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This Survey is published on the responsibility of the Economic and Development Review Committee (EDRC) 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 11 February 2019. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 1 March 2019.

The Secretariat's draft report was prepared for the Committee by Christophe André, Jon Kristian Pareliusen and Hyunjeong Hwang, with contributions from Andres Fuentes Hutfilter, under the supervision of Vincent Koen. Secretarial assistance was provided by Sisse Nielsen.

The previous Survey of Sweden was issued in February 2017.

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Basic Statistics of Sweden, 2017

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million, 2018)	10.1		Population density per km²	24.5	(37.2)
Under 15 (%, 2018)	17.7	(17.8)	Life expectancy (years, 2016)	82.4	(80.7)
Over 65 (%, 2018)	20.1	(17.3)	Men	80.4	(77.9)
Foreign-born (%)	17.8	(15.0)	Women	84.1	(83.2)
Latest 5-year average growth (%, 2018)	1.0	(0.5)	Latest general election	Sep.	2018
ECONOMY					
Gross domestic product (GDP, 2018)			Value added shares (%)		
In current prices (billion USD)	551.1		Primary sector	1.2	(2.5)
In current prices (billion SEK)	4 794.3		Industry including construction	25.1	(26.9)
Latest 5-year average real growth (%)	2.8	(2.3)	Services	73.7	(70.6)
Per capita (thousand USD PPP)	51.4	(42.5)			
Latest 5-year average real per capita growth (%)	1.5	(1.6)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure	49.3	(40.7)	Gross financial debt	50.4	(109.5)
Revenue	50.8	(38.8)	Net financial debt	-34.7	(70.8)
EXTERNAL ACCOUNTS					
Exchange rate (SEK per USD, 2018)	8.675		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	8.856		Machinery and transport equipment	38.7	
In per cent of GDP			Manufactured goods	17.4	
Exports of goods and services (2018)	49.2	(45.1)	Chemicals and related products, n.e.s.	11.6	
Imports of goods and services (2018)	45.6	(42.6)	Main imports (% of total merchandise imports)		
Current account balance	3.2	(0.4)	Machinery and transport equipment	37.2	
Net international investment position	4.6		Manufactured goods	12.7	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%, 2018 for Sweden)	77.5	(67.7)	Unemployment rate, Labour Force Survey (age 15 and over) (%, 2018 for Sweden)	6.3	(5.8)
Men (2018 for Sweden)	79.0	(75.4)	Youth (age 15-24, %, 2018 for Sweden)	16.7	(11.9)
Women (2018 for Sweden)	76.0	(60.1)	Long-term unemployed (1 year and over, %)	1.0	(1.7)
Participation rate for 15-64 year-olds (%)	82.5	(72.1)	Tertiary educational attainment 25-64 year-olds (%, 2016)	41.1	(35.7)
Average hours worked per year	1 453	(1 744)	Gross domestic expenditure on R&D (% of GDP, 2016)	3.3	(2.3)
ENVIRONMENT					
Total primary energy supply (ktoe per unit of GDP)	0.1	(0.11)	CO_2 emissions from fuel combustion per capita (tonnes, 2015)	3.8	(9.2)
Renewables (%)	39.0	(10.2)	Municipal waste per capita (tonnes, 2016)	0.4	(0.5)
Exposure to air pollution (more than 10 µg/m³ of PM2.5, % of population, 2015)	10.4	(75.2)			
SOCIETY					
Income inequality (Gini coefficient, 2015)	0.278	(0.311)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2015)	9.2	(11.3)	Reading	500	(493)
Median disposable household income (thousand USD PPP, 2015)	29.3	(22.5)	Mathematics	494	(490)
Public and private spending (% of GDP)			Science	493	(493)
Health care (2016)	10.9	(8.9)	Share of women in parliament (%, 2016)	43.6	(28.7)
Pensions (2013)	10.0	(9.1)	Net official development assistance (% of GNI)	1.02	(0.39)
Education (primary, secondary, post sec. non tertiary, 2014)	3.7	(3.7)			

* 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 29 member countries.
Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

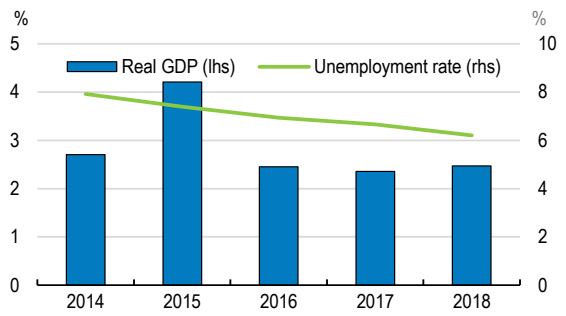
EXECUTIVE SUMMARY

Economic growth is broad-based

The expansion is strong. GDP has expanded at an average rate of close to 3% over the past five years (Figure A). The upswing has been broad-based, with robust consumption, investment and exports.

Unemployment has receded. Employment has grown steadily and the unemployment rate has fallen (Figure A). But jobseekers are increasingly low-skilled and immigrants, who struggle to find jobs.

Figure A. Robust growth reduces unemployment



Source: OECD Economic Outlook database.

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Economic growth will moderate as capacity constraints tighten. Growth will slow, as the economy now operates around full capacity and labour shortages appear in many sectors (Table A). Shrinking residential investment following housing price falls is a further drag on the economy. Exports are expected to remain solid as long as the global economy keeps expanding.

Global uncertainties weigh on the outlook. The global economic environment is laden with uncertainties. As a small open economy highly dependent on exports, Sweden is vulnerable to potential global shocks, such as further intensification in global trade tensions, a disorderly Brexit, stress in European sovereign bond markets, as well as domestic events such as a severe drop of the housing market.

Table A. Economic growth is projected to remain robust

Percentage change, unless otherwise specified

	2018	2019	2020
Gross domestic product	2.4	1.6	1.7
Private consumption	1.2	1.6	2.0
Gross fixed capital formation	3.5	-0.7	1.4
Exports	3.7	3.4	3.2
Imports	3.1	2.5	3.2
Unemployment rate	6.3	6.2	6.1
Consumer prices	2.0	2.0	2.1
CPI with fixed mortgage rate (CPIF)	2.1	2.0	2.0
Current account (% of GDP)	2.5	3.4	3.5
General government fiscal balance (% of GDP)	0.7	0.4	0.5

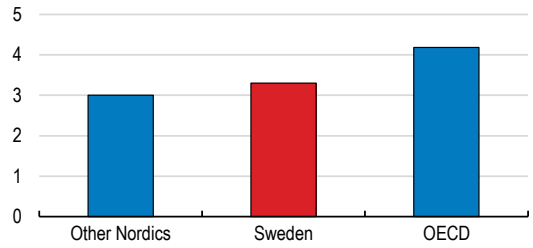
Source: OECD Economic Outlook, No. 104, updated based on available information as of 28-02-2019.

Inequality is low and well-being high

Rising employment has contributed to enhancing well-being and reducing poverty. However, robust capital income growth has pushed up inequality over the past few years. Nevertheless, inequality remains low, albeit higher than in the other Nordic countries (Figure B). Amending tax rules for unlisted companies and property, without increasing the overall tax burden, could help hold back inequality.

Figure B. Income inequality remains low

Ratio of ninth to first disposable income decile, 2016 or latest



Source: OECD Income Distribution Database (IDD).

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Environmental policies are ambitious

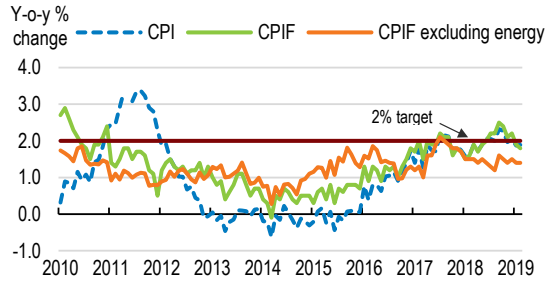
Sweden is a frontrunner in the fight against climate change and in greening the economy. CO_2 emissions per unit of GDP are well below the OECD average and falling. Air quality is good and environment-related patenting strong. The government has stepped up efforts, increasing investments in environmental protection and nature conservation. It has set clear objectives and policies to reduce carbon emissions and put in place an independent climate council to monitor progress. In addition to the carbon tax, the EU Emissions Trading Scheme and blending obligation for biofuels, there are measures such as subsidising solar cells, electric vehicles and charging points and supporting company and municipal investments reducing climate impact.

The macroeconomic policy stance is appropriately turning sligthly counter-cyclical

Fiscal policy has supported the recovery. Two decades of prudent policy had created the fiscal space for Sweden to use fiscal expansion to dampen recessions. In recent years, additional resources have been channelled to key areas such as education, immigrant integration, health, defence and environment protection, providing some stimulus despite high capacity utilisation. The 2019 budget is slightly expansionary, which is appropriate, especially as reduced margins for monetary policy will require fiscal policy to play a greater stabilising role in the next downturn.

Monetary policy has started to tighten, but remains supportive. With inflation close to the 2% target, albeit with some help from rising energy prices, the time has come to begin withdrawing stimulus (Figure C). Inflation expectations are close to the target. The Riksbank has started withdrawing monetary support, with a 25 basis points repo rate hike to -0.25% in December 2018. The gradual normalisation of policy rates should continue, to balance the risks of inflation undershooting against those of excess inflation and debt.

Figure C. Inflation is close to the target



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

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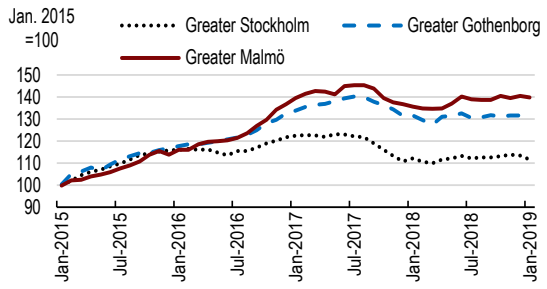
The housing market has cooled

Housing prices have fallen slightly. Housing prices have fallen since mid-2017, largely as a result of increased supply of tenant-owned apartments in big cities (Figure D), but seem to be stabilising. Macroprudential measures, notably the introduction of a mortgage amortisation requirement, have also contributed to contain household indebtedness and housing price increases. Nevertheless, the housing price-to-income ratio remains about 30% above its

long-term average and household debt continues to rise. Structural reforms are needed for the housing market to become more responsive to people's needs.

Figure D. Housing prices have fallen in big cities



Source: Valueguard.

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Reducing regulation could lift productivity and well-being

The housing market suffers from excessive regulation that hinders the supply of new homes. The government is implementing a 22-point plan including measures to release more land for development, accelerate planning processes and subsidise the construction of affordable housing. While this is going in the right direction, broader reforms will be needed to achieve a well-functioning housing system, in particular moving towards more tenure-neutral taxation, further streamlining land-use planning procedures and easing rental regulations. Greater competition could help lower construction costs.

There is room for further progress on regulations and administrative procedures. Sweden is among the most business-friendly countries in the OECD. Nevertheless, some regulations and administrative procedures could be streamlined, taking advantage of the new opportunities offered by digitalisation.

Evolving work patterns create challenges

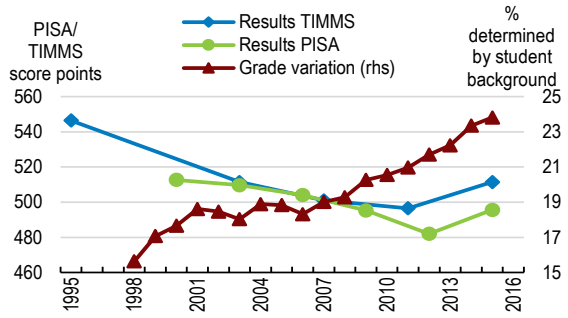
Automation increases re-skilling needs. Digitalisation offers great opportunities to raise productivity, but puts nearly a third of jobs at risk of automation or significant change. Hence investment in re-skilling and up-skilling will be crucial to inclusive growth. This requires strengthening the foundation skills of the workforce and developing adult education, in cooperation with the social partners.

Labour legislation should adapt to evolving work patterns. As unconventional forms of work gain ground, labour legislation will need to evolve to ensure the right balance between flexibility and protection for all workers. New rules should be designed in close cooperation with the social partners.

Improving primary and lower secondary school results is crucial

Swedish school results have declined for two decades. Issues with design and implementation of a series of reforms in the early 1990s, coinciding with a deep economic crisis, likely contributed (Figure E). School inequalities, driven by residential segregation and school choice, likely reduce equality of opportunity. A reform programme for primary and lower secondary schools should coordinate funding better and strengthen governance, combine school choice and competition with greater attention to socio-economic diversity, and increase the attractiveness of teaching.

Figure E. School results and equity have declined



Source: OECD (2016), Mullis et al. (2016), Martin et al. (2016), and Swedish National Agency for Education (2018).

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The institutional set-up of the school system needs strengthening. School funding has to better target needs related to pupils' different socio-economic backgrounds. Developing a regional arm of the central government governance structure would enhance local cooperation, improve skills development, promote continuous quality improvements, and instil accountability at every level of the school system.

Competition and school choice must be steered to deliver for the public good. Municipalities need to take the socio-economic mix of pupils into account in municipal school entry and when investing in new schools. A liberal regime for the establishment and expansion of private schools needs to internalise a broader set of criteria, notably to counteract segregation. Municipalities should have a stronger say in such decisions. Pupils should be assigned to over-subscribed private compulsory schools by lottery, possibly with quotas reserved for pupils with unfavourable socio-economic backgrounds.

Teaching needs to become more attractive to address current teacher shortages, which are most acute in remote locations and set to intensify as the number of school-age children increases. Improving teacher education with a stronger research base, more instruction time and teaching practice, strengthened continuous learning and development, as well as feedback and support mechanisms to foster more cooperation between colleagues, would help. Furthermore, principals and education personnel should be shielded from unnecessary administrative procedures.

MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic policies	
Inflation is close to the 2% target and capacity utilisation is high after several years of strong growth.	Continue to raise interest rates gradually, taking inflation and output developments into account.
Public finances are healthy, supported by a strong fiscal framework. Fiscal policy has supported the recovery, but is becoming less expansionary.	Continue to run budget surpluses while the economy remains solid. In the case of a downturn, use the space provided by the fiscal framework.
Environmental and green finance policies	
Implicit carbon taxes on fossil fuels are much higher in household than in industrial use.	Raise taxes on industrial energy use.
Climate change and climate change mitigation policies generate new financial risks and opportunities for investors.	Strengthen and further harmonise climate-related disclosure requirements, especially for financial intermediaries, including banks.
Housing policy	
Housing prices have stabilised, but structural weaknesses remain, with potential adverse effets on financial and economic stability, as well as on mobility and well-being. The 2015 22-point government housing plan is a step in the right direction, but broader reforms are needed.	Reform the recurrent property tax to better align tax charges with property values. Phase out the deductibility of mortgage interest rate payments.
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.
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, mobility and better utilisation of the housing stock, while maintaining tenant protection against abuse.
Business regulations and competition policies	
Business regulations and administrative procedures are generally lean, but further streamlining could raise productivity.	Continue to use digital tools to improve services, simplify procedures and shorten licences and permits processing times.
Labour market and adult skills policy	
The integration of immigrants has improved, thanks to enhanced integration policies and strong demand for labour. Technological developments increase re-skilling needs for a large share of workers..	Develop adult education, in cooperation with the social partners, including for people in unconventional forms of work.
Education policy	
School segregation has intensified while compensatory funding has remained relatively constant. Schools with weaker pupil backgrounds lack qualified, experienced teachers and material resources.	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.
The central government lacks a regional structure to steer and develop schools, while many municipalities lack the necessary scale.	Develop a regional arm of the central government school governance structure tasked with systematic quality improvement, inducing local cooperation, continuous teacher training and inspections.
No objective benchmark of school performance exists. Entry to upper secondary and tertiary education depend on grades, but grading practices differ between schools. The grading- and upper secondary entry systems put heavy weight on fail grades, notably in the core subjects Swedish, mathematics and English.	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. Weigh high and low grades symmetrically and suppress the requirement to pass in certain subjects to enter upper secondary education.
School segregation has intensified and municipalities assign school places based on a strictly interpreted proximity principle, while private schools mostly assign places based on queuing time.	Take the socio-economic mix into account when investing in new schools and in school entry.
Teacher quality affects pupil outcomes, but teacher education is fragmented and of relatively low status in Sweden.	Strengthen teacher education with more instruction time, teacher practice and research.
Mentoring and peer-to-peer learning improves teacher quality and job satisfaction, but are applied in a patchy manner across Sweden.	Improve continuous learning and development through a regional school governance structure, systematic peer learning and continued mutually beneficial cooperation with universities.

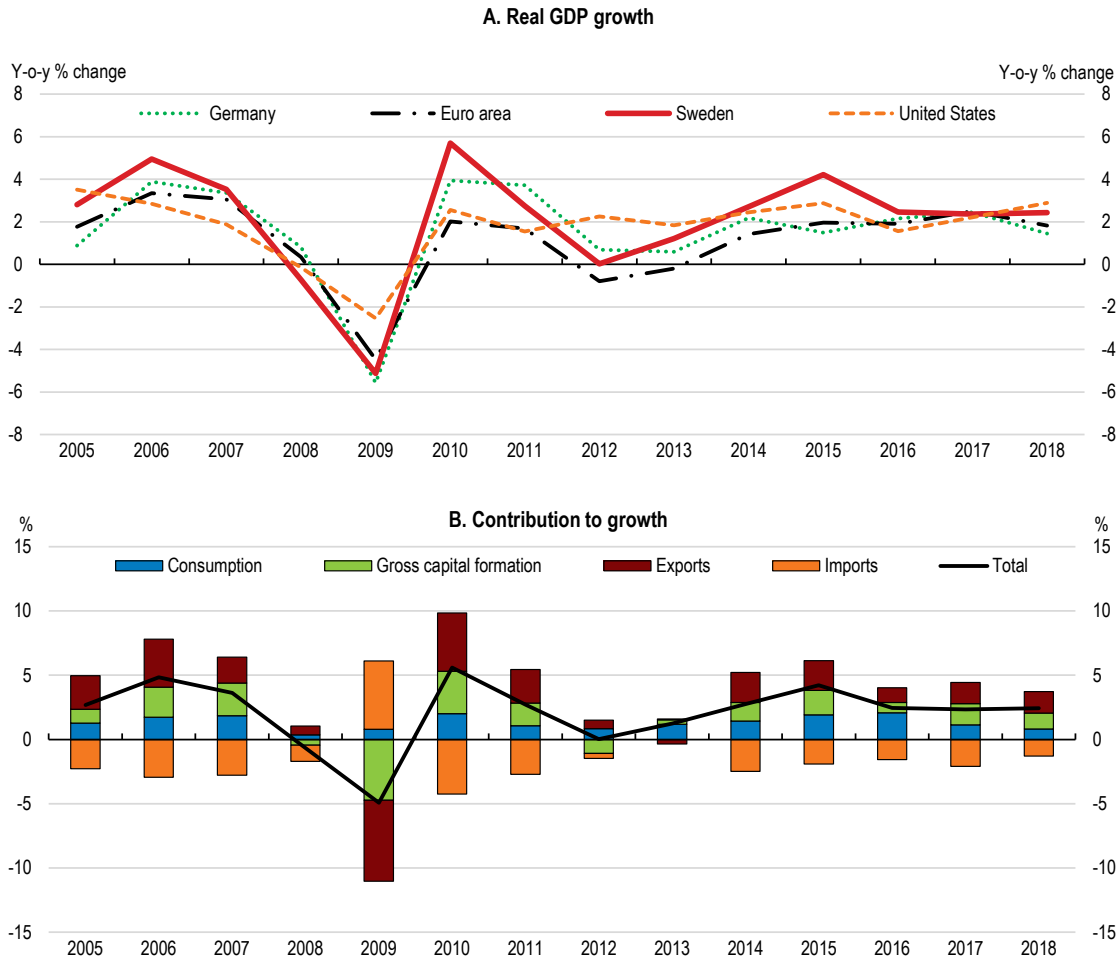
Key policy insights

- *The economy is growing steadily*
- *Macroeconomic stimulus should be withdrawn*
- *Structural reforms would enhance productivity and well-being*
- *Employment is high but some still struggle*

The economy is growing steadily

Sweden is a strong knowledge-based economy, well integrated in global value chains, which ensures high standards of living, well-being, income and gender equality, as well as a high environmental quality to its inhabitants. Growth has been broad-based over the past five years, with consumption, investment and exports all contributing significantly. Meanwhile, strong domestic demand has pushed up imports (Figure 1).

Figure 1. Output growth is robust and broad-based

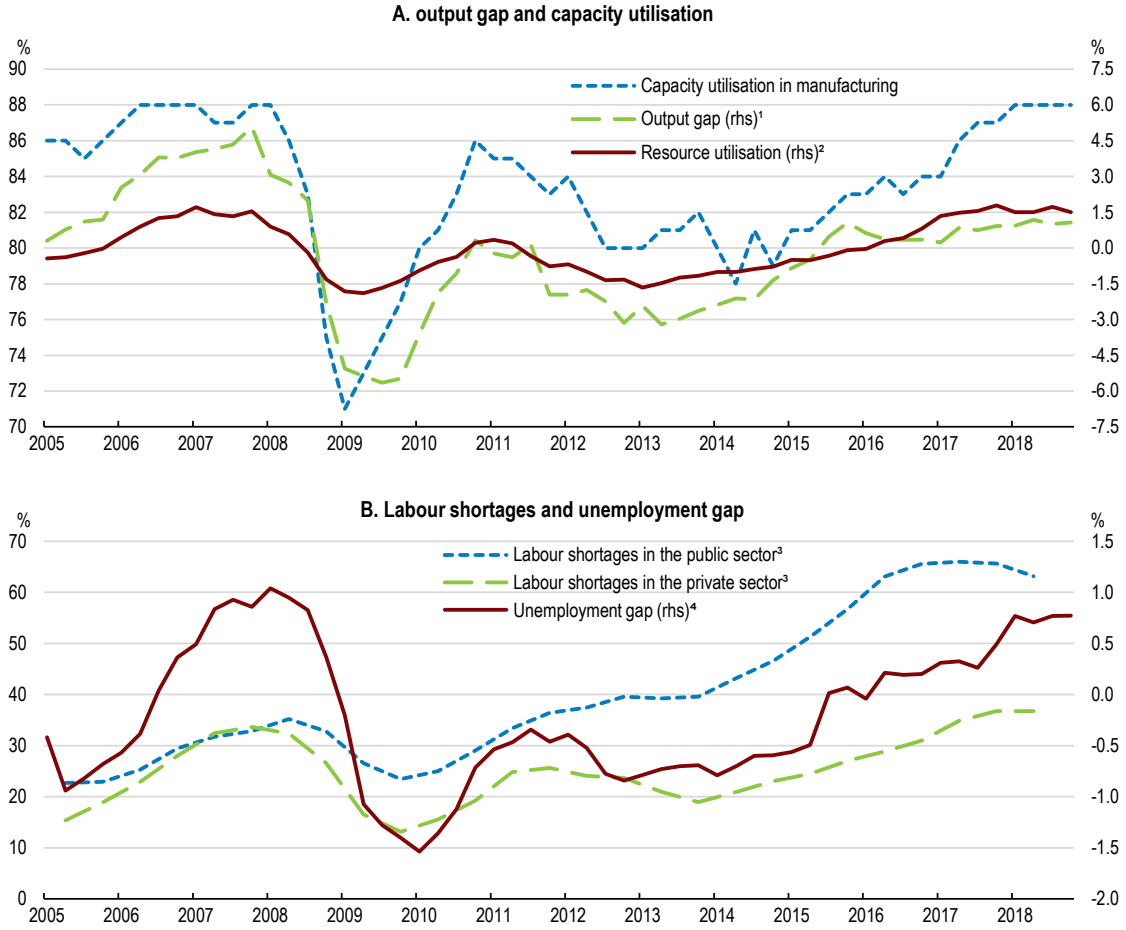


Source: OECD Economic Outlook database.

StatLink https://doi.org/10.1787/888933943607

Measures of the output gap and indicators of capacity utilisation suggest the economy is operating close to full capacity (Figure 2). Even so, monetary policy remains expansionary, while fiscal policy is slightly expansionary.

Figure 2. The economy is operating close to full capacity



1. Percentage of potential output.
2. Deviation from 2005-2018 average in units of standard deviation.
3. Percentage of employers reporting difficulties in recruiting.
4. Percentage of labour force.

Source: OECD Economic Outlook database for the output and unemployment gaps; National Institute of Economic Research for capacity utilisation in the manufacturing; Public Employment Office for labour shortages, and Riksbank for resource utilisation.

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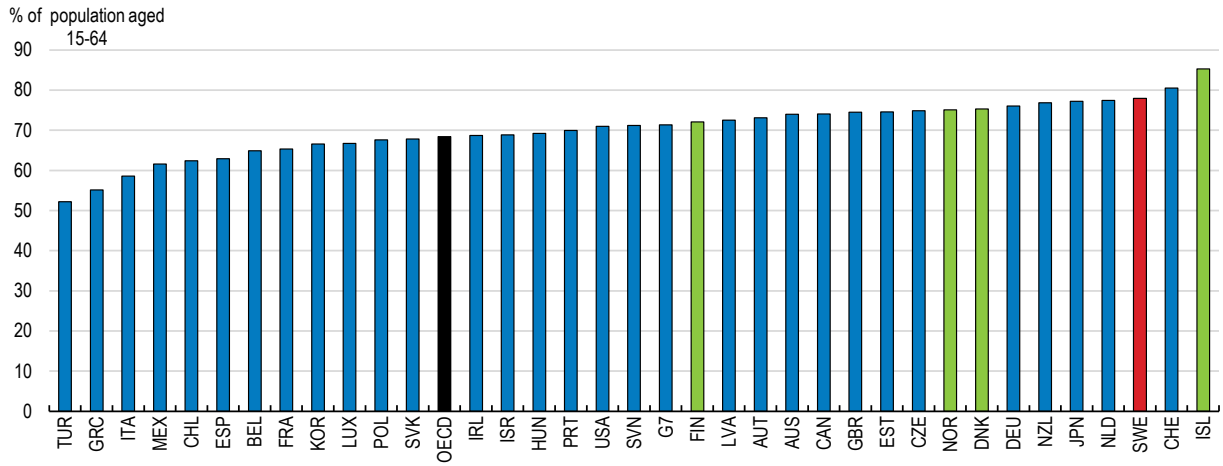
Sweden's employment rate is the highest in the European Union, reflecting the strength of the economy, high participation of women and labour market institutions generating strong work incentives (Figure 3). Labour shortages appear in various economic sectors, even though the unemployment rate remains higher than the OECD average (Figure 4). Unemployment is now concentrated among the most vulnerable groups, notably the low-skilled and immigrants, which makes further reductions more challenging, notwithstanding some recent progress.

Productivity growth is among the highest in the OECD, even though it has slowed over the past decade, following the global trend. Nevertheless, it is uneven across sectors, and there is scope for improvement, particularly in sectors with relatively limited exposure to foreign competition. Early adoption and diffusion of technology can foster productivity growth, raise competitiveness and provide the opportunity to develop new economic processes,

which could lift well-being, as well as help tackle essential issues such as climate change and the consequences of population ageing. However, it also raises concerns that many jobs could be at risk of automation, with consequences for employment, skills requirements, social protection and income inequality.

Figure 3. The employment rate is among the highest in the OECD

2018 Q4 or latest



Source: OECD Labour Force Statistics database.

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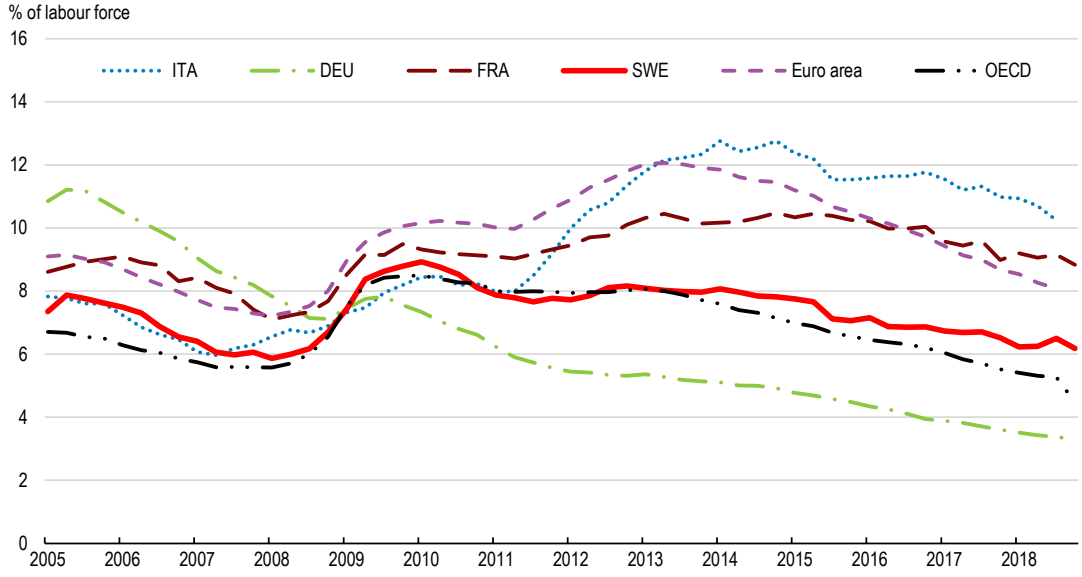
Figure 4. Unemployment has declined



Source: OECD Economic Outlook database.

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A new government appointed on 21 January 2019 plans to reform labour market and rent regulations and invest further in education, inclusiveness and the environment (Box 1).

Box 1. The new government's programme

A new government, composed of Social Democrats and Greens, came into office on 21 January 2019. The most economically significant lines of its programme, which results from an agreement with the Centre and Liberal parties, are as follows:

Labour market

- Labour legislation will be revised to allow more exceptions to the order of lay-off rules.
- Access to adult education and skills development will be enhanced.
- The Public employment service will be reformed. A new system with private providers will be developed.
- Measures to facilitate the integration of immigrants will be reinforced, including through the *Entry agreement* negotiated by the social partners (see main text) and an *Integration year* scheme combining vocational education and training with Swedish language learning. Women's labour market intergration will receive particular attention.

Education

- The implementation of the School Commission's recommendations to enhance equality in schools will continue (see Box 1.3 in Chapter 1).
- Teacher education will be reformed, with higher standards and admission requirements.
- Struggling students will receive more support, notably through additional courses and homework help.
- The study environment will be improved with strengthened security and bans on mobile phones.

Housing

- Rent setting for new dwellings will be liberalised.
- The investment support for the construction of rental housing will be concentrated, streamlined and targeted at rental housing throughout the country.
- A broad tax reform will be initiated which, among other goals, aims to reduce household indebtedness and improve the functioning of the housing market.
- Tax payments on capital gains from selling primary residences can be postponed without paying interest. Earlier legislation demanded that taxpayers paid interest to postpone paying this tax.

Welfare

- Pensions will increase for low-income households.
- An extra week of paid parental leave will be introduced.

Health

- A general plan for shortening health-care queues will be drafted.
- A broad primary care reform will be implemented, in particular to facilitate the recruitment of doctors and enhance access to care in rural areas.

Taxes and social contributions

- Taxes on pensions will be lowered and tax rules for pensioners fully aligned on those for wages.
- Tax deductions for household work will be increased.
- Employer social contributions will be reduced for companies hiring their first employee, low-skilled youth or newly-arrived immigrants.
- The fight against tax evasion and avoidance will be stepped up.
- Taxes on environmentally-harmful activities will be raised and those on work and entrepreneurship will be reduced.

Environment

- Climate requirements for aviation will be tightened.
- Capacity for charging and fuelling fossil-free vehicles throughout the country will be expanded.
- Recycling will be encouraged further.
- Protection of bio-diversity will be reinforced.
- The possibility to emit a government green bond will be investigated.

Other

- Resources for police and defence will increase.
- Sweden will continue to support the Global Deal, which the OECD is taking over as host organisation.

Source: Government of Sweden, Statement of Government Policy, 21 January 2019.

Against the background of a strong economy, amid a fast-moving global environment, the main messages of this *Economic Survey* are the following:

- Monetary policy stimulus should be gradually withdrawn and fiscal policy should be broadly neutral as long as the economy remains solid.
- Structural weaknesses should be addressed to enhance productivity and well-being, notably alleviating obstacles to housing affordability and enhancing the efficiency of public services by seizing the opportunities offered by digitalisation.
- Maintaining a high level of workforce skills is essential to sustain growth, competitiveness and social cohesion, calling for action to lift educational performance and promote lifelong learning.

1.1.1. The economic expansion has peaked

Output growth is projected to slow markedly as capacity constraints become increasingly binding in many sectors, and as residential investment contracts following falls in housing prices in the biggest cities. Household consumption is set to continue expanding at a measured pace, as labour market tightness only gradually feeds through to wages, and housing market and global uncertainties encourage household saving. Demand from Sweden's main trading partners should continue to support exports and business investment, although less vigorously, as global growth prospects weaken (Table 1).

Table 1. Macroeconomic indicators and projections

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

	2016	2017	2018	2019	2020
Gross domestic product (GDP)	2.5	2.4	2.4	1.6	1.7
Private consumption	2.8	2.3	1.2	1.6	2.0
Government consumption	3.2	0.4	1.1	1.5	1.2
Gross fixed capital formation	3.9	6.5	3.5	-0.7	1.4
Housing	11.2	11.5	-0.8	-9.3	-3.2
Business	0.6	5.1	4.5	0.9	2.3
Government	8.1	4.9	5.6	4.5	3.3
Final domestic demand	3.2	2.8	1.8	1.0	1.6
Stockbuilding[2]	-0.1	0.1	0.4	0.1	0.0
Total domestic demand	3.0	2.9	2.1	1.1	1.6
Exports of goods and services	2.6	3.7	3.7	3.4	3.2
Imports of goods and services	4.0	5.2	3.1	2.5	3.2
Net exports[2]	-0.4	-0.4	0.4	0.5	0.1
Other indicators					
Potential GDP	2.1	2.1	2.1	2.1	2.0
Output gap[3]	0.4	0.7	1.0	0.5	0.2
Employment	1.5	2.3	1.8	1.2	0.6
Unemployment rate[4]	6.9	6.7	6.3	6.2	6.1
GDP deflator	1.7	2.2	2.2	2.3	2.3
CPI	1.0	1.8	2.0	2.0	2.1
CPIF[5]	1.4	2.0	2.1	2.0	2.0
Household saving ratio, net[6]	16.0	15.1	17.9	19.2	19.9
Trade balance[7]	4.4	3.7	3.4	3.5	3.6
Current account balance[7]	4.3	3.2	2.5	3.4	3.5
General government fiscal balance[7]	1.1	1.5	0.7	0.4	0.5
Underlying government net lending[3]	0.8	1.0	0.1	0.1	0.4
Underlying government primary balance[3]	0.7	0.9	-0.1	-0.2	0.2
Gross government debt (Maastricht)[7]	42.4	40.8	37.6	35.8	34.6
General government net debt[7]	-30.7	-34.7	-33.9	-33.0	-32.2
Three-month money market rate, average	-0.5	-0.5	-0.4	0.0	0.4
Ten-year government bond yield, average	0.5	0.7	0.7	0.9	1.1

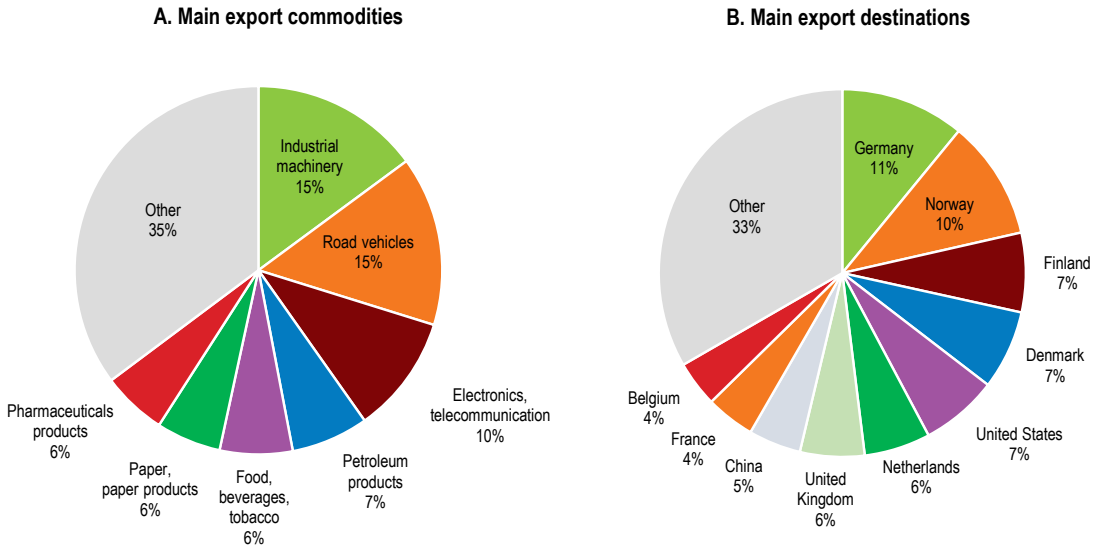
1. Annual data are derived from quarterly seasonally and working-day adjusted figures.
2. Contribution to changes in real GDP.
3. As a percentage of potential GDP.
4. As a percentage of labour force.
5. CPI with a fixed mortgage interest rate.
6. As a percentage of household disposable income.
7. As a percentage of GDP.

