OECD Economic Surveys
SWEDEN

JULY 2021

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OECD Economic Surveys: Sweden 2021

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Please cite this publication as:
OECD (2021), *OECD Economic Surveys: Sweden 2021*, OECD Publishing, Paris, *https://doi.org/10.1787/f61d0a54-en*.

ISBN 978-92-64-95276-8 (print)
ISBN 978-92-64-40539-4 (pdf)

OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Sweden
ISSN 1995-3380 (print)
ISSN 1999-0448 (online)

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Corrigenda to publications may be found on line at: *www.oecd.org/about/publishing/corrigenda.htm*.

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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 Sweden were reviewed by the Committee on 10 May 2021. The draft report was then revised in light of the discussions and given final approval as the agreed report of the whole Committee on 10 June 2021.
The Secretariat's draft report was prepared for the Committee by Christophe André, Jinwoan Beom and Mathilde Pak, under the supervision of Vincent Koen. Research assistance was provided by Natia Mosiashvili and Axel Purwin, and editorial support by Sisse Nielsen.
The previous Survey of Sweden was issued in March 2019.
Information about the latest as well as previous Surveys and more details about how Surveys are prepared is available at www.oecd.org/eco/surveys

BASIC STATISTICS OF SWEDEN, 2019*

(Numbers in parentheses refer to the OECD average)**

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	10.3		Population density per km² (2018)	25.0	(38.1)
Under 15 (%)	17.6	(17.9)	Life expectancy at birth (years, 2018)	82.6	(80.1)
Over 65 (%)	20.2	(17.1)	Men (2018)	80.9	(77.5)
International migrant stock (% of population)	20.0	(13.3)	Women (2018)	84.3	(82.8)
Latest 5-year average growth (%)	1.2	(0.6)	Latest general election	September 2018	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	532.0		Agriculture, forestry and fishing	1.6	(2.6)
In current prices (billion SEK)	5 028.7		Industry including construction	25.0	(26.8)
Latest 5-year average real growth (%)	2.5	(2.2)	Services	73.4	(70.6)
Per capita (000 USD PPP)	55.1	(48.3)			
GENERAL GOVERNMENT (Per cent of GDP)					
Expenditure	49.3	(40.6)	Gross financial debt (OECD: 2018)	46.5	(107.6)
Revenue	49.9	(37.5)	Net financial debt (OECD: 2018)	-37.7	(67.8)
EXTERNAL ACCOUNTS					
Exchange rate (SEK per USD)	9.45		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	8.88		Machinery and transport equipment	38.8	
In per cent of GDP			Manufactured goods	16.7	
Exports of goods and services	47.7	(54.2)	Chemicals and related products, n.e.s.	12.8	
Imports of goods and services	43.6	(50.6)	Main imports (% of total merchandise imports)		
Current account balance	5.1	(0.3)	Machinery and transport equipment	37.1	
Net international investment position	18.5		Manufactured goods	12.6	
			Miscellaneous manufactured articles	11.6	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15-64, %)	77.1	(68.8)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	6.8	(5.4)
Men	78.8	(76.3)	Youth (aged 15-24, %)	20.1	(11.7)
Women	75.4	(61.4)	Long-term unemployed (1 year and over, %)	0.7	(1.4)
Participation rate (aged 15-64, %)	82.9	(72.8)	Tertiary educational attainment (aged 25-64, %)	44.0	(38)
Average hours worked per year	1,452	(1,726)	Gross domestic expenditure on R&D (% of GDP, 2018)	3.3	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe)	4.6	(3.9)	CO_2 emissions from fuel combustion per capita (tonnes)	3.2	(8.3)
Renewables (%)	40.8	(10.8)	Water abstractions per capita (1 000 m³, 2015)	0.2	
Exposure to air pollution (more than 10 g/m³ of $PM_{2.5}$, % of population)	1.6	(61.7)	Municipal waste per capita (tonnes)	0.5	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2018, OECD: 2016)	0.275	(0.31)	Education outcomes (PISA score, 2018)		
Relative poverty rate (%, 2018, OECD: 2016)	8.9	(11.4)	Reading	506	(487)
Median disposable household income (000 USD PPP, 2018, OECD: 2016)	31.7	(24.4)	Mathematics	502	(489)
Public and private spending (% of GDP)			Science	499	(489)
Health care	10.9	(8.8)	Share of women in parliament (%)	47.3	(30.7)
Pensions (2017)	9.4	(8.6)	Net official development assistance (% of GNI, 2017)	1.0	(0.4)
Education (% of GNI, 2018)	7.3	(4.5)			

* The year is indicated in parenthesis if it deviates from the year in the main title of this table.

** Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.

Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation, International Monetary Fund, United Nations, World Bank.

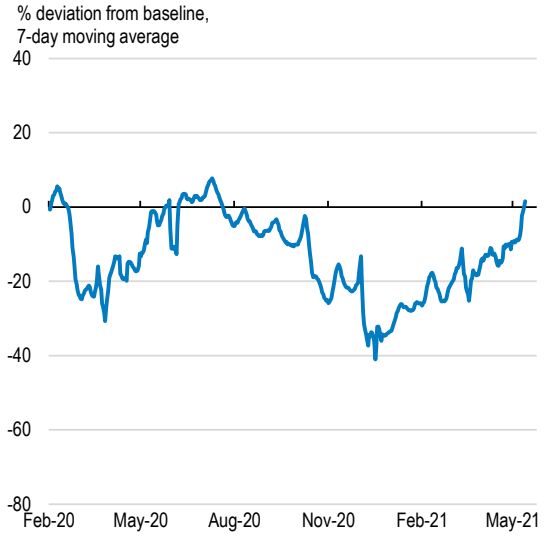
Executive summary

The pandemic has taken a heavy toll

The COVID-19 pandemic drove the country into a severe recession, despite resolute policy action to protect households and businesses. Vaccination will support the recovery, but risks remain.

Infection rates have been high. Despite softer distancing measures than in most other OECD countries, the pandemic has hampered economic activity, notably in sectors requiring face-to-face interactions (Figure 1). The latest infection wave is coming under control only slowly, despite the introduction of stricter distancing measures.

Figure 1. Mobility trends in Sweden



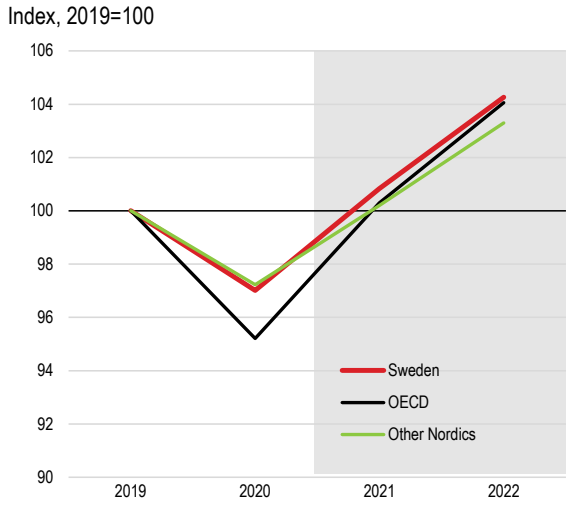
Note: Mobility for retail and recreation. Comparison relative to a baseline day before the pandemic outbreak. Baseline days represent the median value for that day of the week over the five-week period from 3 January to 6 February 2020.
Source: Google LLC, Google COVID-19 Community Mobility Reports.

StatLink https://stat.link/3ahju6

The economy has shrunk. Output shrank by about 8% (q-o-q) in the second quarter of 2020 and 3% for 2020 as a whole (Figure 2), which is in line with the performance of the other Nordics.

While industrial production rebounded after disruptions in supply chains in the spring of 2020, service activity remains muted, as the pandemic lingers, hampering face-to-face interactions. GDP is expected to recover gradually when distancing measures are eased. Private consumption will be supported by high savings, but its growth may remain subdued due to uncertainty and higher unemployment (Table 1).

Figure 2. GDP is picking up after a sharp fall



Note: Other Nordics is an unweighted average of Denmark, Finland and Mainland Norway.
Source: OECD Economic Outlook 109 database.

StatLink https://stat.link/spfbdj

Table 1. The economy is bouncing back

Volume % change, unless otherwise specified

	2020	2021	2022
Gross domestic product	-3.0	3.9	3.4
Private consumption	-4.7	3.2	4.6
Gross fixed capital formation	0.3	4.8	4.3
Exports	-5.6	10.7	4.6
Imports	-6.2	9.3	5.0
Unemployment rate (% of labour force)	8.3	8.4	7.5
Inflation (CPIF[1])	0.5	1.7	1.4
Current account balance (% of GDP)	5.2	6.4	6.2
General government budget balance (% of GDP)	-3.1	-3.3	-1.6

1. CPI with fixed mortgage rate.
Source: OECD Economic Outlook 109 database.

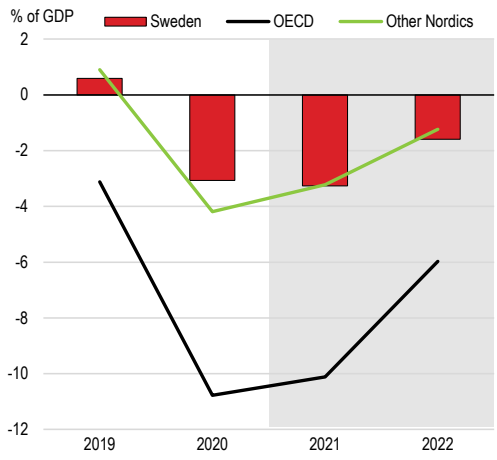
Vaccines offer hopes for a return to normal life, which would boost the recovery, but uncertainty remains high. Possible setbacks in vaccination campaigns and the spread of new variants of the virus could delay the recovery. As a

small open economy, Sweden is exposed to global trade tensions and with a large banking sector highly reliant on wholesale funding, it is vulnerable to international financial turbulences.

Fiscal policy has propped up the economy. Fiscal space, with gross government debt at around 35% of GDP before the crisis, has been appropriately used to damp the recession. The budget balance moved from a small surplus in 2019 to a deficit of more than 3% of GDP in 2020 and 2021, which provides strong support to the economy, even though it is relatively small by OECD standards (Figure 3). Fiscal policy needs to continue supporting businesses and households affected by the pandemic.

Figure 3. Fiscal policy is expansionary

Government net lending



Note: Other Nordics is an unweighted average of Denmark, Finland and Mainland Norway.
Source: OECD Economic Outlook 109 database.

StatLink https://stat.link/2sxk54

Monetary policy is highly expansionary. The Riksbank projects that its policy rate will stay at zero until at least end-2023 and has stepped up its bond buying programme in response to the pandemic. It has also provided ample liquidity to stabilise the markets and support for lending. As inflation is projected to be below target for the foreseeable future, continued monetary accommodation is appropriate. The scope for further loosening is limited, as negative policy rates may lower bank rates only marginally, the size of the government bond market is limited and mortgage and corporate bond-buying could fuel excessive risk taking, notably in property markets.

Some financial vulnerabilities remain. The banking sector is solid, although interconnectedness and reliance on wholesale funding create vulnerabilities. Household debt is high and housing prices are rising rapidly. In response, the mortgage amortisation requirement, which was lifted during the pandemic, will be reinstated in September 2021. If fast housing price increases continue, macroprudential policy should be tightened. The banking system is also exposed to potential losses from commercial real estate, which faces heightened uncertainty in the wake of the pandemic.

Policy needs to lay the foundations for a sustainable recovery

Labour market adjustment calls for reforms. Ongoing improvements in the insolvency framework will ease firm restructuring. Sweden should capitalise on its strengths in digitalisation and environmental policies to boost productivity and further green growth.

Unemployment was rising even before the pandemic. Sweden was suffering from labour market mismatch, with unfilled vacancies coinciding with high unemployment for low-skilled workers and immigrants. The pandemic has exacerbated this problem, particularly for temporary and non-standard workers, as many vulnerable workers usually hold jobs requiring face-to-face interaction. Unemployment has risen further despite a generous short-time work scheme.

Investment in skills is more important than ever. In response to the crisis, the government has allocated additional funds to increase the number of places in education. Measures taken in recent years to improve education outcomes are starting to bear fruit. Nevertheless, vocational education and training is still considered less attractive by prospective students and matches employer needs less well than in the best performing OECD countries, which calls for reinforcing coordination between public authorities, schools and firms. Strengthened cooperation with the social partners

would also help address re-skilling and up-skilling needs, which the pandemic has increased due to digitalisation and structural change.

Improvements in the insolvency framework could facilitate smooth business restructuring. The transposition of the European Commission Preventive restructuring directive approved by the EU Council in June 2019 into Swedish legislation should facilitate early-stage restructuring.

Broad labour market reforms will increase flexibility and security. The social partners have agreed on a package of reforms to enhance flexibility, adaptability and security, which the government plans to implement by mid-2022. The reform will reduce the gap in employment protection between permanent and temporary workers, develop opportunities for retraining and re-skilling and strengthen unemployment insurance.

Easing rent control for new dwellings is part of the government programme. Over time, the reform would raise the dwelling stock, lower housing prices and facilitate labour mobility, notably for low income households.

Digitalisation offers opportunities to boost productivity. The pandemic has accelerated the move towards on-line activities, in which Sweden was already a frontrunner. The government is raising investment to extend the coverage of broadband to rural areas. However, the share of tertiary graduates in ICT and data analysis is rather low, which contributes to holding back the diffusion of big data analysis and limits firms' digital and data-driven innovation. While business R&D expenditure is among the highest in the OECD as a share of GDP, ICT accounts for a relatively small part. Overly frequent security breaches undermine trust in ICT tools, potentially slowing their adoption.

Sweden has long been a leader in the fight against climate change. Carbon emissions per capita have been declining steadily since the 1970s and Sweden has set the ambitious objective of net zero carbon emissions by 2045. An independent climate policy council monitors the adequacy of policies to meet the climate goals.

Having picked the low-hanging fruit in reducing greenhouse gas emissions, further progress is challenging. Road transport, industry and agriculture are the largest greenhouse gas emitters. The carbon tax rate for industries outside the EU Emissions Trading System (EU ETS) is now aligned on the general rate. The government supports ambitious and risky projects for decarbonising industry, for example through green credit guarantees. However, it lacks a clear roadmap for achieving CO_2 emission reduction in road transport in a cost-efficient way and to reduce emissions from agriculture.

Regional disparities are widening

Geographic inequalities have become more pronounced, requiring policy adjustments.

Regional inequality is low by OECD standards, but has been rising over the past decades, fuelling discontent in parts of the country whose inhabitants feel left behind. Large cities attract an increasing share of the younger population and enjoy higher productivity growth, while providing adequate public services to an ageing population is increasingly challenging in rural areas.

Central government grants and fiscal equalisation support equal access to services around the country. However, the fiscal equalisation system and state grant design could be improved. Moreover, digitalisation could be used more effectively to enhance public service provision, including through developing further the public infrastructure for data and information sharing.

Regional growth could be promoted further, in particular by strengthening the role of universities in regional knowledge and innovation networks and reinforcing urban-rural connectivity. This would create more economic opportunities for local and regional development and help foster well-being and social cohesion.

MAIN FINDINGS	KEY RECOMMENDATIONS
Buttressing livelihoods and demand	
Many economic branches, especially those requiring face-to-face interaction, and their workers still suffer from the COVID-19 crisis.	Maintain support measures, such as reinforced short-time work and compensation for lost turnover, until the COVID-19 pandemic subsides.
Fiscal policy supports the economy. As the recovery will be gradual and will require resource reallocation, continued fiscal support will be needed to ensure a solid recovery.	Maintain strong fiscal policy support until the recovery is well established and gradually move back towards the budget surplus target over the medium term.
The zero policy rate and measures to improve liquidity and facilitate lending have stabilised the financial system and support the recovery.	Maintain accommodative monetary policy until inflation is durably close to target, with activity on course to expand at a robust pace.
Housing prices and household debt are rising rapidly. The mortgage amortisation requirement was lifted early in the pandemic, but will be reinstated from September 2021.	If household debt continues to rise rapidly, tighten macroprudential policy.
Implementing reforms to support growth and employment	
The social partners have reached an agreement for broad labour market reforms, introducing more job flexibility and security, to be implemented by mid-2022.	Implement the labour market reforms agreed by the social partners.
The tax wedge on labour remains high despite some shift towards environmentally-related taxation. Existing property taxation arrangements are regressive and raise housing prices.	Shift taxation further away from labour and towards environmentally-related taxes and recurrent taxes on immovable property, including through phasing out mortgage interest deductibility.
Ageing will push up government spending and reduce labour supply over time in the absence of reforms.	Implement the pension reform which raises the maximum age for the right to remain in employment and the minimum ages for receiving state old-age and basic pensions in line with developments in life expectancy.
Strict rental regulations tend to discourage mobility, notably for low-income households, and may contribute to spatial segregation.	Ease rental regulations to incentivise rental housing supply, while maintaining tenant protection against abuse.
Inefficient land-use planning and low incentives for municipalities to encourage construction contribute to housing shortages, which reduce affordability and labour mobility, despite useful recent measures to release land for development and speed up planning processes.	Enhance co-operation between central and local government in land-use planning and increase incentives for municipalities to facilitate the timely release of development land. Simplify land-use planning procedures, balancing economic, environmental and social considerations.
Skills mismatch generates unemployment, particularly for the low-skilled and foreign born, whose position is further weakened by the COVID-19 crisis.	Strengthen adaptation of vocational education and training to labour market needs by reinforcing regional coordination structures.
Strengthening gender equality	
The employment rate of foreign-born women is much lower than that of natives.	Mainstream the pilot Equal Establishment programme for foreign-born women.
Greening growth	
Road transport accounts for about a third of total greenhouse gas emissions. The government has taken several steps to reduce emissions from the sector, but a clear overall strategy is still missing.	Elaborate a roadmap for cost-efficient and technology-neutral decarbonisation of road transport.
Fuels used by agricultural, forestry and fishery machinery generate sizeable CO_2 emissions and benefit from reduced carbon and energy tax rates.	Phase out reductions in carbon and energy taxes for fuels used in agriculture, forestry and fisheries.
Keeping regional inequality in check	
The share of earmarked grants has increased over recent years. These grants are in some cases narrowly targeted and short-term, which makes efficient use challenging.	Limit the use of earmarked grants to strategic areas. Avoid excessively narrowly targeted and short-term grants.
The fiscal equalisation system is complex and generally perceived as lacking transparency. A commission reviews the system every five or six years, but monitoring and discussion between reviews is limited.	Simplify the fiscal equalisation system and/or increase transparency. Introduce monitoring on an ongoing basis to facilitate adjustments.
Digital tools offer potential for providing better services and raising efficiency. User demand looks strong, notably in health and education. Digital capabilities vary widely across local authorities.	Develop further on-line public services delivery. Enhance the public infrastructure for data and information sharing.
Universities contribute to a varying degree to regional development by fostering and helping retain local talent and by strengthening competitiveness and business dynamism through participation in local research and innovation networks.	Strengthen incentives and support to raise the contribution of universities to regional knowledge and innovation.
Strategic spatial plans and coordination between government entities and with other stakeholders are insufficiently developed. Coherent development plans could increase job and business opportunities within functional labour market areas.	Strengthen multi-level governance, including coordination of sector policies and cooperation between government entities and other stakeholders, to enhance strategic cooperation for regional development.

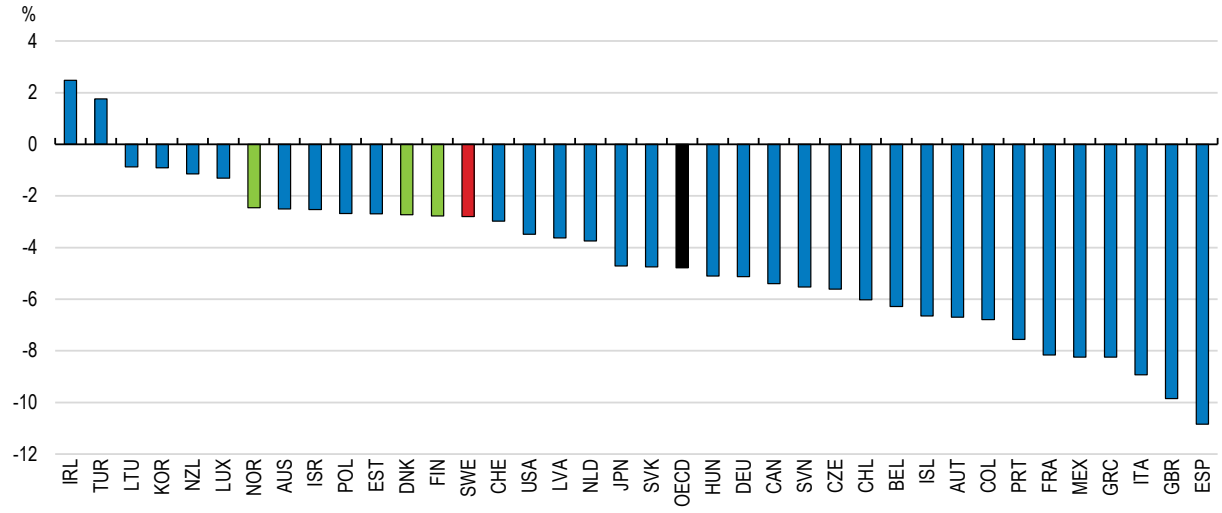
1 Key policy insights

COVID-19 has hit the economy hard

GDP is gradually recovering after a plunge of about 8% in the second quarter of 2020, due to pandemic-related distancing measures and reduced mobility, as well as plant closures. The automotive industry was particularly affected, including through disruptions in global value chains, notably by missing inputs from China. Despite the adoption of softer distancing measures, especially during the first COVID-19 wave, Sweden's output contraction in 2020 was broadly similar to that of its Nordic neighbours, albeit somewhat milder than in most of Europe (Figure 1.1). GDP bounced back 6.4% in the third quarter, with a strong recovery in industrial production, pulled by rising exports, while service activity remained weak. The second COVID-19 wave in the autumn had a minor impact on industry, but the tightening of restrictions on activity dealt a further blow to services.

Figure 1.1. GDP contracted less than in many other OECD countries

Real GDP growth, 2020



Note: Mainland GDP for Norway.
Source: OECD Economic Outlook database.

StatLink https://stat.link/yhn1lr

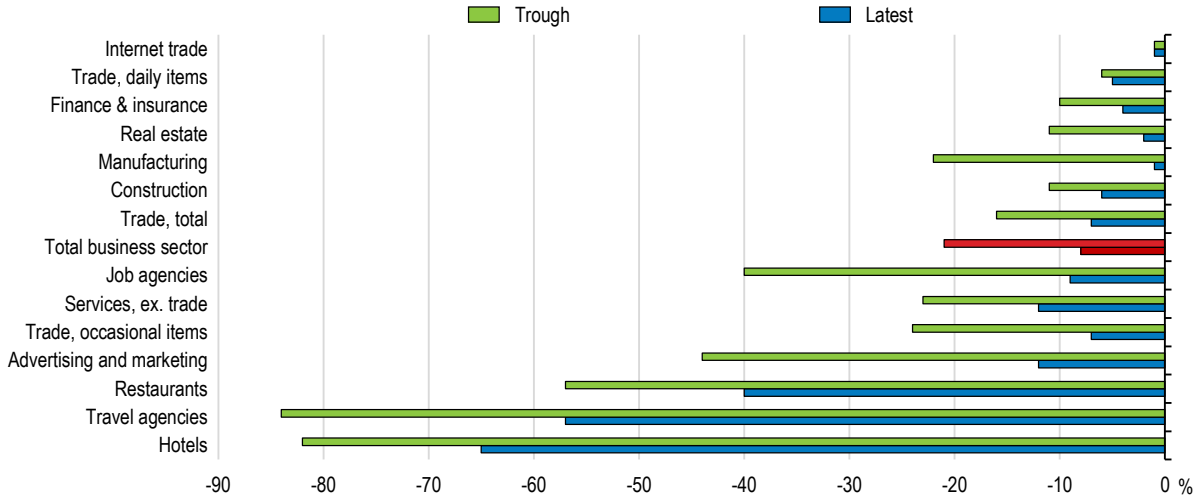
Sizeable fiscal and monetary expansion has been decisive in protecting households and keeping businesses afloat. Several relief measures were extended to 2021 and complemented by other steps to mitigate the lasting effects of the pandemic. Nevertheless, unemployment has risen, despite the extensive use of the short-time work scheme, and activity remains well below normal levels, especially in sectors requiring face-to-face interaction (Figure 1.2). As the pandemic lingers, return to normal activity will be slow. Furthermore, the pandemic has hit the most vulnerable, particularly those relying on temporary jobs, most severely and has accelerated economic restructuring, notably towards on-line activities. Digitalisation

and the move towards a greener economy offer great opportunities to boost productivity, but the transition will require adaptation efforts and investments in education and infrastructure, which the government needs to support. Regional inequality, albeit low in OECD comparison, has been rising over the past decades, which calls for upgrading the sub-national government fiscal framework, enhancing public service efficiency and promoting regional convergence further. Against this background, the key messages of this Survey are:

- Continue to support, in a targeted manner, people and businesses severely affected by the pandemic until the COVID-19 pandemic subsides.
- Implement the labour market reforms agreed by the social partners to support employment.
- Lay the foundations for a sustainable recovery throughout the country by promoting digital and green developments, both through direct public investment and enhancing conditions for private investment. Strengthen multi-level governance and strategic cooperation between government entities, as well as the role of universities as knowledge hubs, to support regional development.

Figure 1.2. Activity remains very low in some sectors

Percentage loss in sales compared to normal



Note: Latest refers to 10-12 May 2021. Trough refers to the minimum value in bi-monthly surveys since 11-13 May 2020.
The percentage loss in sales has been calculated by taking the midpoint of the response options: reduced by 1–25, 26–50 etc.
Source: National Institute of Economic Research.

StatLink https://stat.link/d1xwue

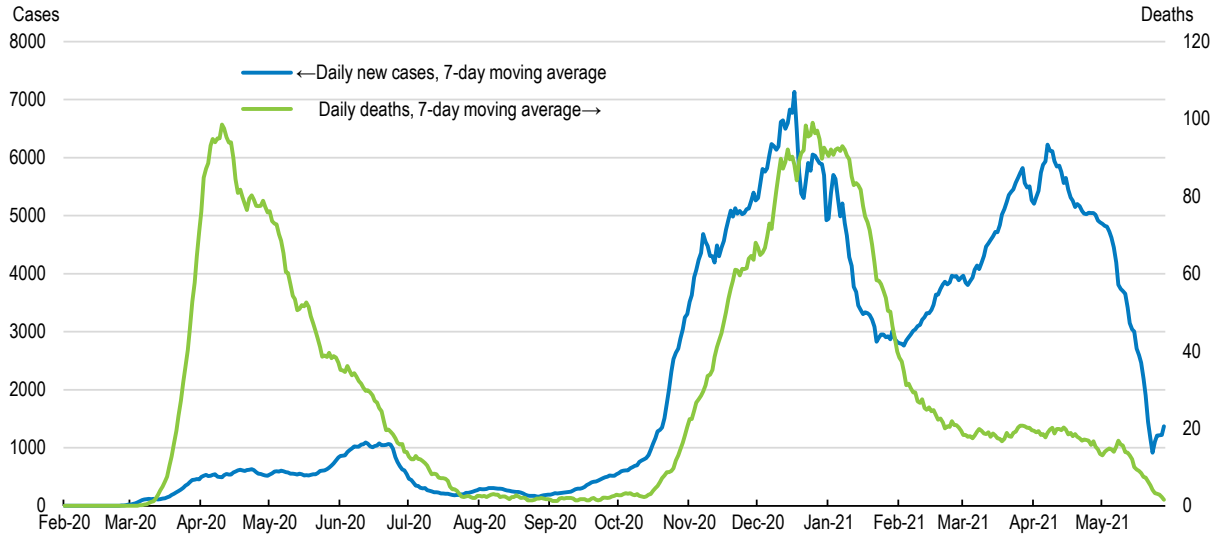
Vaccines bring hope for a gradual return to normality

Sweden's first COVID-19 case was reported on 4 February 2020 and the number of cases increased until July, especially in the capital region and other densely populated cities, with a high concentration of casualties in nursing homes (Swedish Government, 2020b). The first wave of the pandemic was contained without going into lockdown. COVID-19 mortality rates exceeded the EU average slightly and were much higher than in the other Nordic countries. The number of deaths in the second wave of the pandemic peaked at a level roughly similar to that of the first wave. Excess mortality in 2020 compared to the 2016-19 mean, was below the EU average, albeit higher than in the other Nordic countries (Eurostat, 2021). To address the second wave, Sweden introduced stricter distancing measures. Vaccination began in late 2020, bringing hopes for a gradual return to normal economic conditions.

In the first half of 2020, Sweden sought to keep more of society open than other European countries to contain the spread of COVID-19 in a sustainable manner, taking into account the high uncertainty surrounding the duration of the pandemic. The overarching goal of the authorities was to safeguard lives and health, by reducing the spread of the virus and flattening the contamination curve, rather than to achieve herd immunity (Swedish Government, 2020a). The strategy relied both on recommendations (e.g. teleworking and online education for students above 16) and legally-binding measures (e.g. ban on events gathering more than 500 and later 50 persons and on visits to elderly care homes, distancing restrictions in restaurants, shops and public transport). Most schools up to grade nine and nurseries remained open, while upper-high schools for children over 16 and universities switched to online classes. While people were urged to work from home and keep distancing from each other, most businesses, including shops, bars, restaurants and gyms remained open, albeit with restrictions. The authorities did not impose wearing masks in public. The first wave of infections was brought under control during summer 2020, with the number of daily infections dropping to below 100 by August 2020 (Figure 1.3).

Figure 1.3. The number of new infections has fallen only recently

New daily cases and deaths in Sweden, 7-day moving average



Source: Public Health Agency in Sweden.

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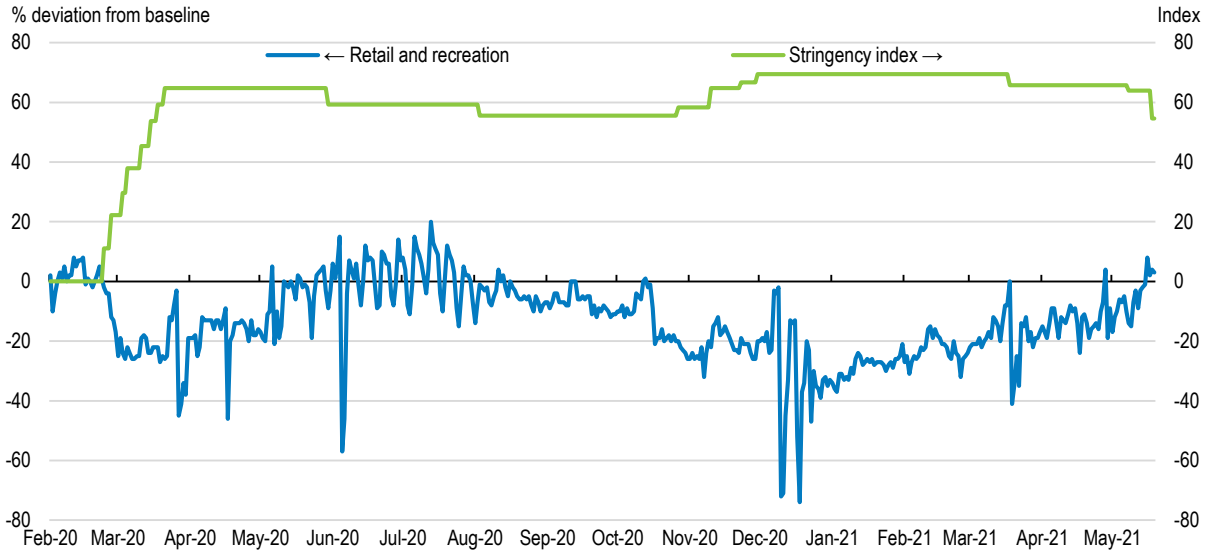
From late October 2020, COVID-19 infections spread again and the recorded infection caseload rapidly exceeded that of the first wave, though this largely reflects more widespread testing. The daily death toll also matched that of the first wave. As pressure on hospital intensive care units mounted, tougher restrictions were introduced. On 18 December, the sale of alcohol after 8pm in restaurants and bars was prohibited. People were urged to wear face masks on public transport at rush hours from 7 January 2021 and to stay at home when a family member was infected. Although Sweden resisted the temptation to lock down, these stricter restrictions sharply reduced business activity. Mobility trends for retail and recreation activities, such as restaurants, cafés, shops and museums dropped to almost 30% below their February 2020 level (Figure 1.4). In January 2021 the Swedish parliament passed a new pandemic law, which gives the Swedish health authorities powers to impose tougher measures on the public to address the virus spread, including reducing business hours, limiting visitor numbers in shops and other public places, and closing business activities.

Figure 1.4. Mobility dropped sharply during the second wave



Note: The Oxford Government Response Stringency Index captures the strictness of 'lockdown style' policies that primarily restrict people's behaviour. It is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response). Mobility change is a comparison relative to a baseline day before the pandemic outbreak. Baseline days represent the median value for that day of the week over the five-week period from 3 January to 6 February 2020.
Source: Google LLC, Google COVID-19 Community Mobility Reports; Hale, T. et al. (2020), Oxford COVID-19 Government Response Tracker, Blavatnik School of Government.

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Vaccination began in late December 2020 and the authorities aim to vaccinate all adults and all children under 18 who are considered at high risk of serious illness by August 2021 (Public Health Agency of Sweden, 2020a). The government covers the vaccine costs. People considered at high risk of serious illness or death are vaccinated first. They include those who live in elderly care facilities, those who receive home care, health care workers and close household contacts to people in home care (Public Health Agency of Sweden, 2020b). The vaccination of the most vulnerable seems to have strongly contributed to lowering mortality since early 2021. Insofar as the epidemiological situation allows easing distancing measures, normal life will resume and the economy will rebound, although scars are likely to remain for the most affected sectors and individuals. On 27 May 2020, the government announced a step-by-step lifting of distancing measures, starting in June and with most restrictions expected to be removed by September.

Growth is picking up but uncertainty remains high

The economy will gather momentum when the COVID-19 outbreak is brought under control and restrictions are eased (Table 1.1). If vaccination plans are implemented as foreseen, the situation could normalise gradually after the summer. Fiscal and monetary policy should nonetheless continue to support the economy. As distancing measures are lifted, pent-up demand and high savings will drive private consumption up. In addition, wages, which were largely frozen in 2020 due to the pandemic-related postponement of wage bargaining negotiations from the spring to the autumn, will increase, albeit at a relatively modest pace. The collective wage agreement reached in October 2020 sets a benchmark increase of 5.4% over 29 months, amounting to a 1.8% per year rise over the three-year period to March 2023. Nevertheless, high unemployment and lingering uncertainties may dampen the rebound in

consumption. Improvement in employment will also be slow, as employers will raise working hours of existing employees before hiring. The recovery is likely to be slow in some sectors, especially those related to international travel. Exports of goods have largely normalised and should strengthen as demand from neighbouring countries rises. However, limited travel and international transport activity will still hamper the exports of services for some time.

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume, unless otherwise specified[1]

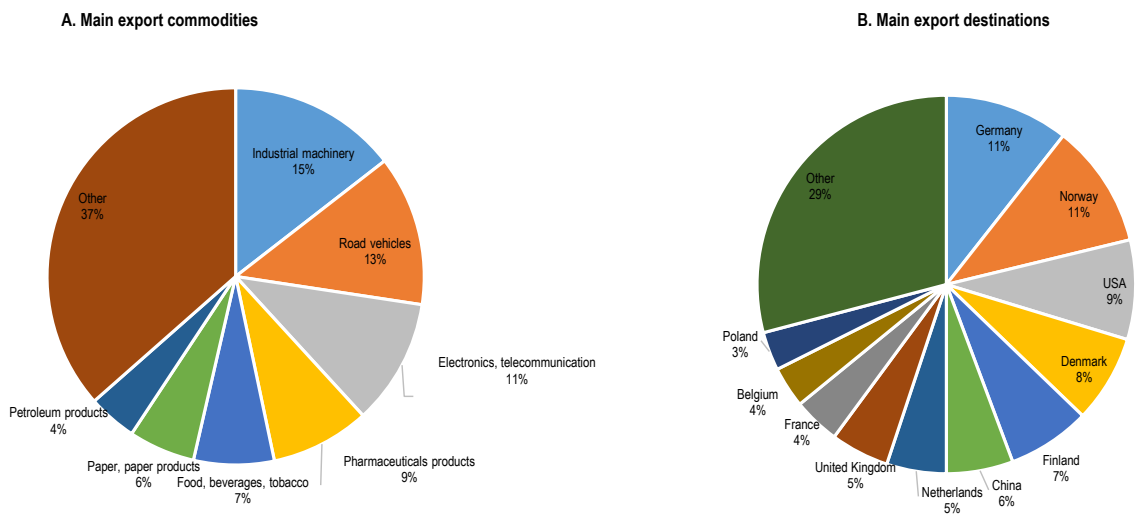
	2018	2019	2020	2021	2022
Gross domestic product (GDP)	2.1	1.4	-3.0	3.9	3.4
Private consumption	1.9	1.2	-4.7	3.2	4.6
Government consumption	1.1	0.3	-0.9	2.1	0.8
Gross fixed capital formation	1.4	-3.0	0.3	4.8	4.3
Housing	-6.5	-8.0	2.2	1.4	2.4
Business	3.0	-2.6	-1.6	6.0	5.9
Government	6.2	1.3	4.7	4.5	1.4
Final domestic demand	1.5	-0.1	-2.4	3.3	3.5
Stockbuilding[2]	0.3	-0.1	-0.8	-0.3	0.0
Total domestic demand	1.8	-0.3	-3.1	3.0	3.5
Exports of goods and services	4.5	4.9	-5.6	10.7	4.6
Imports of goods and services	4.0	1.4	-6.2	9.3	5.0
Net exports[2]	0.3	1.7	0.0	1.0	0.1
Other indicators					
Potential GDP	1.9	1.8	1.7	1.7	1.7
Output gap[3]	0.9	0.5	-4.2	-2.0	-0.4
Employment[4]	1.5	0.6	-1.3	0.9	1.9
Unemployment rate[4,5]	6.3	6.8	8.3	8.4	7.5
GDP deflator	2.4	2.7	1.5	1.5	1.0
CPI	2.0	1.8	0.5	1.7	1.4
CPIF[6]	2.1	1.7	0.5	1.7	1.4
Household saving ratio, net[7]	13.4	16.1	17.9	15.1	13.3
Current account balance[8]	2.6	5.1	5.2	6.4	6.2
General government fiscal balance[8]	0.8	0.6	-3.1	-3.3	-1.6
Underlying government net lending[3]	0.3	0.3	-0.2	-2.0	-1.4
Underlying government primary balance[3]	0.2	0.2	-0.3	-2.1	-1.6
Gross government debt (Maastricht)[8]	38.9	35.0	39.9	39.9	39.4
General government net debt[8]	-33.0	-37.9	-37.4	-32.2	-29.2
Three-month money market rate, average	-0.4	0.0	0.1	0.0	0.0
Ten-year government bond yield, average	0.7	0.1	0.0	0.0	0.0

1. Annual data are derived from quarterly seasonally and working-day adjusted figures.
2. Contribution to changes in real GDP.
3. As a percentage of potential GDP.
4. The break in the time series resulting from the adaptation of the Swedish Labour Force Surveys (LFS) to the new EU framework regulation from 2021 onwards has not been taken into account in the projections (i.e. the numbers for 2021-22 are as they would have been without the change in methodology).
5. As a percentage of the labour force.
6. CPI with a fixed mortgage interest rate.
7. As a percentage of household disposable income.
8. As a percentage of GDP.
Source: OECD Economic Outlook 109 database.

