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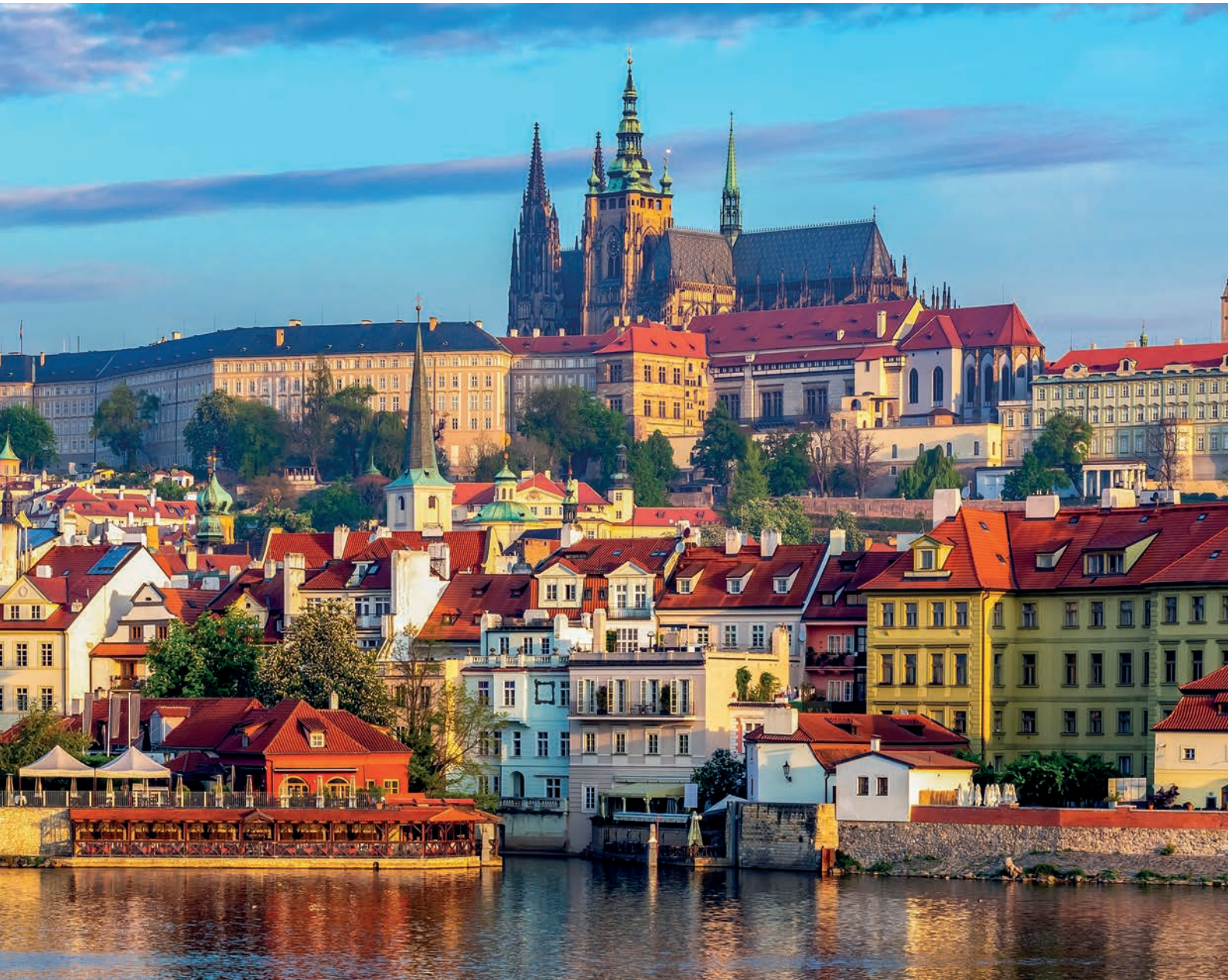

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Foreword

This Economic Survey was prepared by Oliver Röhn and Federica De Pace, with contributions from Radek Dědeček and Marta Stará, under the supervision of Mame Fatou Diagne. Research assistance was provided by Corinne Chanteloup, administrative and editorial assistance by Robin Houng Lee and communication assistance by Francois Iglesias.

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Information about this and previous Surveys and more information about how Surveys are prepared is available at https://www.oecd.org/en/topics/economic-surveys.html.

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BASIC STATISTICS OF CZECHIA, 2023

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

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	10.9		Population density per km²	140.9	(39.2)
Under 15 (%)	15.8	(17.0)	Life expectancy at birth (years, 2022)	79.0	(79.6)
Over 65 (%)	20.8	(18.3)	Men (2022)	76.2	(77.0)
International migrant stock (% of population, 2020)	5.1	(13.9)	Women (2022)	82.0	(82.4)
Latest 5-year average growth (%)	0.5	(0.4)	Latest general election	October 2021	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	343.7		Agriculture, forestry and fishing	1.8	(2.8)
In current prices (billion CZK)	7 626.6		Industry including construction	33.0	(27.2)
Latest 5-year average real growth (%)	1.0	(1.7)	Services	65.3	(70.0)
Per capita (thousand USD PPP)[2]	53.1	(59.0)			
GENERAL GOVERNMENT					
			Per cent of GDP		
Expenditure	43.9	(42.9)	Gross financial debt (OECD: 2022)	48.6	(109.4)
Revenue	40.1	(38.1)	Net financial debt (OECD: 2022)	15.6	(66.6)
EXTERNAL ACCOUNTS					
Exchange rate (CZK per USD)	22.19		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	13.21		Machinery and electronics	37.6	
In per cent of GDP			Transportation	21.5	
Exports of goods and services	69.1	(31.2)	Miscellaneous	8.1	
Imports of goods and services	64.0	(31.2)	Main imports (% of total merchandise imports)		
Current account balance	0.3	(-0.3)	Machinery and electronics	37.7	
Net international investment position	-13.3		Transportation	10.8	
			Metals	9.8	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	58.4	(58.0)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	2.6	(4.8)
Men	67.1	(65.5)	Youth (aged 15-24, %)	8.3	(10.6)
Women	50.2	(50.8)	Long-term unemployed (1 year and over, %)	0.7	(1.0)
Participation rate (aged 15 and over, %)	60.0	(60.9)	Tertiary educational attainment (aged 25-64, %)	27.0	(41.0)
Average hours worked per year	1 766	(1 742)	Gross domestic expenditure on R&D (% of GDP, 2021)	2.0	(2.9)
ENVIRONMENT					
Total primary energy supply per capita (toe,)	3.5	(3.7)	CO_2 emissions from fuel combustion per capita (tonnes)	7.5	(7.6)
Renewables (%)	12.5	(12.5)	Water abstractions per capita (1 000 m³, 2022)	0.1	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2020)	97.7	(56.5)	Municipal waste per capita (tonnes, 2021, OECD: 2022)	0.6	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2022, OECD: latest available)	0.249	(0.316)	Education outcomes (PISA 2022 score)		
Relative poverty rate (%, 2022	6.2	(11.7)	Reading	489	(476)
Median disposable household income (thousand USD PPP, 2022, OECD: 2021)	27.6	(30.0)	Mathematics	487	(472)
Public and private spending (% of GDP)			Science	498	(485)
Health care	8.5	(9.2)	Share of women in parliament (%)	26.0	(32.8)
Pensions (2019)	8.5	(9.5)	Net official development assistance (% of GNI, 2022)	0.4	(0.4)
Education (total spending, 2020)	4.5	(5.1)			

