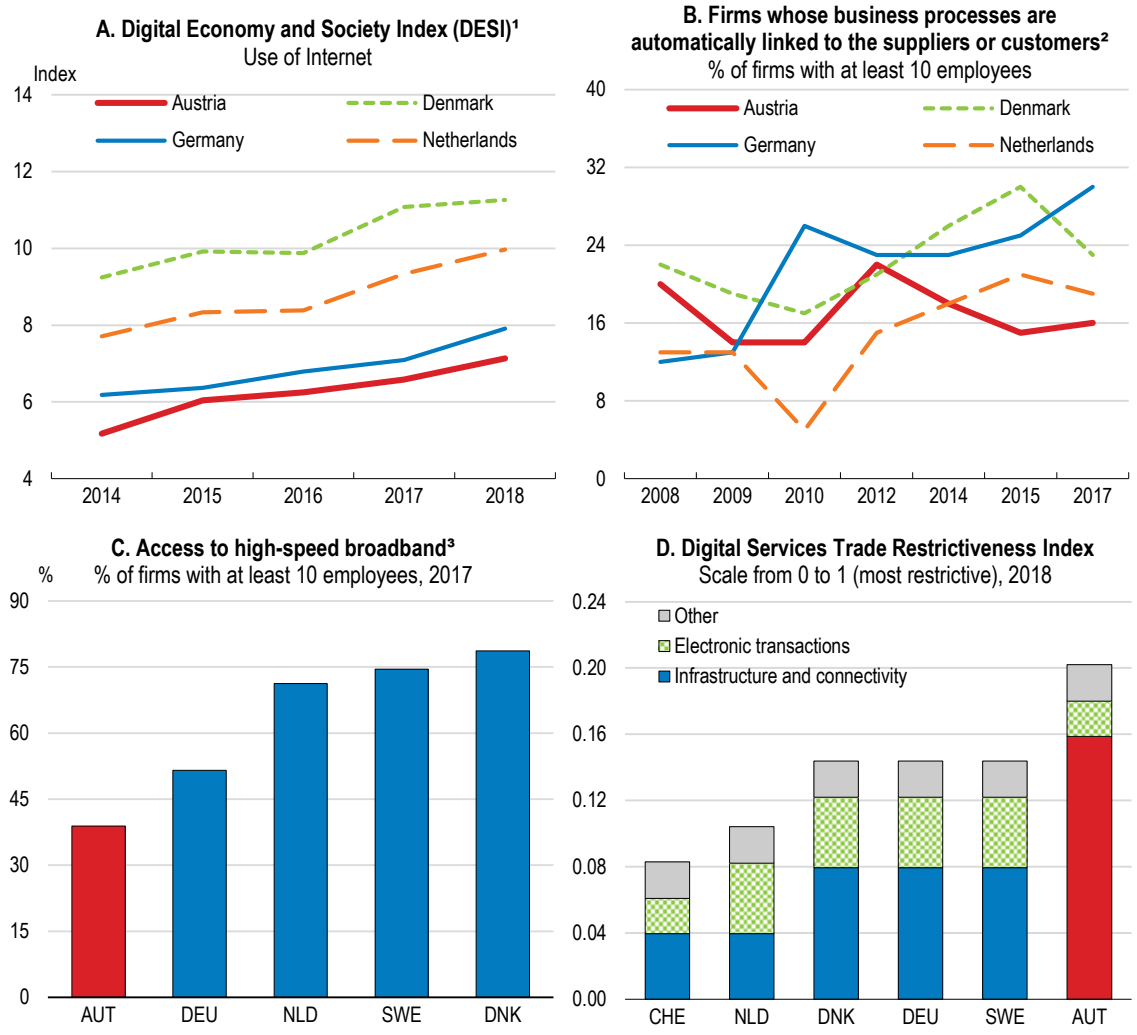
Austrian SMEs face a special challenge raised by demographic trends: a large proportion of their owner-managers approach retirement age. Many ownership transitions come on the cards within or outside current owner families. The preservation of the outstanding business goodwill that these firms have already built-up, and the social and regional stakes associated with their good performance make successful transmissions crucial. A stronger eco-system for external investments encompassing the full cycle of financing of enterprises – from venture capital to private equity, and from growth capital to stock market listings- is needed, including a supportive set-up of information and legal services. The thematic chapter recommends that Austria reviews and strengthens the most critical factors in the development of such an ecosystem.

Digitalisation needs to advance more rapidly

Austria is adapting to the moving global digitalisation frontier in both the business and public sectors. However, according to available indicators this is occurring at a slower pace than in peer countries (Figure 1.25). Divergences in the "digitalisation momentum" may be expected to create larger productivity gaps, income divergences and social cohesion tensions in the future than in the past (Andrews, Nicoletti and Timiliotis, 2018). Austria rightly aims at catching-up in this area on the back of a "Digitalisation Roadmap" adopted in 2017 and a comprehensive "Digitalisation Strategy" which is being developed under the auspices of the Federal Ministry of Digital and Economic Affairs (OECD, 2017).

The 2017 OECD Economic Survey had found that Austria's digitalisation gap resulted mainly from adoption lags in small-and-medium-sized firms. This was due to shortcomings in both their skills (capabilities) and market expansion and growth opportunities (incentives). The OECD Survey recommended to focus policy efforts on i) upgrading the entire range of ICT-generic, ICT-specific and ICT-complementary skills of workers and citizens of all ages, and ii) stimulating business dynamics in ICT-producing and ICT-using sectors alike, in both manufacturing and services.

Figure 1.25. Digitalisation gaps



1. DESI overall index is calculated as the weighted average of the five main DESI dimensions: Connectivity (25%), Human Capital (25%), Use of Internet (15%), Integration of Digital Technology (20%) and Digital Public Services (15%).
2. Based on the European surveys on ICT usage in enterprises. Data in 2016 are not available.
3. High-speed broadband refer to at least 30 Mbit/sec data transfer speed.
Source: S., Sorbe, et al. (2019), "Digital Dividend: Policies to Harness the Productivity Potential of Digital Technologies", OECD Economic Policy Papers, No. 26., OECD (2019), Digital Services Trade Restrictiveness Index, European Commission (2019), Digital scoreboard (database), and Eurostat (2019), Digital economy and society (database).

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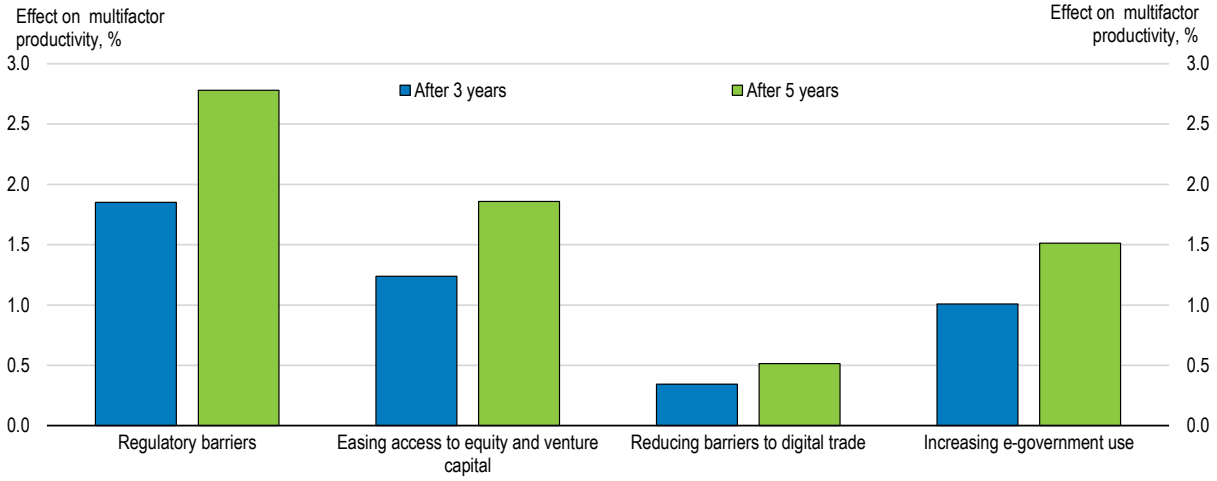
Recent OECD research suggests that the three most important drivers of digitalisation in Austria are the quality of technical and managerial skills, the fluidity of resource allocation via product and labour market reforms and access to long-term risk finance by young innovative firms (Andrews, Timiliotis and et al., 2018). Other policy levers such as e-government services and trade facilitation for digital goods and services also affect the pace of digitalisation, but to a lesser extent. Upgrading the key framework conditions promises to deliver particularly sizeable productivity and growth benefits in Austria. Based on the calculations in Andrews, Timiliotis and et al., 2018, it is estimated that if Austria's current gap in product market regulations, digital trade barriers, e-government use and venture and equity capital investing was

reduced by half vis-à-vis best performing OECD countries in each domain, a significant acceleration may be anticipated in digitalisation and in the resulting productivity gains (Figure 1.26).

A recent comprehensive overview of the digitalisation process (Peneder et al., 2019) suggested that while Austria is well-equipped with a high-speed broadband infrastructure,[11] it risks being trapped in this penultimate technology and is lagging behind in ultra-high speed broadband. While network utilisation data suggests that only 30% of users subscribe to high-speed services, and that demand may still be too weak for ultra-high speed services, their limited availability may also be constraining the provision of data-intensive user-friendly services. Cross-country OECD comparisons confirm Austria's gap in this area (Sorbe et al., 2019 and Figure 1.25, Panel C). This gap may be hindering the global internet connectivity required for the full development of cross-border digital services (Ferencz, 2019 and Panel D).

Figure 1.26. Structural reforms can support productivity through digital adoption

Effect on firm productivity of closing half of the gap with best performing countries



Source: OECD calculations based on S., 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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Austria hosts many multinational firm headquarters for Central and Eastern Europe. These units create high-quality jobs, generate high incomes and stimulate know-how transfers. For Austria to stay attractive as a location for these corporate headquarters, a stronger environment for digital innovations is needed – as these headquarters operate as central engines for the digital transformation of their entire groups (Nell et al., 2019). Austria's having fallen somewhat behind the international frontier in digitalisation may become a handicap. Current policy efforts to fill this gap can help strengthen Austria's attractiveness as a headquarter location.

The Digitalisation Strategy of the previous government, following-up on the Digital Roadmap, aimed at positioning Austria as a global digital leader. It was being developed under the auspices of the Ministry of Digital and Economic Affairs and included specific priorities, key indicators, and a timetable of implementation. It also included a comprehensive networking platform between all stakeholders (https://www.digitalaustria.gv.at/).

International competitiveness and global value chain participation can be strengthened further

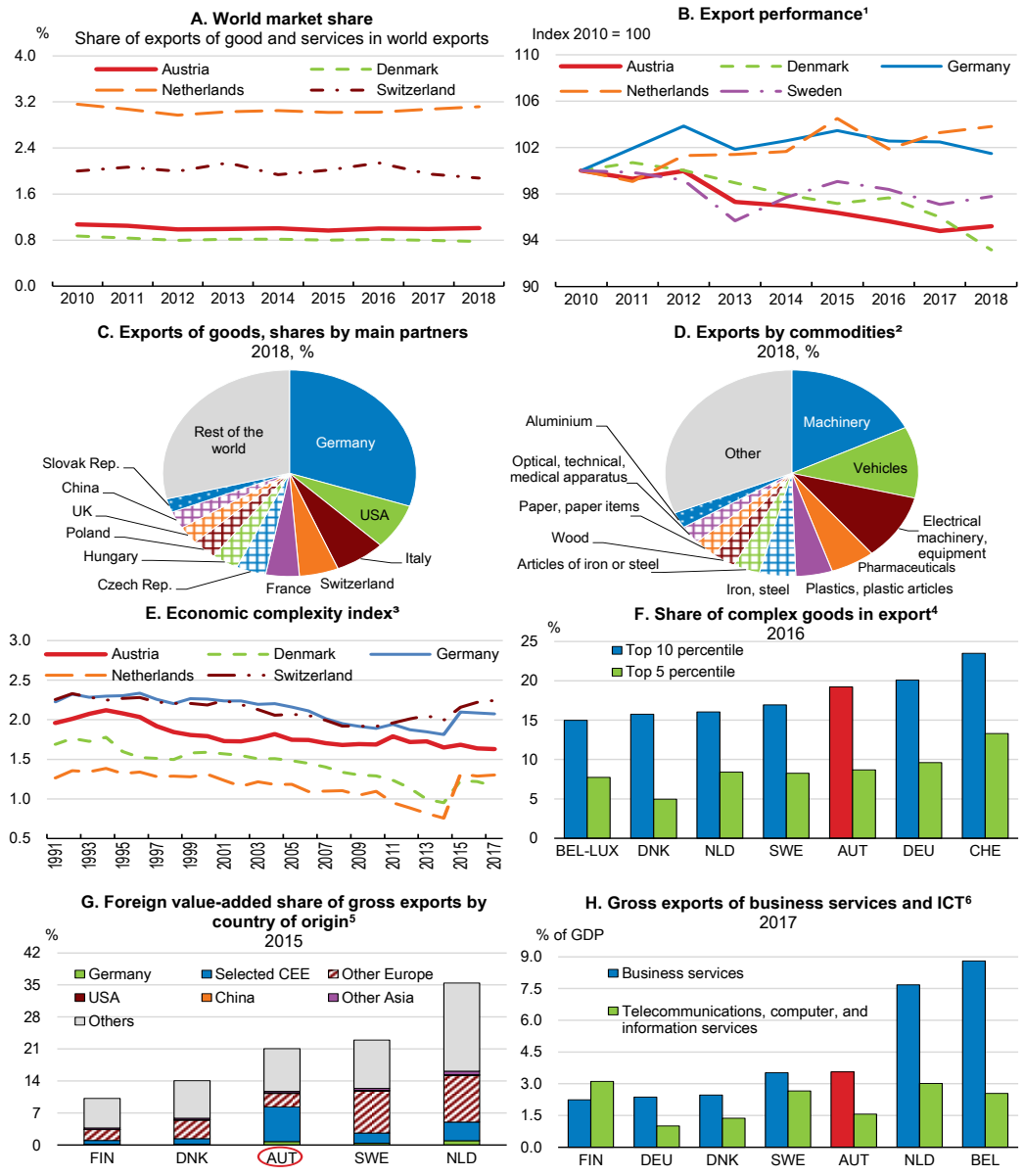
Austria is a successful export economy, with a well-diversified manufacturing base with strong positions in export markets, notably in Germany-centred value chains in Central Europe. Policymakers and economic researchers monitor closely Austria's international competitiveness and global value chain positions. The country's world market share declined over the past two decades, due mainly to the slower growth of its traditional markets in Europe (Figure 1.27, Panel A). However, even when this geographic composition of markets is taken into account, performance has slightly weakened.

The principal drivers of Austria's international competitiveness have evolved in different directions. Cost competitiveness (measured by relative unit labour costs) declined slightly over the past decade, departing from Austria's long-established ability to stabilise these costs relative to trade partners. Still, the sensitivity of exports to labour costs has also diminished, as manufacturers succeeded to preserve the differentiation and the technological sophistication of their products. The Economic Complexity Index, which measures the technical sophistication of exports, remains strong (Figure 1.27, Panel E). However, given the massive government effort engaged in R&D support over the past decade, the additional improvement which could have been expected in the innovation performance and the further technological sophistication of the economy has not been fully realised (OECD, 2019). In the meantime, some competitors and peer countries improved their relative positions (Figure 1.27, Panel E).

Austria's integration in international value chains remains centred on EU trade partners and principally Germany and other Central European neighbours (Figure 1.27, Panel E). This is expected given Austria's size and geographical location (Hanzl-Weiss et al., 2018; Heimberger, 2018; Ghodsi, 2018). Moreover, given the presence of a substantial migrant population from these countries additional trade and value chain integration opportunities emerge. Still, too an exclusive confinement in European networks may deprive the Austrian economy from broader stimuli. Austria's new External Trade Strategy aims at supporting exporters' access to broader overseas markets (Bundesministerium für Digitalisierung und Wirtschaftsstandort, 2018).

Analyses of member countries' "degree of centrality" in international value chains - defined as a country's industrial structure being more or less connected, both directly and indirectly, to global production networks - suggest that Austria has a more peripheral position than some other small open European economies (Criscuolo-Timmis, 2018). This weakens the productivity spill-overs that domestic firms, in particular SMEs, derive from external value chains. As low barriers to entrepreneurship (where Austria has room for progress, as discussed in Section 1.4.3) and effective trade facilitation frameworks (captured by the complexity of customs procedures, where Austria performs slightly less well than Netherlands, Switzerland and Sweden) are found to be particularly relevant for SMEs' performance in value chains. Austria should ensure that these frameworks are as supportive as possible for these international interactions.

Figure 1.27. Traditionally strong export performance has weakened somewhat



1. Export performance is measured as the ratio of actual export volume to the country's export market size.
2. Based on the two-digit Harmonized System 2012.
3. Economic complexity is measured by the knowledge intensity of an economy, as reflected in the diversity and ubiquity of its exports.
4. Based on the calculations of export product complexity by the Observatory of Economic Complexity of the MIT.
5. Selected CEE countries cover the Slovak Republic, the Czech Republic, Hungary, Poland and Slovenia. Other Europe covers Austria, the Netherlands, Belgium, Denmark, France, Italy, Switzerland, Sweden, Spain, Finland, Norway and the United Kingdom. Other Asia covers Japan, Korea, India and Russia. Other covers 37 other countries whose data are available for this indicator in OECD TiVA database.
6. Business services are included in the "other business services" category which includes research and development services, professional and management consulting services, technical, trade related and other business services.
Source: OECD (2019), OECD Economic Outlook: Statistics and Projections (database), OECD International Trade by Commodity Statistics (database), and the Massachusetts Institute of Technology.

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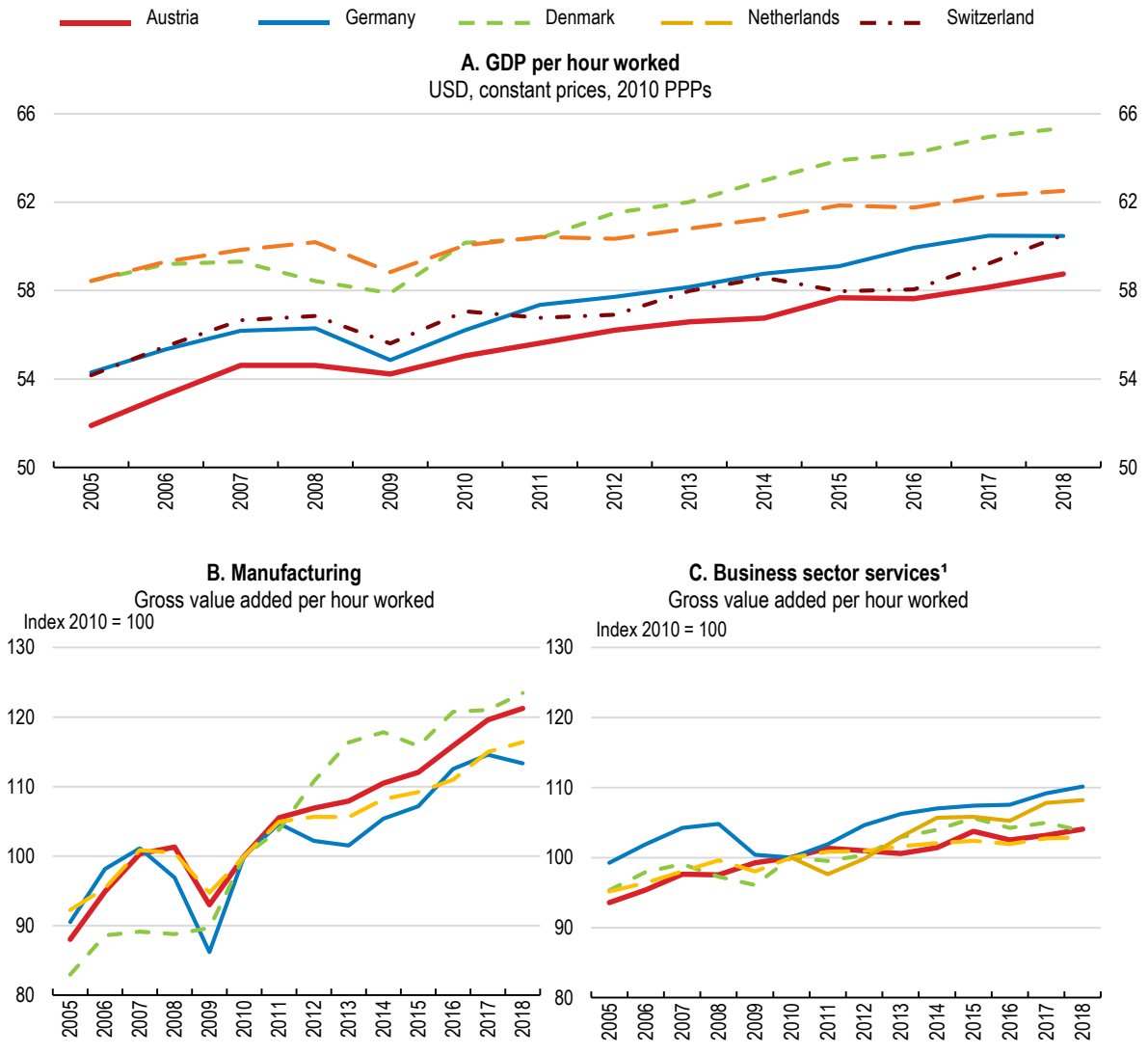
Service markets can be made more vibrant, with large benefits

Service activities account for 70% of employment in Austria. They also contribute for nearly 60% to Austria's value-added exports, via both cross-border transactions and inputs embodied in good exports. The quality and costs of services impact increasingly on the productivity and external competitiveness of the economy. There are some indications that Austria does relatively less well in services than in manufacturing (Figure 1.28).

Figure 1.28. Performance differences between manufacturing and services are weighting on aggregate productivity



1. Excludes real estate.
Source: OECD (2019), OECD Productivity Statistics (database).

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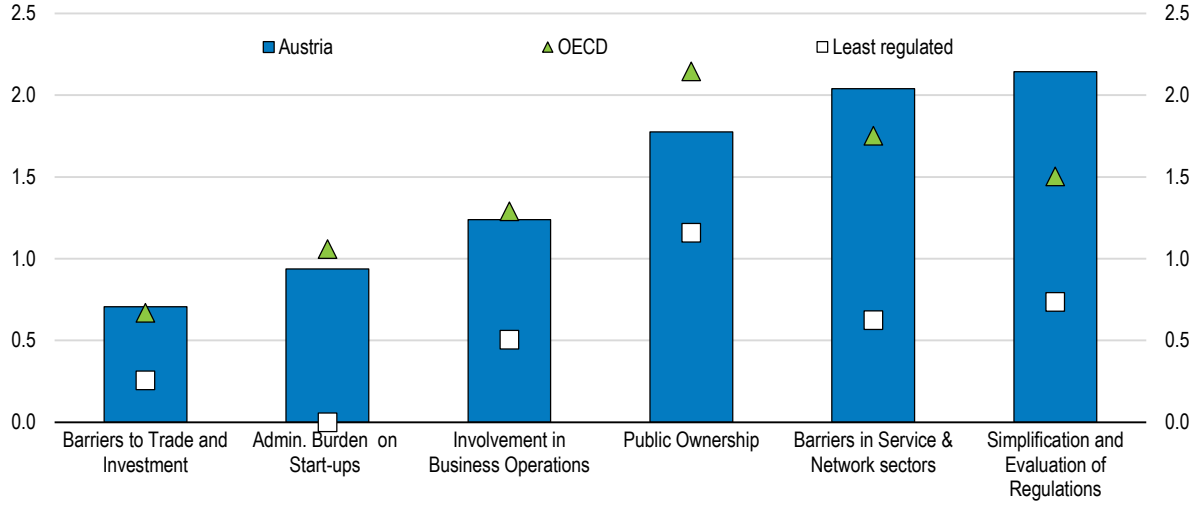
The 2015 and 2017 OECD Economic Surveys of Austria stressed the differences in competition and innovation conditions in trade-exposed manufacturing and relatively competition-sheltered services. They

highlighted the productivity wedge which seemed to arise from these differences (OECD, 2017; OECD, 2015). While entry and competition opportunities are vibrant in services such as tourism and computer consulting, restrictions to competition persist - as in a number of other OECD countries - in the majority of professional and business services. These gaps risk denting the performance of the Austrian economy.

The new comprehensive OECD snapshot of product market regulations in member countries (OECD, 2019, forthcoming) confirms that Austria's regulatory framework is less open to competition than in peer countries. Gaps persist even after the welcome amendment of the Trade Act in 2017, which lifted market access restrictions in 19 "Teilgewerbe", which became free trades. The authorities estimate that the Trade Act should maintain high skill and qualification standards in professions, to continue to support service quality, innovations and young workers' motivations to engage in high-quality vocational education. The official registration of new firms in non-regulated activities was simplified, via an on-line digital platform. The previous government planned to establish a "regulatory monitoring agency" which would review all existing business regulations, with a view to alleviate regulatory burdens. While earlier reforms in network sectors (electricity, gas, air transportation and e-communication) had opened them to competition, the framework remains more restrictive than in many other OECD countries in rail transportation, road freight, retail trade, distribution of pharmaceuticals, and professional services of lawyers, notaries, accountants, architects and civil engineers (Figure 1.29). In the last two areas (tax accountants and auditors, and architects and chartered engineers) professional examinations and minimum periods of practice are being simplified. Still, some of the aforementioned regulations are based more on command-and-control than economic incentives, and stakeholders appear to participate less in their design. The treatment of foreign suppliers in public procurement is also found to be more limiting.

Figure 1.29. Product Market Regulations remain generally restrictive

Index scale from 0 to 6, from least to most restrictive, 2018



Source: OECD (2019), OECD 2018 Product Market Regulation database, July.

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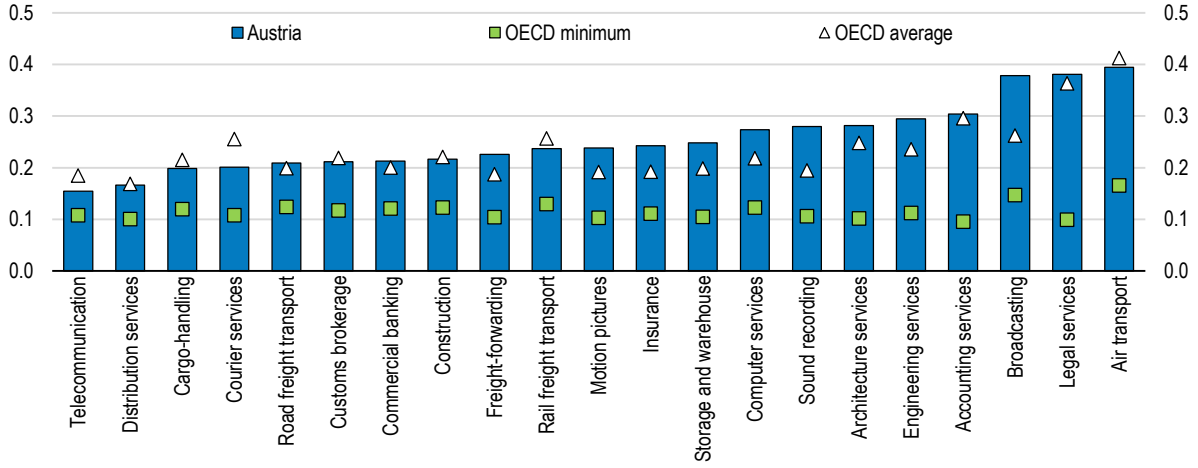
The OECD indicators of the openness of service markets to international investment and trade place also Austria in an intermediary position between open and restrictive countries (Figure 1. 30). In particular, labour market tests applied to foreign service firms' workers temporarily assigned to Austria are constraining. Managers and specialists may obtain work permits for three years, while workers in other categories can stay in the country for up to 12 months. High-skilled labour mobility and migration are

important drivers in attracting foreign direct investment, and bringing in new skills and perspectives to the economy. Austria should further align the temporary employment conditions of foreign service workers with international good practices.