Source: OECD Economic Outlook 104 database, updated based on available information as of 28-02-2019.

The housing market remains vulnerable, and further housing price falls could weigh on consumption, especially as many households are heavily indebted. The current global economic environment is characterised by an increasing risk of a sharp slowdown in growth and unusually high uncertainty. Several shocks could have a major impact on the Swedish economy. An intensification of global trade tensions would weigh on the export outlook and pose a major risk to Sweden, which is deeply integrated in global value chains. Vulnerabilities are to some extent mitigated by the product diversification of exports (Figure 5, Panel A). More than 40% of Swedish exports go to the economies of Northern Europe, which are solid but also vulnerable to trade shocks (Panel B).

Figure 5. Exports of goods by commodity and market

Share of total exports, 2018



Source: Statistics Sweden.

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If the United Kingdom left the European Union without a negotiated agreement, the direct trade impact on Sweden would be relatively modest. However, indirect effects through disruption in European supply chains, uncertainty and financial market turbulence might inflict greater pain. Stress in some European sovereign bond markets could lower growth and increase uncertainty EU-wide, which would affect Swedish exports and investment. Table 2 shows shocks that could hit the Swedish economy.

Table 2. Shocks which would affect economic performance

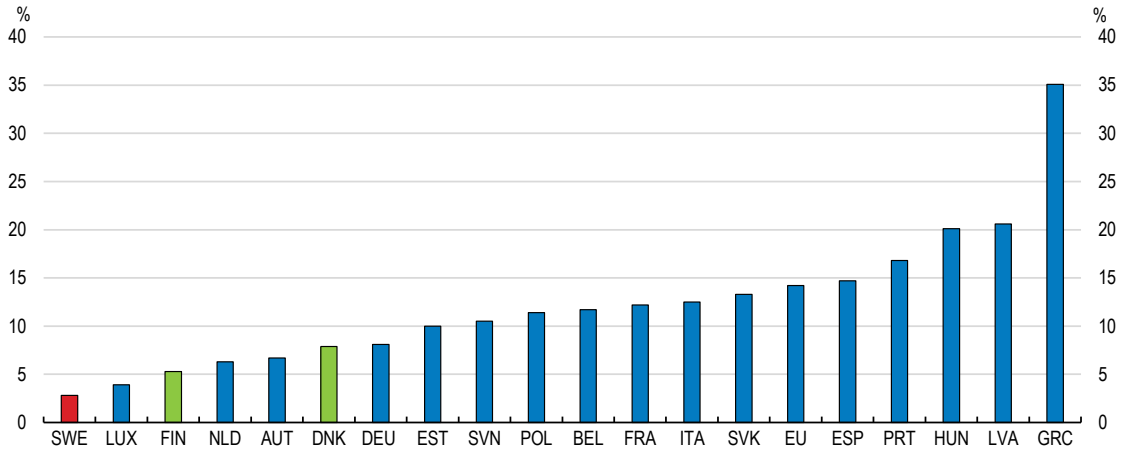
Vulnerability	Possible outcomes
Global or regional financial crisis contagion	The Swedish financial system is dominated by a few large banks, which are dependent on foreign wholesale funding. A liquidity crisis triggered by events outside Sweden could lead to difficulties in the banking sector, falls in asset prices and a credit squeeze, which would cause a deep recession.
Escalation of global trade tensions	As a small open economy, Sweden is exposed to weakness in world trade, which would lower exports and output.
Disorderly Brexit	Although the overall direct impact of a disorderly Brexit on Sweden would be modest, some sectors (e.g. food, motor vehicles) would be more severely affected. Moreover, indirect effects such as supply-chain disruptions, financial market disturbances and higher uncertainty could amplify the impact on output growth.
Housing market crash	Falls in housing prices have been modest so far. A collapse in housing prices, which remain 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.

1.1.2. Poverty recedes but capital income outpaces wages, raising income inequality

Poverty is extremely low in Sweden, which has the lowest severe material deprivation rate in the European Union (Figure 6). However, an upward trend in income inequality, which was interrupted by the global financial crisis, resumed after 2013, as the strength of the economy boosted capital income (Figure 7, Panel A). The upward trend in income inequality partly results from structural factors, such as ageing, changing family structures, educational achievement and immigration (Robling and Pareliussen, 2017[1]; Pareliussen et al., 2018[2]). Nevertheless, economic and policy factors also play a role, in particular the rise in capital income, taxed at moderate levels relative to labour income (Fiscal Policy Council, 2018[3]), and the slow uprating of benefits since the 1990s.

Figure 6. Poverty is extremely low

Share of population living in material and social deprivation, 2018 or latest[1]



1. Material and social deprivation refers to the inability to afford at least five out of thirteen items. For example, an inability to pay unexpected expenses, have regular leisure activities, or keep their home adequately warm.
Source: Eurostat.

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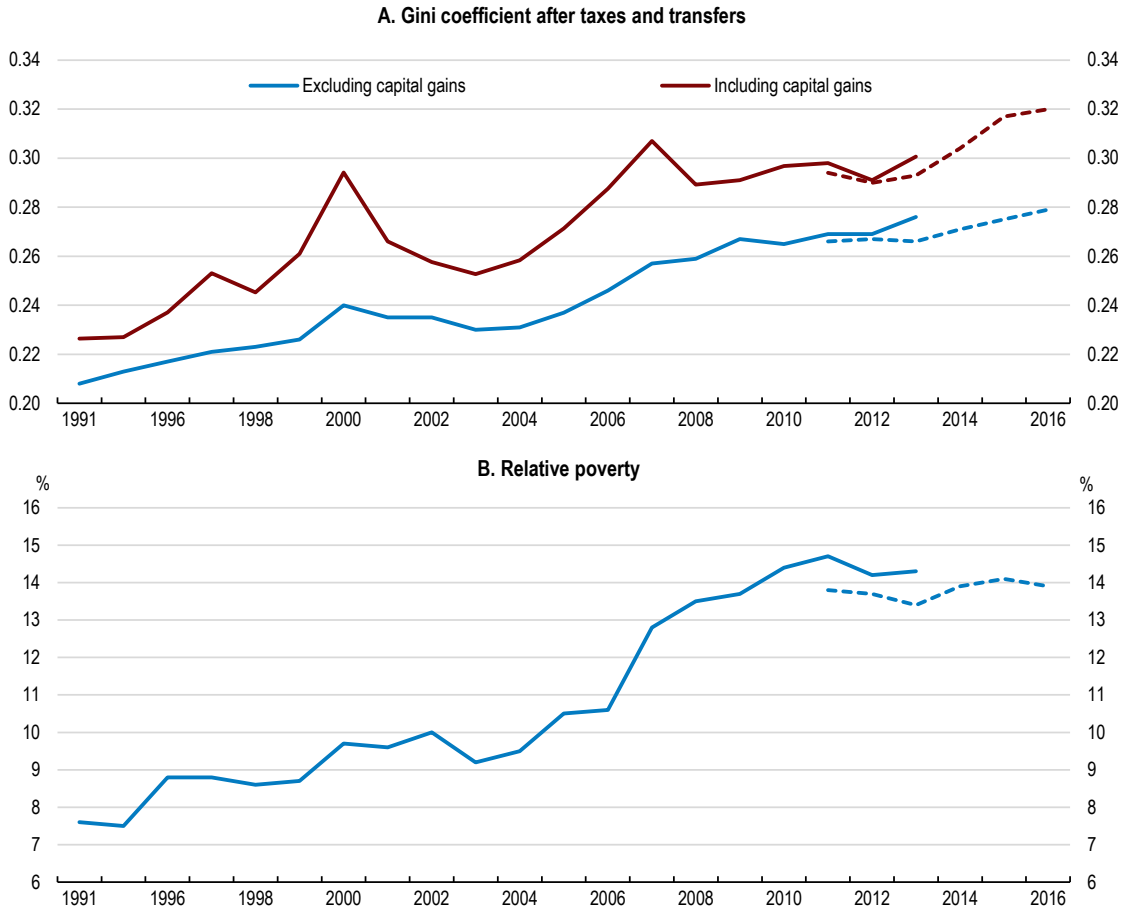
Interest and dividends pushed up inequality, as higher-income households benefitted most from investment income growth (Ministry of Finance, 2018[4]; Fiscal Policy Council,

2018[3]). The rules governing the taxation of unlisted companies since 2006 have allowed business owners to receive a larger part of their revenue in the form of capital income, taxed at lower rates than labour income. The favourable taxation of property, including generous mortgage interest deductibility, also increases inequality, even though realised capital gains on property are more evenly distributed than those on financial assets.

Notwithstanding the rise in overall inequality, relative poverty has stabilised and it even declined slightly in 2016, the last year for which data are available (Figure 7, Panel B). The pick-up in employment has helped disadvantaged households, which also benefit more than others from increases in the child and housing allowances and from a reduction in taxes on pensions in 2018.

Figure 7. Income inequality is increasing but relative poverty is contained



Note: Relative poverty refers to individuals in households with disposable income below 60% of the median. Continuous series over the whole period are not available. The series covering the 1991-2013 period (full lines) are based on household finance surveys and the series starting in 2011 (dotted lines) on income and tax statistics.
Source: Statistics Sweden.

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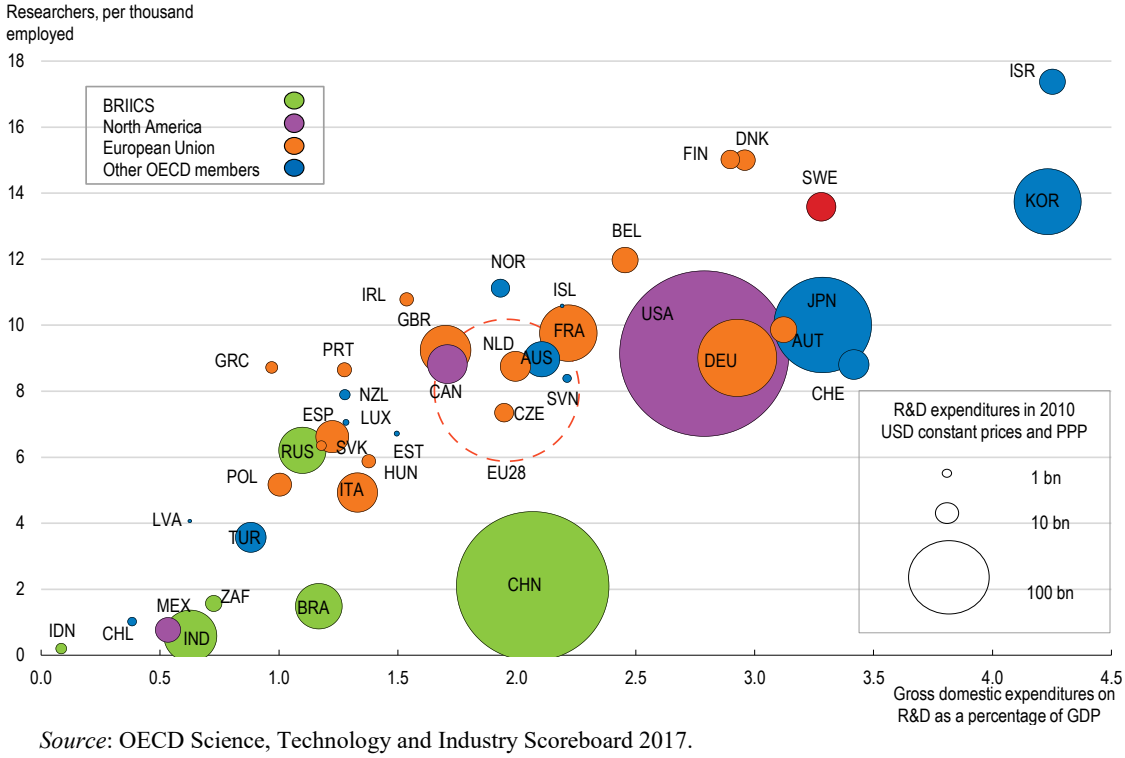
Table 3. Past recommendations on income inequality and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Review annually the distributional consequences of uprating social benefits, taking equity, fiscal costs and work incentives into consideration.	No systematic review has been introduced. However, child and housing allowances increased and taxes on pensions were reduced in 2018.

1.1.3. Sweden's investments in technology lift productivity and competitiveness

Sweden's strong economic performance is rooted in a highly skilled workforce and high investment in R&D (Figure 8). Sweden's labour productivity is on par with the upper half of OECD countries (Figure 9) and, although it followed the global slowdown over the past decade, its long-run growth is faster than in most of the main OECD areas and neighbouring countries (Figure 10). Sweden's competitiveness in world markets has also remained steady, with market shares roughly stable over the past decade (Figure 11). Despite the strength of the economy, wage increases have remained moderate. Combined with a weak krona, this has enhanced competitiveness (Sveriges Riksbank, 2018[5]). Wage moderation is driven by a wage bargaining process in which the industrial sector sets the benchmark for other sectors. In practice, wage increases have followed developments in Germany closely in recent years (IMF, 2017[6]). The current account surplus remains large, despite a recent erosion as strong domestic demand growth has boosted imports.

Figure 8. Sweden invests heavily in R&D



Source: OECD Science, Technology and Industry Scoreboard 2017.

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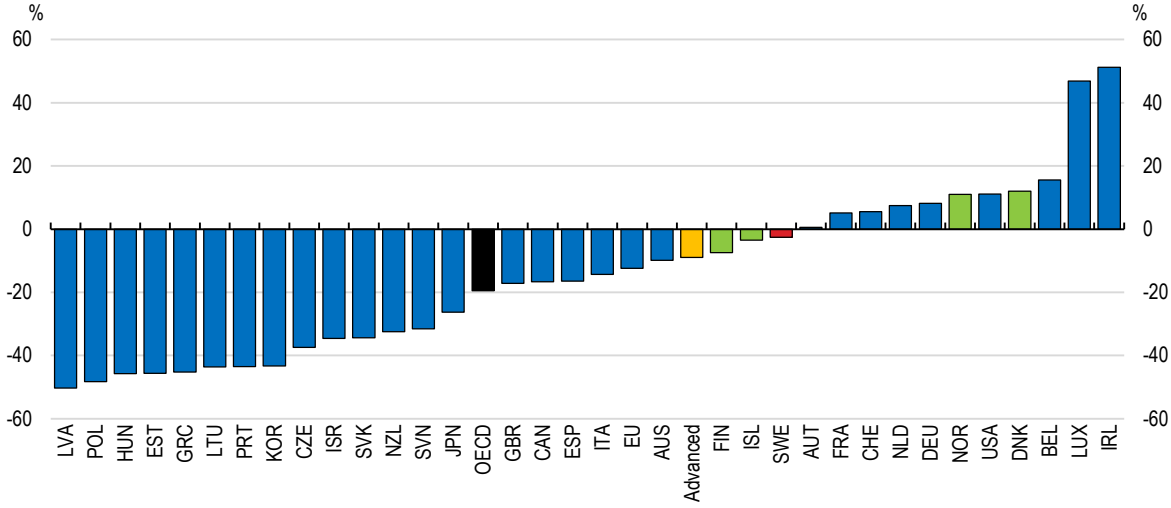
Figure 9. The level of productivity is close to the average of top OECD countries

GDP per hour worked, deviation from the average of the upper half of OECD countries, 2017



Note: Advanced economies include all OECD countries, except Chile, Mexico and Turkey.
Source: OECD, National Accounts, Productivity and Economic Outlook databases.

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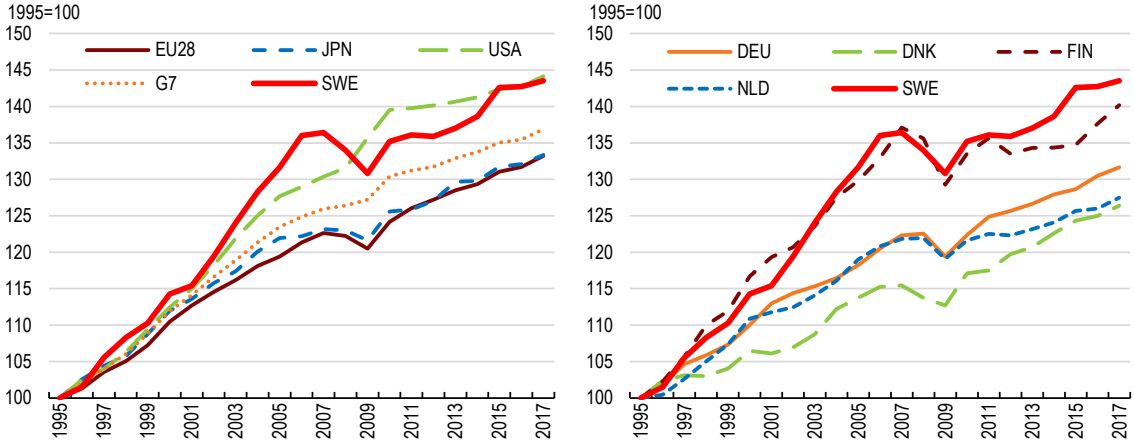
Figure 10. Labour productivity has been growing faster than in most other countries



Note: Productivity is measured as GDP per hour worked.
Source: OECD, National Accounts, Productivity and Economic Outlook databases.

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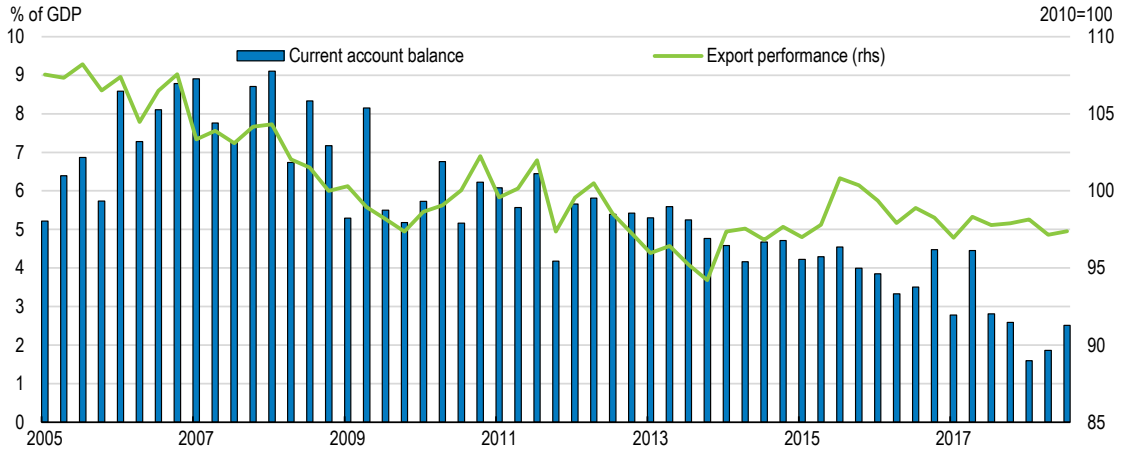
Figure 11. Export performance remains solid but the current account surplus has steadily narrowed



Source: OECD, Economic Outlook database.

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1.1.4. Strong output and employment growth underpins well-being

Sweden performs well in all dimensions of well-being (Figure 12). Its employment rate – the highest in the EU and one of the highest in the OECD – largely contributes to inclusive growth and a high level of well-being, although earnings are close to the OECD average. Life satisfaction is among the best in the OECD and the work-life balance is good, with only 1% of employees regularly working very long hours. The indicators for health status of the population, personal security, air and water quality, civic engagement and governance are high. While adult skills are among the best in the OECD, the cognitive skills of 15 year-olds are only about average. This calls for improving educational outcomes to support the development of the knowledge-based economy and lifting the performance of struggling pupils to strengthen inclusiveness. A relatively inefficient housing system is reflected in low affordability and overcrowding in some places, which points to the need for reform.

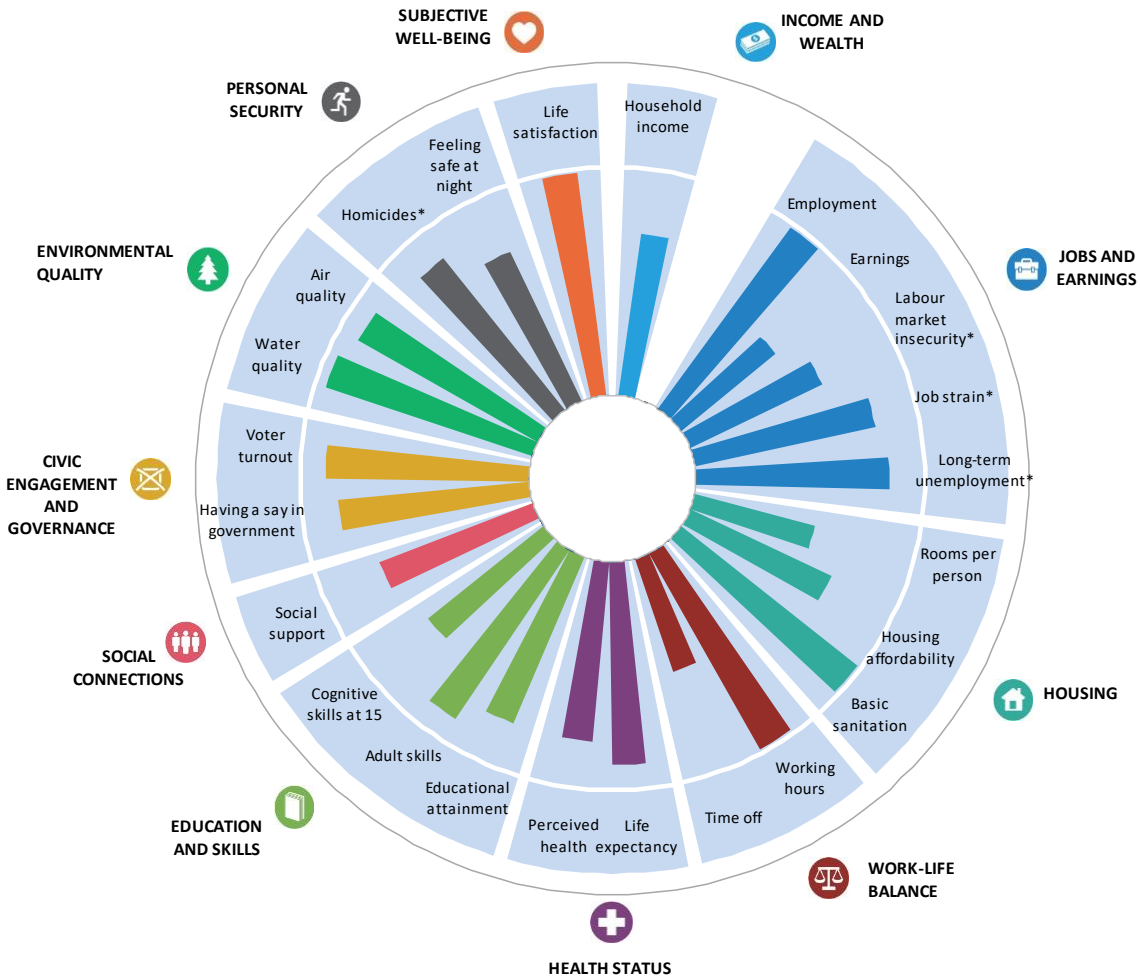
1.1.5. Corruption is low but further progress on foreign bribery is needed

Sweden's perceived level of corruption is among the lowest in the world, ranking sixth in the 2017 Transparency International Corruption Perceptions Index, a score similar to the other Nordic countries (Figure 13). The Rule of Law Index, provided by the World Justice Project, ranks Sweden third out of 113 countries as regards absence of corruption (World Justice Project, 2018[7]). Fighting corruption is important for ethical and economic reasons, as it harms the business climate, distorts competition and diverts public resources into overpriced or worthless projects, and generates mistrust in institutions and corrodes the social fabric. More than two-thirds of respondents to the 2017 Eurobarometer in Sweden consider that corruption is rare in their country, compared to about one-third in the European Union. Moreover, only about a tenth of respondents in Sweden report being affected by corruption in their daily lives, compared to a quarter in the European Union. Corruption is seen as more widespread in private companies than in the public administration, which enjoys a high level of trust. Like individuals, companies perceive that corruption is low, with less than one in ten reporting that corruption in Sweden is a

problem for their business, as against over a third EU-wide. The most widespread form of corruption is nepotism, which is seen as much more common than tax fraud or bribes and kickbacks in Sweden (European Commission, 2017[8]).

Figure 12. How's life in Sweden?

OECD Better Life Index, 2017



Note: This chart shows Sweden's relative strengths and weaknesses in well-being when compared with other OECD countries. For both positive and negative indicators (such as homicides, marked with an "*"), longer bars always indicate better outcomes (i.e. higher well-being), whereas shorter bars always indicate worse outcomes (i.e. lower well-being).
Source: OECD (2017), OECD Better Life Index, *www.oecdbetterlifeindex.org*.

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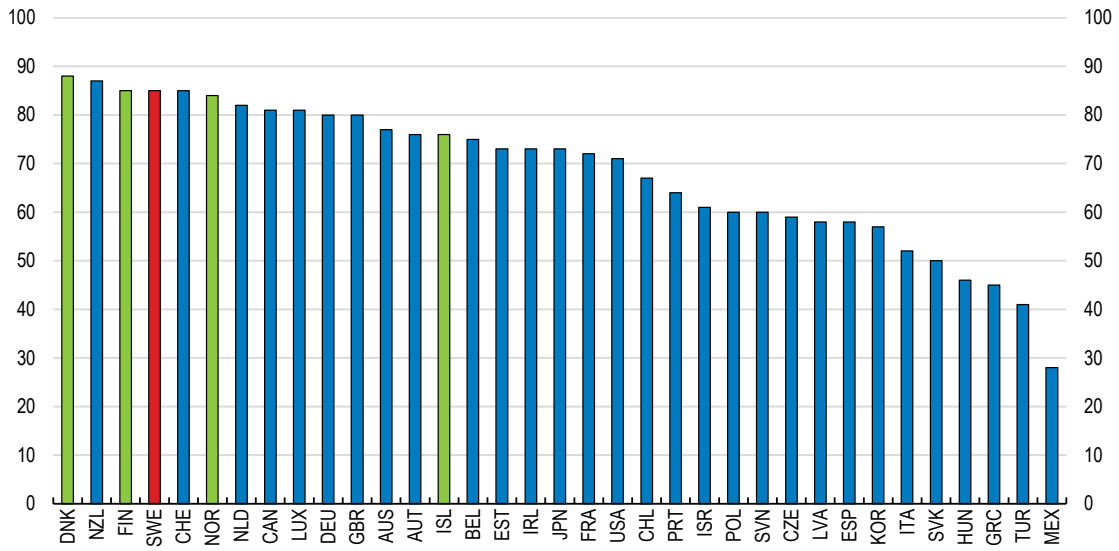
However, Swedish companies face corruption challenges when conducting business abroad in high-risk jurisdictions and sectors. According to the OECD Working Group on Foreign Bribery, Sweden's system of corporate liability for foreign bribery does not meet the requirements of the OECD Anti-Bribery Convention and Sweden has still not implemented reforms on corporate liability recommended by the OECD Working Group on Bribery in 2012 (OECD, 2012[9]; OECD, 2014[10]). In particular, maximum fines for companies paying

bribes are low, companies may not be liable for foreign bribery unless individuals are convicted and prosecuted, and current legislation contains loopholes allowing Swedish companies to avoid liability if they pay bribes abroad, notably through business partners such as foreign subsidiaries (OECD, 2017[11]). Sweden has taken institutional measures to step up enforcement, as noted by the Working Group on Bribery, but in practice this has been limited to natural persons (OECD, 2017[12])

Figure 13. Perceived corruption is low

Corruption Perceptions Index, 2018



Note: The Corruption Perceptions Index uses a scale of zero (highly corrupt) to 100 (very clean).
Source: Transparency International.

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1.1.6. Innovation and policy incentives foster green growth

Sweden is a frontrunner in the fight against climate change and in greening the economy. CO_2 emissions per unit of GDP are well below the OECD average and have continued to fall (Figure 14). This reflects nuclear energy use as well as a large, and rising, share of renewable energy production. It is backed up by ample availability of water and wood, and a long-standing policy to substitute fossil fuel with biomass, including through CO_2 taxes, of which certified sustainable biomass is exempt. The energy intensity of GDP has fallen but is still about the OECD average. Air quality is good. Strong environment-related patenting reflects high investment in clean technologies. Built-up areas are modest relative to population. Population density in urban areas has increased on average. However, low population density in some parts of the country may keep car dependency high (OECD, 2018[13]). Environmental tax revenue as a share of GDP is close to the OECD median. Biomass is used extensively in industry and electricity generation and is largely untaxed. If biomass resources are managed sustainably, biomass use reduces CO_2 emissions and is therefore also exempt from the European Union's Emission Trading Scheme. Even low-carbon energy sources should be used effectively. Sweden has set a national target for reducing its energy intensity of GDP by 20% between 2008 and 2020.

Sweden has adopted climate policy targets well beyond its obligations in the context of the European Union's burden sharing agreement. It aims at reducing domestic greenhouse gas (GHG) emissions (mostly CO_2 emissions), by 85% by 2045, yielding zero net GHG emissions, including emission reductions abroad. Intermediate goals of reducing overall emissions by 63% and transport sector emissions by 70% compared to 1990 by 2030 have been set. These targets are relatively well aligned with the objective of the Paris agreement to limit global warming to well below 2 degrees, which requires reducing CO_2 emissions worldwide to zero on a net basis by 2060, although high-income countries need to reach zero net emissions earlier. To reach these targets, in addition to the carbon tax and blending obligation for biofuels, the government adopted measures such as increased government subsidies for solar cells, electric vehicles and charging points, as well as support for company and municipal investments reducing climate impact. Fuel and vehicle taxation has been overhauled in 2018 to incentivise further reductions in carbon emissions. Moreover, the government is now required to report on progress towards climate policy targets when it presents its annual budget. An independent climate council set up in early 2018 monitors the government's progress (Ministry of the Environment and Energy, 2017[14]).

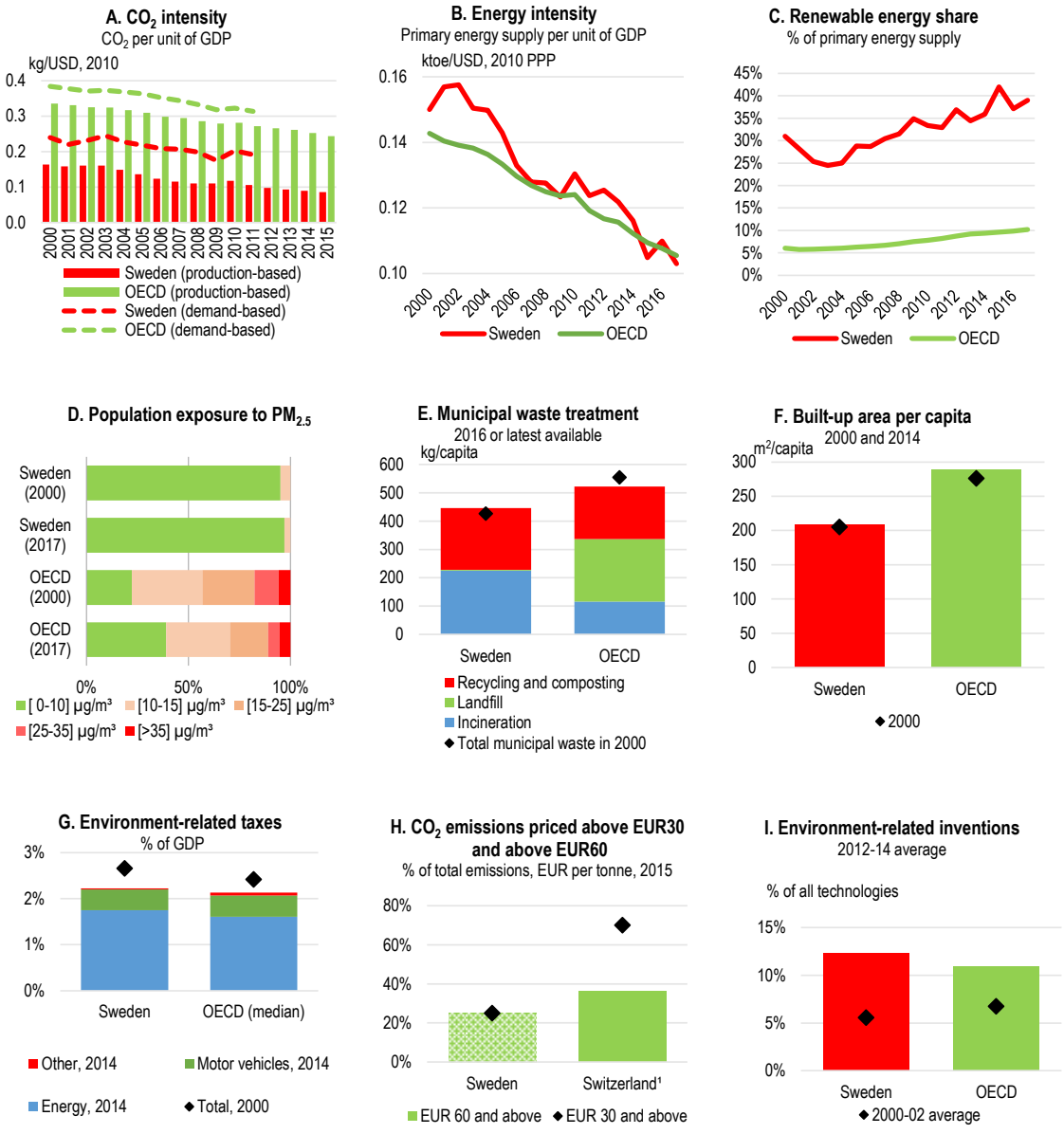
Sweden could reach its climate objectives more efficiently with a more consistent approach to carbon taxation. Implicit carbon taxes on fossil fuels are much higher in household than in industrial use (OECD, 2018[15]). They are well below EUR 60 per ton of CO_2, a midpoint estimate of carbon costs in 2020, as well as a forward-looking low-end estimate of carbon costs in 2030 (OECD, 2018[16]). However, approximately 30% of Swedish emissions are from industries included in the EU Emissions Trading Scheme, where the carbon price and overall emission reductions are only to a limited extent under national control. Fuel taxes are much higher in transport but they also reflect other costs, such as infrastructure use. Since July 2018, transport fuel taxes also apply to low-blended petrol and diesel biofuels. Sweden certifies the sustainability of its forests and only sustainable biomass benefits from tax exemption, which also applies to high-blended biofuels and in sectors other than transport. Improving energy efficiency is key to reach climate policy objectives at low cost (International Energy Agency, 2017[17]).