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

Executive summary

Key messages:

- Enhancing spending efficiency and addressing rising ageing costs are key to ensure long-run fiscal sustainability.
- Revitalising productivity growth and convergence requires boosting Czechia's innovation capacity and business dynamism.
- Accelerating policy action to replace coal and reduce the energy and emission-intensity of the buildings sector is needed to meet Czechia's climate targets.
- Addressing inequalities in education, increasing the quality and efficiency of schooling, and expanding possibilities to reskill and upskill workers throughout their careers are key to tackle skill shortages and provide equal opportunities for all.

Preparing for future challenges

Sustaining strong economic convergence in the face of future challenges, including population ageing as well as the green and digital transitions, requires building fiscal buffers and reprioritising spending, and shifting to a more knowledge-based and greener growth model.

In the three decades since joining the OECD, Czechia has made impressive strides towards OECD average living standards, thanks to its openness to trade and investment, stable institutional framework and well-educated population. Czechia has also maintained one of the lowest income inequality and poverty rates in the OECD, supported by high employment and well-developed social systems.

Policies need to address longer-term challenges. This includes ensuring long-term fiscal sustainability in the face of mounting spending pressures related to population ageing, an education system that provides equal opportunities for all and adaptable skills, strengthening the role of innovation and business dynamism as drivers of growth, while enhancing capacities to mitigate and adapt to climate change.

Returning to fiscal prudence and addressing longer-term fiscal challenges as economic growth strengthens

Economic growth is set to pick up in 2025 and 2026, but downside risks are elevated. Monetary policy restrictiveness should continue to gradually ease, contingent on underlying inflation pressures durably subsiding. Fiscal policy should continue to build buffers and prepare for longer-term challenges.

The economy returned to growth in 2024 (Figure 1), mostly driven by a rebound in private consumption. Robust real disposable income growth, easing financial conditions, a stronger use of EU funds and improving demand from trading partners will support a pick-up of growth in 2025 and 2026 (Table 1). The labour market will remain tight.

Risks are tilted to the downside. An increase in trade barriers or a more persistent slowdown among trade partners, especially Germany, would weigh on Czechia's export-oriented economy. Geopolitical tensions could lead to renewed global energy price increases and supply chain disruptions.

Monetary policy remains restrictive. The central bank has lowered the policy rates as headline inflation has fallen back close to the 2% target. However underlying inflationary pressures, especially for services, remain elevated.

The financial system has been resilient, but risks should be monitored closely. The high share of bank loans directed to residential and commercial real estate and the increasing exposure to foreign currency corporate loans create vulnerabilities. Authorities should stand ready to adjust macro-prudential policies to reduce risks.

Table 1. Real GDP growth is set to pick up

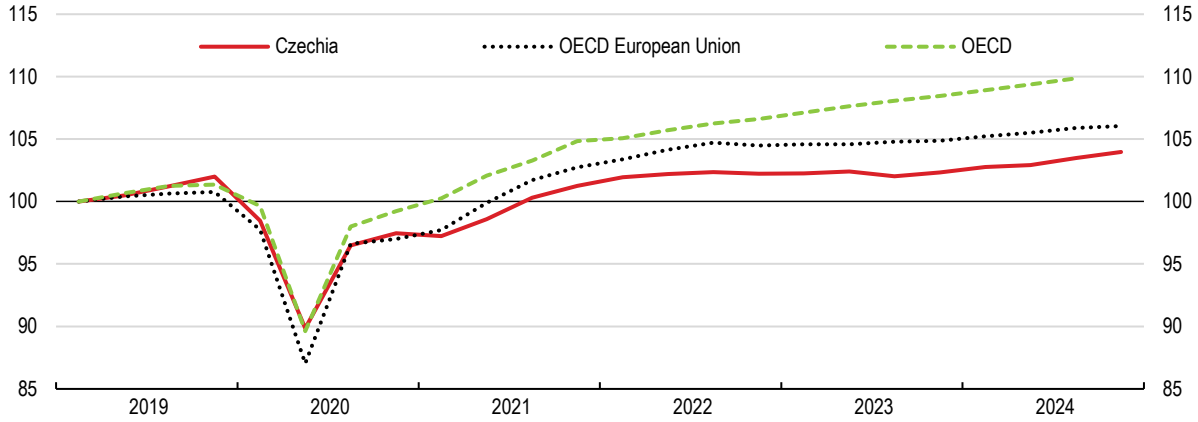
Annual growth rates, %, unless specified

	2024	2025	2026
Real GDP	1.0	2.1	2.5
Unemployment rate (% labour force)	2.6	2.7	2.5
Inflation (index of consumer prices)	2.4	2.3	2.0
Fiscal balance (% of GDP)	-2.8	-2.6	-1.9

Source: OECD Economic Outlook database.

Figure 1. The economy has returned to moderate growth

Real GDP growth, index 2019Q1 = 100



Source: OECD Economic Outlook database.

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Fiscal consolidation should continue in the medium-term to rebuild fiscal buffers, prepare for long-term spending pressures and help support the disinflationary process**.** The authorities have appropriately started to consolidate public finances in 2024. Consolidation measures to meet the national and EU fiscal rules should be specified, while taking distributional effects into account.

Increasing the efficiency of the public administration can help to improve fiscal sustainability and raise the quality of services. Building capacity to regularly conduct spending reviews can help identify saving potential without harming outcomes but requires better access to data. Strengthening incentives for overly small municipalities to cooperate or merge can improve the provision of public services and boost investment at the local level.

Reforms have been enacted to improve the overall sustainability of the pension system and should be fully implemented. Changes include the reduction of pension benefit growth, the tightening of early retirement options and an increase in the statutory pension age. Linking the statutory pension age to gains in life expectancy would further dampen expenditure growth.

Revising family benefits would reduce disincentives for mothers with young children to return to the workplace. Employment rates of mothers with young children are very low, hampering career progression and contributing to the gender wage gap. Shortening long parental leave entitlements, shifting family cash benefits towards expanding access to high-quality and affordable pre-school facilities while enhancing the flexibility of work arrangements can help combine work and family obligations.

Boosting innovation and business dynamism

Productivity growth has slowed down significantly since the global financial crisis and has stalled since the pandemic, leaving a sizeable productivity gap with the OECD average. Boosting the innovation capacity and business dynamism can help revitalise productivity growth.