Figure 1.30. Service markets can be opened to freer international trade and competition

OECD Services Trade Restrictiveness Index, scale from 0 to 1 (most restrictive), 2018



Note: The index includes regulatory transparency, barriers to competition, other discriminatory measures, restrictions on movement of people and restrictions on foreign entry. It is calculated on the basis of the Service Trade Restrictions Index (STRI) regulatory database over the 36 OECD Members, Brazil, China, Colombia, Costa Rica India, Indonesia, Malaysia, Russia and South Africa. The STRI database records measures on a most-favoured-nations basis. Preferential trade agreements are not taken into account. Air transport and road freight cover only commercial establishment (with accompanying movement of people).
Source: OECD (2019), "Service Trade Restrictions Index by services sector" in OECD Industry and Services Statistics (database).

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The less competitive operation of service markets risks affecting price formation in Austria. Comparative trends in service sector productivity, service sector wages and service sector and headline inflation suggest that less intense competition, beyond denting productivity growth, may also be fostering a degree of rent-seeking, putting upward pressure on inflation (Figure 1.31).

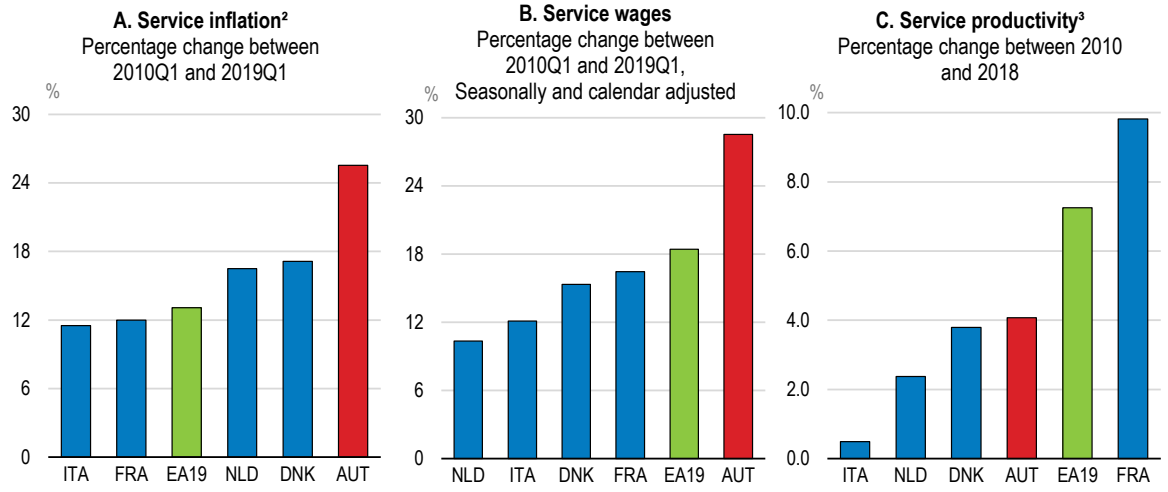
Austrian inflation has been modestly but regularly higher than in Germany and Euro area in recent years (OeNB, 2018). In 2018, the consumer price inflation differential between Austria and Germany was around 0.26 percentage points, originating almost entirely from services. The contribution of service inflation to headline inflation attained 1.06 percentage points in 2018 (in a headline inflation of 2.12%), whereas the corresponding figure for the Euro area was 0.66 percentage points (in a headline inflation of 1.75%). Competition reforms and the full opening of services to international trade and investment may help reduce these inflationary pressures.

Developments in the tourism and restaurants sector have a special impact on inflation. These activities account for one third of all services included in the consumer basket. Due to large tourist inflows, tourism generates 7% of GDP and 6% of total employment in full-time equivalents in Austria (Austrian Government, 2018). The Central Bank found that a large part of Austria's inflation differential originate from tourism services. The sector is exposed to domestic and international competition, but its productivity may be hindered by its fragmented structure. Around 16 000 hotels (mostly of small size and family-owned) employ 4 employees each on average, against 20-30 employees per hotel in Sweden and the US (OECD, 2018). Their service quality and product differentiation is high, but they suffer a gap in digital transitions (OECD,

2017; Austrian Hotel Association, 2016). The 2017-2022 programme of the previous government committed to stimulate the tourism sector by alleviating its regulatory burdens, its seasonal employment costs and supporting its digital transition (Austrian Government, 2017; Moor, 2017). Structural strengthening in the tourism sector may help moderate price pressures.

Figure 1.31. Inflationary pressures in services

Business sector services[1]



1. Excludes real estate.
2. Harmonised consumer price index (HICP).
3. Gross value added (in volume terms) per hour worked. -
Source: Eurostat (2019), Prices statistics (database) and Short-term business statistics (database), and OECD (2019), OECD Productivity Statistics (database).

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Policymakers are keen to preserve the high quality standards and consumer safety norms in the service sectors. They also value the between strict market entry rules and young cohorts' incentives to engage in high-quality vocational training in related trades. The experience of other OECD countries (including other countries with high service standards such as Sweden) suggests that it is feasible to reconcile freer competition and high quality and reliability in services. The case of pharmaceutical distribution was recently investigated by the Austrian Competition Authority. After a detailed investigation, it concluded that, while this activity has special "confidence good" properties with limited consumer information and high safety risks, there is a case for opening the market to competition. Skill standards can be enforced without curbing new entries (Austrian Competition Authority, 2018).

Structural reforms can accelerate GDP growth

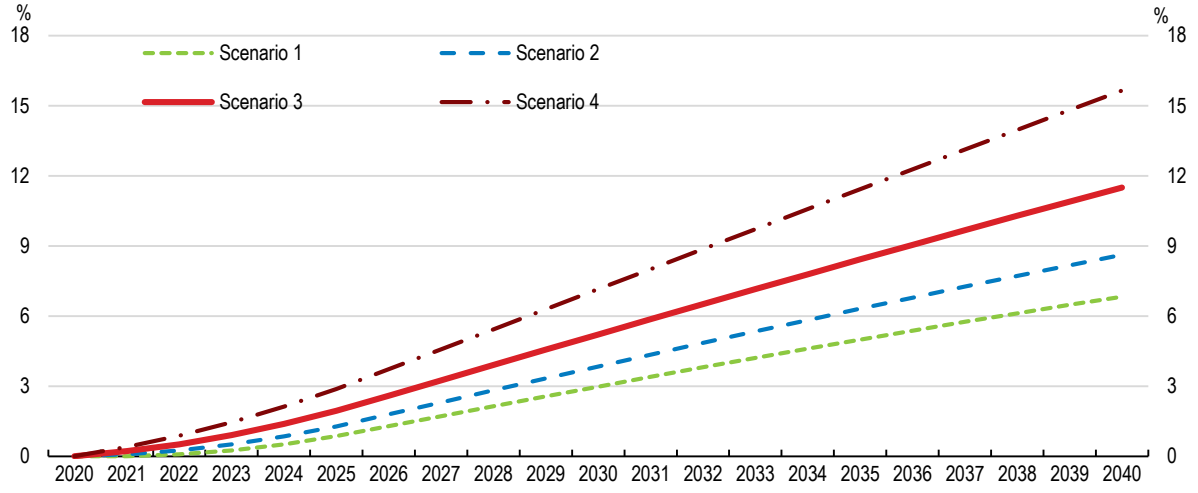
Taken together, measures recommended in this Survey to reduce barriers to labour force participation and employment, and boost competition would have a significant effect on Austria's medium-term growth prospects. Table 1.9 sets out reform scenarios based on three different combinations of pillars. First, if existing competition restrictions in market and infrastructure services were cut by reducing the difference in the stance of regulations to the top five OECD countries by half between 2021 and 2025, GDP per capita growth may accelerate by around 0.4% percentage points. Second, ambitious but achievable labour tax reforms, which would reduce the labour tax wedge for low-income earnings by 0.8% of GDP over 2021-2025, financed by a cut in production subsidies or increases in environmental taxes, could lift GDP

per capita growth by 0.7-0.9 percentage points per year over 15 years (Figure 1.32). Third, public sector reforms aimed at improving government effectiveness (section 1.5.2), if implemented, would further help accelerate GDP growth. Combinations of such growth accelerating reforms would contribute to long-term fiscal sustainability as discussed above (Figure 1.32).

Table 1.9. Reform scenarios

Baseline	No reforms
Scenario 1: Pro-competition regulatory reform	Close half-way the gap to the average 5 best performing countries.
Scenario 2: Increase in environmental taxes and cut in labor tax wedge	Increasing the receipts from environmentally related taxes by 0.25% of GDP and reducing the labour tax wedge on below-average earnings by the same size.
Scenario 3: Cut in production subsidies and cut in the labor tax wedge	0.4% of GDP cut in production subsidies to fund a same-sized cut in the labour tax wedge of low-income earnings
Scenario 4: Full reform package	Scenarios 1-3. Reducing the gap in government effectiveness with Sweden by half.

Figure 1.32. Potential impact of structural reforms on per capita GDP



Note: Model simulations based on the framework of Guillemette, De Mauro and Turner (2018) and Akgun, Cournède and Fournier (2017). Scenarios depict the effect on the level of GDP per capita as compared to a baseline scenario with no policy changes. Scenario 1 simulates a PMR reform that closes the gap to the average of the 5-best performing OECD countries half-way. Scenario 2 shows the potential impact of a decrease in the labour tax wedge of low-income earnings of 0.25% of GDP financed through an increase in receipts from environmental taxes. Scenario 3 depicts the impact of a decrease in the labour income tax wedge of low earnings of 0.4% of GDP financed through an equivalent cut in production subsidies. Scenario 4 combines all reforms scenarios and also simulates a half-way increase government effectiveness to level of the best-performing OECD country.
Source: Calculations based on OECD (2019), OECD Economic Outlook: Statistics and Projections (database).

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Table 1.10. Past recommendations to foster the dynamism of the business sector

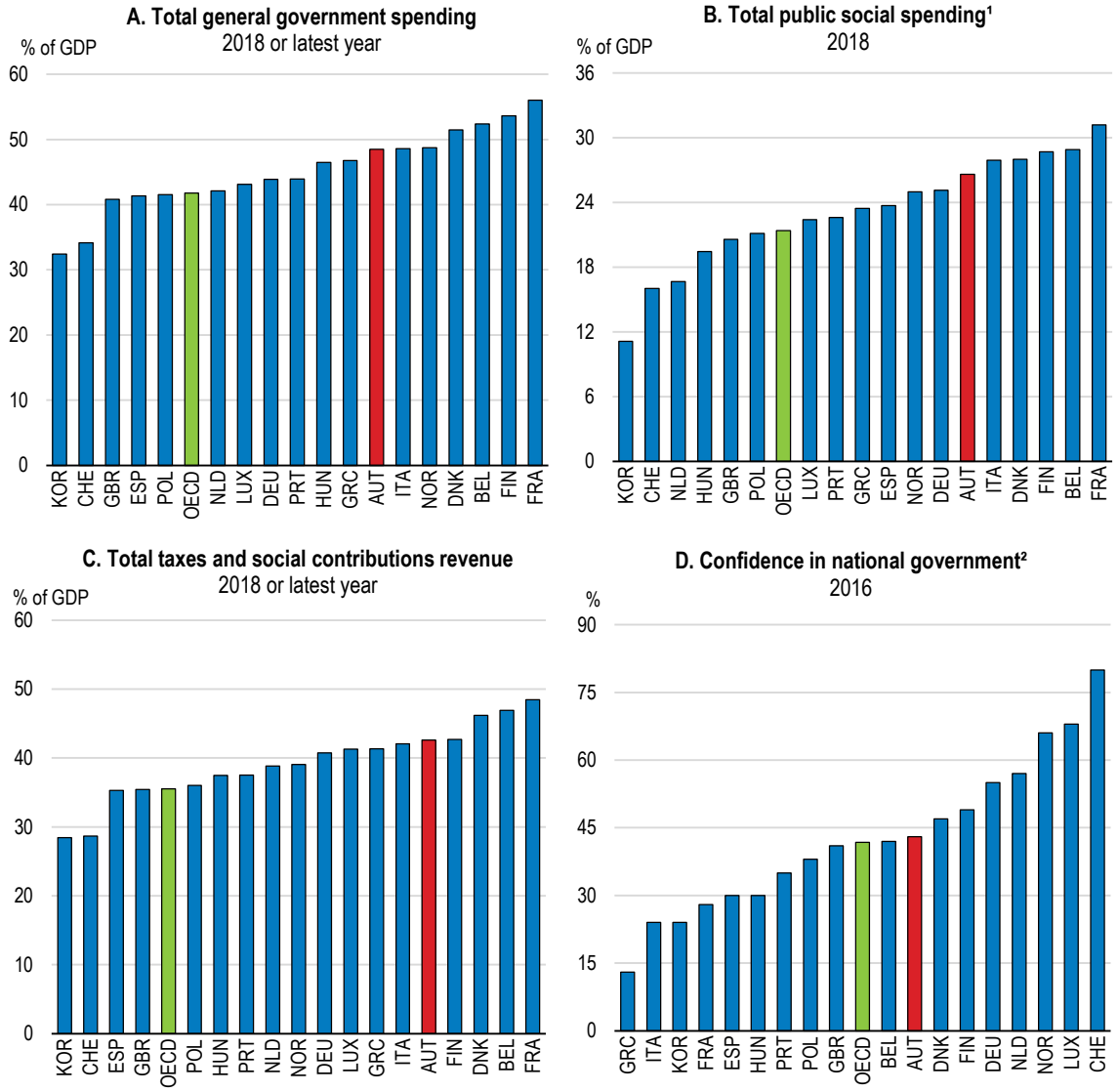
Past OECD recommendations	Actions taken
Reduce barriers to competition in services by easing entry regulations, removing restrictions on capital shares and voting rights of foreign investors and strengthening the investigation power of competition authorities	Market access restrictions in 19 so-far regulated trades were eliminated in 2017. A "regulatory monitoring agency" will be established to review all remaining regulations and make simplification proposals. The National Competition Authority's powers of inspection on electronic files (on external servers, or on cloud) were increased. Its annual budget was also augmented in 2017.
Set up a transparent monitoring system for the implementation of the Digital Roadmap, with timelines and quantitative targets	A new "Digitalisation Strategy for Austria" was adopted in 2018 as a follow-up to the 2017 Digital Roadmap. It has specific priorities, a timetable, a monitoring system and key indicators.
Integrate a Digital Skills Plan in the Roadmap, with timelines and quantitative targets for ICT-generic, ICT-specialist and ICT-complementary skills	New support programmes "SME Digital" and "Digital Innovation Hubs" were introduced to upskill SMEs in digital technologies. "Pro boot camps" were launched to jointly train the employees of leading firms and of SMEs in specific digital subject areas. A "Digital Competence Pact" was signed between several public and private sector organisations to foster the digital skills of different target groups such as "young career starters", "elderly professionals above 45", "seniors above 60", "mobile application professionals" etc.
Facilitate new entries and stimulate competition in broadband services in the context of the Broadband Plan 2020.	A "Broadband Strategy 2030" was adopted in February 2019. Austria is the first European country with a commercial 5G mobile network launched in March 2019 in 25 cities and municipalities. A nationwide 5G network is targeted for 2025.
Ensure that competition policy responds to changing threats to competition in digital markets, including through international co-operation.	A new merger threshold was defined to improve merger control in the digital sector. Austrian Competition Law's "relative market power" concept permits to detect market power abuses and is used to foster competition in digital markets.
Promote more effective data protection, cyber security and consumer protection. Improve public awareness that responsibility for risk management remains partly with firms and consumers themselves.	An internet portal addressing exclusively security issues was created with the participation of 40 public and private sector organisations. Austria's electronic identification system (eID and Handy Signatur) comply with high technical and legal security standards.

Public sector reforms are now more crucial

The large size of the public sector constrains policy innovations

Austria's relatively large public sector (Figure 1.33 and 1.34) is currently exposed to three pressures: additional ageing-related spending, re-allocation needs in education spending, and the need to make the revenue structure more employment-friendly. Fiscal relations between federal, provincial (Länder) and municipal layers are also complex and hamper the strategic prioritisation and service quality in several areas. The perceived performance of the public sector is below the expectations of citizens. Public appreciation is high in certain areas such as judiciary and security services, but the overall trust in the quality of services is below comparable countries (Figure 1.33, Panel D).

Figure 1.33. The public sector is very large and its performance can be improved



Note: Unweighted average of available OECD countries for the OECD aggregate for each panel.
1. It covers benefits with a social purpose in the following nine policy areas: old age, survivors, incapacity-related benefits, health, family, active labour market policies, unemployment, housing, and other social policy areas.
2. Based on the Gallup World Poll (GWP). % of respondents answering "yes" to a question such as "Do you have confidence in national government?".
Source: OECD (2019), "National Accounts at a Glance", OECD National Accounts Statistics (database), OECD Social Expenditure Database (SOCX), and OECD (2017), Government at a Glance 2017.

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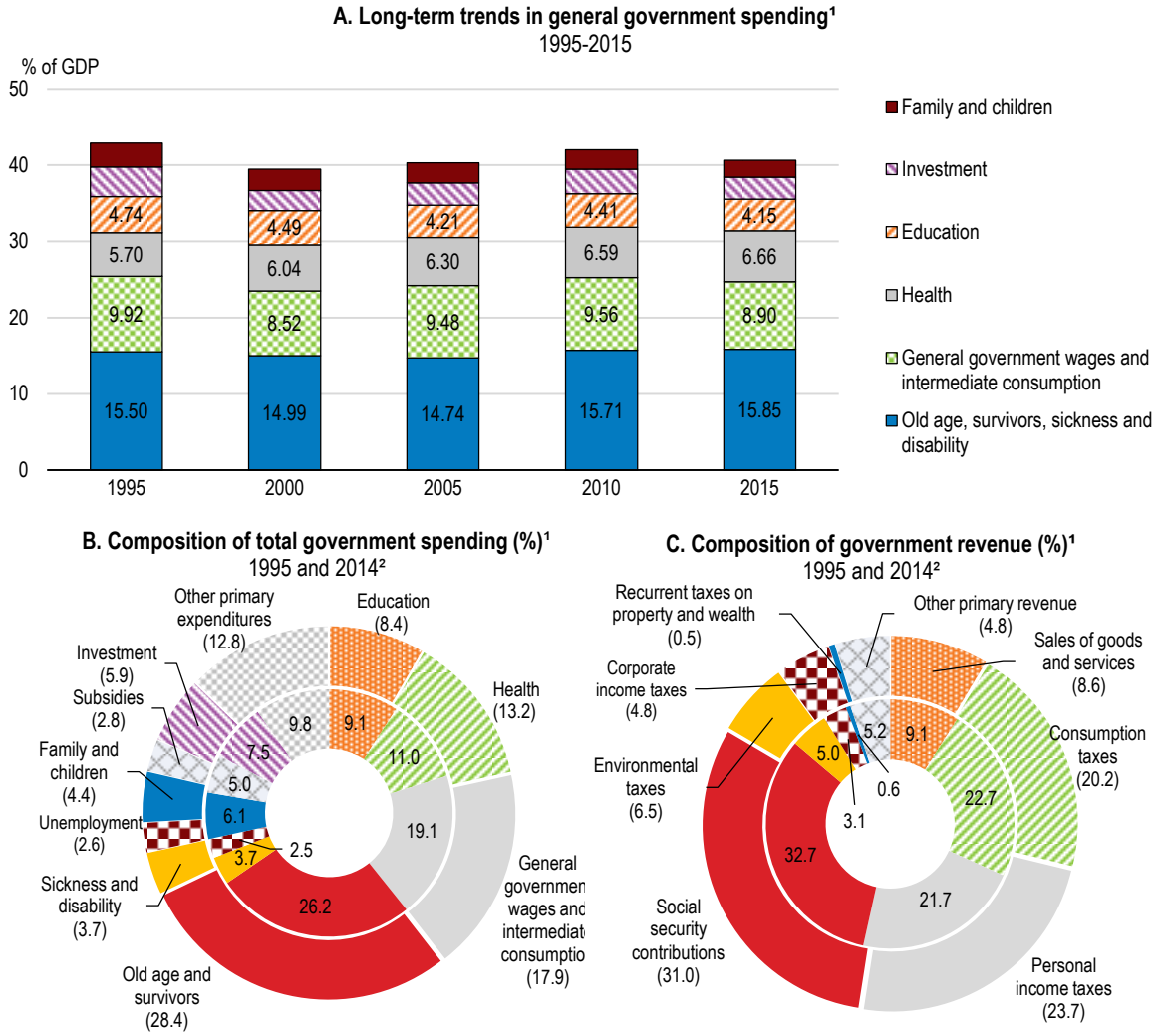
Figure 1.34. The structure of general government revenue and spending remained broadly stable over two decades



1. Cyclically-adjusted data.
2. The inner circles refer to 1995, while the outer circles to 2014.
Source: B., Cournède, J., Fournier and P., Hoeller (2018), "Public finance structure and inclusive growth", OECD Economic Policy Papers, No. 25.

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The previous government aimed at reducing the tax-to-GDP ratio from 42% in 2018 towards 40% by 2023. The financing and spending reforms required to attain this goal without undermining long-term fiscal sustainability would be challenging. In order to attain this objective policies would have to reign in the "passive" trend increase in spending and regain room for more strategic use of public resources. Sector-specific spending reviews were planned to detect the potential for savings and quality and efficiency improvements. According to the experience of other OECD countries, the quality of these reviews vary and the authorities should ensure that they are carried out at the highest possible level of independence and technical standards. Their conclusions should also be well publicised and publicly discussed. Among OECD countries' experiences with spending reviews Canada's and The Netherlands' experiences may be of interest for Austria. To combine independence of analysis and judgment with deep insider knowledge and practical experience in the policy areas reviewed, the Netherlands has for example created mixed review teams composed of line Ministry insiders, Ministry of Finance officials, and independent experts,

under the chairmanship of experienced wise persons external to the field (OECD, 2011; Institute for Government, 2018).

Federal fiscal arrangements should be adapted

Austria has a multi-layer federal system which is appreciated by the population as a bottom-up governance model. However, it increases government costs and raises co-ordination challenges in the planning and implementation of public services. Policy functions, which are not explicitly vested by the constitution with the federal government, are carried out by the 9 Länder governments. More than 2 000 municipalities are in charge of various service areas such as early child care and protection against poverty. The average size of municipalities is one of the lowest in OECD and the number of local governments per 100 000 inhabitants one of the highest (Figure 1.19 above).

Länder and municipal governments have limited own revenues and are funded mainly by federal government transfers through a complex system of tax sharing and redistribution.[12] Austria is among the OECD countries with the largest gap between the taxing and spending powers of sub-central governments (OECD, 2019; Allain-Dupré, 2018). This misalignment has long been identified as a weakness in the optimisation and efficiency of public services and spending (Fischer et al., 2011). In several key areas including the hospital infrastructure, secondary education and social protection, the three layers of government share the planning, funding and provision responsibilities and are accountable together on the quality of services. Austria should more closely align revenue raising and spending responsibilities of government levels, and seek economies of scale in municipal governance through shared services or consolidation of government. An example, in a crucial domain for long-term social cohesion and economic growth, is found in the organisation of pre-school and school education. Co-operation between government levels started with the publication of some common pedagogical documents, and information exchanges on pupils' language abilities, but upgrading the pedagogical content of kindergarten services and ensuring better curricular continuity with school education require higher service quality at respective government levels and improved co-operation between them (Box 1.4).

Box 1.4. Co-ordination of pre-school and school education between government layers

OECD's new study on Early Learning and Child Well-Being (OECD, 2018) emphasises that "the imperative to give all children a strong early start is more and more pressing. Children's early experiences have a profound and long-lasting impact on individual children's well-being and happiness during childhood, as well as their later life outcomes, including education, employment, health, citizenship and life satisfaction. Countries that fail to pay attention to the quality of children's early years are ignoring the most effective means to assure the well-being and skills of the next generation and to achieve more equitable outcomes across families and communities". The study found however that "providing more early childhood education and care (ECEC) does not automatically yield positive results for children. In some countries, ECEC has very positive effects on children's learning outcomes, whereas in other countries it is neutral and even negative in some cases. Equally worrying, in a number of countries ECEC appears to benefit advantaged children more than disadvantaged children".

Austria has taken several initiatives to improve the coverage and quality of its ECEC infrastructure, introducing notably a compulsory year of pre-school education. While participation of under 3 year-olds to ECEC remains lower than in peer countries, at around 25% (against 50-80% in the Nordic countries and in the Netherlands), attendance by 4 year-olds reached 94.9% in 2016, close to the EU average of 95.3%. For 5 year-olds it has already surpassed the EU average, reaching 97%. Amid these major progresses in coverage, it is recognised however that "quality issues remain" (EC, 2018).

The upgrading of early childhood education and care faces three challenges which are partly related to government organisation in this area:

- Pre-school education is a responsibility of municipal governments, under a Federal regulatory framework governing the quality of kindergarten infrastructure and the pedagogical qualifications of the educators. A large diversity is observed in the characteristics of these services across Austria, including in terms of opening hours and periods.

- The educational background of kindergarten and ECEC personnel is specific to Austria. As a difference from several other OECD countries (where preschool teachers receive university training), the standard professional qualification of the educational staff is a two year-long tertiary programme. University degrees in ECEC (granted by few universities) do not authorize a candidate to work in preschools, because the certified two-yearly vocational programme is required. Austria could consider drawing on Germany's recent innovative experience in this area.[13]
- Curricular co-ordination between ECEC and primary education is less advanced than in the most innovative OECD countries (OECD, 2019). Professional contacts and consultations have long existed between pre-school and school educators, but it is since 2018 that the Federal government has prescribed pedagogical standards for kindergarten to be implemented as part of the education financing contracts with the Länder. Substantial background pedagogical work is deemed necessary for effective curricular integration between early and primary education (Shuey et al., 2019).

The previous government announced a series of measures to improve both participation in ECEC and its quality. It planned to establish common educational goals encompassing both pre-school and school education, including strong competences in German language and a definition of common values. The plan included standardised language tests for all children at the age of 4, which, if necessary, would be followed by two years of compulsory pre-school language training. Sanctions against parents were envisaged if compulsory provisions are not complied with. The authorities also envisaged setting standards for pre-school infrastructure, group size, the qualification of staff and initial and life-long training of educators (Austrian Government, 2017).