The main risks to the outlook, both on the upside and downside, are linked to the evolution of the pandemic, which remains very uncertain. Faster vaccination in Sweden and abroad would allow a swifter resumption of normal activity than expected. Conversely, setbacks in vaccination campaigns and spread of new variants of the virus could delay the recovery. The evolution of the pandemic will also affect world trade, which has a major impact on growth in an export-oriented economy like Sweden, even though product diversification mitigates downside risks (Figure 1.5, Panel A). Although the impact of Brexit on Swedish exports has so far been modest, despite some weakening in service exports, a stronger medium-term impact cannot be ruled out, as the Swedish economy is relatively vulnerable to obstacles to trade with the United Kingdom (Bisciari, 2019). Disruptions in supply chains are an additional risk, as illustrated by the recent global shortage of semiconductors, which affected in particular the automotive industry. The speed of the recovery in the Nordic region, which accounts for more than a quarter of Swedish exports, is particularly relevant (Panel B). Other unpredictable shocks and risks that Sweden can be exposed to include those stemming from an intensification of global trade tensions, spillovers from global financial instability or a real estate market crash (Table 1.2).

Figure 1.5. Exports of goods by commodity and market

Share of total exports of goods, 2020



Source: Statistics Sweden.

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

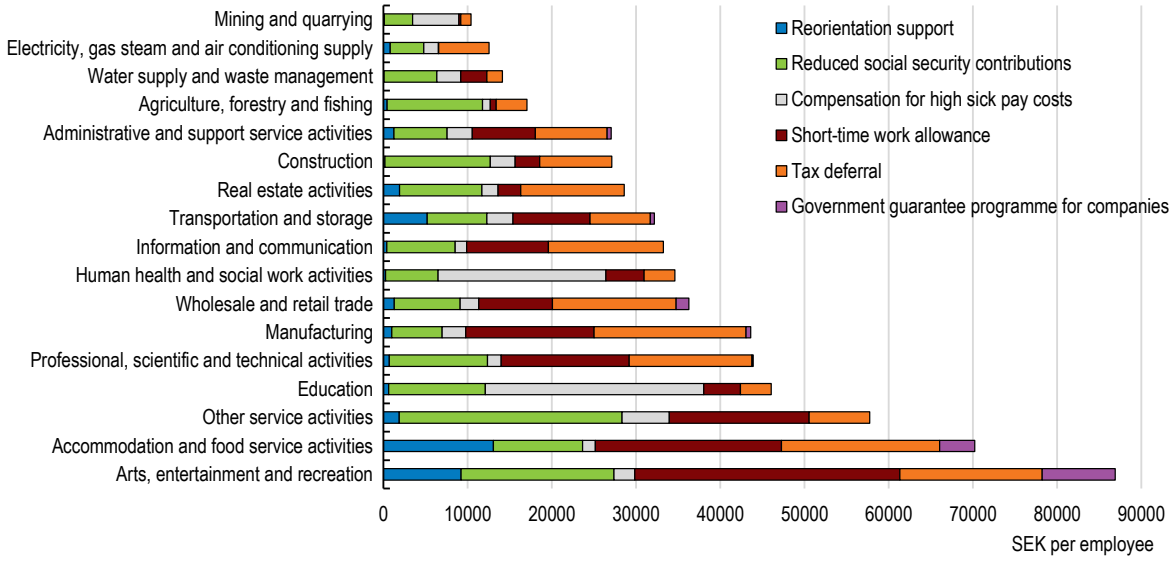
Potential shock	Possible outcomes
Failure to control the pandemic in Sweden and globally	The longer distancing measures are necessary, the more bankruptcies are likely to occur and the greater the scarring effect on people at the margin of the labour market.
Global trade tensions	As a small open economy, Sweden is exposed to weakness in world trade, which would lower exports and output.
Global or regional financial crisis contagion	The Swedish financial system is dominated by a few large banks, which are dependent on foreign wholesale funding. A liquidity crisis triggered by events outside Sweden could lead to difficulties in the banking sector, resulting in a credit squeeze, which would cause a deep recession. Falls in asset prices would aggravate the situation.
Real estate market crash	Housing prices have continued to rise during the pandemic, as in many OECD countries. A collapse in housing prices, which are high by historical standards, could trigger a sharp fall in consumption, which could in turn result in economic and financial distress in the wider economy. The outlook for commercial real estate has become more uncertain in the wake of the COVID-19 crisis, particularly for offices and retail outlets. A collapse in prices and a rise in vacancies could trigger significant credit losses for banks and corporate bond holders.

Extensive policy support has mitigated the impact of the crisis

The government has taken a wide range of measures to mitigate the impact of the COVID-19 crisis, totalling nearly 29% of annual GDP including loans and guarantees, of which 8.5% of GDP in budget measures over 2020-21. The short-time work scheme plays a key role in preserving jobs, even though the amount spent in 2020 was only about half what had been anticipated. Since January 2021, employers are eligible to financial support for investment in the skills of their employees on reduced working hours. This will strengthen the competences of individual employees and companies and raise the supply of skills nationwide, which will facilitate labour reallocation and strengthen competitiveness. Reorientation support, which is a scheme covering a large part of fixed costs of companies having lost a sizeable portion of their turnover, reduced employer social contributions and tax deferrals help keep companies afloat (Box 1.1). Only about a quarter of OECD countries provide general fixed cost subsidies to businesses like those put in place in Sweden, notably Germany, Austria, the Netherlands, some Nordic and Eastern Europe countries and Israel. The vast majority of OECD countries extend subsidies to businesses but in most cases they are not directly related to specific expenses. Several countries, however, among which Canada, Japan, Turkey and some Eastern Europe countries, subsidise businesses' rents. In Sweden, the sectors most affected by the pandemic received the highest support per employee. Short-time work, tax deferrals and reduced social contributions provided significant support to most sectors, while compensation for high sick pay costs benefitted health and education sectors the most. Reorientation support mainly went to arts, entertainment and recreation, accommodation and food services, and to a lesser extent transport and storage (Figure 1.6).

Figure 1.6. Government support went primarily to the most vulnerable sectors

As of January 2021



Source: Ministry of Finance (25 January 2021).

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Box 1.1. Main fiscal measures taken during the pandemic

The government passed a range of measures in 2020 and 2021. The most prominent ones are:

- A new **short-time work scheme**, with higher subsidies than in the scheme previously in force, was introduced on 7 April 2020, with retroactivity to 16 March. The subsidy, whose normal level is 33%, was set to 75% for 2020 and the first quarter of 2021 and 50% for the second quarter of 2021. The maximum working hour cut, normally 60%, was increased to 80% during May-July 2020 and January-September 2021. With a 60% (80%) reduction in working time, employees receive 92.5% (88%) of their wages and the employer's wage costs are reduced by 53% (72%). Since January 2021, employers are eligible for financial support covering 60% of the cost of initiatives to develop or validate the competences of employees on reduced working hours.
- **Reorientation support**: Between March 2020 and January 2021, businesses having lost a sizeable share of their turnover (between 30% and 50% depending on the period of the year) were eligible to reimbursement of a share of their fixed costs, up to 70% (with exceptions), subject to ceilings. On 20 January 2021, the government announced that during the period of business closures imposed by the Pandemic Act (which started on 10 January 2021), businesses are entitled to receive compensation for up to 100% of fixed costs, up to a maximum of SEK 75 million (EUR 7.4 million) per business and month.
- **Employer social contributions** were reduced from March to June 2020, with only old-age pension contributions payable, for up to 30 persons per company and up to a monthly salary of SEK 25 000 (EUR 2 470), providing monthly relief of up to SEK 5 300 (EUR 525) per employee.

- **Health care spending** has been raised substantially to help hospitals and other medical institutions cope with the COVID-19 burden, as well as for testing, vaccination and prevention. Funding for elderly care has also increased significantly.
- **Education and labour market measures** include an expansion of places in education and training, funding for more summer courses at universities and other higher education institutions (22 000 places in total), targeted education and training for vulnerable groups in the labour market and more introduction jobs and matching services.
- **Additional grants to municipalities** to cope with COVID-19 related costs.

Table 1.3. Cost of crisis-related budget measures in 2020 and 2021

	2020	2021[1]	Total[2]	% of 2020 GDP
Total[2]	**161**	**259**	**420**	**8.5**
Short-time work scheme	35	24	59	1.2
Compensation for lost turnover	6	48	54	1.1
Reduced employer and self-employed social contributions	33	..	33	0.7
Sick-leave and other cost compensation for businesses	16	18	34	0.7
Health expenditure[3]	26	51	76	1.5
Labour market and training	13	49	61	1.2
General grants to municipalities	21	23	44	0.9
Other budget measures	12	47	59	1.2

1. Includes 2021 budget, supplementary budgets and spring budget 2021.
2. Numbers may not exactly add up due to rounding.
3. Includes additional health care, testing, vaccination and prevention costs and additional funds for elderly care.
Source: Ministry of Finance (15 April 2021).

- The government also provides **liquidity measures**, mainly in the form of tax deferrals, **increased guarantees**, and **injected equity** in state-owned companies.

Table 1.4. Crisis-related guarantees, liquidity measures and capital injections

	SEK billion	% of 2020 GDP
Liquidity measures	**689**	**13.9**
Tax deferral	669	13.5
Other	20	0.4
Increase in guarantees	**300**	**6.1**
Emergency help for businesses	150	3.0
Export credit	125	2.5
European Investment Bank, SURE	20	0.4
Airlines	5	0.1
Capital injections in state-owned enterprises	**10**	**0.2**

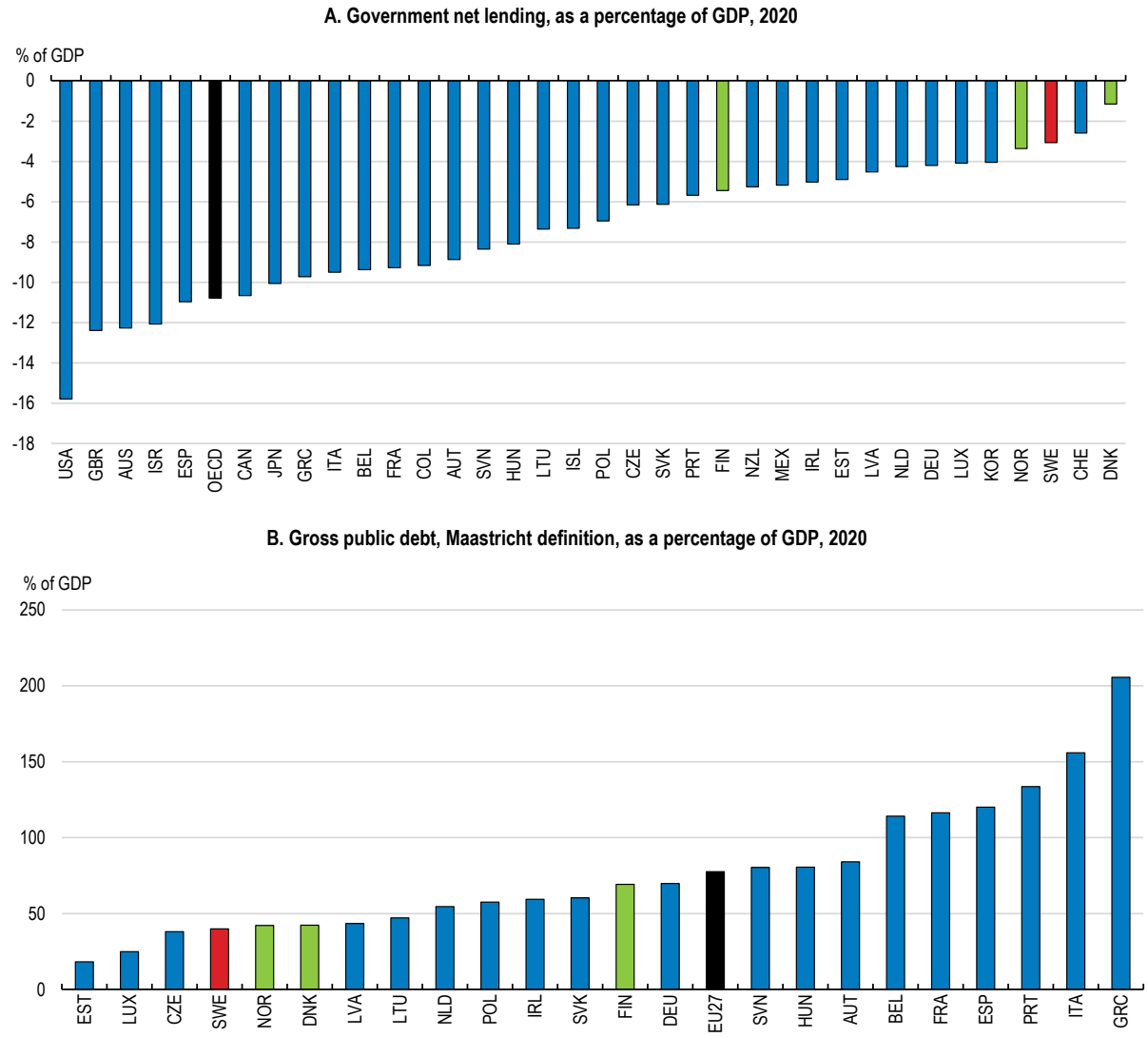
Source: Ministry of Finance (15 April 2021).

Public finances are robust but debt will rise with population ageing

Sweden entered the COVID-19 crisis with a general government budget surplus of 0.6% of GDP, above the 1/3% of GDP surplus target over the business cycle, and gross government debt of 35% of GDP, the level of the debt anchor defined in the fiscal policy framework which entered into force in 2019 (*OECD*

Economic Survey of Sweden, 2019). Even after the large-scale interventions to fight the crisis, the budget deficit is only about 3% of GDP, one of the lowest in the OECD (Figure 1.7, Panel A). The government gross debt-to-GDP ratio rose in 2020 for the first time since 2014, but remains among the lowest in Europe (Panel B). Strong fiscal support should be maintained until the recovery is well established. If the economy recovers as projected, the budget balance should move back towards the surplus target over the medium term. However, if the recovery proves weaker than expected, there is room for more expansionary fiscal policy, especially as margins for further monetary easing are limited (see below).

Figure 1.7. The government's deficit and debt remain modest



Source: OECD Economic Outlook database.

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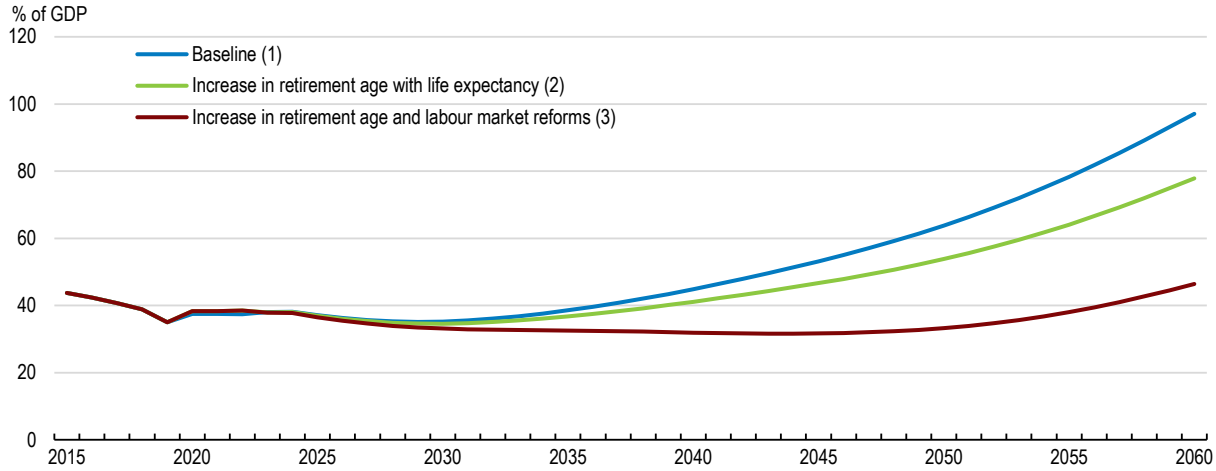
Ageing-related costs, notably health and long-term care costs, are projected to rise over time (Figure 1.8). Meeting these costs without tax increases, savings in other areas or structural reforms would require deviating from the current 1/3 per cent of GDP surplus target. This would push up debt. Under the assumption of unchanged policies and fully debt-financed increases in age-related spending, the debt ratio would be around 60% in 2050 and close to 100% in 2060. However, structural reforms would help contain

this rise (see below). An increase in the retirement age by two-thirds of the increase in life expectancy, in line with the reform for 2023 announced in the latest budget bill (see below), would lower the debt ratio by about 20 percentage points in 2060. Combined with labour market reforms planned or recommended in this Survey, including a reduction in tax wedges and reformed employment protection, the extension of working lives would keep the debt ratio below 50% in 2060.

Figure 1.8. Ageing will push up government debt over time in the absence of reforms



Note: (1) Based on no policy change and age-related costs as estimated in the OECD long-term model baseline (Guillemette et al., 2017); (2) The minimum pensionable age increases by two-thirds of the increase in life expectancy; (3) A package of labour market reforms is implemented before 2030. Calculations are based on Guillemette et al. (2017) and recalibrated in accordance with planned policy reforms and recommendations in this Survey (see Box 1.4).
Source: Authors' calculations based on the OECD Long-term model.

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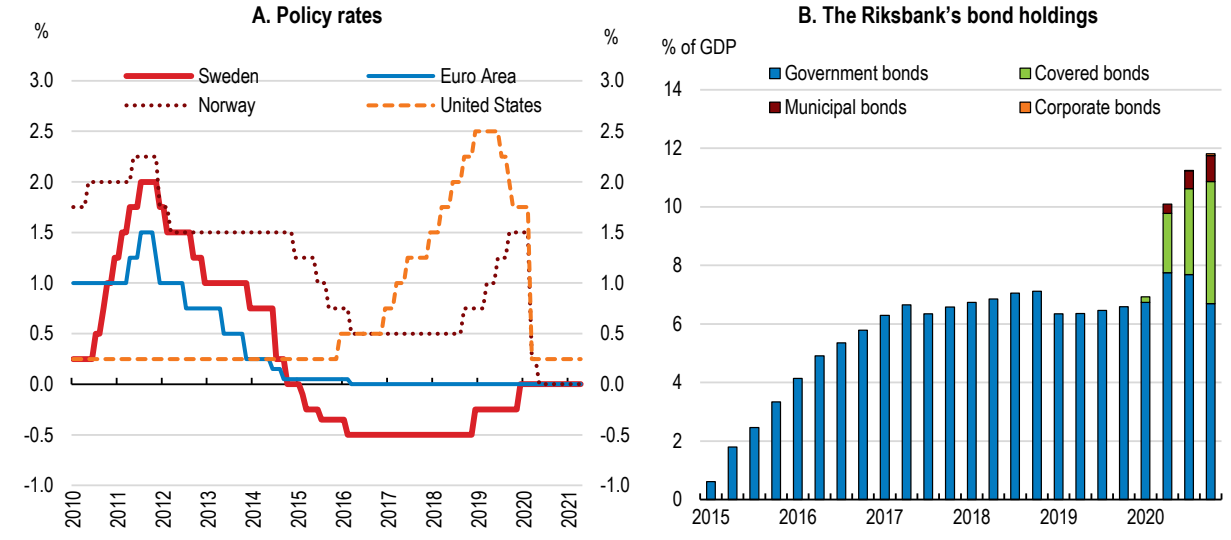
Monetary and financial policy has buttressed the financial system

Highly expansionary monetary policy is supporting the recovery (Figure 1.9). While the Riksbank had raised its policy rate back to zero shortly before the outbreak of the pandemic to avoid potential adverse effects of keeping negative rates for a long time, it had also signalled that the repo rate was likely to stay at zero over a long period, which now extends to at least end-2023. As market-based financing was difficult at the onset of the COVID-19 crisis, the authorities have taken a wide range of measures to ensure liquidity and enhance credit availability (Box 1.2). Financial conditions gradually normalised from the summer and turned somewhat more expansionary than before the crisis towards end-2020 (Figure 1.10, Panel A). The exchange rate also appreciated from a low level, as monetary policy was loosened in other countries (Panel B). In early 2021, headline consumer price inflation briefly overshot the 2% mark, partly due to higher energy prices and supply bottlenecks in certain sectors, and inflation expectations have moved up (Figure 1.11).

Monetary policy needs to remain accommodative until inflation is durably close to the target, with activity on course to expand at a robust pace. The scope for further loosening in the case of adverse economic developments is limited. Negative policy rates may lower bank rates only marginally and would likely primarily affect the exchange rate. The scope for expanding security purchases is also limited, even though some further interventions are possible, notably if liquidity deteriorates. The government bond market is relatively narrow, with the Riksbank holding nearly 45% of the outstanding stock as of end-2020 (Sveriges Riksbank, 2021a). Large-scale mortgage and corporate bond-buying could fuel excessive risk taking, notably in property markets. The distributional effects of monetary policy are ambiguous, as it both raises

asset prices, which are concentrated among wealthy households, and economic activity and employment, which supports lower income households (Sveriges Riksbank, 2020). In any case, accommodative monetary policy is necessary to support the recovery and potential undesirable distributional effects can be addressed through other instruments, notably taxes and benefits. As the use of cash is declining rapidly in Sweden, the Riksbank has launched a pilot project for a central bank digital currency, the e-krona (*OECD Economic Survey of Sweden 2019*, Sveriges Riksbank, 2021b), which has the potential to improve payment efficiency, limit substitution by private cryptocurrencies and ensure inclusiveness of digital payments (IMF, 2021).

Figure 1.9. Zero policy rates are complemented by sizeable bond buying



Source: OECD Economic Outlook database and Sveriges Riksbank.

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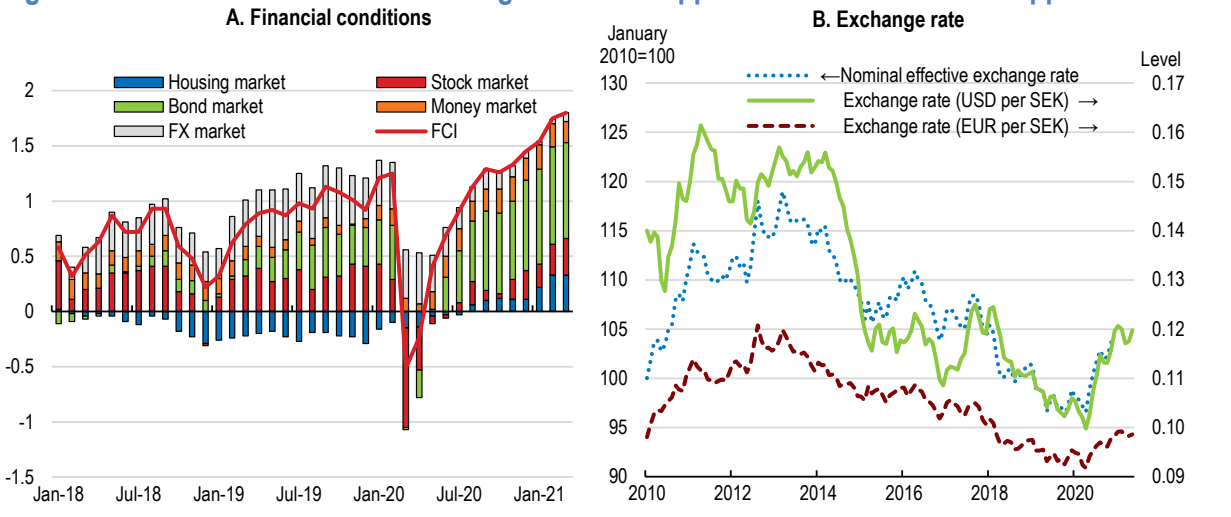
Figure 1.10. Financial conditions have again turned supportive but the krona has appreciated



Note: Credit conditions are expressed as standard deviations. Higher values indicate more expansionary financial conditions.
Source: OECD Economic Outlook database and Sveriges Riksbank.

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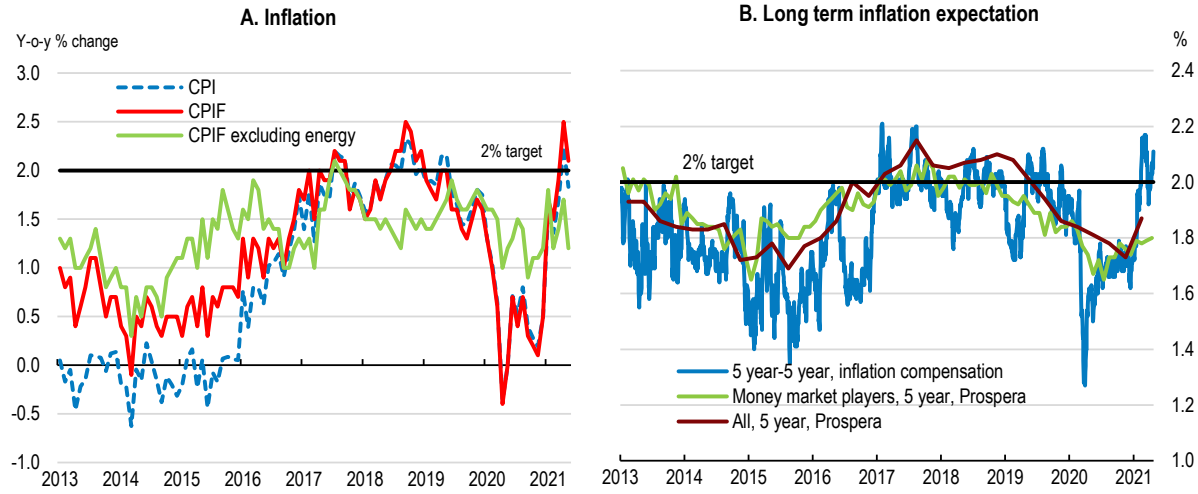
Figure 1.11. Inflation and inflation expectations have moved up



Note: CPIF is CPI with a fixed mortgage rate.
Source: OECD Economic Outlook database and Sveriges Riksbank.

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Box 1.2. Main measures taken by the financial authorities during the crisis

The central bank (Riksbank)

Programme for corporate lending via banks. The Riksbank is providing long-term loans of up to SEK 500 billion at the repo rate, under certain conditions, against collateral to banks to stimulate onward lending to Swedish non-financial companies.

Extended purchases of securities. The Riksbank's security purchase plan has been extended due to the pandemic, with additional purchases of government bonds, treasury bills, covered bonds (mortgage bonds), municipal bonds and corporate securities (commercial paper and corporate bonds) with a total amount of up to SEK 700 billion until 31 December 2021.

Enhanced access to liquidity. The Riksbank is offering banks the opportunity to borrow at the repo rate an unlimited amount on a weekly basis against collateral at three and six month maturity. Collateral requirement are eased, especially for covered bonds.

Loans in US dollars. The Riksbank is offering loans in US dollars to banks against collateral.

Temporary extension of monetary policy counterparties. Swedish credit institutions under the supervision of the Financial supervisory authority (e.g. saving banks) were given the opportunity to become temporary monetary policy counterparties to the Riksbank and to participate in the programme for lending to non-financial companies via banks.

Reduced overnight lending rate to banks. The overnight lending rate for banks has been reduced from +0.75% prior to the pandemic to repo rate + 0.10%.

Table 1.5. Main pandemic-related measures by the Riksbank

	SEK billion unless noted otherwise	% of 2020 GDP	Amount used as of 4 June 2021	% of 2020 GDP
Programme for corporate lending via banks	500	10.1	165	3.3
Extended purchases of securities	700	14.1	520	10.5
Of which:				
Government bonds			69	1.4
Treasury bills			22	0.4
Covered bonds			328	6.6
Commercial paper			12	0.2
Corporate bonds			9	0.2
Municipal bonds			79	1.6
Enhanced access to liquidity	Unlimited		32	0.6
Loans in US dollars (in USD billion)	60	10.2	2	0.3

Source: Sveriges Riksbank.

The Financial Supervisory Authority (FSA)

The countercyclical capital buffer was lowered from 2.5% to 0% in March 2020. This amounts to SEK 45 billion and creates new lending capacity of around SEK 900 billion (about 18% of GDP).

Since April 2020, banks may grant both new and existing mortgages temporary exemption from the requirement on amortisation.

The FSA recommended restrictions on dividend payments during the spring of 2020, following the European Systemic Risk Board recommendation. It advised insurance and pension companies to use buffers if needed rather than selling assets, to avoid triggering a negative spiral in asset markets. It also made clear that the crisis constituted the type of situation where the liquidity coverage ratio requirement on both an individual currency and all currencies may be breached.

Source: Sveriges Riksbank and Finansinspektionen.

Some financial vulnerabilities remain

The Swedish banking sector is large and interconnected, which creates vulnerabilities, particularly in a period of high uncertainty for the global economy. So far, interventions by the authorities have stabilised financial markets and bankruptcies have mainly affected companies that were already weak before the crisis. However, the longer the pandemic lingers, the greater the risk of business failures and repayment difficulties for indebted households. Swedish banks have high risk-weighted capital ratios (Figure 1.12, Panel A). However, as mortgages with relatively low risk weights account for a large share of their loan portfolio, their overall leverage ratio is weaker (Panel B). The Nordic banks have a narrow deposit base (Panel C) and rely heavily on wholesale funding, which can entail liquidity risks in periods of market turmoil.

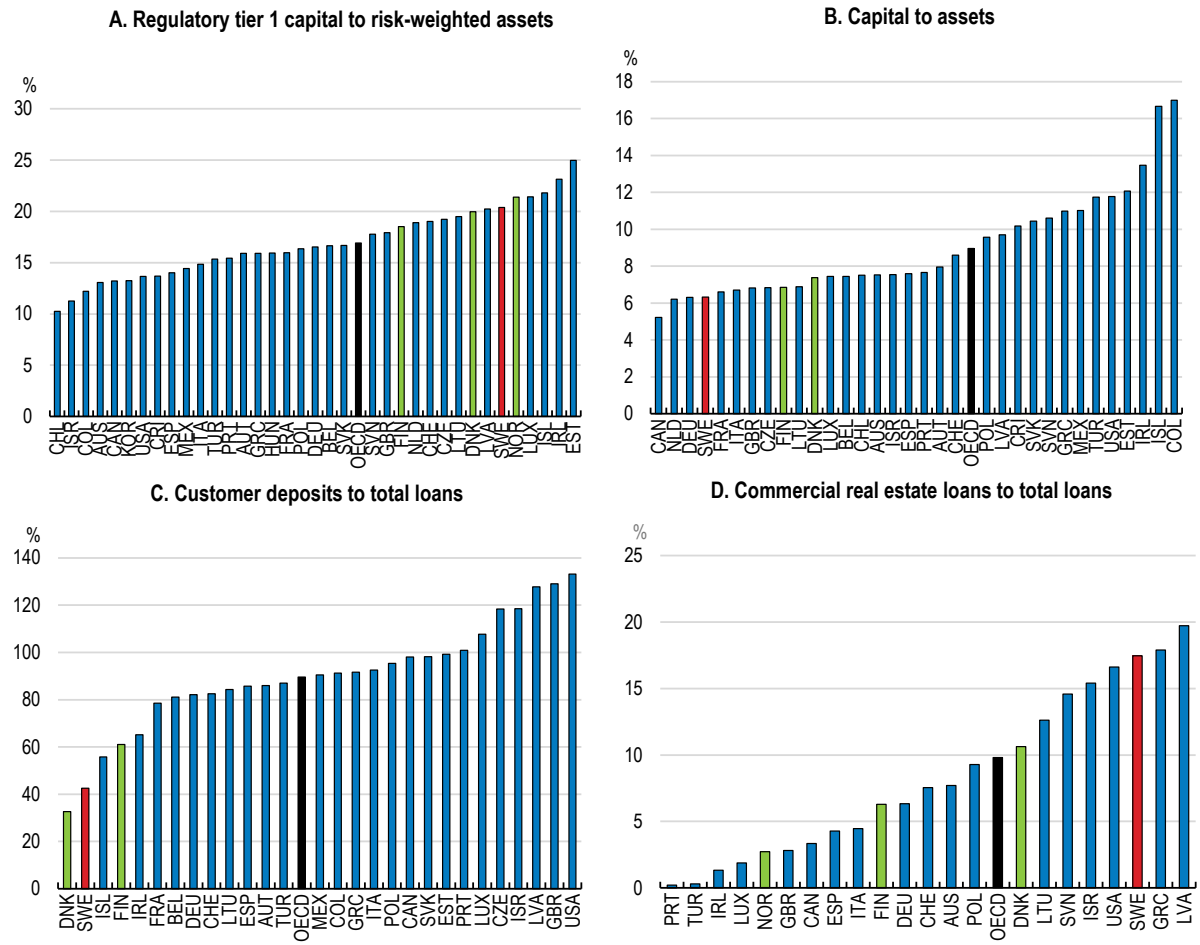
Banks are heavily exposed to the property sector. Like in several other OECD countries, easy financing conditions and changing preferences have pushed up housing prices sharply during the pandemic (Figure 1.13, Panel A). In contrast with previous recent upswings, houses have gained more value than flats in 2020, likely reflecting demand for space, as people spend more time at home than before the pandemic (Panel B). Average housing prices relative to income are close to the OECD average, but higher than in the other Nordics (Figure 1.14, Panel A). Average loan-to-value and loan-to-income ratios increased in 2020 (FSA, 2021). Defaults on mortgages have historically been low in Sweden, even during economic crises, and despite a high aggregate household debt level (Figure 1.14, Panel B), mortgage

delinquency risks remain limited according to stress tests (FSA, 2021). However, a fall in housing prices could weaken private consumption and slow economic growth (Flodén, 2014).

Macroprudential instruments can limit the build-up of financial vulnerabilities, particularly in periods when low interest rates may lead to excessive borrowing and risk-taking. Several general and targeted macro-prudential measures have been introduced over the past decade or so. A systemic risk buffer of 5% was introduced in 2011 and a countercyclical buffer was set at 1% in 2014 and gradually raised to 2.5% in 2019. To contain the rise in household debt, the mortgage loan-to-value ratio has been capped at 85% since 2010. A mortgage risk-weight floor of 15% was introduced in 2013 and increased to 25% in 2014. From 2016, amortisation of 2% and 1% per year was required on mortgages with a loan-to-value ratio respectively exceeding 70% and between 50% and 70%. The amortisation requirement was tightened in 2018 for mortgages amounting to more than 4.5 times gross income, which became subject to additional amortisation of 1%, 2% or 3%, for loan-to-income ratios respectively below 50%, between 50% and 70%, and above 70%. After the COVID-19 outbreak, the countercyclical buffer was set to zero and the amortisation requirement suspended. To slow the rise in housing prices and household debt, the mortgage amortisation requirement will be reinstated in September 2021. If housing prices continue to rise rapidly, macroprudential policy should be tightened.

Figure 1.12. The banking system seems solid although not without vulnerabilities

2019 or latest



Source: IMF, Financial Soundness Indicators database.

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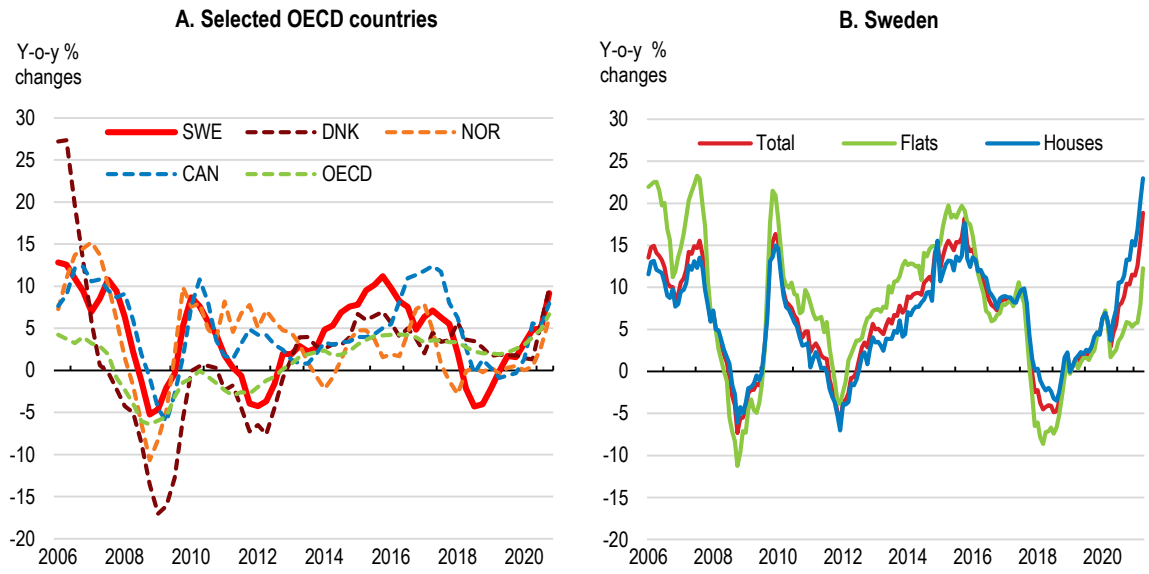
The share of commercial real estate loans, which are generally riskier than mortgages, in bank lending is one of the highest in the OECD (Figure 1.12, Panel D). To contain risks, the Financial Supervisory Authority (FSA) has raised capital requirements on bank loans for commercial real estate from January 2020. The pandemic may have a lingering negative impact on commercial real estate. Demand for office space is likely to be lower, as telework has gained ground. At the same time, retail space may shrink with the acceleration of e-commerce, though this pushes up demand for warehouses.

Climate change also entails risks for financial stability, which calls for better reporting of climate-related financial exposures. Both the Riksbank and the FSA take part in the Network for Greening the Financial System (NGFS), a global network of 89 central banks and financial supervisors, launched at the 2017 Paris One Planet Summit. They are promoting better disclosure by both financial and non-financial corporations and integrating climate-related risks in their financial stability monitoring (Sveriges Riksbank, 2019; Thedéen, 2019). The FSA is also leading the International Organization of Securities Commissions (IOSCO) taskforce on sustainable finance. Together with the International Financial Reporting Standards foundation (IFRS) and other stakeholders, IOSCO is developing a comprehensive global corporate reporting system for sustainability-related information that meets the needs of capital markets and serves the public interest. Beyond its importance for financial stability, disclosure of climate risk is a powerful instrument in the fight against climate change by orienting savings to investments contributing the environmental transition (OECD/The World Bank/UN Environment, 2018).