The research intensity and innovation capacity of the economy have improved but still lag many OECD peers. Better targeting business support for R&D to young and small firms and further developing capital markets can help overcome financing constraints. The transfer of knowledge and technology from higher education and research institutes to firms can be further strengthened.

Business dynamism is relatively low hampering the diffusion of new technologies. Strengthening

the eco-system for start-ups, improving product market regulations and streamlining insolvency procedures is essential to facilitate the entry and scaling up of productive and innovative firms as well as the exit of unproductive firms.

Continuing efforts to strengthen the public integrity and anti-corruption framework can improve the business environment. A law that introduces lobbying rules for the first time is forthcoming and should be accompanied by broadening and better monitoring post-employment rules, which cover the civil service and government only in limited cases, to avoid conflict-of-interest situations.

Transitioning to net-zero emissions

Czechia has significantly reduced greenhouse gas emissions over the past three decades, but the emissions- and energy-intensity of the economy remain high. Transitioning to net-zero emissions requires a cost-effective mitigation policy package together with measures to alleviate the impact on vulnerable communities and strengthen the climate adaptation framework.

Effective carbon prices are too low to reach environmental targets, especially in sectors outside the EU emission trading system. Large differences in carbon prices across sectors and activities mean that marginal abatement costs are not equalised, potentially increasing the cost of emission reductions.

The planned phasing out of coal from the energy mix by 2033 is imperative to get on track to net zero but requires accelerating the deployment of renewables, including by further simplifying permitting procedures. This would ensure energy security, especially until new nuclear capacity becomes available.

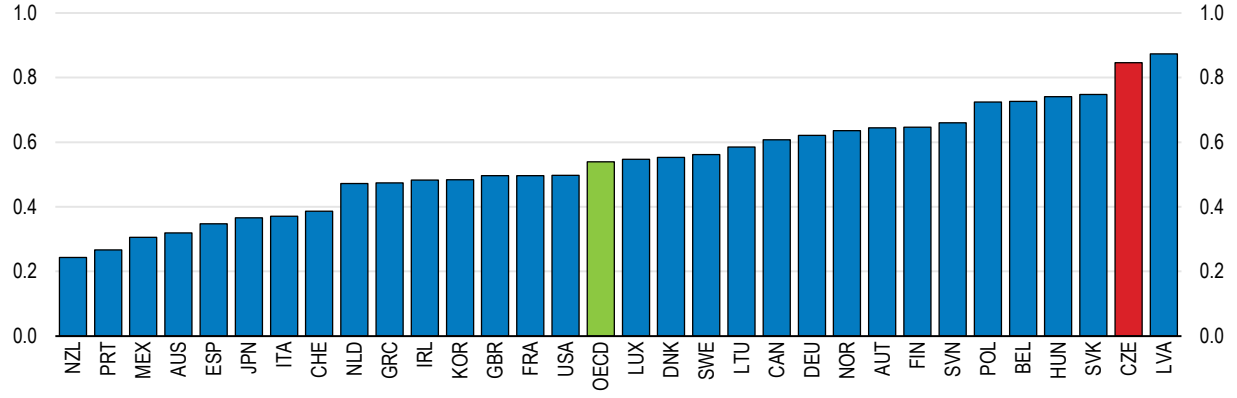
Despite progress, the residential building sector remains highly energy inefficient and polluting. Implementing stricter regulations and targeted financial assistance to households most in need would help incentivise housing renovations. District heating systems need to be modernised and decarbonised.

The social impact of climate policies needs to be mitigated. The share of employment in high-polluting jobs is high, implying a substantial need to reskill and upskill workers.

Climate adaptation can be strengthened. Ensuring adequate capacity at the local level to plan and implement adaptation measures would enhance resilience to natural disasters, such as floods.

Figure.2. The residential sector is energy inefficient

Energy use intensity, total energy consumed per floor area (GJ/m2), residential sector, 2022 or latest



Note: Unweighted average for OECD.
Source: IEA (2024), IEA Energy end-uses and efficiency indicators database.

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Improving education and skills for all

School outcomes are strong overall, but have been declining among the most vulnerable. Moreover, skill shortages and mismatches pose a threat to productivity growth. Improving skills requires enhancing educational outcomes for all students by addressing inequalities and increasing the quality and efficiency of schooling, as well as expanding opportunities to reskill and upskill workers throughout their careers.

Expanding affordable, high-quality childcare capacity would have positive effects on children's future educational outcomes. This would be particularly beneficial to children from disadvantaged backgrounds, who are more likely to experience poor-quality early learning environments.

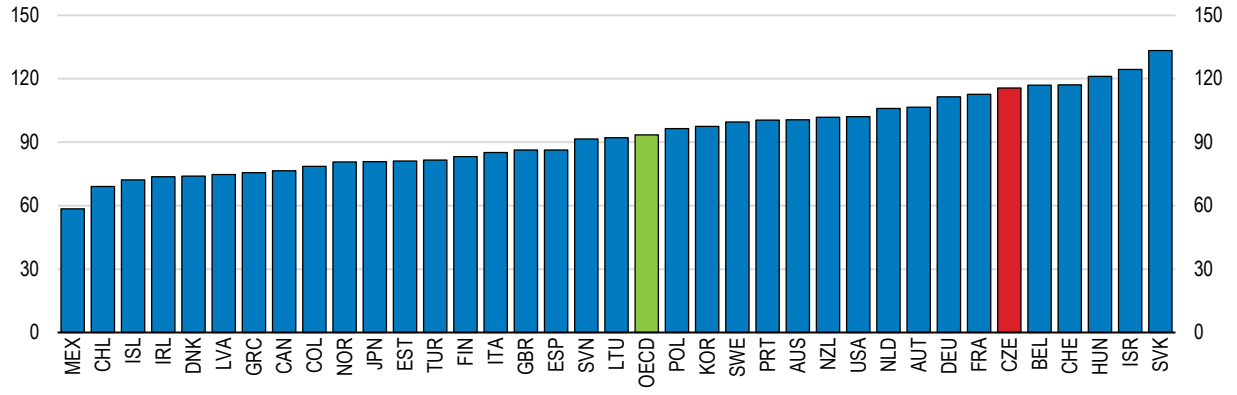
Socioeconomic background is related to students' educational choices and outcomes (Figure 3**), and disadvantaged students, including the Roma, are often clustered in certain schools.** Delaying school tracking and reducing disparities in quality across educational paths is essential to reduce inequality in education. Directing funding to schools with a high share of disadvantaged students to offer individualised support to children with special education needs can improve educational outcomes for all.

Teacher shortages, especially in rural areas and some scientific fields, along with a fragmented school network hamper school quality and efficiency. Improving teachers' working conditions, including by offering diverse career paths, is crucial to make the profession more attractive. Transferring responsibilities for establishing and managing schools to communities of municipalities or municipalities with extended powers (i.e. municipalities that fulfil several administrative functions on behalf of smaller surrounding municipalities) and introducing rules on minimum school size would enhance school management, resource allocation, and students' performance.