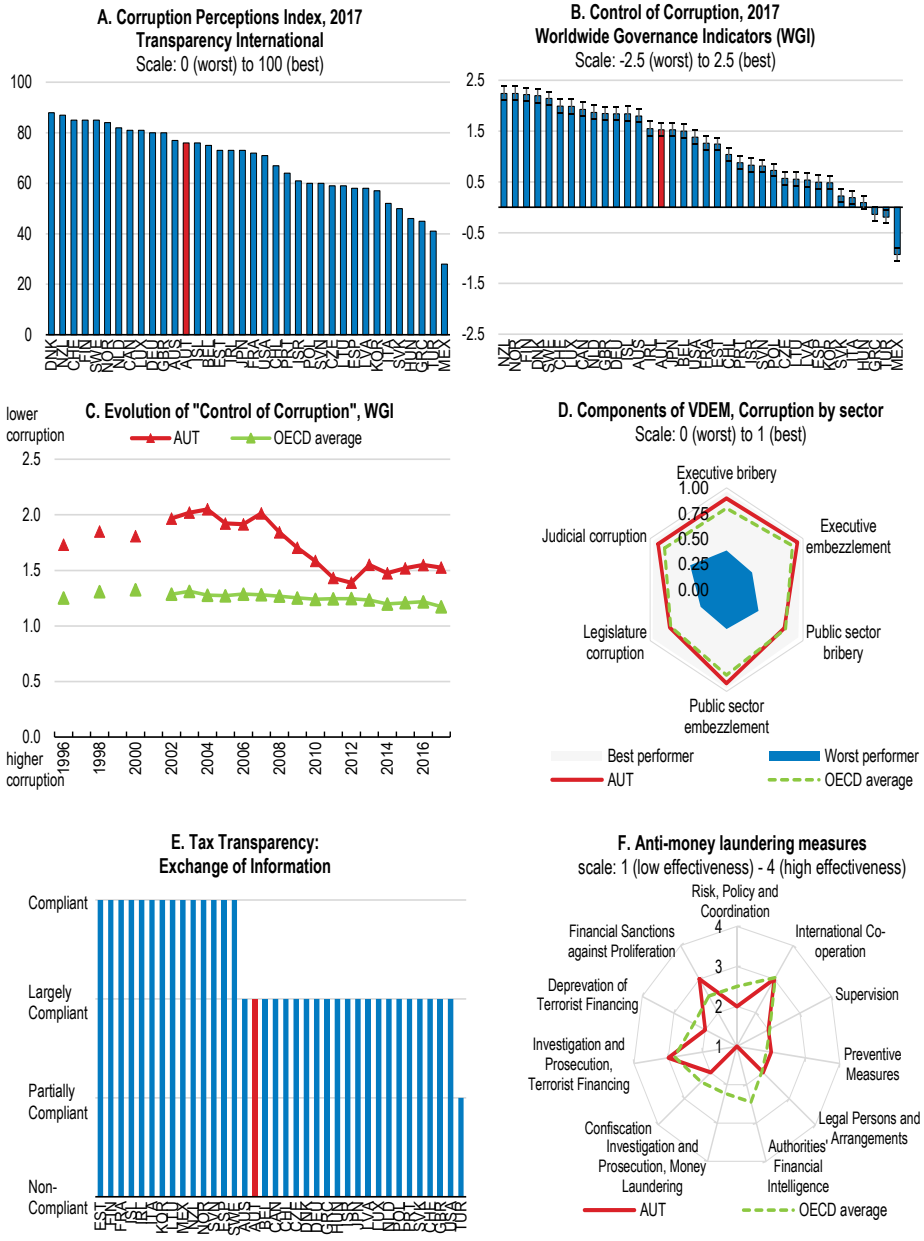
Reinforcing integrity in the public sector and combatting corruption

Austria is ranked 14th among 180 countries in Transparency International's Corruption Perception Index, somewhat below its peer countries (Figure 1.35). Scoring displayed variations in the 2000s. The complex multi-layer structure of the government, the multitude of public procurement authorities and the presence of many economic entities owned by the Federal government-, Länder and municipalities expose the country to special governance challenges.

A number of difficulties in fighting transnational corruption have been identified by the OECD Working Group on Bribery, when monitoring Austria's implementation of the OECD Anti-Bribery Convention.[14] Special conditions include the weight of companies carrying-out cross-border activities in quasi-public services such as energy and telecommunications in Central, Eastern and South Eastern Europe (OECD, 2012). The gambling industry also has strong international ties, and foreigners account for 70% of the bets in Austria. All of Austria's top six banks have significant operations throughout the region.

One key matter is the low maximum fine available to companies held liable for bribery abroad. The maximum fine, of just EUR 1.3 million, does not reflect the size and importance of many Austrian companies, the location of their international business operations, and the business sectors in which they are involved (OECD, 2017, DAF/WGB(2017)72). The fine is in fact lower than that which can be imposed on an individual convicted of the same conduct. Other longstanding issues upon which progress is being made include elements of bank secrecy, and the length of time it takes for the authorities to obtain bank account information. Historically, this has proved an obstacle in providing prompt and effective international cooperation to other countries in corruption cases. Austria has taken steps to address these issues through the creation, in October 2016, of a national register of bank accounts which can be directly accessed by Austrian prosecution authorities. Austria has also enacted laws to remove the previous difficulties in identifying the true "beneficial" owners of companies (OECD, December 2017). Furthermore, Austria should take steps to improve foreign bribery enforcement. Since ratifying the Convention in 1999, Austria has sanctioned only one individual for foreign bribery, and no companies have yet been convicted (OECD, December 2017). Austria's foreign bribery laws and its enforcement will be comprehensively re-evaluated by the Working Group in March 2020. Austria has also volunteered in 2018 to be examined by the IMF on the quality of its legal and institutional framework to combat bribery and prevent the laundering of dirty money.

Figure 1.35. Corruption risks



Note: Panel A: the "Corruption Perceptions Index" by Transparency International is subsumes several sub-indicators. Panel B: the "Control of corruption" indicator in the World Bank Worldwide Governance Indicators (WGI) is also a composite indicator. For details, see Kaufmann et al., (2010); the chart shows both the point estimate and the margin of error. Panel D: the corruption indicator by the Varieties of Democracy Project ("VDEM") is one of the subcomponents of the World Bank "Control of Corruption" indicator. Panel E: it summarises the overall assessment on the exchange of information in practice from the Phase 2 peer reviews by the Global Forum on Transparency and Exchange of Information for Tax Purposes; peer reviews assess member jurisdictions' ability to ensure the transparency of their legal entities and arrangements and to cooperate with other tax administrations in accordance with the internationally agreed standard; the panel shows first round results (a second round is ongoing). Panel F: the FATF conducts peer reviews of each member to assess levels of implementation of the FATF Recommendations; the chart refers to the ratings, which reflect the extent to which a country's measures for anti-money laundering and countering the financing of terrorism are effective against the defined 11 immediate outcomes.
Source: World Bank; Transparency International; Varieties of Democracy Institute, University of Gothenburg, and University of Notre Dame; OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes, OECD; Financial Action Task Force (FATF).

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Ambitious public finance reforms should help reallocate resources and rebalance revenue sources

Austria should make use of the significant room available for rendering its public finance structures more supportive of employment, growth, social inclusion and public service quality. This requires a new strategic approach, to both public spending and public revenue patterns.

Public spending has expanded rather passively with the size of both public services and social transfers having grown along the tracks of established policies, organisations and entitlements. To make spending more strategic and more responsive to economic and social priorities and needs, Austria can draw on the experiences of other OECD countries in identifying areas where spending can be reduced with limited loss for social benefits with the help of in-depth independent spending reviews - as discussed above. The government programme 2017-2022 planned to use this instrument more actively than in the past.

On the revenue side, there is also room for major reforms. Recent OECD research on the effect of tax mix on growth and equality suggests that if Austria rebalanced the composition of its tax structure from labour to environmental and property taxes, sizeable gains can be expected for employment, growth and social inclusion (OECD, 2017), higher environmental taxes would serve both emission-reduction and revenue-raising objectives. Any regressive effects for income distribution (for instance for low-income households in remote areas) can be offset with targeted transfers. While consumption taxes have high standard rates in Austria, widespread rate-reductions[15] are fiscally costly and can be reduced (OECD, 2018; EC, 2017; Zu, 2017; IFS, 2017). With a VAT revenue ratio of 60% (which means that 40% of the theoretical revenue potential from VAT is not realised, due mainly to reduced rates and exemptions), Austria's policymakers can draw on the experience of other OECD countries such as New Zealand and Canada which succeeded to enhance their VRR rates (to 95% in the case of New Zealand). If policymakers could increase Austria's VAT revenue ratio from 60% to 70%, they could generate up to 1.1% of GDP of additional tax revenues, which may create space for more productive tax cuts.

The evaluation by the OECD of the efficiency of VAT reductions and exemptions is indeed mitigated. In the tourism sector in particular, which received additional VAT concessions in 2018, economic gains from VAT incentives may not justify their high fiscal costs (OECD, 2014). Iceland's experience deserves Austrian policymakers' attention: following a positive experience with increasing the special rate for tourism from 7% to 11%, Iceland plans to align the rate for most tourism services with the normal VAT rate. This alignment will help decrease the standard VAT rate from 24% to 22.5%, in line with the objective of broadening the tax base and reducing the tax rates (OECD, 2017). Targeted transfers to low-income groups can offset any regressive effects from higher VAT rates (Maples and Sawyer, 2017).

Property taxation, in turn, may serve both revenue raising and income and wealth redistribution goals. As discussed above, recent OECD research found that inheritance taxation may be an effective form of property taxation, with, moreover, a positive estimated net effect on growth (Akgun et al., 2017).

Austria announced a digital taxation initiative. A 5% tax rate will, beginning in 2020, apply to online advertising revenues from companies generating global sales of EUR 750 million with at least EUR 25 million from Austria. Further, VAT will be applied to certain sales made via digital retail platforms. The VAT reforms are welcome and should be implemented in a manner consistent with OECD guidance. The online advertising tax follows several other countries introducing similar initiatives, and the European Parliament voting to support a similar EU-wide directive (European Parliamentary Research Service, 2018). Many of the enterprises that would be subject to the digital services tax are headquartered in the United States. A G20/OECD process is developing measures that adapt existing approaches to taxing firms to the challenges of digital technologies. Members of the G-20/OECD process are committed to reaching a consensus-based, long-term solution in 2020, and have not reached a consensus about the need or merit of interim measures (OECD, 2019).

Box 1.5. OECD research on public finance reforms have important implications for Austria

The findings of the new OECD project on "Public finance structure and inclusive growth" are informative for Austria. Estimated implications for the revenues of low-income deciles and social cohesion are particularly remarkable (Cournède et al., 2018):

The increase in the size of OECD governments over the past two decades has to a great extent been passive, reflecting the impact of ageing on public pension and health expenditure, with scant reallocation across spending or tax areas. This has also been the case in Austria where the share of general government spending in GDP reached the 6th highest level in OECD at 50%.

There is room for win-win public sector reforms in all OECD countries, that could boost both output and social inclusion. Austria comes out as one of the countries where potential benefits from such reforms, both for growth and social inclusion, is the greatest. Available evidence hints at a weakening of the overall quality (size, efficiency and structure - measured according to the methodology described in Cournède et al. (2018) of public spending between 1995-2012, while this quality has improved in peer countries. Re-orienting the composition of spending and taxes and increasing the quality and credibility of services would be expected to important major gains.

These OECD insights are congruent with the results of another simulation of the effects of deficit-neutral reductions of the labour tax wedge in four EU countries including Austria (the others being Germany, Italy and Belgium). This simulation concluded that the measure with the highest growth and employment gains is a decrease in labour taxation, financed by an increase in consumption taxes. However, as this raises the consumption costs of households and reduces their real incomes, financing such a cut via a reduction in public spending may be more beneficial in terms of social welfare.

Building on the OECD estimation methodology (Cournède et al., 2018), some specific reform scenarios for Austria were investigated for this Survey:

- Scenario 1: If environmental taxes are raised by 0.5% of GDP and if this is used to cut the labour tax wedge on below-average earnings by the same amount, the level of GDP per capita could increase and the lowest income decile would benefit most (see Table 1.11 on details).
- Scenario 2: A reduction of 0.8% of GDP in production subsidies (which would be a sizeable reduction and would assume supporting reforms at the EU level), if used to fund a same-sized cut in the labour tax wedge on below-average earnings, could boost GDP per capita. All income deciles would benefit but the bottom decile would draw the largest gains.
- In a Scenario 3: if, through structural reforms, the effectiveness, quality and credibility of the public sector is increased by reducing the gap with Sweden by half (without changing the aggregate tax and spending ratios), GDP per capita could increase and the lowest income decile would benefit most, as in the above scenarios.

Several inquiries, including by the Court of Audit, have shed light on the saving potential available in specific areas of public administration, education and health spending (EC, 2019), including in the context of transition to performance-based budgeting (OECD, 2018, GOV/PGC/SBO(2018)7). The losses for GDP growth and social inclusion from the excessive concentration of taxes on labour incomes have also been well identified (Köppl and Schratzenstaller, 2015). Reforms such as rebalancing primary (preventive) and secondary (curative) health services gave promising results, but their generalisation has proven difficult under existing financing and supply structures (Hofmarcher, 2014). Concerning the simplification of federal, Länder and municipal responsibilities in the main public services, goals have long been settled but progress has been slow. The Fiscal Equalisation Act of 2017 settled new objectives in this area from 2020/2021 (including the utilisation of formal benchmarks to compare the quality of services offered in different

jurisdictions) (Federal Chancellery, 2017; Federal Chancellery, 2018). An integrated approach to public finance reform, encompassing all government layers and involving all the main spending items (pensions, health, public administration) and revenue areas (social security, personal income, consumption, environmental and wealth and inheritance taxes) could help make more systematic progress.

The fiscal policy recommendations of this Survey have been formulated as fiscally neutral measures, as highlighted in Table 1.9 and in Box 1.5. Survey recommendation to reduce VAT rate reductions is quantified in only very broad terms. The Table 1.11 below summarises the first-round likely fiscal impacts of the proposed measures (Table 1.11).

Table 1.11. Possible Growth and fiscal impacts of the main recommendations of the Survey

Recommendations	Fiscal impact	GDP impact after 5-15 years	Impact on inequality after 5 years
Product market liberalisation reforms.	No significant fiscal cost	GDP per capita level increases by 1-6% compared to 2020	Impact on inequality not modelled
Scenario 1: • Raise environmental taxes by 0.25% of GDP • Cut labour tax wedge on below-average earnings by 0.25% of GDP	Fiscally neutral	GDP per capita level increases by 1.5-8.5% compared to 2020	Lowest income decile would benefit most, with expected real increases in income of around 2%
Scenario 2: • Reduction of 0.4% of GDP in production subsidies • Cut labour tax wedge on below-average earnings by 0.4% of GDP	Fiscally neutral	GDP per capita level increases by 2-11% compared to 2020	Lowest income decile would benefit most, with expected real increases in income of around 2%
Scenario 3: Increase effectiveness, quality and credibility of the public sector by reducing half of the gap with Sweden	Fiscally neutral	GDP per capita level increases by 3-15% compared to 2020	Lowest income deciles would benefit the most, with increases in real income from 0.35% (lowest income decile) to 0.15% (median)

Table 1.12. Past public finance reform recommendations

Past OECD recommendations	Actions taken
Undertake in-depth spending reviews in education, health care, long-term care and public administration.	In total three spending reviews have been completed (public compulsory schools, Disaster Relief Fund, Family Benefit Funds). Further, at the moment, five other reviews are being completed (Austrian Railways, water management services, health services in schools, international financial institutions and justice).
Align spending and financing responsibilities at different government levels by increasing the tax autonomy of sub-central governments.	The housing levy (generating revenues of about EUR 1.1 billion per year) became an exclusive levy of the Länder, which can freely set rates.
Encourage municipal mergers to exploit economies of scale.	

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Notes

1. These changes, approved by the Austrian Parliament, mean that the level of child benefits will now be calculated according to living costs in the child's living place and not those in Austria. The European Commission questioned the legality of this reform against EU law. The Austrian government admitted that it could be blocked by the European Court of Justice.

2. The Financial Market Stability Board recommended in 2018 that i) down payments for real estate credits should amount to at least 20% of the face value of loans, ii) the maturity of mortgage loans should be capped at 35 years, iii) debt service costs should not exceed 40% of the net income of borrowers, and iv) the creditworthiness of borrowers should be evaluated by using all available data sources.

3. Less than 20% of households in Vienna and less than 50% of households in Austria own a house, against the OECD average of 60%.

4. OECD calculations suggest that the structural unemployment rate (NAIRU) increased from above 4% to around 5½ per cent between 2000 and 2018, while, after an initial increase, it tended to decline in comparable countries.

5. OECD, Supporting Entrepreneurship and Innovation in Higher Education in Austria, 2019 (forthcoming).

6. Public support to long-term care is currently provided through three channels: i) cash benefits (proportional to the degree of dependence of beneficiaries on a scale of seven and ranging from monthly EUR 158 to EUR 1 689); ii) support to primary caregivers (to ease their part-time working and leave arrangements), and iii) in-kind services in care institutions. The first two components are provided by the Federal government and the third is under the responsibility of Länder governments. As dependant elderly prefer generally to stay in a private environment, the lion's share of public aid is provided through cash-allowances. This, however, risks perpetuating the labour force participation difficulties of primary caregivers. Länder governments are now providing new in-kind, notably mobile, services to support the primary caregivers. A masterplan on long-term care was adopted in December 2018, and the former government commissioned a study to the Institute for Advanced Studies (IHS) on alternative financing arrangements.

7. Mixed responsibilities are typical for many policy areas: 1) in health, responsibility is shared between the federal government, the provincial governments, and local governments; 2) in housing, the provincial and local governments make the decisions; 3) in education, responsibilities are split. The local governments share responsibility with the provincial governments with regard to preschool and primary education; the responsibility for secondary education lies with the provincial governments and the federal government; post-secondary and tertiary education is the sole responsibility of the federal government.

8. Source: Main Association of Austrian Social Security Institutions.

9. Die Österreichische Sozialversicherung in Zahlen, March 2019.

10. The results presented in Panel B utilised micro-level data on Austrian firms from the Orbis database. While the coverage of Austrian firms in Orbis may differ from a representative sample of the Austrian firm universe, it is the only firm-level database currently available for listed and non-listed Austrian firms. In this respect, the ongoing discussion about changes to the *Statistikgesetz* to make Austrian micro-

level data similar accessible to external researchers like in Germany, Denmark or Netherlands may help improve the accessibility and availability of Austrian firm-level data.

11. High-speed broadband secures the transmission of 30 to 100 megabits of data per second, ultra-high speed infrastructures transfer at least 100 megabits per second via direct fibre optic connections to buildings and homes.

12. The system of transfers includes unconditional block grants, earmarked grants and ad hoc transfers. There are also cost compensations for the tasks delegated from the Federal government to the Länder, and from the Länder to the municipalities. An Intergovernmental Fiscal Relations Act governs these relations. It is renewed every four to six years. The latest Act was adopted in 2017 for the period 2017-2021.

13. In Germany, like in Austria, the training of preschool teachers has traditionally been located in upper-secondary vocational schools. Since 2004 however, more than 100 ECEC study courses opened in the universities of applied sciences, pedagogical universities and classical universities across the country, and are now training pre-school educators.

14. The information contained herein does not prejudice the Working Group's monitoring of the implementation of the OECD Anti-Bribery Convention.

15. In addition to the standard 20% VAT rate, there are three reduced rates of respectively 13% (applying to hotel accommodations, cultural and sport events, domestic flights and some agricultural supplies); 10% (applicable notably to foodstuffs, restaurants, pharmaceutical products, printed books and other agricultural supplies; and a zero rate applied to international air transportation.

2 Firming up the capital base of the Austrian business sector – Consolidating Austria's business sector strengths and its social role in the face of new challenges

While small- and medium sized firms in Austria are generally more productive, export more, and engage more in higher technology activities than in comparable countries, they need to adapt better to the knowledge economy to maintain their relative performance levels. The capital structure of Austrian SMEs are biased towards debt-financing and stronger equity, growth and venture capital markets would provide them with further resources for their long-term knowledge based investments. Skills shortages, in particular in advanced digital technologies, should be overcome. As around one third of all SMEs are up for ownership transmissions, ensuring successful business transfers will be crucial for maintaining the broad-based entrepreneurial dynamism. Meeting these challenges would also help to lift constraints on upscaling that many SMEs face and would provide the fruitful soil for future innovative activities.

Challenges and opportunities for Austria's business sector in a changing world

Austrian small- and medium-sized enterprises in manufacturing sectors tend to be more productive, engage more in exporting and contribute more to medium-high- and high-tech manufacturing activities and knowledge-intensive market service sectors than in comparable economies (Box 2.1). Through entrepreneurship, SMEs can foster social inclusion of otherwise disadvantaged groups, like migrants, women, young but also the elderly.

However, the performance of these sectors in Austria has been less impressive over the last decade and it faces significant challenges from global trends, including demographic change, digitalisation, global value chain integration and adaption to new environmental regulations and prices. This chapter focusses on key factors, which limit the potential of Austrian SMEs to adapt and upscale, while taking into account the defining features of the Austrian economy. It identifies the following three key challenges:

- *The capital structure of SMEs is biased towards debt-financing:* Austrian small- and medium-sized enterprises have one of the highest debt-to-equity ratios across OECD countries and are strongly reliant on bank debt and internal sources to finance increases in capacity. While the relationship-banking model is a strength of the Austrian economy, a general lack of risk capital tends to hinder investment in new and experimental technologies and business applications, including specific ICT applications, knowledge-based capital. Austria has abnormally few stock market listings even after taking the size of the economy and the legal framework into account. This reflects the general lack of demand for equity investments of Austrians but also structural impediments. Further, venture and growth capital markets are less developed than elsewhere.
- *Skill shortages:* The vast majority of Austrian SMEs report skills shortage as a major obstacle to growth. The skills shortage is particularly pronounced for ICT specialist skills, thus constraining the adoption of ICT applications and higher productivity.
- *Business transfers:* Around 30% of Austrian SMEs are up for ownership transmission in the 2014-2023 period, a critical stage in the lifecycle of a company. Ensuring successful business transfers of economically vibrant enterprises is vital for employment and productivity growth.

Addressing these challenges can lift the constraints on upscaling many Austrian SMEs are facing while providing fruitful soil for innovative activity. Ageing of the Austrian society and the digital transformation may result in significant changes to traditional ways of doing business. Framework conditions conducive to competition, innovation and business growth can deliver synergies by diminishing current constraints and preparing for these substantial changes. Policies need to be innovative too in order to deal with challenges and should be open to new avenues without jeopardizing the defining features of the Austrian economy.

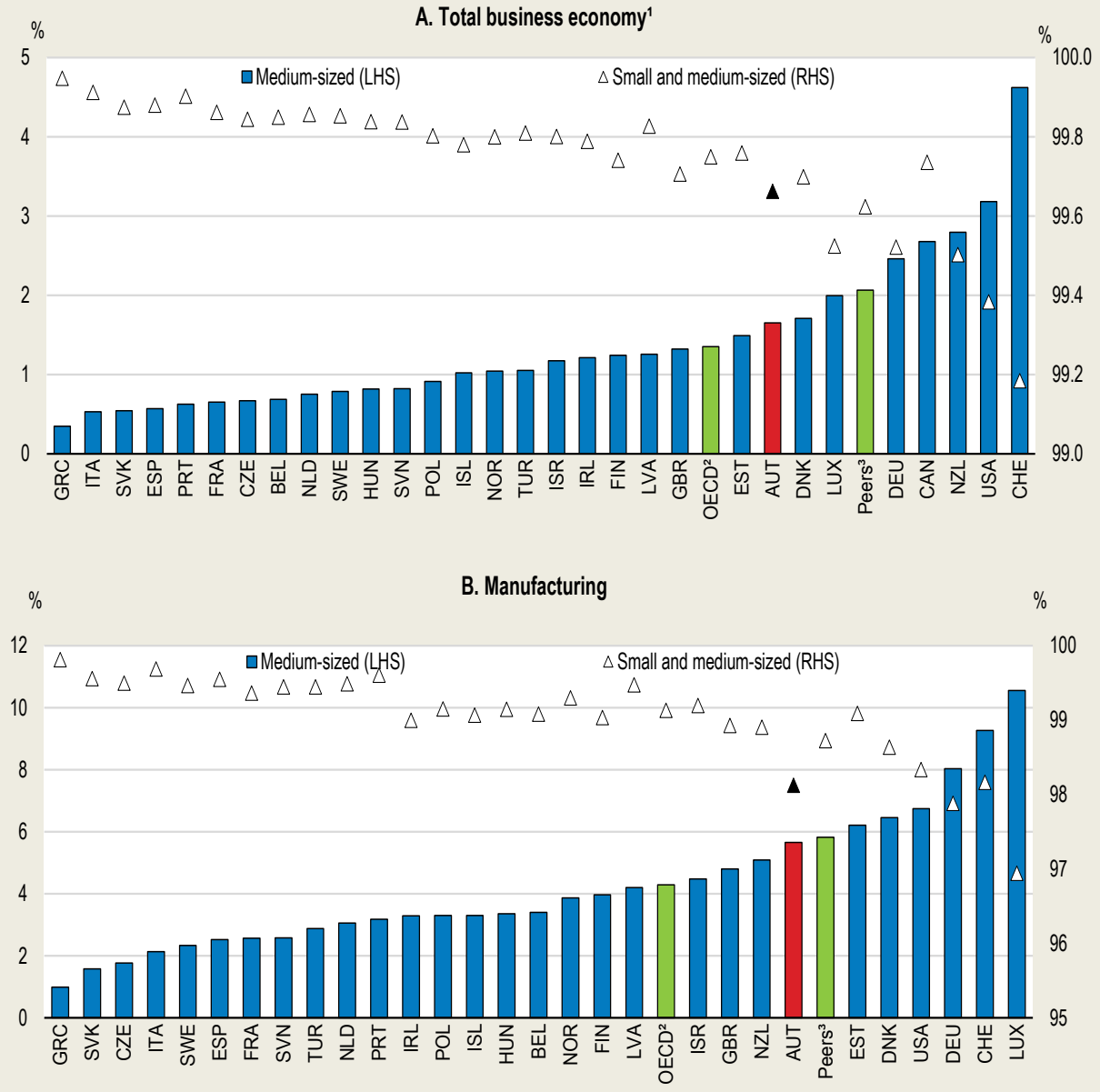
The first section of this chapter discusses these trends, how the Austrian SMEs might be affected and concludes with an analysis of recent trends in productivity performance of the Austrian business sector. The second section takes an in-depth look at capital structures of Austrian businesses and analyses the provision of debt but also risk capital. The third section discuss how policymakers can address skills shortages and the fourth section how to provide the right ground for successful business transfers.

Box 2.1. Key characteristics of the Austrian business landscape

- The definition of SMEs used in this chapter rests on employment numbers. It defines a SME enterprise as having between 0 and 249 employees, in line with the definition of Eurostat. As incentives to self-employment and entrepreneurship vary across countries, it is sometimes helpful to disentangle micro- and small companies (0-49 employees) from medium-sized enterprises (50-249 employees).
- **Austria has a similar share of SMEs in the total business population as elsewhere.** The Austrian business economy consists of over 300 000 firms, of which 99.7% were SMEs, nearly identical to the OECD average (Figure 2.1 Panel A). SMEs provided around 69% of total employment in business sectors, slightly above the OECD average. The share of medium-sized companies is also broadly in line with the OECD average. Similarly for total employment in business sectors, where Austrian medium-sized companies provide around 19% of all jobs, compared to the OECD average of 18.6%.
- **In manufacturing sectors, significantly more firms are medium-sized than in the OECD average.** This coincides with lower shares of SME firms (Figure 2.1 Panel B), which suggests that medium- and large-sized firms play a larger role than in the typical OECD country, though lower as compared to neighbouring and peer countries.
- **Austrian SMEs have a higher export orientation (Figure 2.2).** The share of SMEs exporting in Austria is one of the highest across OECD countries (Figure 2.3). This implies that Austrian SMEs are more exposed to the benefits but also the challenges from increased globalisation, even taking into account that statistics on direct exports and imports may understate the role of SMEs in international global value chains. After accounting for the inputs of SMEs to large exporters, the share of Austrian SMEs in value added exports jumps to over 50% (OECD, 2018).
- **SMEs account for higher shares of value added in medium-high- and high-technology sectors than in peer countries (Figure 2.4, Panel A)**. Their contribution to value added in these sectors is around 30% against 25% in the OECD average and 22% in peer countries. This goes hand in hand with slightly smaller shares in medium-low- and low-technology sectors than in peer countries or the OECD average.
- **Austrian SMEs contribute more to value added in business service sectors, in particular in knowledge-**intensive **business services (Figure 2.4, Panel B)**. Around 82% of value added in knowledge-intensive business market services is produced by SMEs compared to roughly 60% in peer countries of the OECD average. With 72% of total value added in business service sectors, Austrian SMEs are responsible for significantly more output than in the OECD average or peer countries where around 60% of value added comes from SMEs.
- **Austrian SMEs are close to the top performing SMEs across OECD countries for productivity in** manufacturing **(Figure 2.5)**. Further, Austrian SMEs have the smallest gap as compared with peer countries and the OECD average in medium-high to high-tech sectors.

Figure 2.1. Medium-sized manufacturing firms play an important role in Austria

Share of SMEs and medium-sized enterprises in the total firms, 2016 or latest year



1. It covers non-agriculture business sectors excluding real estate.
2. Unweighted average of the data shown.
3. Unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.

Source: OECD (2018), Structural and Demographic Business Statistics (database).