Adaptation policies are also crucial, as the effects of climate change are already apparent and warming will be most intense at high latitudes (Intergovernmental panel on climate change, 2018[18]). Significant progress has been achieved in recent years, particularly in flood and landslide prevention and research on climate-related risks, but further measures are needed, including a clarification of the roles and responsibilities of different stakeholders and better coordination between them (Andersson et al., 2015[19]).

Table 4. Past recommendations on environmental policy and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Continue to gradually phase out exemptions to the carbon tax.	Fuel and vehicle taxation has been overhauled in 2018 to incentivise further reductions in carbon emissions. But implicit carbon taxes on fossil fuels remain much higher in household than in industrial use.

Figure 14. Sweden scores well on environmental indicators



1. Switzerland has the largest share of emissions priced at EUR 30 and above. The relatively low share of emissions priced above EUR30 in Sweden is mainly due to the fact of the large share of emissions within the EU ETS. Another explanation is the high share of biofuels used in Sweden, exempted from carbon tax.

Source: OECD Green Growth Indicators database.

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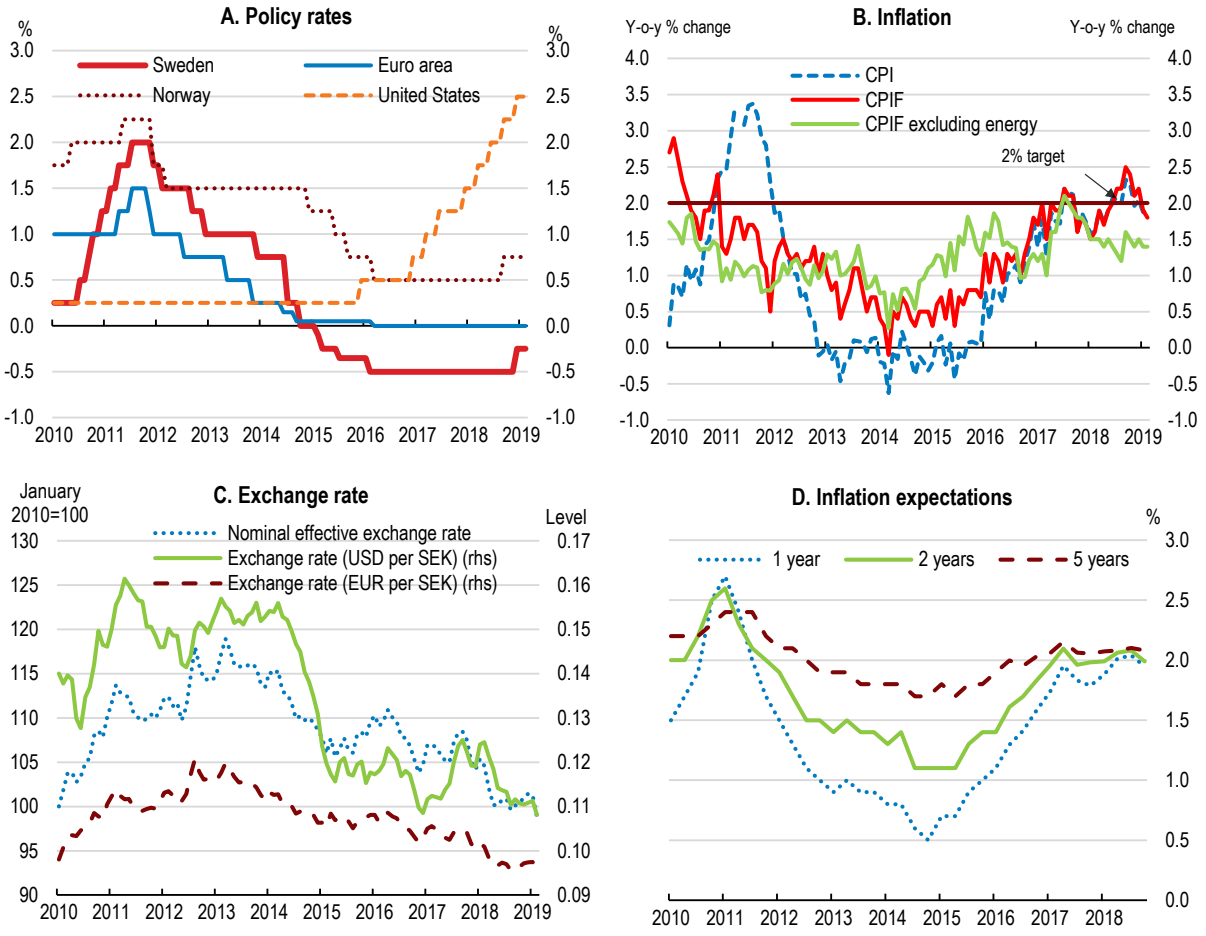
1.2. Macroeconomic stimulus should be withdrawn

1.2.1. Monetary policy needs to be tightened gradually

Monetary policy has been very expansionary, with a negative policy rate since 2015 (Figure 15, Panel A) and a bond purchase programme which has brought Riksbank's holdings of government bonds to SEK 330 billion by August 2018 (about 7% of GDP).

Figure 15. Monetary policy remains very expansionary



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

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This has supported the recovery and helped lift inflation and inflation expectations to near the 2% inflation target (Panel B). The gradual normalisation of policy rates as the economy strengthens is, to some extent, constrained by the monetary policy of other central banks, notably the European Central Bank. Changes in interest rate differentials could trigger shifts in exchange rates, which could make it more difficult to attain the inflation target. The depreciation of the krona over recent months, reflecting relative interest rate expectations and increasing global financial uncertainties, has pushed up import prices, contributing to higher consumer price inflation (Panel C). Rising energy and food prices

have pushed up headline inflation. Overall, the weakness of inflation relative to the cyclical position of the economy and concerns over a potential appreciation of the krona, which would exert downward pressure on prices, have encouraged the Riksbank to maintain a very expansionary monetary stance. The krona is estimated to be undervalued by 5% to 14% in the third quarter of 2018 (Riksbank, 2018[20]). Going forward, exchange rate developments will depend on relative interest rate paths, but also on global uncertainties, which usually tend to weaken the krona. The strength of the pass-through of the exchange rate to consumer prices is also difficult to assess and depends on the nature of the shocks affecting the economy (Corbo and Casola, 2018[21]).

The Riksbank started withdrawing monetary support with a quarter percentage point repo rate hike in December 2018 and forecasts a gradual increase in the repo rate, whose interval mid-point would reach 0.5% by end-2020 and 1% by end-2021 (Riksbank, 2018[22]). Such a tightening of monetary policy is welcome given the strength of the economy and the potential negative side effects of a long period of very low interest rates, which may generate excessive risk taking and indebtedness, fuel asset price bubbles and lead to a misallocation of resources harmful to productivity (Borio et al., 2015[23]; Adrian and Shin, 2008[24]; BIS-IMF-OECD, 2018[25]). Inflation gauged by the consumer price index with a fixed mortgage rate (CPIF), which is the targeted measure, has been close to 2% since early 2017 and inflation expectations are close to 2% (Panel D). Even if cooling food and energy prices were to pull back headline inflation somewhat in the coming months, normalisation is unlikely to affect the credibility of the inflation target.

Looking forward, the dramatic reduction in the use of cash in Sweden is bound to affect the operation of the payment system, as well as monetary and financial policy. The Riksbank is already investigating these issues, and in particular considering the introduction of an e-krona (Box 2). Sweden is well ahead of other OECD countries in that respect, even though other central banks, including the Bank of Canada and the Bank of England are also investigating the issue (Barrdear and Kumhof, 2016[26]; Engert and Fung, 2017[27]). However, most central banks are so far unconvinced that the benefits of introducing a central bank digital currency for retail payments outweigh the costs in the context of their specific market conditions (Barontini and Holden, 2019[28]).

Table 5. Past recommendations on monetary policy and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Gradually withdraw monetary stimulus as inflation rises towards the 2% target (2017).	The Riksbank stopped net purchases of government bonds at the end of 2017, but principal and coupon payments will be reinvested until further notice. The reinvestment calendar implies, however, that the Riksbank's holdings of government bonds will increase temporarily in early 2019. The policy rate was raised by a quarter percentage point to -0.25% in December 2018.

Box 2. Moving towards a cashless society: potential policy implications

The use of cash has been halved over the past decade. Only 13% of Swedes reported having paid their latest purchase in cash in 2018, compared to nearly 40% in 2010. This evolution, while permitted by technological advances in payment systems, seems essentially demand-driven, most consumers now preferring digital payments. Six out of ten now use the Swish mobile payment service, which allows instant transfers from person to person or between

individuals and companies (Erlandsson and Guibourg, 2018[29]). The rapid decline in cash use has policy implications, in particular:

- About seven out of ten Swedes say they could manage without cash. However, some groups would struggle to do so, because they have difficulties accessing or using digital tools. According to the Swedish Post and Telecom Authority, digital exclusion affects at least half a million people. Hence, banks should be required to provide access to cash throughout the country.
- As the use of cash dwindles, payments may become increasingly dependent on private institutions and economies of scale and network effects may result in monopoly positions, creating incentives for under-supply of services and excessively high prices. The confidence in money and the payment system has the characteristics of a public good, which calls for an active government role (Ingves, 2018[30]). In particular the government guarantee ensures a level of safety inaccessible to private players.
- Digital developments and consumer preferences suggest potential benefits from introducing a central bank electronic currency akin to cash. The Riksbank has decided to start technical development work on a simple token-based e-krona pilot. The intention is to explore design possibilities from a technological perspective. The Riksbank is also investigating related legal issues (Riksbank, 2018[31]). While most e-krona transactions would go through an instant settlement system, being able to use e-krona offline would be useful to address both digital exclusion and cybersecurity issues. Importantly, the e-krona would be a complement rather than a substitute to cash (Skingsley, 2016[32]).
- A smaller role for cash may help fight illegal activities and tax evasion (Rogoff, 2016[33]). However, digitalised payments may lead to new forms of tax evasion (Kireyev, 2017[34]). In addition, there would be a high cost in terms of privacy if anonymous transactions became impossible.
- Monetary policy could become marginalised if cash is no longer used and a digital alternative is not provided. The public could become completely dependent on private bank money and, if confidence in the banking system erodes at some point in time, seek alternatives assets and means of exchange, like cyber currencies or foreign currencies (Ingves, 2018[30]). Conversely, assuming the krona retains a central role, a cashless monetary system could in theory allow interest rates to go further into negative territory.
- Financial stability would also be affected if the reduction in cash use led to a decline of the role of the central bank in the financial system, which in particular lowers counterparty risk and provides last-resort liquidity. The ability to transfer funds to a safe digital currency almost instantly may increase the risk of bank runs (Danmarks Nationalbank, 2017[35]; Bank for International Settlements, 2018[36]).
- Consumer protection and information is critical in periods of deep innovations. In particular, it is important that government institutions make it clear to the public that crypto-currencies are not money, but rather high-risk assets (Ingves, 2018[37]).

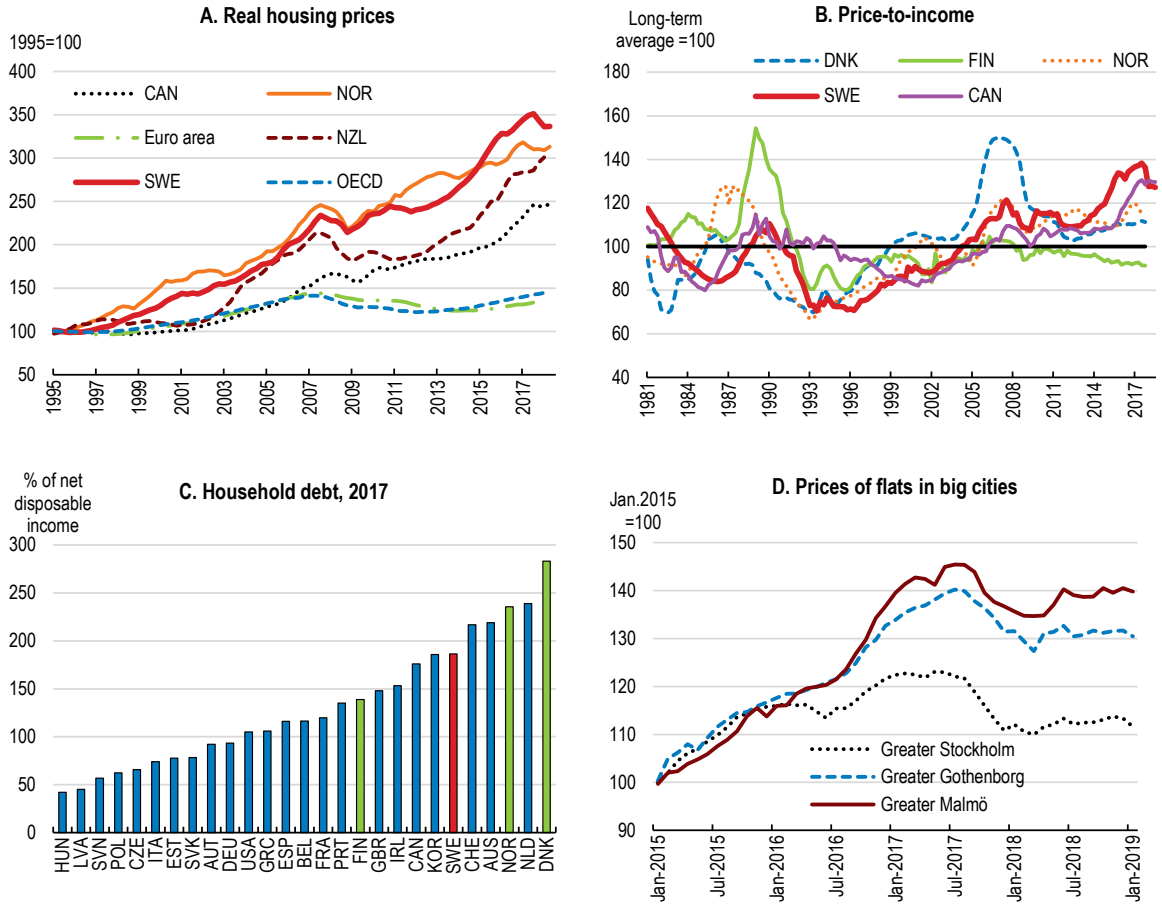
1.2.2. Stronger supply and macroprudential measures have cooled the housing market

Real housing prices have more than tripled since the mid-1990s (Figure 16, Panel A) and the housing price-to-income ratio is about 30% above its long-term average (Panel B). Declining interest rates and weak amortisation requirements until recently have allowed households to borrow more. Gross household debt has increased from less than 90% of disposable income in 1995 to more than 185% in 2017 (Panel C). Most mortgages carry variable interest rates, making households vulnerable to rate increases, even though most of them have substantial financial buffers (Finansinspektionen, 2018[38]). The high level of household debt and the associated interest rate sensitivity of the economy may also complicate the normalisation of monetary policy (Bachmann et al., 2017[39]). Since mid-2017, housing prices have fallen, particularly for tenant-owned flats in big cities, but they now seem to be stabilising (Panel D). The fall in prices is associated with a sharp decline in residential investment from an historically high level, which is expected to reach about 15% by early 2020. Sharper falls in housing prices do not seem very likely, as a general housing shortage provides some support to prices, but cannot be ruled out. They could reduce consumption and hence output growth substantially, as happened during the latest housing price collapses in Denmark and the Netherlands.

Several steps have been taken since 2010 to contain the rise in household indebtedness. A cap on loan-to-value ratios was introduced, followed by minimum capital risk-weights on mortgages and a compulsory amortisation requirement for new loans with a loan-to-value above 50%. The latter is estimated to have reduced the size of mortgages relative to income by almost 9% and the price of homes bought by households with new mortgages by about 3% on average (Finansinspektionen, 2017[40]). In March 2018, the amortisation requirement was tightened further for borrowers with new mortgages exceeding 450% of their gross income. While macroprudential tightening is containing financial risk, structural measures are needed to address imbalances in the housing market, as discussed below.

The Swedish banking system is large, interconnected and heavily reliant on wholesale funding, which creates some vulnerabilities. Swedish banks have high risk-weighted capital ratios (Figure 17, Panel A). However, as mortgages with relatively low risk weights account for a large share of their loan portfolio, their overall leverage ratio is much weaker (Panel B). Return on equity is very high, despite fairly conservative lending practices (Panel C). Liquidity buffers have been strengthened over recent years, reducing vulnerability to disruptions in global financial markets (Panel D). Banks' exposure to residential and commercial real estate is high (Panel E) and bank lending to non-financial corporations with property as collateral would compound risks associated with household debt in the case of a property crisis (Riksbank, 2018[41]). Non-performing loans have been very low so far, partly reflecting stronger economic performance than in most other European countries (Panel F).

Figure 16. The housing market has cooled, but prices remain high



Source: OECD Economic Outlook database and Valueguard.

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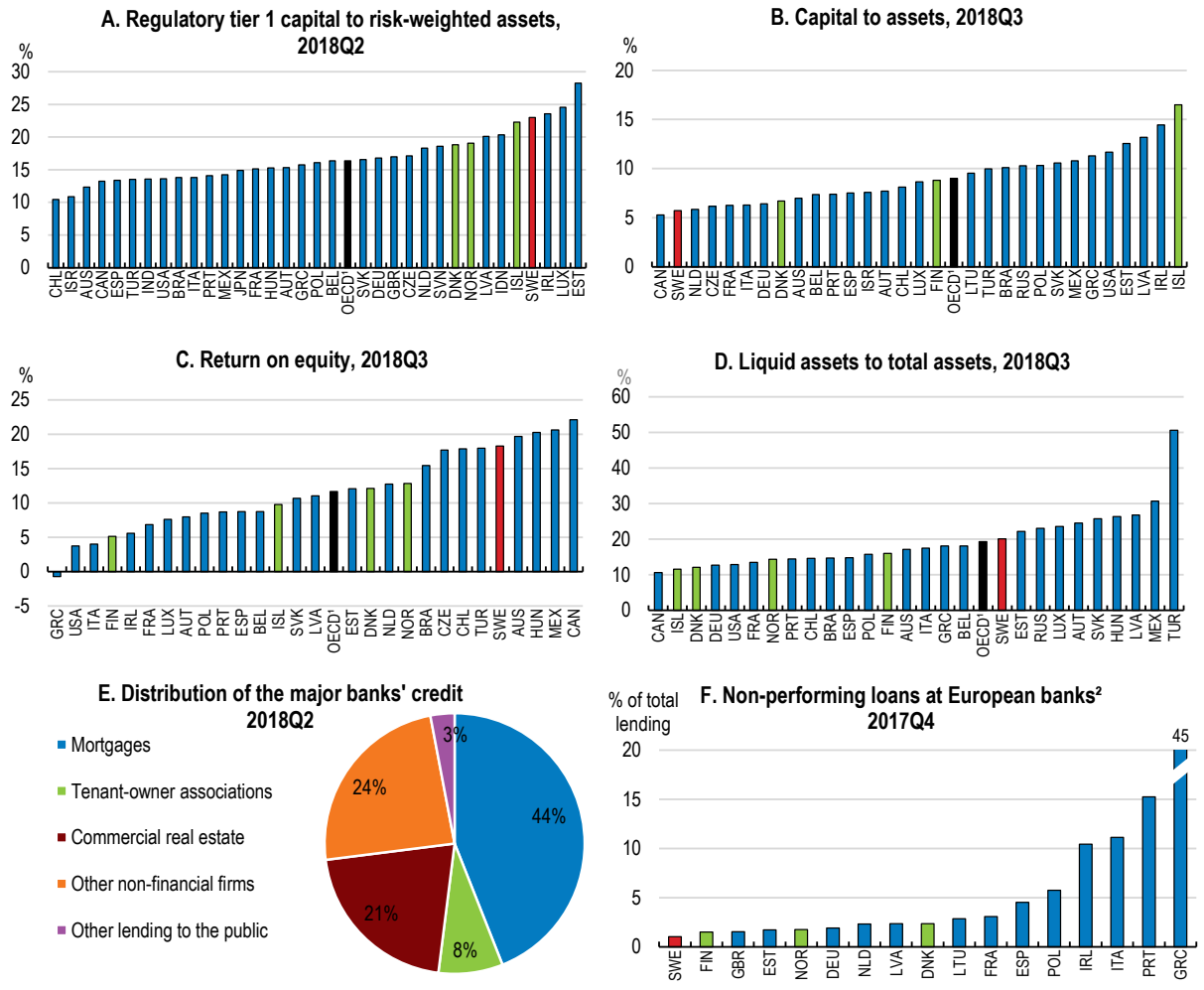
1.2.3. Promoting further green finance would reinforce financial stability

Climate change and climate change mitigation policies generate new financial risks and opportunities for investors. The Swedish financial sector does not currently look overly exposed to climate-related risk (Finansinspektionen, 2016). Nevertheless, enhanced information and transparency from financial institutions, including banks, would allow better monitoring exposure through international investments (Box 3).

Figure 17. The banking system is solid but with some weaknesses



1. OECD averages exclude countries not shown in the figure.
2. Non-performing loans are defined as loans in which the borrower has paid neither interest nor amortisation in the past 90 days.
Source: BIS, Riksbank, Finansinspektionen, and IMF Financial Soundness Indicators database.

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Box 3. Promoting green finance

Climate change and climate change mitigation policies generate new financial risks and opportunities for investors. Stranded assets could amount to one trillion US dollars worldwide for the energy supply and industry sectors alone, and could treble if decisive climate mitigation action is delayed to 2025 (OECD, 2017[42]). Additional losses on assets could result from climate change itself. Enhancing disclosure requirements on businesses and other organisations, and in particular financial intermediaries, can help individual investors avoid risks and identify new investment opportunities, thereby improving the

allocative role of financial markets and supporting the effectiveness of climate mitigation policy.

Sweden has therefore taken steps to promote green finance. It supports the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD, 2018[43]). Stricter carbon disclosure requirements entered into force in 2016 for non-financial firms and in 2018 for investment funds and international cooperation to develop tools to finance the transition towards low-carbon and climate-resilient economies was stepped up. The possibility of emitting a government green bond is being investigated. The new disclosure rules require investment funds to provide information to obtain an understanding of the funds' management with regard to sustainability, including environmental aspects. This is particularly welcome because of their important role in old-age pension provision. However, the new rules on investment funds do not apply to banks.

Since 2017 the European Union has required firms with more than 500 employees to disclose information related to energy, land, materials and water use as well as greenhouse gas emissions. The European Commission is also preparing voluntary guidelines for institutional investors and asset managers to disclose how they incorporate environmental, social and governance criteria in their risk assessment and how their financial investments contribute to sustainability goals. It is developing a taxonomy of economic activities according to how environmentally sustainable they are. It will also propose to develop alternative stock market indices which would include and give larger weight to quoted companies which contribute to lower CO2 emissions. Indeed, stock market indices are often used in passive investment strategies to minimise management costs. Existing stock market indices comprise well-established large firms including companies exposed to strong fossil-fuel use.

The Task Force on Climate-related Financial Disclosures has recommended more ambitious and concrete disclosure practices. For example, all businesses with disclosure requirements should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario. Banks should describe significant concentrations of credit exposure to carbon-related assets. Pension funds should describe the positioning of their asset portfolio with respect to the low-carbon transition and provide data on carbon intensity for their investments. In this context, the European Commission's proposal to develop alternative stock market indices is of particular interest to Sweden, as most funds in its compulsory second pension pillar follow passive investment strategies using stock market indices. Strengthening and further harmonising climate-related disclosure for financial intermediaries, including banks, would improve the resilience of financial intermediaries and complement Sweden's ambitious approach to climate mitigation policy.

Table 6. Past recommendations on macroprudential policy and action taken

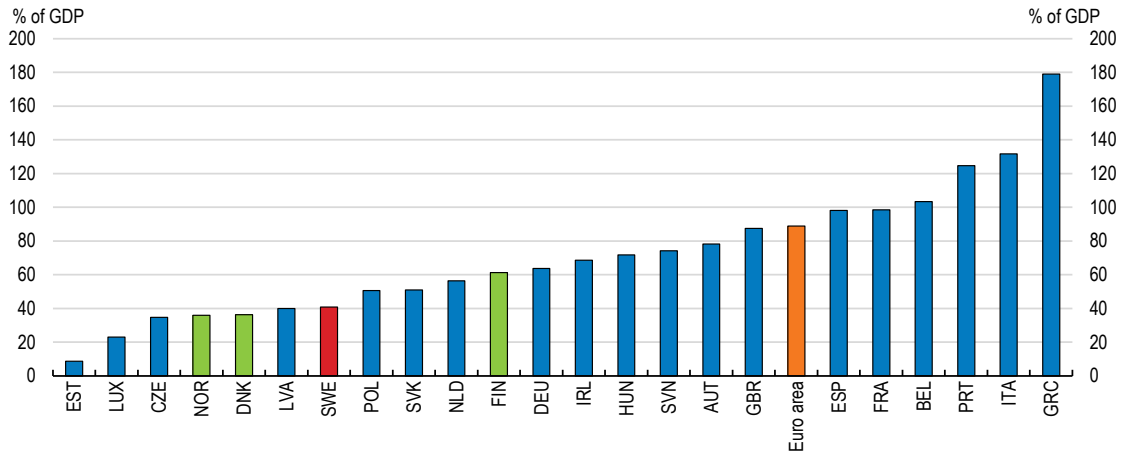
Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Introduce a cap on household debt-to-income ratios.	No cap has been introduced. However, amortisation requirements have been tightened for borrowers with new mortgages exceeding 450% of gross income.

1.2.4. Fiscal policy has supported the recovery but is appropriately turning less expansionary

Public finances are strong, with low public debt (Figure 18). Prudent fiscal policy since the 1990s has created space for counter-cyclical fiscal policy to dampen recessions. The fiscal stance was expansionary in 2017 and especially in 2018, when discretionary measures weakened the budget balance by about 0.9% of GDP, despite the strong economy. Part of the additional spending relates to necessary investment in the areas of education, immigrant integration, health, defence and environment protection. The alignement of tax rules for pensions on those of wages and the increase in the child allowance reduce income inequality. However, some permanent measures are financed by temporary receipts. The underlying fiscal surplus has narrowed significantly in 2018 and is set to edge down further in 2019 (Figure 19).

Figure 18. Government debt is low

2017



Source: OECD Economic Outlook database.

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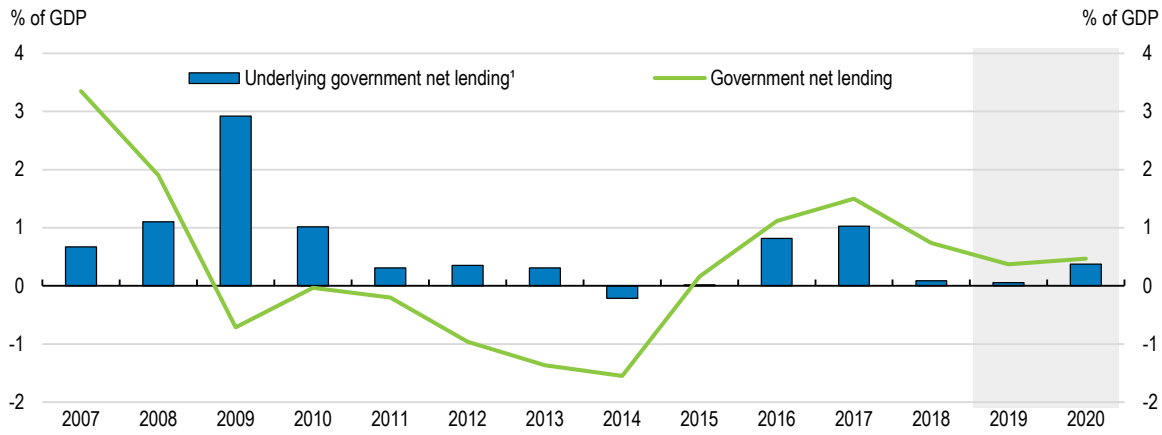
Figure 19. Government surpluses largely reflect the strength of the economy



1. Underlying government net lending in % of potential GDP.
Source: OECD Economic Outlook database.

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The new fiscal framework (Box 4) entering into force in 2019 lowers the surplus target from 1% to 1/3% of GDP over the business cycle and gross government debt is rapidly falling towards the new debt anchor of 35% of GDP. Nevertheless, with the economy operating close to full capacity and very expansionary monetary policy, fiscal stimulus is hardly needed and the fiscal stance should be neutral as long as the economy remains solid without overheating, not least to strengthen fiscal buffers as monetary policy margins are bound to be limited during the next recession, shifting more of the burden of macroeconomic stabilisation to fiscal policy.

Box 4. The new fiscal policy framework

A new fiscal policy framework is entering into force in 2019 (Ministry of Finance, 2018[44]). The main changes from the 2011 framework are as follows:

- The government budget surplus target over the business cycle is lowered from 1% to 1/3% of GDP.
- Deviations from the target will be assessed in real time on the basis of the structural budget balance. An eight-year backward-looking average of actual net lending will be used to determine ex post whether the target has been met. This is a welcome simplification over the previous system, which used a variety of indicators to evaluate deviations from the target.
- The Fiscal Policy Council's role is strengthened, with respect to evaluating the Government's macroeconomic and budgetary forecasts, as well as assessing whether the fiscal position deviates from the target and whether deviations are justified.
- A debt anchor at 35% of GDP is introduced. The government will have to explain deviations of more than 5 percentage points from this benchmark to Parliament.

- The surplus target and debt anchor will be reviewed at the end of every second electoral term, i.e. every eight years.

The framework retains many key features of the former system, including the balanced budget rule for local authorities, the top-down budget process, the three-year expenditure ceiling and adherence to the European Stability and Growth Pact.

Demographics are driving up demand for public services, particularly education, health and elderly care. The dependency ratio is set to increase by eight percentage points between 2015 and 2025 (Figure 20). This is slightly more than the high-income countries and Northern Europe averages, but lower than the European average, partly as a result of strong immigration. A notable difference is that a much larger share of the increase is due to young age dependency in Sweden.

At the current juncture, subnational finances are strong at the municipal level but less so than at the national level. Municipalities have received central government grants to finance the intake of refugees and benefited from growing tax revenue from capital and development gains thanks to the construction boom, albeit with wide variations across the country. The financial situation of the county councils, whose main responsibility is to provide health care, is weaker. The Swedish Association of Local Authorities and Regions predicts a financing gap in the order of 1% of GDP for the aggregate local government sector by 2021 in the absence of new measures (Sveriges Kommuner och Landsting, 2017[45]).

Notwithstanding, the outlook for general government finances is bright. Fiscal pressures arising from pensions are absent as the pension system established in the early 1990s is designed to ensure fiscal sustainability by basing pensions on lifetime contributions. Planned reforms will reinforce sustainability by lengthening the period of contributions and linking elegibility of payments to life expectancy. In December 2017, a cross-party parliamentary group reached agreement on gradually raising the minimum public pension age from 61 to 64 in 2026, pushing back the working-age right from 67 to 69 by 2023, and raising the minimum age for receiving the guaranteed pension and housing allowance from 65 to 66. The agreement also calls for the introduction of a benchmark pension age related to life expectancy, although further investigation is needed to determine the share of life expectancy gains which should be spent working. Measures to reduce discrimination against older workers and enhance their employability and to move towards more gender-equal pensions are part of the agreement, which also states that the reform must be neutral for public finances (Swedish Government, 2017[46]).

The National Institute of Economic Research's central fiscal sustainability scenario shows that government debt sustainability is not a concern, with gross government debt below 40% of GDP in 2040 and still below 50% in 2060. This scenario assumes, in addition to the demographic effect, an increase in welfare spending of 0.6% per year for quality enhancements (Konjunkturinstitutet, 2018[47]). A similar picture emerges from OECD long-term scenarios, which show how much the government primary revenue-to-GDP ratio has to increase to stabilise government debt at its current level when age-related cost pressure increases (Figure 21). In the baseline scenario, which assumes no policy change, revenue has to increase by two percentage points of GDP by 2040 and nearly six percentage points of GDP by 2060, notably to compensate for rising health care costs. Increases in the legal retirement age as life expectancy rises and labour market reforms lifting the employment rate would reduce the financing need. A combination of labour market reforms and

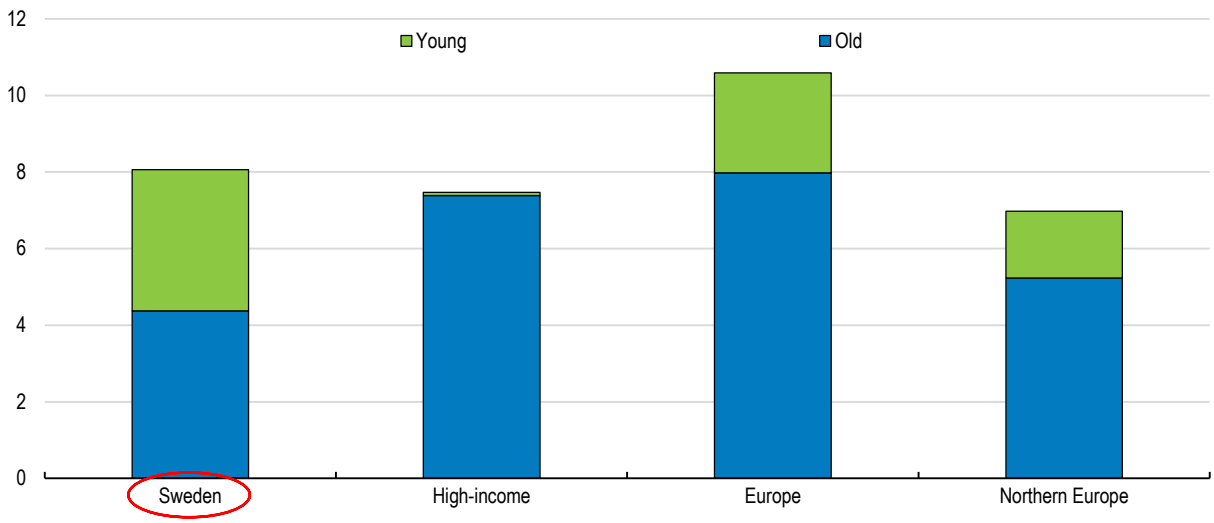
containment of health care spending growth would stabilise debt at the current level without any increase in the revenue-to-GDP ratio.