Skill shortages and mismatches are severe. Reforming the VET system to reduce over-specialisation and promoting work-based learning would help to better align the skills of graduates with labour market needs. Providing grants and income-contingent loans to vulnerable students is necessary to increase tertiary education attainment. Expanding opportunities for reskilling and upskilling, through flexible, modular high-quality training programmes, would help make the workforce more adaptable to changing skill needs.

Figure 3. Student performance is strongly linked to socio-economic background

Difference in mathematics performance by national quarter of ESCS (top versus bottom quartile), PISA 2022



Note: Represents the simple difference in scores, not controlling for any other explaining factors. A socio-economically advantaged (disadvantaged) student is in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.

Source: OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education, PISA, OECD Publishing, Paris, https://doi.org/10.1787/53f23881-en.

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Main findings	Key recommendations
Increasing resilience to shocks and improving long-run fiscal sustainability	
Monetary policy has eased but remains restrictive. Headline inflation has fallen close to the 2% target, but services price inflation is elevated and wage growth is brisk.	Continue to gradually ease the restrictiveness of the monetary policy stance, contingent on underlying inflationary pressures durably subsiding.
Public debt has increased significantly after recent crises, although it remains low in international comparison. The government has started fiscal consolidation, but measures to reach the fiscal target of a structural budget deficit of 1% of GDP have not yet been specified.	Continue fiscal consolidation and specify measures to meet medium-term fiscal targets and rebuild fiscal buffers.
There is a need to strengthen evidenced-based policy making and performance-oriented budgeting. Spending reviews were piloted in 2023.	Build capacity to conduct comprehensive spending reviews and integrate them into the budgetary process, and ensure availability and access to adequate performance data and inter-ministerial cooperation.
Recent pension reforms have improved sustainability. However, a public pension funding gap will remain.	Link increases in the statutory retirement age from 2030 to gains in life expectancy.
Paid parental leave is longer than elsewhere, negatively affecting the career prospects of mothers and gender wage equality. In 2023/24, more than 98% of parental leave beneficiaries were mothers.	Reduce the effective duration of parental leave and make part of it conditional on the second parent's participation. Redirect family cash benefits towards the expansion of high-quality and affordable early education and care capacity.
Boosting innovation and business dynamism	
Business R&D expenditure is comparably low. Government support for R&D investment is low and mostly focused on direct (e.g. grant) support.	Make the R&D tax allowance refundable or extend the duration of the carry-forward option for small and young firms.
Capital markets are underdeveloped, and venture capital investment is low.	Improve conditions for institutional investors to invest in venture capital and consider strengthening tax incentives for business angels.
Business dynamism is relatively low. The share of start-ups in the business population is lower than in other OECD economies.	Establish a one-stop-shop and introduce silence-is-consent rules to streamline administrative procedures to obtain licenses and permits.
The perceived level of corruption remains elevated. The lack of broader rules on revolving doors represents a gap in the legal framework according to the EU Rule of Law Report.	Continue to strengthen the public integrity framework, including by broadening post-employment rules for members of government, parliament and civil service.
Transitioning to net-zero emissions	
The effective carbon price is relatively low, and carbon prices vary significantly across sectors in the economy. Fossil fuel subsidies and tax expenditures weaken price signals and can jeopardise climate goals.	Phase out fossil fuel subsidies and increase effective carbon prices in sectors outside the EU Emission Trading System. Mitigate the impact on vulnerable households via targeted transfers.
Coal is still dominant in the energy mix. The planned phase-out of coal by 2033 and the further electrification of the economy will require a significant expansion of renewable energy capacity.	Further simplify permitting procedures for renewable energy, including by establishing administrative one-stop-shops and assigning suitable land for acceleration zones.
The residential building sector is highly energy and carbon intensive. It is the main emitter of fine particulate matter.	Target renovation grants to low-income households living in the most energy inefficient dwellings. Expand loan programmes with favourable terms for renovations.
The share of employment in high-polluting jobs is high, implying a significant need to reskill and upskill workers.	Expand active labour market policies, especially targeted training and reskilling programmes, and strengthen the capacity of the public employment service to effectively profile jobseekers.
Improving education and skill for all	
Limited capacity and low affordability reduce participation in early childhood education and care, especially for children from disadvantaged backgrounds and below the age of 3, weighing on educational outcomes.	Increase high-quality and affordable early education and care capacity.
Socioeconomic background strongly impacts student performance and disparities in educational outcomes between schools are high.	Direct resources to schools with a high proportion of disadvantaged students and use up-to-date, reliable data and methods to target schools.
Opportunities for teachers' career development are limited.	Promote a greater variety of career paths for teachers, by creating a complete teachers' competence profile, formal requirements for appraisals involving standardised and externally validated certification systems.
Given the high territorial fragmentation, high decentralisation of education policy results in many underperforming small elementary schools.	Transfer responsibilities for establishing and managing elementary schools and the related funding to communities of municipalities or municipalities with extended powers and introduce rules on minimum school size to enforce mergers and/or cooperation between schools.
There are generally no tuition fees for public higher education, but lack of support for students hinders access to university for vulnerable groups.	Introduce grants for vulnerable students and income-contingent loans.
Participation in adult learning is low, especially among low skilled workers.	Expand the supply of modular learning and introduce high-quality micro-credentials in the national register of qualifications.

1 Ensuring robust growth and fiscal sustainability

Oliver Röhn, OECD

The economy returned to growth and the outlook is improving, although risks are elevated. The restrictiveness of monetary policy has been gradually eased as inflation has fallen close to the target but underlying inflationary pressures persist. Fiscal consolidation has appropriately started and should continue in the medium term in line with the national and EU fiscal rules to rebuild fiscal buffers and prepare for long-term spending pressures. Increasing spending efficiency, including by building capacity to regularly conduct spending reviews and by strengthening incentives for overly small municipalities to cooperate or merge, implementing recent pension reforms, and revising family benefits to reduce disincentives for mothers with young children to return to the workplace, can help to improve fiscal sustainability.