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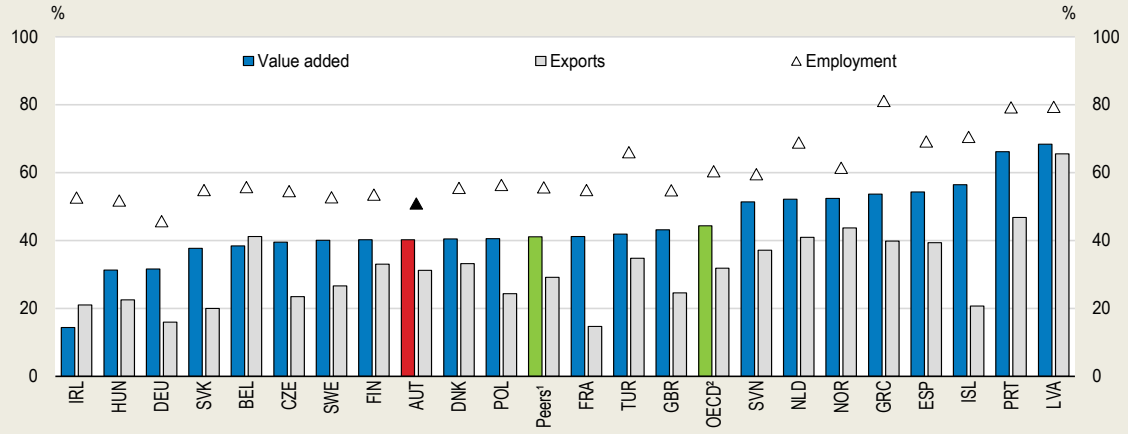
Figure 2.2. Lower contribution to value added but similar share of exports confirm high export orientation of Austrian SMEs

Share of SMEs in the total firms, manufacturing, 2016 or latest year



1. Unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.
2. Unweighted average of the data shown.
Source: OECD (2018), Structural and Demographic Business Statistics (database) and OECD (2019), "Trade by enterprise characteristics: Trade by activity sectors (Edition 2018)", OECD Statistics on Measuring Globalisation (database).

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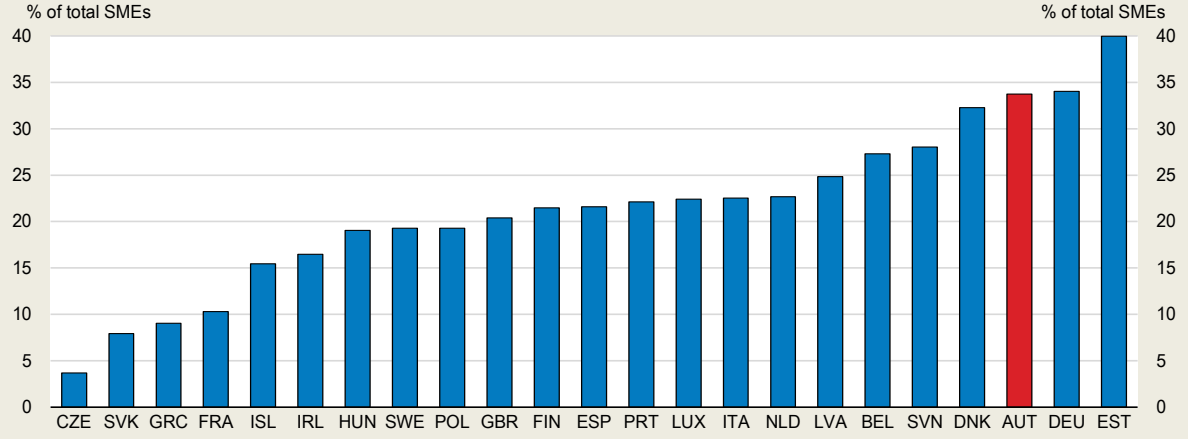
Figure 2.3. Austrian SMEs are more likely to engage in exporting

Share of SMEs exporting, 2016 or latest year



Note: Exporting SMEs include all SMEs which export to any country worldwide.
Source: OECD (2018), Structural and Demographic Business Statistics (database) and OECD (2019), "Trade by enterprise characteristics: Trade by activity sectors (Edition 2018)", OECD Statistics on Measuring Globalisation (database).

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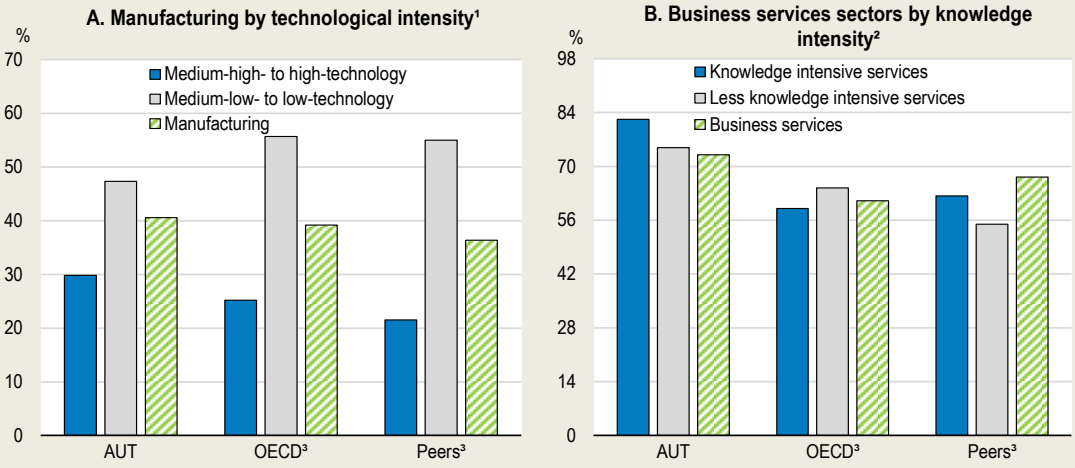
Figure 2.4. Austrian SMEs contribute more to medium-high to high-tech sectors and knowledge-intensive market services

Share of total value added per sector, SMEs, 2015



1. 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.
2. 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, 68, 77, 79, 81, 82 and 95. Business services exclude both real estate and financial services.
3. Peer countries is the unweighted average of Germany, Switzerland, Denmark, Sweden and the Netherlands. OECD is the unweighted average of 32 OECD countries.
Source: OECD (2018), Structural and Demographic Business Statistics (database).

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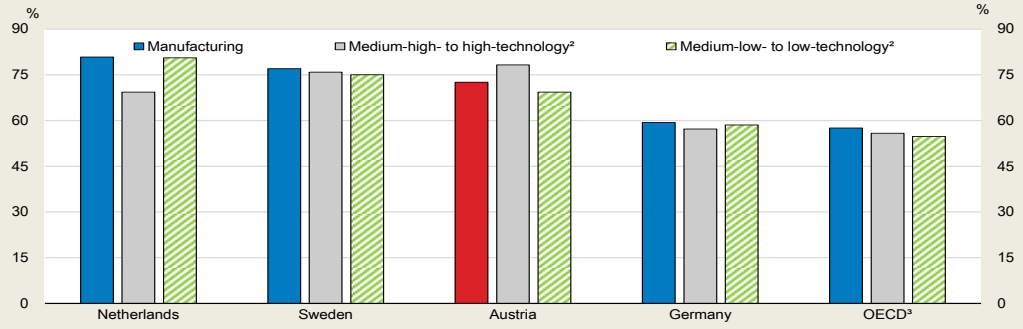
Figure 2.5. Austrian SMEs in manufacturing sectors close to productivity of top performers but lag behind in service sectors

Productivity[1] of SMEs in per cent of top performer, 2016



1. Productivity is measured as real value added (converted into euros using 2016 exchange rates) per hour worked.
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. OECD is the unweighted average of 29 OECD countries.
Source: OECD (2018), Structural and Demographic Business Statistics (database).

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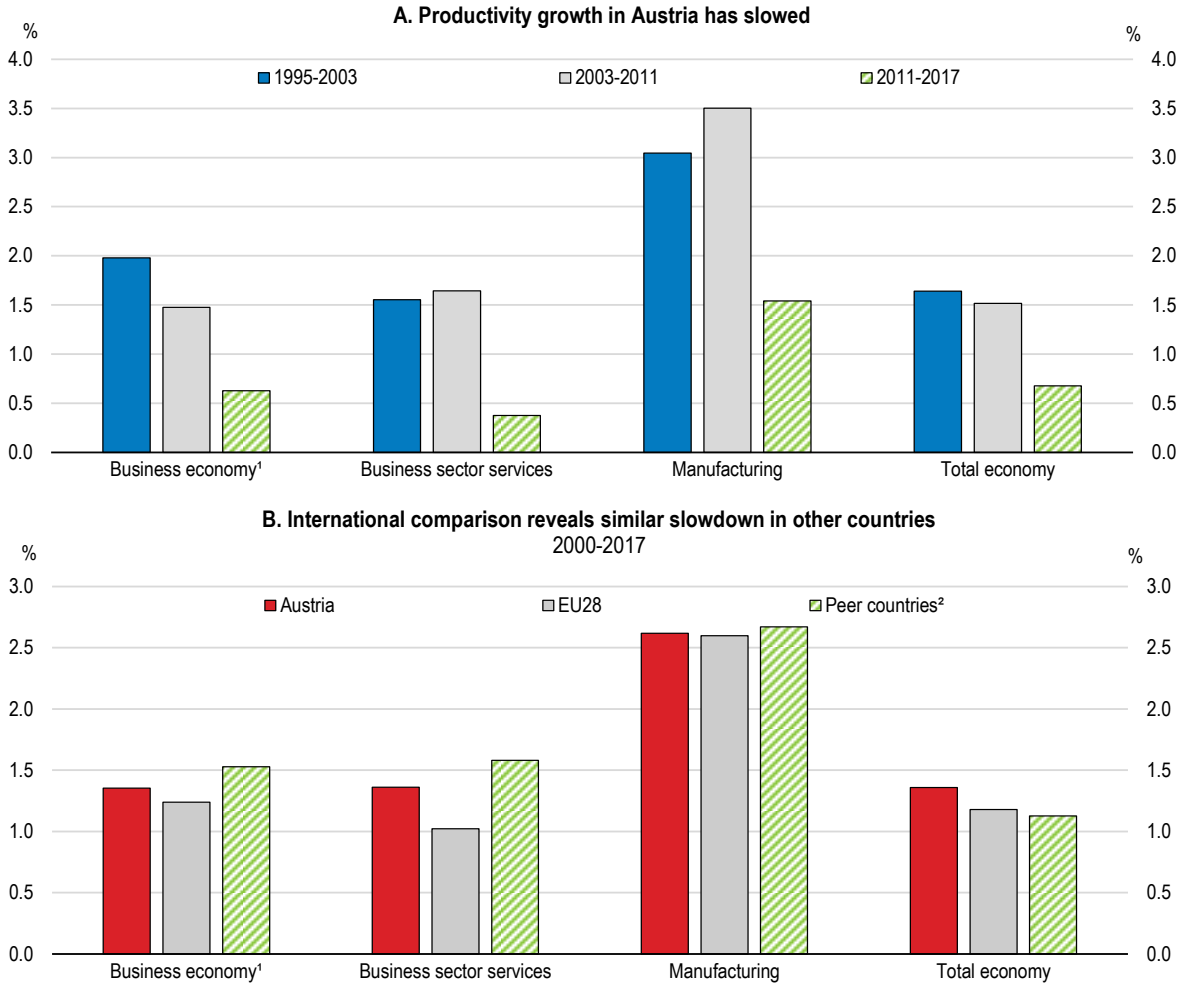
Productivity growth of Austrian businesses has declined

Productivity growth in the Austrian business economy has declined. Whereas annual average productivity growth was around 2% in the period from 1995-2003, it diminished to 0.6% in the post-crisis period (Figure 2.6, Panel A). This may reflect structural impediments to innovative activity and productivity but also illustrates, that at high levels, margins for further improvement are more difficult to exploit (Gordon, 2012). Peer countries and countries from the European Union, experienced a similar slowdown, so Austria is far from alone to experience this slowdown (Figure 2.6, Panel B).

Figure 2.6. Weak productivity growth in service sectors drags on aggregate productivity growth

Compounded average annual growth, labour productivity by sector



1. It covers non-agriculture business sector excluding real estate.
2. Unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.
Source: OECD (2018), OECD Structural Analysis Statistics (database).

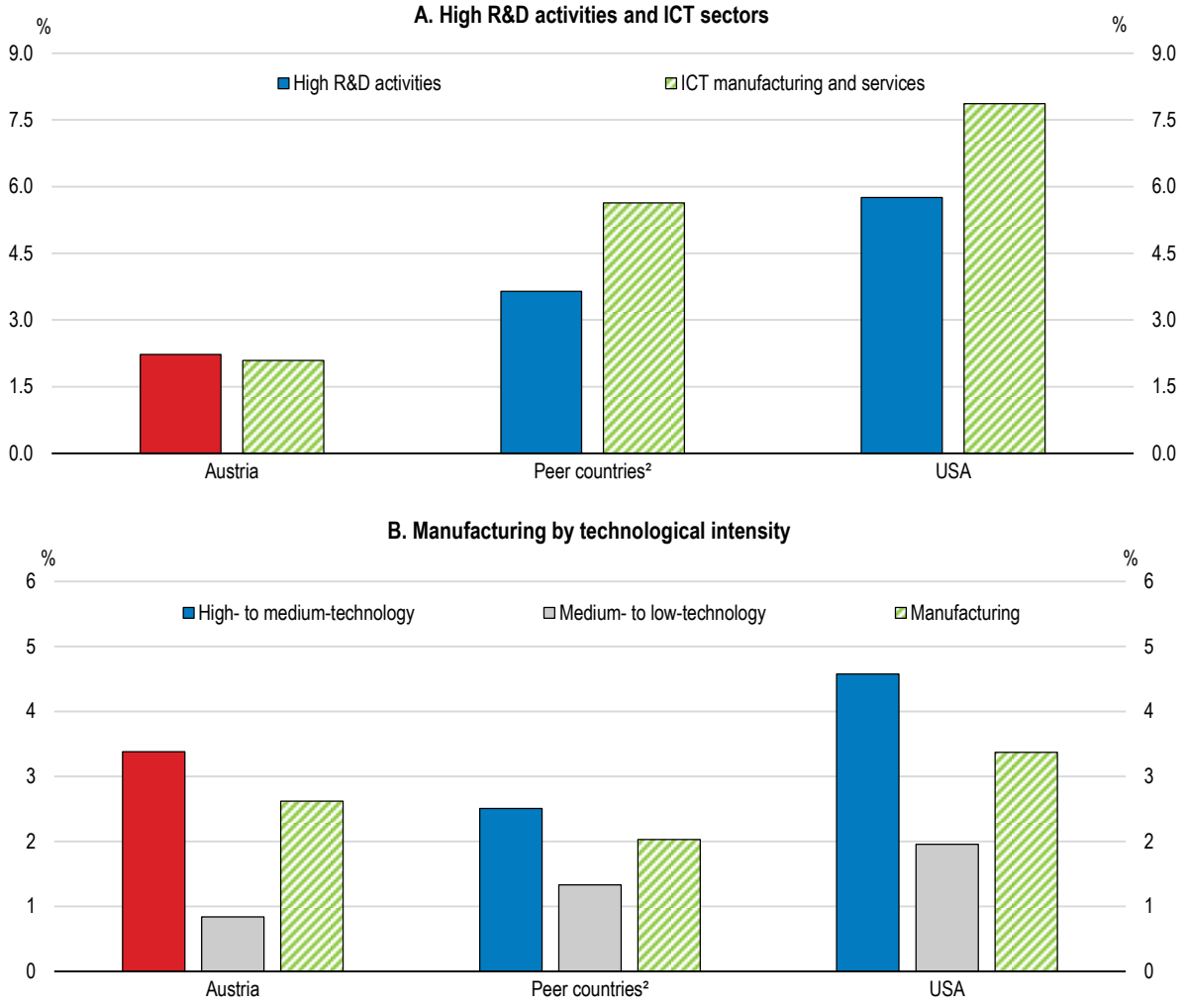
StatLink https://doi.org/10.1787/888934025746

Overall business sector productivity growth masks large differences in the performance of specific sectors. Besides business services, Austria falls behind in sectors with high R&D activity and in ICT manufacturing and services (Figure 2.7, Panel A). The annual difference in productivity growth in ICT manufacturing and

service sectors and high R&D activities compared to peer countries is large. Productivity growth in manufacturing sectors was above peer countries but below the US (Figure 2.7, Panel B). The productivity performance was driven by strong growth in medium-high to high-tech sectors, where growth rates were on average 1 percentage points higher than in peer countries.

Figure 2.7. Overall productivity performance masks differences between sectors

Compounded average annual productivity growth, business economy[1], 2000-2015



1. It covers non-agriculture business sector excluding real estate.
2. Unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.
Source: OECD (2018), OECD Structural Analysis Statistics (database).

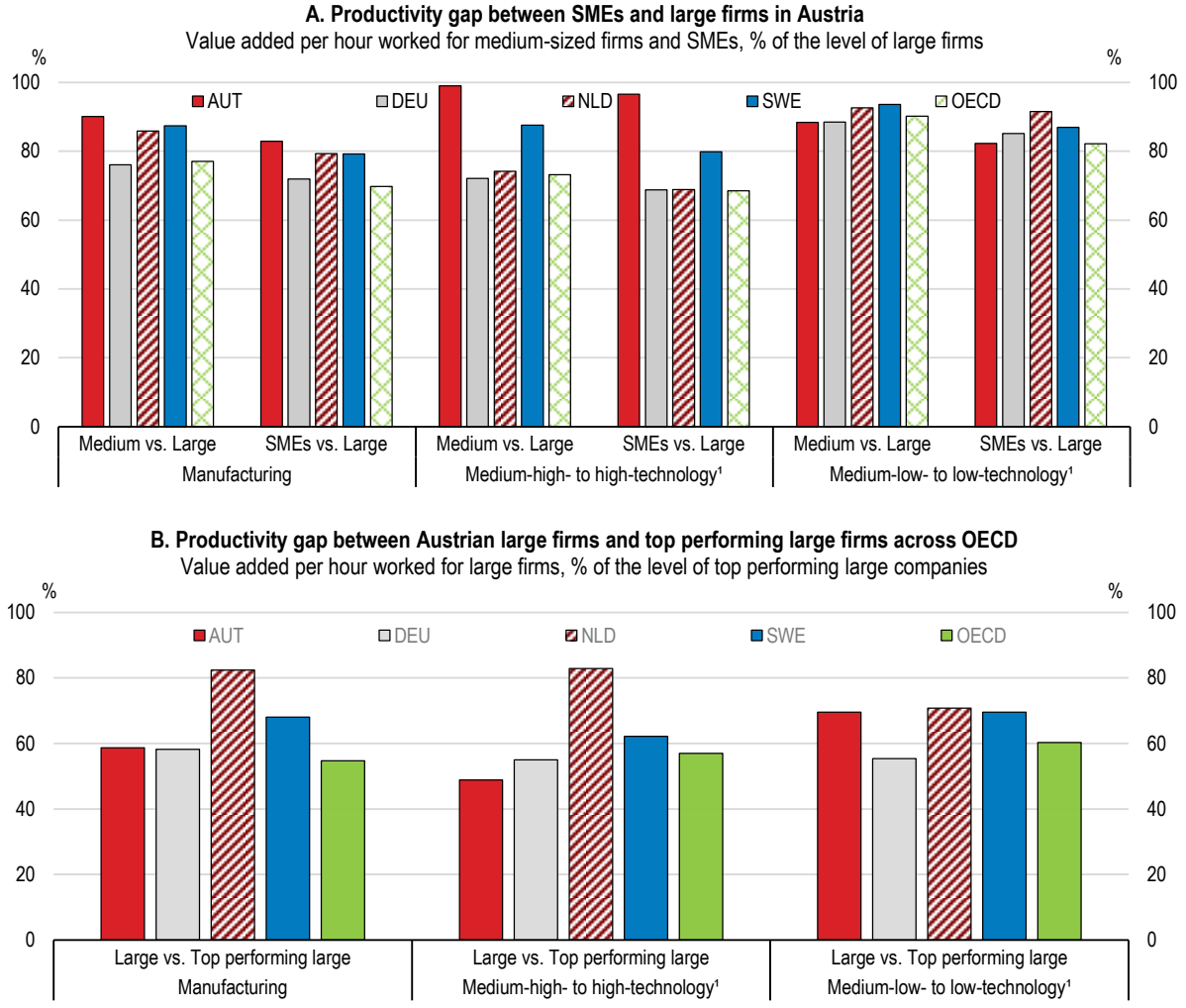
StatLink https://doi.org/10.1787/888934025765

The productivity gap between SMEs and large enterprises in manufacturing sectors is much smaller in Austria than in peer countries or the OECD average. This small gap is driven by the productivity performance of medium-sized firms, which attain 90% of the productivity level of large firms (Figure 2.8, Panel A). In medium-high to high-tech manufacturing sectors, the gap is even narrower and SMEs have nearly the same productivity as large companies. This is surprising, as high shares of fixed assets in most

manufacturing sectors typically allow larger firms to exploit returns to scale and subsequently materialise in higher productivity performance. However, the small gap can be partly explained by the weaker productivity performance of larger firms in Austria than elsewhere (Figure 2.8, Panel B). Austrian large firms achieve only around 60% of the productivity level of the top-performing large companies across the OECD, which is above the OECD average but below peer countries. The gap to the top-performing large firms is even more pronounced in medium-high to high-tech manufacturing sectors.

Figure 2.8. SMEs perform comparatively well on productivity, but larger firms lag further behind the global frontier

2016



1. 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.
2. OECD is the unweighted average of 29 OECD countries.
Source: OECD (2018), OECD Structural Analysis Statistics (database).

StatLink https://doi.org/10.1787/888934025784

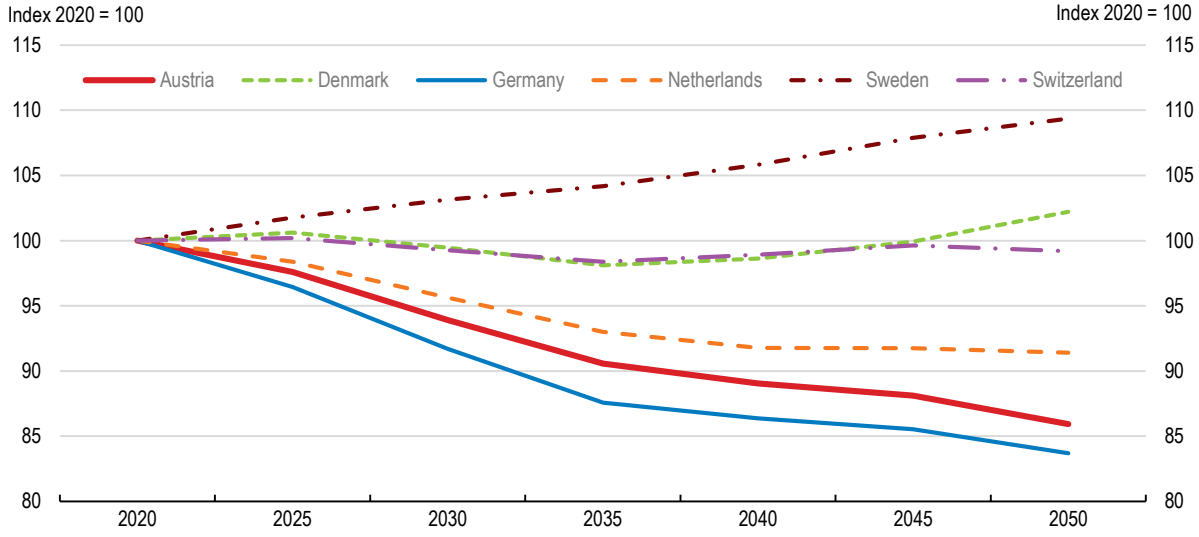
Emerging challenges from three mega-trends

The Austrian economy faces emerging challenges from three trends. First, ageing will put downward pressure on the size of the working age population. Second, new digital technologies will go hand in hand with disruptions that may change production processes or services fundamentally. Third, increased fragmentation of goods and services across firms and countries pose opportunities but also challenges to the business universe.

The shrinking of the working age population in Austria, projected to fall by 14% until 2050 (Figure 2.9), will be a major challenge to employers. As SMEs typically focus more on day-to-day running of the business and may lack the resource for searching extensively for available talent (Hellman and Kavadia, 2016), skill shortages constrain SMEs more than large firms. More than eight out of ten Austrian SMEs, an increase of 18 percentage points compared to year before, consider already today the lack of talent a major impediment to upscaling through investment, which is above the EU average (EIB, 2018). The ageing of Austrian society will further aggravate the skill constraint. Moreover, many current owner-managers of today's SMEs are reaching their retirement age. Nearly one-third of all privately held Austrian enterprises, accounting for 30% of total employment, will be up for ownership transmission by 2023 (Zieniel et al., 2014). Business transfers constitute a critical stage in the lifecycle of a company. Unsuccessful transmission of otherwise vibrant firms may have detrimental effects on employment and productivity. Yet, demographics may provide the necessary pressure and window of opportunity to integrate today's disadvantaged groups, such as high-skilled migrants, women, younger and older people and people with handicaps, into the labour force thereby contributing positively to a more inclusive society.

Figure 2.9. Demographic change reduces the size of Austria's talent pool

Projected change in working age population (15-64 year-olds), 2020-2050



Source: United Nations (2018), World Population Prospects.

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New digital technologies are changing the ways in which firms pursue business activities and interact with customers and clients. Since the decreasing costs of these technologies enable a wide diffusion, businesses can reach out more easily to new markets and customers (OECD, 2017c). They can also improve productivity through improved access to up-to-date information, technology and applications.

Moreover, some technologies, especially artificial intelligence bundled with the availability of massive amounts of data, have the potential to act as "game-changers", i.e. creating entirely new business applications and models (OECD, 2018c). Moreover, access to cloud-computing may allow SMEs to access to digital solutions independent of firm size and lead to increased employment and productivity for young firms (DeStefano, Kneller, and Timmis, 2019). Potentially, the digital revolution can thus even counterbalance the advantages of large companies in terms of returns to scale and blur the distinction between SMEs and large companies.

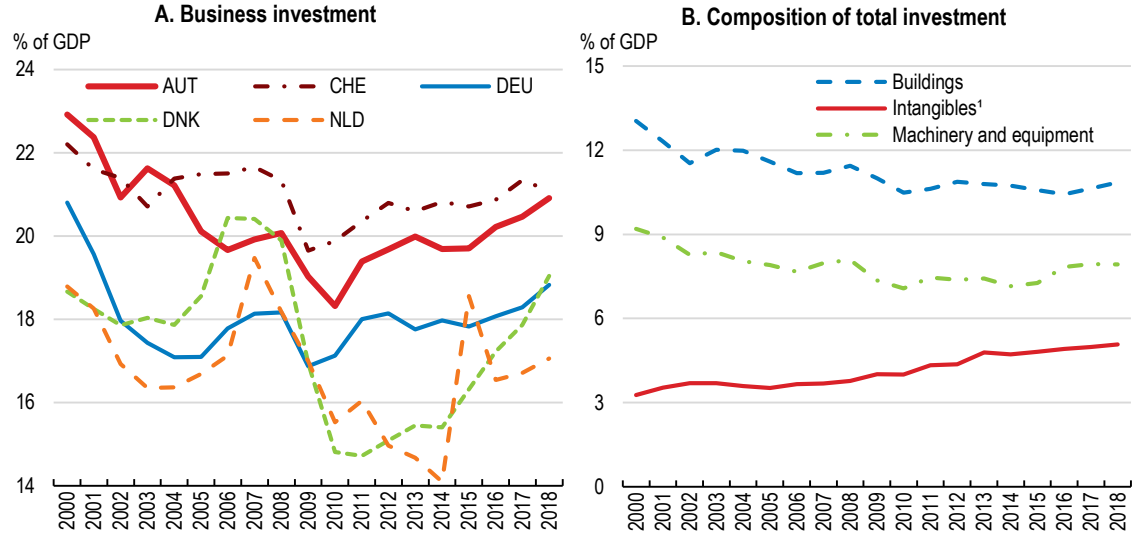
However, due to returns to scale and network effects, the digital revolution increases the potential for "winner takes it all" dynamics. Since digital technologies enable better access to worldwide customers and suppliers, they increase international competition. The increased use of digital technologies will also likely pose challenges for the management of small- and medium-sized companies. Successful adoption of new ICT applications require the managerial capital to use these technologies effectively. In addition, the digital transformation also poses additional challenges for SME enterprises. With more devices connected to the internet and increased use of ICT, businesses face greater risks from cybercrime and other digital threats. Due to returns to scale in ensuring digital security, SMEs are more vulnerable and in particular need to improve their digital security risk management practices (OECD, 2017).