Figure 1.13. House prices have been rising at a fast pace



Note: Panel A displays quarterly data adjusted for inflation using the private consumption deflator, up to 2020Q4. Panel B displays nominal monthly data, up to April 2021.
Source: OECD, House Price database and Valueguard.

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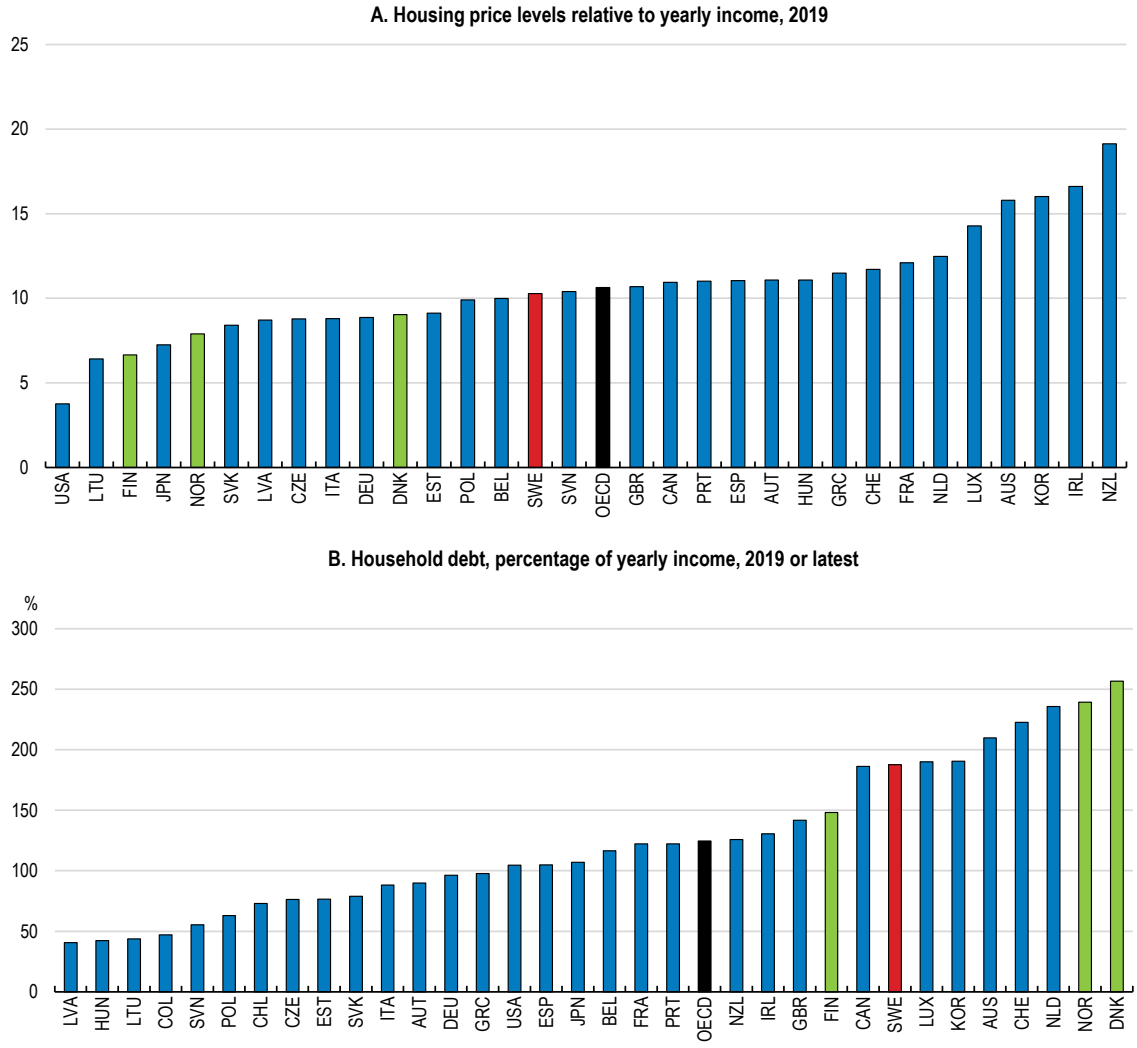
Figure 1.14. The house price-to-income ratio is close to the OECD average but household debt is high



Note: In panel A, number of years of per capita gross disposable income needed to buy a 100 square metre dwelling (for more detail, see Bricongne et al., 2019). In panel B, data for Chile, Colombia, Japan, Luxembourg, Norway, New Zealand, Norway, Poland and United States refer to 2018. Income refers to net household disposable income.
Source: Houselev; OECD, House price database and OECD, National Accounts database.

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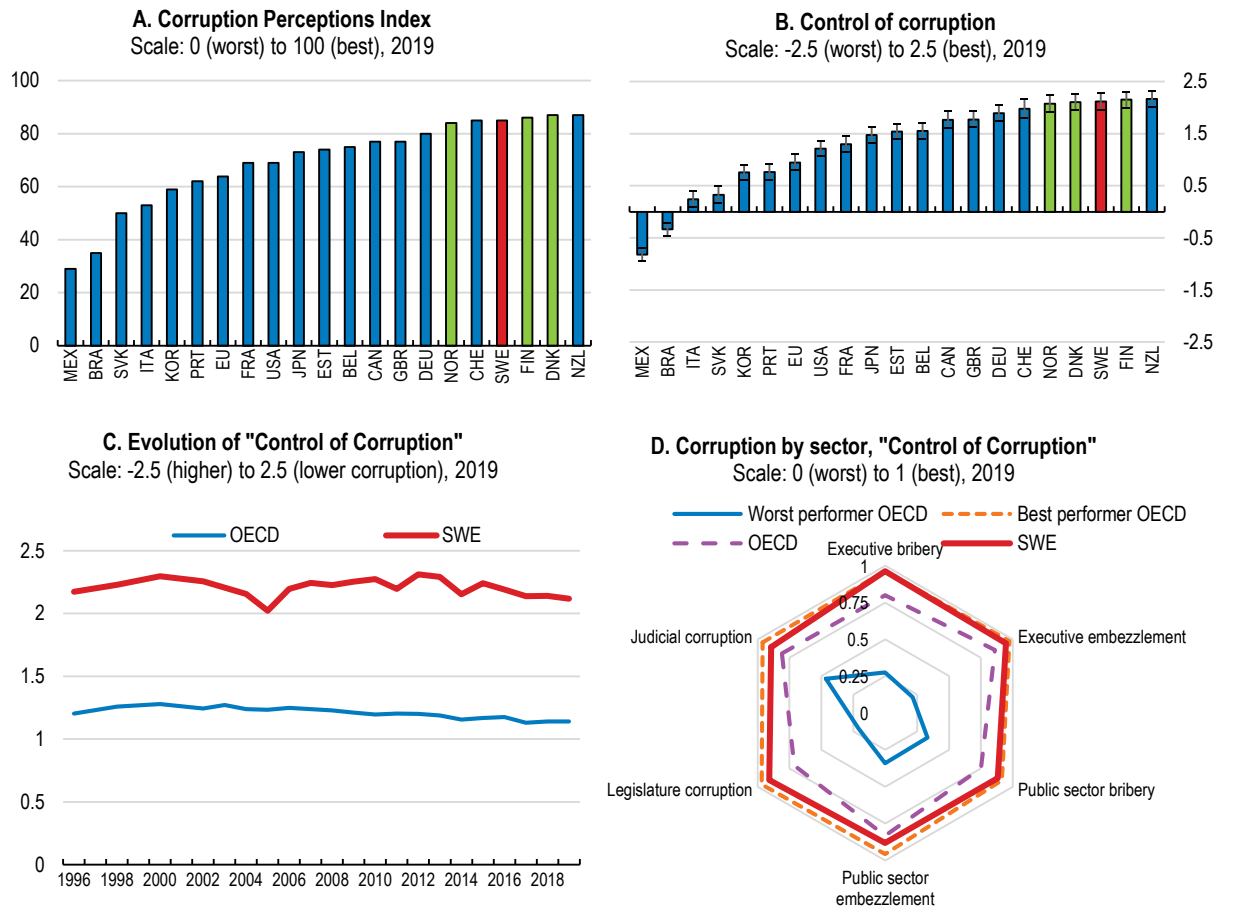
Weak money laundering controls have been an issue in some banks' foreign subsidiaries

Major Swedish banks have been subject to interventions from the Swedish supervisor, including sanctions amounting to hundreds of millions of euros, for deficiencies in anti-money laundering governance and controls in their subsidiaries in the Baltic countries. This may be seen in light of Sweden being one of the 11 countries that have received a high effectiveness rating by the Financial Action Task Force (FATF). The authorities have taken action to step up the fight against money laundering (Forsman, 2020). Regulatory changes in recent years pertain inter alia to an overhaul of the central legislative acts in this area; the introduction of registers of beneficial owners and bank accounts; improved sanctioning and investigative powers and resources for several supervisory authorities; stricter requirements on the provision of

information from financial companies to law enforcement authorities, as well as feedback from the Financial Intelligence Unit to reporting entities; and the anti-money laundering regulation of virtual currencies. Furthermore, several state public enquiries have recently delivered or are expected to deliver further proposals for reform in the near future (Swedish government, 2021a). The FSA has stepped up its supervision, with extra funding of SEK 20 million per year, and strengthened its cooperation with Nordic and Baltic country authorities on a strategic level (FSA, 2019) as well as on an institute-specific level, by setting up and participating in several dedicated Anti-Money Laundering/Combating the Financing of Terrorism colleges. Other agencies involved in the fight against money laundering also received additional funding. National and international authorities pursue cooperation to track ever-evolving fraudulent practices. However, effectively preventing money laundering also requires vigilance from national authorities in other countries, as they have the relevant investigation powers.

More generally, corruption is perceived as being very low in Sweden. The level of perceived corruption is among the lowest in the OECD, together with the other Nordics, New Zealand and Switzerland (Figure 1.15, Panel A and B). Control of corruption has remained steady over time (Panel C) and is strong in all sub-categories (Panel D). Sweden is fully compliant on exchange of tax information (Figure 1.16, Panel A). As concluded by the FATF, most anti-money laundering indicators are at least on par with the OECD average (Panel B).

Figure 1.15. Corruption is very low



Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Institute; University of Gothenburg; and University of Notre Dame.

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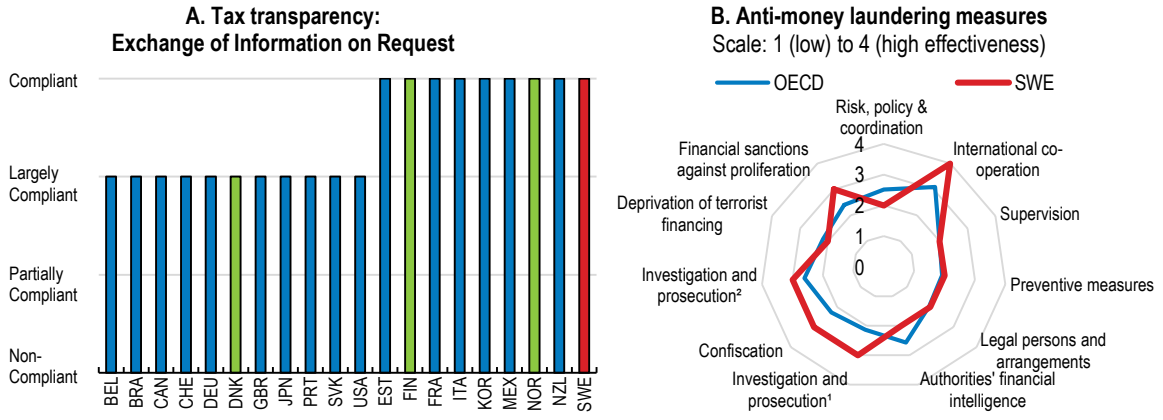
Figure 1.16. Tax transparency is high and anti-money laundering is relatively effective



Note: Panel A summarises the overall assessment on the exchange of information in practice from 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 co-operate with other tax administrations in accordance with the internationally agreed standard. Panel B shows ratings from the FATF peer reviews of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a country's measures are effective against 11 immediate outcomes. "Investigation and prosecution¹" refers to money laundering. "Investigation and prosecution²" refers to terrorist financing.
Source: OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes; and OECD, Financial Action Task Force (FATF).

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Facilitating resource reallocation is essential for the recovery

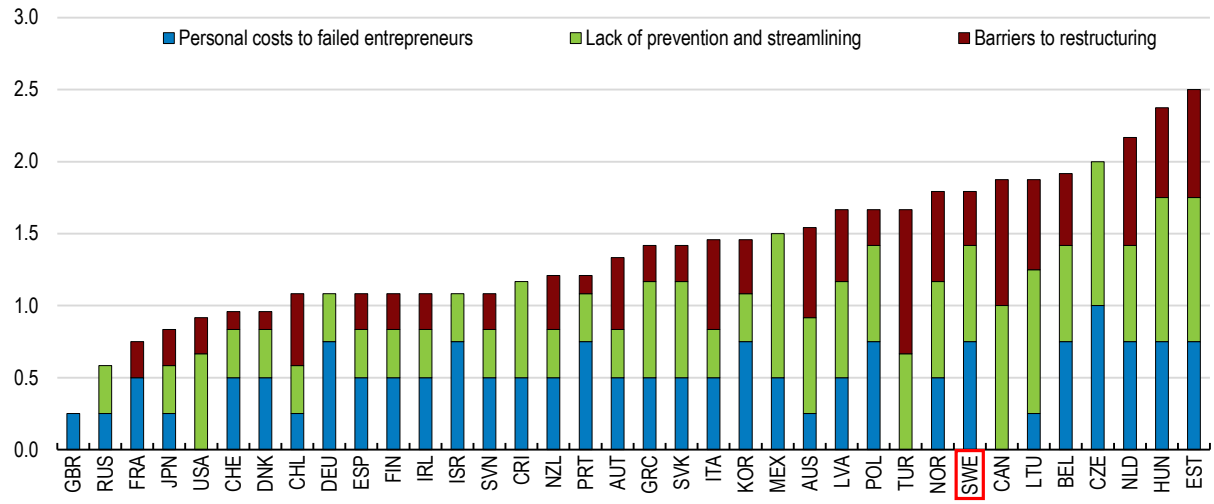
While most businesses will survive the pandemic, not least thanks to temporary government support, and will be able to resume business as usual after distancing measures ease, some will face more difficulties. The pandemic dealt a further blow to already weak businesses and accelerated some changes in consumer behaviour and business models, notably the move towards digitalisation. Reallocation has generally been effective in Sweden in recent years, with workers tending to move primarily to higher-productivity firms (Andrews and Cingano, 2014) and despite a long period of very low interest rates, the share of zombie firms in the Swedish economy consistently decreased over 2010-16. The number of bankruptcies increased during the first half of 2020, but has been lower than the historical average in the second half of 2020 and the beginning of 2021, partly owing to the support measures put in place by the government.

An efficient insolvency framework is essential to promote smooth restructuring. OECD indicators point to room for improvement in Sweden's insolvency framework (Figure 1.17, Adalet McGowan et al., 2017). The integration of the EU Directive on Preventive restructuring frameworks, approved by the EU Council in June 2019, into Swedish legislation should facilitate early-stage restructuring. An inquiry tasked with proposing amendments to incorporate the provisions of the Directive into Swedish law released its conclusions in March 2021 (Swedish Government, 2021b). It recommended establishing a permanent national business emergency support centre with a focus on micro, small and medium-sized enterprises heading for financial crisis, under the responsibility of the Swedish Agency for Economic and Regional Growth. It also proposed a new company restructuring act to ensure that necessary measures to address a company's financial problems can be confirmed in a binding restructuring plan. Other proposed adjustments to the insolvency framework include an enhanced viability test before entering a restructuring procedure, a streamlined debt settlement procedure for companies without need for further restructuring

measures, the concentration of restructuring in fewer courts to facilitate the resolution of difficult cases and stricter supervision standards. Reforms along these lines would improve prevention and facilitate restructuring. Nevertheless, the personal costs to failed entrepreneurs are likely to remain high, as in many European countries and in contrast to Canada and the United States.

Figure 1.17. There is room for improvement in the insolvency framework

Scores in selected aspects of insolvency schemes: higher scores indicate worse systems



Source: OECD (2017), Confronting the Zombies: Insolvency and Financial Reform, Corporate Restructuring and Productivity Growth.

StatLink https://stat.link/zjsrgc

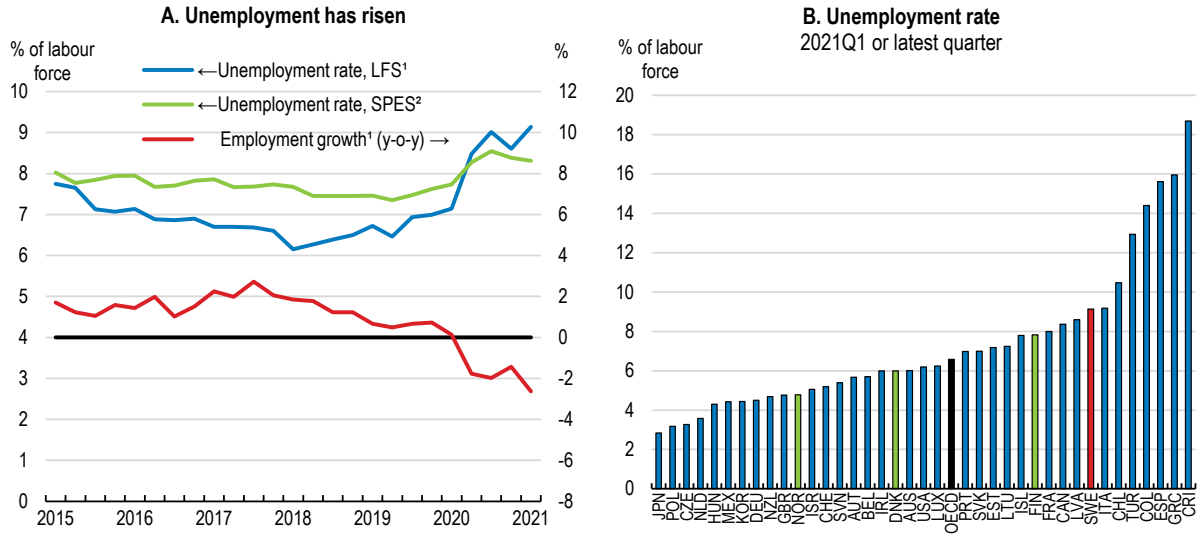
Unemployment started rising before the COVID-19 crisis (Figure 1.18), as the economy decelerated. The matching problem was already serious before the pandemic, with labour shortages coinciding with high unemployment for some categories of workers, notably immigrants (*OECD Economic Survey of Sweden, 2019*). This problem was worsened by the crisis, which reduces demand for low-skilled workers, who are often employed in occupations requiring face-to-face interaction. To support low-skilled and foreign-born workers, the government plans to introduce two new schemes in 2021, as negotiated with the social partners: the *Entry agreements* scheme targeting immigrants and long-term unemployed, which combines subsidised employment with adult education; the *Integration year* scheme for newly-arrived asylum seekers, which combines vocational education and training with a Swedish language learning programme. A pilot programme for the integration of foreign-born women in the labour market is showing promising results and should be expanded (Box 1.3). The youth suffered more from the crisis than prime-age workers, with a gender difference reflecting the sectoral composition of employment. While young male employment declined most in the second and third quarters of 2020, which saw disruptions to industrial activity, young women still suffer disproportionately, presumably because they are over-represented in the service sectors most affected by the pandemic (Figure 1.19).

In this context, it is essential to invest in skills to facilitate labour market integration and transitions. Sweden has a strong vocational education and training (VET) system, which provides students with sound foundation and occupational skills. However, enrolment in upper-secondary VET has been falling, which may be related to negative perceptions of VET and perceived weak pathways to higher education. Collaboration between schools is limited and social partner engagement to better match skills with labour market needs is uneven at the local level. The government plans to strengthen vocational education and training structures at the regional level to ensure better planning and cooperation between providers and better adaptation to labour market needs. Sweden VET schools are small by European standards.

Consolidation in highly specialised technical areas requiring expensive equipment would help achieve economies of scale and provide more labour market-relevant education (Kuczera and Jeon, 2019). Given the increasing need for re-skilling and up-skilling due to technological change, which the COVID-19 crisis is likely to accelerate, adult education should also be developed further, in cooperation with the social partners, including for people in unconventional forms of work (*OECD Economic Survey of Sweden, 2019*).

Regional inequality, although low compared to most other OECD countries, has been rising over the past decades. Ensuring that the recovery benefits all regions and continuing to provide equal public services across the country in the face of strong demographic headwinds in some regions will require some adjustments to the sub-national government fiscal framework, as well as strengthening multi-level governance and strategic cooperation between government entities and with other stakeholders. Reinforcing the role of universities as knowledge hubs would support regional development (Chapter 2).

Figure 1.18. Unemployment has risen markedly



1. Labour Force Surveys (LFS), population aged 15-74. There is a break in the LFS unemployment and employment time series resulting from the adaptation of the Swedish LFS to the new EU framework regulation from 2021 onwards.
2. Swedish Public Employment Service, population aged 16-64.
Source: OECD Economic Outlook database; Swedish Public Employment Service.

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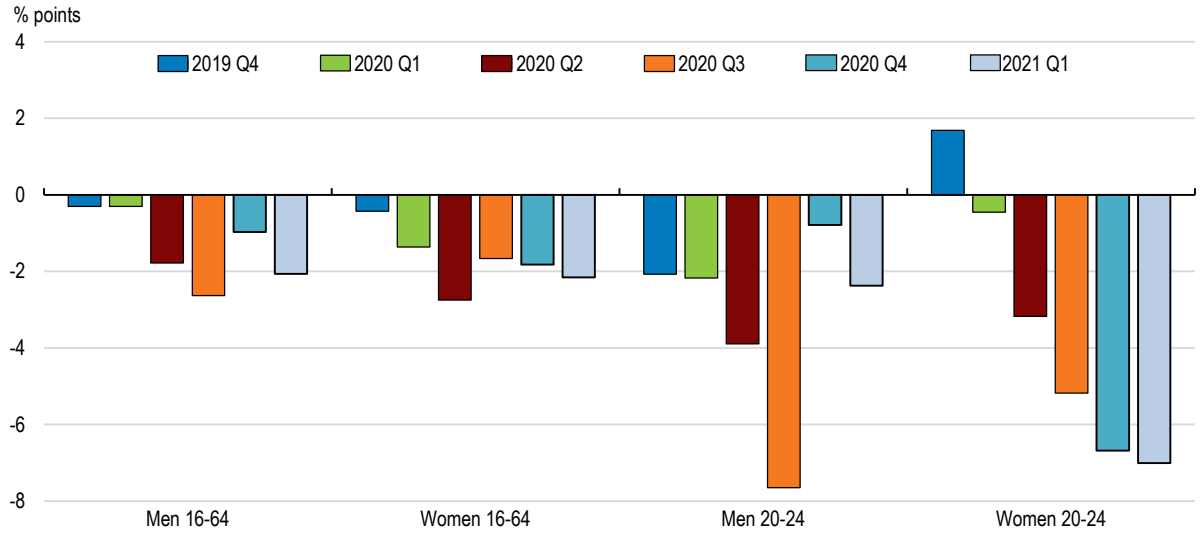
Figure 1.19. Young women have seen the most persistent fall in employment

Change in employment rate from previous year (% points)



Source: Statistics Sweden.

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Box 1.3. A pilot job matching programme for foreign-born women

The employment rate of foreign-born women aged 16-64 lagged that of natives by more than 20 percentage points in 2020. A major obstacle to their employment is often a lack of documented qualifications and work experience, which makes their applications unattractive to employers. In response, the Public Employment Service initiated in March 2019 a pilot programme (*Equal Establishment*) to improve job matching for foreign-born women, with support from the European Social Fund. The programme documents the informal skills and motivations of jobseekers to match them with employer demand.

The project is run as a randomised experiment, to allow evaluation. After two years, over a third of the 3710 participants in the trial were employed, which is 10 percentage points (or 30%) higher than in the control group, consisting of jobseekers having received traditional jobseeker support. The new matching method does not generate higher costs than traditional support. Hence, opportunities for scaling up the programme look very promising.

Source: Swedish Public Employment Service.

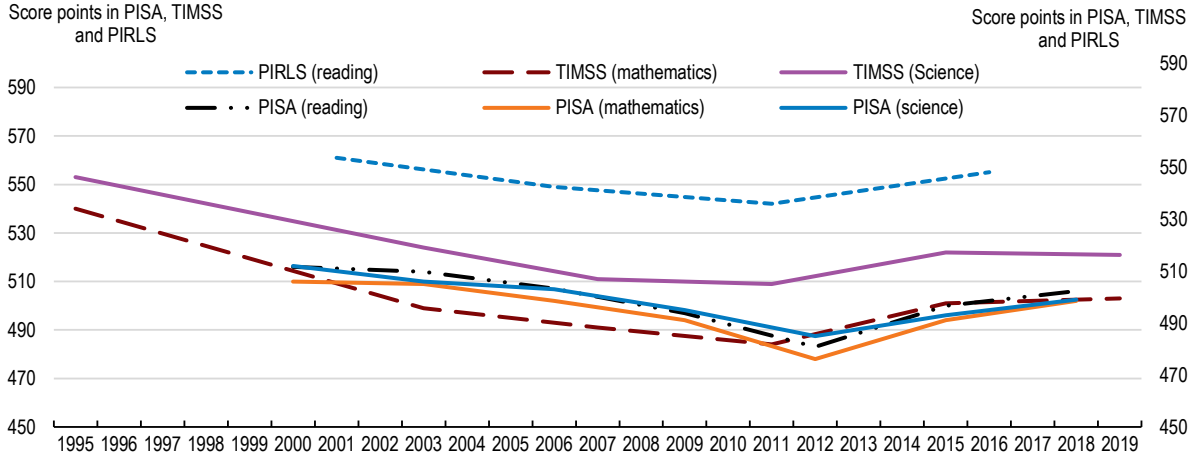
Education policy measures are starting to bear fruit but challenges remain

The downward trend in education performance seems to have been halted, as indicated by some encouraging recent international test results (Figure 1.20). Nevertheless, scores in the latest OECD Programme for International Student Assessment (PISA) are only slightly above the OECD average, which points to further room for improvement. Furthermore, gaps between students in reading and science continued to widen (OECD, 2019). The government is taking many steps to improve the education system and reduce educational inequalities, notably on teacher pay and training, school selection and curricula (Table 1.6).

The pandemic has challenged the education system, even though school closures were more limited than in most other OECD countries. The government took swift measures to allow education institutions to deliver distance learning. Nevertheless, some students, notably from disadvantaged socio-economic or immigrant backgrounds, may adapt less well than others to distance learning. This calls for carefully monitoring student results, in particular through the existing national tests, and providing support to those lagging, so that they can catch up. To respond to increased demand during the crisis and its aftermath, the government has allocated significant resources for increasing the number of places in vocational training and tertiary education.

Figure 1.20. School results have started to improve

Sweden's test results in international skills surveys for children of school age



Note: The score points in PISA, TIMSS and PIRLS are not on the same scale and cannot be directly compared.
Source: OECD, PISA database; and TIMSS and PIRLS International Study Center – International databases.

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Table 1.6. Past recommendations on education policy and action taken

Main recent OECD recommendations	Action taken since the 2019 Survey or planned
Introduce a non-binding minimum norm of school financing, integrated with the national income equalisation system, to better target funding towards disadvantaged groups, including immigrants.	No minimum norm of school financing has been introduced. The reformed equalisation system, which entered into force in 2020, better accounts for socio-economic differences, including those related to the reception of refugees. The government also introduced government grants to increase teacher wages, partly aimed at raising the proportion of certified teachers in deprived areas, as well as grants for hiring teacher assistants.
Develop a regional arm of the central government school governance structure tasked with systematic quality improvement, inducing local cooperation, continuous teacher training and inspections.	The government is preparing a plan to organise local cooperation with the National Agency for Education.
Remove sources of bias in national test grading to create an objective benchmark for school performance, and use it to remove differences in grading leniency.	The introduction of digital national tests in the coming years will enhance grading and assessment efficiency, which could help reduce the bias in grading.
Weigh high and low grades symmetrically and suppress the requirement to pass in certain subjects to enter upper secondary education.	No action taken on grades. The government has launched an inquiry on ways to support pupils at risk of not becoming eligible for upper secondary school. Its proposals have been sent for consultation and are being examined by the government.
Take the socio-economic mix into account when investing in new schools and in school entry.	New school curricula will be introduced in compulsory school and some areas of upper secondary and municipal adult education to facilitate learning by all students.
Strengthen teacher education with more instruction time, teacher practice and research.	The number of places in the teacher training programmes has increased. Shorter supplemental training programmes allow people with relevant education or background to get a teaching degree more rapidly.
Improve continuous learning and development through a regional school governance structure, systematic peer learning and continued mutually beneficial cooperation with universities.	The government plans to introduce a national programme for the professional development of teachers to further their career development and collaborative work. An ongoing training initiative (boost for teachers) allows teachers to upgrade their qualifications in specific subjects, while continuing to work as teachers. The National Agency for Education offers online support material for teachers in need.

Structural reforms could boost long-term growth

Structural reforms will be necessary to increase employment and prevent the rise in the government debt-to-GDP ratio in the long run. Employment protection in Sweden is stricter than the OECD average (Figure 1.21; OECD, 2020a). However, the social partners have reached an agreement for broad labour market reforms, which is by and large expected to be implemented by mid-2022, after the Government submits a bill to Parliament. The social partners' agreement contains various amendments regarding employment protection. One such amendment allows all companies to exempt three workers from the order of lay-off rules (last in-first out), whereas currently only companies with up to ten employees are allowed to exempt two employees, although exceptions can be negotiated between the social partners (Uddén Sonnegård, 2018).

Loosening employment protection legislation facilitates workers' move towards more productive jobs (Scarpetta, 2014). A 2001 reform of employment protection rules in Sweden, which enabled firms with up to ten employees to exempt two workers from the lay-off rules, is estimated to have raised labour productivity by 2% to 3% (Bjuggren, 2018). Swedish legislation is among the strictest in the OECD for "Fair reasons for dismissal for personal reasons" and "Compensation for the employee following an unfair dismissal". In particular, insufficient performance is rarely considered a fair reason in Sweden, contrary to two-thirds of OECD countries. Compensation for the employee following an unfair dismissal is the second highest among OECD countries together with Portugal and only second to Italy. The agreement between the social partners facilitates dismissal for insufficient performance. Employers will no longer be compelled to offer a new position to workers who are still objectively underperforming after being offered a new assignment.

At the same time the social partners' agreement offers more security to workers. For instance, one type of fixed-term contract is proposed to be converted to a permanent contract after 12 months, instead of 24 currently. The agreement also proposes the establishment of a publicly-funded basic transition service, as well as that of a new public study aid aiming at facilitating re-training and up-skilling. The new study aid would apply for a maximum of 220 study days. To qualify, the individual must, in particular, have worked 16 hours per week on average for at least 96 months. The aid is provided for training that bolsters the applicant's future prospects in the labour market. The grant is to cover up to 80% of salary losses while studying. The social partners also agreed that a public inquiry investigates the possibility of setting up a collectively-agreed unemployment insurance, covering private sector workers, including those with low or irregular income and guaranteeing employees at least 80% of their previous salary.

Reducing the labour tax wedge, which is among the highest in the OECD (Figure 1.22), would help raise employment, particularly for the low-skilled. Taxation has gradually shifted from taxes on labour to environmentally-related taxes in recent years. Carrying on with this strategy would gradually bring down the tax wedge. In addition, higher recurrent taxes on immovable property could be used to offset lower labour taxation. Sweden combines generous mortgage interest deductibility with a recurrent tax on residential immovable property that is capped at a relatively low level, making it regressive. The marginal effective tax rate for owner-occupied, debt-financed housing investments is the third lowest in the 27 OECD countries for which data are available, after the Netherlands and Denmark (Brys et al., 2021). Recurrent property taxes are among the least detrimental to growth (Arnold et al., 2011; Cournède et al., 2018). The *OECD Economic Survey of Sweden 2019* recommended reforming the recurrent tax on immovable property to better align tax charges with property values and phasing out the deductibility of mortgage interest rate payments. Over the long run, lowering the tax wedge to the OECD average would increase GDP per capita by around 3% (Box 1.4).

To prevent an ageing-related government debt increase in the coming decades, longer working lives will be needed. Reforms implemented from the mid-1990s ensure the financial viability of the public pension system (Lundberg, 2020), which comprises two main elements: a means-tested basic pension (guarantee pension) and an earnings-related pension. The guarantee pension is a minimum pension benefit for residents aged 65 or over who have not accumulated enough earnings-related pension rights to earn a decent living. It can be complemented by a housing benefit. Elderly people with very low incomes and few years of residence are eligible to maintenance support.

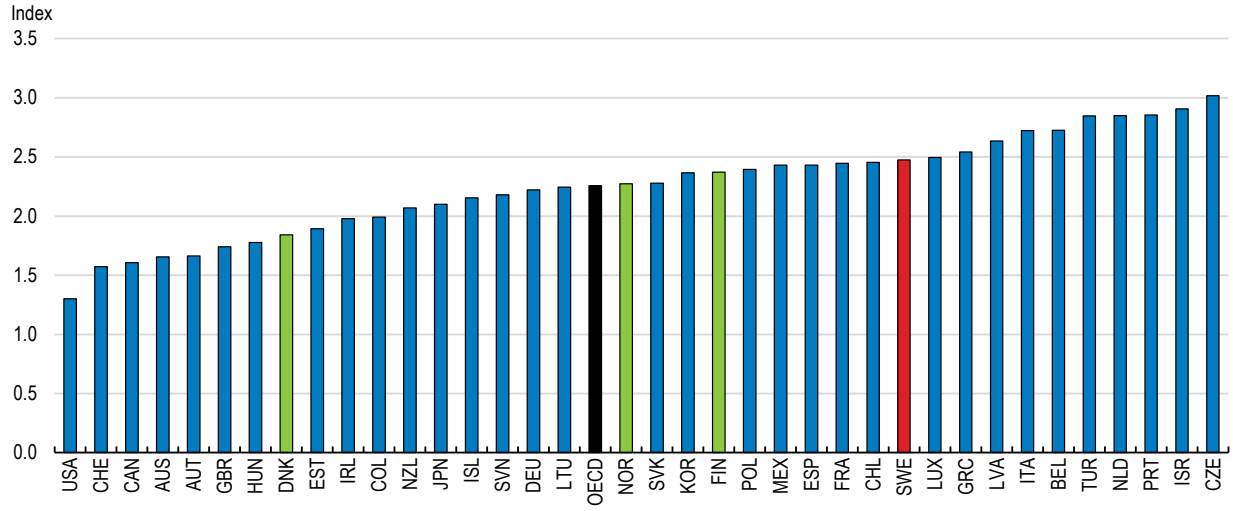
Public earnings-related pensions are based on lifelong contributions and consist of two components (income and premium pension). The main element is the income pension, a distribution system with a balancing mechanism. The income pension is adjusted annually according to an index of average income across society. The balancing mechanism ensures the financial sustainability of the system, through reductions in the annual pension increases when the amount of assets falls below the value of liabilities, as happened in 2010, 2011 and 2014. The minimum age for receiving earnings-related pension payments was 61 in 2019. Employees retiring later receive a pension adjusted on an actuarial basis. Employees are protected from forced retirement until age 68 as of 2020 (maximum age for the right to remain in employment). The income pension is complemented by the premium pension, which is a fully-funded defined-contribution pension, where the insured has a wide choice of investment funds. The contributions to the income and premium pensions are respectively 16% and 2.5% of wages (net of contributions), up to a ceiling. In addition to the state pension, the vast majority of workers is covered by occupational pensions, which are governed by collective agreements and are especially important for high-income earners (Ministry of Health and Social Affairs, 2016).

While the design of the pension system ensures its financial sustainability, a failure to lengthen working lives as life expectancy increases could lead to insufficient pension income and labour supply shortages. Hence, a gradual increase in the minimum age to receive state old-age pension benefits is being phased in. From 2020, it increased to 62; from 2023, it will increase to 63 and from 2026 it will rise to 64. The maximum age for the right to remain in employment has also risen from 67 to 68 in 2020 and will rise to

69 in 2023. The reform also introduced a "target age for retirement", based on average life expectancy at 65. The minimum age for receiving the basic pension will be linked to this target age from 2026 and onwards. OECD simulations suggest that under a scenario where the minimum pensionable age rises by two-thirds of the increase in life expectancy, the long-term fiscal balance improves by 1.3% of GDP, helping stabilise government debt.

Figure 1.21. Permanent workers' employment protection is relatively strong

Index of protection of permanent workers against individual dismissals, 2019



Note: The index ranges from 0 (no regulation) to 6 (detailed regulation).
Source: OECD Employment Protection Database.

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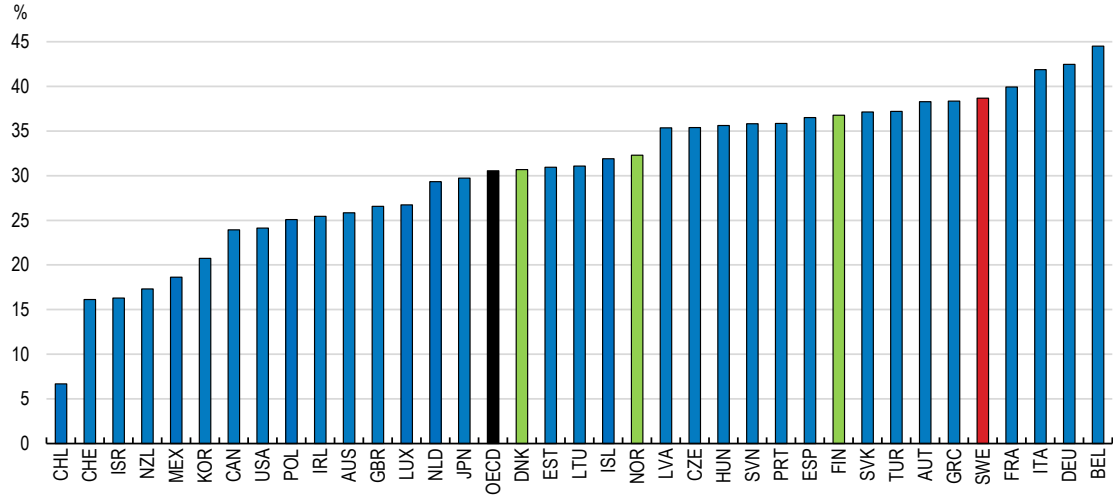
Figure 1.22. The labour tax wedge is high

Tax wedge for a two-earner married couple, one at 100% of average earnings and the other at 67%, with two children



Source: OECD Taxing wages.