Economic growth is picking up but risks remain elevated

The economy resumed moderate growth and inflation fell back close to target

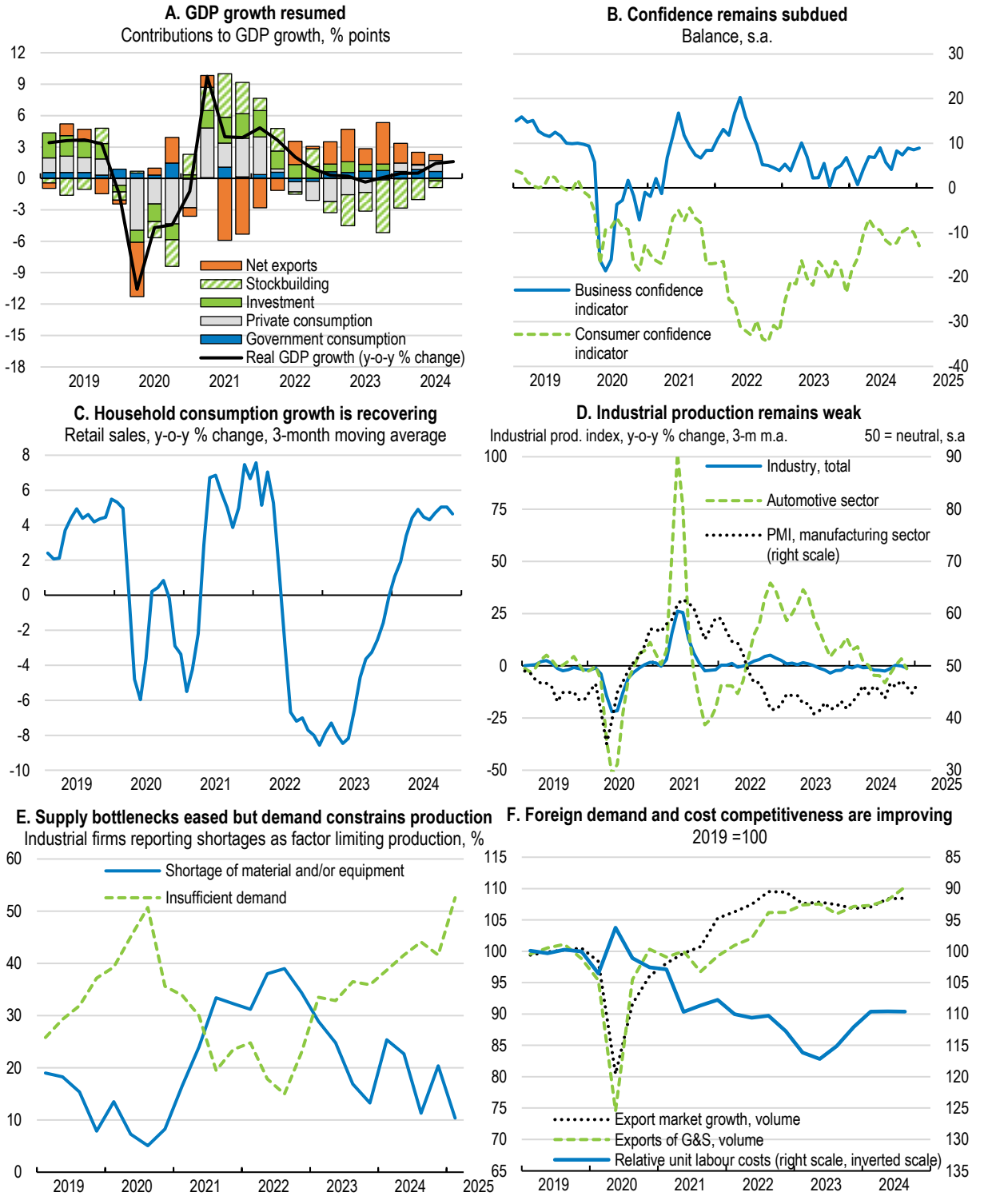
After stagnating in 2023, the economy moderately recovered in 2024. Economic output surpassed the pre-pandemic level in mid-2022, but the economy was hit hard by the repercussions of Russia's war of aggression against Ukraine. GDP was flat in 2023 as global demand cooled and private consumption contracted on the back of surging prices and tight financial conditions. Moderate GDP growth resumed in late 2023 and continued in 2024 driven mainly by increased household consumption supported by positive real wage growth. At the same time, investment and foreign demand remain subdued, slowing the recovery of Czechia's export-oriented economy.

High frequency indicators suggest continued growth in early 2025 mainly driven by private consumption (Figure 1.1). GDP expanded by 0.5% in the fourth quarter of 2024 compared to the previous quarter, driven by domestic demand. Retail sales point to a continuation of the recovery in household consumption. Czech exports are dependent on developments in Europe and in the vehicle and other machinery and equipment manufacturing sectors (Figure 1.2). Hence, the slow recovery of external demand, especially from Germany, is weighing on industrial production and exports. The weakness is more pronounced in sectors outside vehicle manufacturing, while the automotive sector has shown resilience (Box 1.1). While supply chain disruptions continue to ease, export-oriented industrial firms perceive insufficient demand as the main factor limiting production. Decreasing policy interest rates (see below) have led to falling interest rates on new loans, and loan growth to the private sector has picked up.

Headline inflation has fallen back close to the 2% inflation target in 2024, but underlying inflationary pressures remain elevated (Figure 1.3). Headline inflation slowed markedly in the course of 2023, on the back of abating food, energy and industrial producer prices, easing supply chain disruptions, and tight monetary policy (see below). Inflation hit the 2% target in the first quarter of 2024. Inflation edged up in the second half of 2024 and stood at 2.8% in January 2025, largely due to volatile food prices and temporary base effects. Service price inflation has declined more slowly and remains elevated (Figure 1.3, Panel C), partly due to strong wage growth. The koruna depreciated mildly against the euro in 2024, exerting limited inflationary pressure.

Despite some cooling, the labour market remains tight (Figure 1.4). Amid weak economic activity the unemployment rate edged up in 2023 and 2024. However, the unemployment rate remains among the lowest in the OECD. Job vacancies have fallen, but labour shortages persist. Shortages are reported in most sectors but are particularly prevalent in construction. Refugees from Ukraine have mitigated labour shortages to some extent, especially in lower-skilled occupations. Czechia received a large inflow of Ukrainians, with about 380.000 refugees (3.5% of the population) under temporary protection at the end of 2024, around a quarter of whom are under the age of 18. In October 2024, almost 150.000 (about 2.8% of total employment) Ukrainian refugees were in employment in the Czech labour market. While a relatively high share of working-age Ukrainians is in employment, they often work in jobs below their qualifications. As a result of the tight labour market and past high inflation, nominal wage growth remains buoyant. Real wage growth turned positive at the beginning of 2024, after two years of decline. At the same time, unit labour cost growth has eased (Figure 1.4, Panel B) and cost competitiveness has improved in recent quarters (Figure 1.1, Panel F).

Figure 1.1. Moderate economic growth resumed



Note: Panel F: the scale is inverted for relative unit labour costs, so that an increase implies an improvement of cost competitiveness.
Source: OECD Economic Outlook database; Czech Statistical Office.