Austria is highly integrated in global value chains. Austria's economy relies significantly more on foreign intermediate goods than other countries on Austria's inputs (OECD, 2017b). Austrian SME enterprises in manufacturing sectors are more likely to export and medium-sized companies in Austria contribute more to total exports than in peer countries and the OECD average (Box 2.1). The high share of SMEs competing on international markets poses opportunities but also challenges. Increased engagement in export activities can help SMEs to scale up faster through tapping new markets. Exposure to international markets can further be beneficial for productivity through increased competition, improved access to cheaper goods and spill-overs of technology and managerial know-how (Lopez-Gonzalez, 2017). However, since more Austrian SMEs export than elsewhere, the Austrian economy is also more exposed to the downside risks of globalisation. As other countries, in particular from the CESEE region, upskill and move up the quality ladder, their products are increasingly competing with Austrian products (Belka et al., 2016). Moreover, SMEs are more vulnerable to the effects of trade barriers, as, inter alia, they are much less likely to influence trade policy processes (Fliess and Busquets, 2006) and incur additional costs with detrimental consequences on their competitiveness (Requena-Silvente, 2005).

Firming up the capital structure of the Austrian business sector

Total business investment as a share of GDP has recovered from the Great Financial Crisis and surpassed its pre-crisis level (Figure 2.10, Panel A). Business investment has been a key driver of the ongoing expansion (Ederer, 2018). The composition of total investment shows that expenditures for intangibles, such as investment in intellectual products like R&D spending, patents, software, have risen, gradually increasing their share in total business investment from 13% in 2000 to 21% in 2017 (Figure 2.10, Panel B). This increase is in line with rising shares of intangible investments across OECD countries (Rouzet and Eberly, 2018; OECD, 2018) and underlines the pace of the ongoing transformation towards a knowledge economy. However, data from national accounts on intangible investment have to be interpreted with care. Investment in intangibles often requires expenditures for enabling the use of intangibles, which can be much larger than the initial investment. Such additional investments, for instance training existing staff, however, are not counted in national account data. The relevance of intangibles is therefore likely underestimated (OECD, 2018).

Figure 2.10. Business investment is above pre-crisis levels with shift towards intangibles



1. Intellectual property includes R&D, computer software and databases; mineral exploration and evaluation; and entertainment, literary or artistic originals and other intellectual property products.
Source: *OECD (2019), OECD Economic Outlook*: Statistics and Projections (database) and OECD National Accounts Statistics (database).

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The growing importance of intangibles poses challenges for the composition between debt and equity. While financial development in general tends to benefit economic growth by reducing firms' costs of external capital (Rajan and Zingales, 1998), equity and credit markets tend to play different roles in fostering investment in intangibles. Intangibles investment are more difficult to value, because they tend to be partly embedded in human capital. Additionally, information on business success of new technologies without a track history is likely to be sparse. Therefore, intangible investments are more difficult to use as collateral (Hall and Lerner, 2010). Further, young firms in high-tech sectors, which are likely to experiment with these new technologies and foster their diffusion, have more uncertain and skewed returns (Brown, Fazzari, and Petersen, 2009), restricting the use of credit. By contrast, equity investors share the full upside returns and require no collateral requirements. Moreover, additional equity does not increase the probability of default (Hsu, Tian, and Xu, 2014). Empirical evidence underscores that external finance through equity benefits innovative activity, especially in high-tech sectors (Brown, Martinsson, and Petersen, 2012; Hsu, Tian, and Xu, 2014).

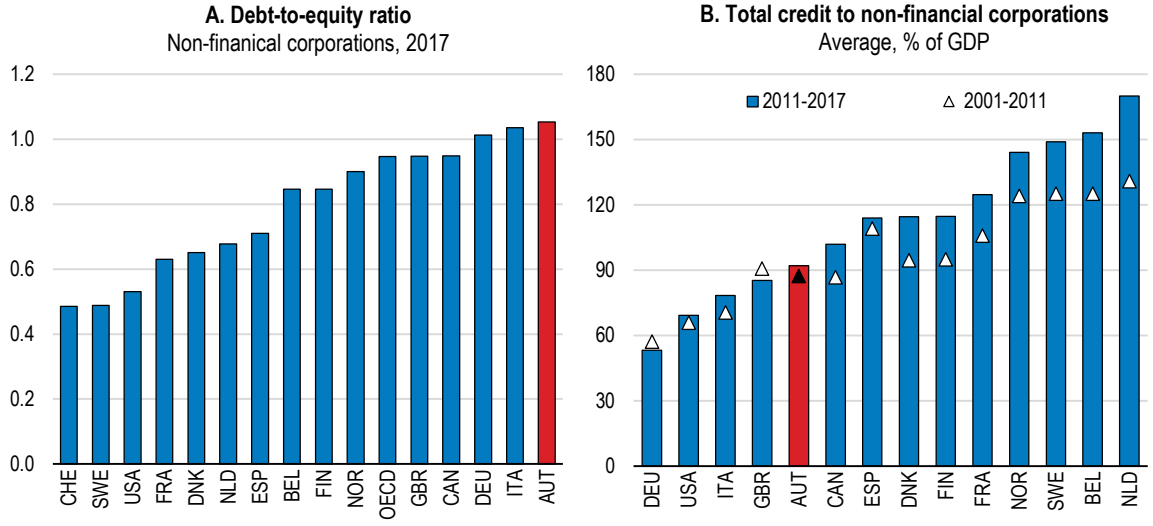
These challenges may be more demanding for a traditional bank finance model like Austria's. Banks may not have the right expertise to evaluate projects without track history. The emphasis on collateral to back up the ability to meet financial obligations limits funding to new firms and already highly leveraged firms. However, the Austrian system of bank financing relies on relationship banking, the so-called *Hausbank* system, and may mitigate some of the disadvantages of the strong focus on bank loans. Due to close relationship between bankers and business owner, Austrian bankers have access to more and better information, especially on private assets of company owners (Dirschmid and Waschiczek, 2005), therefore making it easier for firms of all sizes to borrow funds. Additionally, the *Hausbank* shows a greater willingness to continue to support firms with funds in financially difficult situations (Dirschmid and Waschiczek, 2005), which helps to smooth the business cycle, but may also increase the risk of capital getting trapped in zombie firms (McGowan, Andrews and Millot, 2017). Thus, a bank loan from the *Hausbank* may take up some of the functions equity capital provides in other countries (Dirschmid and Waschiczek, 2005).

According to various surveys, access to finance for Austrian firms tends to be good. Only 2% of Austrian firms consider themselves as constrained by their access to finance, below the EU average of 5% (EIB, 2018).According to the latest SAFE survey of the ECB, access to external sources of finance further improved over the 6 months from October 2018 to March 2019 and increased more than investment needs (ECB, 2019). Austrian firms tend to be satisfied with the amount of external finance received, including defining characteristics, like interest rates and maturity. However, 10% of Austrian businesses, compared to 6% for the EU average, see the required collateral as too high (EIB, 2018). Further, 67% of Austrian firms report that they prefer to rely on internal sources, which is above the EU average of 62%. While internal financing ensures that less information has to be disclosed with outsiders, it also implies that firms hold back investments when the economy is contracting.

The capital structure is biased towards debt-financing

The composition between debt and equity of an economy can be evaluated by looking at its aggregate capital structure. Austria has one of the highest debt-to-equity[16] ratios among OECD countries (Figure 2.11, Panel A) but a moderate level of total leverage, as compared to the OECD average (Figure 2.11, Panel B). This reflects very low provision of equity capital and a strong focus on bank financing. A simple comparison illustrates this further: while the level of leverage of non-financial corporations in Denmark is significantly higher than in Austria, the aggregate debt-to-equity ratio in Denmark is only 70% of that in Austria.

Figure 2.11. High debt-to-equity ratios but moderate total leverage point to lack of equity capital



Source: OECD (2018), OECD Financial Dashboard and BIS International Debt Securities Statistics

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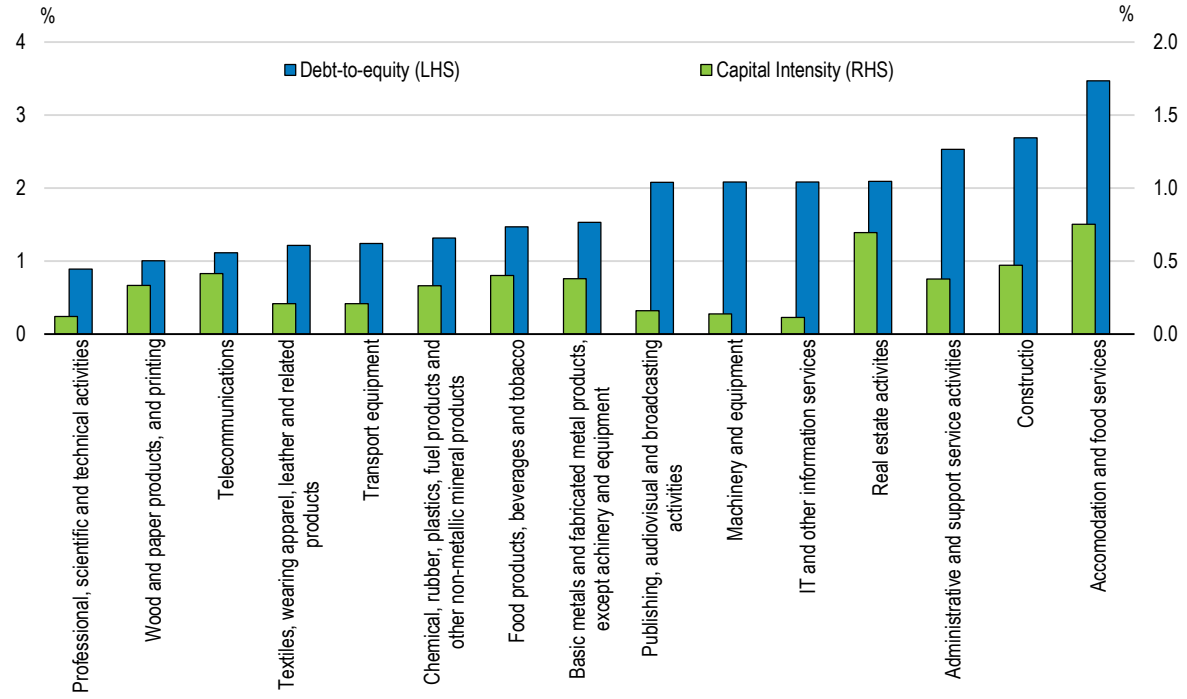
Figure 2.12. High capital intensity and prevalence of family-owned enterprises lead to high debt-to-equity ratios in tourism industries

Debt-to-equity ratios and capital intensity by sector, 2016



Note: Based on NACE rev.2. Capital intensity is calculated as the share of fixed assets over total assets.
Source: Bank for the Accounts of Companies Harmonized (BACH) database.

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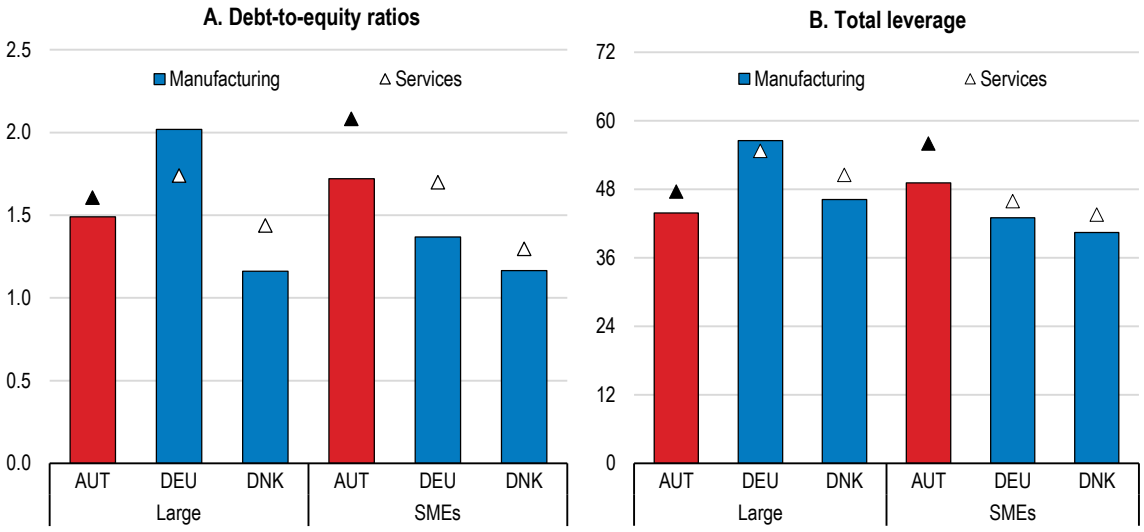
A more granular perspective on Austria's debt-to-equity ratio reveals that firms in the tourism sector ("Food and accommodation services") have a high debt exposure, followed by those in construction sectors (see Figure 2.12). The variation in the debt-to-equity ratio across sectors can only partly be explained by differences in the share of fixed assets employed. Furthermore, high debt-to-equity ratios in the tourism sector are also due to the high prevalence of family-owned enterprises (WKO, 2018). Family-owned enterprises tend to be averse to losing control to family outsiders and therefore have additional incentives to take on debt instead of equity in order to continue to maintain their controlling power (González et al., 2013).

Figure 2.13. Debt-to-equity ratios of Austrian SMEs are higher than in peer countries

Debt-to-equity ratios and total leverage in manufacturing and business services, 2016



Note: Based on NACE rev.2. Services refer to business services excluding finance, insurance and real estate.
Source: Bank for the Accounts of Companies Harmonized (BACH) database.

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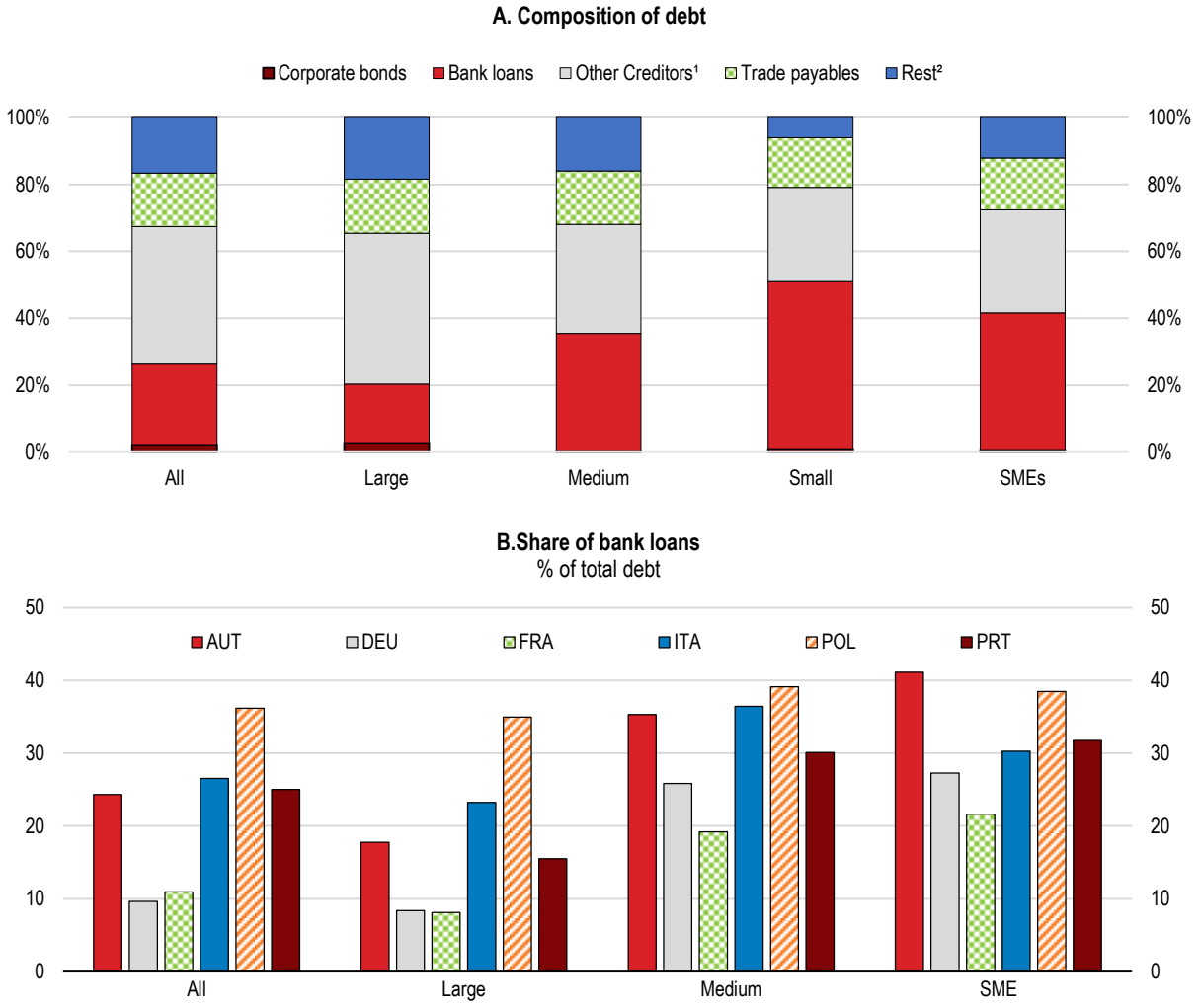
Debt-to-equity ratios of Austrian small- and medium-sized enterprises are higher than in Germany and Denmark, peer countries with available data (Figure 2.13, Panel A and B). This goes hand in hand with higher total leverage for small- and medium-sized enterprises than in peer countries. However, a back of the envelope calculation shows, that even with the lower leverage level of peer countries (for example Denmark), Austrian small- and medium sized enterprises would still have a 22-30% higher debt-to-equity ratio, suggesting that more equity capital would be needed to achieve a lower debt-to-equity ratio.

Austrian firms have relatively high debt-to-equity ratios, though only partly explained by the levels of total leverage. It is still meaningful to have a closer look at the supply of credit for two main reasons. First, leverage above a certain threshold can constrain investments in tangible assets and economic growth (Cournède and Denk, 2015), because fewer internal resources are available for capacity expansion. Moreover, access to external credit becomes more difficult at higher levels of leverage due to higher default risks (Aivazian, Ge, and Qiu, 2005). Second, small- and medium-sized enterprises are more vulnerable to credit tightening (OECD, 2012) and banks usually decrease loans to SMEs faster than for large firms (ECB, 2013).

Figure 2.14. Bank loans are the most important form of external credit for small- and medium-sized firms

Business sector, 2016



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.

StatLink https://doi.org/10.1787/888934025898

Bank loans are the main source of external credit for Austrian small- and medium-sized enterprises (Figure 2.14, Panel A). The amount of bank loans used for finance correlates negatively with the size of enterprises. Bank loans in small firms in business sectors make up 50% of total leverage, but only 18% in large firms. In comparison with other European countries with available data, Austrian firms make more use of bank financing, in particular in small- and medium-sized companies (Figure 2.14, Panel B). Other important forms of leverage include trade payables and loans from other creditors, including intra-group debt. The use of trade payables in Austrian manufacturing sectors make up around 16% of all external financing and is roughly constant across firm sizes. However, the comparison with European countries with available data suggests that trade payables are less important in Austria.

The availability of bank credit to Austrian firms of all sizes is high. On average, Austria SMEs pay a premium of 0.38 bps over interest rates charged by banks to large firms, which is relatively low compared to peer countries (Gassler, Pointner and Ritzberger-Grünwald, 2018). Only 1% of SME loan application were actually rejected (Gassler, Pointner and Ritzberger-Grünwald, 2018). Further, the share of non-performing loans of all firms have been decreasing and stood at 3.1% in 2016 (OECD, 2018b). The high access to bank loans of Austrian SMEs reflects various guarantees and support programs of the Austrian development bank, *Austria Wirtschaftsservice GmbH* (*aws*), bundled with initiatives that foster SME financing at the level of the European Union. In 2016, around 78% of all guarantees of the government were granted by *aws*, which guarantees up to 80% of the total loan amount.

New analysis for this *Survey* based on micro-level data of Austria firms using the Orbis database, suggests that high debt capital tends to be associated with less investment (Box 2.2). In particular, marginal increases to the level of long-term debt are negatively correlated with firm-level investment. The empirical framework takes the potential endogeneity between investment and debt into account by using an empirical strategy based on instrumental variables.

Box 2.2. Long-term debt reduces growth opportunities of small- and medium-sized enterprise more than of large firms

The firm-level data

The analysis uses micro-level data on Austrian firms from the Orbis database. Orbis provides annual balance-sheet data for listed and non-listed firms. While the coverage of Austrian firms may differ from a representative sample of the Austrian firm universe, it is nevertheless the only firm-level database currently available for listed and non-listed Austrian firms with combined data on financial and economic variables. In this respect, the recent reforms of *Statistik Austria* should not further restrict the access of Austrian and external researchers to Austrian micro-level data. Instead, micro-level data should be made similar accessible to researchers like in Germany, Denmark or Netherlands, which would contribute to the understanding of the Austrian economy at a granular level.

The data in this analysis relies on all Austrian firms in manufacturing industries in the 2011-2016 period.

Modelling investment

The aim is to examine the impact of long-term leverage levels on investment. Total investment is modelled in a dynamic framework. Further, the model controls for lagged cash holdings, i.e. takes source of internal financing into account. The firms' demand situation is captured through firms' sales. In order to incorporate the firm specific demand for investment goods, the analysis includes the level of the capital stock and output, equivalent to the standard error-correction formulation in the investment literature (e.g. Bond et al. (2003); Buca and Vermeulen (2017)). The key variable of interest is the level of long-term debt. However, the level of debt in an investment model is likely endogenous, if investment is - at least partially - financed by debt. Since the investment model also controls for all unobserved time-invariant drivers of investment at the firm-level, the lagged dependent variable suffers from correlation with the error term and is therefore biased (Nickell, 1981). The analysis in this chapter deals with this two-fold problem by using internal instruments in a difference GMM estimation framework. The statistical diagnostics underlying the validity of the difference GMM estimation are shown in the table below. They are discussed in detail in Dlugosch and Gul (forthcoming).

In addition, the analysis controls for shocks common to all firms using a non-parametric time control, i.e. dummy variables for each year.

High long-term debt impedes investment

The analysis finds that lagged long-term debt is negatively correlated with investment (Table 2.1). Importantly, the estimations take the potential endogeneity of investment and debt into account through instrumenting debt with lagged values. The estimated coefficients illustrate the ceteris paribus effect of an increase of long-term debt on the capacity to undertake investment in the next year. Therefore, the results suggest that higher levels of debt, other things equal, tends to discourage further firm-level investment.

Given that Orbis does not cover the total Austrian firm universe, these estimates need to be interpreted with care. As a robustness check, the analysis also re-estimates the investment model based on data from the BACH database. The BACH database provides annual balance-sheet data of non-financial companies aggregated at the industry level. The estimation sample consists of all Austrian non-financial industries in the 2000-2016 period. The estimations based on this different data source confirm that higher leverage is associated with lower fixed investment for Austrian non-financial industries. Further details on the BACH dataset, estimations using BACH data and tabulated results can be found in Dlugosch and Gul (forthcoming).

Table 2.1. Firm-level regression results

	(1)	(2)	(3)	(4)
Dependent variable: Investment (t) / Capital(t-1)				
Investment (t-1) / Capital(t-2)	-0.4328***	0.3174***	-0.1865	-0.1021
	(0.0205)	(0.0137)	(0.1758)	(0.1426)
Ln(Output(t-2)/Capital(t-2))	-0.3329***	-0.0302***	-0.0384*	-0.0480***
	(0.0184)	(0.0016)	(0.0223)	(0.0181)
Cash(t-1)/K(t-2)	0.0002	-0.0009*	-0.0021	-0.0026
	(0.0014)	(0.0004)	(0.0028)	(0.0023)
Output growth (t)	0.1043***	0.0523***	0.0084	0.0259
	(0.0095)	(0.0067)	(0.0483)	(0.0349)
Output growth (t-1)	0.2470***	0.0655***	0.0563**	0.0718***
	(0.0149)	(0.0070)	(0.0267)	(0.0201)
Total debt (t-1)/Capital(t-2)	0.0001	-0.0001**	-0.0001**	-0.0001***
	(0.0001)	(0.0000)	(0.0000)	(0.0000)
Employment growth)t-1)				0.0681*
				(0.0386)
Constant	0.1554***	0.1287***	0.1793***	0.1608***
	(0.0137)	(0.0117)	(0.0297)	(0.0237)
Observations	4,664	4,664	4,664	4,664
R-squared	0.2081	0.2406		
Number of id_i	2,459		2,459	2,459
# of instruments	.	.	44	54
AR(1)	.	.	0.0893	0.0130
AR(2)	.	.	0.374	0.569
Hansen p	.	.	0.743	0.763

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10
Source: OECD calculations.

There is little scope for policies to foster investment by further stimulating the provision of debt capital. Evidence from investment surveys underpins that access to external finance through debt is sufficient. The empirical analysis suggests that marginal increases in long-term debt would decrease investment. Additionally, the digital revolution goes hand in hand with the emergence of knowledge-based economies where investment in intangibles takes on a much more prominent role. However, intangibles are more difficult to pledge as collateral (Hsu et al., 2014), thereby restricting the use of bank-based loan financing. Thus, the relatively strong credit markets in Austria need to be complemented with other forms of financing in order to enable Austrian firms to adopt and experiment with these new technologies. Austrian policies in this area have to comply with EU capital market rules and regulations, but there is room for various national initiatives to support the equity ecosystem, for example by upgrading the financial literacy and the relevant technical know-how of equity issuers and equity investors, and promoting corporate governance and reporting practices improving the information and protection of minority investors.

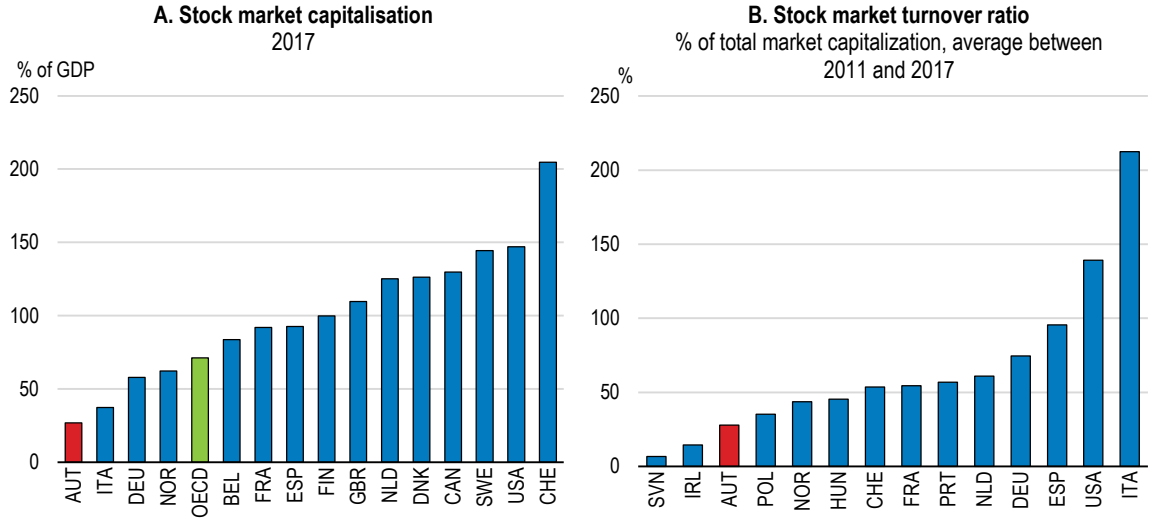
Strong credit markets should not be seen as a detriment to innovative activity. Indeed, larger established firms tend to benefit from good access to bank financing (Kerr and Nanda, 2015; Mann, 2018). Well-developed credit markets may also provide external debt financing to younger firms and start-up, although not directly by lending to the firm but by granting personal credits to the owner (Robb and Robinson, 2014). Here, the *Hausbank* system may be considered as a strength of the Austrian economy. However, high debt-to-equity ratios but relatively moderate levels of leverage suggest that there is ample room for equity instruments in Austria. Thus, equity and debt markets should be perceived as complementary, rather than mutually exclusive.