Digitalisation offers great opportunities for enhancing the quality and responsiveness of public services, developing new services and raising efficiency, even though in some cases there is a risk that innovations could lead to higher demand for services and higher spending if adequate regulations and incentives are not in place. For example, easy access and low fees has increased demand for tele-medicine recently, prompting concern about overuse and quality of care (Blix and Jeansson, 2018[48]). Sweden has an ambitious digitalisation strategy, including many initiatives to develop the provision of on-line public services, and scores among the best on most indicators included in the EU e-government benchmark report (European Commission, 2017[49]).

Nevertheless, there is room for improvement in some areas, including promoting usage of digital public services among lagging groups and territories, as well as enhancing interoperability of IT systems and data sharing. Two features of the Swedish government system make this task challenging: the separation of strategic and implementation roles between ministries and autonomous agencies; and decentralisation. Hence, coordination between different bodies at different levels of government is needed. The creation in 2017 of a Digital Council of ten members, aimed at providing leadership and coordination in digitalisation policy, and of a new Agency for Digital Government in September 2018 with 50-70 staff to coordinate and support public sector digitalisation will help achieve these goals. Nevertheless, further steps may be necessary to build a whole-of-government approach, such as the establishment of a "Digitalisation Co-ordinator" (a single person or small agency), with a discretionary budget to co-finance policies and incentivise cooperation between public institutions (OECD, 2018[50]).

Figure 20. The dependency ratio is rising markedly

Percentage point increase, 2015-25



Note: The dependency ratio relates the number of younger (0-19 years old) and older persons (65 years or over) to the working-age population (20-64 years old). Based on the medium variant of United Nations projections. High-income countries are defined on the basis of the 2016 gross national income per capita from the World Bank. Northern Europe includes the Baltic and Nordic countries, Ireland and the United Kingdom.
Source: United Nations, World Population Prospects: The 2017 Revision.

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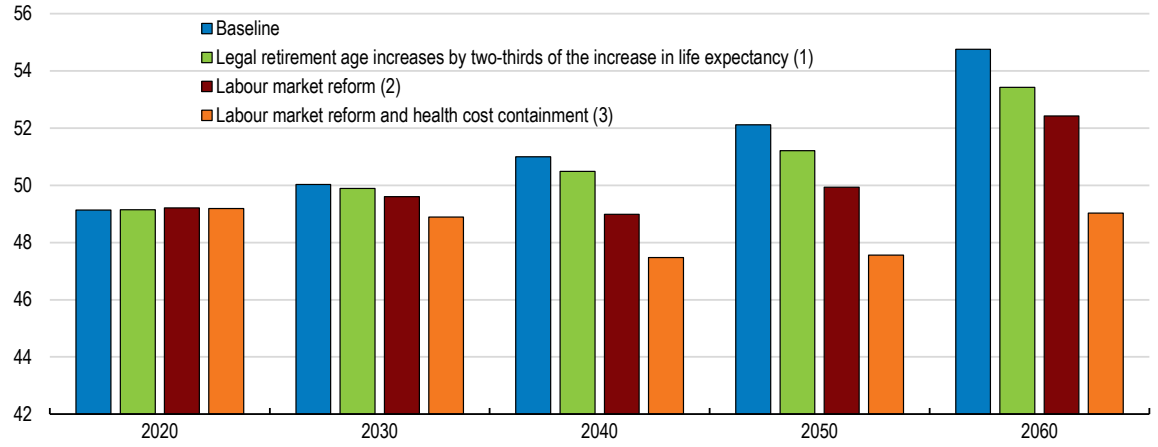
Figure 21. Long-term ageing-related cost pressure is moderate

Change in primary revenue required to stabilise gross debt-to-GDP, percentage points of GDP



1. The retirement age increases by three years between 2018 and 2060. As a result the employment rate of the population aged 15-74 increases by about two percentage points.
2. A package of labour market reforms implemented between 2020 and 2030 (e.g reduction in tax wedges; active labour market policy measures) closes half of the gap with the five leading OECD countries on a set of labour policy indicators.As a result the employment rate of the popultaionn aged 15-74 increases by about five and a half percentage points by 2060.
3. Labour market reform as in (2) and health care spending growth halved compared to the baseline scenario, which assumes 1.3% growth per year, based on historical trend.
For more detail, see Guillemette and Turner (2018[51]), "The Long View: Scenarios for the World Economy to 2060", OECD Economic Policy Paper, No. 22.
Source: Economic Outlook Long-term projections database.

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Table 7. Past recommendations on fiscal policy and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Continue to pursue prudent fiscal policy, while accommodating temporary immigration-related spending to facilitate integration.	Fiscal expansion has appropriately been used to support the recovery and finance temporary spending, but the fiscal stance has turned more expansionary in 2018.

Structural reforms would enhance productivity and well-being

1.2.5. The housing market remains unbalanced

Although housing prices seem to be stabilising, the housing system remains plagued by a number of problems, including an overall shortage of housing, tax rules encouraging household indebtedness and worsening inequalities, tight rental regulations preventing an efficient use of the existing housing stock and discouraging mobility, inefficient land-use planning and low incentives for municipalities to encourage development holding back housing supply and a lack of competition in construction pushing up construction costs (Box 5). The 2015 22-point government housing plan, which is being gradually implemented, includes measures to release more land for development, lower construction costs and accelerate planning processes, as well as to provide subsidies for the construction of rental housing in exchange for rent caps over a span of 15 years (Ministry of Finance, 2016[52]). These measures can contribute to reducing the housing shortage, but a comprehensive package of reforms would be needed to restore housing affordability. Such

policies have been outlined in previous *OECD Surveys of Sweden* and the main recommendations are summarised in Table 8.

Table 8. Past recommendations on housing policy and action taken

Main recent OECD recommendations	Action taken since the 2017 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 so far but a broad tax reform is to be initiated which, among other goals, aims to reduce household indebtedness and improve the functioning of the housing market.
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 2015 22-point housing plan, which includes measures to release land for development and speed up planning processes, is being implemented.
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 so far but rent setting for new dwellings is to be liberalised.

Box 5. Reforming housing policy

Sweden experienced one of the largest increases in housing prices in the OECD over the past two decades, which eroded housing affordability and pushed up household debt. Macroprudential measures can help contain financial risk, but structural measures are needed to restore access to affordable housing for all. The provision of new dwellings is insufficient to meet the needs generated by rapid population growth (Boverket, 2018[53]). A tightly regulated rental market and almost lacking prioritisation in the allocation of municipal housing result in long rental housing waiting lists, especially in Stockholm (*OECD Economic Survey of Sweden, 2017)*. While previous governments took some measures to improve the functioning of the housing market, including the 2015 22-points plan being currently implemented (see main text), a broader and more ambitious approach to housing challenges is warranted. Policy measures can reinforce each other if implemented within a coherent package of reforms, while measures taken in isolation may be less efficient or even counterproductive. This box summarises the main ingredients required for a successful reform, as they have been outlined in previous *OECD Economic Surveys of Sweden*.

Property taxation

With no taxation of imputed rents, low property taxes and generous deductibility of mortgage interest, the tax system is favouring homeownership over renting. Gradually phasing out mortgage interest deductibility is the most straightforward way to move towards tenure neutrality, although achieving this objective through raising property taxes or taxing imputed rents while maintaining mortgage interest deductibility would have distributional advantages, notably for younger households. Several OECD countries are currently cutting down mortgage interest deductibility, including Finland and the Netherlands.

Land-use planning

Inefficient land-use planning and low incentives for municipalities to encourage construction contribute to housing shortages. Hence, it would be desirable to 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. Land-use planning procedures should also be simplified, balancing economic, environmental and

social considerations. The 22-point housing plan includes measures to release more land for development and accelerate planning processes, which are steps in the right direction.

Rental regulations

Sweden's rental regulations are among the most restrictive in Europe (Cuerpo, Kalantaryan and Pontuch, 2014[54]), discouraging investment in rental housing, hampering mobility and leading to an inefficient use of the housing stock. Furthermore, they seem to increase, rather than reduce, spatial segregation (Lind, 2015[55]). Recent US research confirms the negative effects of rent control on mobility and housing supply (Diamond, McQuade and Qian, 2018[56]). The new government aims at liberalising rent setting for new dwellings, which would strengthen incentives to invest in rental housing. Gradually easing regulations further, while maintaining tenant protection against abuse, should be considered. Finland provides a successful example of rental deregulation in the early 1990s (Kettunen and Ruonavaara, 2015[57]; de Boer and Bitetti, 2014[58]).

Competition in construction

Construction costs are higher than in most other EU countries. Competition in the construction and building materials sectors should be encouraged (see section on productivity).

Other measures could also be contemplated, including further government support for affordable housing and prioritising the allocation of municipal housing according to needs.

1.2.6. There is scope for productivity gains in some sectors

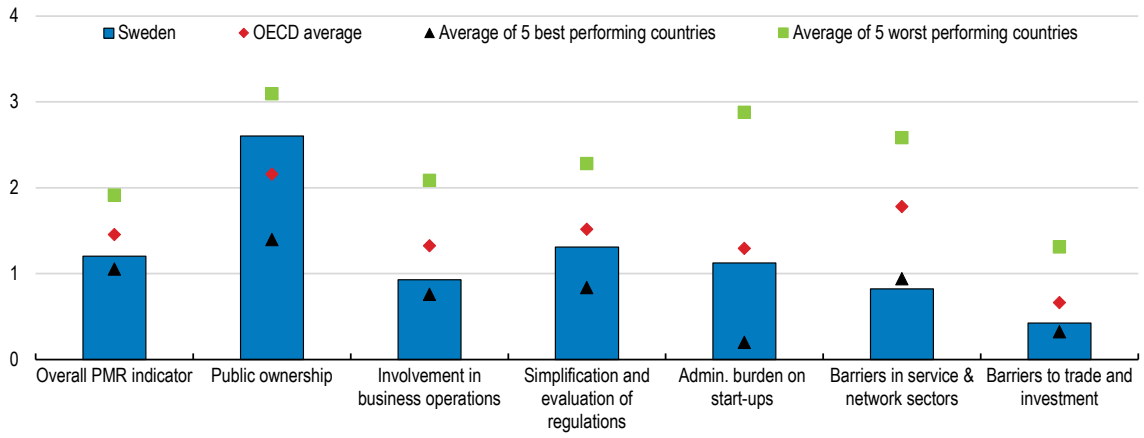
The Swedish business environment fosters entrepreneurship and competition, as reflected in a vibrant start-up ecosystem and in the OECD product market regulation (PMR) indicators (Figure 22). Sweden's 2018 overall PMR indicator value is close to the average of the five best performing countries. On most sub-indicators, Sweden performs better than the OECD average. The exception is public ownership. Furthermore, the administrative burden on start-ups is close to the OECD average and substantially heavier than in the best-performing countries, despite shortening the time limit to register a company to five days in 2015. The impact of the above-average degree of public ownership is mitigated by the high quality of governance in Swedish state-owned enterprises. Nevertheless, strong productivity growth in sectors exposed to intense international competiton has generally not been matched in more sheltered sectors, with the exception of retail trade. To some extent, this reflects the difficulty in raising service sectors productivity, compared to manufacturing. However, ongoing advances in technology offer vast potential to enhance productivity even in services, if combined with the right policies (Blix, 2015[59]; Sorbe, Gal and Millot, 2018[60]).

There seems to be scope for productivity gains in sectors such as construction and public services. Construction costs remain higher than in most other EU countries, even after taking into account the positive relation between price and income levels (Figure 23). If prices in construction were at a similar level as consumption prices relative to the EU, they would be nearly 20% lower. Assuming that differences in prices reflect differences in productivity, this would translate in a whole economy productivity level about 1.2% higher than currently. This is a lower bound, as it only includes direct effects. Building and planning regulations have been made available online in foreign languages to promote foreign competition in the construction sector. Nevertheless, competition remains weak. A recent report from the Swedish competition authority recommends further investigations in

three areas to strengthen competition: the impact of special requirements at the municipal level on housing construction and competition; the low number of bids in municipal construction procurement; the lack of studies on competition in the construction materials market (Konkurrensverket, 2018[61]).

Sweden has generally efficient business regulations and administrative procedures, and simplification measures have recently been taken in the restaurant and tourism sectors (Table 9). Nevertheless, there is scope for improvement, which can be facilitated by digitalisation. Regulation sandboxes, which allow testing products and services in a controlled environment, could be promoted as an innovative approach to the design and implementation of policies and regulations in the digital economy (OECD, 2018[37]). Innovation policy supports entrepreneurship, including for immigrants and women, and since 2018 taxes on stock options in companies with less than 50 employees have been reduced. However, recent OECD research suggests that the Swedish insolvency regime penalises failure more than in some other OECD countries (Adalet McGowan, Andrews and Millot, 2017[42]). Ongoing work on a new EU Directive on business insolvency (European Commission, 2016[62]), aimed at facilitating company restructuring at an early stage and giving reputable bankrupt entrepreneurs a second chance, should lead to improvements in the Swedish insolvency regime.

Figure 22. Product market regulations are lean
2018



Note: The indicators range from 0 (least stringent) to 6 (most stringent).
Source: Preliminary OECD 2018 PMR database (as of 20-02-2019).

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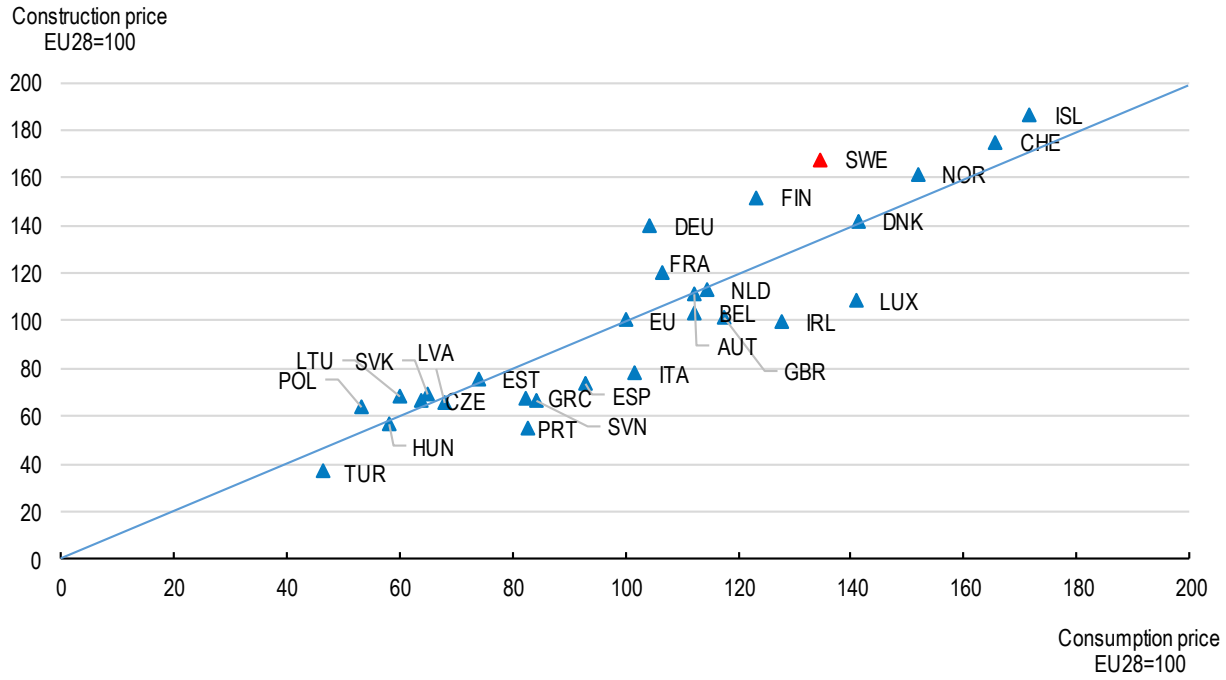
Figure 23. Construction costs are high
2017



Reading note: Countries above the 45° line have higher price levels relative to the EU28 average for construction than for consumer goods. Sweden's construction price level is more than 60% above the OECD average compared to less than 40% for the consumer price level.
Source: Eurostat.

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Table 9. Past recommendations on business regulations and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Streamline building requirements across municipalities. Enhance the access of small and foreign firms to the public procurement process by improving its timeliness, predictability and clarity.	The 2015 22-point government housing plan, which is being gradually implemented, includes measures to release more land for development, lower construction costs and accelerate planning processes. An investigation into simplifying and increasing flexibility in procurement regulations, including measures to reduce appeals, has been started. Building and planning regulations have been made available online in foreign languages.
Simplify regulatory procedures, in particular regarding licences and permits.	Some promising initiatives to digitalise and simplify procedures have been taken, notably in restaurants and tourism. Some administrations are using digital tools to improve services, simplify procedures and shorten processing times.

Employment is high but some still struggle

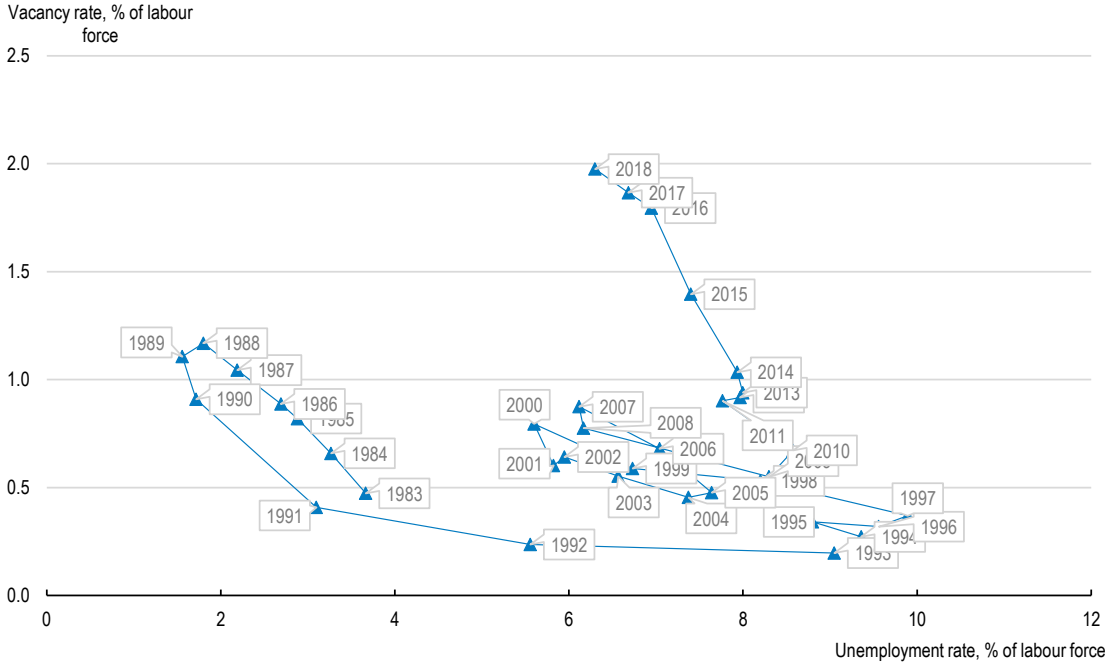
Even though Sweden has the highest employment rate in the European Union, matching workers and jobs is increasingly difficult (Figure 24). Labour shortages have appeared in many sectors, notably IT, data processing, health and education (Arbetsförmedlingen, 2018[63]).

Refugees and low-skilled workers still struggle to find jobs. The unemployment rate of the foreign-born is around 15%, versus less than 4% for natives, and the number of foreign-

born jobseekers has increased sharply since 2009 (Figure 25). However, integration of refugees into the labour market has improved for more recent cohorts, as a result of enhanced integration policies and strong demand for labour (NIER, 2018[64]).

Measures have been taken to facilitate the integration of long-term unemployed, recently arrived immigrants and people with disabilities into the labour market, as high entry-level wages make it difficult to employ low-skilled workers (*OECD Economic Survey of Sweden, 2017*). Five employment subsidy programmes were merged into a new scheme (*Introduction jobs*) in May 2018, with a subsidy of 80% up to a gross wage ceiling of SEK 20 000 per month. Subsidies for those further away from the labour market have increased, eligibility conditions have been harmonised and regulations have been simplified to reduce the administrative burden on the employer and the public employment service. In addition, the former government and the social partners agreed, in March 2018, to introduce so-called *Entry agreements*, combining employment and municipal adult education within the formal education system and targeting new immigrants and long-term unemployed. Compensation will be a combination of wage and state benefits. *Entry agreements* are part of the new governemnt's programme (see Box 1). Employment protection legislation for permanent contracts is tight, which tends to complicate access to jobs for low-skilled workers (OECD, 2017[65]) and reduce productivity growth (Martin and Scarpetta, 2012[66]; Uddén Sonnegård, 2017[67]). The new government plans some easing in employment protection legislation for permanent contracts. New forms of work, like platform jobs, may also call for updating labour legislation and broadening the coverage of collective agreements.

Figure 24. Labour market mismatch is increasing



Note: An outward (inward) shift of the Beveridge curve over time implies a decrease (increase) in the efficiency of labour market matching.
Source: OECD Registered Unemployed and Job Vacancies dataset and Annual Labour Market Statistics, and Statistics Sweden.

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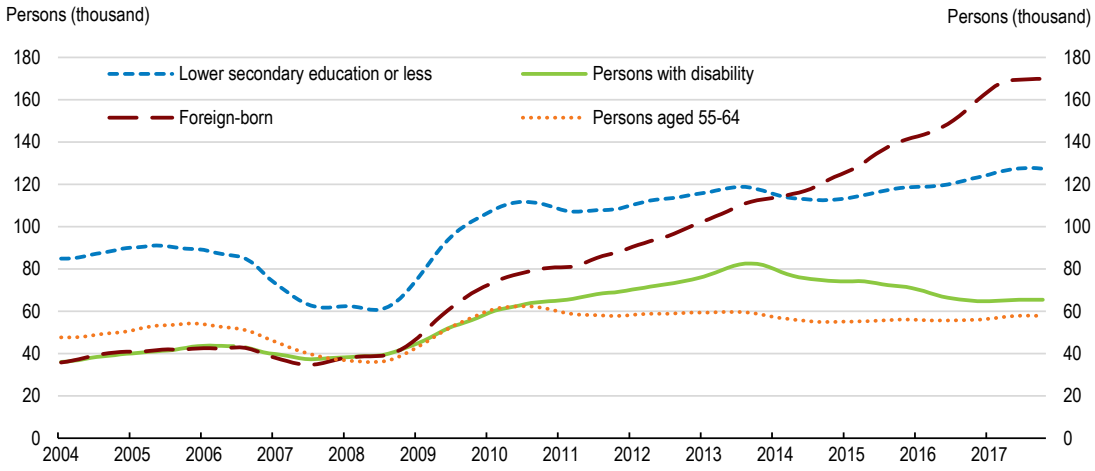
Figure 25. Numbers of registered unemployed remain high in vulnerable groups



Source: Swedish Public Employment Agency.

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Table 10. Past recommendations on labour market policy and action taken

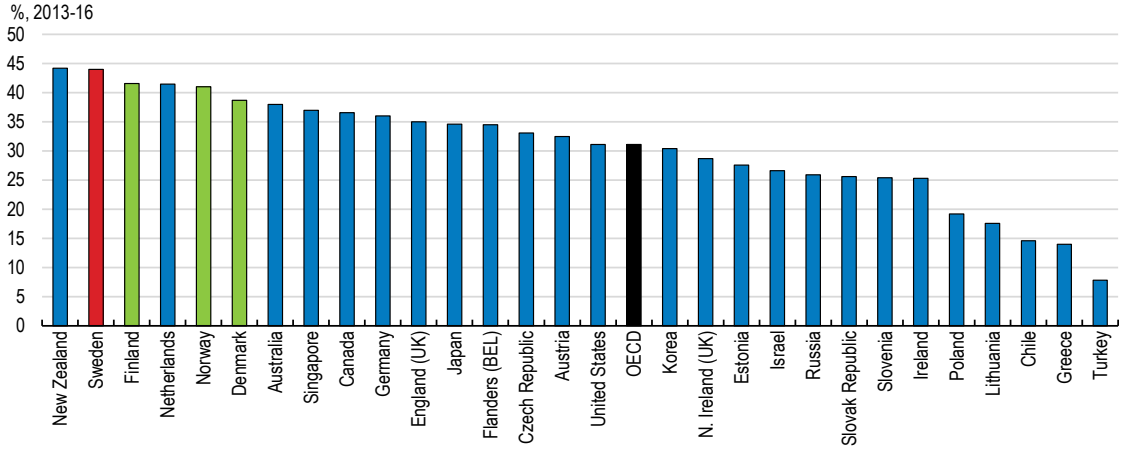
Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Reduce the gap in employment protection between permanent and temporary contracts and increase flexibility in entry level wages.	No action taken. The new government is set to appoint a committee that will investigate how a better balance can be created in employment protection for staff with different terms of employment.
Continue to simplify the procedures to help migrants get residence and work permits.	Policies to speed up the integration of migrants have been stepped up, including an education and training obligation, recognition of qualifications and compensation to municipalities for refugee reception.
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.	Five employment subsidy programmes were merged into a new scheme (*Introduction jobs*) in 2018, with a subsidy of 80% up to a gross wage ceiling of SEK 20 000 per month.

1.2.7. The workforce is highly skilled but policies need to look forward

Recent OECD research confirms that human capital is a key driver of growth (Égert et al., 2019[68]) and a highly qualified workforce is one of Sweden's main strengths. Swedes rank highly in all areas of the OECD Survey of Adult Skills (PIAAC), especially in problem solving in a technology-rich environment (Figure 26). Nevertheless, the fast pace of technological change creates new challenges, requiring new skills and putting some jobs at risk of automation and many more at risk of significant change (Figure 27). Sweden's proportion of tertiary graduates in science is above the OECD average and has remained broadly constant over the past decade, while the proportion of ICT graduates is close to the OECD average. However, shortages of qualified ICT workers are acute.

Women are under-represented among both science and ICT graduates, which may reflect preferences, but also social norms and stereotypes. The entry and progression of women in science and technology-related professions could be facilitated by further encouraging networking and cooperation between schools and trade associations, civil society groups and the business community (OECD, 2015[69]). This would extend the pool of skilled workers, bring advantages associated with diversity and contribute to increasing further gender equality, as technology-related professions are generally highly valued both in terms of wages and social status.

Figure 26. A large share of the adult population has strong skills in problem solving



Note: Percentage of adults scoring at level 2 or 3 in the PIAAC test. Problem solving is the ability to use digital technology, communication tools and networks to acquire and evaluate information, communicate with others, and perform practical tasks.
Source: OECD Survey of Adult skills (PIAAC).

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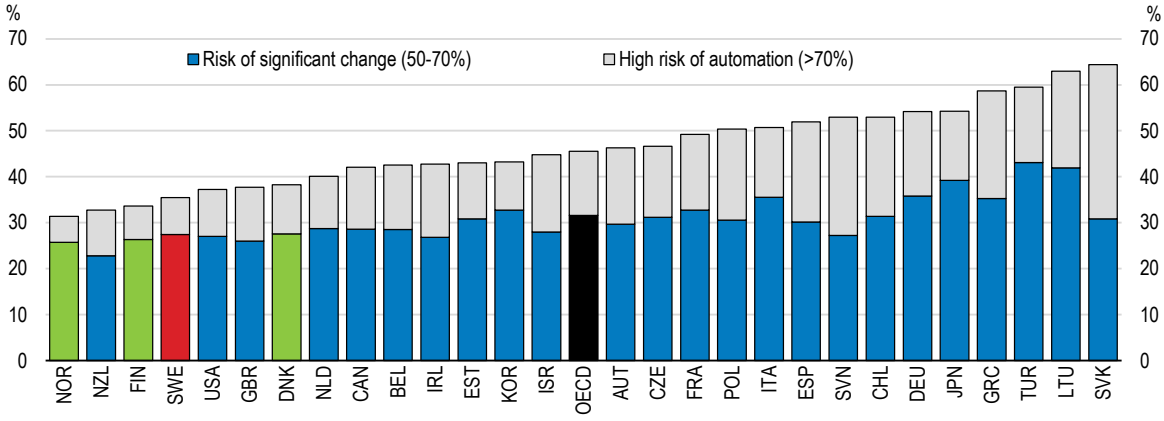
Figure 27. Many jobs are at least partially at risk of automation



Note: Jobs are at high risk of automation if their likelihood of being automated is at least 70%. Jobs at risk of significant change are those with a likelihood of being automated estimated at between 50 and 70%.
Source: Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", OECD Social, Employment and Migration Working Papers, No. 202, OECD Publishing, Paris.

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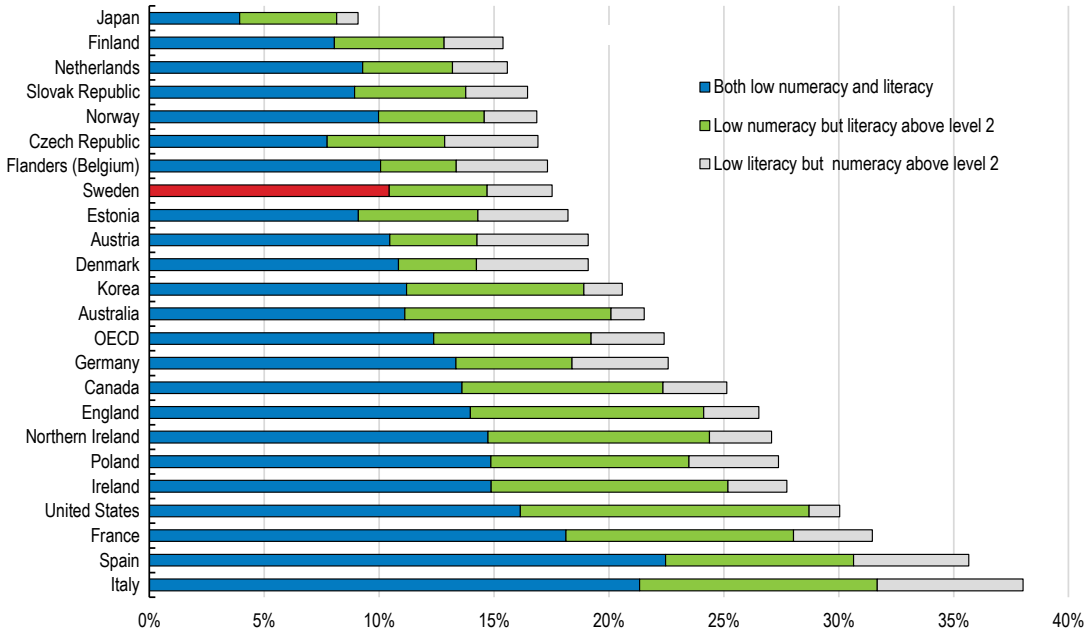
The acceleration in technological change requires individuals to adapt to new tasks and develop their skills during their whole working life. This necessitates both strong foundation skills and adequate lifelong learning. Even though Sweden enjoys one of the highest levels of adult skills in the OECD, nearly one person in five has low literacy or numeracy skills, or both (Figure 28).

Figure 28. Nearly one adult in five lacks some foundation skills



Source: Musset, P. (2015), "Building Skills for All: A Review of Finland", *OECD Skills Studies*.

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In a country where low-skilled jobs represent only about 5% of employment and routine tasks are increasingly being automated, individuals with low foundation skills are at a strong disadvantage. Hence, it is crucial to make sure that youth, including those from disadvantaged backgrounds, acquire solid foundation skills and that adults lacking those skills, including immigrants, are offered opportunities to acquire them.

1.2.8. School results and equity need strengthening

Swedish school results declined for two decades since the early 1990s. Reforms to decentralise the school system, introduce choice, competition and management by objectives likely played a role, not because of their general direction (several successful school systems in the OECD are decentralised, with some choice, management by objectives and private provision) (OECD, 2017[70]), but because of concrete issues of design and implementation. The latest edition of the OECD Programme for International Student Assessment (PISA) showed an improvement, but Sweden's educational performance only climbed back to close to the OECD average (OECD, 2016[71]; Gustafsson, Sörlin and Vlachos, 2016[72]).

Inequalities across pupils and schools are widening. Children's performance is increasingly determined by who their parents are and where in the country they live. This trend partially reflects lower education among foreign-born pupils' parents and immigrants' entry at an older age into Swedish schools compared to earlier cohorts. School inequalities are driven by residential segregation and school choice (Figure 29). Even though evidence of peer effects in Swedish schools is ambiguous, there is a clear risk that these trends deprive pupils of equal opportunities. Furthermore, they may reduce the average performance of the school system to the extent pupils from weak backgrounds lose more from segregation than strong pupils gain (Skolverket, 2018[73]; Böhlmark, Holmlund and Lindahl, 2016[74];

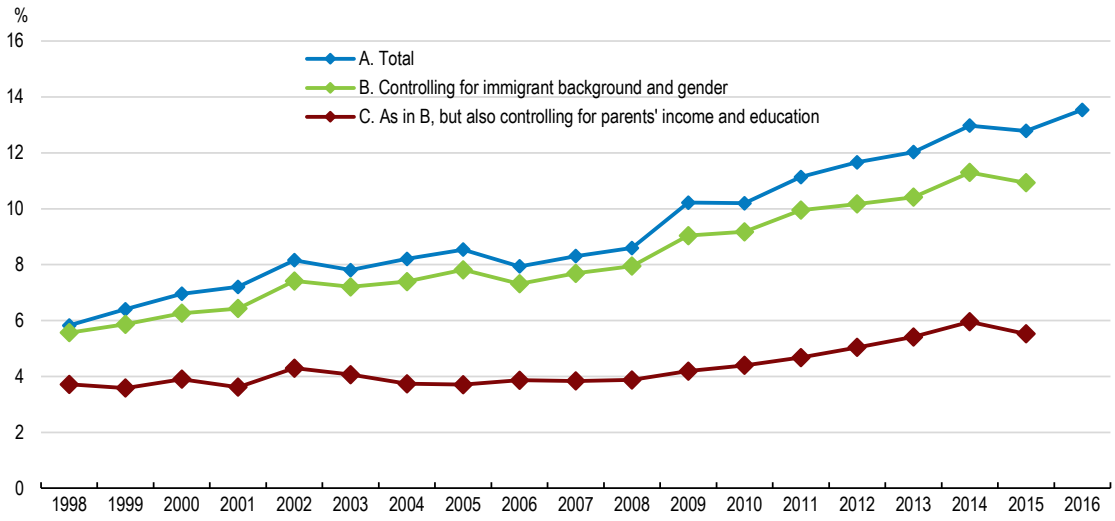
OECD, 2016[71]; Sund, 2009[75]). The OECD has identified facilitating the access of immigrants to school choice as a priority area for closing the gap between immigrant and native pupils in Sweden, along with building teaching capacity, providing language training and strengthening the management of diversity (Cerna et al., 2019[76]). The Government initiated a public enquiry in 2018 to analyse increasing school segregation and propose policies to reduce it and foster equal opportunities within the compulsory school system.

Recruiting enough quality teachers is challenging after years of declining status of the profession. The problem is particularly acute in remote parts of the country, as the young with higher education tend to migrate to the cities (SKL, 2018[77]; Mellander and Bjerke, 2017[78]). Demographic pressures add to the challenge, with the number of pupils in Swedish schools set to increase in the coming years, while the existing teacher population is ageing.