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Table 1.7. Past recommendations on labour market policy and action taken

Main recent OECD recommendations	Action taken since the 2019 Survey or planned
Reduce the gap in employment protection between permanent and temporary contracts and increase flexibility in entry level wages.	The government plans to allow all companies to exempt three employees from the order of lay-off rules (last in-first out), in accordance with the social partners agreement, by mid-2022.
Develop adult education, in cooperation with the social partners, including for people in unconventional forms of work.	The labour market agreement to be implemented by mid-2022 includes the right for employees who have worked for an employer for at least eight years to train for one year and receive 80% of their salary.
Rationalise by merging and harmonising various wage subsidy schemes to better target the most vulnerable workers, ease the related administrative burden and increase take-up.	Merging and harmonising various wage subsidy schemes were implemented in 2018 as Introduction Jobs.
Continue to simplify the procedures to help migrants get residence and work permits.	No action taken.

Box 1.4. Potential impact of structural reforms

This box summarises potential long-term impacts of selected ongoing and recommended structural reforms on GDP per capita (Table 1.8). The quantified impacts are merely indicative and do not incorporate behavioural responses to the reforms. They are also expected to materialise gradually over the long term. The GDP impacts of some key recommendations are not quantified because they are very small. The potential impact of pension and labour market reforms on the government debt-to-GDP ratio is shown in Figure 1.8.

Easing employment protection legislation

Easing EPL by 0.1, which would broadly be in line with changes negotiated by the social partners, could potentially raise GDP by more than 2% in the long run, mainly through higher productivity. The associated measures to facilitate re-training and up-skilling could raise productivity further, although their effect is difficult to quantify.

Reducing the tax wedge by gradually shifting from labour levies to environmentally-related taxes and recurrent taxes on immovable property

The tax wedge on labour is assumed to be gradually reduced to the OECD average by 2030. Reduced income from taxes on labour is fully offset by higher income from environmentally-related and property taxes. Nevertheless, the positive impact on employment may improve the fiscal position.

Increasing the pension age

The maximum age for the right to remain in employment and the minimum age for receiving state old-age pension benefits and the basic pension are assumed to be raised by two-thirds of the increase in life expectancy, which is estimated to increase the effective retirement age by three years by 2060, as in Guillemette et al. (2017).

Easing rental regulations

The estimates assume that the strictness of rent control moves to the level of Norway, where the initial rent level can be freely negotiated (although the Norwegian Tenancy Act asserts that the rent may not be unreasonable) and rent increases are regulated. In the long term (2050), the reform would increase the housing stock by nearly 6% and increase housing affordability, with the housing price-to-income ratio reduced by 0.8 year of disposable income. These estimates are derived from a residential investment equation estimated on a panel of 27 OECD countries from 1980 to 2017. The model includes

an indicator of rent control, an interaction term between rent control and real housing prices, as well as real construction costs, real housing prices, indicators of land availability and land-use restrictiveness, and country fixed effects (Cournède et al., 2020). The estimates reflect an average effect in the country sample over the period of estimation. The response of supply to rent deregulation may deviate substantially from the norm in some countries. For example, while rent deregulation has contributed to the expansion of the private rental sector in the United Kingdom since the 1980s, there is no conclusive evidence of a link to an overall increase in housing supply.

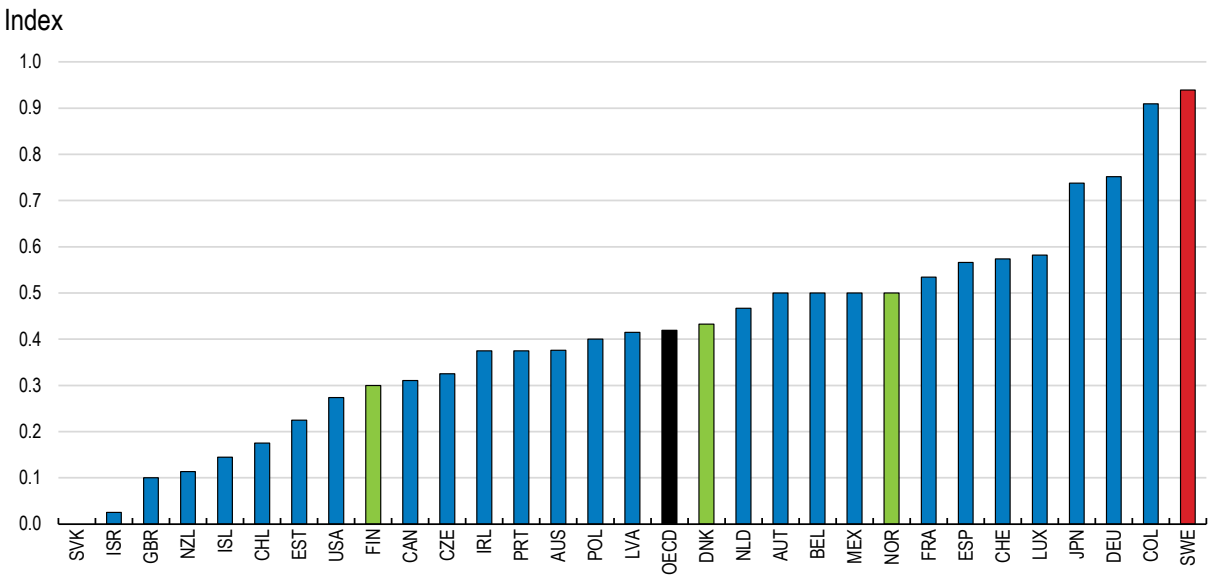
Table 1.8. Estimated impact of main recommendations (%, unless otherwise specified)

Reform / variable	Change in policy indicator[1]	5 years	10 years	Long term
Easing employment protection legislation	**-0.1**			
GDP per capita		0.4	0.9	2.3
Multi-factor productivity[2]		0.4	0.7	1.9
Capital deepening[2]		0.1	0.1	0.4
Employment rate[2]		0.0	0.0	0.1
Reducing the tax wedge on labour	**-8.1**			
GDP per capita		1.6	1.9	3.1
Increasing the pension age				
GDP per capita		1.9	3.0	3.8
Easing rental regulation	**-0.44**	..	..	
Residential investment		..	..	10.9
Housing stock		..	..	5.7
Price-to-income ratio (years of disposable income)		..	..	-0.8

1. The EPL index ranges from 0 (no regulation) to 6 (detailed regulation); The rent regulation index ranges from 0 (least restrictive) to 1 (most restrictive).
2. Contribution to GDP per capita growth.
Source: Calculations based on Égert and Gal (2017), Cournède et al. (2020) and Guillemette et al. (2017).

Strict rental regulations (Figure 1.23) tend to discourage mobility, notably for low-income households, and may contribute to spatial segregation by lowering the supply of rental dwellings in some locations (*OECD Economic Survey of Sweden*, 2019). They have led to long waiting lists for rental housing, especially in Stockholm, where getting access to a rented flat requires on average eight to ten years (Figure 1.24). This hampers labour mobility and is likely to reduce output and employment, although the magnitude of this effect is impossible to quantify. The government plans to liberalise rents for new dwellings, which will be more easily accepted than measures applying to existing dwellings. It has also launched a number of inquiries on different aspects of rent setting. OECD estimates suggest that easing rental regulation to the level of Norway, where rent increases rather than levels are regulated, could increase the housing stock by nearly 6% in the long term, which would significantly improve housing affordability over time through an increase in supply which would lower housing prices by on average more than nine months of household income (Box 1.4). This could facilitate labour mobility, which is hampered by high housing prices. A recent OECD study estimates that 1% higher house prices in Sweden reduce regional migration by nearly 1% (Cavalleri et al., 2021). Easing rent control could also facilitate access to better housing for some low-income and young households, as the current system favours sitting tenants, irrespective of their income.

Figure 1.23. Rent control is very strict



Note: The index ranges from 0 (least restrictive) to 1 (most restrictive).
Source: OECD calculations.

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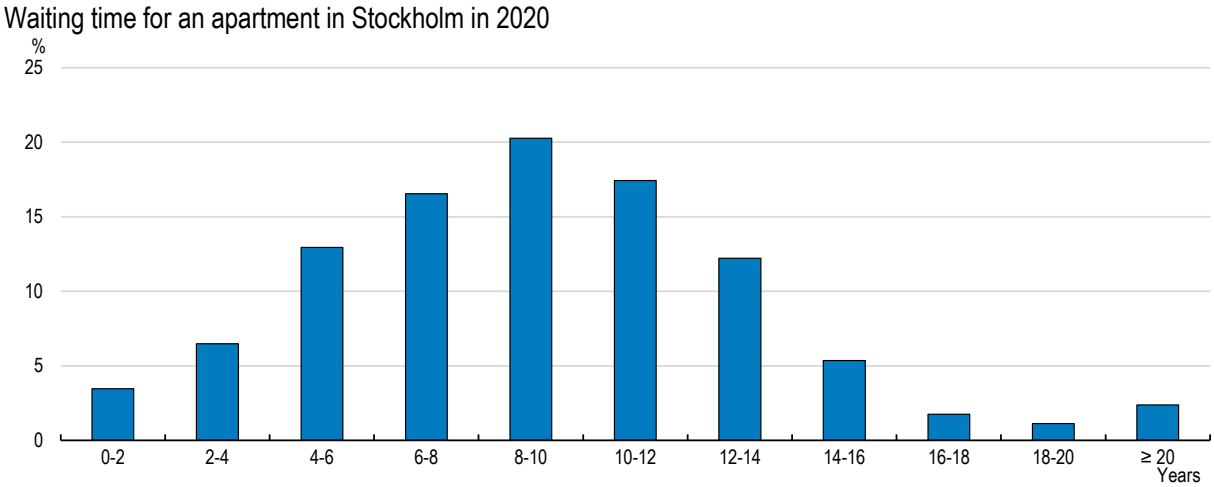
Figure 1.24. Rental regulations lead to long queues



Source: Stockholm Housing Agency.

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Land-use planning inefficiencies and low incentives for municipalities to encourage construction remain a source of housing shortages, despite recent amendments to the Planning and Building Act. Hence, it would be desirable to enhance cooperation in land-use planning between central and local government further and increase incentives for municipalities to facilitate the timely release of development land. Land-use

planning procedures should also be simplified, balancing economic, environmental and social considerations.

Table 1.9. Past recommendations on housing policy and action taken

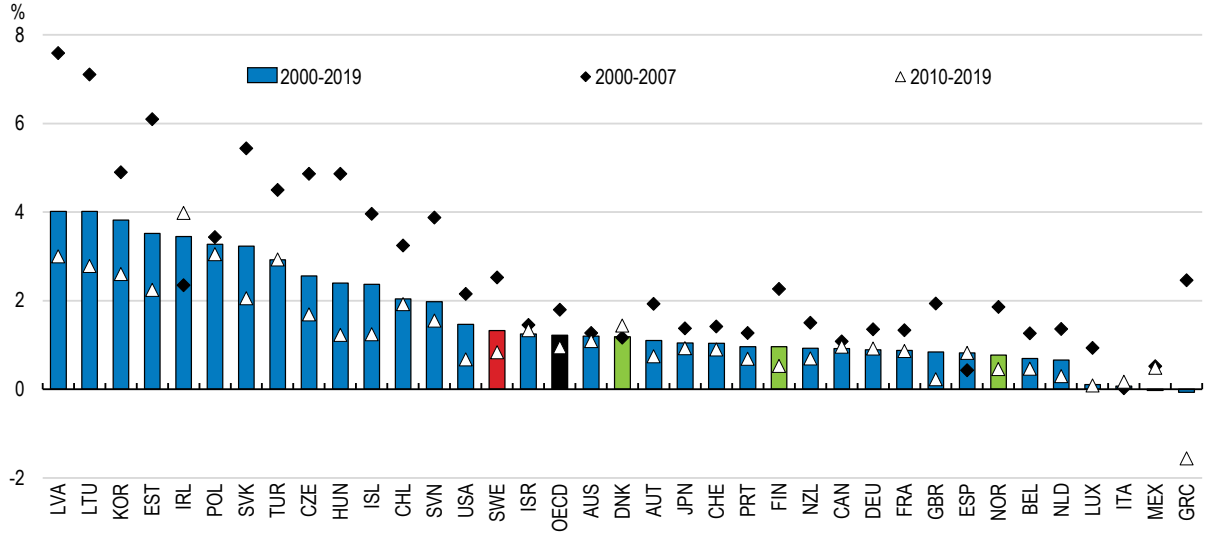
Main recent OECD recommendations	Action taken since the 2019 Survey or planned
Reform the recurrent property tax to better align tax charges with property values. Phase out the deductibility of mortgage interest rate payments.	No action taken.
Enhance co-operation between central and local government in land-use planning and increase incentives for municipalities to facilitate the timely release of development land. Simplify land-use planning procedures, balancing economic, environmental and social considerations.	The Planning and Building Act has been amended in 2020 to ensure better continuity in comprehensive planning and more effective implementation, as well as to facilitate subsequent planning.
Ease rental regulations to incentivise rental housing supply, mobility and better utilisation of the housing stock, while maintaining tenant protection against abuse.	No action taken. The government plans to liberalise rents for new dwellings and has launched a number of inquiries on rent setting.

Wider diffusion of digitalisation would boost productivity

Among OECD countries, Sweden takes the lead in the diffusion and use of digitalisation among individuals and firms (OECD, 2020b). The telecommunication infrastructure and services are well developed. Internet usage is almost generalised, online activities are diverse and the age gap in Internet use is one of the lowest among OECD countries. Innovation is high, with numerous patents, high-quality scientific publications and ICT specialists, as well as high business R&D intensity (OECD, 2018a). Sweden is also a frontrunner in frontier technologies like the Internet of Things. These determinants contribute to explaining Sweden's relatively strong productivity level. However, like other OECD countries, Sweden is experiencing declining productivity gains (Figure 1.25). Firms can raise their productivity by adopting digital technologies (Gal et al., 2019). Adequate capabilities and incentives can enhance digital technology diffusion across firms (Andrews et al., 2018). Digitalisation can also help providing public services more efficiently throughout the country. To fully reap the benefits of digitalisation, the government needs to strengthen its role in enhancing the infrastructure for data and information sharing and to provide adequate technical support to municipalities and regions in need (chapter 2). The European Union Recovery and Resilience Facility (Swedish government, 2021c) provides funds for enhancing digital capabilities, with some measures already budgeted for 2021-23. In total, Sweden is expected to receive around SEK 34 billion (0.7% of GDP), in grants only, of which some 24% are to be allocated to the digital transformation.

Figure 1.25. Productivity gains have slowed

Average annual growth rates, USD per hour, constant prices and PPP (base year 2015)



Source: OECD Productivity Database.

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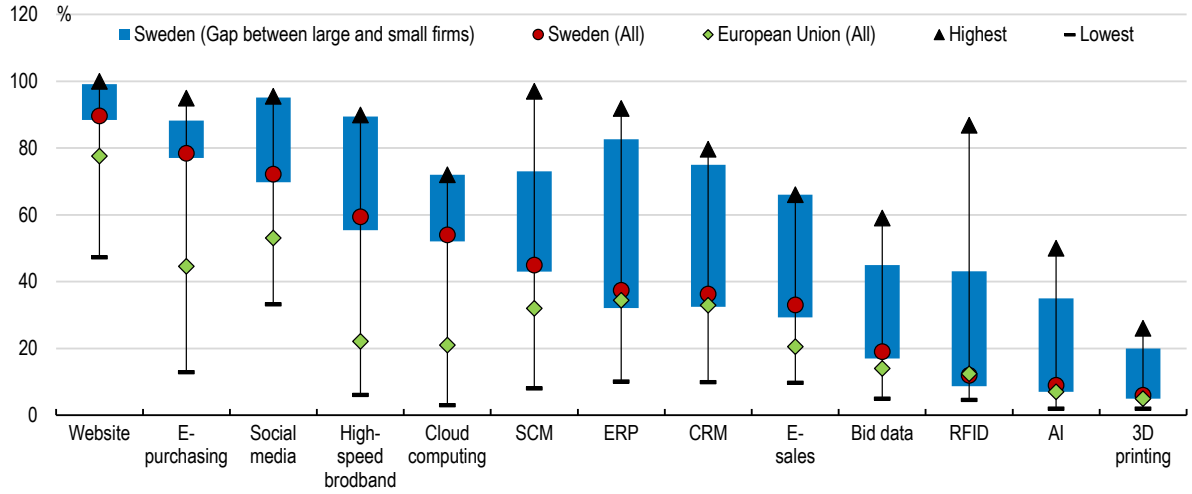
Swedish firms use digital tools more than their counterparts in other OECD countries, be it basic tools like website, social media and high-speed broadband, or advanced tools like cloud computing. However, there are sizeable gaps between large and small firms (Figure 1.26). The use of broadband is widespread across firms, but the use of high-speed broadband remains mostly the privilege of large firms. Gaps with SMEs are especially large for business process tools like supply chain management (SCM), enterprise resource planning (ERP) and customer relationship management (CRM). Such digital tools help making business processes more efficient internally and in relations with suppliers and customers. Nevertheless, numerous Swedish firms outsource ICT tasks and use cloud computing for advanced applications like CRM, which may explain the lower use of digital business process tools (OECD, 2018a). As for advanced tools, like big data analysis and radio frequency identification (RFID), and frontier technologies like artificial intelligence and 3D printing, Sweden lags behind OECD best performers.

The diffusion of digitalisation across Swedish firms is hindered by several obstacles. First, in terms of capabilities, there is scope for improvement in ICT skills. Innovation is increasingly driven by big data analysis and firms with a high share of data specialists are more likely to innovate and experience higher productivity gains (OECD, 2018a). However, in Sweden, the supply of data specialists, as measured by the share of tertiary graduates in ICT and data analysis, is rather low (Figure 1.27, Panel A). This contributes to holding back the diffusion of big data analysis and limits firms' digital and data-driven innovation. Likewise, firms do not provide enough training to ICT specialists to upgrade their skills (Panel B). As digitalisation keeps evolving rapidly, the lack of training not only hinders the adoption of next generation digital tools and productivity growth, but may also leave behind some vulnerable workers. Second, R&D expenditure in information industries is relatively low. The share of business expenditure in R&D is the fourth highest among OECD countries, after Israel, Korea and Japan (2.4% GDP), but only a fifth is allocated to ICT industries (OECD, 2020b). Finally, Sweden needs to improve public trust in digitalisation by strengthening cybersecurity. A significant number of Swedish firms are reporting security breaches (OECD, 2021). These ICT incidents lower trust in ICT tools, potentially slowing their adoption. The share of enterprises making ICT risk assessments, which are at the core of digital security risk management, is relatively high in large enterprises but, as in other OECD countries, much lower among small firms (OECD, 2020b). Campaigns should raise awareness in small firms of the necessity to

implement ICT risk assessments on a periodical basis and more training should be proposed to help them do so. In addition, there should be more training to improve workers' awareness of their obligations related to ICT security, especially in small enterprises.

Figure 1.26. Digital gaps between small and large firms are wide

Percentage of enterprises with ten or more employees, 2020 or latest year available



Note: RFID stands for radio frequency identification; CRM for customer relationship management; ERP for enterprise resource planning; SCM for supply chain management.; high-speed broadband corresponds to broadband with a speed higher than 100Mbits/s; cloud computing covers cloud computing services for advance application (accounting software applications, CRM software, computing power). Big data analysis, cloud computing and SCM come are sourced from Eurostat and cover 2020 (2018 for Greece and United Kingdom). E-purchasing covers 2017 or 2016. RFID covers 2016 of 2017. Other ICT tools cover 2018 or 2019.
Source: OECD ICT Access and Usage by Businesses Database; Eurostat ICT Usage in Enterprises Database.

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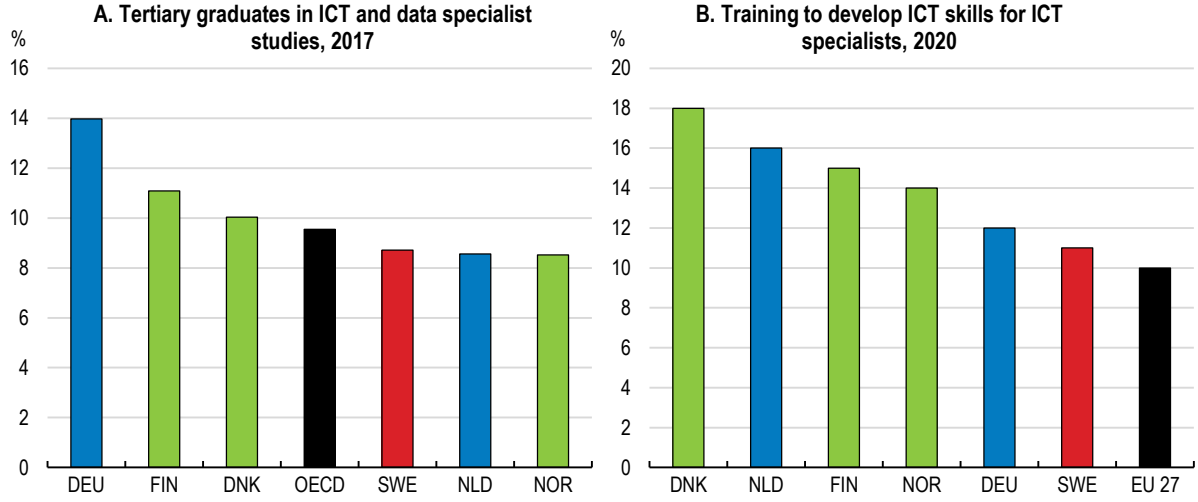
Figure 1.27. ICT skills need to be further improved

Share of all tertiary graduates (A) and of enterprises with ten or more employees (B)



Note: The fields of studies in Panel A include ICTs, natural sciences, mathematics and statistics.
Source: OECD Science, Technology and Industry Scoreboard; Eurostat ICT Usage in Enterprises Database.

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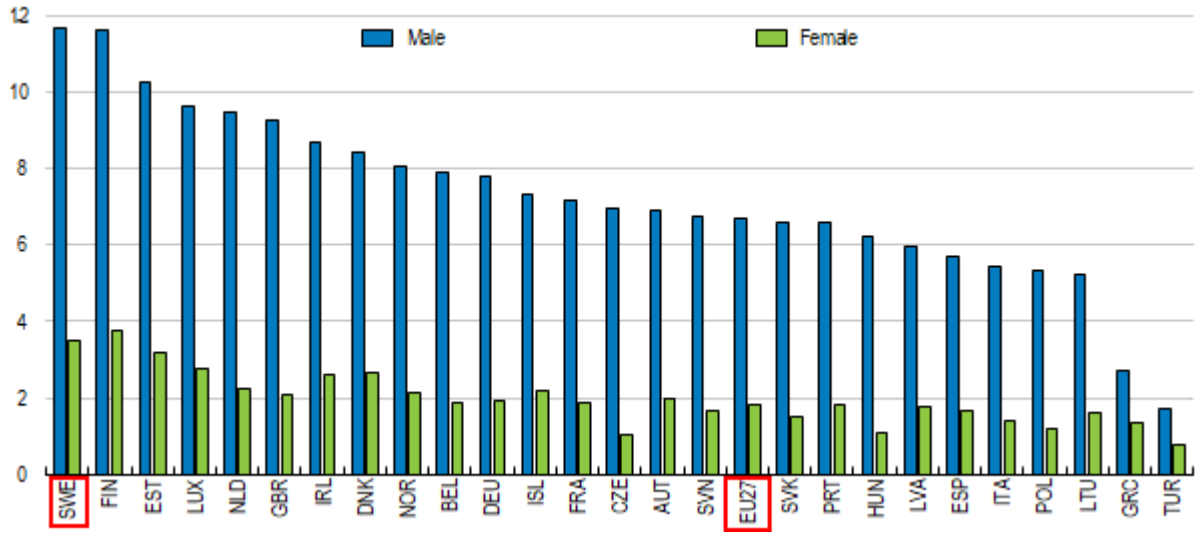
Like in many OECD countries, the digital divide between men and women is also sizeable. The share of female ICT specialists is the second highest after Finland among European countries, but the share of male ICT specialists is more than three times higher (Figure 1.28). Overall, the gender gap in ICT specialists is the highest among European countries (8 percentage points). The under-representation of women in ICT professions matches their education choices. Women represent 30% of ICT graduates (Figure 1.29). Education choices are determined by personal preferences. They are also influenced by social norms, resulting in the self-selection of women in education fields they think are most likely to offer them job and career opportunities. Sweden has already implemented several projects to address gender stereotypes in schools and pre-schools (*2017 OECD Economic Survey of Sweden*). Such projects should be further supported and developed, for instance by raising teachers' gender awareness and knowledge of STEM-related studies and professions, like in the Netherlands, and promoting female role models in the digital economy like Sheryl Sandberg's "Lean in" campaign (OECD, 2018b).

Figure 1.28. The gender gap in ICT specialists is the highest in Sweden

Percentage of male and female workers, 2020



Note: 2019 for United Kingdom. ICT specialists are defined by Eurostat as "workers who have the ability to develop, operate and maintain ICT systems, and for whom ICT constitute the main part of their job".
Source: Eurostat Digital Economy and Society Database; Eurostat Labour Force Survey.

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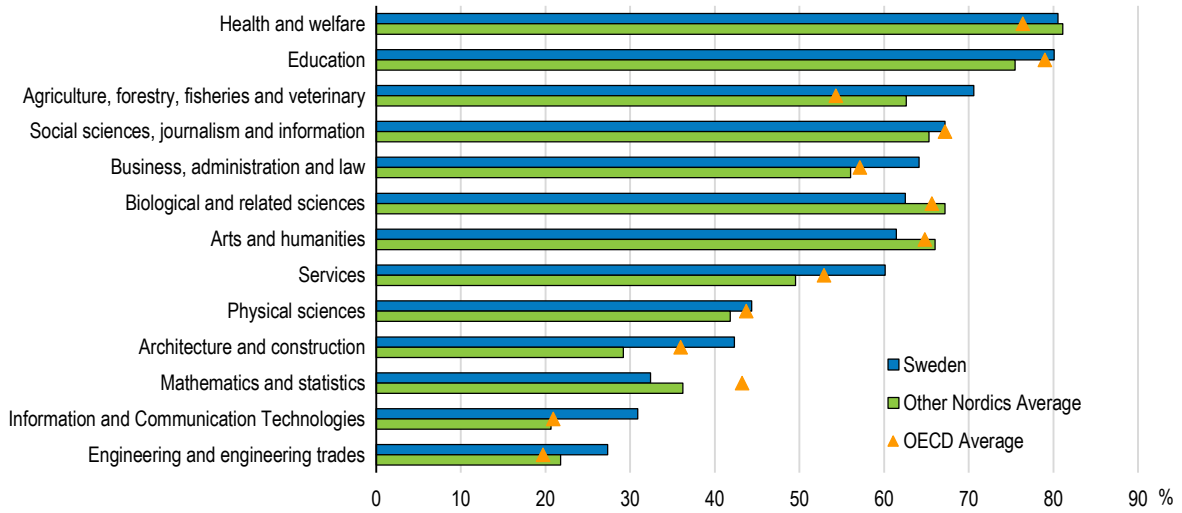
Figure 1.29. The share of women graduating in ICT is still low

Share of women graduating by field of education, 2018



Note: Level of education: total tertiary education (ISCED2011 levels 5 to 8).
Source: OECD Education at a Glance.

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Table 1.10. Past recommendations on business regulations and competition policies

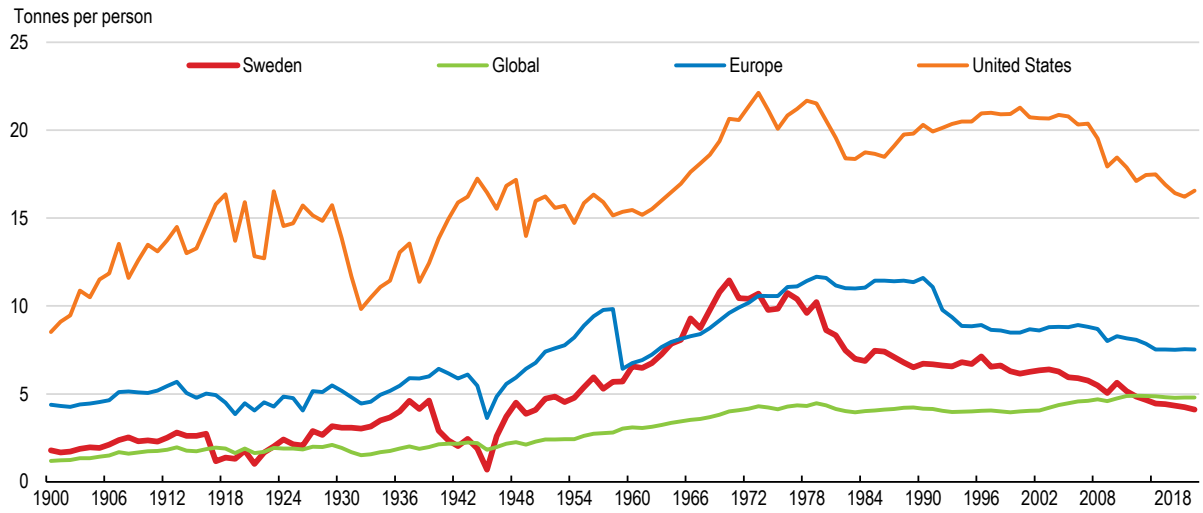
Main recent OECD recommendations	Action taken since the 2019 Survey or planned
Continue to use digital tools to improve services, simplify procedures and shorten licences and permits processing times.	Digitalisation of public services has continued and online services have expanded greatly during the pandemic.

The green economy offers new growth opportunities

Sweden is a frontrunner in the fight against climate change and an example of best practice for other countries. Its territorial CO_2 emissions per capita peaked as early as 1970 and have declined by about two-thirds since (Figure 1.30). Economic incentives and policy instruments played a major role in this achievement. In particular, Sweden was among the first countries in the world to introduce a carbon tax in 1991, which increased gradually thereafter. Many initiatives at regional and municipal level have improved the environment, while benefitting local economic actors (Chapter 2). The objective of reducing GHG emissions outside the EU Emissions Trading System (EU ETS) by 40% relative to the 1990 level by 2020 has been achieved, even abstracting from the temporary effects of the pandemic on emissions (Swedish Climate Policy Council, 2021). Sweden has set the ambitious objective of achieving net zero carbon emissions by 2045, which implies reducing domestic emissions by at least 85% relative to the 1990 level. The surplus of emissions rights generated, which reflects the government's will to meet its national climate goal for 2020 with domestic measures only, has been removed every year since 2014, instead of being sold to other countries. In total, withdrawals of emission rights reduced GHG emissions by approximately 130 million tonnes of CO_2 equivalent, more than twice Sweden's 2019 total emissions. The 2017 climate policy framework set out the modalities of the implementation of the Paris Agreement in Sweden and created an independent climate policy council to assess every year the adequacy of policies to meet the climate goals (Ministry of the Environment and Energy, 2018). Sweden's climate act, which entered into

force in January 2018, requires the government to present an annual climate report in its budget bill and an action plan every four years in accordance with the various climate targets, notably the zero net GHG emissions by 2045 announced in its 2017 climate policy framework (Swedish Government, 2020c).

Figure 1.30. Carbon dioxide emissions per capita are declining steadily



Note: Carbon dioxide emissions refer to emissions from burning fossil fuels to produce energy and cement.
Source: Sveriges Riksbank, based on Our World in Data (OWID).

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Renewable energy is growing rapidly and its share in electricity generation was 52% in 2019, with nuclear accounting for another 39% and conventional thermal power for less than 10%. Sweden has set the objective of having fossil-free electricity by 2040, with possible contribution from nuclear. The objective looks achievable, even though it will require capacity investments to replace ageing nuclear plants and wind turbines after 2030 and investments in the power grid to allow adjusting production to demand at all times (Swedish Climate Policy Council, 2020). Widespread district heating based on biomass contributes to limiting greenhouse gas (GHG) emissions from buildings, even though enhancing energy efficiency through renovation, with government support, will help reduce them further. Having largely picked the low-hanging fruit, Sweden needs to reduce GHG emissions in more challenging areas. The largest emitters are road transport, industry, notably metal and cement, and agriculture (Figure 1.31).

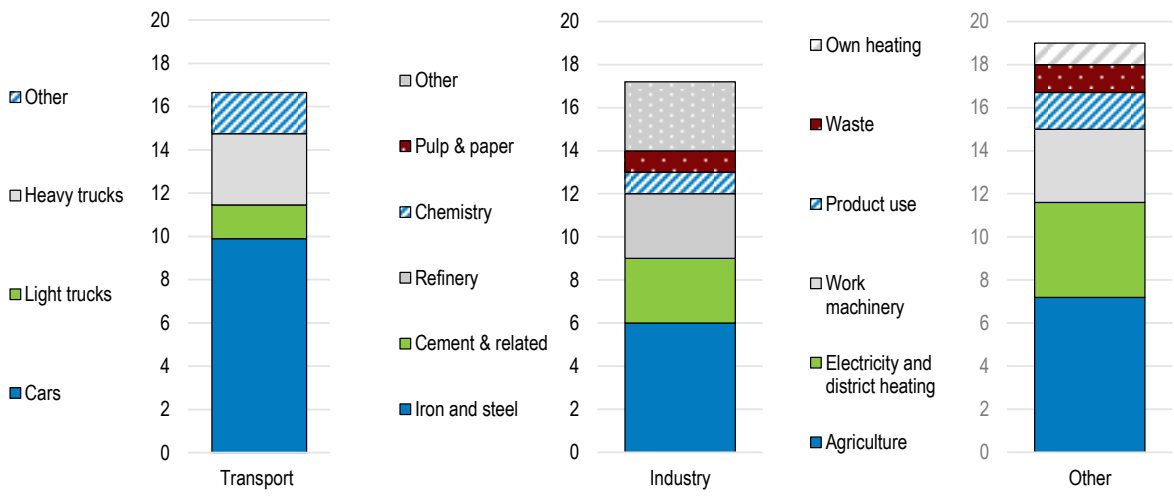
To reduce domestic transport emissions, which account for about a third of Sweden's total emissions, the government has reformed the vehicle bonus-malus system, imposed more renewable fuels through a low-carbon fuel standard (i.e. capping emissions per energy unit, forcing suppliers to blend gasoline and diesel with biofuels), and increased investment in railways. Electric vehicles are becoming increasingly popular and accounted for about a third of new registrations in 2020. An electrification commission has been set up, led by the Minister for infrastructure, to implement measures for a rapid electrification of the transport system and a transition to sustainable renewable fuels, along with increased transport efficiency. Nevertheless, the timeline for electrification of road transport and its articulation with policy measures remains unclear (Swedish Climate Policy Council, 2020). Countries like Norway and the Netherlands were early promoters of transport electrification and have achieved large increases in their electric vehicle fleets, but at the price of costly subsidies. Hence, the Swedish government should elaborate a more precise roadmap for achieving CO_2 emission reduction in road transport in a cost-efficient way. This would also give visibility on investment needs, notably for charging stations and biofuel production. The European

Union Recovery and Resilience Facility also supports the climate transition, to which 40% of the funds to be received are linked (Swedish government, 2021c).

Maritime transport is another sector where GHG emissions need to be reduced. New advances in technology can improve energy efficiency. Cleaner fuels, including biofuels, electricity, hydrogen and ammonia offer solutions for reducing emissions, provided they are produced using low-carbon processes, which calls for the introduction of international regulations on lifecycle emissions (ITF, 2020). Price signals will also need to be strengthened to reach emission targets (Vierth et al., 2020). Some measures have been put in place in Sweden, as in the other Nordic countries, including environmentally differentiated port and fairway charges. However, the Swedish carbon tax does not apply to domestic shipping and maritime fuel benefits from tax exemptions, as in most OECD countries, with exceptions for domestic shipping in Canada, Colombia, Iceland and the US state of California (ITF, 2020). The September 2020 European Parliament decision to support the inclusion of CO_2 emissions from the maritime sector in the EU ETS and use revenues to support investment in innovative green maritime technologies and infrastructure is welcome.

Figure 1.31. Road transport, industry and agriculture are the largest GHG emitters

Million tonnes of CO_2-equivalent



Note: transport refers to domestic transport.
Source: Naturvårdsverket.

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Emissions from industry have historically been under-priced compared to those from other sectors, but the carbon tax rate for industries outside the EU ETS is now aligned on the general rate. ETS prices have risen to above EUR 30 in early 2021, but this level still corresponds to a low-end estimate of GHG emissions' current climate cost (OECD, 2018c). The Swedish authorities need to continue to work with the European Commission to ensure that the ETS provides the right price signals to achieve the desired emission reductions. Decarbonising sectors of Swedish industry like steel and cement is technically challenging, involves high economic risks, and requires huge investments (Bataille, 2020). The government has initiated the Industrial Leap programme in 2018 to support the development of technologies and processes aimed at reducing process-related GHG emissions from Swedish industry. Financial support, which is administered by the Swedish Energy Agency, may be provided for research, feasibility studies, pilot and demonstration projects, as well as full-scale investments. Projects related to mitigation, as well as to negative emissions, are eligible for funding. The target group for support is

industries with process-related emissions, along with universities and research institutes. The 2021 budget also introduced green credit guarantees for large-scale industrial investment projects contributing to reaching environmental and climate policy goals. A consortium of steel and mining companies is developing a technology for producing fossil-free steel by 2035, with support from the Swedish Energy Agency. The project could reduce Sweden's CO_2 emissions by 10%. Although fossil-free steel would be 20 to 30% more expensive than traditional steel at current electricity, coal and carbon prices, it is expected to become competitive in the future, as carbon prices rise.

Agriculture accounts for around 15% of total GHG emissions, including about 2% related to fossil fuels used in machinery. Fuels for agriculture, forestry and fishery machinery benefit from reductions in carbon and energy taxes, which should be phased out. If necessary, government support should be provided in a way that is consistent with reducing GHG emissions. The government has commissioned an inquiry on measures and instruments for fossil-free agriculture. Reducing non-fossil fuel emissions (e.g. methane) from agriculture is particularly challenging, as they result from biological processes in animal husbandry and agricultural land use. Knowledge on ways to tackle such issues is limited and on current conditions and announced policies, about two-thirds of current GHG emissions from agriculture would remain by 2045 (Swedish Climate Policy Council, 2020). The government has taken measures to reduce methane leakage from manure management, but reducing agricultural GHG emissions further will require developing more sustainable agricultural models. Better connections between research and the agriculture and food sector, further efforts to provide targeted and tailored advice to farmers on sustainable technologies and practices, and more systematic application of the polluter-pays-principle would all help (OECD, 2018d). Sweden should also ensure that its European common agricultural policy strategic plan shows strong ambition for the climate.

Table 1.11. Past recommendations on environmental policy and action taken

Main recent OECD recommendations	Action taken since the 2019 Survey or planned
Raise taxes on industrial energy use.	The carbon tax rate for industries outside the EU ETS has been aligned on the general rate.
Strengthen and further harmonise climate-related disclosure requirements, especially for financial intermediaries, including banks.	The FSA has actively encouraged Swedish financial and non-financial firms to adopt the Task Force on Climate-related Financial Disclosures recommendations and to disclose climate-related exposures in accordance with these recommendations. The FSA is leading the IOSCO Taskforce on Sustainable Finance, which is deeply involved in the ongoing work to achieve a unified and comparable global standard for sustainability disclosure.