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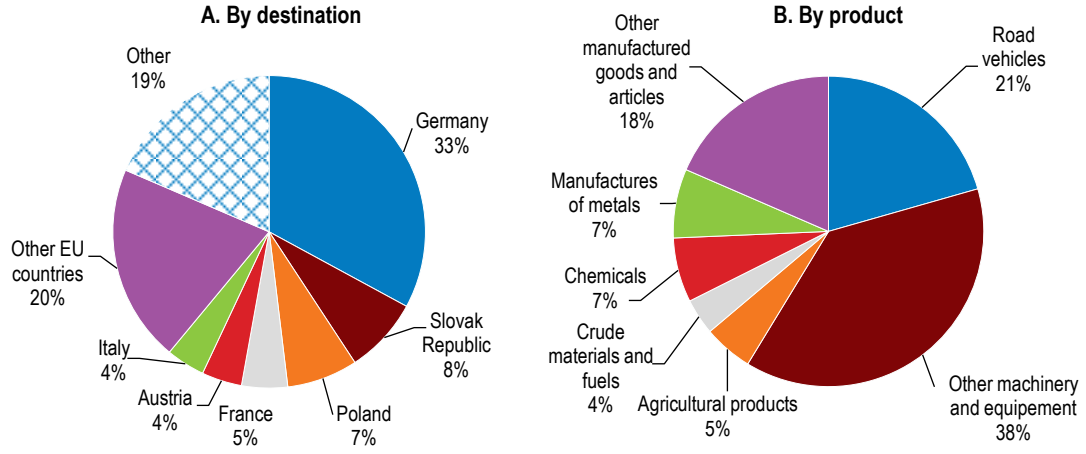
Figure 1.2. European countries and road vehicles play an important role in goods exports

Exports of goods, % of total, 2023



Source: IMF, DOTS Database; UN Comtrade Database.

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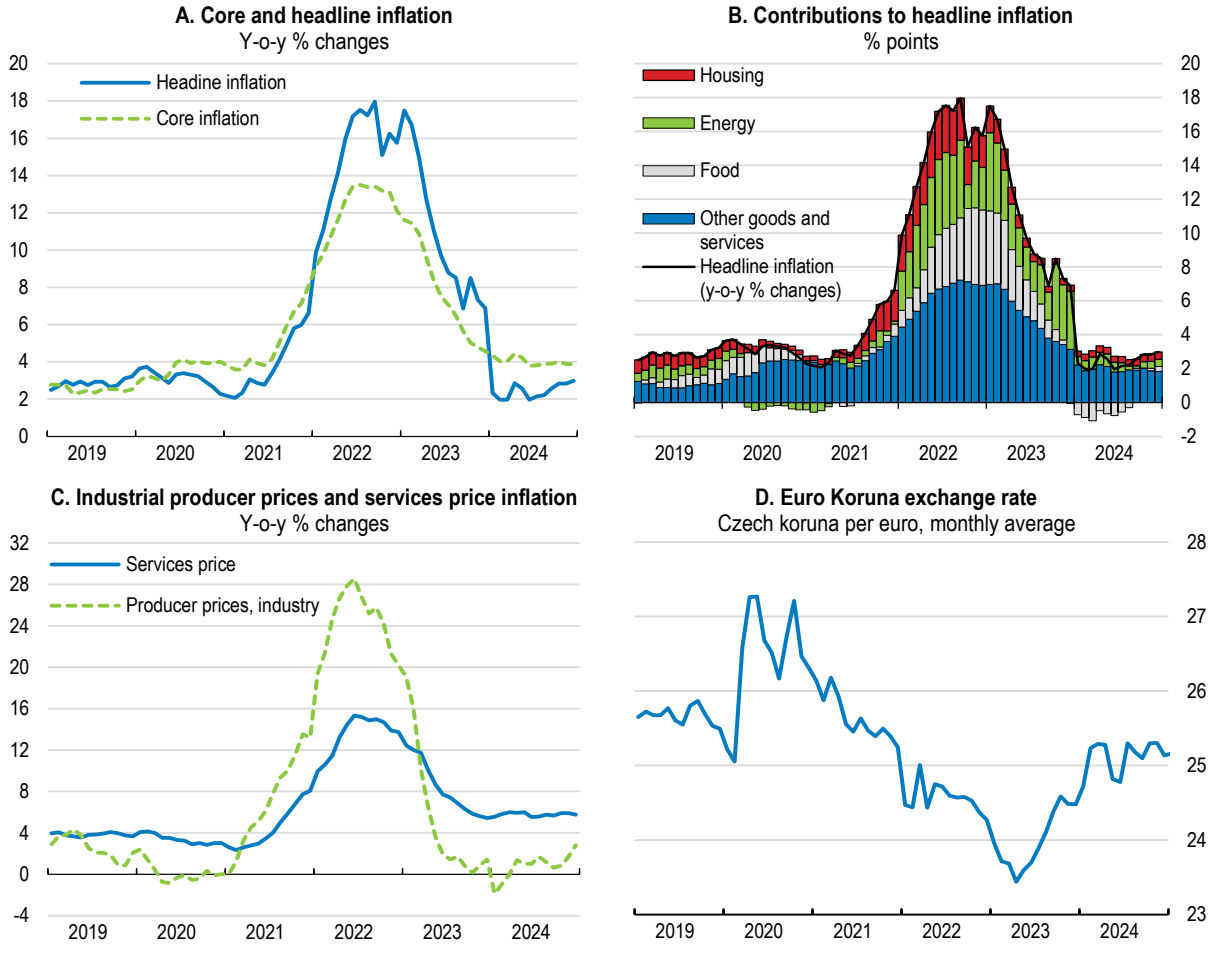
Figure 1.3. Inflation has fallen close to target



Source: OECD Consumer Prices Indices database; Eurostat.

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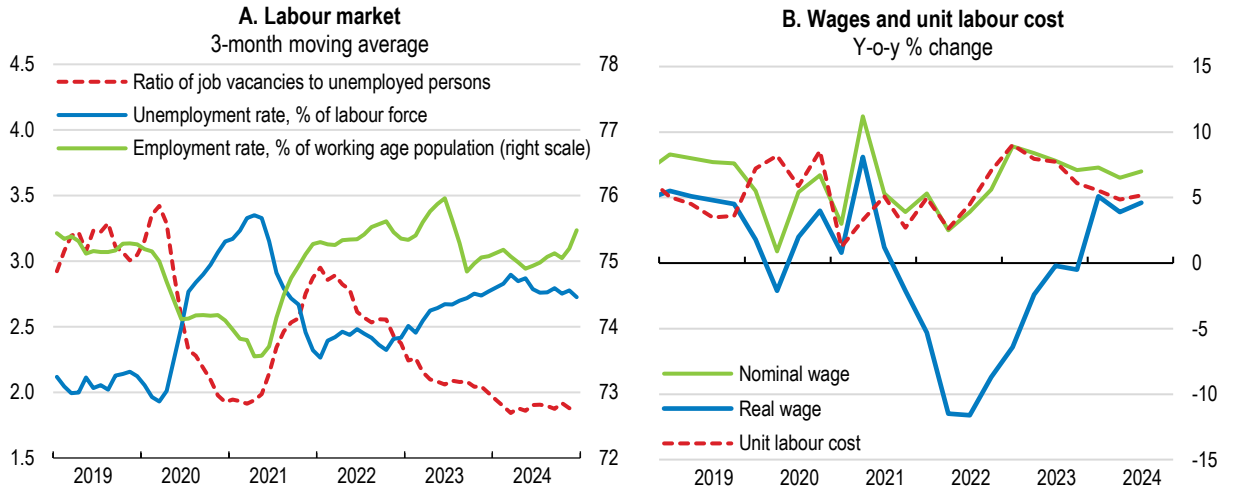
Figure 1.4. The labour market is tight and wage growth is strong



Source: Ministry of Labour and Social Affairs (Job vacancies); Czech Statistical Office (Unemployed persons, Unemployment rate, Employment rate, Real and nominal wages); OECD Economic Outlook database (Unit labour cost).