A common understanding of the mechanisms behind these challenges and ways to address them is gradually replacing the piecemeal reform approach prevalent from the late 2000s. The 2015 School Commission played an important role in building consensus (School Commission, 2017[79]). However, proposals central to improving the school system's ability to give all children the same opportunities to succeed in school, notably to assign places at over-subscribed schools by lottery and to introduce a minimum school level funding requirement, remain politically divisive.

Figure 29. School segregation leads to diverging school results

Between-school grade variation controlling for socio-economic background



Note: Grades are grade point averages of 9th grade pupils. Between-school variation is the share of total grade points variation explained by between-school average grade points variation.
Source: Skolverket (2018[73]).

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Well-performing school systems in many countries contain elements similar to Sweden's, and the general direction of the 1990s reforms of decentralisation, choice and private provision was not bound to lead to falling learning outcomes. For example, Finland has a highly decentralised system, but a strong teacher profession maintains high education quality, and the government promotes educational equity with a central grant covering around half of compulsory school funding (OECD, 2015[69]).The Dutch school system has

strong similarities with the Swedish one. Entry of private providers is liberal, and private schools are funded equivalently to public schools, but in contrast to Sweden, only non-profit providers receive public funding (Patrinos, 2011[80]). In the United States, 41 states and the District of Columbia permit charter schools to operate. Charter laws vary across states, but defining characteristics common to the Swedish system are that they cannot charge tuition fees, and they are not permitted to impose admission requirements. If oversubscribed, they must select pupils by lottery. Even though charter schools do not outperform public schools on average when controlling for pupil backgrounds, many charter schools, and charter school districts (such as New York City) appear to outperform traditional public schools according to various measures, and individual schools and the sector as a whole seem to improve over time (Epple, Romano and Zimmer, 2016[81]). Several states have school voucher programmes or tax credits to offset the cost of attending private schools. These programmes often raise the results of their direct beneficiaries, notably when targeted towards groups of low socio-economic status (Anderson and Wolf, 2017[82]). However, it is not clear whether the improvements reflect higher school productivity or peer effects, and the system-wide effects of these voucher programmes remain uncertain (Urquiola, 2016[83]).

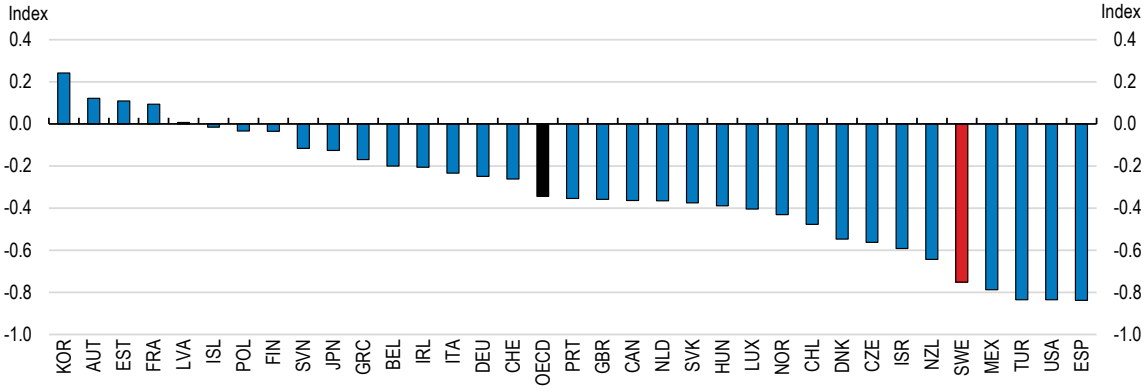
However, decentralisation and the transition to a hands-off approach to management were too abrupt and went too far. Both the centrally articulated objectives and the 1994 curriculum were too vague, with too much emphasis on pupils' responsibility for their own learning (OECD, 2015[69]; OECD, 2015[84]). Many activities benefit from a broader perspective than the municipal one. Without central steering and funding, some important aspects of policy inputs, such as teacher wages, compensatory funding of socio-economic needs and continuous learning activities for teachers drifted in the wrong direction. Indeed, many municipalities still lack the organisational capacity to run schools effectively (OECD, 2015[69]).

A liberal establishment regime for private providers, competition for pupils and opening up for private profits introduced a new set of incentives calling for strengthening governance and control. Instead, governance structures were weakened, notably by closing the regional education boards (Gustafsson, Sörlin and Vlachos, 2016[72]). Many countries have a large share of private schools dependent on public funding, but they typically limit dividends and/or limit entry of for-profit school providers. Only Sweden has a large publicly funded for-profit sector after Chile ended public funding of for-profit schools on equity grounds with the 2015 Inclusion and Equity Law (OECD, 2018[85]). The private school sector is growing strongly in Sweden, almost exclusively in the for-profit segment (Werne, 2018[86]).

The institutional set-up of the school system needs strengthening, with the central government reinstating some of the steering levers removed in the 1990s, notably an increased share of centralised funding and regional education boards. The government is introducing a block grant to better align school funding with socio-economic needs. This grant could be supplemented or replaced by a centrally set non-binding minimum funding norm, integrated with the national system for income equalisation between municipalities. Better aligning school funding with needs and equity objectives would allow schools with the highest needs to acquire good equipment and compete for the best personnel (Figure 30). A regional arm of the central government school governance structure should be developed to enhance cooperation, improve skill development, promote continuous quality improvements, and instil accountability at every level of the school system.

Figure 30. Schools with weak socio-economic backgrounds struggle to attract teachers

Shortage of educational staff, difference between schools with high and low socio-economic status of pupils



Note: Based on school principals' responses to a questionnaire accompanying the PISA survey. Negative values indicate higher shortages in schools with low socio-economic status of pupils.
Source: OECD, PISA 2015 Database, Tables II.6.2 and II.6.15.

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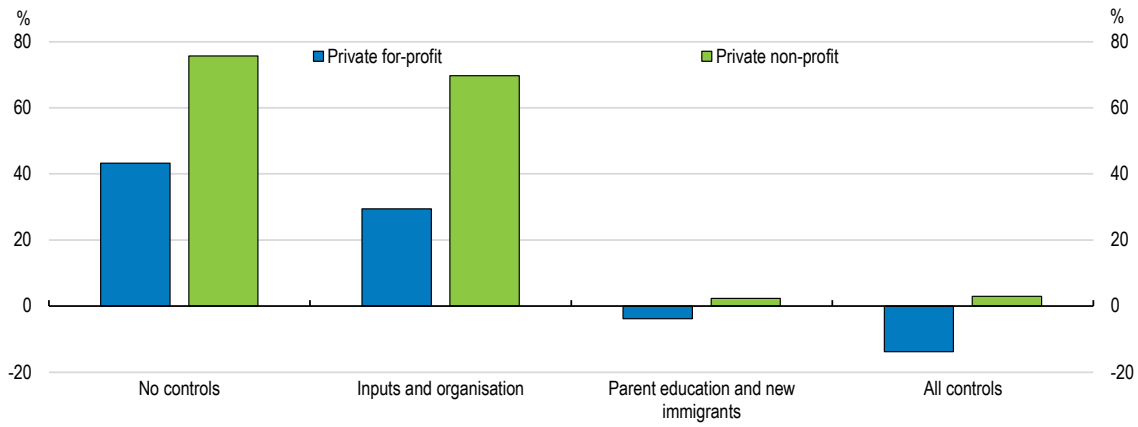
Competition and school choice do not deliver fully in line with the public good in Sweden today, because of information asymmetries and because the interests of private school providers, teachers and pupils do not align with the public interest. It increases school segregation (Böhlmark, Holmlund and Lindahl, 2016[74]; Yang Hansen and Gustafsson, 2016[87]). Many private schools are high-performing, but there is some evidence that on average private schools obtain lower results than public schools when controlling for socio-economic backgrounds (André, Pareliussen and Hwang, 2019[88]; OECD, 2016[89]; Skolverket, 2018[73]). Competition could still be positive if it raised the average performance of all schools. However, such effects are very small at best, and may even be negative, insofar as negative peer effects in low-performing schools dominate positive effects from competition in a context where competition increases school segregation over time (Wondratschek, Edmark and Frölich, 2013[90]; André, Pareliussen and Hwang, 2019[88]). Drawing the benefits from choice and competition, while limiting negative side-effects calls for addressing information asymmetries, and taking the socio-economic mix into account in compulsory school entry and when investing in new schools.

Information asymmetries should be addressed by turning national tests into an objective benchmark of skills. This could be achieved by securing the integrity of test material and independent grading. Ensuring that grades fairly represent a pupil's skills and knowledge is important, as sorting from compulsory to upper secondary school depends exclusively on grades, and grades are the main sorting mechanism from upper secondary school to tertiary education. The grading scale places a heavy weight on fail grades, and individual fail grades in core subjects prevent entry into upper secondary national programmes. This system heavily incentivises tilting schools' efforts towards avoiding failure, but also creates failure, as it somewhat arbitrarily creates losers through threshold effects around the fail grade (Gustafsson, Sörlin and Vlachos, 2016[72]). Weighing high and low grades symmetrically and suppressing the requirement to pass in certain subjects to enter upper secondary education would constitute a more balanced approach towards helping pupils achieve their full potential. High grades would still be necessary to enter the most popular programmes and the most popular schools, but pupils would not be excluded from a wide range of educational choices predominantly based on their performance in their weakest subjects.

Municipalities need to take the socio-economic mix of pupils into account when investing in new schools and in municipal school entry. For localisation decisions to effectively counteract segregation, some coordination between the municipality and private providers is needed. Today's liberal establishment of private schools therefore needs better coordination. The potential effects on school segregation should become an explicit criterium for opening a new school, taking over a school or increasing pupil numbers in existing ones. Municipalities need a stronger say in these matters. Pupils should be assigned to over-subscribed private schools by lottery, or with quotas reserved for pupils with unfavourable socio-economic backgrounds (Figure 31). Successful examples of school choice with socio-economic quotas exist in Nijmegen in the Netherlands and Flanders in Belgium (OECD, 2015[84]).

Figure 31. Private schools' over-performance reflects pupil selection

National test results, difference to public schools, controlling for inputs and pupil backgrounds



Note: Difference to public schools in the logarithm of national mathematics test scores for 9th graders. The columns are coefficients for private for- and non-profit dummies in a random-effects panel regression with data covering the years 2013-17. "All controls" corresponds to the main specification in André, Pareliussen and Hwang (2019[62]). "Parent education and new immigrants" controls for the education level of parents and the share of pupils having immigrated during the four years preceding the test. "Inputs and organisation" controls for the average municipal expenditure per pupil, the share of certified teachers, the number of pupils per teacher and a survey measure of adaptation of education to pupils' needs.
Source: Authors' calculations based on André, Pareliussen and Hwang (2019[62]).

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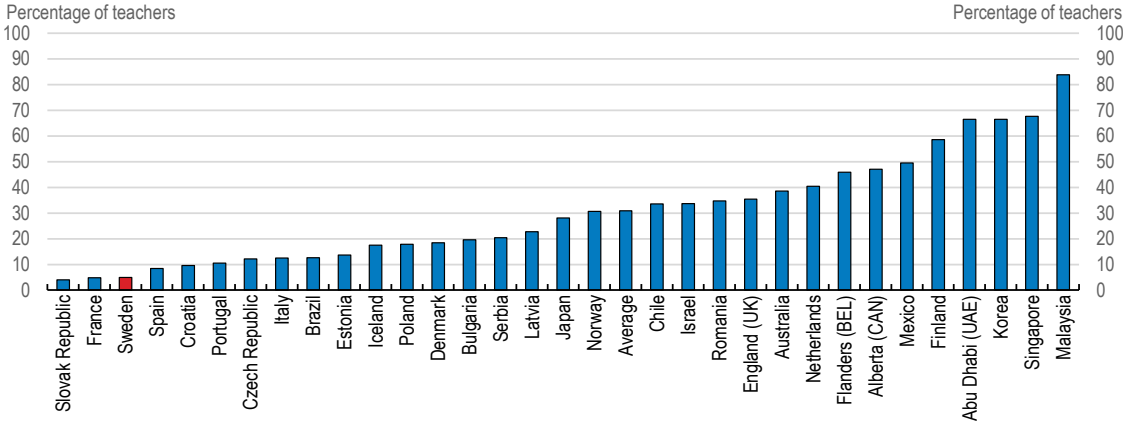
Only 5% of teachers in Sweden report that teaching is a valued profession in society, compared with 59% in Finland, 31% in Norway and the TALIS average of 31% (Figure 32). Increasing the attractiveness of teaching is important to recruit enough high-quality teachers going forward. Better teacher education with a stronger research base, more instruction time and more teaching practice, enhanced continuous learning and development through a regional school governance structure and more cooperation, as well as feedback and support between colleagues would help. Furthermore, principals and education personnel should be shielded from unnecessary administration and red tape so they can concentrate on core teaching and leadership tasks. Teachers should face incentives to progress, perform and take on challenging tasks. The government has taken steps the past few years to strengthen teacher pay and career paths. Earnings for young teachers are now well above the OECD average (OECD, 2018[91]). Strengthened steering from a regional governance structure, clear lines of responsibility and accountability for results should help.

Figure 32. The teacher profession is unattractive

Percentage of teachers who agree that the teaching profession is valued in society



Source: OECD, TALIS 2013 Database, Tables 7.2 and 7.2 web.

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1.2.9. Investment in lifelong learning can foster inclusive growth

As many jobs are at risk of automation or of significant change in tasks and skills requirements, re-skilling will be critical for inclusive growth over the coming years. Workers with the right skills will be essential for productivity and competitiveness. Allowing displaced workers to retrain will be crucial for employment, equality and social cohesion. The government has introduced the *Knowledge boost* programme to provide around 100,000 study slots in higher vocational education and other types of adult education, with a focus on fields crucial to society, such as engineering and medicine (Government Offices of Sweden, 2018[92]). Nevertheless, more will need to be done over the coming years to meet rapidly evolving skill needs.

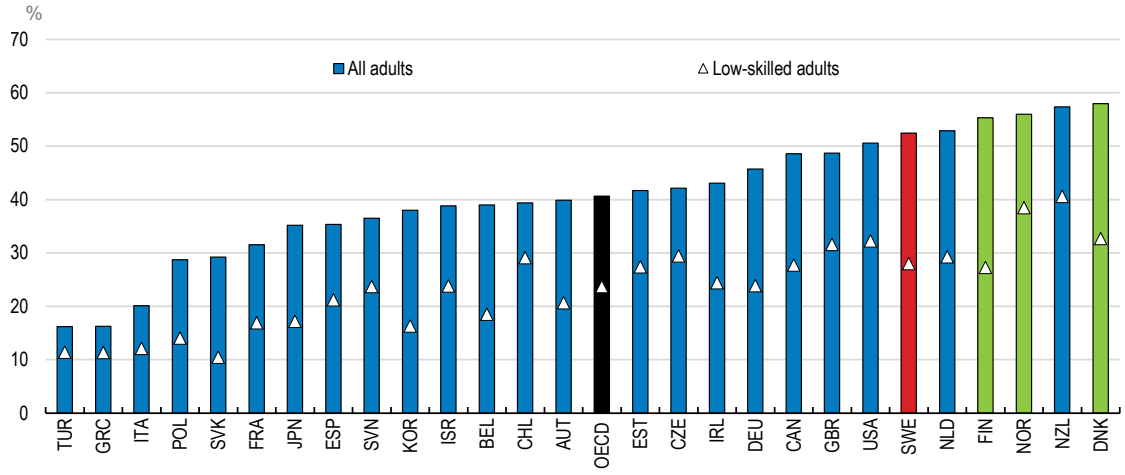
Key requirements for the development of adult education and training include favouring compatibility between training and employment (e.g. time flexibility, training leave, on-line learning), enhancing responsiveness to different and evolving needs and improving the recognition and certification of learning. Co-financing, as well as tax credits and allowances can be used to ensure adequate financing and incentives for re-skilling (OECD, 2017[93]).

Meeting the re-skilling challenge will require close cooperation between employers, trade unions and government. Sweden should build on its strong social dialogue tradition to find innovative solutions. For example, the social partners could consider giving more weight to training in collective bargaining. Re-skilling needs to be widely available, including to SME employees, workers in unconventional forms of employment and the unemployed. Sweden has one of the highest rate of participation in training in the OECD. However, as in other countries, the low-skilled participate less in training than higher-skilled individuals (Figure 33).

Some countries have put in place individual learning accounts (e.g. Canada, Netherlands, United States) and education vouchers (e.g. Austria, Germany, Switzerland) to widen access to training. The public employment service also needs to offer unemployed people training which matches evolving labour market needs, plus effective career guidance.

Figure 33. The low-skilled receive less training than others

Participation in training over a 12-month period



Note: Low-skilled adults are defined as people scoring at or below a PIAAC literacy score of 225 points.
Source: OECD calculations based on the Survey of Adult skills (PIAAC).

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Table 11. Past recommendations on education and action taken

Main recent OECD recommendations	Action taken since the 2017 Survey or planned
Raise the attractiveness of teaching by increasing monetary incentives, offer clearer career paths, and improve teacher education.	The "Teacher salary boost" offers enhanced career pathways and pay, financed by grants from the central government.
Increase support for struggling pupils, including immigrants, through early intervention and targeting resources based on socio-economic background.	The 2018 reading-writing-mathematics guarantee introduced mandatory evaluations of pupils' reading, writing and mathematics skills from an early age, followed by extra support for those who need it.
Enhance support and incentives for immigrants to learn Swedish.	New regulations, better coordination between agencies and strengthened funding contribute to shorter processing times for new immigrants, more flexible integration activities and clearer expectations to migrants' own efforts.

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Annex Progress in structural reforms

This annex summarises recommendations made in previous Surveys and main actions taken since the OECD Economic Survey on Sweden was published in February 2017.

Recommendations in previous *Surveys*	Actions taken
Business regulations, infrastructure and innovation	
Simplify regulatory procedures, in particular regarding licences and permits.	Some promising initiatives to digitalise and simplify procedures have been taken, notably in restaurants and tourism. Some administrations are using digital tools to improve services, simplify procedures and shorten processing times.
Streamline building requirements across municipalities. Enhance the access of small and foreign firms to the public procurement process by improving its timeliness, predictability and clarity.	The implementation of the 2015 22-point housing plan, which includes measures to release land for development and speed up planning processes, continues. An investigation into simplifying and increasing flexibility in procurement regulations, including measures to reduce appeals, has been started. Building and planning regulations have been made available online in foreign languages.
Invest to improve the quality of roads and rail, with careful consideration of social returns.	The Government has made major investments in railway maintenance and investments in public transport in rural areas.
Continue to broaden support for innovation and enhance co-ordination of innovation and research policies. Lower financing constraints by fostering the development of debt and equity instruments and platforms for corporate finance.	Innovation and research policy is being gradually strengthened, but governance, leadership and strategic vision need further improvement.
Skills and education	
Raise the attractiveness of teaching by increasing monetary incentives, offer clearer career paths, and improve teacher education.	The "Teacher salary boost" offers enhanced career pathways and pay, financed by grants from the central government.
Increase support for struggling pupils, including immigrants, through early intervention and targeting resources based on socio-economic background.	The 2018 reading-writing-mathematics guarantee introduced mandatory evaluations of pupils' reading, writing and mathematics skills from an early age, followed by extra support for those who need it.
Enhance support and incentives for immigrants to learn Swedish.	New regulations, better coordination between agencies and strengthened funding contribute to shorter processing times for new immigrants, more flexible integration activities and clearer expectations to migrants' own efforts.
Labour market and social policy	
Reduce the gap in employment protection between permanent and temporary contracts and increase flexibility in entry level wages.	No action taken. The new government is set to appoint a committee that will investigate how a better balance can be created in employment protection for staff with different terms of employment.
Consider extending the coverage of unemployment insurance by easing the entitlement conditions in terms of duration of past work, and moving to a system with mandatory contributions to unemployment insurance.	No action taken. An inquiry on the design of income-based unemployment insurance and ways to increase coverage has been opened in 2018, including an analysis of the opportunity to modify the length and level of unemployment benefit compensation.
Continue to simplify the procedures to help migrants get residence and work permits.	Policies to speed up the integration of migrants have been stepped up, including education programmes, recognition of qualifications and compensation to municipalities for refugee reception.
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.	Five employment subsidy programmes were merged into a new scheme (*Introduction jobs*) in 2018, with a subsidy of 80% up to a gross wage ceiling of SEK 20 000 per month.
Review annually the distributional consequences of uprating social benefits, taking equity, fiscal costs and work incentives into consideration.	No systematic review has been introduced. However, child and housing allowances increased and taxes on pensions were reduced in 2018.
Gender equality	
Encourage parents to split parental leave more equally by continuing to increase the share reserved for each parent.	No action taken.
Enhance active labour market policy for foreign-born women when the Introduction programme ends, to prevent them from drifting away from the labour market.	The government has, in addition to general measures to speed up the integration of newly arrived immigrants, taken initiatives focusing on foreign-born women, e.g. funding to increase the possibilities for persons on parental leave to take part in Swedish language courses and training, improving the quality of education in Swedish for immigrants and outreach and study motivation actions for foreign-born women..

Housing policy	
Introduce a cap on household debt-to-income ratios.	No cap has been introduced. However, amortisation requirements have been tightened for borrowers with new mortgages exceeding 450% of gross income.
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. A broad tax reform will be initiated which, among other goals, aims to reduce household indebtedness and improve the functioning of the housing market.
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 implementation of the 2015 22-point housing plan, which includes measures to release land for development and speed up planning processes, is going on.
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. Rent setting for new dwellings will be liberalised.
Climate change mitigation policies	
Continue to gradually phase out exemptions to the carbon tax.	Fuel and vehicle taxation has been overhauled in 2018 to incentivise further reductions in carbon emissions. But implicit carbon taxes on fossil fuels remain substantially higher in household than in industrial use.

1. Improving school results and equity in compulsory education

Swedish school results declined for two decades following a series of reforms in the early 1990s decentralising the school system and introducing choice, competition and management by objectives. The general aims and direction of reform were not destined to lower results, but weaknesses of reform design and implementation, against the backdrop of a deep recession, likely contributed to falling outcomes. Residential segregation and the current model of competition and choice increase school segregation and likely reduce equality of opportunity. A coherent set of reforms should strengthen central government institutions, rebuild a regional governance structure and increasingly target funding to pupils' needs. Better steering of competition and school choice implies ensuring that grades fairly represent pupils' skills and knowledge, that municipalities increasingly take the socio-economic mix of pupils into account in entry and investment decisions, and that entry and expansion of private schools are better coordinated to counter school segregation. Teaching needs to become more attractive to raise the quality of recruitment to the profession and to address current and future teacher shortages by improving teacher education, strengthening continuous learning and instigating more cooperation, feedback and support between colleagues.

Sweden enjoys among the highest levels of income per capita and well-being in the OECD and the highest employment rate in the European Union. The economy has proved very resilient to the crisis hurting the global economy, thanks to sound macroeconomic management and a strong knowledge base. As such, Sweden is also less vulnerable than many other OECD countries to losses of jobs due to digitalisation.

However, shortages of skilled labour appear in some sectors, partly due to years of vigorous economic growth, but also to structural reasons. The number of pupils in Swedish schools is set to increase in the coming years, while recruitment to the profession is insufficient and the existing teacher population is ageing. Recruiting enough quality personnel is challenging after years of declining status of the profession. Teacher scarcity is highest in remote parts of the country, as youth with higher education tend to migrate to the cities. These demographic pressures further challenge a Swedish school system where results and equity have declined in recent decades.

Swedish schools entered the 1990s from a position of strength, as one of the top performers in early international school surveys. However, school results declined for two decades following a series of reforms in the early 1990s. Reforms to decentralise the school system, and to introduce choice, competition and management by objectives likely played a role, not because of their general direction (several successful school systems in the OECD are decentralised, with some choice, management by objectives and private provision (OECD, 2017[1])), but because of concrete issues of design and implementation (Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]). Furthermore, these reforms coincided with cost savings in the public sector triggered by the 1990s economic crisis. The latest vintage of the OECD Programme for International Student Assessment (PISA) showed an improvement, but Sweden's educational performance only climbed back to close to the OECD average. Furthermore, inequalities across pupils and schools are widening, and children increasingly attend schools with pupils from similar backgrounds. Even though there is no unambiguous evidence of peer effects in Swedish schools, there is a clear risk that these trends deprive pupils of equal opportunities. Furthermore, they may reduce the average performance of the school system to the extent pupils from weak backgrounds lose more from segregation than strong pupils gain (OECD, 2016[4]; OECD, 2017[5]; Skolverket, 2018[6]). The Swedish School Commission, with representation from a broad set of stakeholders, presented a range of reform proposals, but some of the more important ones remain politically difficult, and some require further enquiry (School Commission, 2017[3]).

This chapter describes and analyses the challenges facing Sweden's school system with a focus on primary and lower secondary education, but with relevance also for upper secondary schools. The complexity of the school system calls for a cautious approach to reform, with experimentation and implementation designed to allow for quantitative research and evaluations. A set of recommendations is outlined, focussing on three main areas of improvement:

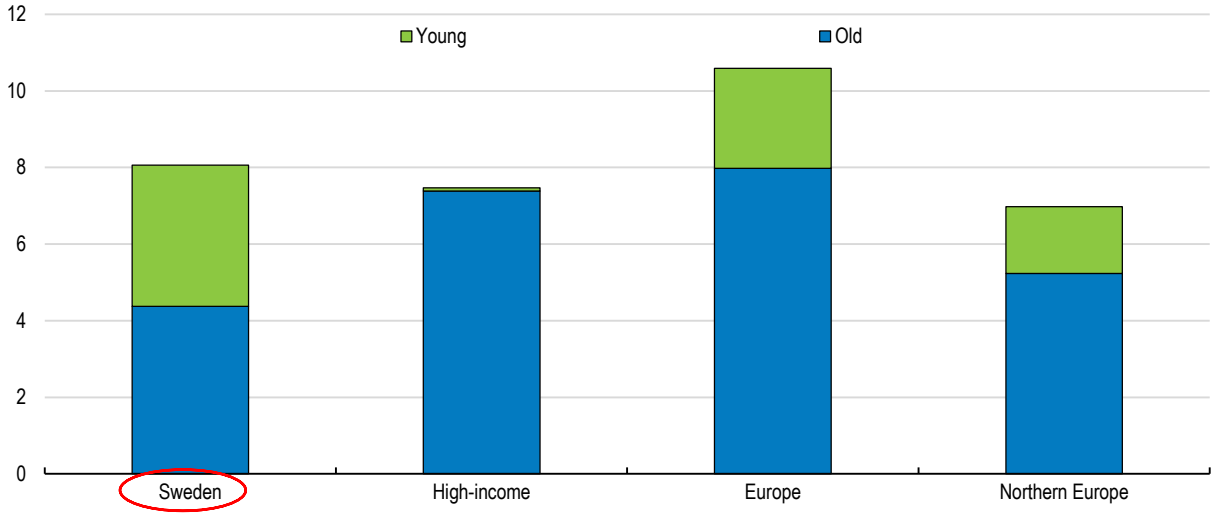
- A recentralisation of some aspects of education policy is recommended, based on evidence that the decentralisation of the 1990s has not delivered the expected results. A centrally set non-binding minimum funding norm, integrated with the national system for income equalisation between municipalities would better align school funding with needs and equity objectives. A strengthened regional arm of the central government governance structure should enhance cooperation, improve skills development, promote continuous quality improvements, and instil accountability at every level.
- Competition and school choice need to be steered to reduce school segregation and deliver for the public good by ensuring that grades fairly represent pupils' skills and knowledge, loosening the proximity principle for school entry and introducing a wider set of evaluation criteria for private providers planning to open new, expand or to take over existing schools.
- Teaching needs to become more attractive to recruit and retain high quality teachers. Better teacher education with a stronger research base and more teaching practice, clearer career paths and more cooperation, feedback and support between colleagues would help. Teachers should face incentives to progress, perform and take on challenging tasks, coupled with clear accountability for key outcomes.

Demographic pressures on public services differ between cities and countryside

Demographic developments are putting pressure on public services, especially education, health and long-term care. Both the number of Swedes aged under 20 and aged over 70 will rise by about 300 000 by 2025. Population is ageing less rapidly in Sweden than in most other high-income countries, including those of Northern Europe. Net immigration added almost a percentage point to annual average population growth in 2014-17, and mostly consists of humanitarian and family reunion migrants. Asylum applications fell back to normal levels of slightly below 30 000 per year after the peak of 163 000 in 2015. Almost a quarter of the population was either foreign-born or had two foreign-born parents in 2017 (Statistics Sweden, 2018[7]; OECD, 2017[5]). Partly as a result of high immigration and higher fertility among immigrants than natives, the share of young people is growing fast. The number of children and elderly for each working-age person is set to increase more than in the average high-income and Northern Europe country, albeit less than in the average European country over 2015-25 (Figure 1.1).

Figure 1.1. More young and old put pressure on public services

Projected increase in the dependency ratio 2015-25, percentage points



Note: The dependency ratio relates the number of younger (0-19 years old) and older persons (65 years or over) to the working-age population (20-64 years old). The numbers are based on the medium variant of the United Nations population projections. High-income countries are defined on the basis of 2016 gross national income per capita data from the World Bank. Northern Europe includes the Baltic and Nordic countries, Ireland and the United Kingdom.
Source: United Nations, World Population Prospects: The 2017 Revision.

StatLink http://dx.doi.org/10.1787/888933943968

Sweden has strong public finances, with a government debt-to-GDP ratio below 40%, and a budget surplus for the past four years, despite increases in welfare spending and immigration-related costs and a reduction of taxes on pensions. Financial resources are available within an overall prudent fiscal policy to address the needs of the elderly and to invest in the future through education and integration policies.

Sweden is one of the most decentralised countries in the OECD. The provision of public services is largely organised by its 20 county councils (*landsting*) and 290 municipalities (*kommuner*). Government responsibilities organised on a county basis are either governed through the county administrative board (*länsstyrelse*) or by national government agencies with different regional organisations, which is the case for example for the Swedish Police (*Polismyndigheten*), Swedish Public Employment Service (*Arbetsförmedlingen*) and Swedish Social Insurance Agency (*Försäkringskassan*). The county councils oversee public healthcare, public transport and culture services. Municipalities are responsible for childcare and pre-school, primary and secondary schools (Box 1.1). Other important municipal responsibilities include social services, elderly care, support to people with disabilities, health and environment issues, emergency services (except police), infrastructure, urban planning and sanitation.

Box 1.1. Organisation of primary and secondary education in Sweden

Compulsory education consists of compulsory pre-school class (*förskoleklass*) and compulsory school (*Grundskola*), plus the Sami school and schools for pupils with certain disabilities. It is provided in one single structure covering children aged 6 to 16, corresponding to primary school and lower secondary school (ISCED levels 1 and 2). About 1 024 000 pupils were enrolled in the Swedish compulsory school system in the school year 2016/17. Most pupils attended municipal schools, while 154 000 (approximately 15%) attended private (including international) schools. Around 344 000 pupils attended upper secondary school (*Gymnasieskola*), of which 88 000 (approximately 25%) attended private schools.

The school system has been decentralised since the early 1990s. Municipalities and private school providers are responsible for primary and secondary schools, including organisational development and control, and teacher training and competence development. Municipalities are in addition responsible for adult education. School funding is set at the discretion of each municipality, with the exception of some targeted state grants.

National steering is based on broad direction from the government, who sets goals mainly through the Education Act and the National Curriculum, supported by the National Agency for Education and the School Inspectorate, which also have key roles in monitoring the implementation and fulfilment of these goals. National tests in mathematics and Swedish (including Swedish as a second language) are given in the third, sixth and ninth grade. National tests are also given in English in the sixth and ninth grades, and in one of the subjects biology, physics or chemistry as well as one of the subjects geography, history, religion or social sciences in the ninth grade. In upper secondary school the national tests cover mathematics, Swedish and English.

Compulsory school pupils are entitled to a place in a municipal school based on proximity, but may choose another municipal school (usually within the municipality) or private school (regardless of location), subject to capacity. Private providers have their own admission systems, which need to be non-discriminatory. The usual admission criteria are siblings already admitted, geographical proximity and the time of application (first-come-first-served). Upper secondary admission is based on compulsory school grades, and not limited by municipal borders.

Rules guiding private schools are designed to create a level playing field between public and private schools. Private schools can be freely established following approval by the Swedish Schools Inspectorate that they fulfil the criteria of the Education Act. They follow the same rules as public schools, and teach the same curriculum (except for international schools), and they are subject to the same inspection regime as municipal schools.

Municipalities are obliged to finance compulsory and upper secondary education of resident children, including children attending a private school or a school run by a different municipality. Funding of resident children attending schools other than those run by the municipality is based on the actual cost of provision or the cost of organising the same programme in public schools in the home municipality. Schools (private and public) are not allowed to charge tuition fees.

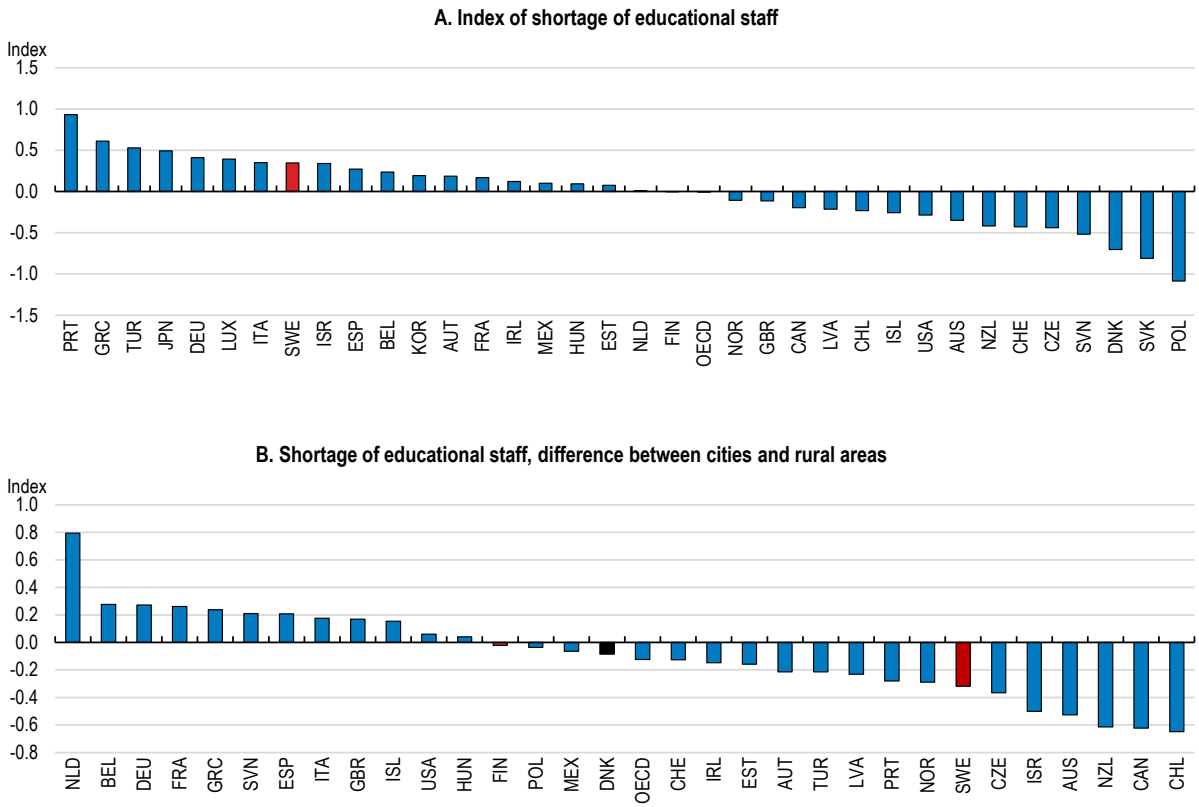
Source: Skolverket (2017[8]); OECD (2015[9]) and André, Pareliussen and Hwang (2019[10]).