Key policy insights recommendations

Key recommendations in bold

MAIN FINDINGS	RECOMMENDATIONS
Buttressing livelihoods and demand	
Many economic branches, especially those requiring face-to-face interaction, and their workers still suffer from the COVID-19 crisis.	**Maintain support measures, such as reinforced short-time work and compensation for lost turnover, until COVID-19 pandemic subsides.**
Fiscal policy supports the economy. As the recovery will be gradual and will require resource reallocation, continued fiscal support will be needed to ensure a solid recovery.	**Maintain strong fiscal policy support until the recovery is well established and gradually move back towards the budget surplus target over the medium term.**
The zero policy rate and measures to improve liquidity and facilitate lending have stabilised the financial system and support the recovery.	**Maintain accommodative monetary policy until inflation is durably close to target, with activity on course to expand at a robust pace.**
Housing prices and household debt are rising rapidly. The mortgage amortisation requirement was lifted early in the pandemic, but will be reinstated from September 2021.	**If household debt continues to rise rapidly, tighten macroprudential policy.**
Fighting money laundering	
Major Swedish banks have been deficient in anti-money laundering governance. The authorities have imposed fines and taken steps to reinforce supervision, including through international cooperation.	Continue to strengthen supervision and international cooperation to fight money laundering.
Implementing reforms to support growth and employment	
The social partners have reached an agreement for broad labour market reforms, introducing more job flexibility and security, to be implemented by mid-2022.	**Implement the labour market reforms agreed by the social partners.**
The tax wedge on labour remains high despite some shift towards environmentally-related taxation. Existing property taxation arrangements are regressive and raise housing prices.	**Shift taxation further away from labour and towards environmentally-related taxes and recurrent taxes on immovable property, including through phasing out mortgage interest deductibility.**
Ageing will push up government debt over time in the absence of reforms.	**Implement the pension reform which raises the maximum age for the right to remain in employment and the minimum ages for receiving state old-age and basic pensions in line with developments in life expectancy.**
Strict rental regulations tend to discourage mobility, notably for low-income households, and may contribute to spatial segregation.	**Ease rental regulations to incentivise rental housing supply, while maintaining tenant protection against abuse.**
Inefficient land-use planning and low incentives for municipalities to encourage construction contribute to housing shortages, which reduce affordability and labour mobility, despite useful recent measures to release land for development and speed up planning processes.	**Enhance co-operation between central and local government in land-use planning and increase incentives for municipalities to facilitate the timely release of development land. Simplify land-use planning procedures, balancing economic, environmental and social considerations.**
Skills mismatch generates unemployment, particularly for the low-skilled and foreign born, whose position is further weakened by the COVID-19 crisis.	**Strengthen adaptation of vocational education and training to labour market needs by reinforcing regional coordination structures.**
Enrollment in vocational education and training has declined, which may be related to perceived weak pathways to higher education.	Improve access to programmes that create pathways from upper-secondary vocational education to higher education.
Vocational education and training schools are small by European standards, which prevents economies of scale.	Concentrate vocational education programmes in highly specialised technical areas requiring expensive equipment in fewer institutions.
Supporting digitalisation	
The diffusion of digitalisation across firms is hindered by a lack of ICT skills.	Encourage students to graduate in ICT fields and develop further adult education in ICT.
The share of firms reporting security breaches is high.	Encourage firms to implement ICT risk assessments on a periodical basis and train their employees to raise their awareness of obligations related to ICT security, especially in small firms.
Strengthening gender equality	
The employment rate of foreign-born women is much lower than that of natives.	**Mainstream the pilot Equal Establishment programme for foreign-born women.**
The gender digital divide is sizeable both in terms of profession and education.	Continue to address gender stereotypes in schools and pre-schools and support other projects like raising teachers' gender awareness and knowledge of STEM-related studies and professions, and promote female role models in the digital economy.

Greening growth	
Road transport accounts for about a third of total greenhouse gas emissions. The government has taken several steps to reduce emissions from the sector, but a clear overall strategy is still missing.	**Elaborate a roadmap for cost-efficient and technology-neutral decarbonisation of road transport.**
Fuels used by agricultural, forestry and fishery machinery generate sizeable CO_2 emissions and benefit for reduced carbon and energy tax rates.	**Phase out reductions in carbon and energy taxes for fuels used in agriculture, forestry and fisheries.**

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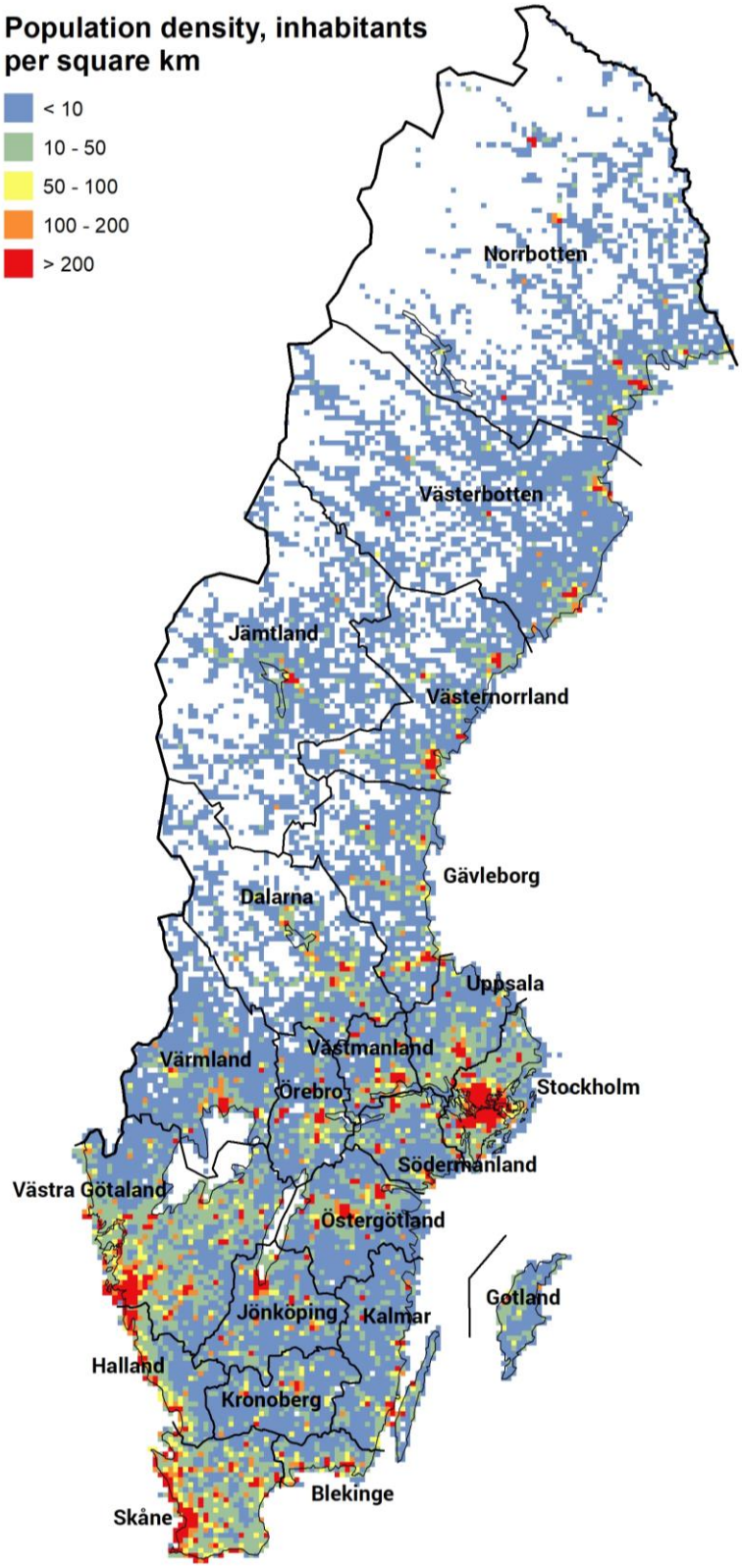
2 Keeping regional inequality in check

Regional inequality is low in Sweden compared to most other OECD countries, but has been rising over the past decades, fuelling discontent in parts of the country whose inhabitants feel left behind. The younger population is increasingly concentrated in the largest cities, which also enjoy the highest productivity growth. Demographic trends exacerbate the difficulty in providing equal public services across the country. Healthy public finances are allowing the government to increase its support to municipalities and regions to adjust to demographic developments and local operating conditions. Beyond this effort, keeping regional inequality in check will require upgrading the sub-national government fiscal framework, enhancing public service efficiency, especially through digitalisation, and promoting regional convergence further, especially by strengthening the role of universities in regional knowledge and innovation networks.



Source: Statistics Sweden.

Regional inequality has been rising since the early 1980s and, while remaining low by international standards, risks weakening economic opportunities, well-being and social cohesion. As in many other OECD countries, widening regional inequality has increasingly fuelled discontent among citizens feeling left behind (OECD, 2017a). The main urban areas, and particularly Stockholm, are enjoying the strongest growth in both population and productivity. While the move of younger and better educated individuals to big cities is not new, it no longer coincides with productivity convergence, due to strong agglomeration effects in an increasingly knowledge-based economy. Regional divergence is likely to continue, even though the COVID-19 pandemic may slow migration to cities and the acceleration in digitalisation could weaken agglomeration effects and mitigate the disadvantage of remoteness. Some Northern regions have also enjoyed strong output growth over recent years despite demographic headwinds, largely thanks to developments in mining and renewable energy.

Regional and municipal finances are coming under pressure. Providing equal public services to citizens across the country is becoming increasingly challenging (Swedish government, 2019a, 2020a). In addition, the share of both young people and the elderly is increasing nationwide, pushing up demand for education, health and other social services across the country, but with regional differences. Infrastructure is ageing, imposing renewal investments.

Sweden is one of the most decentralised OECD countries, with regions and municipalities receiving a significant share of fiscal revenue and being responsible for most welfare services. Steady economic growth generated strong tax revenue until 2017, but weakening activity has subsequently reduced income growth and pushed up expenditure, even before the COVID-19 crisis hit. The central government has responded by increasing grants to sub-national governments (regions and municipalities) and more than compensated for COVID-19-related costs in 2020, which has markedly improved the financial position of sub-national governments. Nevertheless, many of them will face strong headwinds going forward. Beyond financial constraints, many sub-national governments face shortages of skilled workers, which increasingly hampers the provision of high-quality public services. While additional central government funding, enhanced fiscal equalisation and efficiency gains can help mitigate these problems, policies should also aim at boosting the growth potential of all regions to foster job opportunities, inclusiveness and well-being throughout the country.

In March 2021, the government unveiled its 2021-2030 National strategy for sustainable regional development throughout the country (Swedish Government, 2021). The strategy aims at tackling environmental, climate, demographic and inequality challenges, while reinforcing competitiveness throughout the country, by enhancing capacities for regional and local development action, strengthening multi-level governance and coordination between government institutions, regions and other stakeholders, and strengthening policy assessment through research and evaluation. The strategy identifies four strategic areas: equal opportunities for housing, work and welfare; competence supply and development; innovation, renewal and entrepreneurship; accessibility through digital communication and transport systems.

This chapter is structured as follows. The first section outlines recent developments in regional inequality. The second maps the resources and responsibilities of different levels of government. The third section describes the fiscal equalisation system. The fourth explores the challenges faced by various types of regions and municipalities. The fifth shows how the central government is supporting municipalities and regions. The sixth investigates opportunities offered by digitalisation to enhance public service delivery. The last section looks at ways to promote regional growth and employment.

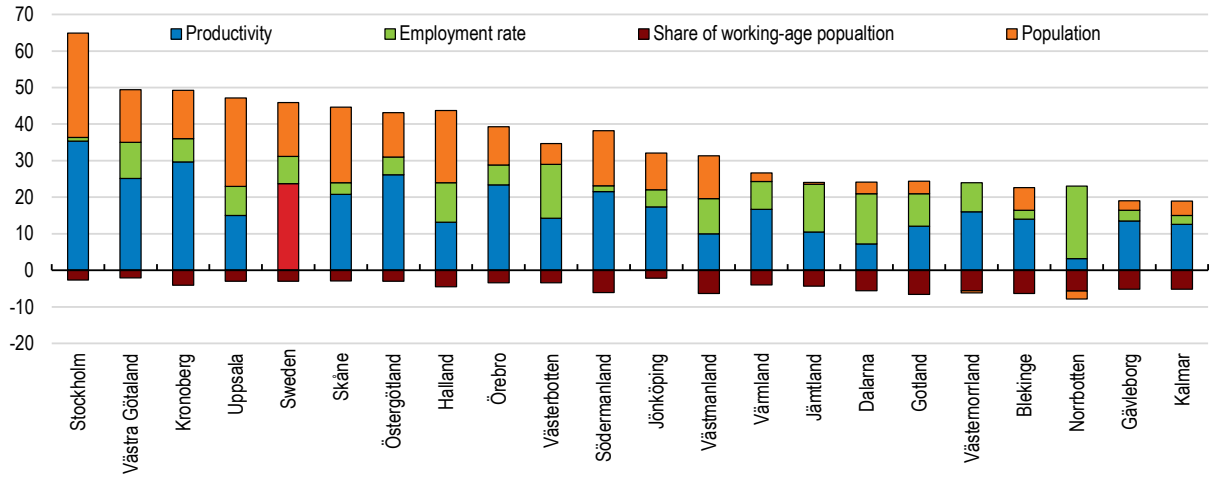
Regional inequalities are increasing albeit from a low level

Real gross regional domestic product (GRDP) growth has varied widely across Swedish regions over the period 2000-18, ranging from more than 70% in Stockholm to less than 15% in Kalmar (Figure 2.1). This

stems mainly from differences in productivity and population growth, although the evolutions in the age structure of the population and the employment rate also play a role. GDP per capita has diverged across regions, as illustrated by the positive correlation between GRDP per capita levels in 2000 and subsequent growth (Figure 2.2, Panel A). The correlation overwhelmingly reflects outstanding performances in the regions of Stockholm and Gothenburg (Västra Götaland). Despite the divergence over the past decades, disparities in GRDP per capita between the Swedish regions remain lower than among comparable regions in other OECD countries, in half of which regional inequality has also increased since 2008 (Figure 2.3). While there was some convergence between EU28 regions since 1997, it slowed after the 2008 global financial crisis. Furthermore, convergence was exclusively driven by between-country convergence, while regional dispersion within countries increased somewhat, with capital regions in many cases pulling away from other regions (Bisciari et al., 2020). In Sweden, an extensive welfare model, coordinated wage bargaining, as well as a clear objective of territorial equity in national policies, contribute to low regional inequality.

Figure 2.1. GDP growth has varied considerably across regions

Contributions to real gross regional domestic product percentage change, 2000-18, TL3 regions



Note: Data are adjusted for changes in the perimeter of some regions during the period. This has a minor impact on the results.
Source: Authors' calculations based on Statistics Sweden Regional Accounts (accessed on 8 December 2020).

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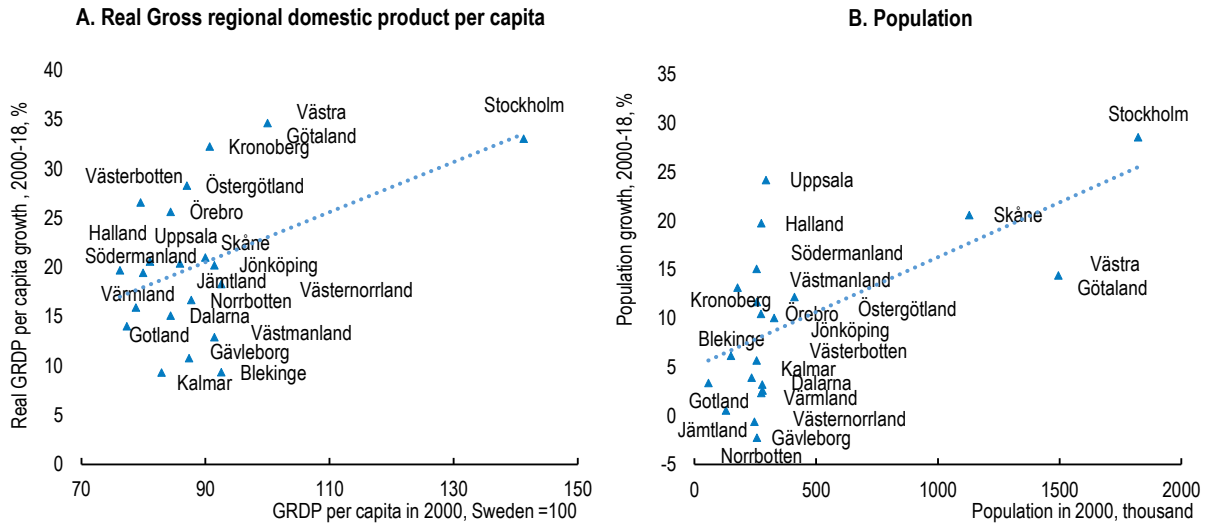
Population growth is also diverging (Figure 2.2, Panel B). Hence, both population inflows and GRDP per capita are lifting leading regions' output. This combination, which dates back to the early 1980s, is unique in Swedish history (Enflo, 2016). During the period between the Second World War and 1980, a reallocation of labour across regions and sectors strongly contributed to convergence in GRDP per capita (Enflo and Roses, 2015). The new pattern reflects agglomeration effects in an increasingly knowledge-based economy. Large agglomerations allow economies of scale, better labour market matching among a larger pool of workers and knowledge spillovers. International studies suggest that a doubling in population size raises the productivity level of a city by 2% to 5% (OECD, 2015a). Contrary to many other OECD countries (Gbohoui et al., 2019), the internal migration rate in Sweden has increased slightly since 2000, and especially since 2012, which suggests relatively strong labour market mobility. This is consistent with micro-data evidence pointing to more efficient reallocation of labour in Sweden than in most other OECD countries (Andrews and Cingano, 2014).

Figure 2.2. Real output per capita and population have diverged

TL3 regions



Note: Data are adjusted for changes in the perimeter of some regions during the period. This has a minor impact on the results.
Source: Authors' calculations based on Statistics Sweden Regional Accounts (accessed on 8 December 2020).

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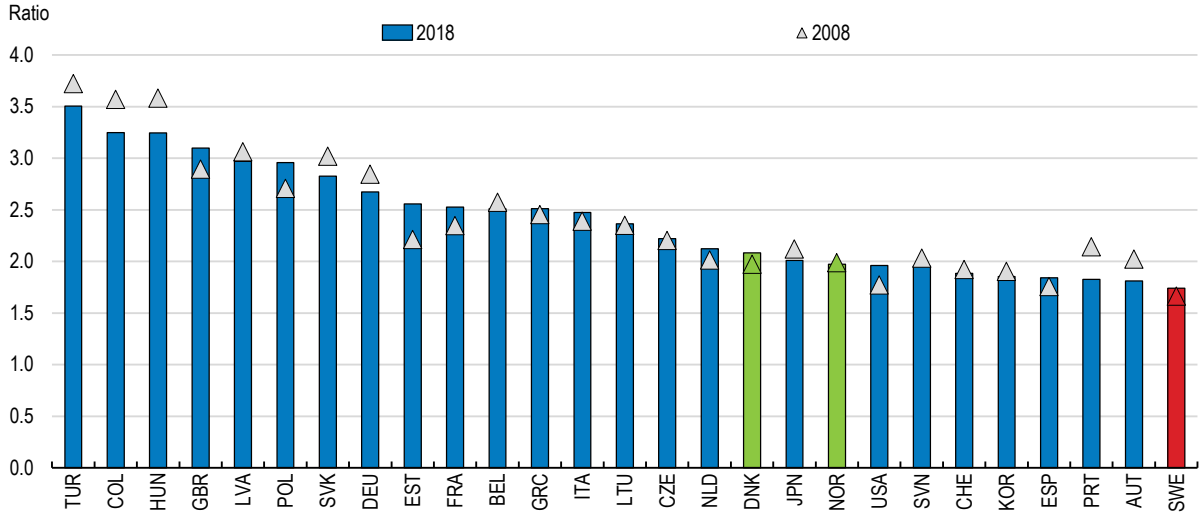
Figure 2.3. Regional disparity remains relatively low

Regional disparity in GDP per capita, TL3 regions

Ratio of RGDP in the top 20% richest regions over that in the bottom 20% poorest regions



Note: The GDP per capita of the top and bottom 20% regions are defined as those with the highest/lowest GDP per capita until the equivalent of 20% of national population is reached. Based on GDP per capita values expressed at 2015 constant prices, using OECD country deflators and converted into constant USD purchasing power parities (PPPs), 2015 reference year. 2008-2018, except last available year for COL, LVA, LTU, NZL and CHE: 2017; JPN: 2016.
Source: OECD Regional Statistics database.

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Sparsely populated regions have experienced slow population growth since 2000, even negative in two cases, as well as generally low productivity growth. Even though the fall in the ratio of working-age to total population is a national phenomenon, it is more acute in sparsely populated regions. Some of them, particularly in the North, have been able to compensate the impact of ageing on labour supply by a significant increase in the employment rate, but the situation is uneven across regions.

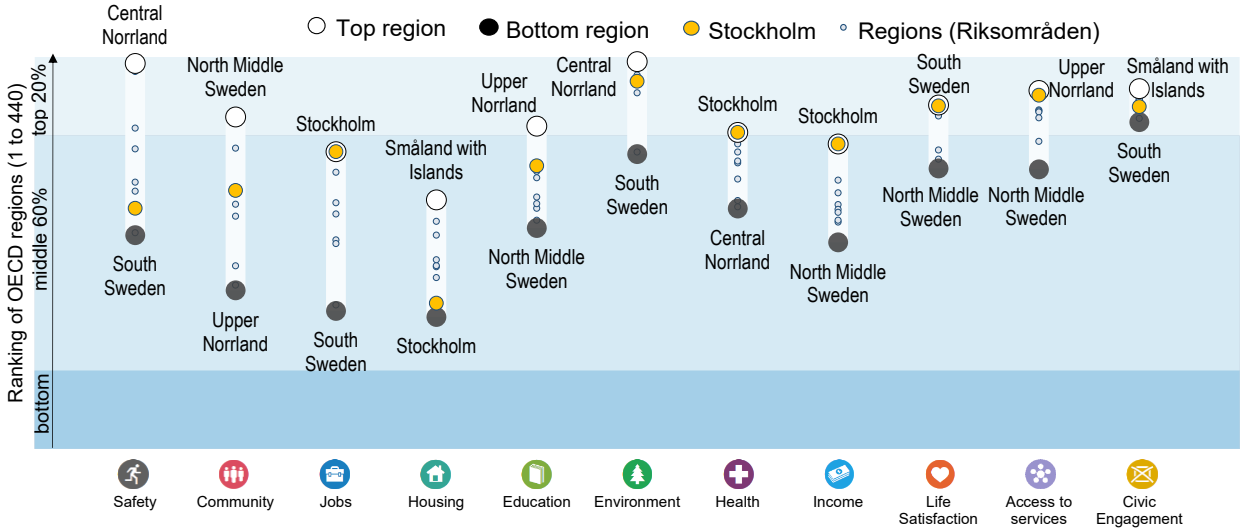
Income is more equally distributed than GDP per capita, thanks to coordinated wage bargaining, which results in a relatively compressed wage distribution, and to taxes and transfers. Still, in 2018, equivalised disposable income (income per household adjusted for family composition) is about 17% above the national average in Stockholm, 4% above average in Gothenburg and below average in the rest of the country, with the lowest level in predominantly rural remote areas, at about 14% below the national average. Differences in living costs, for which data are not available, may mitigate these differences somewhat, even though taking housing costs into account does not alter the picture significantly (Swedish Government, 2019a). Welfare services contribute to narrowing regional inequality, as rural households tend to use more of them than their urban counterparts due to demographic differences. Although this contribution is difficult to quantify, estimates suggest that it could reduce the gap between Stockholm and rural remote areas by more than ten percentage points (Swedish Government, 2019a).

Stockholm stands out for its high level of income, largely due to high capital income relative to the rest of the country. This mainly results from stronger increases in property prices and from rising capital income from closely-held companies (businesses with a limited ownership base in which all or many of the partners are active). Since capital income has been a major contributor to the increase in income inequality in Sweden since the mid-1990s, income inequality between Stockholm and other regions has also widened. Nevertheless, when income inequality is broken down in within and between region components, the between component accounts for less than 4% of the total in 2016 (Swedish Government, 2019a).

Regional inequality is also evident in several other dimensions of well-being, despite generally high scores, with many Swedish regions among the top 20% of OECD regions in several dimensions and no region among the bottom 20% in any dimension (Figure 2.4). Civic engagement, access to services, life satisfaction and the quality of the environment are high throughout the country. Nevertheless, large regional differences appear in other areas, with some weak spots, including housing shortages in Stockholm, job scarcity and safety issues in South Sweden and a perceived lack of social network support in Upper Norrland. This illustrates different challenges across the country, as South Sweden struggles with social issues and gang violence (Sturrup et al., 2019), while Northernmost regions are suffering from declining and ageing populations.

Figure 2.4. Well-being varies across regions

Well-being regional gap, TL2 regions



Note: Relative ranking of the regions with the best and worst outcomes in the 11 well-being dimensions, with respect to all 440 OECD regions. The eleven dimensions are ranked according to the size of regional disparities in the country. This chart refers to large regions (TL2) rather than the small regions generally referred to in this chapter due to data availability. Upper Norrland includes Norrbotten and Västerbotten; Central Norrland includes Jämtland and Västernorrland; North Middle Sweden includes Dalarna, Gävleborg and Värmland; Småland with Islands includes Gotland, Jönköping, Kalmar and Kronoberg; South Sweden includes Blekinge and Skåne.
Source: *OECD Regions and Cities at a Glance 2020*.

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Sweden is among the most decentralised OECD countries

Swedish sub-national governments, like their other Nordic counterparts, enjoy extensive responsibilities and relatively high autonomy, even though strict national regulations and standard requirements impose significant constraints in some areas. Fiscal decentralisation in OECD countries is generally associated with lower disparities in regional GDP per capita, and a more rapid pace of convergence (Blöchliger et al., 2016).

Health care is the main responsibility of regions, although they also have a significant role in transport and regional development. Municipalities are responsible for providing a wide range of welfare services (Box 2.1). They account for nearly half of general government final consumption, with the other half almost equally divided between regions and central government. In total, sub-national governments account for more than 70% of general government final consumption, the highest share in the OECD, and more than half of general government investment, the fifth highest share in the OECD (Figure 2.5). Altogether, sub-national government spending represents about half of public spending, the second highest share in the OECD after Denmark (Figure 2.6, Panel A), and nearly a third of public revenue, the highest share in the OECD (Panel B). Municipalities and regions have discretion on tax rates, which is an important dimension of fiscal autonomy (Dougherty et al., 2019; Forman et al., 2020).

Box 2.1. Sub-national government responsibilities in Sweden

Sweden has three levels of government, central, regional (21 regions) and local (290 municipalities). Municipal and regional councils are directly elected by citizens and other entitled residents. The population of regions ranges from barely 58 000 (Gotlands kommun) to about 2.3 million (Stockholm) and for municipalities from less than 2 500 (Bjurholm) to close to one million (Stockholm).

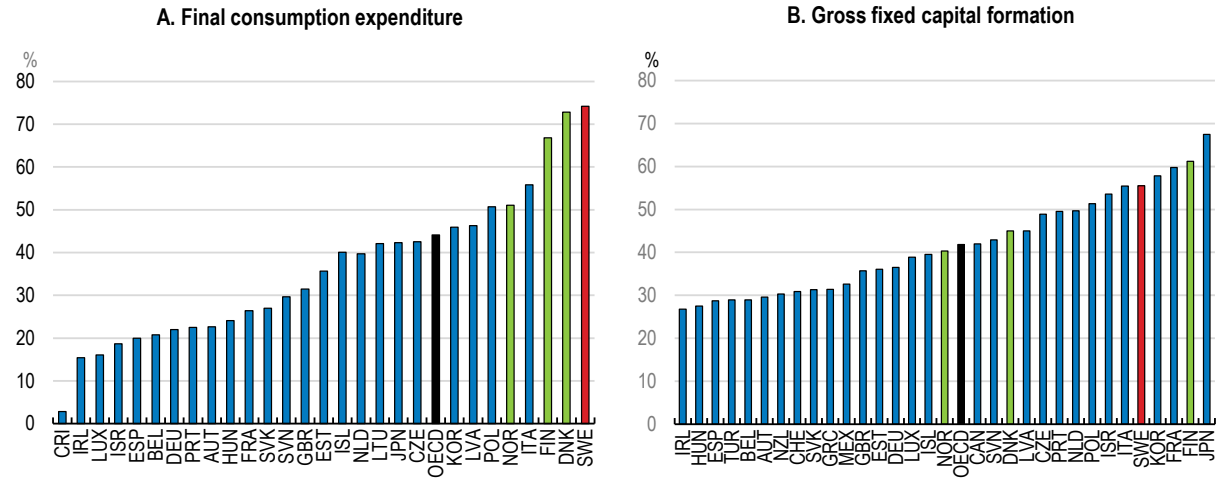
Regions are mainly responsible for health care, transport and regional development, although they can also take responsibilities for culture, training and tourism. In 2019, health care accounted for about 88% of regional expenditure and transport and infrastructure for nearly 10%. Personnel costs represented around 45% of spending and outsourcing of services 17%. Taxes and charges accounted for nearly 73% of revenue and general and earmarked grants from central government for respectively 8% and 14% (including grants for high-cost drugs).

Municipalities are responsible for providing a wide range of services, including pre-school, primary and secondary education, social services, elderly care, environmental and health protection, land-use planning and housing. They can also be involved in leisure and culture, energy and employment services, as well as business development. In 2019, on average more than 40% of expenses went to education and training, 18% to elderly care, 11% to support for people with disabilities and 7% to infrastructure and protection. Personnel expenses accounted for about 55% of costs and outsourcing of services for 18%. Taxes and charges accounted for more than 70% of revenue and general and earmarked grants from central government for respectively 14% and 6%.

Source: Swedish Association of Local Authorities and Regions.

Figure 2.5. Sub-national governments make up a large part of public consumption and investment

Sub-national government consumption and investment as a share of total public consumption and investment, 2018 or latest



Note: In Panel A, data for Costa Rica and Luxembourg refer to 2017 values, and data for the Netherlands refers to 2019 values. In Panel B, data for New Zealand and Turkey refer to 2017 values. Data for the OECD refer to an unweighted average of the countries for which the data are available.
Source: OECD National Accounts database.

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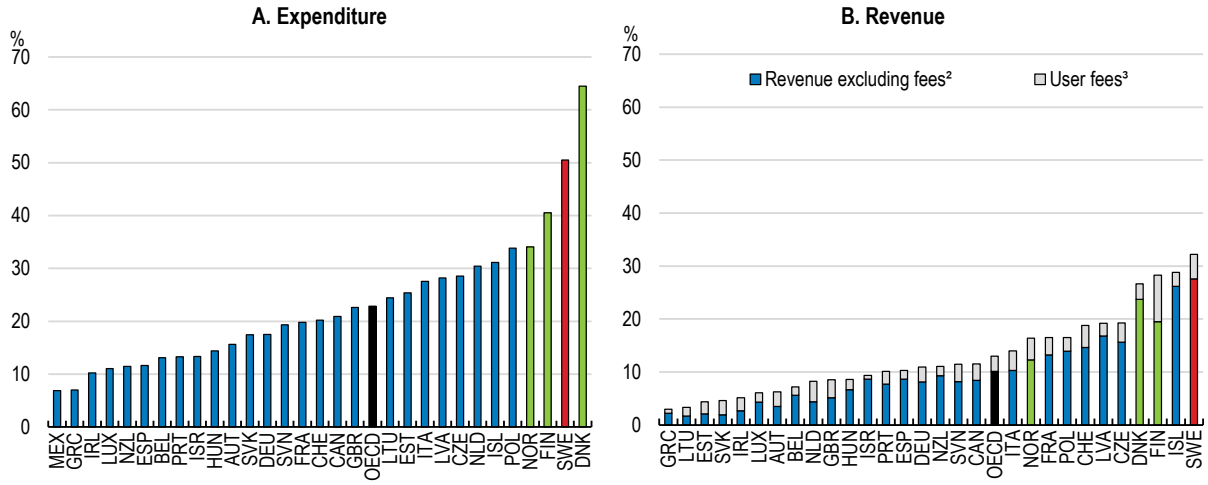
Figure 2.6. Sub-national governments account for a large share of public revenue and spending

Sub-national government revenue and spending in 2018 as a share of total public revenue and spending[1]



1. Data for New Zealand refer to 2017. Data for the OECD refer to an unweighted average.
2. Excludes grants and subsidies.
3. Individual payments to public service providers, including collective and private co-payments through insurance schemes, in return for services provided.
Source: OECD Fiscal Decentralisation database.

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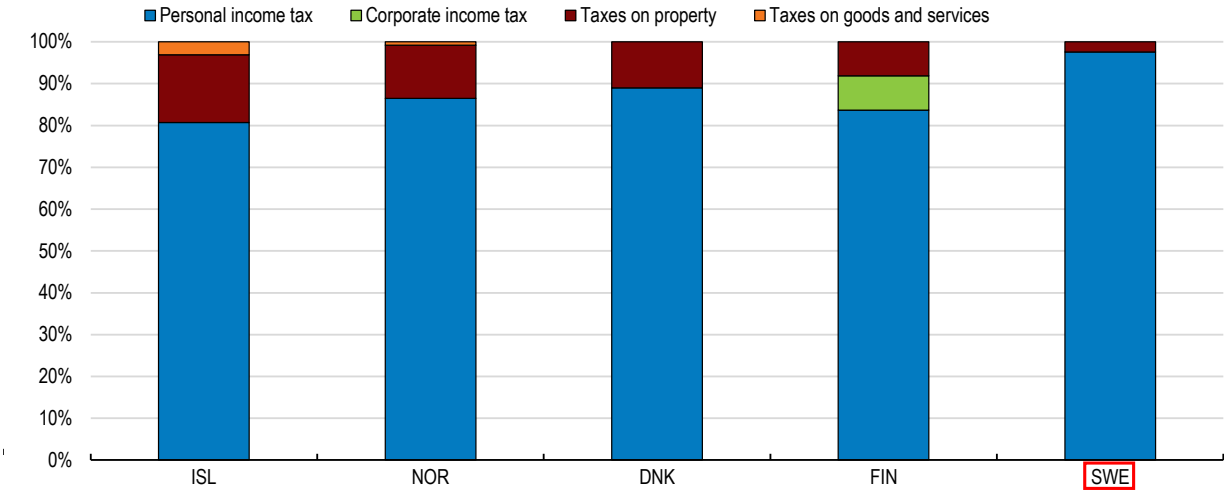
Personal income tax accounts for the largest part of sub-national government revenue, a common feature of highly decentralised countries (Forman et al., 2020). As the tax mix is strongly related to the degree of decentralisation, comparing the tax mix at a sub-central level is only relevant for relatively similar countries. The main source of sub-national government revenue in the other Nordic countries is also personal income tax. However, in the other Nordic countries, a higher share of revenue comes from property taxes (Figure 2.7). Recurrent property taxes are among the least detrimental to growth (Arnold et al., 2011; Cournède et al., 2018). Sweden combines generous mortgage interest deductibility with a recurrent tax on residential immovable property, which is capped at a relatively low level, making it regressive. The marginal effective tax rate for owner-occupied, debt-financed housing investments is the third lowest in the 27 OECD countries for which data are available, after the Netherlands and Denmark (Brys et al., 2021). The *OECD Economic Survey of Sweden 2019* recommended reforming the recurrent tax on immovable property to better align tax charges with property values and phasing out the deductibility of mortgage interest rate payments. In addition to making the tax system more neutral with respect to owning or renting a dwelling, with a likely positive impact on housing market and macroeconomic stability, this could generate additional revenue for municipalities.

Figure 2.7. The share of property tax revenue is smaller than in the other Nordics

Breakdown of local government tax revenue as a share of total local tax revenue, 2018



Source: OECD Revenue Statistics database.

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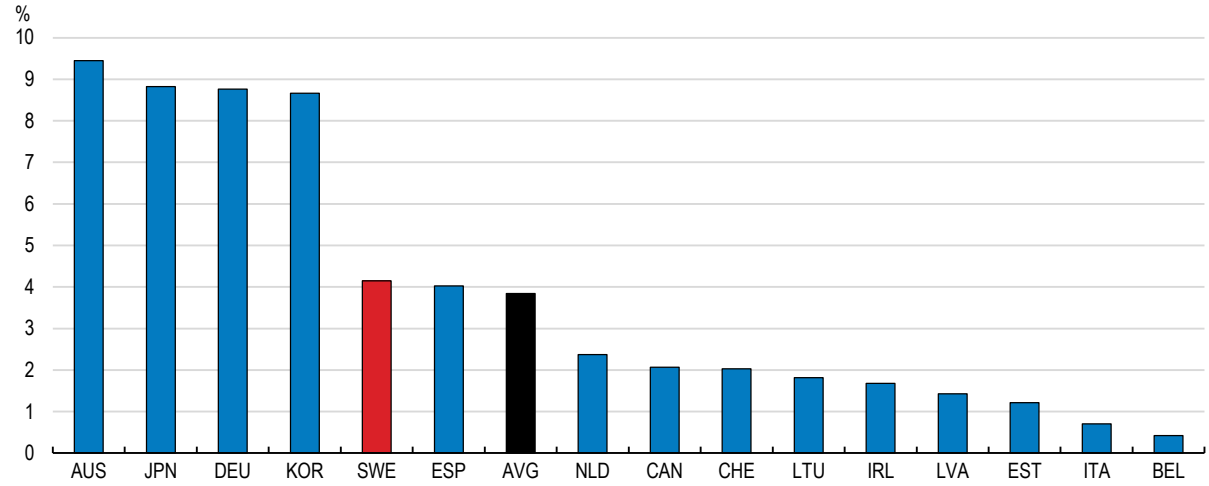
The equalisation system compensates most differences in tax capacity and costs

The fiscal equalisation system aims at enabling sub-national governments (regions and municipalities) across the country to provide equal access to public services, despite differences in demography, taxing power and costs. Similar systems of revenue and cost equalisation are in place for regions and municipalities (Box 2.2). Equalisation transfers amount to more than 4% of government expenditure, which is slightly above the average of OECD countries with available data. However, the size of equalisation transfers varies widely across countries, partly reflecting differing administrative structures and responsibility allocation (Figure 2.8). Revenue equalisation accounts for nearly 90% of equalisation transfers in Sweden (Figure 2.9). Equalisation systems with a dominant revenue component tend to reduce income differences much more than systems with a strong cost-equalising component. In Sweden, fiscal equalisation is estimated to reduce revenue inequality between municipalities (measured by the inter-municipal Gini coefficient of per capita revenue) by a third, which is close to the average of OECD countries for which data are available (Dougherty and Forman, 2021). Germany provides an example of a well-functioning system based on vertical revenue redistribution with a horizontal equalising effect (Box 2.3).