Though Austrian businesses make little use of externally raised equity capital, 67% of Austrian firms state that their preferred source of financing are based on internal sources, which is above the EU average of 62% (EIB, 2018). According to OeNB (2019), the share of internal financing in total financing was indeed 82% in 2018, based on (preliminary) financial accounts data. Internal sources constitutes a form of equity capital and consist of retained operating profits but also include the sales of assets and increases in working capital, such as through reductions in the time it takes to convert inventories and outstanding sales into cash-flows. While internal financing ensures that less information has to be disclosed with outsiders, the amount of internal financing is limited. Thus, investments of a larger scale require additionally externally raised capital.

Deeper Austrian equity markets would help support innovation

The total domestic market capitalization of all listed Austrian companies is one of the lowest across OECD countries (Figure 2.15, Panel A). This goes hand in hand with very low levels of stock market turnover, a measure of stock market liquidity (Figure 2.15, Panel B). Low liquidity makes it difficult for domestic and foreign institutional investors to participate in the stock market and is therefore an unattractive feature of the Austrian stock market (Dahlquist and Robertsson, 2001). Furthermore, the Austrian stock market is characterized by low levels of free-floating shares, which constitutes another impediment to the participation of institutional investors. Block-holders control around 55% of the total market capitalization in Austria, compared to roughly 30% in peer countries and 8% in the US. (Dahlquist et al., 2003).

Figure 2.15. Austria has the lowest stock market capitalisation in the OECD and the market lacks liquidity



Note: Turnover ratio is calculated as the value of domestic shares traded in a year divided by their market capitalisation.
Source: OECD (2018), OECD Financial Dashboard and World Bank Development Indicators.

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The low level of stock market development is in line with a legal framework that emphasizes creditor rights over debtor rights and low disclosure requirements in IPO prospectus and annual reports (Dirschmid and Waschiczek, 2005). Countries that favour debtor rights put a stronger focus on continuing the operation of a company instead of serving creditors. Higher debtor rights and better access to information through more disclosure requirements (LaPorta et al., 2006; Shleifer et al., 2008) are associated positively with firms' equity ratios (LaPorta et al., 1998). However, other countries with strong creditor rights, namely Germany and Denmark, have higher stock market capitalisation over GDP. Thus, the broad legal framework can only partly explain the low levels of Austrian stock market development.

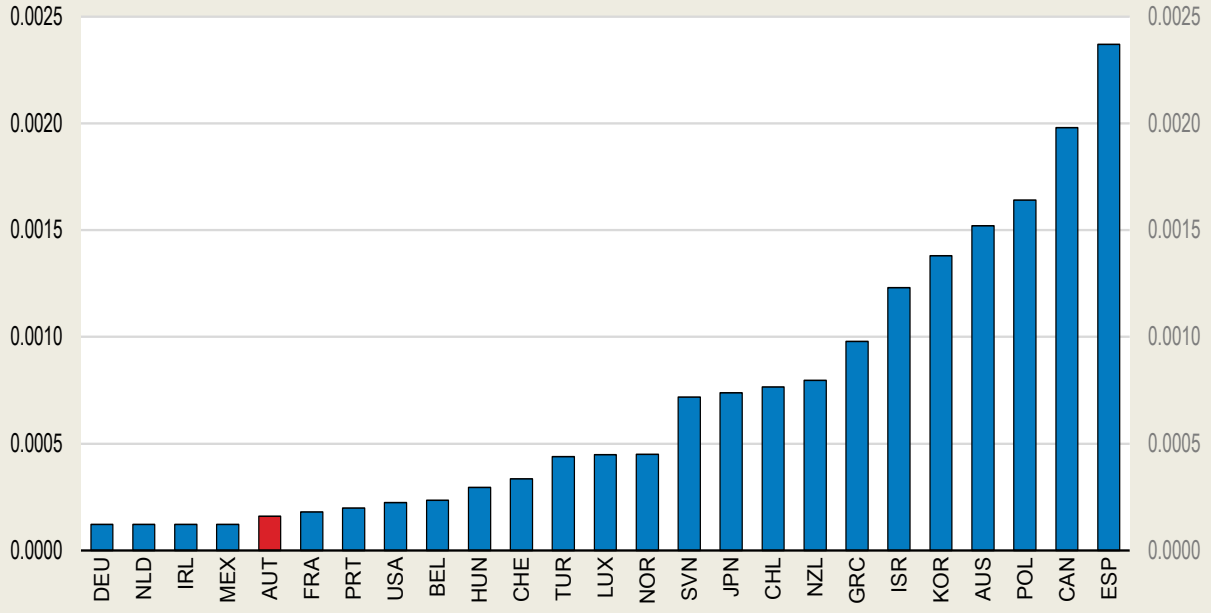
New analysis conducted for this *Survey* provides evidence that even once size and the legal framework is taken into account, Austria has a rather low number of stock market listing (Box 2.3). This is in line with generally low levels of stock market participation of Austrians (Giannetti and Koskinen, 2010).

Box 2.3. Is there a listing gap in Austria?

The share of domestically incorporated companies listed on the Austrian stock exchange, as a proportion of GDP, is low compared to other countries with similar institutions and economic development (Figure 2.16). Moreover, the ratio has been decreasing steadily, having declined nearly twelve-fold since 1975, and threefold since 2000. The empirical analysis conducted here shows that the number of listed companies per capita in Austria is indeed abnormally low, pointing to the presence of the "listing gap" as compared to other countries with similar institutions and economic development.

Figure 2.16. Number of listings per GDP (1 million USD)

2017



Source: World Bank Development Indicators.

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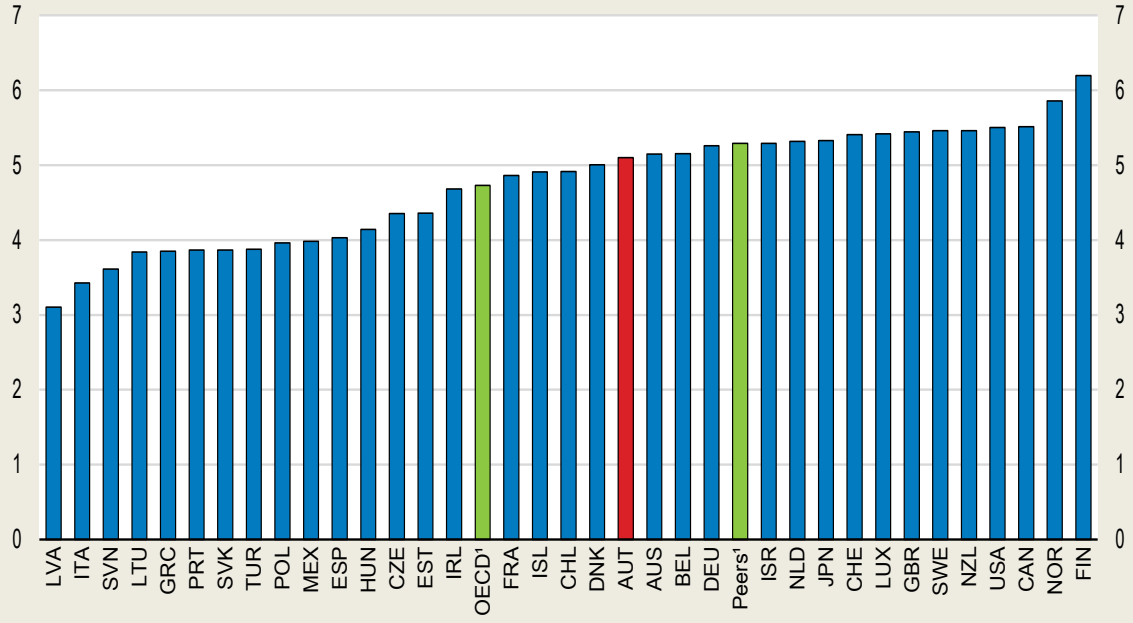
Cross-country regression models allow for an estimation of the *expected* number of listings per capita, and subsequent count of the listing gap. Previously in the literature, La Porta et al. (1997) projected the number of listed firms per capita on the log of gross domestic product (GDP), GDP growth, a rule of law index, and an index of investor protection. Doidge, Karolyi and Stulz (2017) estimate similar regressions using the log of the average number of listed firms per capita for 1990-2012. After controlling for the log of GDP per capita, they show that listings per capita are strongly positively related to the anti-self-dealing index, a measure of the extent to which related-party transactions are limited in a country.

More specifically, the anti-self-dealing index is a measure of legal protection of minority shareholders against expropriation by corporate insiders. Those who control a corporation, whether they are managers, controlling shareholders, or both, can use their power to divert corporate wealth to themselves rather than sharing it with the other investors. Various forms of such self-dealing include executive perquisites, excessive compensation, transfer pricing, appropriation of corporate opportunities, self-serving financial transactions, such as directed equity issuance or personal loans to insiders, and outright theft of corporate assets (Shleifer and Vishny, 1997). The anti-self-dealing index has been calculated for 72 countries based on legal rules prevailing in 2003. Figure 2.17 shows more recent data on protection of minority shareholders based on an indicator similar to the self-dealing index from World Bank's Doing Business database. It focuses on private enforcement mechanisms, such as disclosure, approval, and litigation that govern a specific self-dealing transaction, predicting a variety of stock market outcomes. While higher index values indicate better minority protection, Austria's performance is below peer countries.

Figure 2.17. Protection of minority shareholder interests across countries

Scale from 0 to 7 (best minority protection), 2017 or 2018



Note: Unweighted average of peer countries. Peer countries include Denmark, Sweden, Germany, Switzerland and the Netherlands.
Source: World Bank Doing Business.

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The data on the number of listed firms in each country comes from two sources: the World Bank's World Development Indicators (WDI) database and the World Federation of Exchanges (WFE) database, which we merge to create a comprehensive data set. The listings do not include investment companies, mutual funds, real estate investment trusts (REITs), or other collective investment vehicles.

Following Doidge, Karolyi and Stulz (2017), regression of the log of listings per capita on the anti-self-dealing index and on the log of GDP per capita are estimated (Table 2.2). While the anti-self-dealing index pertains to legal rules in 2003 and may thus appear outdated, we chose to stick to this indicator to better compare results for Austria with the previous literature. In further estimations, we, however, check whether results are robust to using more recent data. Three alternative regressions with additional variables are also considered. In particular, a dummy variable, which takes on the value 0 for Austria, tests whether the number of stock market listings in Austria are significantly different from other countries is introduced. More details on data, estimation and results can be found in the annex.

Consistent with Doidge, Karolyi and Stulz (2017), both the anti-self-dealing index, and GDP per capita have a positive significant coefficient independent on the specification. Models 1 and 2 estimate a cross-country regression for 2016, with the latter specification additionally including a non-Austria indicator variable. The non-Austria dummy is indeed highly statistically significant, suggesting a systematic difference between the listings per capita and the explanatory variables for Austria as compared to other countries. The positive coefficient indicates a listing gap in Austria relative to other countries, whose number of listings per capita is significantly higher, given their institutions and economic development.

Table 2.2. Institutions, economic development, and listings per capital

	Cross-sectional regressions (2016)		Panel regressions (2001-2016)	
	(1)	(2)	(3)	(4)
log_gdp_cap	0.6653***	0.6796***	0.6532***	0.6532***
	(0.1006)	(0.1024)	(0.0848)	(0.0855)
anti_sd	1.2390**	1.1671*	1.3995**	1.3995**
	(0.5971)	(0.6156)	(0.5358)	(0.5401)
gdp_growth			-0.0076	-0.0075
			(0.0218)	(0.0220)
Non-AUT dummy		0.7035***	0.4191*	0.4715**
		(0.2304)	(0.2146)	(0.2200)
Year FE			Yes	Yes
Year FE x non-AUT dummy			No	Yes
Observations	54	54	958	958
R-squared	0.4478	0.4527	0.4526	0.4527
Adj. R2	0.426	0.420	0.442	0.433

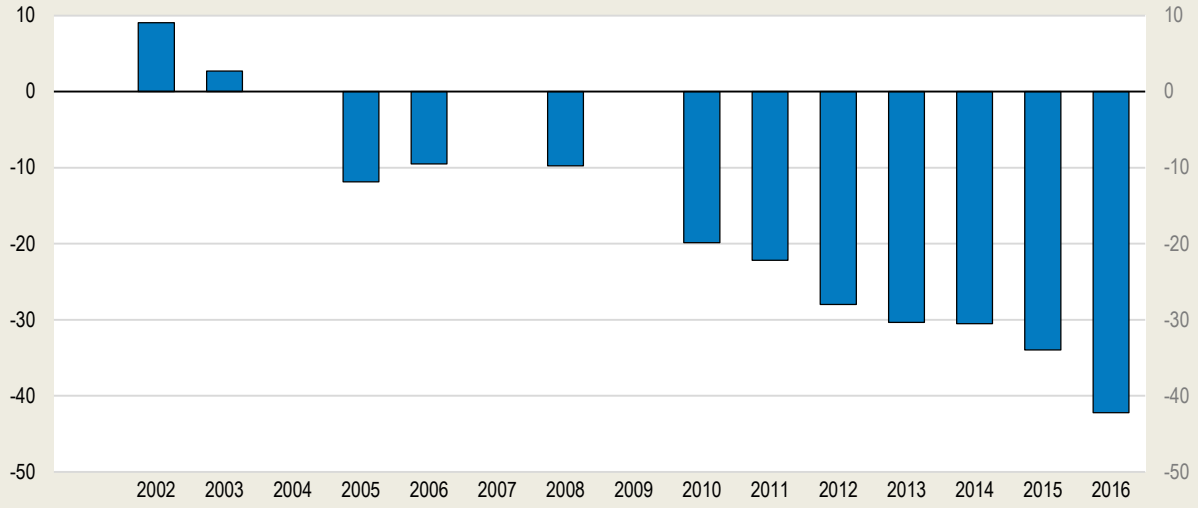
Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10
Source: OECD calculations.

In the third model, we estimate a panel regression across countries and years for the period 2001-2016. In addition to the variables included in the Model 2, we regress the listings on the GDP growth as an additional variable capturing changing economic conditions. Further, we control for shocks common to all countries by including year fixed effects. As in the previous specification, the non-Austria indicator remains positive and significant.

Finally, Model 4 includes the year fixed effects interacted with the non-Austria indicator variable, allowing for a computation of the Austrian listing gap each year, and to trace its evolution over time. Using the coefficients on the year fixed effects we can compare how actual listings in Austria differ each year from predicted listings, measured relative to the rest of the world (Figure 2.18). The coefficients for the anti-self-dealing index and GDP per capita remain significant. The adjusted R^2 is 43%.

Extended models using broader sets of control variables, including liquidity and the provision of debt capital, and importantly more recent data on the protection of minority shareholders do not change the results on the listing gap qualitatively. The annex shows the additional tables and discusses these results in greater detail.

Figure 2.18. Estimates of Austria's listing gap



Note: Yearly listing gap was computed using model estimates from Model 4 with the year fixed effect in Table 2.2. Zero values for 2004, 2007 and 2009 reflect estimates which were not statistically significant at the 10 % level.
Source: OECD calculations.

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At the beginning of the observed period, the coefficients on the year fixed effects are either statistically insignificant or slightly positive, suggesting an actual overrepresentation of listed firms in Austria, as compared to other countries. The negative gap started appearing from 2005, and has been growing steadily since. As a result, the listing gap reached 42 listings in 2016, with 66 actual listings as compared to 108 expected ones.

The Austrian authorities have already tackled the relatively low development of domestic stock exchange and recently implemented a reform in stock corporation laws geared at easing access for SME firms. Subsequently, the Vienna Stock Exchange has introduced two new segments, which aims at improving access to SME enterprises. These two new segments, “Direct Market” and “Direct Market Plus”, operating from 21 January 2019 on, allow small- and medium-sized enterprises to be listed and trade their shares internationally. Austria is, however, late with the introduction of a stock market segment reserved for SMEs as Germany, Spain, France and Italy, among others, have already had such segments in place for more than a decade (Hölzl et al., 2016). First empirical evaluations (Eisele and Nowak, 2017) suggest that the introduction of specific SME segments increased average equity financing by 6%. The better access to capital markets helped to boost investment in tangible capital and decreased SMEs cash holdings, implying that SMEs used less internal financing when access to risk capital improved (Eisele and Nowak, 2017).

The potential economic effects of better access to equity capital on productivity can be sizeable. Demmou and Stefanescu (2018) show that policies aimed at providing similar access to equity and venture capital in Austria as in the average of the Top 5 best-performing OECD countries could lift productivity growth by around 1.5% pts. annually. The effects are particular pronounced in sectors, which make more use of intangibles, like software, patents, R&D expenditure but also more human or organizational capital.

However, besides the introduction of two SME segments at the Vienna stock exchange, more efforts are needed to improve the demand and supply of equity capital in Austria. Initiatives at the European level like

the Capital Market Union will likely boost the supply of equity capital through more conducive stock market regulations (Raposo and Lehmann, 2019). Nevertheless, domestic policies have room to improve markets for risk capital in Austria, either by increasing the demand for equity by firms or by raising the supply of equity by locals. Austria has relatively low levels of stock market participation. According to survey evidence, around 22% of Austrians hold stocks or mutual funds, in line with neighbouring countries like Germany and Italy, however significantly below the UK (32%), the Netherlands (34%) and the US (49%) (Fessler and Schürz, 2008). The cross-country statistics on stock market participation have to be interpreted with care, as they most rely on self-proclaimed and not observed holdings. Further international time series data is scarce, thus these numbers pertain to the mid-2000s.

Unleashing the full potential of public but also venture and growth capital equity markets requires a vibrant equity eco-system (Nassr and Wehinger, 2016). Such an eco-system comprises institutional investors, investment banks, research analysts, market makers, legal and financial advisors, specialised accountants and other service provides. In order to ensure the success of the new “Direct Market” and “Direct Market Plus” of the Vienna Stock Exchange, the eco-system in particular needs service providers specialised in SMEs (Nassr and Wehinger, 2016).

In this respect, stocktaking of the Austrian capital markets could help to identify potential bottlenecks in the market-based financing eco-system. The stocktaking exercise should include an examination of which firms tap Austrian capital markets, in particular public equity and corporate bond markets, the analysis of more granular data on the current state of capital markets and the structure of the corporate sector would allow to understand the origin and nature of investors, underwriters, intermediaries and other financial service providers. This information can then be used to better identify where Austria’s eco-system lags behind and be helpful for designing the right policies to improve companies’ access to market-based financing and investor confidence.

The most crucial factor determining the uptake of Austrian stock markets pertains to the general widespread aversion against equity, losing control of entrepreneurs and the aforementioned relatively low participation in stock markets (Hölzl et al., 2016). Here, improving financial literacy can also help entrepreneurs to better understand the benefits of equity capital (OECD, 2018d; Boschman and Pissareva, 2017). Additionally, further equity capital can be obtained without having to share voting rights. This can be achieved for example through hybrid vehicles like preferred stocks.

Stock market participation can be increased through financial literacy (v. Rooij, Lusardi and Alessie, 2011; Boschman and Pissareva, 2017). Results from the OECD/INFE cross-country survey on financial literacy suggests that Austrian have overall slightly above average financial literacy compared to other OECD countries (OECD, 2016b; Cupak et al. 2018). However, there is room for improvement. On the one hand, the beneficial effects of financial literacy on stock market participation tend to be large (v. Rooij, Lusardi and Alessie, 2011). On the other hand, aggregate indexes of financial literacy may mask knowledge gaps in areas directly related to the stock market. Indeed, only 61% of the 2 000 Austrian interviewed in the OECD/INFE survey (OECD, 2016b; Silgoner et al., 2018) correctly grasp the basic notion of diversifying idiosyncratic risk through stock investments, the key concept of modern portfolio theory. This is below the OECD average of 65%. However, the relevant question from the OECD/INFE survey only asks participants whether they are aware of the benefits of diversification and thus do not allow an evaluation of the necessary tools for understanding the benefits of diversification, e.g. correlation and volatility. The Austrian Central Bank actively promotes financial education and initiated a financial education campaign in 2015. However, there is currently no nation-wide strategy for financial education. Such a strategy should foremost tackle financial literacy in a gender- and age-inclusive way, for example by putting financial education on school curricula of all school levels. Moreover, besides basic financial knowledge, financial education should also teach skills related to investments. This is important given that many people actually hold stakes in stock investment, though not always directly, but through the pension system or other financial products like life insurances. Besides changing stock market development and firms’ financing possibilities,

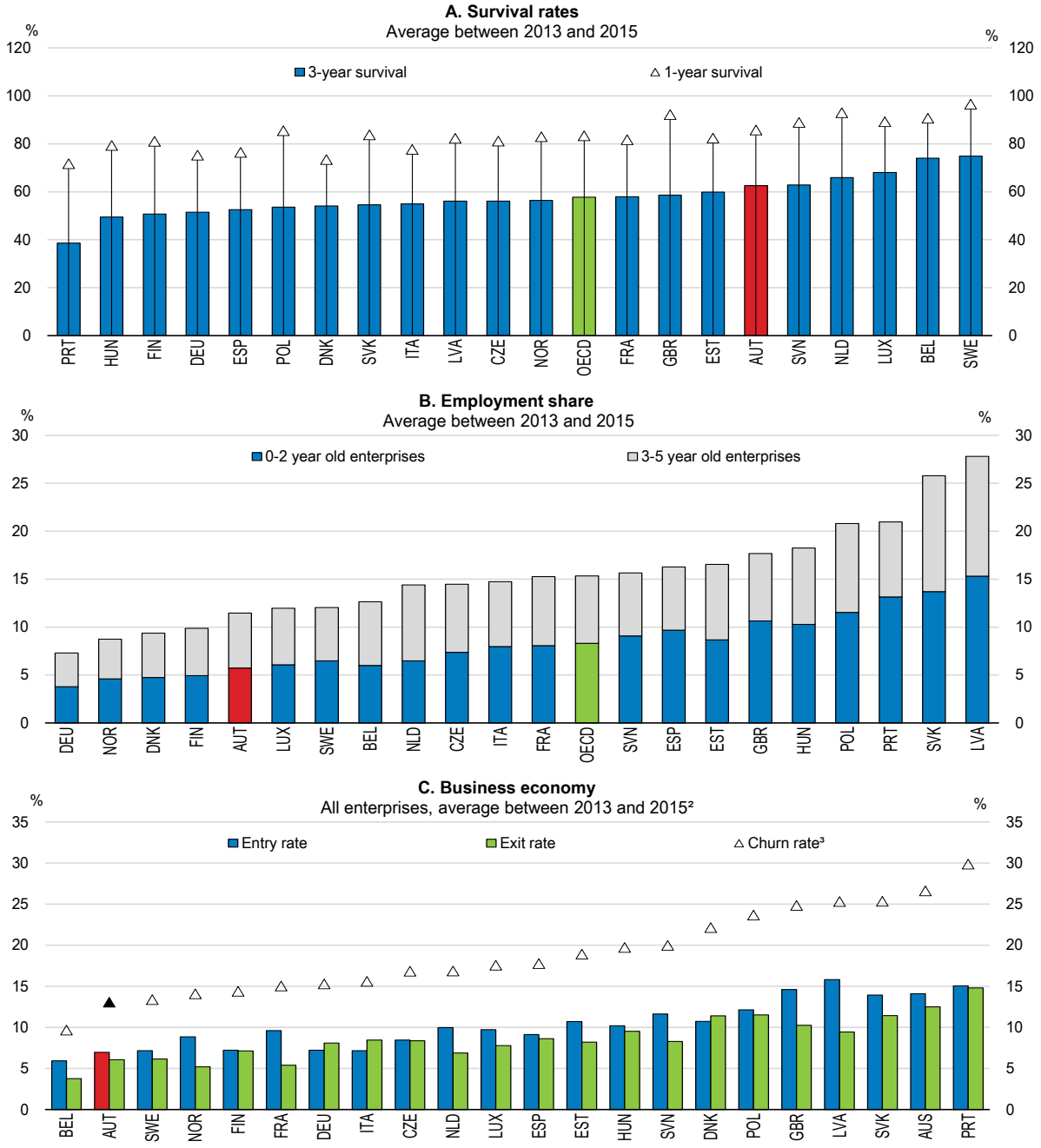
financial education can also help improve financial decision-making in general with particular positive impacts on retirement savings (Lusardi, 2009).

Low levels of stock market participation may reflect deep-rooted preferences for less risky assets, i.e. higher degrees of risk aversion. Subsequently, less developed markets for risk capital may constitute the optimal outcome from the viewpoint of households. However, they may also reflect a lack of financial literacy and experience with these products. Revealed preferences from observed financial choices may then overestimate the degree of risk aversion (Heath and Tversky, 1991). A large literature in behavioural economics and finance indeed finds that individuals are prone to systematic biases, which distort their beliefs (Barberis and Thaler, 2003). As empirical evidence suggests that better financial literacy can help to reduce systematic biases and eventually lead to greater risk-taking (Behrman et al., 2012), improving financial literacy still constitutes a way to improve financial decision-making, in particular stock-market participation, even though market outcomes may suggest high degrees of risk aversion.

Addressing the supply of venture and growth capital

Austrian young firms are very successful in surviving through the first 3 years, though the employment share of these firms is one of the lowest across OECD countries (Figure 2.19, Panel A and B). On the one hand, this may reflect slow business dynamism and resource allocation (Adalet McGowan, Andrews and Millot, 2017). Firm entry and exit rates in Austria are indeed one of the lowest across OECD countries (Figure 2.19, Panel C). On the other hand, access to finance and skill shortages may impede upscaling. Young firms tend to have more volatile cash-flows, usually no performance track record and often only few assets which could be used as collateral. This severely restricts their access to bank loans.

Figure 2.19. Young firms are successful in surviving the first years but do not grow large



1. Business economy, all enterprises. Data for Denmark refer to 2012-2014.
2. Data for Denmark and Poland refer to 2012-2014.
3. The churn rate is the number of enterprises births and deaths as a percentage of the number of active enterprises.
Source: OECD Structural and Demographic Business Statistics.