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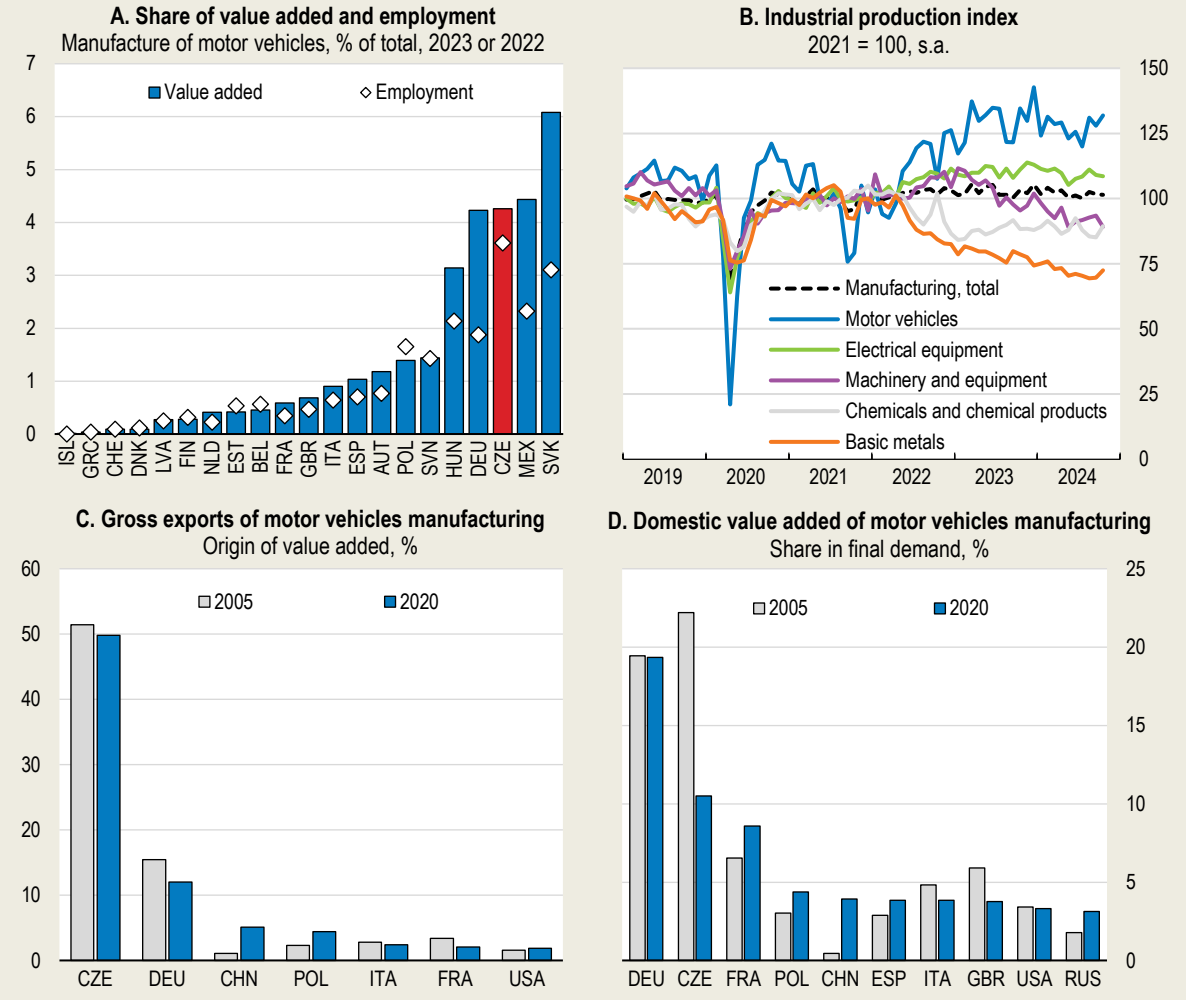
Box 1.1. The Czech automotive sector has proven resilient but faces challenges

The automotive sector is a key industry for the Czech economy and has recovered strongly from recent crises. Motor vehicle manufacturing accounts directly for around 4% of total value added and employment (Figure 1.5, Panel A). These shares roughly double if supplying industries are included. Moreover, exports of road vehicles account for about a fifth of total goods exports (Figure 1.2). Despite headwinds from increasing input costs, in particular energy, and shortages of labour and materials in the past two years, the motor vehicle sector has performed better than most other manufacturing sectors, steadily increasing production (Figure 1.5, Panel B).

The Czech automotive sector is closely integrated into global supply and demand chains, with Germany playing a particularly important role. Around half of the value added of Czech vehicle manufacturing exports originates domestically. Inputs from Germany, China and Poland for account for significant share of the value added of Czech exports (Figure 1.5, Panel C), highlighting these countries' role in the Czech automotive manufacturing supply chain. German demand also plays a key role for Czech production in the vehicle manufacturing sector, with German final demand accounting for 20% of value-added (Panel D). Other important destination countries are France, Poland and China.

The green transition poses challenges to the automotive sector. Czech automotive production is still largely focused on internal combustion engines, even though exports of cars with alternative engines (hybrid or fully electric) have increased rapidly since 2020 and accounted for over a third of all passenger car exports in 2023. The decline in the production of cars with internal combustion engines will imply a phasing out of the production of certain parts and accessories (e.g. gear boxes, exhaust pipes). These specific components accounted for around 20% of all motor vehicle parts and accessories exports in 2023 (MoF, 2024[1]). Simulations suggest that if the production of these specific components were to cease without replacement, the production of the motor vehicle sector would fall by 6%, total gross value added by 0.9% and total employment by 0.3% (MoF, 2024[1]).

Figure 1.5. Manufacture of motor vehicles



Source: OECD National Accounts database; Czech Statistical Office; OECD, Trade in Value Added (TiVA) 2023 edition.

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Czechia is diversifying its energy sources to enhance energy security. The country's energy import dependency is relatively low in international comparison (around 40%) due to the still high share of nationally produced coal in the energy mix. However, before the war in Ukraine, Czechia imported almost all of its natural gas, oil and nuclear fuel from Russia. The share of imported natural gas from Russia has fallen to around 8% in 2023 thanks to diversification, with increased gas imports from Norway and through liquefied natural gas (LNG) terminals. By 2025, the country is also set to become independent from Russian oil and nuclear fuel imports.