Cost equalisation systems are much more complex than revenue equalisation systems and their outcomes are much more difficult to assess, as they cannot be summarised in a simple revenue disparity indicator. Sweden has one of the most comprehensive cost equalisation systems in the OECD, along with Australia (Figure 2.10). The use of sophisticated sectoral expenditure models allows a wide-ranging assessment of structural differences in the per capita costs faced by municipalities and regions, albeit at the price of perceived complexity and lack of transparency. The latest review of the equalisation system could only propose relatively minor simplifications, but dismissed claims that the system was incomprehensible (Swedish government, 2018). Nevertheless, as many stakeholders seem to find the system too complicated, it would be desirable either to simplify it, as far as this can be done without neglecting important factors, or to present it in a more transparent way.

Figure 2.8. Equalising transfers are slightly above peer countries' average

Percentage of total government expenditure



Note: Data is from 2017 or latest year available. Only systems of explicit fiscal equalisation are included, other systems of inter-governmental transfers which may include equalising criteria are not included in this figure. The figure for Belgium is based on revenue equalising transfers to regions only. AVG is the unweighted average of the countries included in the figure.
Source: Dougherty and Forman (2021), "Evaluating fiscal equalisation: finding the right balance", *OECD Working Papers on Fiscal Federalism*, No. 36, OECD Publishing, Paris.

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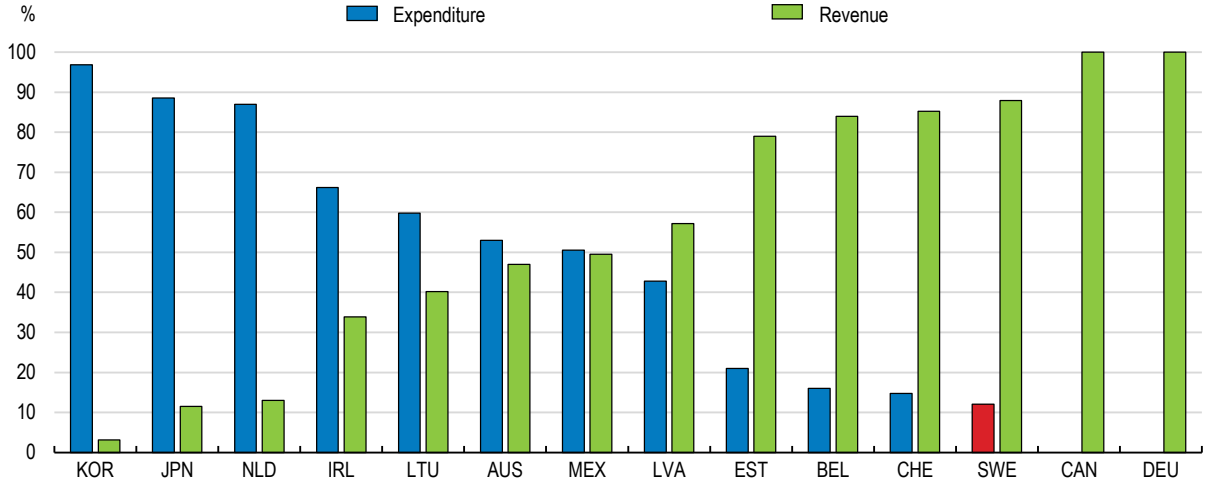
Figure 2.9. Revenue equalisation is predominant in Sweden

Expenditure on cost and revenue equalisation as a share of total expenditure on equalisation, 2018



Note: This figure depicts the relative shares of cost and revenue equalisation as a percentage of total expenditure on equalisation.
Source: Dougherty and Forman (2021), "Evaluating fiscal equalisation: finding the right balance", *OECD Working Papers on Fiscal Federalism*, No. 36, OECD Publishing, Paris.

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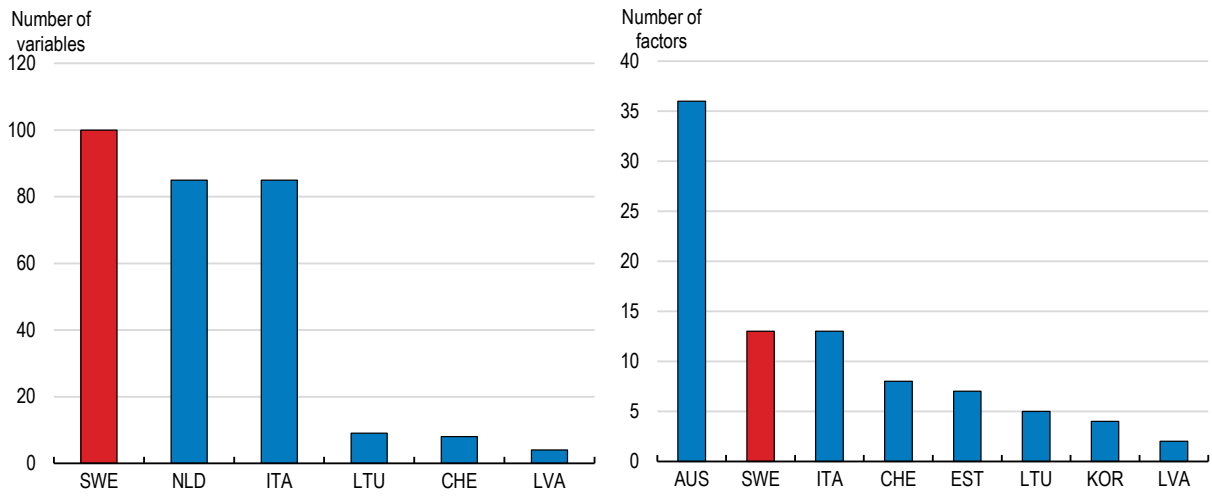
An additional difficulty with cost equalisation is that the factors influencing costs evolve over time, calling for periodical reviews. In Sweden, reviews take place approximately every five years. The latest review

was released in 2018 and its main proposals were implemented from the beginning of 2020. They include significant changes to take into account demographic and socioeconomic developments. While the periodicity is reasonable to implement changes to the system, continuous monitoring involving all stakeholders could allow better debates and updates than the current periodical reviews through government inquiries. In cases where factors affecting costs evolve rapidly, as during the 2015 migration crisis, a permanent monitoring group could also examine the need for temporary measures until the next vintage of the cost equalisation system is in place. The present COVID-19 crisis could also have important implications for the transfers, and a rapid evaluation of the system may be useful. Parliament has called for a new general review of the whole tax equalisation system and asked the government to start an inquiry in December 2020.

Figure 2.10. The Swedish cost equalisation system is relatively complex

Number of variables and number of factors entering into cost equalisation formulas



Note: A factor is a driver of cost disparity, such as a public service or a geographic feature, rather than a variable which enters directly into a formula. Factor are quantified by one or more variables.
Source: Dougherty and Forman (2021), "Evaluating fiscal equalisation: finding the right balance", *OECD Working Papers on Fiscal Federalism*, No. 36, OECD Publishing, Paris.

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Box 2.2. Overview of the equalisation system and new features introduced in 2020

Organisation and principles

Fiscal equalisation in Sweden relies on two separate equalisation systems, one for municipalities and one for regions, both with a revenue and a cost component.[1]

The income equalisation system is based on taxing power, measured by the tax base per inhabitant. The tax rate used in the calculation of the tax base is a representative tax rate fixed by Government to avoid that different tax rates across jurisdictions affect redistribution. The sub-national governments with taxing power below 115% of the country average receive a grant from the state, while those with higher taxing power pay a contribution. Only 14 out of 290 municipalities and one region out of 21 pay a contribution and the central government finances 95% of the grants.

The cost equalisation system compensates for structural cost differences depending on demographics, resident needs and production conditions, like wage levels and geography. The cost equalisation models for municipalities and regions consist of respectively nine and three sub-models, related either to areas of activity (e.g. elementary schools; elderly care; public transport) or to operating conditions and demographics. Efficiency, the range of services provided, or the level of user fees must not affect redistribution to avoid perverse incentives. Contrary to the income equalisation system, the cost equalisation system is entirely horizontal, with no contribution from central government. About a hundred municipalities and ten regions are net contributors.

The 2020 enhancements

The latest vintage of the cost equalisation system came into force at the start of 2020. It retains most previous sub-models, but introduces significant changes and updates to better account for differences in structural needs and costs. In particular, the new system better accounts for higher costs related to sparse and declining populations and socio-economic differences, including those related to the reception of refugees. It adds a new sub-model for adult education, including Swedish language for immigrants. The new formula for individual and family care standard costs removes variables dependant on the actual number of beneficiaries, which generated perverse incentives. The level of education enters the health formula to reflect the impact of socioeconomic conditions on health (Swedish government, 2018, 2019b).

The system also becomes more consistent, with the integration of demographics and operating conditions (e.g. building structure, wages) into the areas of activity sub-models, rather than in separate sub-models. Exceptions are a general expenditure component for municipalities accounting for population decline, payment delays, heating, construction and administration costs, and a population growth component for regions.

A special introduction grant ensures that changes in the system do not increase annual costs for individual municipalities and county councils by more than SEK 250 (EUR 25) per inhabitant.

In December 2020, Parliament asked for a new inquiry to review the entire municipal economic equalisation system, with a focus on development, growth and equal service throughout the country.

1. Both systems also include two components aimed at compensating sub-national governments for past reforms (structural allowance and introduction allowance) and an adjustment item.
Source: Swedish Association of Local Authorities and Regions; Swedish Government (2018, 2019b).

Box 2.3. The German fiscal equalisation system

Germany differs substantially from Sweden, as it is a federal country, and equalising transfers are larger (Figure 2.8). Nevertheless, some mechanisms it uses for fiscal equalisation may be a source of inspiration, even though institutional and cultural differences prevent direct transposition. The German system is based on revenue equalisation (Figure 2.9), although differences in needs and costs are taken into account. In short, the transfer system provides vertical redistribution with a horizontal equalising effect.

Responsibility assignment across government levels

The main central government budget expenditure items relate to defence, social security and labour market policy. The 16 states (*länder*) spend most on education, internal security, justice and administration. About 11 000 municipalities provide social benefits (including assistance for youth and childcare), culture, sport and recreation, and local services, such as water and waste management.

Financing largely relies on shared taxes, notably corporate and personal income taxes and VAT, even though municipalities also have their own fiscal resources, mostly from property and local business taxes. To account for differences in fiscal capacity and needs between and within states, two equalisation systems are in place. The Constitution prohibits direct financing of municipalities by the federal government.

Equalisation between states

A new system entered into force in 2020, to adjust to the expiration of special transfers to Eastern German states in 2019 and the introduction of a "debt brake" to limit debt-financed expenditure by 2020. The states unanimously accepted the reform, which strengthens their finances, in exchange for stricter control. The system also strengthened vertical redistribution, notably through greater VAT distribution to the states. As a result, from 2020, no state has to budget equalisation expenditures, which reduces potential tensions from perceived overburdening.

The Constitution guarantees equivalent living conditions across the country. Semi-determined norms acknowledge regional differences and preserve local autonomy to adapt local service provision to local conditions and preferences. The main horizontal equalisation factor is population, but adjustments account for specific needs. The reference population is increased in the City states (Berlin, Hamburg and Bremen), mainly to account for the provision of services to surrounding areas, and in some sparsely populated states to account for diseconomies of scale. States can also receive non-earmarked federal grants to compensate for specific disadvantages, such as high fixed administration costs due to small size or public infrastructure needs.

Equalisation between municipalities

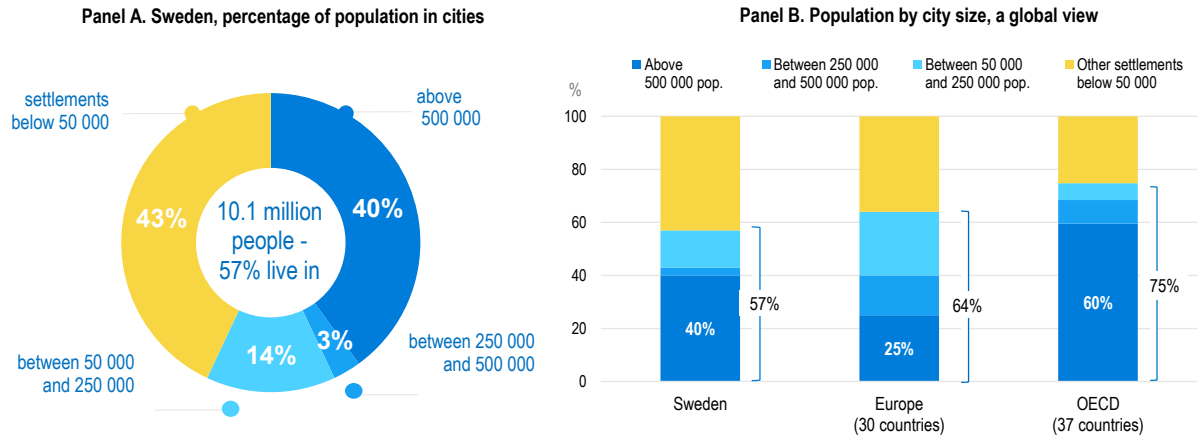
Redistribution to municipalities within each state allows the provision of equivalent services despite varying fiscal capacity and needs. Formula-based grants, non-earmarked to preserve municipal self-governance, transfer funds from the state to municipalities with lower fiscal capacity than spending requirement. In most states, no contribution is required from municipalities with excess fiscal capacity, which keeps the system entirely vertical. Equalisation formulas are generally based on adjusted population numbers, as for equalisation between states. However, some states use more sophisticated formulas, including a broad range of demographic and socio-economic factors.

Source: Thöne, M. and J. Bullerjahn (2018), "Reform and future of federal fiscal relations in Germany", Deutsche Gesellschaft für Internationale Zusammenarbeit, Hamburg; Thöne, M. and J. Bullerjahn (2020), "Municipal finances and municipal financial equalisation in Germany", Deutsche Gesellschaft für Internationale Zusammenarbeit, Hamburg; Deutsche Bundesbank, Monthly Report, September 2014.

Regions and municipalities face diverse challenges

About 40% of the Swedish population lives in the three metropolitan areas with more than half a million inhabitants each (Stockholm, Gothenburg and Malmö). Concentration in cities of this size is lower than the OECD average, but higher than elsewhere in Europe. Cities between 50 000 and half a million inhabitants house a much smaller share of the Swedish population than the European average and 43% of the population lives in areas with less than 50 000 inhabitants (Figure 2.11). The three biggest cities face challenges related to rapid urban growth, such as stress on infrastructures and housing shortages, the need to accommodate growth while reducing carbon emissions, and social polarisation, while small cities and rural areas have to deal with small scale and in some cases remoteness, population shrinkage and labour shortages.

Figure 2.11. A large share of the population is concentrated in the three main cities



Source: OECD Regions and Cities at a Glance 2020.

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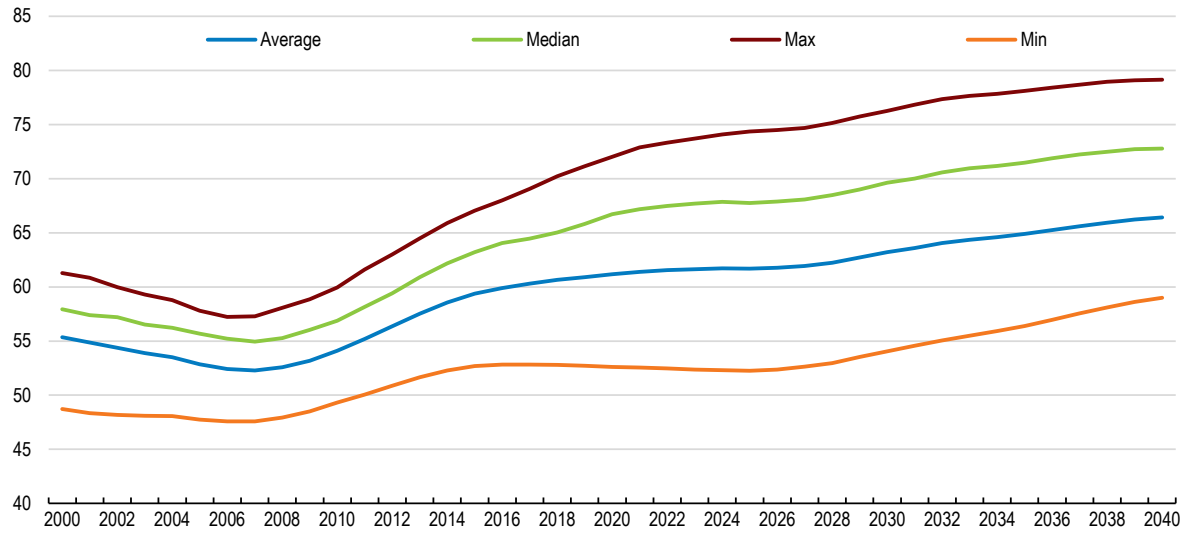
The share of both young and old people has risen markedly over the past decades and the dependency ratio is set to increase further over the next decades (Figure 2.12). However, the national ratio masks regional divergence, with a relatively stable dependency ratio in Stockholm until the end of this decade, contrasting with continued increases in other regions. By the end of the 2020s, the gap between the highest and lowest dependency ratios is expected to be above 20 percentage points, more than twice its 2010 level. Increases in Västra Götaland and Skåne are close to the national average, but the median is much higher, reflecting an increasing burden outside the main metropolitan areas. Demography-related fiscal costs are expected to increase by 9% between 2018 and 2030. Except for the largest metropolitan areas, cost increases are largely unrelated to size (SKR, 2020a). The central government is increasing grants to regions and municipalities, to help them cope with this burden without raising taxes or lowering the provision or quality of public services (see below). Nevertheless, even with more financial resources, providing adequate public services in small or remote jurisdictions is becoming increasingly challenging, due to a lack of scope for economies of scale and shortages of qualified workers.

Access to public services and outcomes vary significantly across places. School results are uneven across regions, even after taking into account other determinants, such as the socio-economic background of students (André et al., 2020). Disparities in the share of adults with tertiary education are also important, partly reflecting the concentration of universities in regions like Stockholm and Western Sweden. In 2019, 53% of the population aged 25 to 64 had tertiary education in the Stockholm region, while this share was only 34% in North Middle Sweden (Annex 2.A). Access to lifelong learning, which offers better job opportunities and where Sweden has the highest ranking among OECD countries, is lower in predominantly rural regions. In 2019, about 30% of the population aged 25 to 64 participated in formal and non-formal education and training in North-Middle Sweden, below the 34% national average and regions like South Sweden and Stockholm (36%). Access to health care varies across regions (Blix and Levay, 2018; Blix and Morin, 2020), partly reflecting the uneven distribution of medical resources around the country. In 2017, about five physicians were available for 1000 persons in the Stockholm region, which is almost 40% higher than in North-Middle Sweden. The number of hospital beds has decreased in all regions between 2000 and 2018 and is one of the lowest among OECD countries (about two beds for 1000 persons, while Austria had about seven).

Figure 2.12. Dependency ratios are increasing and diverging across regions

Ratio of population aged below 15 or over 64 to population aged 15-64 (%), TL3 regions



Note: The minimum corresponds to the Stockholm region throughout the period. The maximum corresponds to different regions depending on the year.
Source: Statistics Sweden and authors' calculations.

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Before the COVID-19 crisis, Sweden displayed high overall employment, with unemployment mostly affecting foreign-born and low-skilled workers. Shortages of skilled labour surfaced in both the public and private sectors in the late 2010s, especially in education, data and IT, technical and scientific professions, construction, health care and installation, operation and maintenance (Arbetsförmedlingen, 2019a). The COVID-19 crisis affects sectors differently, with in particular increased demand for health professionals and data and IT specialists and weak demand for workers in jobs requiring face-to-face interaction. The effect of the crisis on public services over the coming years is unclear as yet. On the one hand, demand for workers will increase in some activities where the crisis has highlighted shortcomings, notably elderly care, and difficult working conditions during the pandemic seem to have prompted more staff than usual to leave health professions. On the other hand, weaker prospects in the overall labour market, especially in private service activities, may make public sector jobs more attractive. Government initiatives have increased teacher remuneration in recent years to make the profession more attractive (*OECD Economic Survey of Sweden, 2019)* and similar efforts may be needed for other categories of professions with rising shortages. However, in some professions, improving working conditions may be even more important than pay levels to attract and retain qualified workers.

Labour shortages vary widely between regions. Earlier OECD analysis pointed to a high skills equilibrium (high supply and demand for skilled workers) in the three leading regions, a low skills equilibrium (high supply and demand for low-skilled workers) mainly in some southern regions, and a skills deficit mainly in northern regions (OECD, 2015b). A shrinking workforce driven by youth out-migration and low retention of migrants is a particular bottleneck in Upper Norrland, which enjoys competitive advantages to become a global leader in environmentally sustainable mining. Labour shortages also vary markedly within regions, between cities and sparsely populated areas. Small and medium-sized municipalities find it particularly difficult to increase employment as they would like for lack of skilled workers. Shortages in rural areas are most acute in business and welfare services and construction, while matching is also less efficient than in more densely populated areas (Tillväxtverket, 2020). Population ageing will further limit labour supply going forward, pointing to the need to increase employment rates and lengthen working lives.

Wage flexibility across regions is crucial to maintain high employment in regions with uneven productivity developments. Wage bargaining in Sweden takes place within an organised decentralised framework, with predominant sectoral level negotiations and high coordination (OECD, 2019a). The manufacturing sector sets a benchmark, which other sectors tend to follow closely. However, the system leaves room for substantial firm-level flexibility. In the 2020 bargaining round, approximately 45% of employees had their wages negotiated at the local level. Wages react to regional unemployment in most sectors. A doubling of the unemployment rate in a region is estimated to lower private sector wages by 2.5% in the short run and 7.5% in the long run. Furthermore, the wages of workers most at risk of job loss or those exiting unemployment react most strongly to the regional unemployment level (Carlsson et al., 2019).

As noted above, the employment rate has increased significantly in some sparsely populated regions, but achievements remain uneven across the country. The foreign-born provide the largest potential to increase labour supply, especially for women, whose employment rate (age 16-64) lagged that of natives by 21 percentage points in 2020. Bringing the employment rate of the foreign-born to the level of natives would add 134 000 women and 87 000 men to employment, or about 45% of the 485 000 needed to stabilise the employed-to-population ratio by 2030 (Arbetsförmedlingen, 2019b). However, the foreign-born generally have lower education than natives. Job matching is relatively weak, especially for people from low-income countries, and even more so in more remote areas (Tillväxtverket, 2020). Policy measures to address this challenge include developing adult education further, in cooperation with the social partners (*OECD Economic Survey of Sweden*, 2019), improving transport to enlarge labour markets (Tillväxtverket, 2018), and increasing opportunities for distance learning and teleworking (see below).

Efforts to raise the employment rate of foreign-born women are essential. Many drift away from the labour market after the end of the *Introduction programme*, which supports immigrants during their first two years in Sweden (OECD, 2016a; *OECD Economic Survey of Sweden*, 2017). The government has, in addition to general measures to speed up the integration of newly arrived immigrants, taken initiatives focusing on foreign-born women, like funding to increase the possibilities for persons on parental leave to take part in Swedish language courses and training, as well as targeted outreach and study motivation actions (*OECD Economic Survey of Sweden*, 2019). A pilot programme for the integration of foreign-born women in the labour market is showing promising results and should be expanded (see Box 1.3 in Chapter 1).

The combination of declining population and low productivity growth in remote areas threatens the cohesion of society (Enflo, 2016). In response, the government introduced in 2020 a tax rebate aimed at people living in sparsely populated areas, particularly in Northern and Western Sweden. Maintaining access to public services in these areas is both challenging and essential to break down negative dynamics leading to further population outflows. While the extension of digitalisation offers opportunities to provide some services remotely (de Mello and Ter-Minassian, 2020), maintaining a certain degree of physical presence remains essential in some areas, including police, social and employment services (Swedish government, 2020a).

Larger cities face the challenges of accommodating growing populations in a sustainable way. This concerns the three main metropolitan areas, but also intermediate size cities, as the number of municipalities with a population over 100 000 inhabitants is expected to increase from 18 to 27 by 2040 (Swedish government, 2020b). The main Swedish cities are at the forefront of smart and green growth. Stockholm has developed its “Vision 2040” to respond in an innovative way to sustainability challenges (Box 2.4). Gothenburg has taken advantage of the region’s strong vehicle cluster to move quickly toward clean transport, with more than 200 electric buses at end-2020, and an objective of fossil-free public transports by 2030. The city is also developing new neighbourhoods hosting both businesses and housing. Malmö is transforming its old dockyards into a carbon-neutral district, relying on wind, solar and biogas energy, which is set to house more than 10 000 people when completed.

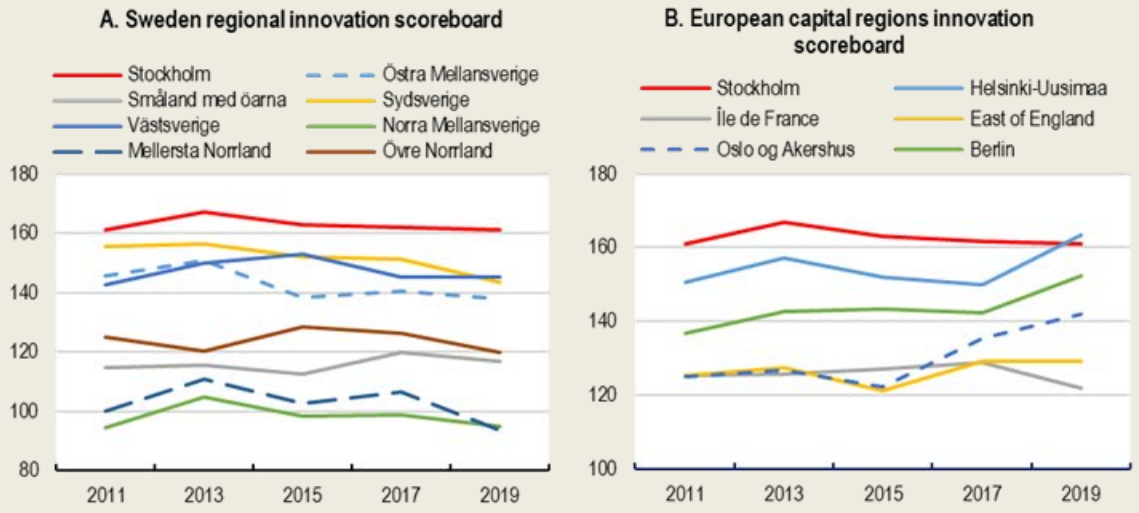
Box 2.4. Stockholm's strategy for a smart and sustainable city: Vision 2040

Stockholm's city council outlined its "Vision 2040" in 2017 to address the challenges from climate change, rapid urbanisation and increasing global competition, with the stated goal of becoming the smartest city in the world by 2040. Having a history of environmental and climate initiatives going back to the mid-1970s, Stockholm now has the ambition to take advantage of its leading position in information technologies and the presence of numerous innovative companies to become fossil free and climate positive by 2040 (Stockholms stad, 2020). Its innovative waste recycling system allows moving towards a circular economy and producing energy, notably for district heating. In June 2020, Stockholm's city council revised its "Vision 2040", in collaboration with government officials, companies and citizens, setting three main goals: a versatile big city for everyone; a smart and innovative city; and a sustainably growing and dynamic city.

Stockholm was awarded the World Smart City Award 2019 by the GrowSmater project sponsored by the European Union for its innovations to reduce energy use, enhance connectivity and improve residents' well-being (European Commission, 2019a). Its region is the most innovative in Sweden and one of the most innovative in Europe, ranking second in the European Commission regional innovation scoreboard 2019 (Figure 2.13).

Figure 2.13. Stockholm is one of the most innovative regions in Europe

EU average = 100



Note: Scoreboard measures may overstate regional differences if they do not fully capture innovations within the smallest companies, which are overrepresented in rural regions.

Source: EU Regional Innovation Scoreboard (2019).

Source: Stockholms stad (2020), *Möjligheterna Stockholm - Vision 2040 (Stockholm of opportunities);* European Commission (2019a), *Stockholm wins World Smart City Awards for European Project*, press release, 27 November 2019.

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Moves towards a circular economy are not confined to the major cities. For example, Växjö stated the goal of being fossil-free by 2030 as early as 1991 and has made great progress since then, notably by using biomass for district heating, recycling waste, and developing clean public transport. In addition, these innovations have benefitted the local economy and the city is at the centre of a region (Kronoberg) with one of the fastest productivity growth rates since 2000. Umeå is developing a circular economy strategy with the goal of being fossil-free by 2040, while enhancing innovation and creating the enabling environment for new business models (OECD, 2020a).

Nevertheless challenges remain. Housing shortages, particularly of affordable rental housing are widespread and acute in big cities, notably Stockholm. Social polarisation is also increasing and safety is an issue in some areas. In response, the government has increased subsidies for municipalities facing socioeconomic challenges and those with a high level of refugee reception, as well as funding for the police. More generally, the government has strengthened its support to regional and local authorities.

The central government is increasing its support to municipalities and regions

Real municipal revenue and expenditure increased on average by about 1% per year over the past decade (Figure 2.14). Spending increases were mainly driven by education costs, reflecting demographic developments, including strong immigration, and efforts to improve quality (*OECD Economic Survey of Sweden*, 2019). Revenue increases were almost equally split between additional tax revenue and additional grants from central government. Several sub-periods need to be distinguished. From 2009 to 2014, spending increases were moderate and mostly covered by general grant and tax revenue increases. The 2015 refugee crisis pushed up spending on items related to the integration of immigrants. Earmarked grants increased sharply and strong economic growth over 2014-17 generated healthy tax revenue, with municipal income outpacing spending. This was reversed from 2018, as growth subsided and earmarked grants declined more than other spending. The regions' real expenditure increased by 1.8% per year on average over 2009-19. The faster rise in spending than for municipalities mainly reflects the rising cost of health care, but infrastructure spending, which accounts for nearly 10% of regional expenditure grew even faster, by close to 8% annually in real terms, reflecting adjustments related to population increases and the need for renewal of old structures.

In 2019, around a quarter of municipalities and more than a third of regions were in deficit. The government increased its general grants to sub-national governments by around 0.7% of GDP in 2020, partly to allow them to deal with rising welfare costs induced by demographic change. The largest part of the increase in general grants, SEK 21 billion, was intended to compensate for the economic effects of the COVID-19 pandemic, but SEK 12.5 billion constitute a permanent increase in general grants. Pandemic-related grants generally exceeded additional costs and revenue shortfalls, leading to the expectation of the first sub-national government surplus in ten years (SKR, 2020b). Nevertheless, the challenges outlined above remain, calling for the central government to continue monitoring closely the adequacy of financing to maintain the quality of welfare service provision throughout the country and for municipalities and regions to continue their efforts to raise efficiency.

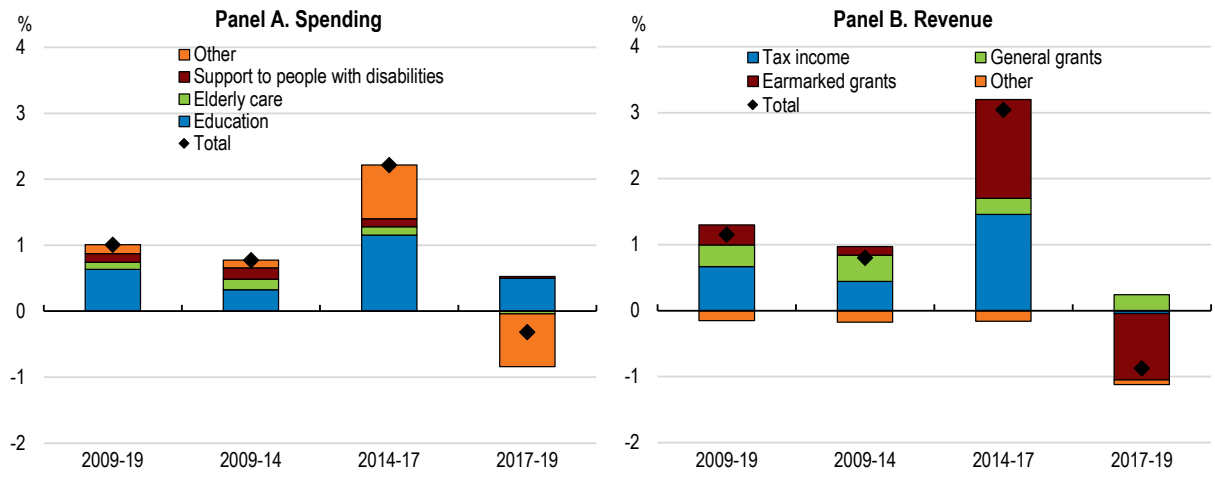
The central government may need to increase grants to municipalities and regions further in the coming years to ensure adequate service provision. One issue is the revaluation of grants, which is not automatic. While linking the evolution of grants to an index, for example of wage increases, as labour costs amount to a large share of spending, would provide more visibility to sub-national governments, discretion offers flexibility to address specific situations. Nevertheless, the government should make sure that grant revaluations reflect evolutions in costs over which local authorities have little control. Another issue is maintaining service standards in the face of increasing demand for public services, notably due to demographic trends.

This raises the question of the most adequate type of grants. General grants provide flexibility to adapt to local needs and are usually preferable, even though in some cases, earmarked grants may be necessary to ensure that money allocation is consistent with key government policy objectives. Narrowly defined earmarked grants in terms of use and time span are difficult to use. They increase the administrative burden and offer less visibility to sub-national authorities than general grants (OECD/KIPF, 2016). Greater reliance on earmarked grants can draw subnational government attention away from local needs and preferences, distorting decision making and impacting allocative efficiency (OECD, 2017a). Moreover, the combination of municipal core funding and responsibility with targeted grants aimed at achieving specific

policy goals may be sub-optimal and a poor substitute for better central government steering and coordination across levels of government (*OECD Economic Survey of Sweden*, 2019; Pareliussen et al., 2019). They also implicitly assume that different jurisdictions face similar issues, which is not always the case (Blix and Morin, 2020). As Figure 2.14 shows, earmarked grants increased rapidly after 2014, partly due to the refugee crisis, even though they were subsequently scaled back somewhat. Ideally, earmarked grants should be restricted to areas where they have a clear advantage.

Figure 2.14. Contributions to municipal spending and revenue

Annualised contributions to real growth, % points



Note: Real values are obtained using the government consumption deflator.
Source: Swedish Association of Local Authorities and Regions.

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Along with additional financial resources, maintaining the availability and quality of public services as labour shortages worsen will require reorganisation and innovation. Responsibility assignment and financing is worth reconsidering in some areas:

- Given the low employment rate of immigrants after the two-year integration period and that municipalities are financially responsible for persons claiming social assistance, the financing for integration may need to be re-examined (OECD, 2016a).
- National-level financing of personal assistance for people with disabilities should replace co-financing between municipalities and central government to better align financing with decision power. This would also allow better risk-pooling. Currently, a few disability cases can heavily burden the finances of a small municipality.

Stronger cooperation between municipalities or mergers may bring efficiency gains. The advantages of much debated municipal mergers are not always clear, as they can bring economies of scale and scope, but weaken local democracy and responsiveness to local needs. While voluntary mergers may be beneficial in some cases, strategic inter-municipal cooperation in relevant fields may be a more flexible way to enhance efficiency in others. Furthermore, mergers may bring little advantage for remote areas, where municipalities cover a wide territory (OECD, 2017a; Swedish government, 2020b; SKR, 2020a). While inter-municipal cooperation has intensified in recent years, there is scope to reinforce strategic approaches to improve efficiency. Stronger strategic cooperation between municipalities and regions to

promote coherent development, along with intensified consultation and dialogue and rigorous project evaluation, could help.

More flexible institutional arrangements can also facilitate the joint provision of public services by several municipalities. The Local Government Act was amended, as of 1 July 2018, to make it possible for municipalities and regions through contractual cooperation to delegate decision-making rights in all activities to an employee in another municipality or region. The amendment aims at facilitating the provision of high quality and equal services throughout the country and is particularly important for small municipalities that may experience difficulties in recruiting specialist competences. Several other OECD countries have reinforced their institutional framework in recent years to promote strategic inter-municipal cooperation, including Austria, Chile, New Zealand and the Slovak republic (OECD, 2017b). For example, 2014 amendments to the New Zealand Local Government Act encourage collaboration and shared service delivery by local authorities (New Zealand Department of Internal Affairs, 2021).

Strategic multi-level governance also needs to improve. Strategies and roadmaps for different sectors, industries and technology areas at European, national, regional and local level remain insufficiently connected to each other. The strategic priority areas defined in the 2021-2030 National strategy for sustainable regional development (see above) could constitute a basis for a more holistic approach (Swedish government, 2021). Multi-level consultation and dialogue on strategic objectives would strengthen coordination between regions, municipalities and other stakeholders, like education institutions or business and civil society organisations.

Several studies comparing performance either across entities within Sweden or with foreign counterparts point to scope for some efficiency improvements in the provision of public services, but most efficiency differences between municipalities remain unexplained. This suggests they are not related to simple and measurable factors, but rather to management quality, notably in terms of budget administration, human resources and responsibility assignment (Blix and Morin, 2020 and references therein). A more general potential source of efficiency gains is through better use of digital tools.

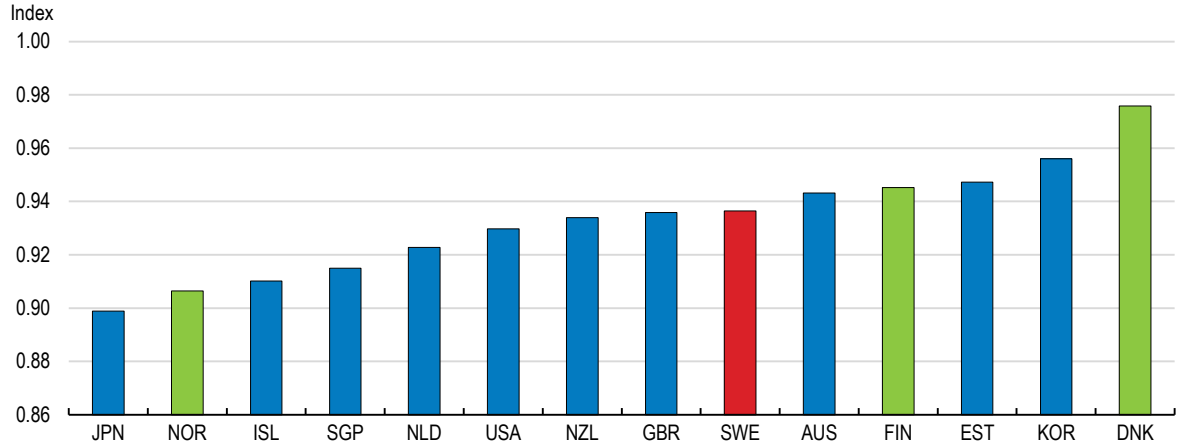
Digitalisation offers opportunities to enhance public service delivery

Advances in technology offer vast potential to enhance productivity, even in services, if combined with the right policies (Blix, 2015; Sorbe, Gal and Millot, 2018). Achieving efficiency gains becomes all the more important as ageing strains financial and human resources. Furthermore, e-government, distance learning and telemedicine improve access in remote areas, even though they cannot fully substitute physical services. Telemedicine was already expanding quickly before the COVID-19 pandemic (Blix and Jeansson, 2018; Oliveira Hashiguchi, 2020) and has gained further momentum during the pandemic. Education also went partly online, helped by the widespread availability of digital tools, although not without pedagogical challenges (Bergdahl and Nouri, 2020). Online services expanded in many other public services, for example the Public Employment Service. Developments triggered or accelerated by the pandemic provide a strong basis for further expansion of permanent digital public services (de Mello and Ter-Minassian, 2020).