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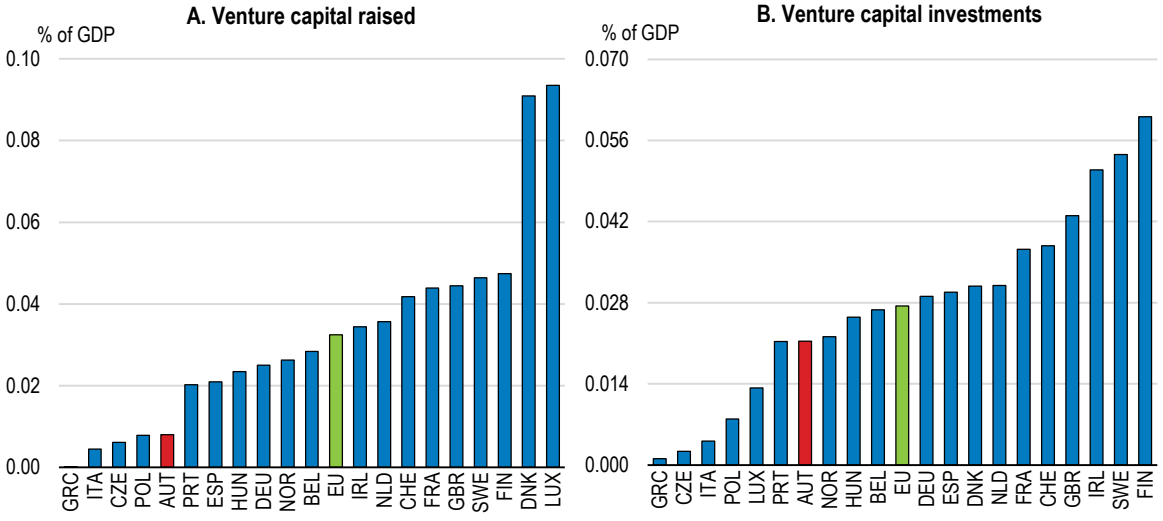
Apart from less developed public equity markets, the provision of venture and growth capital in Austria is also low, reflecting a lack of "equity culture". (Figure 2.20 and Figure 2.21). Although, this lack of risk capital pertains to other European countries also (AFME, 2017), Austria has less developed venture and growth

capital markets compared to countries like Denmark (OECD, 2018d). In 2016, the Austrian authorities launched a new start-up programme with a total volume of around 185 Mio EUR for the next three years, which aims at addressing the market failure of low risk financing through providing more risk capital for start-ups and SMEs. This compares roughly to the total amount of venture and growth capital raised in 2017 and illustrates a further key characteristic of Austrian venture and growth markets: Roughly one-half of venture capital funding in Austria is provided through funds from governmental agencies (OECD, 2018d).

Austrian authorities have further enacted the Alternative Financing Act, a measure to facilitate crowdfunding, which entered into force in September 2015. It allows for prospectus-free issuances of certain financing instruments below a certain threshold. In 2018, the Alternative Financing Act was further amended and allows for emissions of investments and securities up to 2 Mio. EUR without having to disclose a prospectus. Instead the issuer has to provide an information sheet. The Alternative Financing Act also contains provisions on investor protection, such as a limit of EUR 5 000 per individual investor per issuance.

Figure 2.20. Venture capital markets lag behind

Venture capital raised and investments, average between 2013 and 2017



Note: Panel A records venture capital according to the location of the managing office and includes both domestic and foreign investments (industry statistics). Panel B records venture capital according to the location of the firms in the portfolio (market statistics) financed either by domestic or foreign venture capital funds.
Source: Invest Europe, European Private Equity Activity Data 2017

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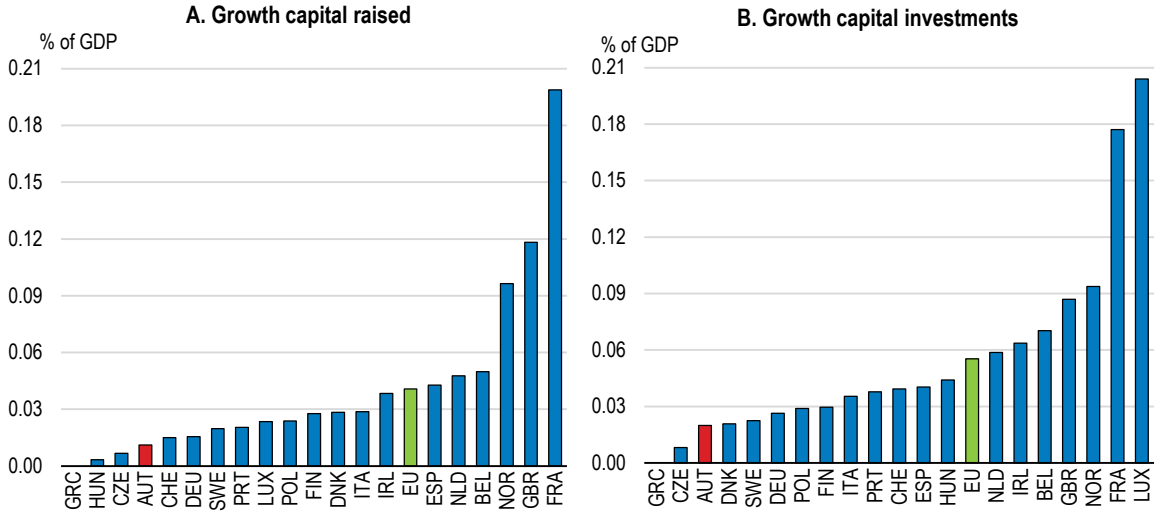
Figure 2.21. Growth capital markets are not well developed

Growth capital raised and investments, average between 2013 and 2017



Note: Panel A records growth capital according to the location of the managing office and includes both domestic and foreign investments (industry statistics). Panel B records growth capital according to the location of the firms in the portfolio (market statistics) financed either by domestic or foreign growth capital funds.
Source: Invest Europe, European Private Equity Activity Data 2017.

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The lack of an equity eco-system and the resulting low numbers of Austrian venture capital investors not only limits financing, but also has implications on the human capital of entrepreneurs. The role of venture capital investors goes beyond the sole provision of risk capital. They provide companies in their portfolio with several services related to consulting, finance, accounting, marketing, strategic foresight and human resources, which entrepreneurs would otherwise need to acquire outside (Colombo and Grilli, 2010). Entrepreneurs may also benefit from accessing the network of the venture capital investors and obtain access to other resources and skills (Hsu, 2006; Bottazzi, Da Rin, and Hellmann, 2008). Given these positive local externalities, the need to better develop local venture capital markets thus do not vanish in light of initiatives at the European level aiming at improving European venture capital markets.

Austrian authorities addressed the relatively low start-up rates with the introduction of a new Start-Up Package, which was introduced in May 2019. The Start-Up package consists of a series of measures to boost Austria's attractiveness as a start-up location, notably the establishment of a new "Digitalization and Growth Fund", more credit guarantees, regulatory sandboxes and new educational programmes. Tax incentives to leverage long-term private engagement in new ventures were not part of this reform. The Mittelstandsfinanzierungsgesellschaftengesetz, a legislation enacted in 2017, is intended to facilitate the access to equity capital for start-ups and young firms. The law constitutes a tax incentive for investments in special purpose vehicles (the "Mittelstandfinanzierungsgesellschaften") which provide risk capital to firms that fulfil pre-defined criteria.

Firming-up the tax system for the knowledge economy

Helping businesses to prepare for the knowledge economy is likely to require great reliance on equity capital to underpin the necessary investments in knowledge capital, in part because it is harder to collateralise for loans. Reforms of the tax systems can go a long way in levelling the playing field between

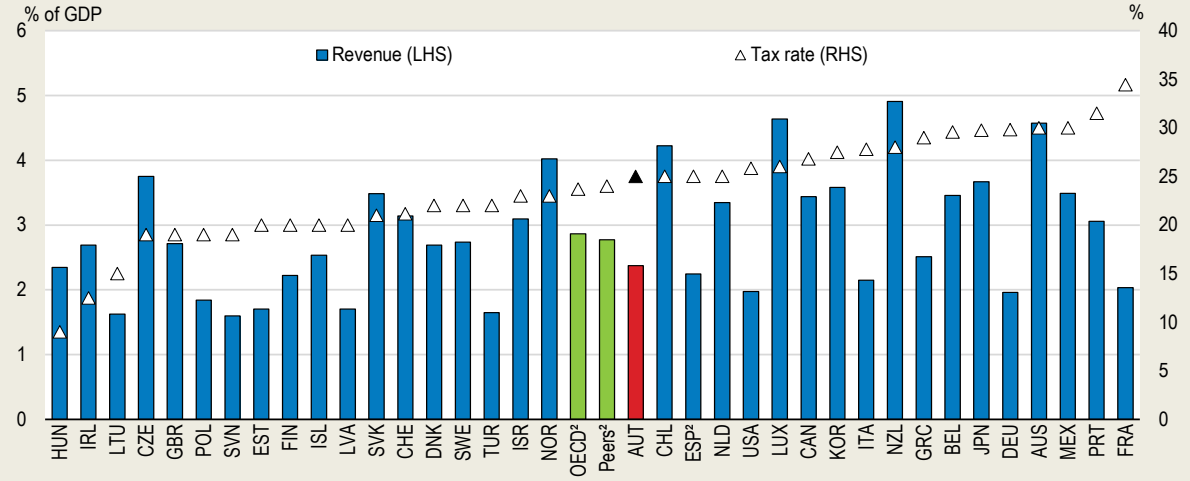
debt and equity by reducing the bias towards the former. Corporate tax rates in Austria have been decreasing from 34% in 2005 to 25% today (Box 2.4). Nevertheless, the Austrian authorities aim at further reducing the corporate tax rate through tax reform in 2019 by reducing corporate income tax rates towards 21% in 2023. A reduction in the corporate income tax rate would also help to reduce the tax bias towards debt. Another way to address the debt-bias would be an allowance for corporate equity, which would give Austrian enterprises, an incentive to employ more equity capital.

Box 2.4. Corporate income taxes in Austria in a nutshell

Statutory corporate income tax rates in Austria currently stand at 25% and are slightly higher than in the OECD average or peer countries (Figure 2.22). However, revenues from corporate income taxes in Austria are only slightly more than 2% of GDP. As a comparison, while the statutory corporate income tax rate for the average of OECD and peer countries is lower, their tax revenue from corporate taxes is higher. However, this comparison needs to be interpreted with some care, as revenues from corporate income tax rates may vary with the business cycle and also depend on other factors.

Figure 2.22. Revenue and rates for corporate income tax

Corporate income tax revenue and statutory corporate income tax rate[1]



1. Data on tax revenue in 2016, but corporate income tax rate in 2018. Basic combined central government and sub-central government corporate income tax rate.
2. For Spain, the total tax revenue has been reduced by the amount of any capital transfer that represents uncollected taxes. Unweighted average for OECD and unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.
Source: OECD (2019), OECD Taxation Statistics (database).

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Recent work by the OECD Centre for Tax Policy and Administration by Hanappi (2018) provides forward-looking effective corporate income taxes for hypothetical investment projects, following a well-established methodology (e.g. Devereux and Griffith (1999); Devereux and Griffith (2003)). The framework disentangles effective average and marginal tax rates. Average corporate income tax rates measure the extensive margin of an investment project, i.e. the yes or no decision to start a specific investment project. Marginal effective tax rates measure the incentive to expand an investment project given that it has already started.

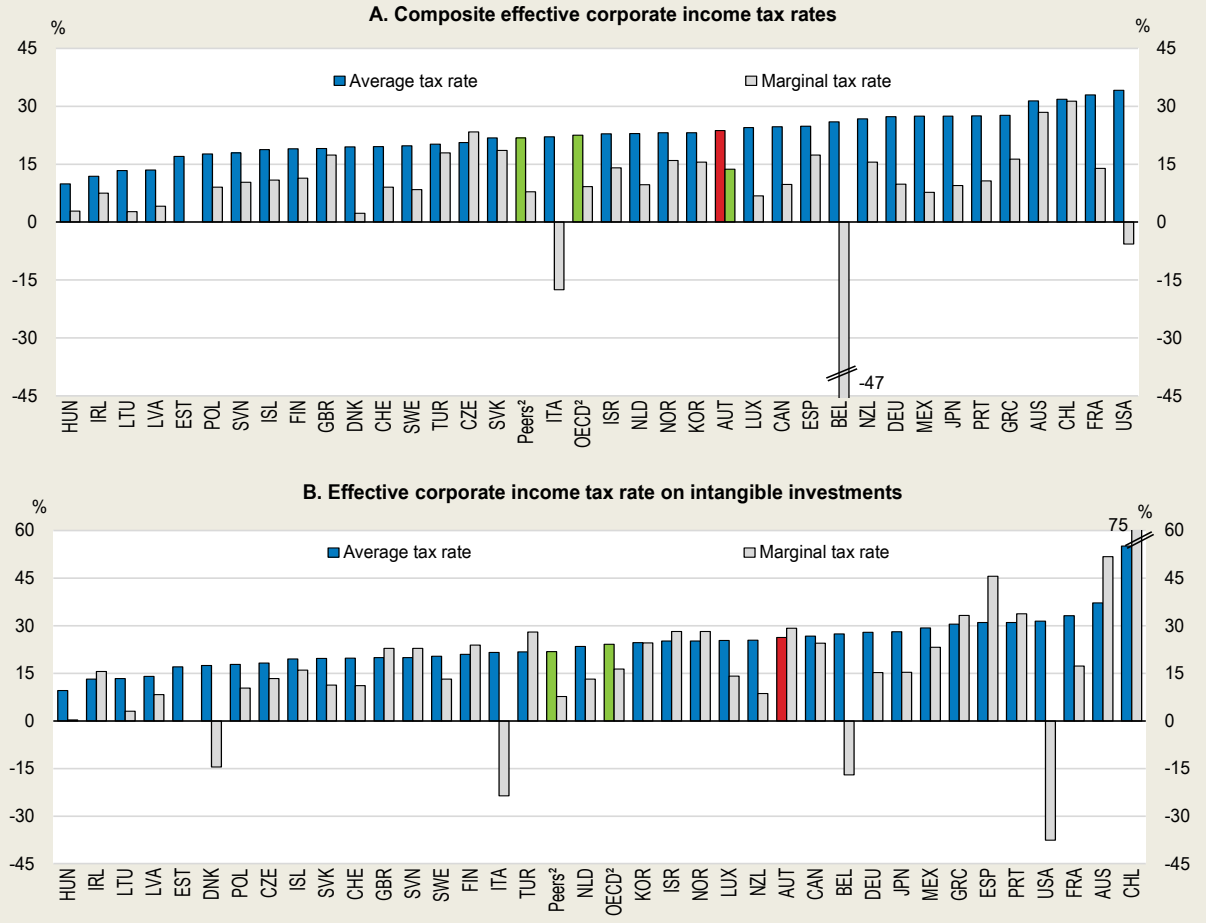
Effective average corporate income taxes in Austria are with around 24% slightly higher than the OECD average and in peer countries (Figure 2.23, Panel A). Effective marginal tax rates stand at roughly 14%,

nearly twice as high as in peer countries and above the OECD average of around 9%. However, the OECD average without Italy and Belgium, two countries with large negative marginal effective tax rates, is with around 11% much closer to the marginal effective tax rate in Austria.

The framework of Hanappi (2018) further allows to quantify effective tax rates for different investment goods. Whereas average effective tax rates for intangible investment in Austria are with 26% slightly above the OECD average and peer countries, effective marginal tax rates are more than four times higher in Austria than in peer countries (Figure 2.23, Panel B). Here, investment in intangibles is confined to the acquisition of intangibles outside the firm. It also excludes further investments to make it usable, e.g. investments in upskilling the staff to use a new technology.

Figure 2.23. Effective marginal corporate income tax rates are high particularly for intangible investment

Effective average and marginal corporate income tax rates[1], 2017



1. Based on the framework of Hanappi (2018) with a scenario assuming real interest rates of 3% and an inflation rate of 1% across all countries.
2. Unweighted average for OECD and unweighted average of Denmark, Sweden, Germany, Switzerland and the Netherlands.
Source: OECD (2019), OECD Taxation Statistics (database) and T., Hanappi (2018), "Corporate Effective Tax Rates: Model Description and Results from 36 OECD and Non-OECD Countries", OECD Taxation Working Papers, No. 38.

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Most corporate tax systems treat debt financing and equity financing differently (ZEW, 2016). In many countries including Austria, the interest expenses on existing debt, can be deducted from pre-tax earnings, thereby lowering taxable income, leading to a lower tax liability. Usually, the returns on equity capital cannot be deducted. Thus, an investment project solely financed through debt generates a higher post-tax return on investment than the same investment project financed through equity. This leads to different effective corporate income tax rates for different sources of financing (ZEW, 2016). However, the debt-bias pertains only to the corporate income tax system. At the personal income tax level interest income is typically taxed while dividends may benefit from exemptions and credits.

The debt bias incentivizes entrepreneurs, from a tax point of view, to finance new investments with debt instead of equity. The rise of the knowledge-based economy, requires significant investments in intangible capital and experimentation with new technologies, business models and ideas, and may require financing through equity. Thus, the debt bias of corporate tax systems tends to be a limiting factor. Further, the debt bias appears to be large (ZEW, 2016). The difference between the effective average tax rates on investment projects entirely financed through debt and projects entirely financed through newly issued equity is around 9% in Austria, which is above the EU28 average of 7.6% (ZEW, 2016).

One way to address the debt bias of the corporate tax system is to grant an allowance for corporate equity. While such an allowance is appealing from a theoretic point of view, there are challenges related to its successful implementation and it may have negative side-effects. As a result, very few countries currently have such a measure in their corporate tax regime. Since 2006, Belgium has an allowance for corporate equity (Zangari, 2014). Italy had a similar scheme from 2011 to 2019. Austria experimented with a tax reform similar to a corporate allowance for equity in the period between 2000 and 2004 (Genser, 2002). Here, Austria granted a reduced corporate tax rate of 25% (instead of the statutory 34% corporate income tax rate at that time) on the notional return on equity. However, after a cut to corporate taxes to 25%, this reduction became obsolete (De Mooij and Devereux, 2009).

The evidence on economic impacts of the allowance for corporate equity from the few existing examples so far supports the conclusion that the allowance for corporate equity reduces leverages ratios of firms. For Belgium, the deduction appears to have decreased the degree of financial leverage significantly (Princen (2012), Panier et al. (2013)), though Campenhout and Caneghem (2013) find no impact on SME's leverage. Branzoli and Caiumi (2018) provide empirical evidence that the allowance has reduced leverage ratios in Italy, though more for older firms and smaller firms. Empirical results for Austria point in the same direction, as the tax reform in 2000 was associated with reduced long-term liabilities (Frühwirth and Kobialka, 2011).

The Belgian case suggests that the reduction in leverage coincided with increased intra-group lending within multinationals with no effects on investment (Hebous and Ruf, 2017). The implementation of an allowance for corporate equity requires a careful design to avoid any incentive to cross-border tax planning. In particular, a key challenge of such an allowance pertains to the identification of the book value of equity and its evolution over time. Further, the allowance may have substantial budgetary costs if applied to existing capital only (Zangari, 2014). In the case of Belgium, the allowance reduced the corporate tax yield by around 10% in 2008. Italy was able to limit tax planning of multinationals through an effective anti-avoidance framework and avoided pressure on budgetary costs by applying the allowance on newly issued equity capital only (Zangari, 2014).

Addressing skill shortages to unleash the full potential of Austrian SMEs

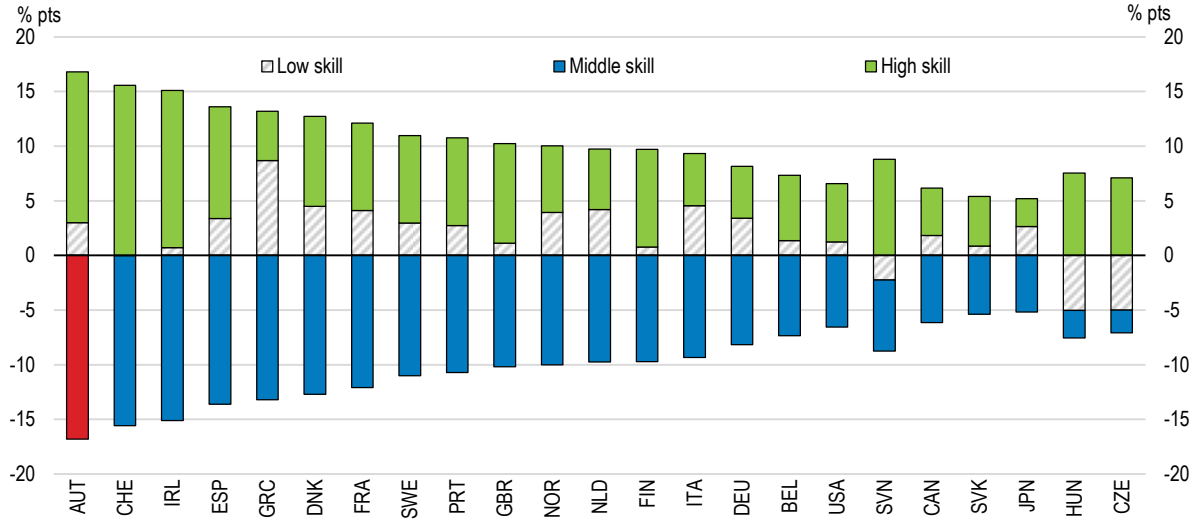
As discussed in detail in the Key Policy Insights chapter, ensuring an effective match of skills for Austrian firms will play an important role in achieving the digital transformation and in their future success in world markets. Technological progress and digitalization allow for greater scope for automation, putting some jobs at risk while also creating new types of jobs. Increased adoption of ICT technologies and new

technological discoveries put pressure on countries to develop skills in computer sciences, electronics, mathematics, physics and engineering. Although the transition towards a digital economy has been underway for nearly half a century, the pace recently became quicker (OECD, 2017) and employment in Austria has been heavily affected by technological progress and the digital transition (Figure 2.24).

Actively addressing the increased skill shortages through reforms across all education layers from early childhood to life-long education, as was intended in the government programme 2017-2022 and discussed in the previous chapter become therefore crucial for preserving the dynamism, the international competitiveness and the future performance of Austrian SMEs throughout the territory. Two aspects of the broad education reform agenda are particularly important for SMEs: upgrading digital skills and activating the skills of migrants.

Figure 2.24. Employment in Austria lost middle-skilled jobs but gained high-skilled jobs

Percentage point change in the share in total employment between1995 and 2015



Note: High-skilled occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. These are legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skilled occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. These are clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skilled occupations include jobs classified under the ISCO-88 major groups 5 and 9. These are service workers, shop and market sales workers (group 5), and elementary occupations (group 9).
Source: OECD (2017), OECD Employment Outlook 2017.

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Upgrading digital skills

Austria is among the countries where shortages of computer and electronic skills and mathematical skills are critical (see KPI). Further, according to the OECD Survey of Adult Skills (OECD, 2013), Austrians of all ages show only average proficiency with ICT skills, both at home and work. The lack of knowledge and skills related to ICT technologies constitute a major impediment to the adoption of these technologies and productivity growth. Simulations based on the empirical framework of Gal et al. (2018) illustrate, that improving skills related to the use of ICT technologies and management to the best-performing OECD country could boost productivity performance of the average Austrian firm by about 3% within a 3 year period. Managerial skills have direct and indirect effects on productivity performance through digital adoption. On the hand, good management tends to increase the probability of ICT adoption (Andrews et al., 2018). On the other hand, low levels of management skills are associated with lower productivity gains from employing ICT technologies (Gal et al., 2018). The beneficial effects on productivity from better ICT

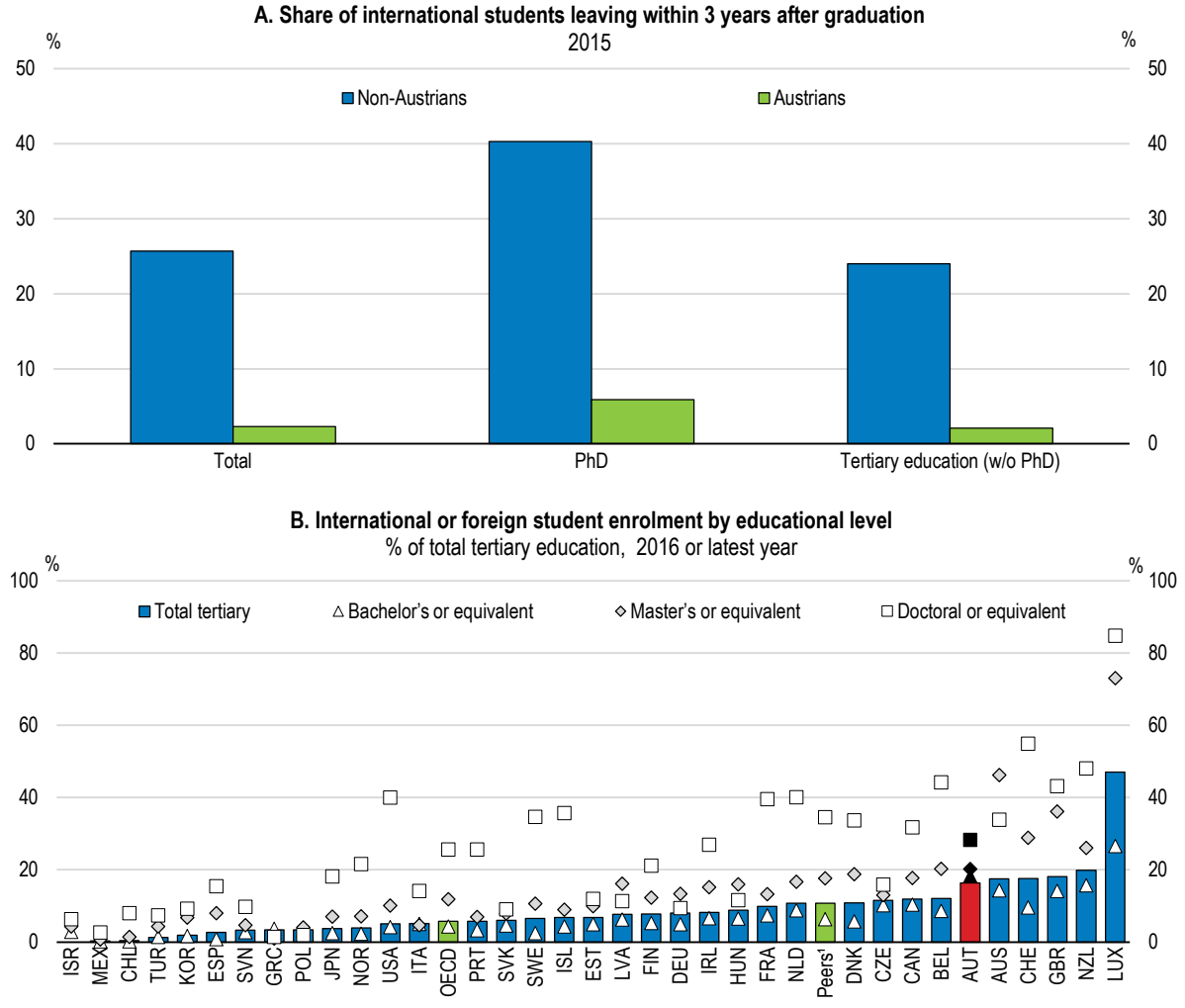
skills are larger than from other structural policies and underline the severity of the skill constraint in adaption to a knowledge economy. Recognising the need for skills related to ICT technologies in Austria, many institutes of higher education and in particular Universities of Applied Sciences involve business stakeholders in the design of the curricula (OECD, 2019c). This allows graduates from Universities of Applied Sciences to acquire skill profiles that are in line with the requirements of the regional labour market. Furthermore, also public universities have progressed in this direction by cooperating with the Chamber of Commerce and other government agencies such as regional development agencies (OECD, 2019c) The authorities are introducing additional measures to improve digital skills including the "Digital Competence Pact", which aims at building basic digital skills and the "fit4internet" program, targeted towards seniors and more experienced professionals. Given the widespread apprenticeship system in Austria, authorities also need to ensure that apprenticeship programs incorporate future needs for digital skills. In this respect, the initiative of the Federal Ministry for Digital and Economic Affairs in Summer 2018 to create the two new programs in "Coding" and "IT technology" and the modernisation of existing programs to better incorporate digital skills is welcomed.

Activating the skills of migrants

A potential pool of untapped talent, which is available today and can help to address the skill shortages of SMEs are high-skilled migrants. The difficulty of mobilising the skills of migrants can be partly explained by the lengthy and cumbersome recognition process of foreign diplomas. According to a survey conducted by Statistik Austria, 3 out of 4 non-EU workers received their qualifications outside, but only 25% apply for recognition (Statistik Austria, 2015). A new comprehensive legal Recognition Act was introduced in 2015, which helped to facilitate the transparency and efficiency of the recognition of non-EU qualifications. However, Austria is one of only few OECD countries which do not grant a legal right to have prior learning recognised. Yet some immigrants may have skills and knowledge resulting from profound work experience or other forms of learning without a formal diploma (OECD, 2017f). Moreover, the recognition of prior learning can serve as a way to identify additional training needs (OECD, 2017f) and help immigrants to address the specific skill gap. Austria can also improve on bridging programmes, which aim at improving existing, however, not yet sufficient, skills to the domestic standard. Although, bridging programmes in Austria exist, they tend not to be systematic and do not tackle all regulations (OECD, 2017f).