Decentralisation allows more proximity with users, but it also entails challenges to equality of access and quality of services across the country and recruitment of qualified staff, notably education and health personnel.

Higher local needs and/or a thinner revenue base caused by for example demographics, internal- and external migration patterns, and differences in strength and structure of local labour markets are met by a national income-and-cost equalisation system designed to allow an equal provision of services across the country.

Perhaps a bigger challenge than financing is to attract and retain qualified staff. Shortages of qualified personnel, in particular nurses and teachers, are constraining health care and education services (Figure 1.2) (SKL, 2018[11]), notably in remote locations, as the young and educated tend to move to cities, notably the main agglomerations Stockholm, Gothenburg and Malmö (Mellander and Bjerke, 2017[12]).

Figure 1.2. Sweden faces teacher shortages, notably in rural areas



Note: Positive values indicate higher shortages, as reported by school principals. Panel B is calculated as shortages in cities minus shortages in rural areas. Negative values hence indicate higher shortages in schools in rural areas.
Source: OECD, PISA 2015 Database, Table II.6.15.

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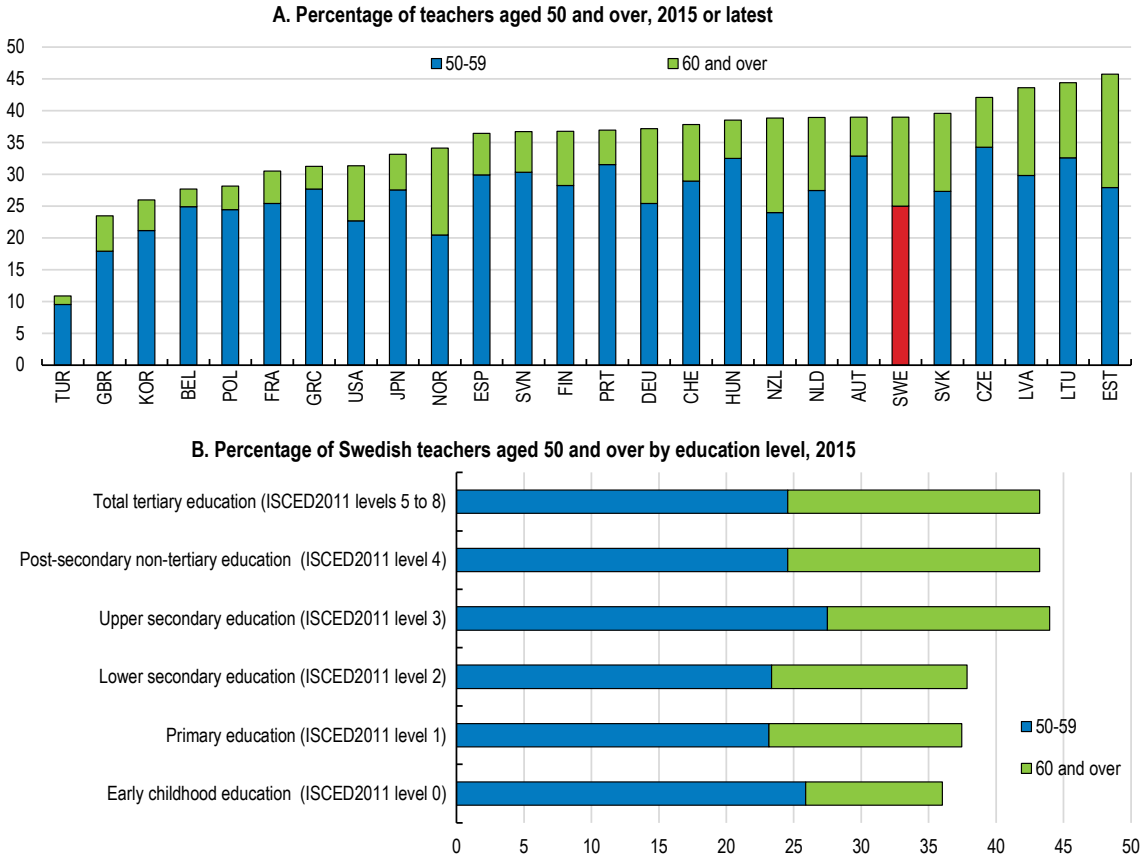
The current teacher shortages are set to intensify going forward, mainly due to a rapid increase of pupils at all educational levels. Nearly 40% of teachers are aged 50 or over and 14% 60 or over (Figure 1.3, Panel A). These shares are among the highest in the OECD, being surpassed only in the Baltic states and some Central European countries. The proportion of older teachers is highest in upper secondary education, where many

vocational teachers are recruited from outside professions, followed by post-secondary and tertiary education. The age structure at lower levels of education is somewhat more favourable (Panel B). Recruiting enough new teachers is proving difficult, despite recent government efforts to make the profession more attractive, both in terms of pay and career paths.

Figure 1.3. A sizeable share of Sweden's teachers are over fifty



Source: OECD, Education at a Glance.

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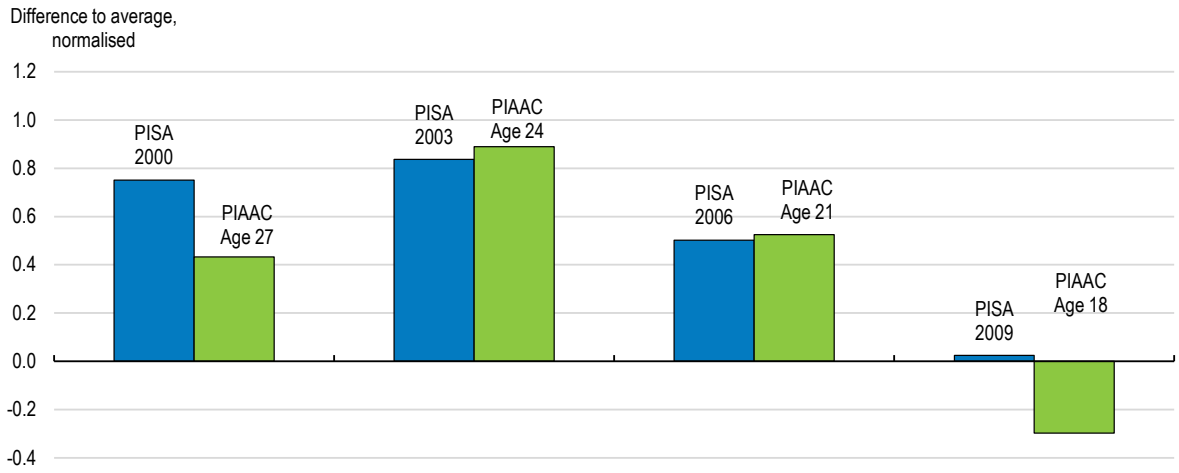
Declining quality and equity in schools challenge Sweden's growth model

Sliding and more unequally distributed skills affect individuals, as people in Sweden need both a formal education and basic skills, such as literacy and numeracy, to get a job and keep it (Bussi and Pareliussen, 2017[13]). More broadly, this trend challenges Sweden's societal model, built around high skills. Sweden specialises in high value-added parts of global value chains, demanding high skills to succeed in tough global competition. Coordinated wage-setting compresses wages, notably by raising them in the bottom of the distribution, which makes it challenging for individuals with low skills and productivity to find employment (Swedish Labour Policy Council, 2016[14]). More unevenly distributed skills are thus likely to lead to increasing social exclusion. Adding to the challenge, high humanitarian and family reunion immigration increases the share of low skilled-workers (OECD, 2017[5]; OECD, 2015[15]; Pareliussen et al., 2018[16]).

Despite the Swedish school system's strengths, such as in fostering civic engagement, cooperation, foreign language skills, pupil satisfaction and learning to learn, pupils do not catch up from low PISA results after the age of 15. Those cohorts which scored low in PISA had correspondingly weak results as adults (OECD, 2015[15]) (Figure 1.4). Countries scoring below average in PISA do not generally catch up in the PIAAC survey. A number of countries have had above-average results in PISA, but below average in PIAAC, but none has scored below average in PISA and significantly above average in PIAAC.

Figure 1.4. Young adults do not catch up from low PISA scores

Average Swedish PISA and PIAAC scores for corresponding age cohorts



Note: The figure compares mean reading scores in PISA with literacy scores in PIAAC for the corresponding cohorts. The test score averages are normalised by the cross-country PISA and PIAAC averages and standard deviations for comparison. A three-year band is used in the Survey of Adult Skills to increase size and reliability of estimates, i.e. the group "adults 24" consists of the age groups from 23 to 25. The mix of countries contributing to the average in PISA and the Survey of Adult Skills differs, which may contribute to differences in countries' average scores relative to the overall averages in either study.
Source: Survey of Adult Skills (2012); OECD, PISA 2009 Database; and OECD, PISA 2012 Database.

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Swedish children have a long-standing legal right to a school system supporting high and equitably distributed skills, set out in the main overarching goals of primary and secondary education in the 1985 and 2010 Swedish Education Acts. The quality goal states that pupils should develop knowledge, but also values, such as respect for human rights and democratic values central to Swedish society. The equity goal states that that schools shall adapt to pupils' different needs and strive to counterbalance differences in pupils' backgrounds (and geographical location) so that they can reach their full potential. (Sveriges Riksdag, 2010[17]; Sveriges Riksdag, 1985[18]).

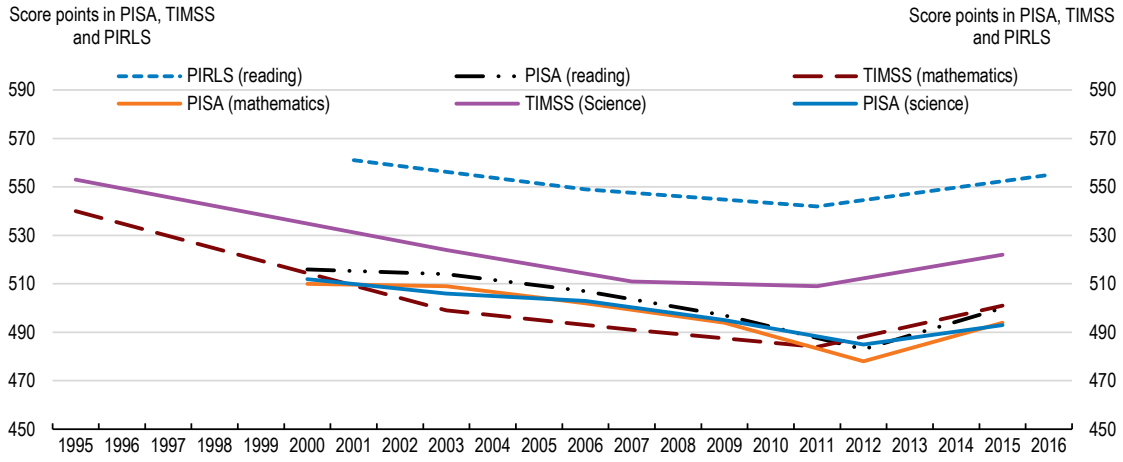
Results have fallen in primary and secondary education

A large body of research, including the OECD Programme for International Student Assessment (PISA), has documented that the Swedish school system's ability to fulfil these goals has eroded since the 1990s. Sweden was one of the top PISA performers in the first PISA survey in year 2000, after which the performance of 15-year-olds deteriorated more rapidly than in any of the other participating countries until 2012. Results fell in reading, mathematics and science, and other international tests confirmed the weakening. The latest

measurements indicate that results may have bottomed out, with improvements in PISA 2015, the Trends in International Mathematics and Science Study (TIMSS) 2016 and the Progress in International Reading Literacy Study (PIRLS) 2015 (Figure 1.5) (Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]; OECD, 2016[4]).

Figure 1.5. A rapid decline in school results may have bottomed out

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



Note: PIRLS denotes the national average results of fourth-graders in the Progress in International Reading Literacy Study. TIMSS denotes the national average results of eight-graders in the Trends in International Mathematics and Science Study. PISA denotes the national average results of 15-year-olds in the OECD Programme for International Student Assessment.
Source: OECD (2016[4]), Mullis et al. (2017[19]; 2016[20]), and Martin et al. (2016[21]).

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Pupils' performance depends on who their parents are

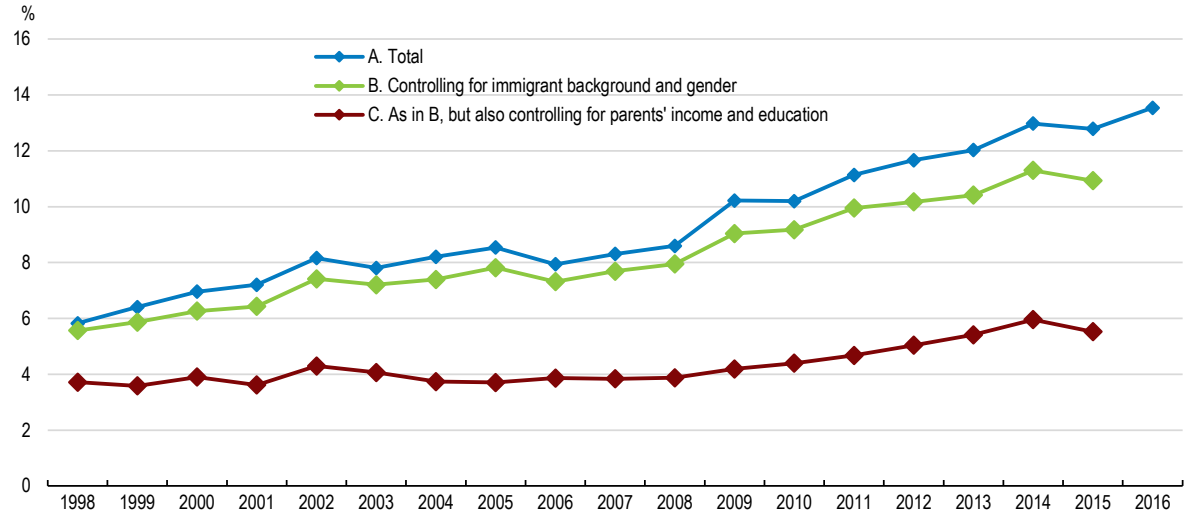
The gap between the highest- and lowest-performing pupils is widening, and socio-economic factors, such as immigrant origin and parent background, increasingly affect grades. This polarisation accelerated since the end of the 2000s. However, increased polarisation is at least partially a result of foreign-born children entering Swedish schools at a higher age and with a weaker educational background. Pupil's socio-economic backgrounds explained 12% of the total variation in science performance in the 2015 PISA survey. This is almost at the OECD average, and significantly higher than in any of the other Nordics, where socio-economic backgrounds explain between 5% (Iceland) and 10% (Denmark) of the total variation (OECD, 2016[4]; Skolverket, 2018[6]; Heller Sahlgren, 2017[19]). Result differences between schools almost doubled from 2000 to 2016, widening particularly fast since the end of the 2000s. 65% of between-school variation in science performance in Sweden was explained by socio-economic backgrounds in the 2015 PISA survey. This is above the OECD average of 63%, and considerably higher than in the other Nordics, where socio-economic backgrounds explain between 34% (Norway) and 51% (Denmark) of the variation (OECD, 2016[4]).

Increasing school segregation, where pupils with similar socio-economic backgrounds tend to cluster in the same schools, can explain most of the divergence (Figure 1.6). School segregation is driven by neighbourhood segregation and school choice, a choice mainly exercised by pupils with favourable socio-economic backgrounds. School segregation affects individual pupils' results when there are peer effects. Increasing segregation may

benefit well-endowed pupils since pupils with well-educated, Swedish-born and high-earning parents typically perform well in school, and these pupils may gain further from going to class with other high-performers with similar backgrounds. Sund (2009[20]) finds that such peer effects are stronger for Swedish pupils with unfavourable socio-economic backgrounds, and that these pupils thus lose more from segregation than pupils with favourable backgrounds gain (Figure 1.7). Therefore, despite the lack of undisputable evidence of peer effects, school segregation risk depriving pupils of equal opportunities to achieve their potential and may even lower average school outcomes in Sweden (Skolverket, 2018[6]; Böhlmark, Holmlund and Lindahl, 2016[21]; André, Pareliussen and Hwang, 2019[10]; Yang Hansen and Gustafsson, 2016[22]). In response to this challenge, the Government initiated a public enquiry in 2018 to analyse increasing school segregation and propose policies to reduce it and foster equal opportunities within the compulsory school system.

Figure 1.6. School segregation leads to diverging school results

Between-school grade variation controlling for socio-economic background



Note: Grades are grade point averages of 9th grade pupils. Between-school variation is the share of total grade points variation explained by between-school average grade points variation.
Source: Skolverket (2018[6]).

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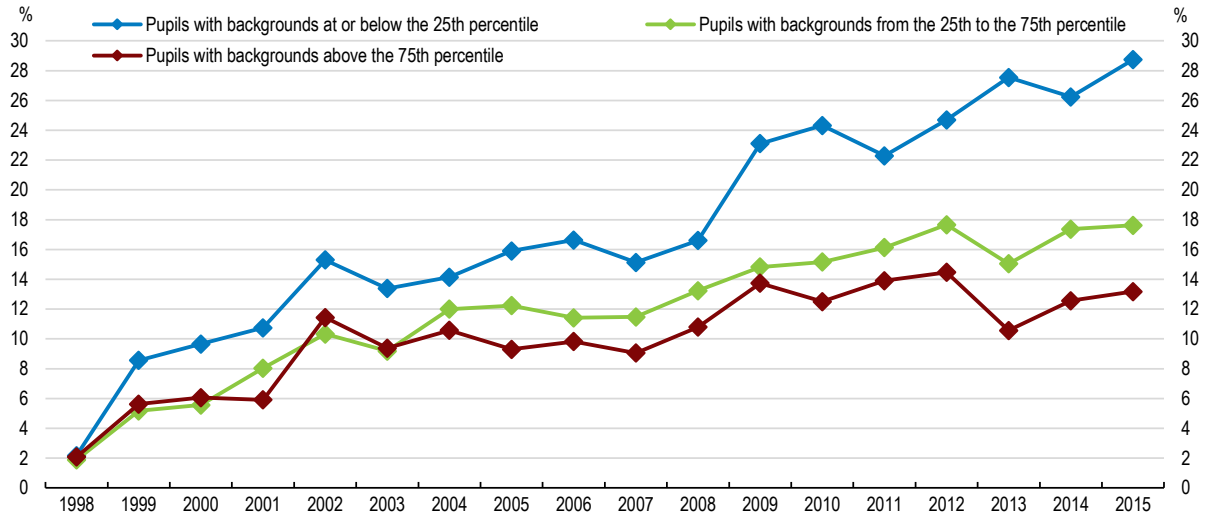
Although immigration contributes to school segregation and the overall fall in school results, it is not the main cause of either of these trends. Rising income inequality, and likely rent controls, contribute to residential segregation. Children of immigrants, notably those who have spent their childhood in Sweden, fare better than children of foreign backgrounds in other European OECD countries (OECD, 2017[5]). However, their parents' immigrant backgrounds and often low education levels compared to natives, negatively affect school results (André, Pareliussen and Hwang, 2019[10]). Auer and Sandqvist (2016[23]) show that to a limited but non-negligible extent, Sweden's falling results in international surveys are related to immigration. They also show that new immigrants increasingly fail individual subjects, disqualifying them from entering the national programmes in upper secondary school, in which case they are entitled to enter a second-chance introduction programme.

Figure 1.7. Peer effects are stronger for children with weaker socio-economic backgrounds

Result difference between pupils attending the top and bottom performance quartiles of schools, by pupil socio-economic background index value



Note: Results are total grade points of 9th grade pupils. The socio-economic background index is notably based on parent income and education, immigrant background and gender. Note that increasing peer effects are partly a result of an increasing polarisation of the pupil mass, notably a higher share and less favourable composition of pupils with immigrant background.

How to read this figure: The figure shows the difference in grades between pupils attending the best performing schools and the worst performing schools, by pupils' ranking on the socio-economic index. For example: a pupil in the lowest socio-economic quartile (blue line) attending a school in the top result quartile achieved approximately 29% higher grades than a pupil with a similar background attending a school in the bottom result quartile in 2015.

Source: Skolverket (2018[6]).

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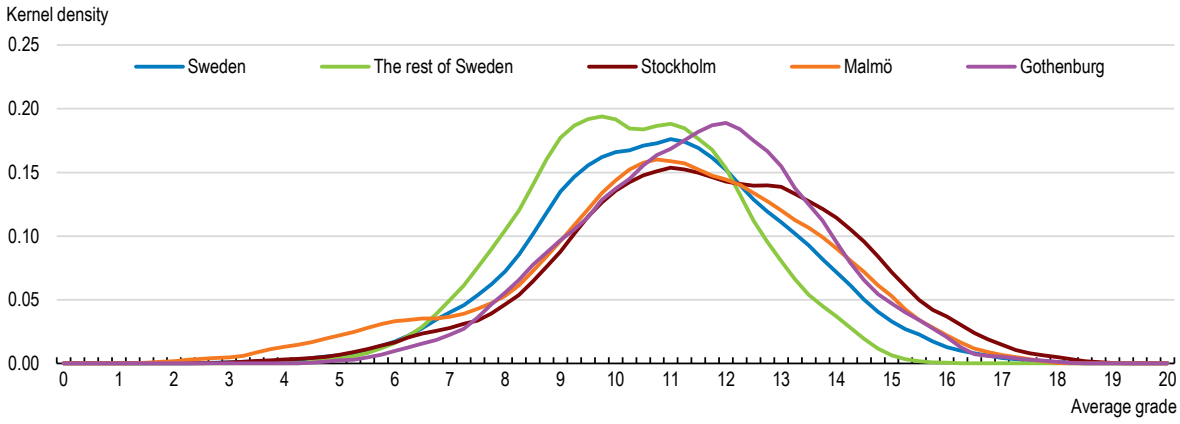
School segregation is mainly a city phenomenon, because there is limited practical scope for school choice and neighbourhood segregation in more sparsely populated areas, and immigrants tend to settle in the cities. Both high-performing and low-performing schools are overrepresented in greater Stockholm and greater Malmö compared to the rest of the country, while school performance is more evenly distributed in greater Gothenburg (André, Pareliussen and Hwang, 2019[10]) (Figure 1.8).

Average school results also differ between regions, with schools in the Greater Stockholm functional labour market area achieving the highest results, followed by Malmö and Gothenburg. These geographical differences are not sensitive to differences in inputs such as expenditure per pupil and the share of certified teachers. On the other hand, they tightly correspond to pupils' different socio-economic backgrounds, notably that a higher share of parents in the cities have higher education, one of the strongest explanatory factors behind school results. Controlling for socio-economic backgrounds, school inputs and a range of additional controls, schools in the Stockholm, Malmö and Gothenburg areas perform slightly better than the country average (Figure 1.9) (André, Pareliussen and Hwang, 2019[10]).

Figure 1.8. School results are more polarised in Stockholm and Malmö

School average national test scores in mathematics by region (2017)



Note: The Kernel density is estimated using the Epanechnikov function. The three cities are defined as functional labour market regions (Statistics Sweden, 2018[24]).
Source: Authors' calculations with data from André, Pareliussen and Hwang (2019[10]).

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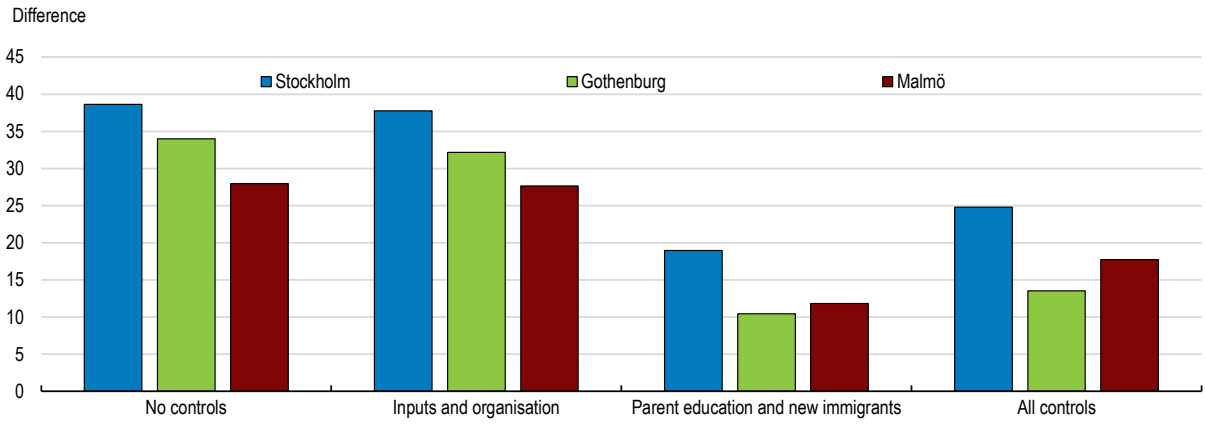
Figure 1.9. Geographical result differences largely reflect socio-economic backgrounds

Difference in test scores compared to the rest of Sweden



Note: The differences to test scores in the rest of Sweden are dummy regression coefficients for schools within the three major agglomerations, defined as functional labour market regions (Statistics Sweden, 2018[24]) from a random-effects panel regression on the logarithm of national test scores in mathematics with data covering 2013-17. "All controls" corresponds to the main specification in André, Pareliussen and Hwang (2019[10]). "Parent education and new immigrants" controls for the education level of parents and the share of pupils having immigrated during the four years preceding the test. "Inputs and organisation" controls for the average municipal expenditure per pupil, the share of certified teachers, the number of pupils per teacher and a survey measure of adaptation of education to pupils' needs.
Source: Authors' calculations based on André, Pareliussen and Hwang (2019[10]).

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Reasons for falling performance are complex, but likely linked to 1990s reforms

Swedish schools entered the 1990s from a position of strength, as one of the top performers in early international comparative school surveys. A suite of sweeping school reforms in the early 1990s promoting decentralisation, management by objectives, school choice and competition likely weakened school performance over time, even though results may have

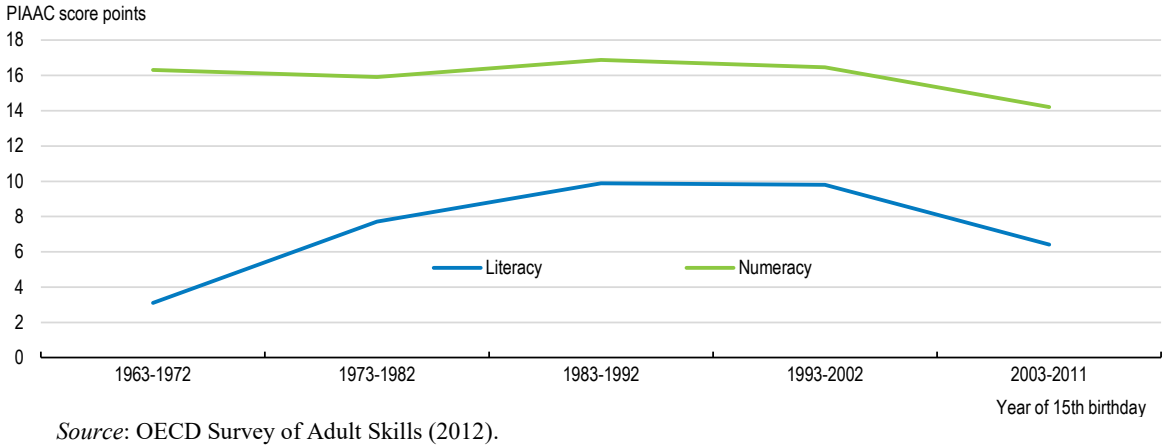
peaked before the reforms (Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]; Holmlund et al., 2014[25]). Weakened results likely reflects concrete issues of design and implementation, rather than the general direction of reform, as several successful school systems in the OECD are decentralised and contains elements of choice, management by objectives and private provision (OECD, 2017[26]).

Quantitative evidence of the impact of the reforms on school performance is lacking because of data limitations and the nature of the reforms. The reforms were implemented at the same time over the whole country, so there is no control group. Furthermore, school reforms will affect results only gradually. Teaching staff remain in their positions, and changes to formal organisation will therefore not turn into changed practices overnight. New teacher qualification requirements will only slowly affect the stock of teachers. In addition, the results of pupils close to graduation depend mostly on the old system. Measuring outcomes is also difficult. Grades cannot be used as an objective benchmark. The grading system has changed over time, and grade inflation as well as differences in grading standards across schools are well-documented, but difficult to correct for (Vlachos, 2018[27]). More robust skills measures from international surveys are only available from 1995. Adding to the challenge, reforms have been implemented in a changing society, such as the digital revolution profoundly changing reading habits, also affecting school outcomes in ways not fully understood. Against this complex background, it is clear that quantitative research, although informative (Box 1.2), can only give partial answers, and needs to be understood in a wider, qualitative context.

The timing of falling results points to a role for the 1990s reforms. According to Gustafsson, Sörlin and Vlachos (2016[2]), reading skills of compulsory school graduates peaked in the early- to mid- 1990s, while mathematics skills started falling in the early 2000s. Since education reforms will only affect results with a lag, this timing points to the 1990s reforms as a likely main culprit (Figure 1.10). Holmlund et al. (2014[25]) argue that the decline started earlier, but accelerated after the reforms. Furthermore, key institutional weaknesses are directly linked to these reforms, which are an important point of departure to analyse the current systemic weaknesses of the Swedish school system (OECD, 2015[15]; OECD, 2015[9]).

Figure 1.10. Adult skills are highest among cohorts graduating from compulsory school around the time of the 1990s reforms

Difference to PIAAC average by 10-year age cohort



Source: OECD Survey of Adult Skills (2012).

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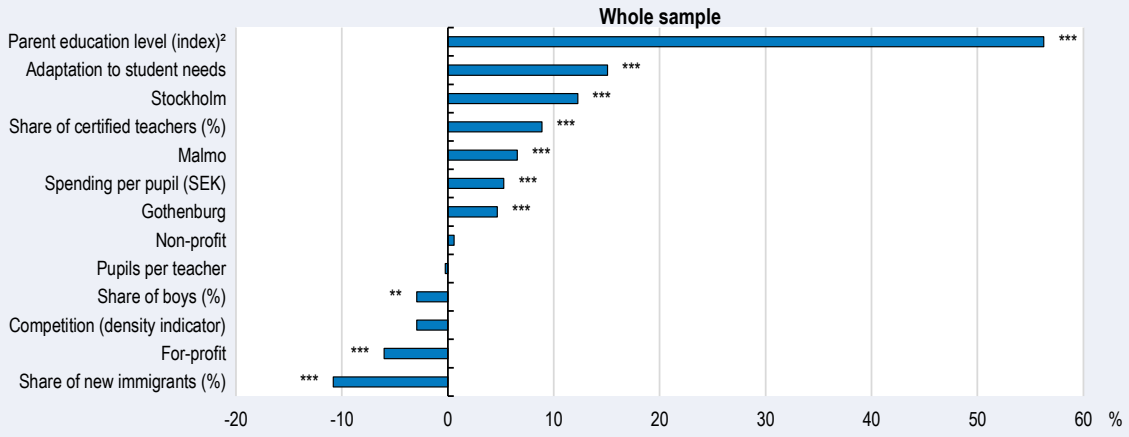
Box 1.2. Drivers of school performance in a panel regression set-up

André, Pareliussen and Hwang (2019[10]) use a panel dataset of Swedish lower secondary schools with data covering the years 2013-17 to identify the main drivers of school performance, measured by school-average scores in national math tests in the 9th grade, which is the final year of compulsory school. The model estimates a production function of educational outcomes using various panel regression methods, with fixed and random effects, as well as panel stochastic frontier analysis, which sheds light on the level and distribution of school inefficiencies.

Socio-economic backgrounds, notably parent education, is the factor most closely associated with results, but school inputs, such as organisational quality, measured through a survey variable of the adaptation to pupil needs, also matter, as do the share of qualified teachers and the type of school provider. The intensity of local competition has a negative coefficient, insignificant for the full sample but significant for schools in the lower part of the socio-economic distribution (Figure 1.11).

Figure 1.11. Drivers of school performance in Sweden

Change in mathematics test score associated with a one standard deviation change in the independent variables



Note: Regression results from the main specification in André, Pareliussen and Hwang (2019[10]), expressed in percentage of the standard deviation in the natural logarithm of test scores. *, ** and *** denotes significance at the 90%, 95% and 99% level, respectively.
Source: André, Pareliussen and Hwang (2019[10]).

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These results should be interpreted with caution, as they represent correlations around the average of each variable. For example, for-profit schools have weaker performance than municipal schools on average, given the same inputs and pupil mix, but there are also highly performing for-profit schools, and inputs differ between the different school types. Endogeneity is also an issue, notably for spending per pupil and the share of certified teachers.

Decentralisation and competition reforms rested on shaky foundations

The original decentralisation reform of 1991 left municipalities with the full responsibility for schools and adult education, organisational development and control, and teacher training and competence development. It was followed by the abolition of earmarked grants in 1993, leaving municipalities with the discretion to prioritise between schools and other municipal tasks (OECD, 2015[15]).

Two school choice reforms were implemented in 1992, allowing public grants to private independent schools and giving pupils the possibility to choose between private and public schools. Rules for teacher qualification assessments were abolished in 1993, and a new curriculum with relatively broad learning objectives and a new grading system were both implemented in 1994 (OECD, 2015[15]). Existing governance structures, including the National Education Board and Regional Education Boards were abolished and replaced by the National Agency for Education, which had a narrower mandate to evaluate school performance, notably based on subject grades, and with unclear means to address shortcomings (OECD, 1992[28]).

The reforms reflected beliefs in the potential for competition and local rule to boost innovation and diversity and thus improve quality and make schools more cost-effective. Competition and local discretion were thought to enable and nudge schools and teachers to adapt to the individual needs of pupils. Furthermore, it was thought that schools would be better adapted to their local context when school staff were given increased discretion and that communication with and the influence of parents and other local stakeholders would improve with school choice, competition and locally anchored decisions. The reforms were also affected by the needs to reduce public spending in the aftermath of the early 1990s financial crisis (OECD, 2015[9]).

In hindsight, the case for fundamental reform was weak, and some of the main challenges of the ambitious reform programme were ignored, despite being raised by stakeholders at the time. The 1992 OECD education review of Sweden pointed out that the reforms would weaken management structures and introduce unclear objectives, an obvious weakness in a system of management by objectives. The review further pointed out that even though Swedish school performance was portrayed as being in decline in the public debate, there was no clear evidence of weaknesses in the existing system and no concrete analyses indicating how the reforms would help (OECD, 2015[15]; OECD, 1992[28]).