Sweden is among the leading countries in the diffusion and use of digital technologies (OECD, 2018) and in *e*-government (Figure 2.15). The use of cash is declining rapidly in favour of digital payments. The share of Internet users who used the web for online banking or purchasing, or to submit completed forms or interact with public authorities, is one of the highest among OECD countries (Annex 2.A). More than 96% of households had access to the Internet in 2019, but high-speed broadband remains limited in rural areas (Figure 2.16). However, the government has allocated additional funding for the expansion of broadband over the coming years.

Figure 2.15. Sweden is among the world's leading countries in e-government

Top performers in e-government



Source: 2020 United Nations E-Government Survey.

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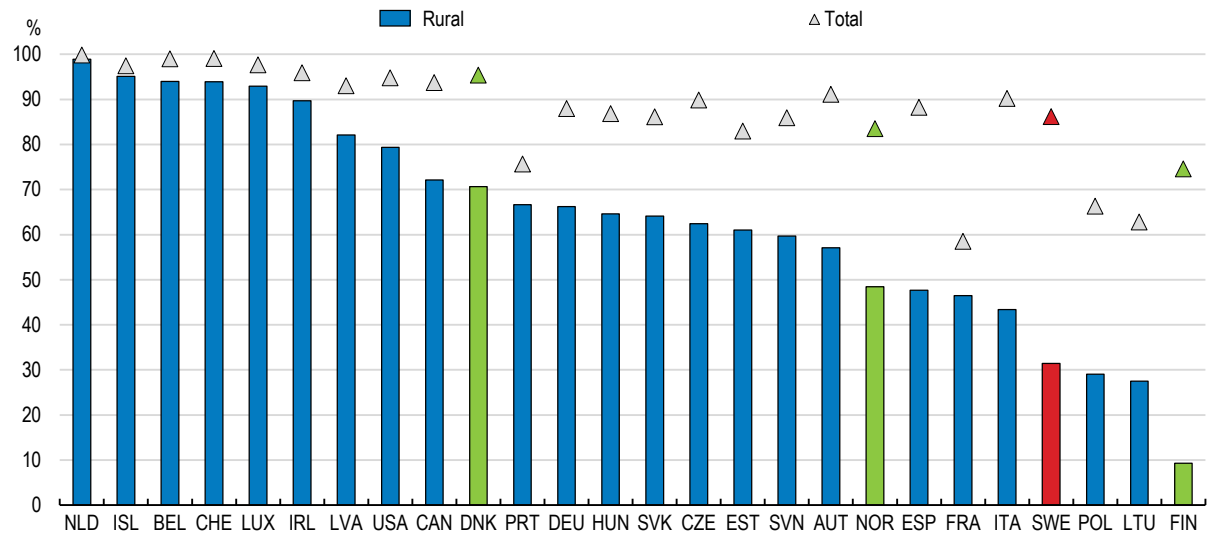
Figure 2.16. Access to high-speed broadband remains limited in rural areas

Percentage of households with access to Internet >30Mbit/s in 2019 or latest available year, at the rural and national levels



Note: 2019, or last available year: EU countries (2018). Internet access is expressed as the percentage of households (population, for the United States) with access to fixed broadband technologies with download speed greater than 30Mbit/s (NGA technologies, for the EU). For EU countries, rural areas are those with a population density lower than 100 inhabitants per square kilometre. For Canada, rural areas are those with a population density less than 400 per square kilometre. For the United States, rural areas are those with a population density less than 1 000 per square mile or 386 people per square kilometre.
Source: Calculations based on OECD Regional Statistics database.

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Digital transformation is demanding for municipalities, particularly the smaller ones with limited resources and technical expertise (Swedish Government, 2020b). The government has a central role to play in supporting them and developing a coherent digital infrastructure, allowing easy access to information and

services and smooth data exchange, while preserving security and privacy. Sweden has an ambitious digitalisation strategy, focussing on skills, security, innovation, management and infrastructure. Digitalisation is a priority across ministries and government agencies. The strategy aims at promoting smart cities, but also sustainable rural areas through digitalisation. Recent initiatives support the strategy, including the creation in 2017 of a Digital Council, aimed at providing leadership and coordination in digitalisation policy and of a new Agency for Digital Government in September 2018 to coordinate and support public sector digitalisation. The appointment of regional digitalisation co-ordinators until 2025 and the strengthening of the coordinating role of the Swedish National Agency for Growth also support digital work, tools and services, as well as strategic cooperation between relevant stakeholders, thereby promoting regional growth (OECD, 2019b; Randall and Berlina, 2019 and references therein).

Nevertheless, information systems remain fragmented, as state agencies, regions and municipalities have generally developed their digital infrastructure independently, which limits the interoperability of IT systems and data sharing. To fully take advantage of the potential offered by digitalisation in the provision of public services, the government needs to strengthen its role in enhancing the infrastructure for data and information sharing and to provide adequate technical support to municipalities and regions in need. The governance framework needs to continue to move from the silo-based and uncoordinated path followed over the past decade to a whole-of-government approach with strong government leadership (OECD, 2019b).

Regulatory adaptation is also necessary to reap the potential benefits offered by technological advances, while adequately protecting users. In particular, legislation needs to strike the right balance between protecting privacy and permitting beneficial use of data for society as a whole and online services (Blix and Levay, 2018; OECD, 2018). The Committee on municipal capacity has recommended setting up a government inquiry to assess the regulatory changes required in order to ensure that the process of digital transformation occurs smoothly. The introduction of regulatory sandboxes could also allow firms in new technologies and new industries to test their products and business models without being subject to all existing legal requirements, as for example in the United Kingdom, Canada or Korea (OECD, 2018). The UK Financial Conduct Authority launched its Fintech regulatory sandbox in 2016 to encourage innovation in the field of financial technology. The sandbox provides the conditions for businesses to test innovative products and services in a controlled environment without incurring the regulatory consequences of pilot projects (Planes-Satorra and Paunov, 2019). In 2016, Canada introduced a sandbox allowing firms to register and/or obtain exemptions from securities laws requirements, under a faster and more flexible process than through a standard application, in order to test their products, services and applications throughout the Canadian market on a time limited basis (Canadian Securities Administrators, 2020). In 2019, the Korean government introduced regulatory sandboxes in areas such as FinTech, the medical sector, manufacturing, electronics, telecommunication, energy and mobility. In terms of digital technology, regulatory sandboxes have been approved for app-based platform technology, IoT, big data, blockchain, artificial intelligence and virtual reality (OECD, 2020b). In a related vein, the recently-launched German “living labs for the energy transition” provide financing for testing innovative industrial technologies, with possibilities for regulatory learning. These projects are in many cases tailored to the conditions prevailing in a specific region (Box 2.5).

Box 2.5. Living labs for energy transition in Germany

In February 2019, Germany’s Federal Ministry for Economic Affairs and Energy (BMWi) organised a competition for ideas for “living labs” for the energy transition (Reallabore der Energiewende) designed to help Germany transition to renewable energy. The living labs allow for regulatory learning and for large-scale industrial innovations to be tested outside of research labs. The competition centred on ideas for “sector coupling and hydrogen technologies”, “large-scale energy storage in the electricity sector” and “energy-optimised neighbourhoods”. The BMWi has set aside €100 million per year for

living labs for energy transition between 2019 and 2022, but the living labs can receive funding for up to ten years. The BMWi announced the winners of the competition in July 2019 and the first project, “SmartQuart”, was launched in January 2020. Led by the energy company E.ON, “SmartQuart” aims to optimise energy utilisation by connecting city quarters to “SmartQuart”-hubs that distribute energy efficiently between the connected quarters. To ensure that this system can be applied in a wider setting, the “SmartQuart” project is tried out in neighbourhoods in three different cities: high-density Essen, rural Bedburg and mixed-structure Kaisersesch.

Unlike regulatory sandboxes covering domains like FinTech or the medical sector, energy-transition living labs can be adapted to conditions that are specific to a certain region. For example, the "Westküste 100" project attempts to produce green hydrogen from offshore wind energy in western Schleswig-Holstein, a region with a lot of wind power and good geological storage conditions. In Brandenburg and Nordrhein-Westfalen, two Länder where coal plays an important economic role, the projects “RefLau” and “StoreToPower” projects seek to convert coal power plants into plants for green energy and heat storage that can still be used after coal is phased out. In fact, five out of the 20 regulatory living labs are in regions particularly affected by the phasing-out of coal power, and living labs in these regions will also receive an additional €200 million in funding.

Source: German Federal Ministry for Economic Affairs and Energy.

Promoting regional growth and employment is essential

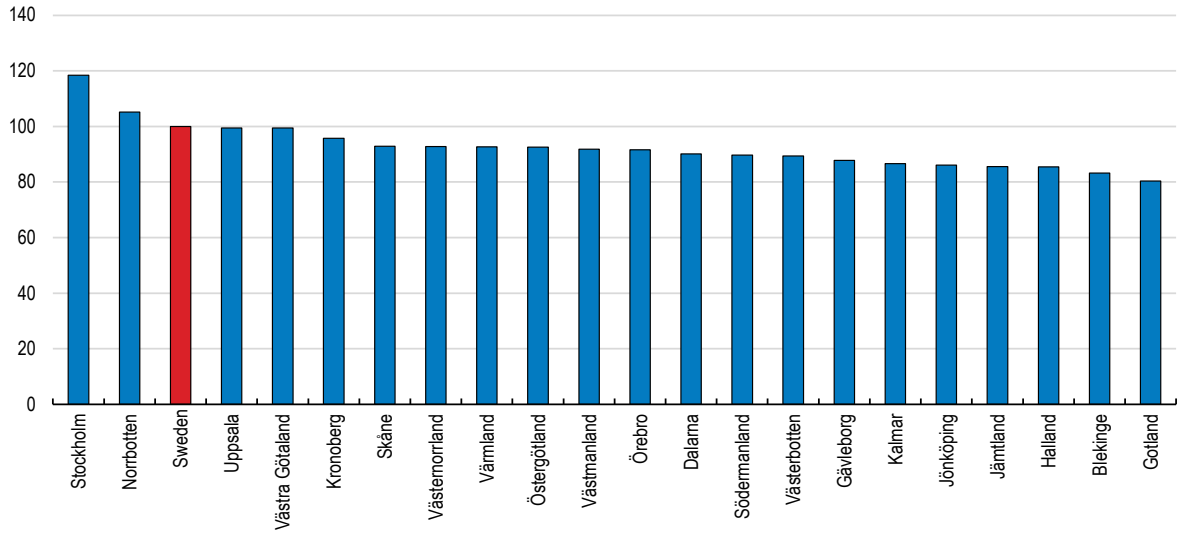
Successful regions whose residents enjoy high levels of well-being rely on more than redistribution from other regions and support from central government. They also provide job opportunities and a dynamic environment. Raising labour productivity is key, as it historically accounts for between 45% and 85% of regional GDP differences (Enflo and Roses, 2015). In 2018, labour productivity ranged from nearly 120% of the national average in Stockholm to about 80% in Gotlands kommun (Figure 2.17). Norrbotten, even though a remote region, had the second highest productivity level, thanks to its mining activity, which has a high capital-to-output ratio. The two northernmost regions, Norrbotten and Västerbotten, have enjoyed among the largest increases in the employment rate since 2008 (Tillväxtverket, 2021). Large investments are currently taking place in Northern regions’ mining and metal industries, notably to produce fossil-free steel and recycle metals, as well as car battery manufacturing. These investments will have a major positive impact on greening the economy (see Chapter 1) and create great opportunities for further regional development. In December 2020, the government appointed a coordinator to link projects supporting business establishment and expansion in Norrbotten and Västerbotten, notably through skills supply, infrastructure and housing. Nevertheless, demographic developments remain challenging in these regions.

Regional inequality in productivity displays a high degree of inertia since the turn of the 21st century (Figure 2.18). It also coincides with a high concentration of employment in the leading regions, especially Stockholm, which accounts for more than four in ten job creations over the period 2006-16. This share is relatively high by OECD standards, although lower than in most of the other Nordics (Figure 2.19). With increasing global competition, agglomeration effects in a knowledge-based economy, and relatively high wages, boosting employment in less central regions will also require increasing productivity and competitiveness.

Business dynamics are important for regional economies as new firms create employment, demand for other existing firms, and spur productivity through enhanced competition and innovation. However, in high-productivity and innovative sectors like high-technology manufacturing or knowledge-intensive services, firms are concentrated in the Stockholm region (Annex 2.A). In ICT services, 45% of firms are in the Stockholm region, while this share is 39% in professional services and 26% in high-technology manufacturing, which covers manufacture of ICT and pharmaceuticals products (based on operational units). Likewise, employment in these sectors is also concentrated in the Stockholm region.

Figure 2.17. Productivity varies significantly across regions

GRDP per employee, 2018, Sweden = 100, TL3 regions



Source: Statistics Sweden.

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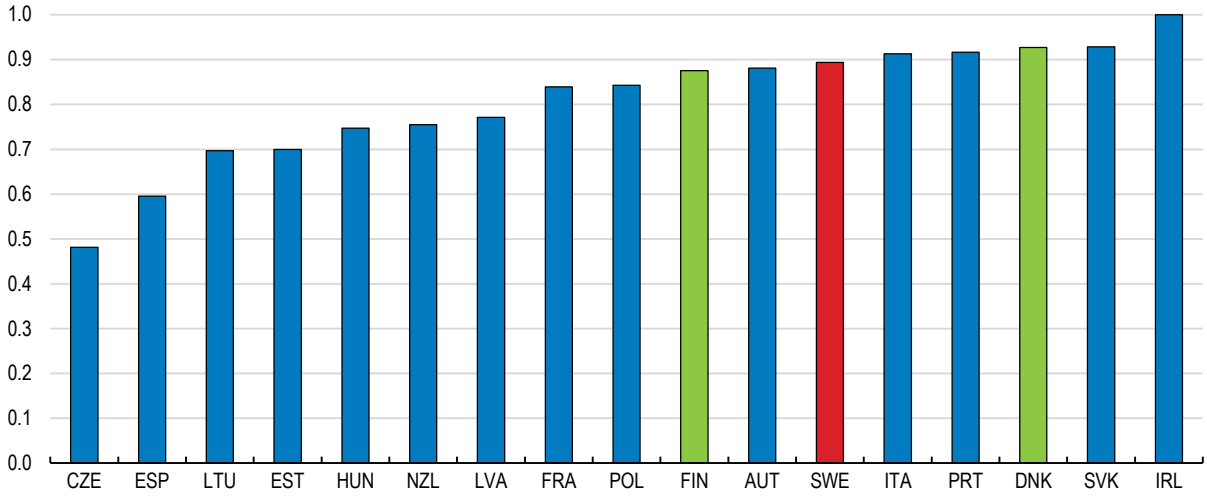
Figure 2.18. Persistence of inequality in productivity levels within countries

Within country Spearman rank-correlation of regional productivity levels, 2000 and 2015



Notes: This graph shows the persistence of productivity differences across regions within a country. The higher the value, the higher the persistence in the ranking of regions by productivity level. Note that persistence in differences is not necessarily related to the overall magnitude of differences. Thus, even in countries that have a high degree of persistence in regional productivity levels, the actual differences across regions might be small.
Source: Calculations based on OECD Regional Statistics database.

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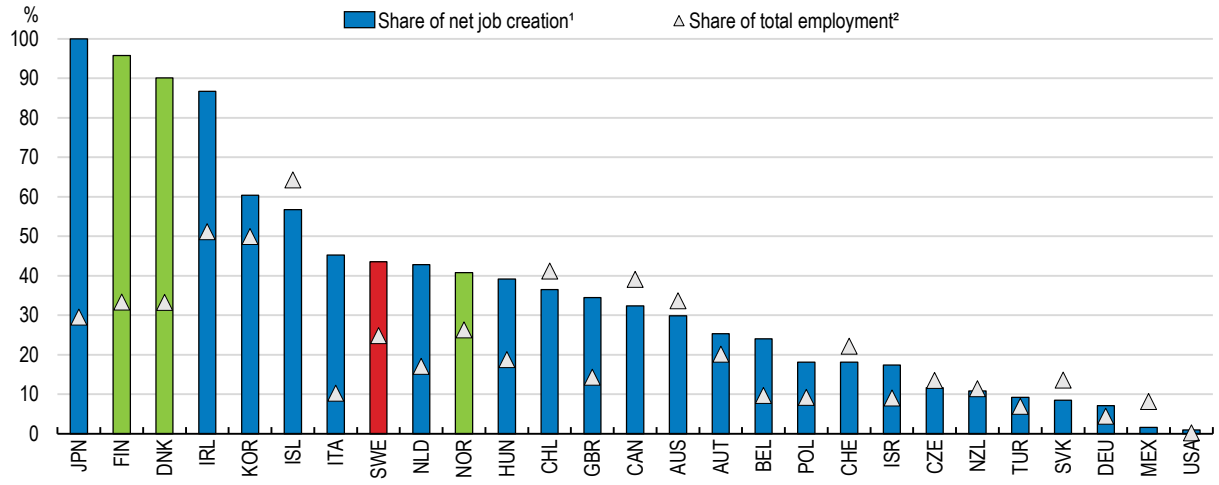
Figure 2.19. Job creation in capital regions

Share of TL2 capital regions in net job creation and total employment



1. Net job creation in capital regions relative to nationwide job creation, 2006-16. Capital regions in Portugal, Spain and Slovenia lost jobs over the 2006-2016 period. Due to data availability, the values for Chile, Israel and Mexico cover the 2006-2014 period.
2. Total employment in capital regions relative to nationwide total employment, 2019 or latest.
Source: OECD (2018), Job Creation and Local Economic Development 2018: Preparing for the Future of Work.

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Regional productivity is determined by global (e.g. general technological advances), national (e.g. policies and regulations) and local factors (e.g. geography, industry structure, local knowledge base, infrastructure). Both global and national factors may have different impacts across regions, according to their specificities. For example, the local knowledge base and availability of skilled workers influences technology adoption and national labour market regulations may have a different impact depending on the industry structure. Productivity determinants include in particular R&D and technology, knowledge diffusion, business churn, human capital, institutions, policies and regulations (Tsvetkova et al., 2020). Although many of these factors are difficult to quantify, connectivity, knowledge intensive employment in manufacturing and services, R&D and educational achievement are strongly associated to labour productivity across OECD regions (Box 2.6).

Box 2.6. What characterises OECD's most productive regions?

The literature has identified many factors associated with regional productivity (Tsvetkova et al., 2020), which are, however, often diffuse and difficult to quantify. This box examines the correlations between a variety of relevant indicators and labour productivity levels in a sample of up to 125 OECD regions in 17 countries (depending on data availability for different specifications). The analysis is carried out at the OECD TL2 level, which divides Sweden into 8 regions, rather than at the finer county level, to ensure wider indicator coverage across the sample.

The first column of Table 2.1 displays a relatively general panel equation (Annex 2.A), including statistically significant variables selected from a broader set of indicators. In subsequent columns, some variables are dropped to extend the sample, as data are missing for some regions. Alternative regressions with different variables and regions also serve as robustness checks. The results suggest the relevance of the following factors for regional productivity, even though they do not prove causality:

- Connectivity: A higher density of motorways or railways is associated with higher productivity. The share of households with access to broadband is not significant in panel regressions. This likely reflects the high coverage reached in most of the regions in the sample. Nevertheless, a cross-section regression for 2018 clearly shows that regions with low coverage exhibit low productivity.
- Knowledge-intensive employment: although representing a small share of total employment on average (respectively around 1% and 5%), high and mid-tech manufacturing is tightly linked to overall regional productivity, suggesting strong spillover effects. The relation between productivity and non-tech knowledge-intensive market services, which employ on average about a quarter of the workforce, is also robust.
- Research and education: higher R&D expenditure is associated with higher productivity, even after controlling for the regional industrial structure and despite the potential disconnection between research and production sites. The share of the population with tertiary education also correlates with productivity, although the coefficients are less stable across specifications than for other variables, presumably reflecting complementarities with other factors.
- Investment: Higher investment rates should boost productivity through capital deepening. However, this effect could not be identified in the panel regressions. Conversely, high investment rates in construction and financial services are associated with somewhat lower regional productivity, suggesting that these sectors may divert resources from more productive industries.

Table 2.1. Panel regressions for labour productivity

Dependent variable: 100*Log(labour productivity)[1]					
Density of motorways (km per thousand km^2)	0.11***	0.14***	0.16***	0.09***	0.09***
Density of railways (km per thousand km^2)	0.08**	..	..	..	..
High-tech employment (% of total employment)[2]	0.87**	0.83**	0.97***	0.89**	0.96***
Mid-tech employment (% of total employment)[2]	1.26***	1.04***	0.98***	0.89***	0.84***
Employment in non-high tech knowledge intensive market services (% of total employment)[3]	0.60***	0.49***	0.50***	0.32***	0.44***
R&D expenditure (% of GDP)	0.64**	0.56*	..	..	..
Tertiary education (% of population)	0.87***	0.27***	0.13*	..	..
Investment in construction (% of value added)	-0.06**	-0.07***	-0.05**	-0.06**	..
Investment in financial services (% of value added)	-0.10***	-0.12***	-0.13***	-0.10***	..
R^2 (within)	0.54	0.48	0.44	0.43	0.44
Total number of observations	548	619	694	785	971
Period	2008-17	2008-17	2008-17	2008-17	2008-18
TL2 Regions	70	81	81	95	125
Countries	9 (1)	11 (2)	11 (2)	13 (3)	17 (4)

1. The regressions include both region and time fixed effects. The coefficient are semi-elasticities (e.g. in the first column, an increase of one km per thousand km^2 in the density of motorways increases the level of productivity by 0.11%). (1) Czech Republic, Spain, Finland, Hungary, Italy, Norway, Portugal, Slovak Republic and Sweden are included; (2) Countries in (1) plus Austria and Poland; (3) Countries in (2) plus Denmark and Slovenia; (4) Countries in (3) plus Ireland, Lithuania, Switzerland and Turkey.
2. The classification of economic sectors into high-technology, medium high-technology, medium low-technology and low-technology industries is based on R&D intensity at the European Community (NACE) 2-digit level.
3. Services are mainly aggregated into knowledge-intensive services on the basis of the share of tertiary educated persons at the NACE 2-digit level.
Source: Authors' calculations.

Across OECD countries, universities play a major role in regional growth. They stimulate the creation of knowledge networks, often support entrepreneurship and young firms, and help build and retain local skills. This generates business dynamism, capacity to absorb knowledge, and helps attract and retain skilled workers and companies, thereby raising productivity (Tsvetkova et al., 2020). Nordic experience confirms these findings. Andersson et al. (2004) show that labour productivity is higher in Swedish cities that have received larger university-based investments. Stein (2019) finds that the university cities of Tromsø and Umeå have played an important role in the development of Northern regions of Norway and Sweden, respectively. The potential trade-off between dispersing resources across regions and concentrating resources in excellence centres can be mitigated by the widening use of digital tools, which facilitate participation in global research networks.

The impact of universities on regional growth, along with their role in providing a skilled workforce, depends on their ability to translate research into innovation, through their integration in entrepreneurship networks, and to reinforce regional comparative advantages. Research and education fields matching local industry and service specialisation are particularly relevant to foster innovation and retain graduates, who are increasingly leaving their place of education after completing their studies, especially if it lies outside the larger metropolitan regions (Rehak and Eriksson, 2019). For example, more than 70% of Umeå university students left after graduating in 2013. Among these 70%, nearly 27% were local students (Eklund et al., 2019). Student migration is partly due to a lack of job and career opportunities in some regions and a high wage premium for bigger cities, especially Stockholm (Eliasson and Westerlund, 2019).

There is scope for strengthening the role of Swedish universities in innovation. The Research and Innovation Bills of 2008 and 2012 introduced a number of policy initiatives aimed at strengthening the performance of the Swedish science, technology and innovation system. They were followed by further initiatives in the 2016 Research Bill and the 2020 Research and Innovation Bill. In particular, policies strengthened the position of research institutes and their role in linking research and innovation, and aimed at improving international competitiveness and finding sustainable solutions to global challenges by enhancing interactions between various stakeholders. However, these policies have been only been partially successful in bolstering the translation of research into innovation (OECD, 2016b).

A recent government enquiry pointed to inefficient support for innovation in higher education, which results in disparate outcomes across institutions (Swedish government, 2020c). This calls for deepening the involvement of tertiary education institutions in local innovation networks, in particular through enhanced incentives and support mechanisms. The December 2020 Research and innovation bill (Swedish government, 2020d) increases funding for research and innovation significantly over the period 2021-24, in particular to grant tertiary education institutions more freedom to develop their strategic priorities. It also facilitates the commercialisation of research and announces a new strategy to strengthen synergies with EU research programmes.

Korean technoparks offer an example of successful policy-led cooperation between a wide range of stakeholders to foster regional innovation and growth (Box 2.7). Regional clusters in the Netherlands have also boosted innovation and increased the resilience of the economy to industry-specific external shocks (Box 2.8).

Box 2.7. Technoparks in Korea

Korea faces increasing economic concentration in the Greater Seoul area, causing regional inequality. In response, the government has introduced various policy measures, among which Technopark, a science and technology cluster project started in 1998 to overcome regional imbalances and support regional development. It is designed to support the innovation and growth of local SMEs by gathering regional innovation capabilities from local industries, universities and research institutes, with government support. Technopark has since grown into a core project supporting regional industrial

development and local SMEs. It plays a key role in mobilising regional innovation (OECD, 2012). Six technoparks were designated in 1998, and their number increased to 19 by 2021. The government has invested KRW 410 billion (about USD 370 million) in technoparks from 1998 to 2018, in the form of grants. There were a total of 2 100 Technopark companies with around 30 000 employees in 2019, recording sales of KRW 13 trillion (about USD 11.4 billion). The rapid growth of technoparks in Korea was driven by strong cooperation between the central government and municipalities, close links with universities and companies, which fostered competitive regional industries. In addition, institutional and policy support for Technopark, including funding, manpower and tax benefits, contributed to the growth of technoparks and positive spillovers to local economic development (Rhee, 2021).

Source: The Korea Technopark Association.

Box 2.8. Regional clusters in the Netherlands

Dutch regional policy, together with national development strategies, supports the development of high-tech clusters in areas where the country enjoys comparative advantages, to foster economic growth, create jobs and boost competitiveness. Regional clusters help creating prosperity across the country, directly and through spillovers to other activities. In addition, the variety of clusters, covering a broad range of economic activities, creates diversity, which enhances the country's innovative capabilities and resilience to industry-specific external shocks.

The cluster development strategy focusses on public-private partnerships to foster investment from a wide range of actors, including companies, government and knowledge institutes. R&D is supported through tax credits, incentives for government bodies to fund selected activities and connections to global innovation networks.

The main clusters include: *Mainports*, building on connectivity around Amsterdam-Schiphol airport and Rotterdam Seaport; *Brainport*, a high-tech cluster stemming from industries related to Philips in Eindhoven; *Greenports*, an array of agriculture and horticulture clusters; *Energy Valley*, a cluster of companies producing energy from gas (including biogas) and wind in the province of Groningen; *Food Valley*, a well-integrated network of international food companies, research institutes and universities in the province of Gelderland; *Health Valley*, located in the same province, fostering cooperation between the biomedical and healthcare sectors.

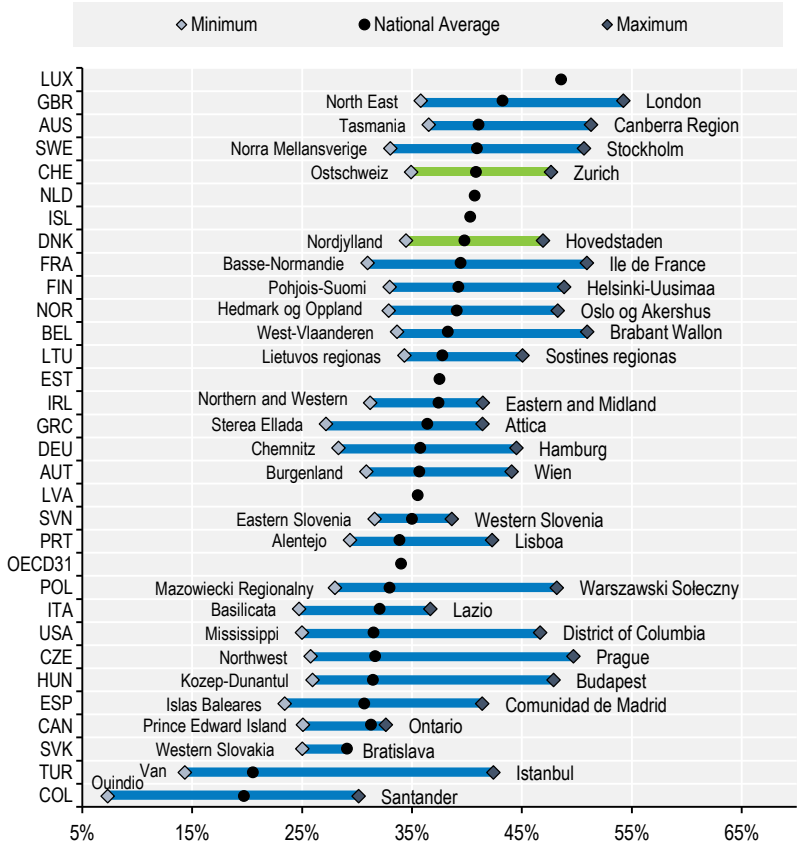
Source: OECD (2014), *OECD Territorial Reviews: Netherlands 2014*, OECD Publishing, Paris; OECD (2018), *Productivity and Jobs in a Globalised World: (How) Can All Regions Benefit?*, OECD Publishing, Paris.

While reinforcing regional centres is essential, addressing the rising income and opportunity divide within regions is equally important. Better coordination between different levels of government, state agencies and other stakeholders to increase connectivity between regional centres and surrounding areas could boost regional growth and mitigate urban-rural inequality. An environmentally sustainable transport infrastructure is key to broadening functional labour markets and improving matching between jobseekers and employers. It also improves access to markets. Well-connected areas are bound to attract or retain more inhabitants and businesses. Digitalisation also increases connectivity and the planned expansion of broadband will provide further opportunities. Telework, at least on a part-time basis, could improve opportunities for people living in remote areas, even though teleworking possibilities are unequal across regions (Figure 2.20). Further developing distance education would facilitate access both to conventional education and to re-training and re-skilling, especially in remote areas.

Efforts to build urban-rural linkages have been stepped up in recent years, in particular through promoting greater inter-municipal co-operation in public service delivery and regional development strategies prioritising planning based on functional labour market areas. Multi-level governance capacity has increased, with a strengthened role for regions and a move toward stronger co-ordination of regional policy. However, cooperation between government entities, including state agencies, and with other stakeholders, would need to be reinforced to develop a coherent vision for rural areas, with clear articulation to national policy in areas like education and health services, spatial planning and transport (OECD, 2017a; Tillväxtverket, 2019).

Figure 2.20. Telework possibilities are uneven across regions

Share of jobs that can potentially be performed remotely (%), 2018, NUTS-1 or NUTS-2 (TL2) regions, selected OECD and EU



Source: Adapted from OECD (2020), "Capacity for remote working can affect lockdown costs differently across places", OECD Policy Responses to Coronavirus (COVID-19), and OECD (2020), OECD Regions and Cities at a Glance 2020, OECD Publishing, Paris.

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Housing shortages may be an obstacle to regional growth and increase income inequality by preventing labour mobility, especially for low-income workers. The number of jobs amenable to telework is also far greater in urban than in remote areas. While housing shortages are most acute in big cities and particularly Stockholm, 212 out of 290 municipalities reported shortages in 2020 (Boverket, 2020). Recent OECD estimates suggest that 1% higher house prices reduce regional migration by nearly 1% (Cavalleri et al., 2021). Factors affecting the availability and affordability of housing include property taxation favouring homeownership, tight rental regulations preventing an efficient use of the existing housing stock, inefficient

land-use planning, low incentives for municipalities to encourage development holding back housing supply and a lack of competition in construction pushing up construction costs (*OECD Economic Survey of Sweden*, 2019).

Recommendations to contain the rise in regional inequality

Key recommendations in bold

MAIN FINDINGS	RECOMMENDATIONS
Upgrade the sub-national government fiscal framework	
The share of earmarked grants has increased over recent years. These grants are in some cases narrowly targeted and short-term, which makes efficient use challenging.	**Limit the use of earmarked grants to strategic areas.** **Avoid excessively narrowly targeted and short-term grants.**
The fiscal equalisation system is complex and generally perceived as lacking transparency. A commission reviews the system every five or six years, but monitoring and discussion between reviews is limited.	**Simplify the fiscal equalisation system and/or increase transparency.** **Introduce monitoring on an ongoing basis to facilitate adjustments.**
Enhance public service provision efficiency	
Digital tools offer potential for providing better services and raising efficiency. User demand looks strong, notably in health and education. Digital capabilities vary widely across local authorities.	**Develop further on-line public services delivery.** **Enhance the public infrastructure for data and information sharing.**
Inter-municipal cooperation to provide public services more efficiently has increased, but strategic vision remains insufficient.	Strengthen regional strategic steering, consultation and dialogue with municipalities and rigorous project evaluation, to promote more strategic inter-municipal cooperation.
Municipalities tend to face difficulties in meeting standards set by the central government in some areas, especially personal assistance and integration of immigrants.	Shift the financing of personal assistance to the national level. Extend the financing of immigrant integration beyond the first two years.
Access to basic public services, including police and employment services, is limited in some remote areas. Digital access is only a partial substitute.	Set up a government enquiry to investigate the ways to improve access to basic services in remote areas in a cost effective way.
Support regional growth	
Universities contribute to a varying degree to regional development by fostering and helping retain local talent and by strengthening competitiveness and business dynamism through participation in local research and innovation networks.	**Strengthen incentives and support to raise the contribution of universities to regional knowledge and innovation.**
Strategic spatial plans and coordination between government entities and with other stakeholders are insufficiently developed. Coherent development plans could increase job and business opportunities within functional labour market areas.	**Strengthen multi-level governance, including coordination of sector policies and cooperation between government entities and other stakeholders, to enhance strategic cooperation for regional development.**
Municipalities offer digital training in local centres, but limited to basic use of digital devices.	Upgrade and increase the range of proposed digital training in municipal centres.

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Annex 2.A. Regional differences in productivity in Sweden: insights from OECD regions

Productivity varies significantly across Swedish regions, even though differences are smaller than in many other OECD countries (Figure 2.A.1). Regional differences largely result from comparative advantages related to each region's uniqueness in terms of population, resource endowment and geography. However, factors influenced by public policies also matter, like connections to transport networks, broadband connectivity, the presence and strength of education and research institutions, and the availability of quality public infrastructure and services. This annex examines variations in productivity and related indicators across Swedish regions and investigates the factors most commonly associated with high productivity across OECD regions, using a dataset covering up to 125 large regions (OECD TL2) from 17 countries (depending on data availability for different specifications).

The main findings are as follows:

- Productivity differences between Swedish regions are relatively small in OECD comparison. They are mainly observed in finance, ICT and manufacturing.
- Distance and low population density hamper transport connectivity in some regions. Digital connectivity is high across regions, although some rural areas lack access to high-speed broadband.
- Knowledge-intensive activities and employment are geographically concentrated, especially in the Stockholm region, which attracts R&D and the highly educated. Participation in lifelong learning is high throughout the country.
- In the sample of OECD regions covered in this annex, connectivity, knowledge-intensive employment, research and education are associated with high productivity. Investment in construction and finance is linked to somewhat lower productivity.
- The Stockholm region benefits from a sizeable time-invariant productivity advantage, which likely reflects agglomeration effects.

The literature has identified many factors associated with regional productivity, which are, however, often diffuse and difficult to quantify. They include R&D and technology, knowledge diffusion, business churning, human capital, institutions (both formal and informal, such as culture), policies and regulations, and demographic profiles and trends (Tsvetkova et al., 2020). Agglomeration effects are also becoming increasingly important in knowledge-based economies. Bigger cities enjoy economies of scale, better labour market matching among a larger pool of workers and knowledge spillovers. International studies suggest that a doubling in population size raises the productivity level of a city by 2% to 5% (OECD, 2015). Recent OECD studies pointed to the role of specific productivity drivers in different countries. For example, weak transport links between and within cities outside London, insufficient spending on innovation and weak support for investment and skills were associated with regional productivity gaps in the United Kingdom (Gal and Egeland, 2018). High regional dispersion in education and job outcomes, compounded by low inter-regional mobility, were identified as key drivers of regional inequalities in Spain (Adalet McGowan and J. San Millán, 2019).

Against this background, this annex investigates associations between a set of productivity drivers identified in the literature and labour productivity across OECD regions, in order to get insights for Sweden. The annex is organised as follows: the next section documents differences in productivity and related indicators across Swedish regions. The following section uses panel regressions to investigate associations between labour productivity and a wide range of indicators across a large sample of OECD regions.

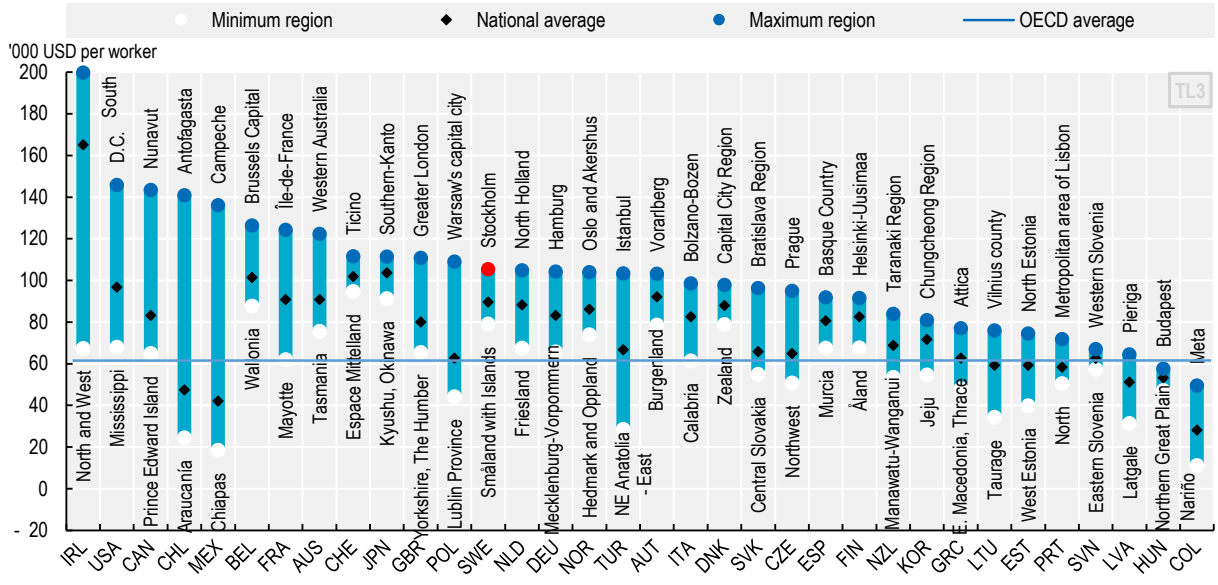
Productivity across Swedish regions

Regional differences in productivity are relatively small in OECD comparison

Productivity in the Stockholm region is higher than in the rest of the country. Nevertheless, the difference of 18% relative to the country average and 33% relative to the worst performing region is relatively small in OECD comparison (Annex Figure 2.A.1). In that respect, Sweden is relatively similar to the other Nordics, some central European countries and Japan. Three sectors − finance, ICT and manufacturing − display wide regional productivity gaps, with very high productivity in the leading regions. In other services and construction, regional productivity differences are limited (Annex Figure 2.A.2).