Austria's has a high level of international student intake, which represents a further significant, but untapped, potential to attract more high-skilled workers. International students, who cross borders for the specific purpose of studying, account for 16% of all enrolments in Austria – a share almost three times bigger as the OECD average (Figure 2.25, Panel A). Yet, only 17% of international students stay after finishing their studies in Austria, the lowest share of countries with available data (OECD, 2014). Further, the higher their final degree, the less international students stay in Austria (Figure 2.25, Panel B). For graduates from non-European countries, policymakers can address this discrepancy by facilitating the process of obtaining an employment permit. In Austria, non-EU citizens can apply for the Red-White-Red card, a combination of residence permit and employment permit, valid for two years and bundled to a specific employer. The Red-White-Red card is mainly targeted at skilled workers and shortage occupations. Graduates from non-EU countries can apply for the Red-White-Red card in a facilitated procedure. This procedure is intended to be modernized by lowering the statutory salary threshold and by eliminating the proof of accommodation needed. In particular, applicants can obtain the Red-White-Red card if they find a job, which matches their educational level, within 1 year after graduation. Austrian authorities need to analyse whether this fast-track application for graduates from non-EU countries is sufficiently attractive to retain international talent. Besides high skilled workers already residing in Austria, authorities should also optimize the search for qualified workers from abroad. In this respect, the initiative of the government to transform the national investment promotion agency ABA into a locational agency also specializing in attracting foreign high skilled workers should be pursued further. Success with these policies would help alleviate the skill shortages of many SMEs throughout the territory.

Figure 2.25. Austria attracts many international students but few stay after graduation



1. Unweighted average of Denmark, Germany, the Netherlands, Switzerland and Sweden.
Source: OECD (2018), OECD Education at a Glance 2018: OECD Indicators and Statistik Austria, Statistisches Jahrbuch "migration & integration". Zahlen.daten.indikatoren

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Business transfers can accelerate SMEs' growth

Ageing will increase the number of business transfers

Business transfers represents a critical stage in the life of a company and many Austrian firms are now reaching this point. On the one hand, business transfer constitutes an opportunity to rethink the strategy of the business, improve business processes and update the state of technology. Furthermore, business transfers provide an opportunity to take up entrepreneurship, in particular for otherwise disadvantaged groups, like women or high-skilled migrants. On the other hand, many economically vibrant businesses exit the market due a result of problematic business transfers, thereby putting employment, innovation and social inclusion at risk (OECD, 2018f). For example, in the European Union, around 450 000 SMEs change ownership annually, affecting more than 2 million employees, but up to one-third of these transfers may

not be successful, thus putting around 150 000 enterprises and 600 000 jobs at risk (European Commission, 2013).

The evidence base on business transfers and succession is generally scarce and mostly relies on employer surveys. Sufficient information on business transfers, especially for different firm typologies, sectors and entrepreneur's characteristics is missing. However, this information would be useful to identify success factors in business transfers and how structural policies can shape these factors. According to a survey conducted by the Federal Ministry of Science, Research and Economy and the Federal Economic Chamber, 45 700 SMEs will be handed over in the period 2014-2023, around one-third of all businesses (KMU Forschung Austria, 2014). There are regional disparities in the absolute numbers, as lower Austria will need to manage 7 800 business transfers but Vorarlberg only 2 400 (KMU Forschung Austria, 2014). The potential economic effects are large. Between 200 000 and 450 000 employees are likely to be affected, which constitutes a share of 5-10% of total employment (Table 2.3). The need for business transfers varies across sectors. The majority of business transfers in the 2017 period were in trade and commerce sectors, the tourism sector and ICT services (KMU Forschung Austria, 2014).

Table 2.3. Employment and turnover affected through potential business transfers in SMEs

Business economy, 2014-2023

	Affected employment (persons)	Affected average employment (persons)	Real turnover (Billions, EUR)
Burgenland	8 000	15 000	20
Carinthia	17 000	32 000	40
Lower Austria	39 000	77 000	100
Upper Austria	35 000	68 000	90
Salzburg	20 000	39 000	50
Styria	29 000	57 000	70
Tyrol	26 000	1 000	65
Vorarlberg	12 000	24 000	30
Vienna	45 000	88 000	115
Austria	231 000	451 000	580

Note: SMEs exclude firms with one person. Projection of turnover under the assumption of constant turnover growth.
Source: KMU Forschung Austria.

The high share of family owner enterprises further exacerbates the business transfer problem. Around half of all Austrian enterprises (excluding one person enterprises) are family-owned enterprises. According to EU definitions, to qualify as a family enterprise, at least one member of the family participates in the management of the company and the founding family holds the controlling rights over the company. The majority of jobs and total turnover in Austria in 2015 were provided by family enterprises (WKO, 2018). A business transfer within a family raises additional problems. Business transfer within a family need to take care of more factors than outside the family (Zehrer, 2016). First, an owner with more than one child needs to pick a potential transferee while ensuring family cohesion and sufficient provision for the other children. Second, family ties between the former and new owner likely raise problems if the former owner still tries to manage the company and is reluctant to let go (Zehrer, 2017).

The link between the involvement of family members in management in family owned enterprises and managerial quality can be beneficial but also raise some challenges. On the one hand, family involvement can go a long way in mitigating conflicts between principal and agents. Since family firms are highly exposed to their own firms in terms of ownership and much less or not at all to other firms through portfolio holdings, they profit to a greater extent from good managerial decisions but are also more affected by bad corporate decisions (Cheng, 2014). Family firms also help to address managerial myopia, as family firms

tend to have longer investment horizons compared to other shareholders (Pahnke and Weber, 2018). On the other hand, empirical evidence from firm surveys shows that management of family firms that follow succession rules based on primogeniture has significantly lower quality (Bloom and Van Reenen, 2010). The same survey further suggests that the negative effect of family internal succession on managerial quality is less severe if the set of potential successors within the family is broader, i.e. does not only include the eldest son (Bloom and Van Reenen, 2010). No significant deterioration of managerial quality is found if a family owned firm appoints a manager from outside the family (Bloom and van Reenen, 2007). However, these results may be partly explained by a different perception of responsibilities of CEOs of family-owned enterprises and a less strong emphasis on maximisation of shareholder value. Indeed, Mullins and Schoar (2016) provide survey evidence that founders and CEOs of firms with greater family involvement tend to have a greater focus on stakeholders, in particular towards their own employees and banks.

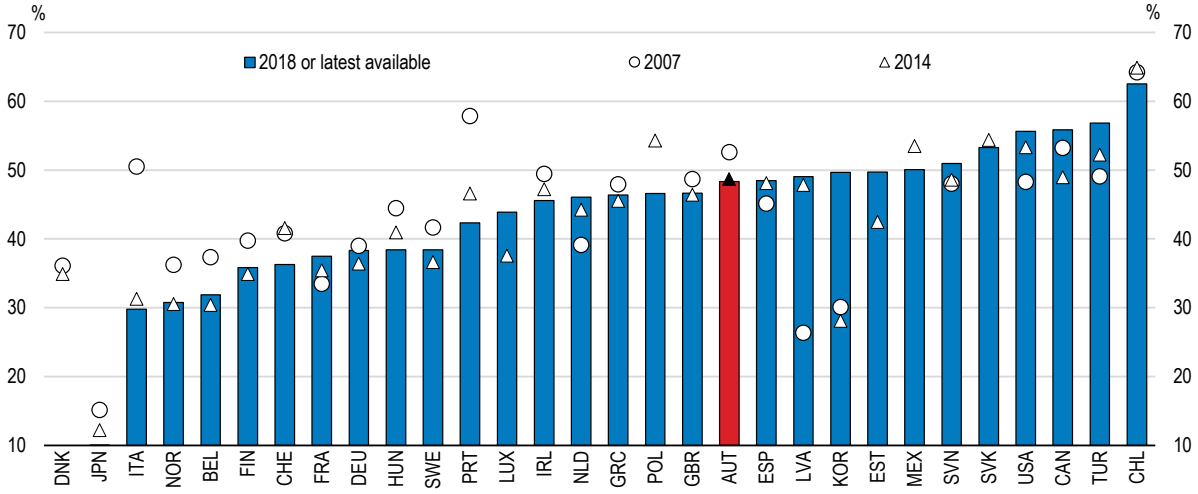
A significant number of Austrian businesses are organised under the umbrella of a foundation. According to estimates to the Federation of Austrian Foundations, around 10% of total employment in Austria is working in a foundation owned company. Initially in 1993, authorities enacted a law, the “Stiftungsgesetz”, to foster the creation of foundations and granted significant tax advantages to foundations. The underlying idea was to counteract outflows of capital and subsequent losses in employment. The law was supposed to keep family-owned enterprises within the family and thus avoided the need to split up firms in case successors could not agree on the continuation of the firm. After various changes to the “Stiftungsgesetz”, the governance of foundations appears to be too restrictive. Beneficiaries of the foundation or close family members of beneficiaries are excluded from the management of the foundations, thereby they have no control over the management of the company. This implies that the foundation can block business decisions of the management of the company if not foreseen in the initial will of the owner of the company who created the foundation. Austrian authorities should therefore take a careful look at whether the current “Stiftungsgesetz” constitutes an impediment to successful business transfers, for example by blocking transfers within and outside the family even if the current generation of beneficiaries would be in favour of it. One way to improve the governance of foundations could be to grant more controlling rights for the beneficiaries in supervisory boards, either by allowing their voting share to be greater than two thirds or by increasing their power in appointing and removing members of the board of the foundation.

Increasing the number of potential transferees

Austrians appear to have a strong entrepreneurial spirit. The share of the working-age population who considers themselves capable of start a business is among the highest across the OECD (Figure 2.26). Fewer Austrians than the OECD average express fear of failure as reason preventing them from setting up a business (Figure 2.27). In general, Austria performs well in indicators regarding early stage entrepreneurial activity, but only few Austrians considering entrepreneurship as a desirable career choice, which may reflect framework conditions for entrepreneurship and a preference for the numerous lower-risk job opportunities in existing firms (European Commission, 2018). Although, survey results based on self-evaluation need to be taken with care, total early-stage entrepreneurial activities of Austrians were above the EU average (OECD, 2017d) and thus confirm the entrepreneurial spirit of Austrians.

Figure 2.26. Austrians perceive themselves as capable for entrepreneurial activity…

Percentage of 18-64 year-old population, who believes they have the required skills and knowledge to start a business

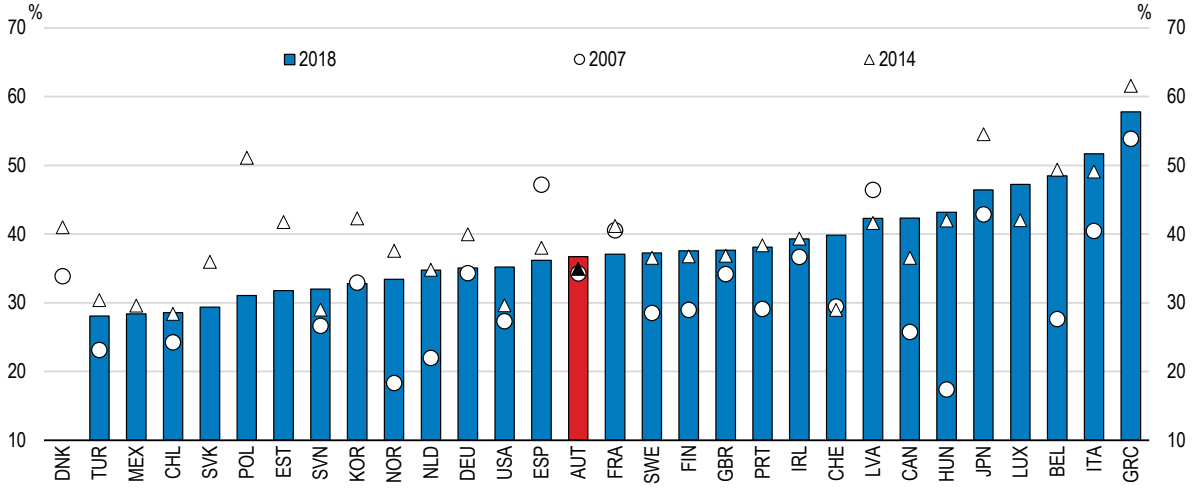


Note: Canada, Germany in 2006 for 2007 and Korea in 2008 for 2007. Korea, Latvia and Turkey in 2013 for 2014.
Source: Global Entrepreneurship Monitor (2019), Entrepreneurial Behaviour and Attitudes (database), www.gemconsortium.org/data/key-aps.

StatLink https://doi.org/10.1787/888934026126

Figure 2.27. …and have less fear of failing than elsewhere

Percentage of 18-64 year-old population, who indicates that fear of failure would prevent them from setting up a business



Note: Canada, Germany in 2006 for 2007 and Korea in 2008 for 2007. Korea, Latvia and Turkey in 2013 for 2014.
Source: Global Entrepreneurship Monitor (2019), Entrepreneurial Behaviour and Attitudes (database), www.gemconsortium.org/data/key-aps.

StatLink https://doi.org/10.1787/888934026145

Austrian women still constitute a large untapped pool of resources available for as potential transferees. Although the uptake of early-stage entrepreneurial activity of Austrian women is above the EU average (OECD, 2017d; European Commission, 2018), fewer women in Austria than elsewhere are actually self-employed with employees (OECD, 2018g). This points towards a general high interest in entrepreneurship among women in Austria, but also suggests that fewer women than elsewhere scale-up their business. Authorities need to ensure the right framework conditions for women to work as entrepreneurs. This includes sufficient child-care facilities across the country, eliminating any tax incentives for women to stay home and encouraging men to take up their part of care responsibilities over children and elderly.

Failed business transfers entail huge economic risks, for example job losses, negative spill-over effects on local suppliers and a loss of human and organisational capital. Further, pending transfers may already lead to adverse economic effects. Pending transfers may induce customers or suppliers to refrain from business deals, due to uncertainty over the firm capacity to guarantee supply in the long-term. Failed transfers also negatively affect the individual entrepreneur and their families including family wealth. Potential transferees from outside Austria and the European Union are already able to apply for the so-called Red-White-Red Card, a special form of work visa for skills needed in the Austrian economy, as self-employed key workers. In order to improve the framework conditions and facilitate business transfers, planned measures by the former government, such as the simplification of administrative procedures, the abolishment of obstacles that might occur from trade regulations and even tax reliefs should be considered.

Ensuring a supportive tax systems and sufficient financing

Austria abolished inheritance taxes in 2008. However, as discussed in greater detail in the KPI, inheritance taxes are an effective way to tackle wealth inequality, which has risen over the last decade (OECD, 2018g). Therefore, in light of the planned reform of tax systems in 2019, Austrian authorities could consider re-introducing an inheritance tax. Tax relief could be provided for business assets to avoid family-owned businesses having to be split up when the property is transferred (because recipients are forced to sell parts or all of the business to pay the tax). However, such tax relief would have to be well-targeted to prevent tax planning and abuse. In particular, the tax relief should focus on productive business assets, ensure the continuation of the business and avoid that the heirs can immediately sell business assets after the donor's death without having to pay inheritance taxes.

Business transfers entail complex tax consequences. A transfer within the family raises different tax considerations as compared to an external transfer. Internal transfers often are a mixture of gift and money exchanges, which are not taxed by income taxes. However, the new owner faces capital gains taxes assessed on the difference between market and book value. The different tax consequences aggravate the complexity of business transfers and thus may require substantive long-term planning. Here, there needs to be adequate provision of consulting services available for potential transferees. These consulting services should not only include advice on legal and tax matters, but also on communication and ahead planning of business transfers (Zehrer, 2016). Further, services related to accounting, due diligence and valuation are needed in order to ensure timely and efficient transfers.

The takeover of established businesses often requires an injection of new financial capital. Whereas 83% of all business transfers within the family did not involve any new fund raising, only 9% of all business transfers outside the family did so (WKO, 2014). The financing possibilities include mergers and acquisitions, initial public offerings, transfer of ownership to foundations, employee buy-outs or management buy-outs and buy-ins. Smaller businesses typically rely on personal resources from the owner when a transfer or selling takes place. An additional financial weakening can occur when other family members need to be paid out (OECD, 2017). The previous government considered scaling up the existing *aws* Pre-/Seed programme to provide start-ups with financing, but also with assistance and educative measures. However, these programmes should include business transfers as well and provide equity capital to transferees. In order to ensure the long-run success, the provision should be conditional on the transferee to continue to hold the business for a sufficient amount of time.

Increasing awareness for the importance of business transfers

A general awareness campaign to inform SME owners about the importance of succession planning, and potential entrepreneurs about the opportunities emerging of business transfers would help to facilitate SME business transfers. In this respect, the *Overdrachtspakket*, launched as a large-scale campaign by the Dutch Ministry of Economic Affairs serves as an example of best practice. The *Overdrachtspakket* consists of series of brochures on legal, financial and other important aspects that need to be considered and is distributed to every entrepreneur above the age of 55. Authorities have already started initiatives to increase awareness for business transfers, including the "Nachfolgebörse" (succession bourse) of the Federal Economic Chamber, which helps to connect potential transferees and business owners.

Key recommendations

Firming up the capital structure of the Austrian business sector

- Further identify and address the remaining shortages in the ecosystem for equity investments in forms of all sizes. Further draw on the completion of EU capital market union.
- As intended in the tax reform strategy of the previous government, modify corporate taxes to reduce disincentive effects and the debt-bias.

Addressing skill shortages to unleash the full potential of Austrian SMEs

- Continue to attract high-skilled foreign workers and retain more foreign graduates of Austrian universities by facilitating their access to red-white-red cards.

Business transfers as an engine for SME growth

- Take up the measure planned by the previous government to facilitate business transfers.
- Improve the evidence base on business transfers and identify factors contributing to successful business transfers by developing a publicly available firm-level database of SMEs' annual reports and information on owners.

Other recommendations

Firming up the capital structure of the Austrian business sector

- Improve the provision of equity capital by using financial literacy as a tool to boost stock market participation and financial knowledge of entrepreneurs, while ensuring that financial literacy is gender- and age-inclusive.
- Review the protection of minority shareholders and improve rules on preventing self-dealing to international standards.

Addressing skill shortages to unleash the full potential of Austrian SMEs

- Grant a legal right to have prior learning of immigrants recognised.

Business transfers as an engine for SME growth

- Facilitate business transfers by reducing regulatory and legal burdens related to transmissions.
- Ensure support for business transfers related to planning ahead and legal and financial advice, in particular targeted to small- and medium-sized family firms: Launch an awareness campaign to inform SME owners about the importance of succession planning and help disseminating best practices.

Increasing awareness of business transfers also includes improving the evidence base on business transfers. With the ultimate goal of identifying success factors in business transfer to better target policy measures, the underlying database should include data on personal characteristics of the owner merged with firm-level information for a sufficiently long period before and after a business transfer. Importantly, the database should also include information on failed business transfer in order to circumvent statistical problems related to the so-called “survivorship-bias”. Furthermore, the firm-level information needs to contain data on economic outcomes, like employment, investment in tangibles and intangibles, but also financial variables, like internal and external financing sources. In this respect, the annual “SME report” of the Federal Ministry for Digital and Economic Affairs with data on projected number of successions and the dedicated study on business transfers, which is jointly published every five years with the Federal Economic chamber, constitute first steps in this direction.

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Annex 2.A. Is there a listing gap in Austria?

Introduction

Stock markets in Austria are less well developed than in peer countries (Figure 2.15). In 2017, only 67 Austrian firms where listed on domestic stock markets compared to 137 in Denmark and 228 in Switzerland.[1] This low level of development goes hand in hand with legal framework conditions that emphasize creditor rights over debtor rights and relatively low disclosure requirements, both which have been negatively associated with firms' equity ratios (LaPorta et al., 1998). This analysis examines whether, actual number of listings in Austria are in line with expected number of listings, taken salient features of the economy and the legal framework into account. Significant differences are informative for policymakers as they may point to structural obstacles not related to framework conditions, e.g. financial literacy and investor participation in stock markets. The analysis follows an established methodology from the literature on corporate governance, in particular the models of Doidge et al. (2017) and Djankov et al. (2008) are employed.

The empirical model provides a way to compare the actual number of listings on domestic stock markets with expected listings. The number of expected listings is modelled by taking key variables into account: the legal framework pertaining to the protection of minority shareholders against expropriation by corporate insiders and the level of development of the economy, as measured by GDP per capita[2], following the seminal models of La Porta et al. (1997) and Djankov et al. (2008).

Protection of minority shareholders against expropriation from corporate insiders is measured using the anti-self-dealing index by Djankov et al. (2008). Examples of self-dealing include various forms of transfer pricing and corporate finance transactions like personal loans to insiders. Importantly, the index only captures corporate actions that respect laws regarding disclosure and approval and therefore refrains from any form of corporate crime. , i.e. the index asks the hypothetical question: "If a controlling shareholder wants to enrich himself while following the law, how difficult is it for minority shareholders to thwart such activity before it takes place and to recover damages if it does occur?" (Djankov et al., 2008). The index is based on answers to a hypothetical transaction between two companies and takes on values from 0 to 1. Higher values indicate better protection of minority shareholders against expropriation from managers and/or controlling shareholders. The answers were provided by an international association of law firms for 72 countries based on legal rules in May 2003.

The regressions results depicted in Table A.1 are consistent with Austria having abnormally few listings. The model suggests that GDP per capita is a strongly associated with listings per capita. Further, a legal framework which provides better protection against expropriation from corporate insiders is significantly positively associated with a higher number of listings. Column 2 adds an indicator for countries other than Austria. If there is a systematic difference between listings per capita and the other covariates for non-Austrian countries and Austria, this indicator would be significantly different from zero. This dummy variable for countries other than Austria shows a positive sign, suggesting that - conditional on the model – listings per capita are on average lower than elsewhere. The analysis further uses panel regressions to construct the time-varying measure of the listing gap for Figure 2.18.

Annex Table 2.A.1. Institutions, economic development, and listings per capita

Dependent variable: Log(Listings/Cap)	Cross-Sectional regressions (2016)		Panel regressions (2001-2016)		
	(1)	(2)	(3)	(4)	(5)
Log(GDP/Cap)	0.665***	0.677***	0.653***	0.653***	0.661***
	(0.101)	(0.102)	(0.085)	(0.086)	(0.088)
Anti Self-Dealing Index	1.239**	1.167*	1.400**	1.400**	1.378**
	(0.597)	(0.616)	(0.536)	(0.540)	(0.551)
GDP Growth			-0.008	-0.008	
			(0.022)	(0.022)	
Non-AUT Dummy		0.704***	0.419*	0.472**	0.478**
		(0.230)	(0.215)	(0.220)	(0.222)
Constant	-4.685***	-5.479***	-4.686***	-4.737***	-4.829***
	(1.042)	(1.112)	(0.922)	(0.924)	(0.939)
Year FE			N	Y	Y
Year FE x non-AUT dummy			N	N	Y
Observations	54	54	958	958	958
R-squared	44.78%	45.27%	45.26%	45.27%	45.27%

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10
Source: OECD calculations.

The listing gap depends critically on the modelling of the number of expected listings. The analysis of Doidge et al. (2017) is extended to check whether the key finding, that Austria has abnormally few listings, is robust to changes in the model specification and variables employed, including using different indicators and additional control variables.

First, given that the anti-self-dealing index is based on data from 2003 (Djankov et al. 2008), the subsequent analysis will test the robustness of the main finding using a different, more timely, proxy for the legal framework related to stock markets to elicit whether Austria's listing gap is sensitive to this variable. Here, the analysis uses the 2014/2015 index of general protection of minority investors from the World Bank Doing Business Survey. This index encompasses regulations related to self-dealing but also other measures related to the protection of minority investors. Higher values indicate better protection of minority investors.

Second, three additional variables are introduced: domestic credit to private sector per cent of GDP, the depth of credit information index, and the rule of law index. The first indicator is regarded as a measure of a financial development in terms of size. The second indicator measures rules and practices affecting the coverage, scope and accessibility of credit information. Higher values indicate better credit information and tend to be associated with more developed credit markets and less well-developed equity markets. All indicators come from the World Bank's World Development Indicators or Doing Business Database.

The additional regressions show that the finding of abnormally few listings in Austria is robust to a different proxy for minority protection and other control variables. As expected, the index of minority protection is positively associated with listings. However, adding rule of law renders the coefficient estimate for GDP per capita and minority protection insignificant. Framework conditions related to the disclosure of credit information tend to be negatively associated with listings, although the level of domestic credit to the private sector appears to drive the number of listings. However, domestic credit is not significant any more once rule of law enters the specification, suggesting that it is not the level of domestic credit which matters but rather the overall level of development.

Across all specifications, the estimated coefficient on the dummy for other countries than Austria remains strongly significant and positive, implying that Austria has abnormal few listings. This results holds even when the level of development of the economy, legal framework conditions pertaining to stock markets as identified in the previous literature (Djankov et al., 2008), overall institutional quality and other control variables are taken into account. In the cross-sectional regressions, the coefficient estimates range from around 0.7 to 1.5, suggesting that if Austria were like the OECD average, it would have 72-250 listings more.

Annex Table 2.A.2. Robustness: Cross-sectional regression model estimates

	(1)	(2)	(3)	(4)	(5)
Log(GDP/Cap)	0.7126***	0.5522***	0.1879	0.1722	0.2387
	(0.0857)	(0.0921)	(0.1445)	(0.1433)	(0.1441)
Index protection minority investors	0.0205**	0.0185**			0.0128
	(0.0096)	(0.0092)			(0.0092)
Index depth credit info	-0.1792***	-0.1658***	-0.0801	-0.0834*	-0.1212**
	(0.0583)	(0.0538)	(0.0512)	(0.0493)	(0.0542)
Domestic credit to private sector / GDP		0.0063**		0.0053*	0.0039
		(0.0026)		(0.0032)	(0.0030)
Rule of Law			0.8495***	0.6606***	0.5592**
			(0.2140)	(0.2256)	(0.2279)
Non-AUT dummy	1.0763***	0.8162***	1.5123***	1.1820***	1.1569***
	(0.1748)	(0.1863)	(0.2293)	(0.2618)	(0.2520)
Constant	-5.7321***	-4.4853***	-0.9113	-0.8170	-1.8453
	(1.1551)	(1.1177)	(1.2308)	(1.2137)	(1.3946)
Observations	73	70	73	70	69
R-squared	42.3%	44.3%	47.8%	48.4%	46.8%

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10
Source: OECD calculations.

Notes

1. Data source: World Bank Development Indicators. Data refers to end-of-year 2017.

2. GDP per capita based on purchasing power parity in constant 2011 USD.

OECD Economic Surveys

AUSTRIA

Austrian citizens enjoy high living standards, well-being and social cohesion. Until the ongoing global slowdown, robust employment growth in the private sector kept domestic demand and investment remarkably robust. More people moved into work and inward migration has been strong. At the same time, new challenges related to social cohesion challenges have emerged, as increased skill differences in the population and diverging productivity performance across firms have generated a higher range of outcomes for job quality and market wages than in the past. Myriad entrepreneurial firms across all regions should better adapt to new megatrends of ageing, globalisation and digitalisation. While small-and-medium sized firms are generally more productive, export more, and engage more in higher technology activities than in comparable countries, they need to adapt to maintain this good performance. Their capital structures are biased towards debt, and stronger equity, growth and venture capital markets would provide them with further resources for their long-term knowledge based investments. Important skills shortages, in particular in advanced digital technologies, should be overcome. As around one third of all SMEs are up for ownership transmission, ensuring successful business transfers will be crucial for maintaining broad-based entrepreneurial dynamism. Meeting these challenges would also help lift the constraints on upscaling that many SMEs face and would provide more fruitful soil for future innovative activities.

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