Well-performing school systems in many countries contain elements similar to Sweden's, and the general direction of the 1990s reforms was not bound to lead to falling learning outcomes. For example, Finland, a high performer in international rankings, has a highly decentralised system, but a strong teacher profession maintains high education quality, and the government promotes educational equity with a central grant covering around half of compulsory school funding (OECD, 2015[15]). Denmark has a decentralised school system, with a substantial and growing share of private schools, but socio-economic conditions of school-age children are taken explicitly into account in municipal funding, and publicly funded private schools are run by the non-profit sector. The Netherlands, another strong performer, also has a decentralised system with school choice and liberal establishment of private providers, but coordinate and provide funding directly from the central level to schools, and only non-profit providers receive public funding (Box 1.3). Charter schools in the United States also have strong similarities to the Swedish system, as explained below.

The Swedish reforms succeeded on some accounts. Pupils and parents saw their influence increase through more dialogue with local representatives, teachers and headmasters.

Swedish pupils continue to perform well along dimensions not measured by PISA, such as civic attitudes and foreign languages. However, the sum of reforms fundamentally broke with long-established, well-functioning organisational structures and philosophies of schooling, replaced the curriculum and reformed teacher education and qualifications without making sure that the new system was capable of delivering good results, or even that it was internally consistent (OECD, 2015[15]; OECD, 1992[28]).

Decentralisation and the transition to a hands-off approach to management were abrupt and went further than originally planned. Both the centrally articulated objectives and the new curriculum were too vague, with too much emphasis on pupils' responsibility for their own learning. The different stakeholders lacked a clear understanding of their tasks and responsibilities following the implementation of the reform, and teachers, who were against the reform from the beginning, showed little enthusiasm for implementation. The division of responsibilities is still not clear between the state, municipalities, headmasters and teachers, and resources and responsibilities are often poorly aligned (OECD, 2015[15]; OECD, 2015[9]).

Fundamentally, the old system where schools were all organised within the public service and presumably had maximising the public good in line with the Education Act as their main goal put lower demands on governance and control than the new system. A liberal establishment regime, competition for pupils and allowing for private profits introduces a new set of incentives that requires stronger governance and control. Instead, governance structures were weakened, notably by closing the regional education boards (Gustafsson, Sörlin and Vlachos, 2016[2]).

Many activities benefit from a broader perspective than the municipal one. Without central steering and funding, some important aspects of policy inputs, such as teacher wages, compensatory funding of socio-economic needs and continuous learning activities for teachers drifted in the wrong direction. Indeed, many municipalities still lack the organisational capacity to run schools effectively (OECD, 2015[15]). Also, the voucher system stymies cooperation between schools who see themselves as competitors for the same funding (Dahlstedt and Fejes, 2018[29]).

Decentralisation coincided with the 1990s economic crisis. Savings triggered by the crisis and the reform were in many cases the wrong ones, and over time they undermined quality. Declining resources led to more pupils per teacher, less teacher training and teacher salaries losing ground. At the same time, core working hours rose. Administrative complexity increased due to the school choice reforms. Teachers' working conditions deteriorated further with extensive documentation and other administrative requirements, as the state and municipalities intensified reporting, documentation and control measures when the falling results became obvious. Headmasters were also left with more administrative tasks and less time for pedagogical leadership. Over time the attractiveness of the teacher profession declined and teacher education lost popularity. Declining teacher skills and an increasing share of teaching staff without adequate qualifications followed (OECD, 2015[15]).

Reforms to take back control helped, but also created new issues

Towards the end of the 2000s it became clear that school results were falling, and the then conservative government responded by tightening control. New policies included more national tests, also for younger age groups, a more detailed curriculum, a new and more detailed Education Act, and a strengthening of the school inspectorate, enabling more frequent and thorough inspections (Persson, 2013[30]).

More detailed rules and a more stringent inspection regime is an inevitable response to weak results in a highly decentralised system based on competition for funding following pupils. This is because the system to an extent encourages behaviour contrary to the public interest, such as lenient grading to attract pupils, or reducing costs at the expense of educational quality, as discussed later in this chapter (Gustafsson, Sörlin and Vlachos, 2016[2]; Böhlmark, Holmlund and Lindahl, 2016[21]). However, such a system encourages a culture of compliance with minimum legal requirements in cases where providers' interests conflict with public interests. It increases the administrative burden and may stifle innovation and teacher autonomy at the local level (OECD, 2015[9]).

The centre-left government taking office in 2014 introduced targeted grants to respond to some distinct problems. These grants were notably meant to benefit pupils from weak socio-economic backgrounds, and to raise the attractiveness of the teacher profession. A more active central government role in school funding is warranted, but a system where municipalities provide schools with their core funding while a multitude of goals have their own targeted grants, is fragmented and sub-optimal. In practice, many of these grants have benefitted schools and municipalities with sufficient administrative resources to apply for and obtain them rather than schools and municipalities who need them most (Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]).

Parties across the political spectrum have agreed on the need to strengthen teaching in reading, mathematics and science. The number of teaching hours in mathematics has increased progressively from 2013 onwards, and the reading-writing-mathematics guarantee coming into force in 2019 introduces mandatory evaluations of pupils' reading, writing and mathematics skills from an early age, followed by extra support for those who need it. A number of targeted grants support these efforts (Ministry of Education and Research, 2016[31]).

A reform consensus is taking shape, but some issues remain contentious

The political right's approach of strengthening the control regime, the political left's approach with targeted grants, and the cross-party approach towards strengthening basic skills may all improve results, and have likely contributed to halting the fall in PISA results. However, the approach is fragmented, the numerous measures do not always rest on solid research foundations, and they do not respond to the more fundamental questions about what kind of school Sweden wants for the future and how to durably improve results and equal opportunities while maintaining current strengths.

A broad national debate about the past and future of Sweden's schools, supported by previous OECD work (OECD, 2015[9]; OECD, 2015[15]), culminated with the School Commission, a public enquiry appointed by the government in 2015. Members of the Commission came from academia, the National Agency for Education, municipalities, pupils' organisations, teachers' and principals' unions, a private school provider and the Confederation of Swedish Enterprise. They interacted with a parliamentary reference group. The Commission delivered its final report in 2017, with thorough analyses and agreement between commission members on a number of important issues (Box 1.3).

Box 1.3. Recommendations of the Swedish School Commission

The Swedish School Commission delivered its final report in 2017, with the following key recommendations:

- Strengthen and consolidate central government funding into a block grant of approximately 6% of compulsory school funding, designed to compensate for differences in socio-economic backgrounds.
- Strengthen the regional organisation of the school agencies to support systematic quality improvement, cooperation and competence development for teachers and principals at the local level, as well as coordinating planning and dimensioning of upper secondary schools.
- Introduce a national system with a strong research foundation to provide timely support to pupils with special needs.
- Increase the potential pool of new teachers by offering alternative pathways to teaching. Improve teacher education quality by more cooperation between universities and school providers and a strengthened research base. Ensure systematic and research-based development of teachers' competences and skills, strongly linking research and practice and peer-to-peer learning with support from the strengthened regional organisation.
- Introduce a programme for teachers' and principals' professional and career development, with tracks and qualification levels linked to competence development.
- Cut red tape. The central level and school providers should shield teachers and principals from unnecessary administrative tasks, so that they can focus on the core tasks of teaching and organisation and school leadership.
- Reduce noise in the classroom, improve safety and pupil health by clarifying in the curriculum pupils' own responsibility, and through systematic research on effective methods to this end.
- Reduce school segregation by means of better information about school quality, requiring all parents to actively choose schools and lottery as the required intake method for over-subscribed schools. Legally oblige school providers to work towards socially mixed pupil groups.

Source: *Samling för skolan - Nationell strategi för kunskap och likvärdighet* (Together for schools - National strategy for knowledge and equity) (School Commission, 2017[3]).

The representation of a broad spectrum of interests in the Commission is a strength, and such commissions play a useful role in creating consensus across political blocs and between social partners and other stakeholders, a hallmark of political decision-making in Sweden and other Nordic countries. Indeed, the Commission agreed on the problem description and the broad thrust of reform proposals. A few of the least controversial Commission proposals are being implemented, and the report constitutes a solid foundation and clear direction for broad political agreement to repair problematic aspects of the system.

However, some of the Commission proposals are politically charged, and were not unanimously supported by commission members. Notably, individual members dissented on the proposals to assign places at over-subscribed schools by lottery and to introduce a minimum funding requirement based on socio-economic backgrounds at the school level (School Commission, 2017[3]).

The recommendations in this chapter are broadly in line with the School Commission reform proposals. However, the school system is complex, and policies to foster well-functioning schools are context specific and only partially understood. The risk of unintended consequences calls for a cautious approach. Reforms should be implemented in ways allowing for quantitative research on their effects, for example with pilots and differentiating the timing of roll-out across the country. Such testing, experimentation and evaluations should be undertaken systematically and used to adjust policy as needed.

A coherent reform programme should address governance, choice and teachers

The recommendations in this chapter rest on three pillars, forming a coherent reform strategy. The first pillar describes how to adjust the institutional set-up, with a strengthened role for the central government by means of a national minimum norm for compensatory school funding or, alternatively, direct compensatory state funding to schools. Furthermore, a regional structure should be developed to foster cooperation, school- and teacher-development, coupled with and enabling accountability throughout the school organisation.

As a second pillar, school choice and competition should be reformed to align with the public good by reducing information asymmetries, increasing the fairness of the grading system, and reforming school choice to reduce segregation. The establishment and expansion of publicly funded private schools need more coordination to safeguard children's equal opportunities.

The third pillar is about making the teaching profession more attractive in order to recruit and retain teachers to face current and future shortages. Better teacher education with a stronger research base and more teaching practice, clearer career paths and more cooperation, feedback and support between colleagues would help. These measures would also improve teacher quality, which has an important effect on learning.

Rebuilding institutions for central coordination

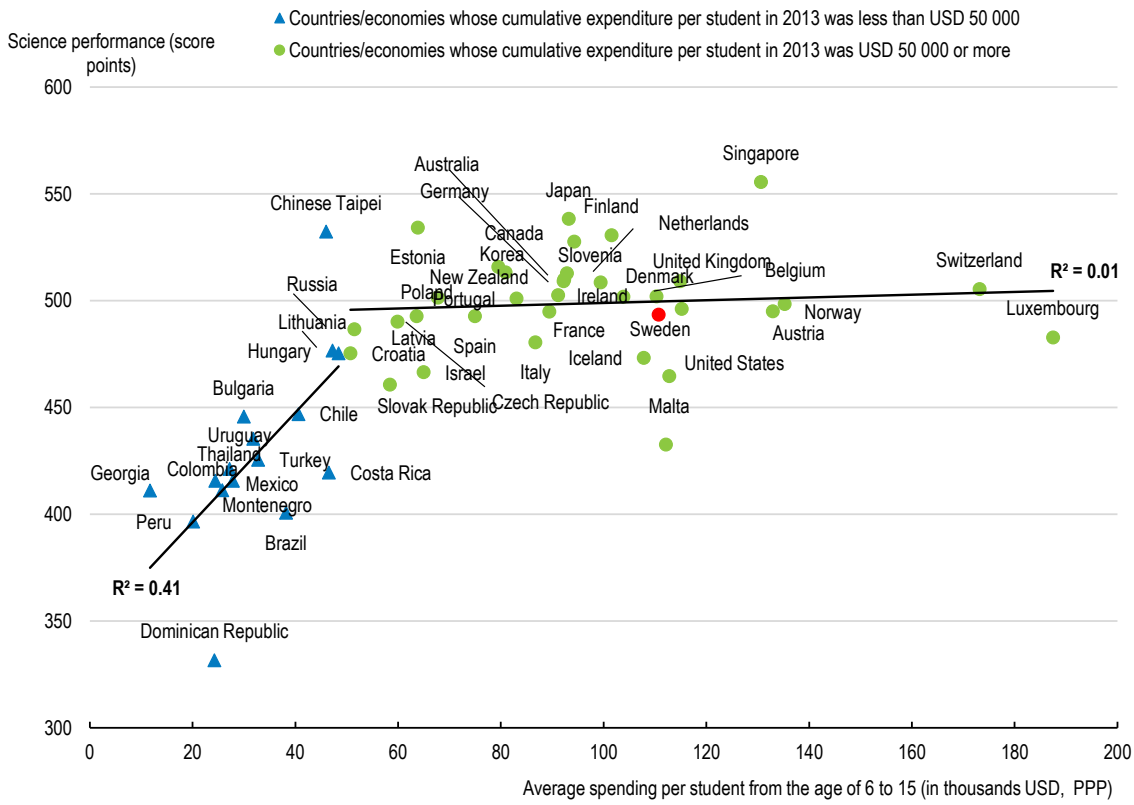
Decentralisation in the 1990s went far, as the government gave away control over school funding and abolished regional structures for coordination and quality development. To strengthen the institutional set-up of the school system the central government needs to rebuild these policy levers to take back some of the control they gave away in the 1990s.

Steer school funding to champion equal opportunities

PISA results show that above a threshold of about 50 000 purchasing power parity-adjusted US dollars per pupil in primary and lower secondary school, there is no clear relationship between spending and results (OECD, 2016[32]). Sweden spends somewhat more than the OECD average per pupil. High-achieving countries include those with relatively low expenditures, such as Estonia, and those with relatively high expenditure, such as Singapore. Other high achievers, such as Japan, Canada and Finland all spend less per pupil than Sweden (Figure 1.12). School performance at Sweden's spending level thus depends more on the effective use of existing resources and the qualitative differences between education systems.

Figure 1.12. Higher spending on education does not necessarily improve results

Total spending per pupil between the ages of 6 and 15 and PISA science performance

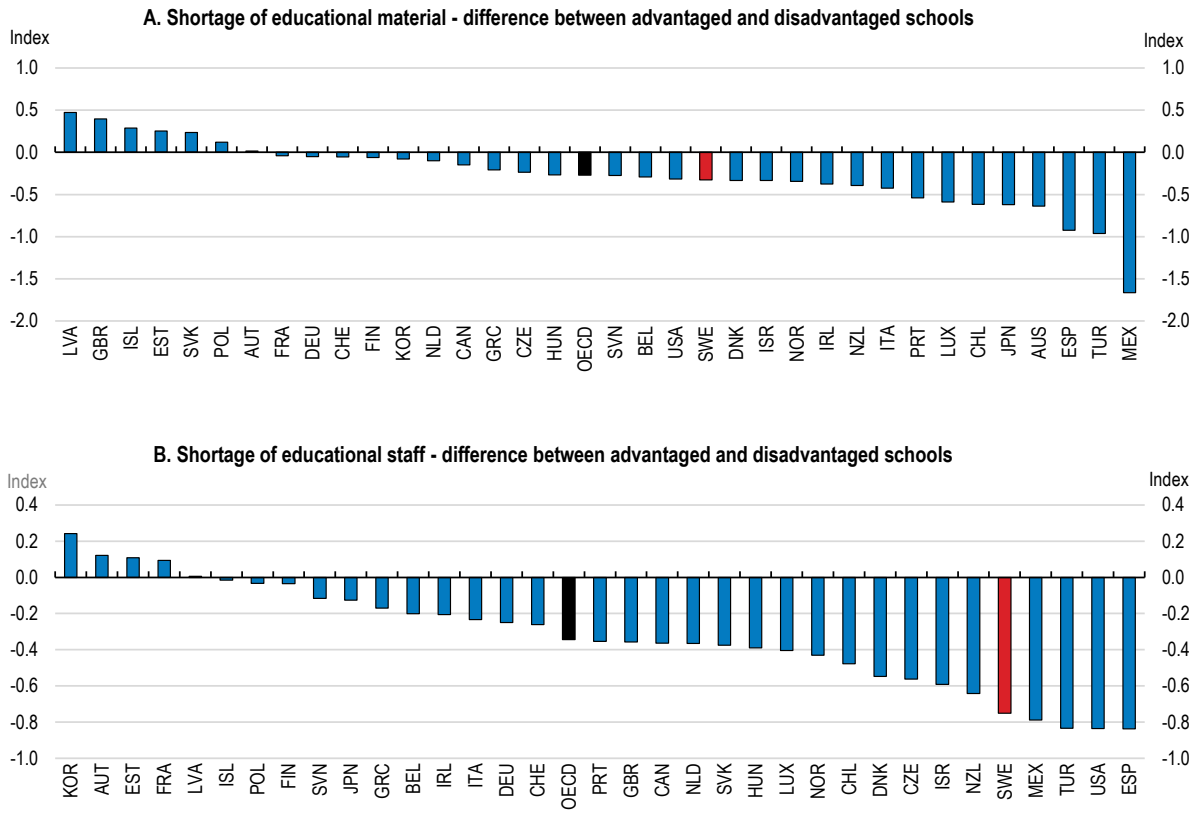


Note: Only countries and economies with available data are shown. A significant relationship ($p < 0.10$) is shown by the line.
Source: OECD, PISA 2015 Database, Tables I.2.3 and II.6.58.

StatLink https://doi.org/10.1787/888933944405

Spending levels per pupil and the distribution of resources within the municipality vary considerably because of the decentralised funding model. Furthermore, the socio-economic profile of a school is associated with the school principal's concern about the lack or inadequacy of educational material and staff. The gap in shortages between advantaged and disadvantaged schools is higher in Sweden than the OECD average (Figure 1.13). Shifting a larger share of existing school funding to schools with a less favourable mix of pupils would likely improve results in these schools. Such a shift could raise the national average since the performance of these schools is more sensitive to funding levels and teacher quality than schools with a more favourable mix of pupils (André, Pareliussen and Hwang, 2019[10]). Better pay does play a role to attract and retain high-quality teachers in schools with higher needs (Glazerman et al., 2013[33]), but should also be accompanied by other measures to improve working conditions in such schools (Hanushek, Kain and Rivkin, 2004[34]). Across countries, almost all school systems where socio-economically disadvantaged schools report considerably more concern about the material resources at their school than advantaged schools score below the OECD average in science (OECD, 2016[32]).

Figure 1.13. Schools with weak socio-economic backgrounds lack materials and teachers



Note: Negative values indicate higher shortages in schools with low socio-economic status. As reported by school principals.
Source: OECD, PISA 2015 Database, Tables II.6.2 and II.6.15.

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Increased income inequality and immigration have raised the need for compensatory funding, but the share of total funding targeted to compensate for socio-economic disadvantage stayed relatively constant throughout the 1990s and 2000s. Teachers tend to move away from schools with a less favourable mix of pupils as they gain enough experience to compete for positions in schools with a more favourable mix, where work is easier and pay is higher on average. Furthermore, only 74% of Swedish teachers surveyed in TALIS in 2013 reported that their school provides extra assistance to pupils in need, the second lowest share in the OECD after Mexico (OECD, 2015[15]; OECD, 2014[35]; Holmlund et al., 2014[25]).

The central government should take control of a considerable part of school financing in order to improve access to material resources and high-quality teachers (including special needs teachers), in schools that need it most. More compensatory financing would facilitate high-status, attractive and well-paying career pathways linked to schools and classes with a challenging mix of pupils.

The Government is currently phasing in a grant to increase compensatory funding following the School Commission proposal. When fully phased in, the block grant will according to the Commission's proposal reach about SEK 6 billion, which constitutes about 6% of compulsory school funding. To ensure the desired compensatory effect,

municipalities and private school providers need to apply for this grant and commit not to reduce their own funding for teaching and pupil health. The grant is calculated on the basis of a socio-economic index value developed by Statistics Sweden, and this index will also guide municipalities in how to distribute resources to their school units (School Commission, 2017[3]).

From a political economy perspective, the School Commission proposal has the advantage of reforming compensatory funding without any real changes to the current funding model. The grant is based on voluntary applications, as was already the case for other targeted grants, and does therefore not encroach on the remit of municipalities and private school providers. However, both municipal and private providers have incentives to reduce the funding they provide to their own schools upon receiving such a grant, and effectively verifying that they do not will likely be challenging and bureaucracy-heavy. Alternative or supplementary solutions giving the central government direct oversight over compensatory funding should be considered.

A non-binding minimum funding norm at the school level, based on a socio-economic index could reinforce the effects of the block grant, or perhaps remove the need for a block grant altogether. Municipalities should be compensated for additional cost pressures from funding schools according to the norm through the general system for income-and-cost equalisation between municipalities. Taking the socio-economic mix in compulsory school into account in the income equalisation system should be feasible, as socio-economic conditions are already taken into account for the cost equalisation of other services, such as pre-school services and elderly care (SKL and MoF, 2008[36]). The recent Cost Equalisation Commission agreed to such a solution in principle, but chose not to recommend it, because the Riksdag (Parliament) had already passed the implementation of the compensatory grant proposed by the School Commission, and double instruments might imply double compensation to municipalities for the socio-economic mix in schools (Cost Equalisation Commission, 2018[37]). Denmark takes the socio-economic conditions of school age children explicitly into account in municipal income equalisation, which has led municipalities with a relatively disadvantaged socio-economic population to spend more resources on education than average (OECD, 2016[38]).

Alternatively, the central government could take back responsibility for a substantial part of school funding, to be distributed directly to schools based on a socio-economic index like the one already in use for the block grant. Municipalities would still be free to top up school funding, leaving them with the discretion to prioritise schools against other tasks and to prioritise between schools.

A strengthened regional structure for governance and cooperation

Decentralisation gave municipalities the full responsibility for running well-performing and equitable schools, which included catering to special needs and developing their teachers' knowledge, skills and careers. In hindsight, it was not reasonable to assume that every municipality had the necessary administrative capacity, expertise and management and control systems. These tasks were previously coordinated by county education boards (*Länsskolnämnd*), the local arm of the central government school structure, up until decentralisation in 1991, when the education boards were discontinued. These boards also systematically worked towards raising educational quality, provided further training for teachers and ensured local and regional cooperation (Gustafsson, Sörlin and Vlachos, 2016[2]).

The decommissioning of the education boards left a void. The need for a central institution with a strong regional presence and with the incentives, competences and authority to systematically work to develop and uphold high quality and equity in Sweden's schools has been emphasised by the OECD (2015[9]), Gustafsson, Sörlin and Vlachos, (2016[2]) and the School Commission (2017[3]).

The School Inspectorate and the National Agency of Education are natural potential starting points for building up such an organisation. The Inspectorate is a central government agency with five regional offices and extensive experience with school inspections. OECD (2015[9]) proposed to strengthen and expand the role of the Inspectorate to pivot away from inspections focussed on legal compliance, towards more critical identification of strengths and weaknesses, follow-up, promotion of networking and robust self-evaluations at school, municipal and private school provider level. This would considerably broaden the role of the Inspectorate and would require additional resources. The Education Agency already has the national responsibility for many of the tasks that would become such a regional arm of central government, but does not have a regional presence today. Building up such an organisation would require close cooperation between the two agencies, and with stakeholders, such as teacher and principal unions and the Swedish Association of Local Authorities and Regions.

Municipalities currently offer training opportunities to a varying degree and with varying quality. A strengthened regional structure is key to a more systematic and uniform approach to the continuous development of teachers' skills and competencies, as discussed later in this chapter (School Commission, 2017[3]).

Decommissioning the education boards removed an important arena for cooperation between schools and school providers. Shifting the main system of school governance from central steering to municipal steering and competition also eroded local incentives for schools to cooperate. A central role of a strengthened regional structure should be to encourage school-to-school and teacher-to-teacher collaboration, which can be an important element in educational improvement (OECD, 2015[9]; Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]).

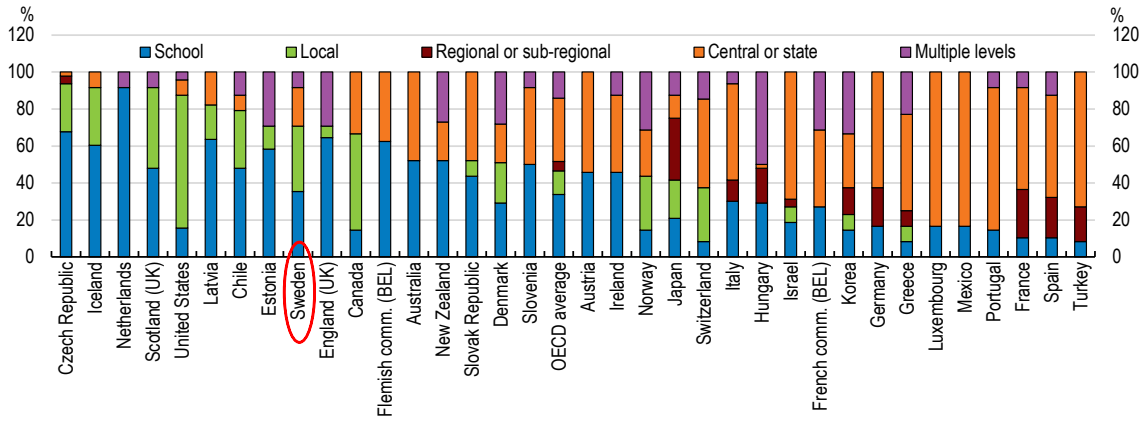
Labour markets are regional, and fostering a closer match between the supply of skills and what is demanded by working life calls for national and regional coordination. A strengthened regional school structure could play a central role in a reorganisation of upper secondary school. A public inquiry has been appointed to investigate this issue. Upper secondary school is, like compulsory school, organised by municipalities and private providers. Even though there is already extensive voluntary cooperation between municipalities, this model is inefficient. It creates problems with funding, since the municipality of residence is as a rule obliged to pay the municipality or private provider where their resident pupils are enrolled an amount calculated on the basis of actual costs or the cost of organising the same programme in public schools in the municipality of residence. With 18 different national programmes and various specialisations within programmes, these rules leave considerable room for interpretation, and litigation over funding is commonplace. Students entering upper secondary school take a more active part in the school choice decision than pupils in compulsory school, and there are signs of over-establishment of some programmes in demand by students but not by employers. This calls for better coordination at the national and regional level, including more active steering of the establishment of private schools (Gustafsson, Sörlin and Vlachos, 2016[2]; School Commission, 2017[3]).

Clear lines of responsibility and accountability to foster efficient organisation and implementation

The quality of organisation is strongly correlated with school results in Sweden (André, Pareliussen and Hwang, 2019[10]). However, organisational quality varies substantially, since more than two thirds of decisions are taken at school and municipal level (Figure 1.14), and lines of responsibility are unclear. National steering is based on broad direction from the government through notably the Education Act and the National Curriculum, supported by the National Agency for Education and the School Inspectorate. Municipalities, private school providers, principals and teachers interpret and elaborate these centrally defined objectives (OECD, 2015[15]; OECD, 2015[9]).

Figure 1.14. Most decisions are taken at school or municipal level

Percentage of types of decisions about public lower secondary education taken by each level of government (2017)



Source: Education at a Glance 2018: OECD indicators, Table D6.1.

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For management by objectives to deliver, national goals must be established that are broad enough to allow for local interpretation and adaptation but also specific enough to maintain common overall direction. However, key requirements of the Swedish Education Act and the National Curriculum are often seen as aspirational goals at the local level (OECD, 2015[9]; OECD, 2015[15]).

Teachers and principals presumably want to help their pupils succeed in school, and they are indeed responsible for the results of their pupils according to the Education Act and the National Curriculum. However, the national agenda can become diluted if those responsible for delivery perceive the scale of demands to be unrealistic, or if they are not given the means to succeed. Teachers receive directives from different levels of government, some of them conflicting. In this situation, where teachers and/or principals are not given the means, autonomy and authority to perform in accordance with the set objectives, they may not assume responsibility for the results. Resources aligned with needs and a strengthened regional school structure along with less red tape and better support from colleagues and superiors are important enabling factors (OECD, 2015[9]).

Furthermore, teachers, principals, municipalities and private providers should be held accountable. The example of Essunga municipality illustrates how results can be improved by establishing clear lines of responsibility, among other measures (Box 1.4).

Box 1.4. Essunga municipality: school failure was turned into success in three years

Nossebro skola, the only school for grades 6 to 9 in Essunga, a municipality of approximately 5 600 inhabitants in the south-west of Sweden, ended up almost at the bottom when the Swedish Association of Local Authorities and Regions published their first ranking of school results in 2007. By 2010, however, the ninth graders of the municipality had climbed to third place in the same ranking. This success was largely the result of several steps taken to overhaul the way schools were run in the municipality, although some exceptional circumstances also played a role.

Accountability

The shock from the low ranking prompted all the actors in the school system to take responsibility, from politicians to teachers and pupils. The municipal education board instructed the head of administration to improve effectiveness and goal fulfilment. The municipality spent slightly below the national average per pupil, and no extra funding was assigned to turn schools around. One of the headmasters in the municipality was given a clearly defined operational responsibility to turn the municipal schools around as "Primary School Head". He had a strong mandate, and used this to place supportive staff in key positions in the initial phase of the turnaround. He implemented the task together with one of the municipality's special education teachers under the motto "Pupil success – the school's responsibility".

Inclusion

Teachers had routinely put pupils judged to have special needs in separate special needs classes, from which they almost never re-entered normal classes. Now they were assigned a clear responsibility for the success of every pupil, and given the means to deliver. Special needs teachers, now freed from teaching the dissolved special needs classes, instead doubled up with subject teachers during lessons in the core subjects. Extra help was offered to all pupils on a voluntary basis through vacation classes and assisted homework sessions twice a week.

Peer collaboration and learning

Relevant research literature was reviewed and summarised by the Primary School Head and the special education teacher before it was presented and discussed in mandatory staff seminars. The new way of working, with doubling-up of staff in the core subject classes, forced peer-to-peer collaboration between subject teachers and special needs teachers. These two aspects seeded a culture of discussion, cooperation and peer-to-peer learning in general, leading to the use of a greater variety of teaching methods, suitable for pupils with different needs.

Changes in the classroom

Pupils were also made responsible. A clearly stated ambition that they succeed in school was coupled with an equally clear expectation that pupils do their part to succeed. This ambition was concretised by clear structures and expectations in the classroom, for example with a starter activity written on the whiteboard from the start of the lesson.

Source: Persson (2013[30]).

Clearer responsibility for key outcomes and peer pressure within the profession can in turn reduce the need for detailed regulations and inspections, and thus enable administrative simplification for principals and teachers.

Steering competition and choice

Drawing the benefits from choice and competition, while limiting negative side-effects calls for addressing information asymmetries, and taking the socio-economic mix into account in compulsory school entry and when investing in new schools. Without sufficient steering, a school system based on competition for pupils will only deliver in line with the public good if private interests match the public interest and perfect information is available to parents and pupils. These assumptions are not met in Sweden and can in principle never be fully met. Educational quality cannot be accurately measured, and pupils and their parents will also value other aspects of a school, such as a homogeneous group of pupils, lenient grading easing entry to further education, good pupil-teacher relations, particular school profiles or modern buildings and equipment (Gustafsson, Sörlin and Vlachos, 2016[2]; OECD, 2015[15]).

School segregation reflects wider societal trends, notably rising income inequality and immigration, which underpin residential segregation. However, school choice and private provision, as implemented in Sweden today, increases school segregation. Segregation risks reducing equality of opportunity and risks lowering the overall performance of Swedish schools due to peer effects, as pupils with weak socio-economic backgrounds may lose more from school segregation than pupils with strong backgrounds gain (Holmlund et al., 2014[25]; Gustafsson, Sörlin and Vlachos, 2016[2]; Sund, 2009[20]). The OECD has identified facilitating the access of immigrants to school choice as a priority area for closing the gap between immigrant and native pupils in Sweden, along with building teaching capacity, providing language training and strengthening the management of diversity (Cerna et al., 2019[39]).

School providers receiving public financing in the Swedish system, be they private or public, are not allowed to charge tuition fees. The profits of for-profit school providers will hence depend on their ability to contain costs. Costs can be contained by providing quality education more efficiently than public schools, for example with more efficient teaching- and management practices and shorter, more responsive chains of command. However, costs can also be contained in ways that reduce education quality, for example by hiring fewer and less qualified staff, as long as the school stays attractive to pupils. Empirical results indicate that both these mechanisms apply (André, Pareliussen and Hwang, 2019[10]). Incentives to cut costs at the expense of quality force the authorities to define a detailed set of rules and implement a strict enforcement regime. The logic of the system becomes one of compliance with minimum requirements, rather than systematic work for continuous improvement (Gustafsson, Sörlin and Vlachos, 2016[2]; OECD, 2015[15]).

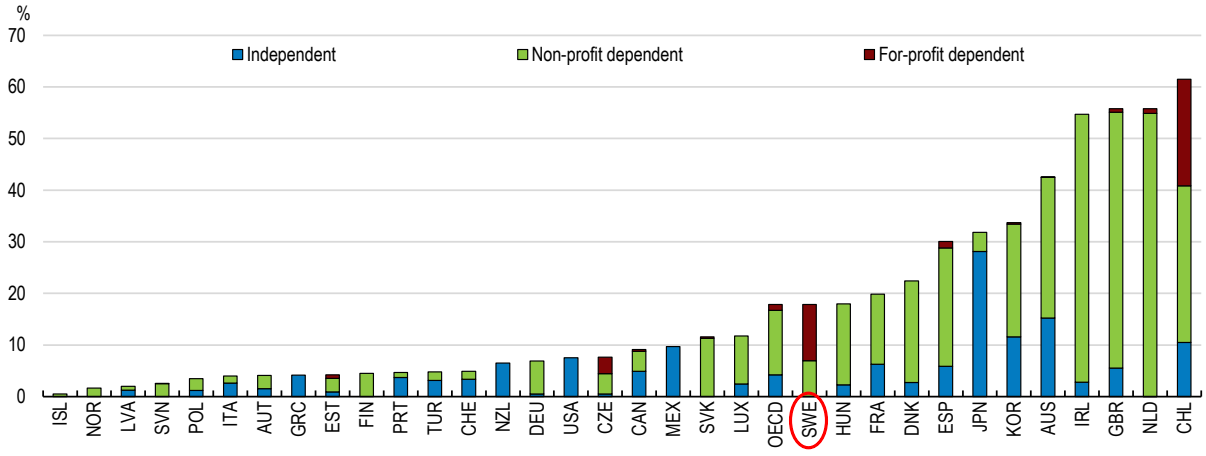
The Swedish system is unique in the OECD context. Many countries have a large share of private schools dependent on public funding, but only Sweden and Chile had large publicly funded for-profit sectors in 2015 (Figure 1.15). Chile ended public funding of for-profit schools on equity grounds with the 2015 Inclusion and Equity Law (OECD, 2018[40]), leaving Sweden as the only OECD country with a substantial for-profit school sector funded by the public purse. The private school sector is growing strongly in Sweden (Figure 1.16), and growth is almost exclusively in the for-profit segment (Werne, 2018[41]). Charter schools at the sub-national level of the United States also bear strong resemblances to the Swedish system. 41 states and the District of Columbia permit charter schools to

operate. Charter laws vary across states, but defining characteristics common to the Swedish system are that that they cannot charge tuition fees, and they are not permitted to impose admission requirements. If over-subscribed, they must select pupils by lottery. Even though charter schools do not outperform public schools on average when controlling for pupil backgrounds, many charter schools, and charter school districts (such as New York City) appear to outperform traditional public schools according to various measures, and individual schools and the sector as a whole seem to improve over time (Epple, Romano and Zimmer, 2016[42]). Several states have school voucher programmes or tax credits to offset the cost of attending private schools. These programmes often raise the results of their direct beneficiaries, notably when targeted towards groups of low socio-economic status (Anderson and Wolf, 2017[43]). However, it is not clear whether the improvements reflect higher school productivity or peer effects, and the system-wide effects of these voucher programmes remain uncertain (Urquiola, 2016[44]).