Annex Figure 2.A.1. Labour productivity disparities across Swedish regions are moderate

Gross value added per employee, TL2 regions, 2018

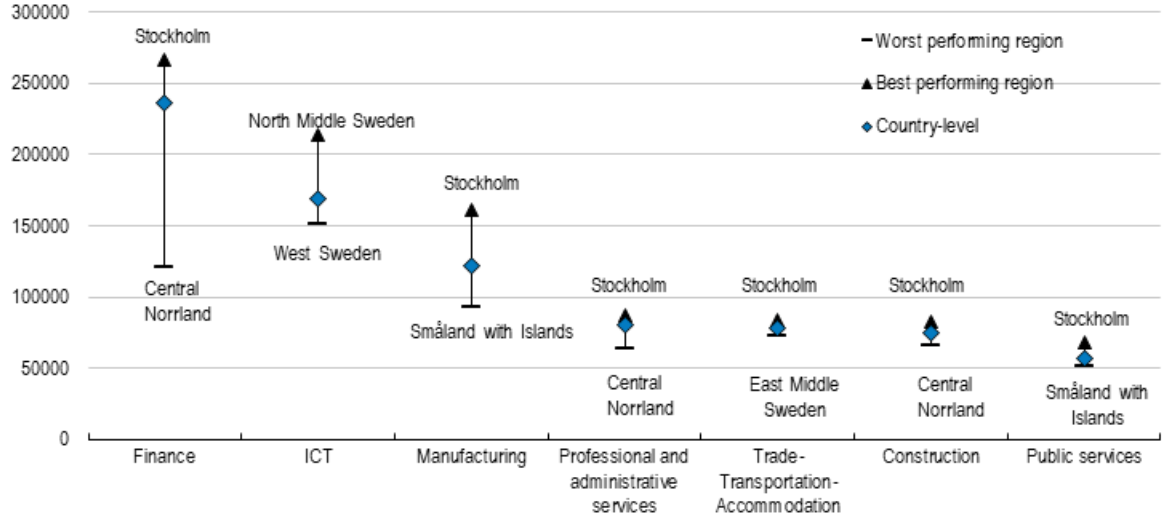


Source: OECD (2020), OECD Regions and Cities at a Glance 2020, OECD Publishing, Paris.

StatLink https://stat.link/dwtnbx

Annex Figure 2.A.2. Productivity disparities between TL2 regions are wide in some sectors

In USD per worker, constant prices and constant PPP (base year 2015), 2017



Source: OECD Regional Statistics Database.

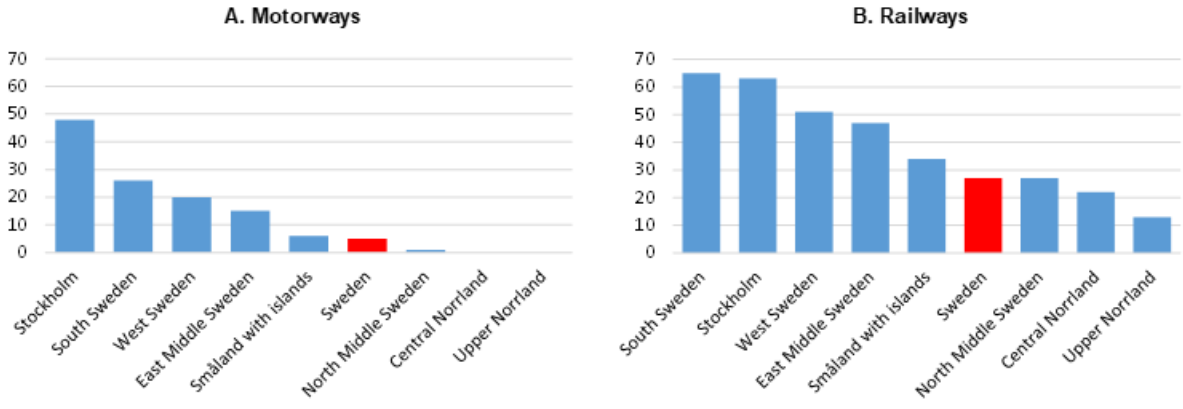
StatLink https://stat.link/56dcas

Connectivity reflects wide variations in population density

Sweden is a vast country, with many sparsely populated areas, which results in large variations in the density of transport networks across regions (Annex Figure 2.A.3). Frequent, reliable and fast transport connections can enhance productivity by providing access to product markets and widening labour market areas. However, benefits have to be weighed against infrastructure costs and environmental footprint. The Swedish road network does not appear to be under-dimensioned (Braconier et al., 2013). High-speed rail lines linking Stockholm to Gothenburg and Malmö are currently being considered. The government has set a maximum of SEK 205 billion (EUR 20 billion) for this purpose and the Swedish Transport Administration has presented four alternative plans in March 2021 (Trafikverket, 2021).

Annex Figure 2.A.3. The density of motorways and railways varies widely across TL2 regions

Km per thousand km^2, 2018



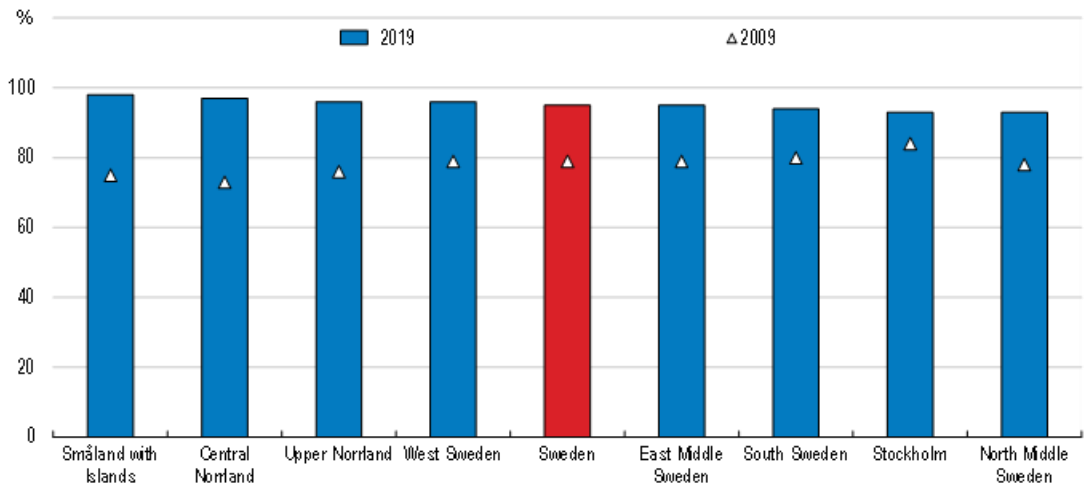
Source: Eurostat.

StatLink https://stat.link/mri7uy

Digital connectivity is increasingly important to facilitate access to goods and services and to raise productivity. The COVID-19 pandemic has also boosted teleworking. Access to broadband is high in all regions (Annex Figure 2.A.4). However, high-speed broadband remains limited in rural areas (Annex Figure 2.A.5). Hence, the government has allocated additional funding for the expansion of broadband over the coming years. The share of internet users who use the web to submit completed forms or interact with public authorities is one of the highest among OECD countries and is high in all regions (Annex Figure 2.A.6). Internet banking and online purchasing are also widely used (Annex Figure 2.A.7).

Annex Figure 2.A.4. Broadband coverage is high across Swedish TL2 regions

As a share of total households

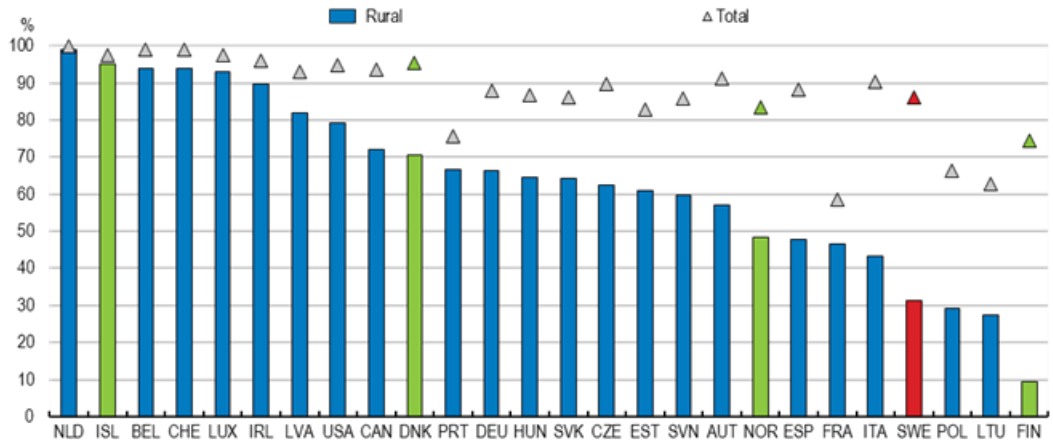


Source: Eurostat.

StatLink https://stat.link/8zl4sq

Annex Figure 2.A.5. Access to high-speed broadband remains limited in rural areas

Percentage of households with access to Internet >30Mbit/s, at the rural and national levels

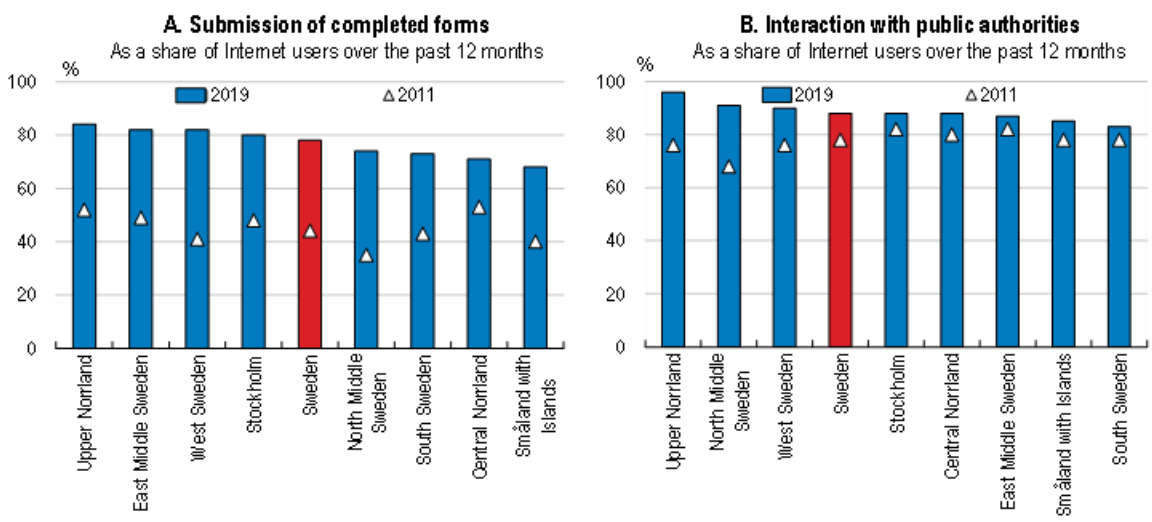


Note: 2019, or latest available year: EU countries (2018). Internet access is expressed as the percentage of households (population, for the United States) with access to fixed broadband technologies with download speed greater than 30Mbit/s (NGA technologies, for the EU). For EU countries, rural areas are those with a population density lower than 100 inhabitants per square kilometre. For Canada, rural areas are those with a population density less than 400 per square kilometre. For the United States, rural areas are those with a population density less than 1 000 per square mile or 386 people per square kilometre.
Source: Calculations based on OECD Regional Statistics database.

StatLink https://stat.link/srtd76

Annex Figure 2.A.6. Internet is widely used to communicate with public authorities

TL2 regions

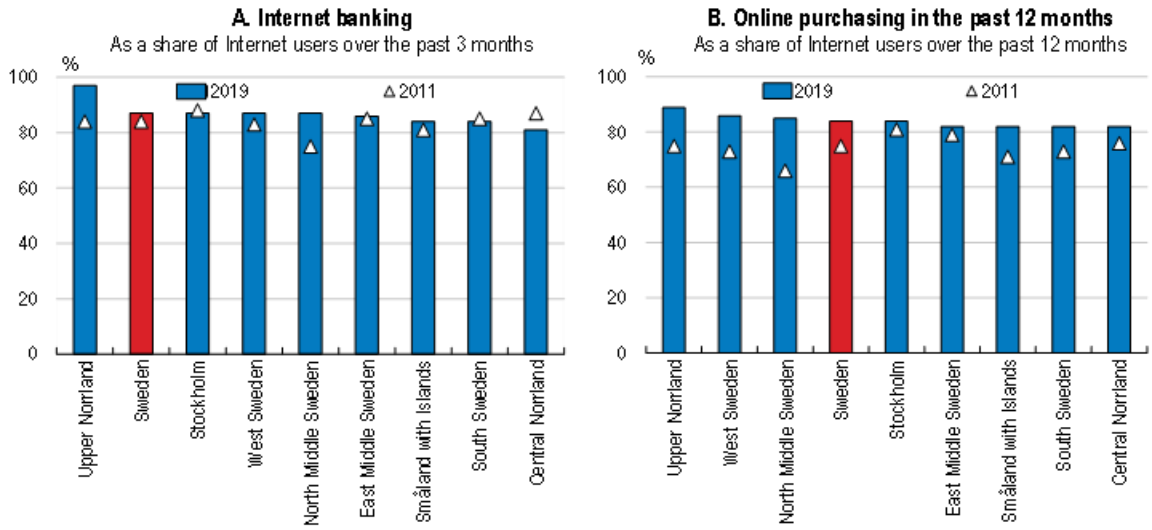


Source: Eurostat Digital Economy and Society Database.

StatLink https://stat.link/e4cmw7

Annex Figure 2.A.7. Internet banking and e-commerce are widespread

TL2 regions



Source: Eurostat Digital Economy and Society Database.

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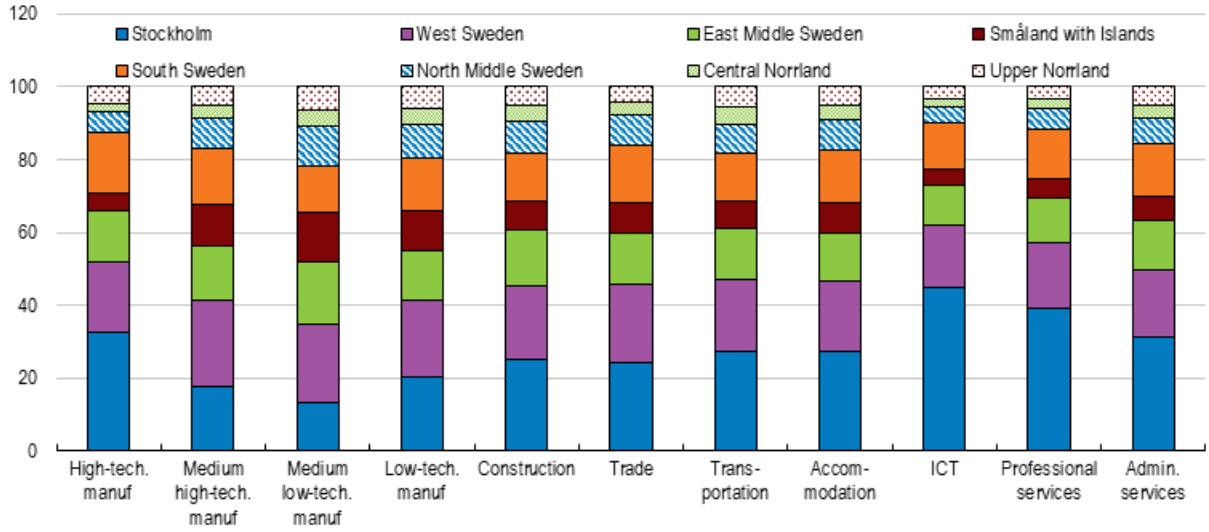
Knowledge-intensive activities are geographically concentrated

The industrial structure within a region is a strong determinant of productivity. Business dynamics are important for regional economies, as new firms create employment, demand for goods and services produced by existing firms, and spur productivity through enhanced competition and innovation. A large share of high-productivity firms is located in the Stockholm region and West Sweden, which includes Gothenburg, Sweden's second largest city. This is particularly the case for ICT, professional services and high- and mid-tech manufacturing (Annex Figure 2.A.8). Moreover, the number of firms in knowledge-intensive services has increased faster in Stockholm and West Sweden than in other regions since the 2008 global financial and economic crisis (Annex Figure 2.A.9).

Annex Figure 2.A.8. Highly productive sector firms concentrate in Stockholm and West Sweden

Share of firms in Sweden (%), TL2 regions, 2018

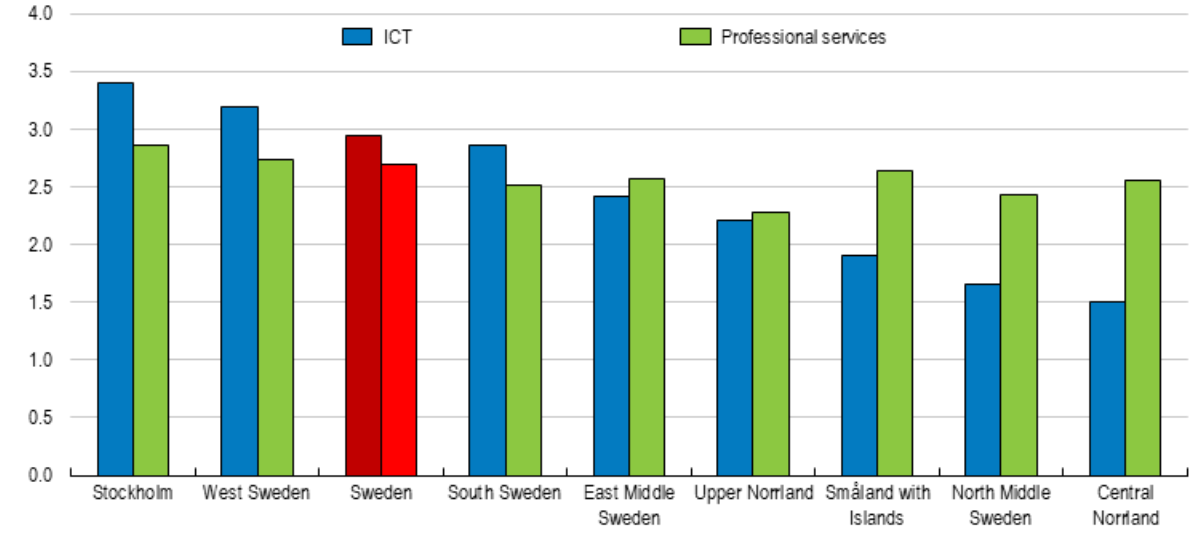


Note: High-tech manufacturing includes manufacture of pharmaceuticals (C21) and computer, electronic and optical products (C26); medium high-tech manufacturing includes manufacture of chemicals (C20), electrical equipment (C27), machinery (C28) and transport equipment (C29-C30); medium low-tech manufacturing includes manufacture of coke and refined petroleum products (C19), rubber (C22), other non metallic mineral products (C23), metals (C24-C25) and repair and installation of machinery and equipment (C33); low-tech manufacturing includes the remaining manufacturing sectors (C10-C18, C31-C32).
Source: Eurostat Regional Structural Business Statistics Database.

StatLink https://stat.link/1rq6kn

Annex Figure 2.A.9. The number of firms in knowledge-intensive services increased faster in Stockholm and West Sweden

Average annual growth rate between 2008 and 2018, TL2 regions



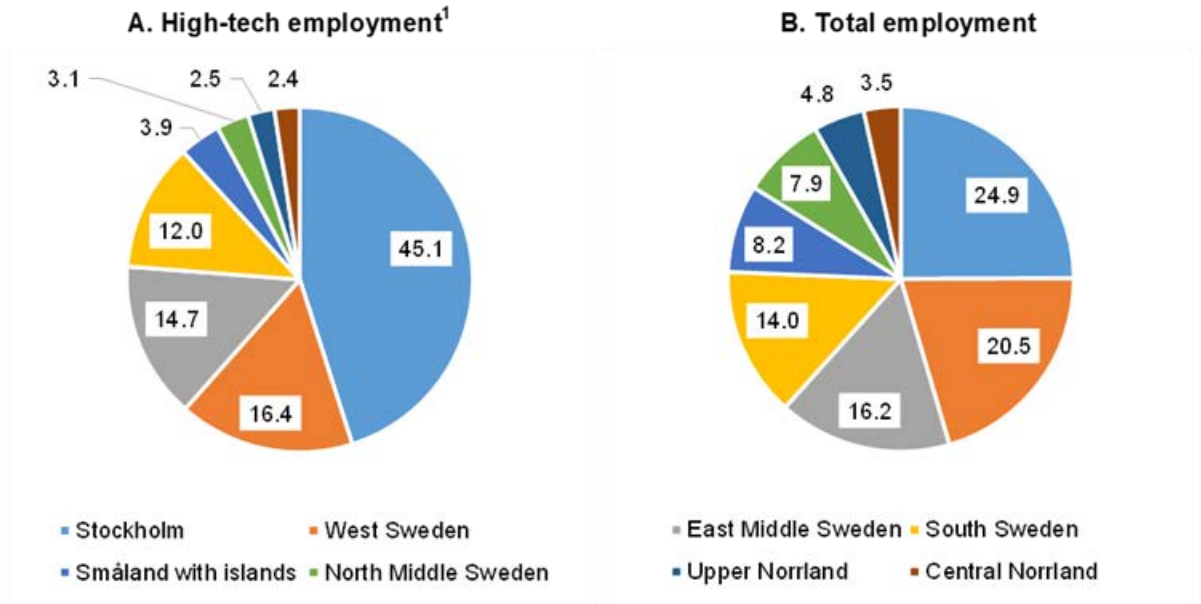
Source: Eurostat Regional Structural Business Statistics Database.

StatLink https://stat.link/qcsk1p

The distribution of industries across regions is reflected in employment patterns. About 45% of high-tech manufacturing and knowledge-intensive high-tech services employment is located in the Stockholm region (Annex Figure 2.A.10). Beyond the obvious fact that more sophisticated firms are more likely to hire highly skilled workers, dynamic effects are at play. Start-ups are more likely to be created where a pool of highly qualified workers is available and existing firms can hire workers more easily to innovate and reinforce their growth potential. Highly educated workers are more likely to move to dynamic regions to study or to work.

Annex Figure 2.A.10. High-tech employment is concentrated in the Stockholm region

Regional share of employment (%), TL2 regions, 2019



1. High-tech manufacturing and knowledge-intensive high-tech services employment.
Source: Eurostat.

StatLink https://stat.link/plg6cw

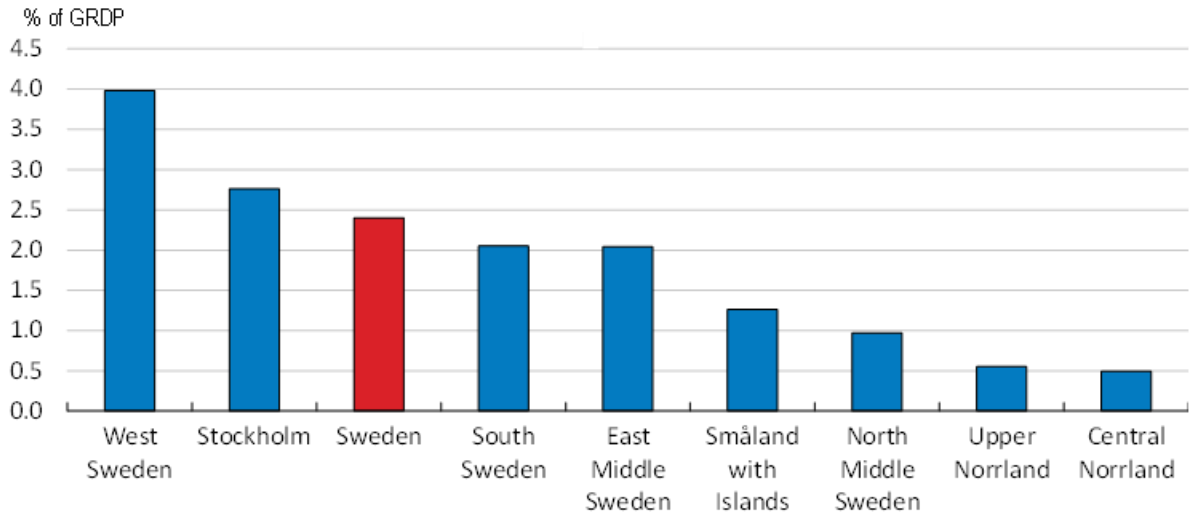
Research and education levels are higher in the large metropolitan areas

R&D expenditure is highest in West Sweden, which has a strong manufacturing base, and in Stockholm (Annex Figure 2.A.11). However, it is also relatively high in South and East Middle Sweden, at about 2% of gross regional domestic product (GRDP). R&D spending is relatively low in more sparsely populated regions, although innovative projects are currently taking place in Northern regions' mining, metal and car battery manufacturing industries (OECD Economic Survey of Sweden, 2021).

The share of adults with tertiary education varies significantly across regions. In 2019, 53% of the population aged 25 to 64 had tertiary education in the Stockholm region, while this share was only 34% in North Middle Sweden (Annex Figure 2.A.12). Meanwhile, participation in lifelong learning is on average the highest in the OECD and regional differences are narrow (Annex Figure 2.A.13).

Annex Figure 2.A.11. R&D expenditure in the business sector is higher in highly productive regions

TL2 regions, 2017

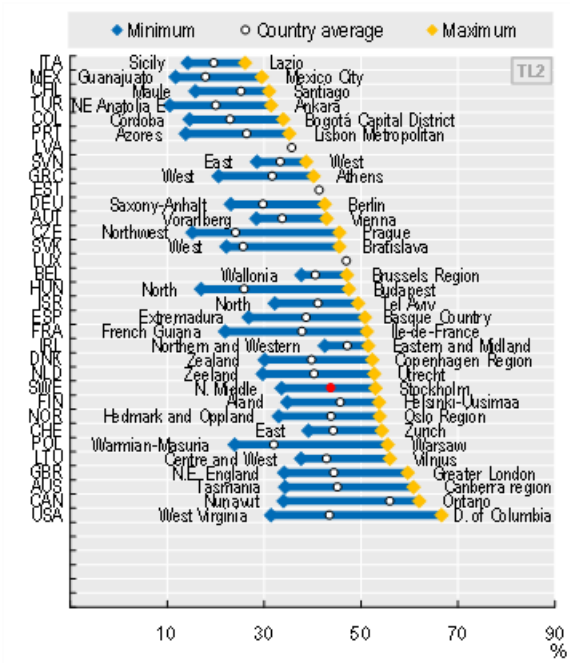


Source: Eurostat Regional Science and Technology Statistics Database.

StatLink https://stat.link/pf2w7j

Annex Figure 2.A.12. The share of the population with tertiary education varies across regions

Population aged 25-64 with tertiary education, TL2 regions, 2019



Source: OECD (2020), OECD Regions and Cities at a Glance 2020, OECD Publishing, Paris.

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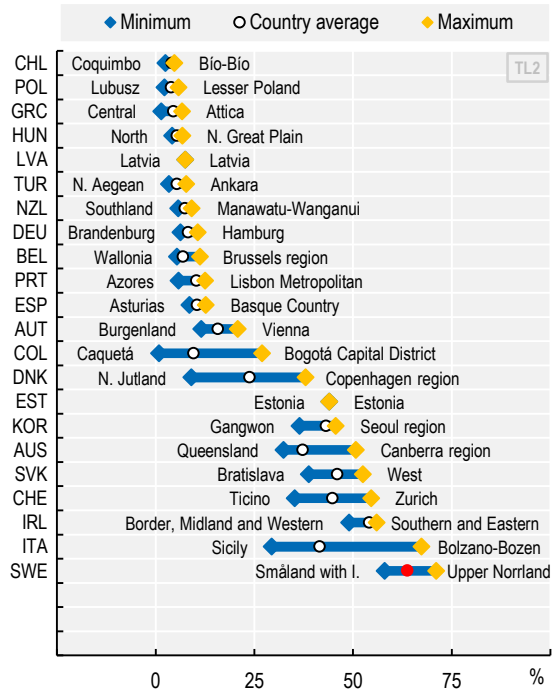
Annex Figure 2.A.13. Participation in lifelong learning is high throughout the country

Population aged 25-64 in formal and or non-formal training, TL2 regions, 2017



Source: OECD (2020), OECD Regions and Cities at a Glance 2020, OECD Publishing, Paris.

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What factors are associated with high productivity across OECD regions?

Data

Regional data at the OECD TL2 (Eurostat NUTS2) level have been collected from several databases from the OECD (Regional productivity, Value-added and employment, Regional innovation and Regional social indicators) and Eurostat (Internet use, Digital economy and society, Regional structural business statistics, IT Employment, GFCF, Training and Transportation). The sample used in the regressions includes up to 125 OECD regions in 17 countries (depending on data availability for different specifications). The analysis uses OECD TL2 level, which divides Sweden into 8 regions, rather than the finer county level to ensure wider indicator coverage across the sample.

Panel regressions

The model is a traditional fixed-effect model, which can be written as:

$$\text{Log } y_{it} = \alpha_i + \mu_t + \beta x_{it} + \varepsilon_{it}$$

where y_{it} is labour productivity, α_i is a regional fixed effect, μ_t is a time fixed effect, x_{it} is a matrix containing variables related to connectivity, knowledge-intensive employment, research and education and investment, and ε_{it} are random errors.

As the right hand side variables are expressed as ratios, only the endogenous variable is in logarithm. Hence, the coefficients are semi-elasticities. The regional fixed effects account for time-invariant heterogeneity across regions. The time fixed effects capture common shocks.

As data coverage varies across regions, more observations are dropped in the regressions including more variables. Alternative regressions with different variables and regions also serve as robustness checks. Except for the percentage of the population with tertiary education, the coefficients remain broadly similar as the variables included and the country coverage change.

These regressions uncover and measure associations between productivity and a number of factors, which the literature identified as potential drivers. Nevertheless, they do not imply causality, as high productivity regions are likely to attract inputs that can in turn raise productivity, such as skilled workers, firms and research institutions. Hence, causality is likely bi-directional.

The first column of Annex Table 2.A.1 displays a relatively general panel equation, including statistically significant variables selected from a broader set of indicators (see André and Pak, 2021). In subsequent columns, some variables are dropped to extend the sample, as data are missing for some regions.

Annex Table 2.A.1. Panel regressions for labour productivity

Dependent variable: 100*Log(labour productivity)[1]					
Density of motorways (km per thousand km^2)	0.11***	0.14***	0.16***	0.09***	0.09***
Density of railways (km per thousand km^2)	0.08**	..	..	..	..
High-tech employment (% of total employment)[2]	0.87**	0.83**	0.97***	0.89**	0.96***
Mid-tech employment (% of total employment)[2]	1.26***	1.04***	0.98***	0.89***	0.84***
Employment in non-high tech knowledge intensive market services (% of total employment)[3]	0.60***	0.49***	0.50***	0.32***	0.44***
R&D expenditure (% of GDP)	0.64**	0.56*	..	..	..
Tertiary education (% of population)	0.87***	0.27***	0.13*	..	..
Investment in construction (% of value added)	-0.06**	-0.07***	-0.05**	-0.06**	..
Investment in financial services (% of value added)	-0.10***	-0.12***	-0.13***	-0.10***	..
R^2 (within)	0.54	0.48	0.44	0.43	0.44
Total number of observations	548	619	694	785	971
Period	2008-17	2008-17	2008-17	2008-17	2008-18
TL2 Regions	70	81	81	95	125
Countries	9 (1)	11 (2)	11 (2)	13 (3)	17 (4)

1. The regression includes both region and time fixed effects. The coefficient are semi-elasticities (e.g. in the first column, an increase of one km per thousand km2 in the density of motorways increases the level of productivity by 0.11%). (1) Czech Republic, Spain, Finland, Hungary, Italy, Norway, Portugal, Slovak Republic and Sweden are included; (2) Countries in (1) plus Austria and Poland; (3) Countries in (2) plus Denmark and Slovenia; (4) Countries in (3) plus Ireland, Lithuania, Switzerland and Turkey.
2. The classification of economic sectors into high-technology, medium high-technology, medium low-technology and low-technology industries is based on R&D intensity at the European Community (NACE) 2-digit level.
3. Services are mainly aggregated into knowledge-intensive services on the basis of the share of tertiary educated persons at the NACE 2-digit level.
Source: Authors' calculations.

The results suggest the relevance of the following factors for regional productivity:

- Connectivity: a higher density of motorways or railways is associated with higher productivity. The share of households with access to broadband is not significant in panel regressions. This likely reflects the high coverage reached in most of the regions in the sample. Nevertheless, a cross-

section regression on OECD regions for 2018 clearly shows that regions with low broadband coverage exhibit low productivity (Annex Figure 2.A.14).

- Knowledge-intensive employment: although representing a small share of total employment on average (respectively around 1% and 5%), high and mid-tech manufacturing is tightly linked to overall regional productivity, suggesting strong spillover effects. The relation between productivity and non-tech knowledge-intensive market services, which employ on average about a quarter of the workforce, is also robust.
- Research and education: higher R&D expenditure is associated with higher productivity, even after controlling for the regional industrial structure and despite the potential disconnection between research and production sites. The share of the population with tertiary education also correlates with productivity, although the coefficients are less stable across specifications than for other variables, presumably reflecting complementarities with other factors.
- Investment: higher investment rates should boost productivity through capital deepening. However, this effect could not be identified in the panel regressions. Conversely, high investment rates in construction and financial services are associated with somewhat lower regional productivity, suggesting that these sectors may divert resources from more productive industries.

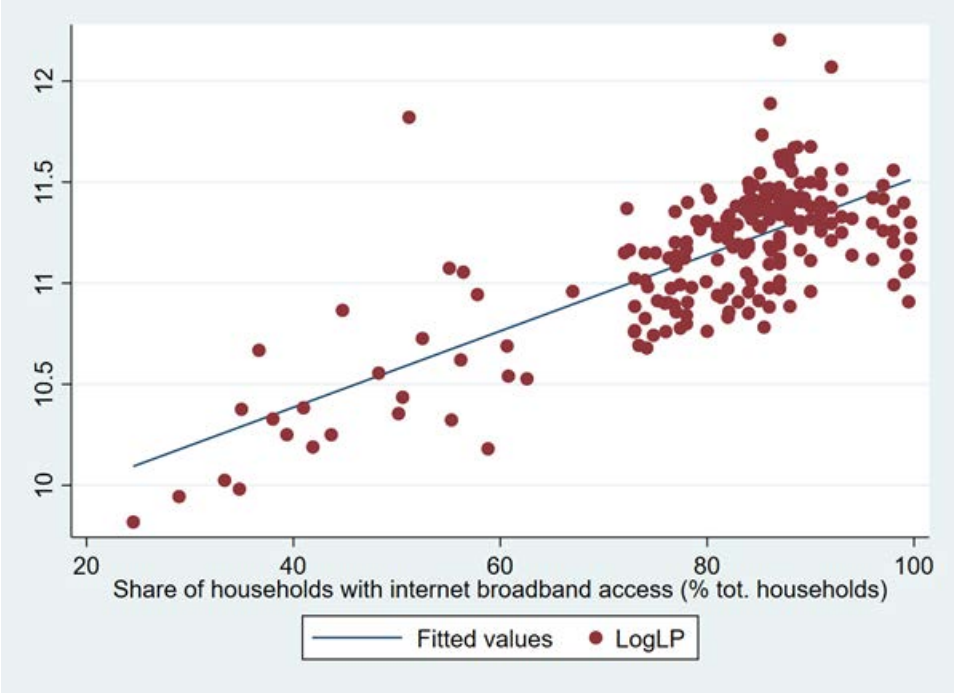
The model's fixed effects measure time-invariant heterogeneity across regions (Annex Table 2.A.2). They capture a number of factors affecting productivity that cannot be incorporated in the model because relevant indicators are not available. For example, agglomeration effects can be partly captured by connectivity indicators, but associated labour market matching effects and knowledge spillovers are difficult to measure. The Stockholm fixed effect, which represents more than 20% of the region's productivity level is likely to largely account for this kind of mechanisms. This effect amounts to nearly half of the productivity difference between Stockholm and the average OECD region in the sample. Fixed effects for Upper Norrland and North Middle Sweden may reflect high capital intensity in mining and heavy industry, as the model is not able to account for capital deepening.

Annex Table 2.A.2. Fixed effects for Swedish regions

Region (TL2)	Fixed effect (% of productivity)	Productivity difference to OECD sample average (2017)
Stockholm	21.5	47.2
Upper Norrland	12.8	21.3
North Middle Sweden	12.1	12.0
West Sweden	3.5	21.1
Småland with Islands	2.4	8.9
East Middle Sweden	2.2	16.6
South Sweden	-4.4	14.7

Note: Central Norrland is omitted due to missing data for some indicators.
Source: Authors' calculations.

Annex Figure 2.A.14. OECD regions with low broadband coverage are at a disadvantage



Note: The sample covers 219 TL2 regions in 18 countries. LP denotes labour productivity.
Source: Authors' calculations.

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OECD Economic Surveys

SWEDEN

Resolute policy action to protect households and businesses has mitigated the pandemic's toll on the Swedish economy, which nevertheless contracted sharply in 2020. Growth is picking up on the back of strong manufacturing activity and exports, while vaccination brings hope for a gradual return to normality in sectors requiring face-to-face interaction. Nevertheless, fiscal support and accommodative monetary policy will remain necessary until the recovery is well established. Government measures to expand education and training and to enhance job matching, along with the implementation of the labour market reforms agreed by the social partners, will help employment recover, particularly among the most vulnerable groups, which have been worst hit by the pandemic. Fostering inclusive growth throughout Sweden will require upgrading the sub-national government fiscal framework, enhancing public service efficiency, especially through digitalisation, and promoting regional convergence further, especially by strengthening the role of universities in regional knowledge and innovation networks.

SPECIAL FEATURE: REGIONAL INEQUALITY

Volume 2021/8
July 2021

PRINT ISBN 978-92-64-95276-8
PDF ISBN 978-92-64-40539-4

ISSN 0376-6438
2021 SUBSCRIPTION
(18 ISSUES)

9 789264 952768