Most other OECD countries limit dividends and/or limit entry of for-profit school providers. For example, the Czech school system opened up for private provision in the early 1990s as in Sweden, and a high share of private schools in the Czech Republic depend on public funding as a result. However, entry criteria for schools receiving public funding were tightened in a 1995 law, they are not allowed to be run for profit, and public funding does not cover investment expenditure (OECD, 2016[45]). Denmark has a relatively large private school sector, funded with a voucher system resembling the Swedish one. However, publicly funded Danish private schools are non-profit, they receive only slightly above 70% of the average cost per pupil in public schools, and they are allowed to charge tuition fees (OECD, 2016[38]). The Netherlands is another example with strong similarities to Sweden. Entry of private providers is liberal, and private schools are funded equivalently to public schools, but in contrast to Sweden, only non-profit providers receive public funding (Box 1.5).

Figure 1.15. The scale of publicly funded for-profit schools is unique in Sweden

Share of 15-year olds attending private schools (2015)



Note: Dependent schools receive at least 50% of their funding from public sources. Chile's Inclusion and Equity Law, passed in 2015, ended public funding of for-profit schools.
Source: OECD (2016[32]).

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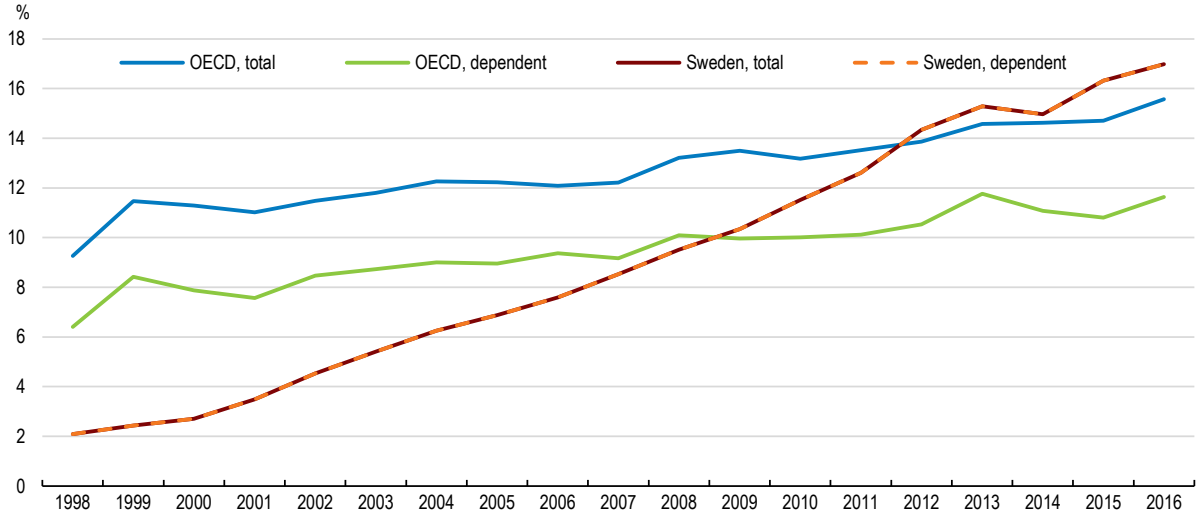
Figure 1.16. A rising share of pupils attend publicly-funded private schools

Share of lower secondary pupils attending a private school



Note: Dependent schools receive at least 50% of their funding from public sources. The Netherlands is excluded from the OECD total, as the Dutch private (non-profit) school sector is classified as part of the public sector from 2005 in the source data.
Source: (OECD, 2018[46]).

StatLink http://dx.doi.org/10.1787/888933944481

The Swedish system should not reform just because it is different. Private competition in the provision of certain public services can be a useful tool to address cost pressures and improve quality, when accompanied with the right steering and regulations. Some aspects of the current system seem to work well. For example, the most profitable for-profit schools also show the best results across a range of outcomes when compared to other for-profit schools (Heller Sahlgren and Jordahl, 2018[47]), and private schools seem to be more responsive to pupil needs than public ones on average (André, Pareliussen and Hwang, 2019[10]).

However, the systemic effects of competition are more unclear. PISA shows no relationship between competition and results in cross-country comparisons (OECD, 2016[4]). Competition and choice as implemented in Sweden increases school segregation (Skolverket, 2018[6]; Böhlmark, Holmlund and Lindahl, 2016[21]; Yang Hansen and Gustafsson, 2016[22]). Furthermore, there is no evidence that it increases average results. Private schools tend to perform well compared to public schools, but mostly because these schools attract pupils with more favourable backgrounds. For-profit schools underperform public schools on average when controlling for socio-economic backgrounds and other relevant variables, even though many of them are high performers. They are notably weaker than public schools in catering for pupils with weaker backgrounds (Figure 1.17) (André, Pareliussen and Hwang, 2019[10]; OECD, 2016[4]; Skolverket, 2018[6]). Competition could still be positive if the mere existence of competitive pressures would raise the average performance of all schools, but empirical studies find such competition effects to be small. Previous studies found small positive effects locally in areas with high competition in Sweden, while OECD work on more recent data finds a small negative effect, significant for the schools with the least favourable socio-economic mix of pupils. These results are consistent with negative peer effects in low-performing schools dominating positive effects

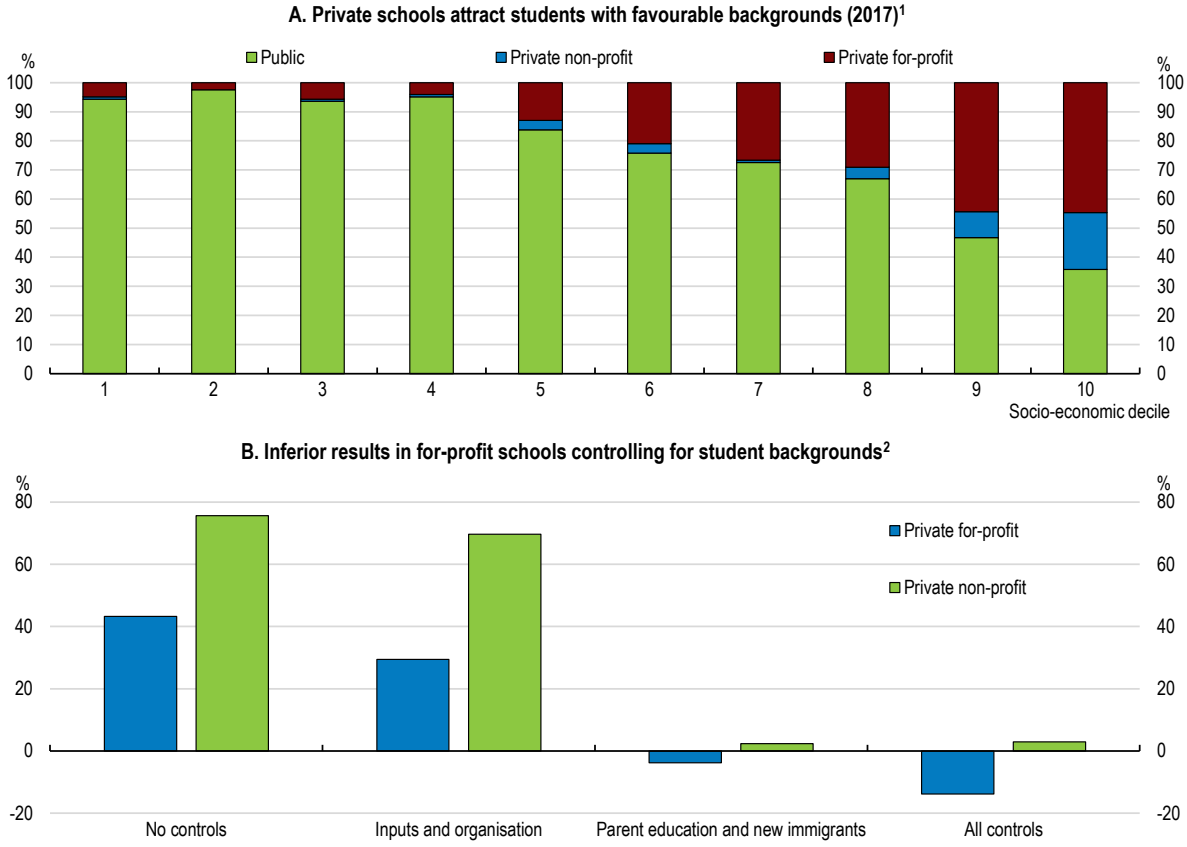
from competition over time as competition increases school segregation (Wondratschek, Edmark and Frölich, 2013[48]; André, Pareliussen and Hwang, 2019[10]).

One important shortcoming in the current system of choice and competition lies in inevitable information asymmetries, as it is not possible to accurately measure the efforts and effectiveness of individual schools. To further complicate issues, value-added from individual pupils' own efforts are part of the school production function, and it is hence not possible to accurately assign responsibility for outcomes.

Turning national tests into an objective benchmark of skills by ensuring the integrity of test material and independent grading is an important first step to reduce information asymmetries. This objective benchmark of performance would be of great value to school agencies, school providers, teachers, researchers, prospective pupils and their parents. Further developing, disseminating and promoting value-added measures of school performance based on this objective benchmark would also help pupils and parents make better choices. Gustafsson, Sörlin and Vlachos (2016[2]) propose to use such an objective benchmark to address differences in grading practices by mechanically adjusting school-level subject grades by school-level test scores.

Ensuring that grades fairly represent a pupil's skills and knowledge is important, as sorting from compulsory to upper secondary school depends exclusively on grades in Sweden. Grades are also the primary sorting mechanism from upper secondary school to tertiary education, even though it is possible to enter university through the Swedish Scholastic Aptitude Test (SweSAT). However, the grading system puts too high a weight on failure. Moving from the fail grade F to the lowest passing grade E is rewarded with 10 points in upper secondary- and tertiary-intake, while each subsequent step is rewarded with only 2.5 points. The cost of failure is accentuated by the entry requirements to upper secondary education, where a fail grade in either of the subjects Swedish, Swedish as a second language, mathematics and English disqualifies entry into the national programmes. Pupils are in this case entitled to enter a second-chance introduction programme. Chances to succeed in an introduction programme (previously "the individual programme") were slim in the past (OECD, 2015[15]), prompting a reform in 2011, after which the programme has not been properly evaluated. The heavy weight on fail grades and their severe consequences in further school entry strongly incentivises schools and pupils to tilt efforts towards avoiding failure. The system also somewhat arbitrarily triggers failure through threshold effects around the fail grade (Gustafsson, Sörlin and Vlachos, 2016[2]). Weighing high and low grades symmetrically and suppressing the requirement to pass in certain subjects to enter upper secondary education would constitute a more balanced approach towards helping pupils achieve their full potential. High grades would still be necessary to enter the most popular programmes and the most popular schools, but pupils would not be excluded from educational choices predominantly based on their performance in their weakest subjects. Specific programmes could still have narrower grade requirements, for example requiring a minimum grade level in specific particularly relevant subjects.

Figure 1.17. Private schools' over-performance reflects pupil selection



1. The figure shows schools sorted into deciles according to their socio-economic mix of pupils. Schools are not weighted by size.
2. Difference to public schools in the logarithm of national mathematics test scores for 9th graders. The columns are coefficients for private for- and non-profit dummies in a random-effects panel regression with data covering 2013-17. "All controls" corresponds to the main specification in André, Pareliussen and Hwang (2019[10]). "Parent education and new immigrants" controls for the education level of parents and the share of pupils who immigrated during the four years preceding the test. "Inputs and organisation" controls for the average municipal expenditure per pupil, the share of certified teachers, the number of pupils per teacher and a survey measure of adaptation of education to pupils' needs.
Source: Authors' calculations based on André, Pareliussen and Hwang (2019[10]).

StatLink http://dx.doi.org/10.1787/888933944177

Box 1.5. Competition and school choice in the Netherlands

The Netherlands has a long tradition of a highly decentralised school system with school choice and a high share of privately run schools. The importance of private schools has increased over the past 150 years, and currently more than two thirds of pupils attend schools run by private school boards. For historical reasons, over half of all schools are either Catholic or Protestant, but there are also schools run by associations or foundations not based on any specific religious beliefs or alternative teaching philosophies. The Dutch school system closely resembles the Swedish one in several ways:

- There is liberal entry of private schools provided they meet the quality standards and conditions imposed by law for the school system as a whole.

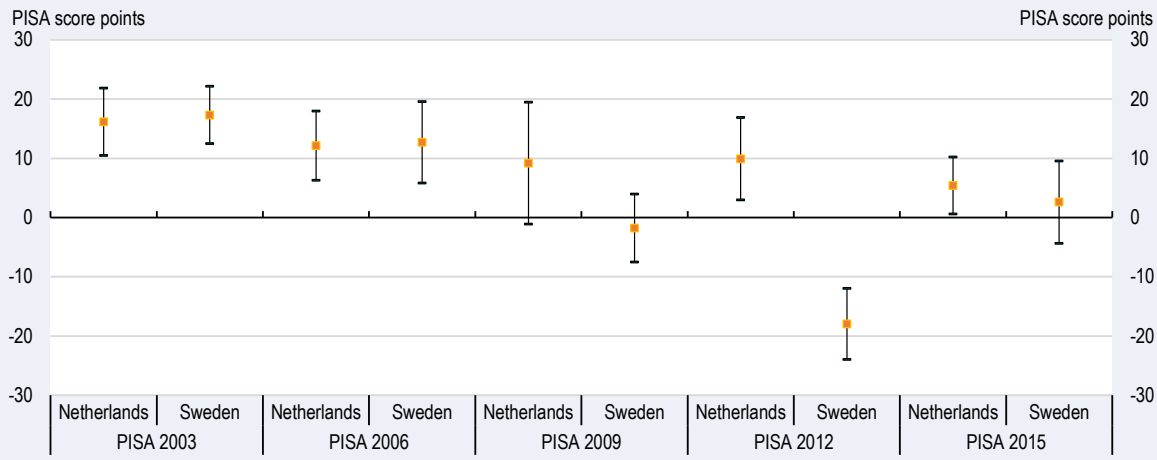
- Pupils and their families can freely chose the school to attend, public or private.
- Funding is public, follows the pupil and is the same for public and private schools.

Contrary to Sweden, the Netherlands has consistently performed well in international rankings, even though results in reading have weakened somewhat since 2003 (Figure 1.18). One important difference with Sweden is that the Dutch system has evolved slowly over multiple decades rather than going through a sudden and fundamental reshuffling of the system, as happened in Sweden in the 1990s. But the current Dutch system differs from the Swedish one in some important ways:

- Funding is primarily given from the central level to individual primary schools. The block grant from the central government is calculated to cover staffing and running costs, with a strong element of targeting according to socio-economic criteria.
- Only non-profit schools are eligible to receive public funding.
- A relatively large central staff includes the Education Ministry and the School Inspectorate, but also a number of school advisory services and coordination bodies.
- Individual schools enjoy great autonomy in how to achieve centrally set attainment targets.

Figure 1.18. PISA results in reading

Difference to OECD average



Note: The black vertical lines denote the 95% confidence interval. OECD average refers to the average for the 24 OECD countries participating in PISA 2000.

Source: OECD (2016[50]), Patrinos (2011[51]) and OECD (2016[4]), Table 1.4.4a.

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Even with grades better reflecting skills and improved information about the value added by individual schools, individuals choose schools based on their own priorities, which do not align perfectly with the best interest of society. In the Swedish system, where funding follows the pupil, schools are forced to respond to competitive pressures, even if this means giving pupils and parents what they want, rather than what they need and what society needs (Gustafsson, Sörlin and Vlachos, 2016[2]; Dahlstedt and Fejes, 2018[29]).

The possibility for pupils and their parents to choose which school to attend has an intrinsic value, and there is scope to counteract segregation without taking away this opportunity. However, it is important to recognise that school choice does not mean, even today, that

every pupil gets to attend his or her first choice, but rather that parents and pupils have the right to state their preferences and expect these preferences to be part of a set of deciding factors within the applicable rules.

In today's system, parents can choose to apply for a certain school and pupils have a right to a place in a municipal school within reasonable proximity to their home. Selection into over-subscribed municipal schools is regulated by the municipality, while selection into private schools is regulated by the private school provider, usually based on queuing time. School choice is usually exercised by (the parents of) pupils from more advantaged backgrounds, many of whom choose private schools at least partially because of a more homogeneous and advantaged pupil mix (Malmberg, Andersson and Bergsten, 2014[49]; Holmlund et al., 2014[25]). The system is obviously unfair to new immigrants and pupils who have moved, as queuing times can be several years for the most popular schools. Schools are not allowed to apply directly discriminative selection criteria, but they can affect which pupils they take in by their physical location, their marketing profile, and of course by the queuing system (Gustafsson, Sörlin and Vlachos, 2016[2]; Dahlstedt and Fejes, 2018[29]).

Public and private school providers have different missions within the current school system. Municipalities are obliged to offer a school place to every resident child of the municipality, in reasonable proximity to their home, and to provide transportation if necessary. Private providers have no such obligations. They are established at the discretion of owners and attended at the discretion of pupils and parents. Placing the entry procedures of private schools strictly under municipal control would allow for a coordinated school intake that would facilitate municipal efforts to counteract segregation. However, given the significant vested interests in the current system, notably from private school providers and well-off parents, reforms probably need to maintain the current differentiation between public and private providers to maximise the likelihood of success.

The Education Act sets out the proximity principle, that pupils have the right to schooling relatively close to their home. Municipalities generally interpret this principle strictly, seeking to minimise pupils' walking distance to municipal schools. A first step to reduce segregation is to clarify municipalities' responsibility to take the socio-economic mix into account when drawing catchment areas, along with reasonable proximity. To the extent the current law does not allow such an interpretation of the proximity principle, the law should be amended. The government proposed in 2018, based on a recommendation from the School Commission, to give education providers an obligation to work actively towards a diverse socio-economic composition of pupils in their schools. The proposal was voted down by the Riksdag.

School segregation should also be counteracted with municipal localisation decisions when investing in new school capacity to meet the coming surge in pupils (OECD, 2015[9]). However, for localisation decisions to effectively counteract segregation, some coordination between the municipality and private providers is needed. Concerns as to how applications for new permits to independent schools would affect the schools in the municipality is already a factor for consideration when granting new licences. However, such factors should perhaps have a higher influence on the outcome, notably considering the possible effect on school segregation when giving permits to open new schools, expanding pupil numbers or taking over existing ones, and giving municipalities a stronger say in these decisions.

A re-interpretation of the proximity principle should be the primary tool to counteract segregation to over-subscribed municipal schools, but would not affect intake to private

schools, which is under the discretion of the school provider. The queuing system is unfair because it favours pupils from strong socio-economic backgrounds, and it discriminates against internal and external immigrants. School places in over-subscribed schools should be assigned by lottery, or with quotas reserved for pupils with unfavourable socio-economic backgrounds. Earlier proposals of abandoning queuing time for a lottery, for example by the School Commission, were met by fierce resistance. Assigning places by queuing time within socio-economic background quotas might be somewhat less contentious, with reserved places for pupils newly arrived to the municipality, pupils with low-educated parents and/or with immigrant background. Successful examples of school choice with socio-economic quotas exist in Nijmegen in the Netherlands and Flanders in Belgium (OECD, 2015[9]; School Commission, 2017[3]).

Improving teacher education and the attractiveness of the profession

Teacher quality has a substantial influence on learning, and this effect tends to be larger for pupils with low socio-economic status (Nye, Konstantopoulos and Hedges, 2004[50]). Even though the importance of good teachers (and principals) is clear, it is less clear which factors make a good teacher (Björklund et al., 2010[51]). Observable characteristics such as content-specific education, pedagogical qualifications and experience are often used in empirical work, but with varying results. André, Pareliussen and Hwang (2019[10]) find a positive correlation between teachers' content knowledge, i.e. their formal qualifications to teach the subject in question, and school test results. However, teachers tend to prefer schools with more advantaged pupils, where the work is easier and the pay tends to be higher (Holmlund et al., 2014[25]; Karbownik, 2014[52]). When controlling for this endogeneity with an instrumental variable approach, the positive effect of the share of certified teachers in André, Pareliussen and Hwang (2019[10]) loses significance. Conversely, with a more detailed dataset covering the years 1998-2004, Andersson and Waldenström (2007[53]) are able to use more sophisticated econometric techniques and find that the share of subject-certified teachers is positively related to results. André, Pareliussen and Hwang (2019[10]) also find a particularly strong correlation between teacher qualifications and results for schools in the bottom part of the socio-economic distribution of schools, which points to the importance of attracting and retaining teachers in the schools with the greatest needs.

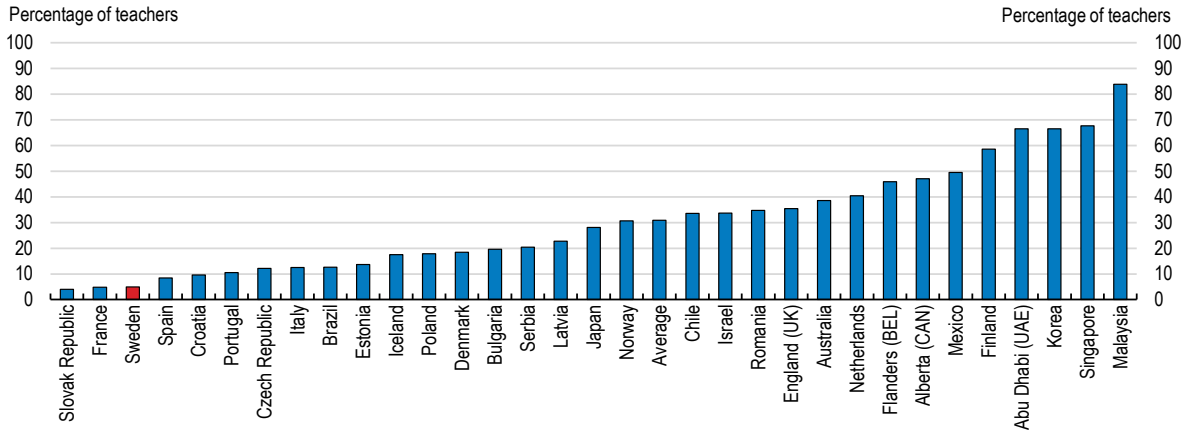
Even though observable differences in education and experience do not always explain teacher quality in empirical work studying a cross-section of teachers, this does not mean that teacher education and training is of no importance. It rather means that teacher quality is much more complex than what can be easily measured by these observable characteristics. Pedagogy, or the ability to teach, is largely a set of practical skills resulting from individual talent, education, experience and practice, obtained both during the initial teacher education and subsequently through learning by doing, continuous professional development and collaboration with peers.

Only 5% of teachers in Sweden report that teaching is a valued profession in society, compared with 59% in Finland, 31% in Norway, 18% in Denmark, and the Teaching and Learning International Survey (TALIS) average of 31% (Figure 1.19) (OECD, 2014[35]). The OECD (2015[9]; 2015[15]) has recommended to enhance opportunities for career- and wage-progression. Teachers' wages have increased recently, following years of relative stagnation, and the government introduced a special grant and expanded career pathways with the "First teacher" reform and later the "Teacher salary boost". Employers can apply for the First teacher grant and promote teachers based on their merits within a given set of pre-defined minimum criteria. The First teacher reform and the Teacher salary boost send

an important signal to teachers that they are valued, and earnings for young teachers are now well above the OECD average.

Figure 1.19. The teacher profession is unattractive

Percentage of teachers who agree that the teaching profession is valued in society



Source: OECD, TALIS 2013 Database, Tables 7.2 and 7.2 web.

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A rigorous education and a strong profession with enhanced collegial cooperation and a strong professional identity would contribute to increasing the attractiveness of becoming a teacher. However, initial teacher education in Sweden is fragmented, with 28 higher education institutions providing initial education programmes. These programmes are largely designed based on the availability of teaching personnel and the demands of applicants rather than emerging needs at the school level. High-performing countries tend to have fewer teacher education institutions. Finland has eight and Singapore has only one (OECD, 2015[9]). Consolidation, by closing down the institutions with the lowest quality of applicants and education, or merging such institutions with higher-performing institutions, might help Sweden increase quality and coordination within the sector, but needs to be weighed against the need to educate more teachers to fill current and projected shortages. Furthermore, a major reorganisation of the teacher education sector should await the on-going evaluation by the Swedish Higher Education Authority. Successful teacher education institutions tend to have a clear vision of what constitutes good instruction, clearly defined educational goals and expectations from pupils. Furthermore, they tend to successfully integrate theory and practice, and a substantial part of education consists of teacher practice in schools (School Commission, 2017[3]; Holmlund et al., 2014[25]).

Instruction time in teacher education is low in Sweden, at about 10 hours per week, or less than half of the 25 hours available to doctor- dentist- and pharmacist students. Instruction time should increase. More time should be spent in teacher practice, and there should be a clear integration between practice and practical instruction by experienced teachers and theoretical classes about teaching and learning. However, these measures are labour intensive and would require increased financing (School Commission, 2017[3]).

More selective admission criteria to teacher education has been brought forward as a way to improve teacher quality and improve the status of the occupation. Some selectivity may be warranted. A person wanting to teach mathematics might for example be expected to have reached a minimum grade level in mathematics. However, Sweden faces a lack of

teachers, and more general limitations to enter teacher education might exclude students who would make good teachers despite low grades in some subjects. A better approach would be to make teacher education more rigorous in theory and practice, which would entail a selection during the course of education rather than at the time of entry. A more challenging and rigorous programme would likely be more appealing to high-achieving students.

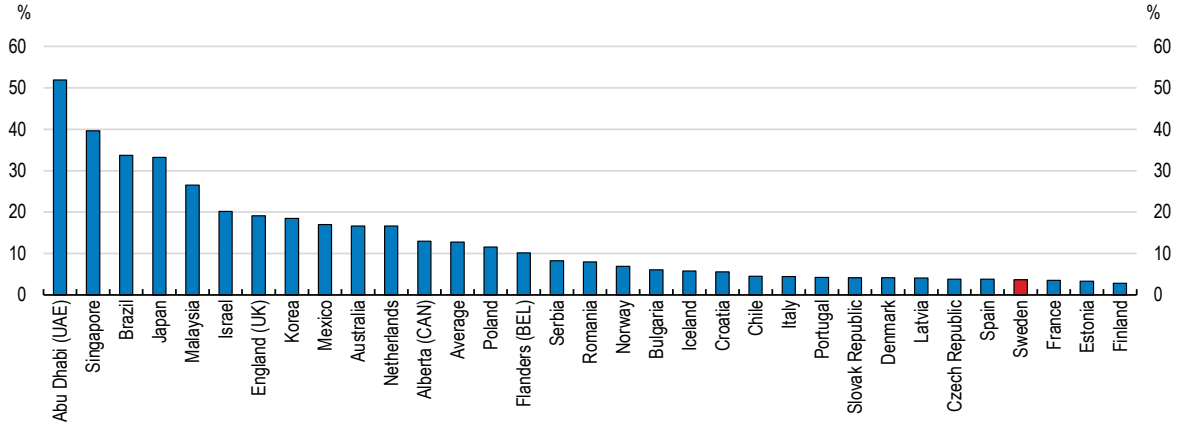
A strengthened research base, more rigour in theory and practice and more feedback from experienced educators should also be part of a teacher's career after graduation. Continued learning opportunities, coordinated by a strengthened regional structure of the school agencies, should maintain close links to universities and university colleges. University personnel participating in such learning activities would also potentially benefit from closer cooperation with local teachers on research projects and student placements.

Equally important for quality in teaching and teacher development is peer-to-peer collaboration and feedback. Swedish teachers being mentored, observed by peers and coached have a higher sense of self-efficacy and job satisfaction. Systematic mentoring of new teachers would allow them to partake the practical experience of colleagues, and also reduce the risk of early exit from the profession. The example of Essunga municipality (Box 1.4) illustrates how research-founded peer-to-peer discussions and feedback hold the potential to enlarge the scope for using different teaching methods, which is an important dimension of teacher quality (Krauss et al., 2008[54]; Björklund et al., 2010[51]). Feedback and pedagogical leadership from the school principal is an important part of this. However, the Teaching and Learning International Survey (TALIS) shows that principals in Sweden are less experienced than the TALIS average, they report spending 51% of their time on administration, devoting only 19% of their time to curriculum and teaching tasks. Moreover, only 7% have teaching obligations, which may keep them somewhat detached from the core job of the school (OECD, 2014[35]). Most TALIS teachers get feedback from multiple sources, which could be an indicator of teacher collaboration or distributive leadership. However, fewer than average Swedish teachers participate in induction and mentoring activities (Figure 1.20). Nearly one in three Swedish teachers (32%) reports never having received feedback. This is a higher share than in the other Nordics, and more than double the TALIS average of 12%. A slight majority of Swedish teachers (57%) report never observing other teachers' lessons or giving them feedback. Those teachers having received feedback mostly did so only from one source, the principal, who tends to spend most of his or her working time on administrative tasks (Figure 1.21) (OECD, 2014[35]).

The learning environment in Swedish science classes is better than the OECD average in terms of noise and disorder, but worse in terms of truancy, as more than half of Swedish pupils taking the 2015 PISA Survey arrived late for school in the two weeks before the test (OECD, 2016[32]). There is potential to improve classroom leadership as part of intensified efforts to build teachers' skills.

Figure 1.20. Few Swedish teachers have a mentor

Percentage of teachers reporting to presently having an assigned mentor



Source: OECD, TALIS 2013 Database, Table 4.3.

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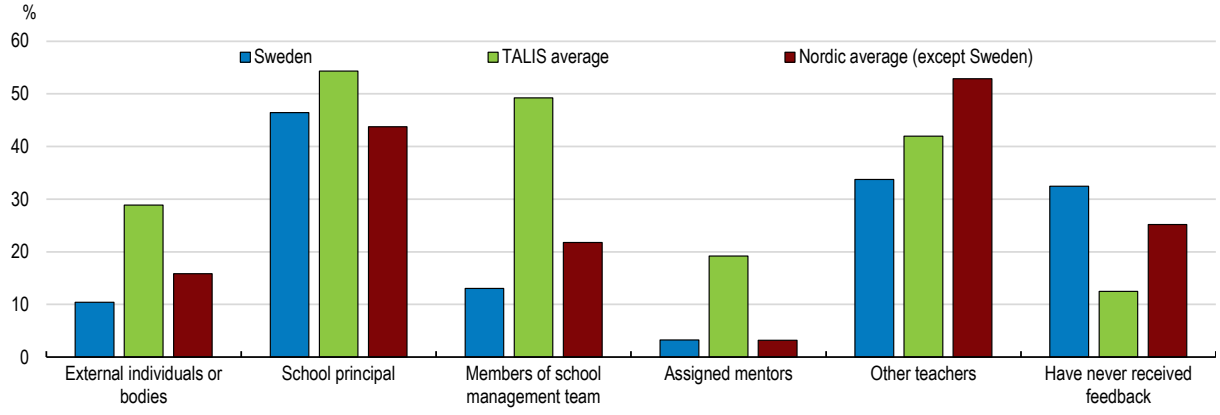
Figure 1.21. Teacher appraisals and peer-to-peer learning are patchy

Share of lower secondary education teachers who report receiving feedback in their current school



Note: Feedback is defined broadly as any communication of the results of a review of an individual's work, often with the purpose of noting good performance or identifying areas for development. The feedback may be provided formally or informally.

Source: OECD, TALIS 2013 Database, Table 5.4.

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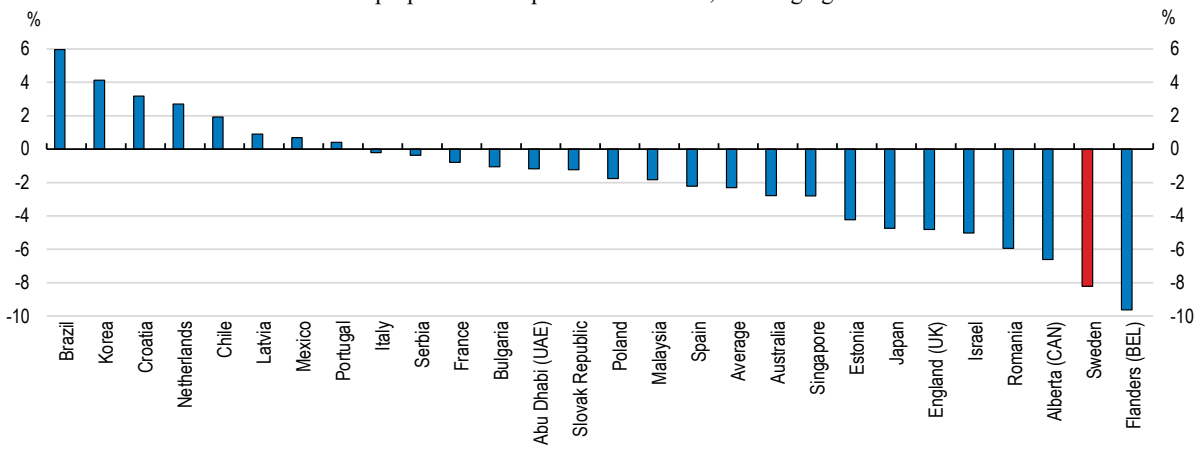
Teachers should face incentives to progress, perform and take on challenging tasks. Strengthened steering from a regional governance structure, clear lines of responsibility and accountability for results should help. However, teacher quality tends to affect pupils with low socio-economic status more than the average, but this is not currently recognised in pay and career structures in Sweden, where teachers in schools with more advantaged pupils are better paid on average (Holmlund et al., 2014[25]; Karbownik, 2014[52]). More should be done to address the lack of quality teachers in schools with an unfavourable socio-economic mix of pupils (Figure 1.22). The status of challenging career paths in schools with an unfavourable socio-economic mix of pupils should be raised, compounding the effects of more compensatory funding to raise average results and counteract inequalities (Nye, Konstantopoulos and Hedges, 2004[50]; André, Pareliussen and Hwang, 2019[10]).

Figure 1.22. Experienced teachers avoid challenging schools

Difference in the proportion of experienced teachers, challenging vs. other schools.



Note: Difference in the proportion of teachers with more than five years teaching experience who work in schools with more than 30% of pupils from socioeconomically disadvantaged homes and those who work in other schools.
Source: OECD, TALIS 2013 Database, Table 2.11.

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Recommendations to strengthen school results and equity in the whole of Sweden

A stronger institutional set-up

Key recommendations:

- Introduce a non-binding minimum norm of school financing, integrated with the national income equalisation system, to better target funding towards disadvantaged groups.
- Develop a regional arm of the central government school governance structure tasked with systematic quality improvement, inducing local cooperation, continuous teacher training and inspections.

Further recommendations:

- Shift the responsibility of upper secondary school to the strengthened regional structure for improved governance and a better match with regional labour market demands.
- Instigate a culture of accountability where municipalities, principals and teachers assume responsibility of key outcomes.

Steer competition and choice to deliver in line with the public good

Key recommendations:

- 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.
- Weigh high and low grades symmetrically and suppress the requirement to pass in certain subjects to enter upper secondary education.
- Take the socio-economic mix into account when investing in new schools and in school entry.

Further recommendations:

- Assign pupils to over-subscribed private schools by lottery, or with quotas reserved for pupils with unfavourable socio-economic backgrounds.
- Take potential effects on school segregation explicitly into account when giving permissions to open a new school, take over a school or increase pupil numbers in existing ones.

Teacher quality and standing

Key recommendations:

- Strengthen teacher education with more instruction time, teacher practice and research.
- Improve continuous learning and development through a regional school governance structure, systematic peer learning and continued mutually beneficial cooperation with universities.

Further recommendation:

- Shield principals and education personnel from unnecessary administration and red tape so they can concentrate on core teaching and leadership tasks.

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