The planned phase-out of coal by 2033 needs to be carefully planned to ensure energy security. New nuclear capacity will only come online in the mid-2030s and will partly replace older nuclear generators. This leaves an expansion of renewables and to a lesser extent natural gas as the main instruments to offset declining coal capacity and to satisfy increasing electricity demand in the transition period. As discussed in detail in *Chapter 3,* Czechia's transmission grid is well connected with neighbouring countries, with a significant capacity to transport electricity across borders, helping to ensure security of supply in the coal phase-out period. However, expanding renewable energy capacity will require further investments in the electricity grid capacity and system flexibility (see Chapter 3).

Growth is set to strengthen but risks are elevated

GDP growth is set to pick up in 2025 and 2026 (Table 1.1). The recovery in household's real disposable incomes and a normalisation of the saving rate from an elevated level will support stronger consumer demand. Trade policy uncertainty will weigh on investment, which will nevertheless pick up thanks to easing financial conditions and the stronger use of EU structural and recovery and resilience funds. Exports growth will accelerate as demand of Czechia's trading partners strengthens. However, import growth will also pick up on the back of increasing domestic demand, resulting in a declining contribution of net exports to growth. Headline inflation is projected to fall back to the 2% target by 2026. Core inflation is gradually easing, helped by a pick-up in productivity growth that mitigates labour cost growth.

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume (2020 prices)

	2021	2022	2023	Projections		
	Current prices (billion CZK)			2024	2025	2026
Gross domestic product (GDP)	**6 306.1**	**2.9**	**0.1**	**1.0**	**2.1**	**2.5**
Private consumption	2 979.5	0.5	-2.7	1.7	2.8	3.0
Government consumption	1 318.7	0.4	3.4	3.5	1.3	1.3
Gross fixed capital formation	1 654.3	6.3	2.7	-0.3	1.7	3.3
Final domestic demand	5 952.5	2.1	0.1	1.5	2.2	2.7
Stockbuilding[1]	119.4	1.2	-2.7	-1.0	0.7	0.0
Total domestic demand	6 071.9	3.3	-2.6	0.4	3.0	2.7
Exports of goods and services	4 446.9	5.2	3.1	1.9	3.0	2.9
Imports of goods and services	4 212.7	6.0	-0.6	1.1	4.3	3.2
Net exports[1]	234.2	-0.3	2.7	0.6	-0.6	-0.1
Other indicators (growth rates, unless specified)						
Potential GDP		2.0	2.0	1.6	1.3	1.3
Output gap[2]		0.3	-1.6	-2.2	-1.4	-0.3
Employment	. .	-1.6	1.5	2.6	0.1	0.4
Unemployment rate (% of labour force)	. .	2.2	2.6	2.6	2.7	2.5
GDP deflator	. .	8.7	8.1	4.0	1.7	1.8
Consumer price index	. .	15.1	10.7	2.4	2.3	2.0
Core consumer price index[3]	. .	12.2	7.7	4.0	2.5	2.1
Household saving ratio, net (% of disposable income)	. .	11.5	13.1	12.4	10.9	9.7
Current account balance (% of GDP)	. .	-4.7	0.3	1.4	0.6	0.6
General government financial balance (% of GDP)	. .	-3.1	-3.8	-2.8	-2.6	-1.9
Underlying government primary financial balance[2]	. .	-2.2	-2.1	-1.5	-1.5	-1.2
General government gross debt (% of GDP)	. .	45.9	48.6	50.2	51.7	52.2
General government gross debt (Maastricht, % of GDP)	. .	42.5	42.4	44.0	45.5	46.0
Three-month money market rate, average	. .	6.3	7.1	5.0	3.5	3.1
Ten-year government bond yield, average	. .	4.3	4.4	4.0	3.7	3.7

1. Contribution to changes in real GDP.
2. Percentage of potential GDP.
3. Consumer price index excluding food and energy.
Source: OECD Economic Outlook database.

Risks to the projections are skewed to the downside. An increase in tariffs or other trade barriers would hurt the export-oriented economy. An escalation of geopolitical tensions would weigh on foreign demand and could lead to increased global energy prices and renewed supply chain disruptions. A more persistent slowdown among trade partners, especially in Germany, would particularly slow growth. Disruptions in

Germany's automotive sector may also have repercussions on Czech car manufacturing (Box 1.1). Strong wage increases could hamper the competitiveness of the business sector and increase inflationary pressures. A strong depreciation of the koruna would lead to higher inflation and may force the central bank to pause monetary easing.

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

Shock	Possible Impact
Escalation of trade tensions.	A surge in trade restrictions could lead to lower foreign demand and a resurgence of supply chain disruptions, hurting Czechia's export-oriented business sector.
Escalation of geopolitical tensions	Increased uncertainty weakens domestic and external demand, slowing growth.
Severe disruptions in energy supply hampering energy security.	Energy shortages or steep increases in energy prices would limit the recovery and raise pressure on government to increase fiscal spending.

Monetary and financial conditions are easing

Monetary policy should continue to ease restrictiveness contingent on underlying inflation pressures durably subsiding

Inflation expectations have declined but remain above the 2% target. In January 2025, expectations of financial market analysts were close to the target, at 2.3% on the 1-year and 2.1% on the 3-year ahead horizon. However, non-financial corporations still expected inflation of 3% on the 1-year and 3.4% on the 3-year ahead horizons in December 2024. Household inflation expectations have traditionally been significantly above the target (in the range of 7-10% in the period 2017-2019, with actual inflation around 2-3% over the same period) and stood at 12.6% in December 2024 on the 1-year ahead horizon. Inflation expectation above the target may exert upward pressure on inflation via price and wage-setting dynamics.

Monetary policy is easing but remains restrictive. With inflation slowing, the Czech National Bank (CNB) gradually reduced the main policy rate (the two-week repo rate) from 7% to 3.75% between December 2023 and February 2025. The CNB estimates that the (real) natural rate of interest is around 1% in Czechia (CNB, 2024[2]). With real rates above that level, the monetary policy stance remains restrictive. The CNB signalled that given inflationary pressures in the economy, it would approach future monetary policy easing with great caution and may pause the interest rate reduction process. The central bank views a declining nominal short-term interest rate to around 3% by mid-2025 and broadly stable rates thereafter consistent with its projection of inflation remaining close to the 2% target in 2025 and 2026 (CNB, 2025[3]). In October 2024, the CNB announced an increase in the minimum reserve requirement from 2% to 4% as of January 2025 to lower the cost of conducting monetary policy. This follows the CNB's decision to end the remuneration of minimum reserves in October 2023.

The narrowing interest rate differential vis-à-vis the euro area led to depreciation pressures on the koruna. The CNB started tightening its policy rate much earlier (in June 2021) and more strongly than the ECB. As a result, the short-term interest rate differential widened, peaking at about 700 basis points in mid-2022. Since then, the interest rate differential has continuously narrowed. This has put depreciation pressure on the koruna and in turn upward pressure on prices of imported goods and services and tradable inflation. The CNB intervened in the foreign exchange market to stem the koruna depreciation from May to October 2022, selling a total of EUR 25.56 billion of its foreign exchange reserves. In August 2023 the CNB officially ended its foreign exchange market operations. Since then, the CNB resumed sales of part of the income on international reserves under its managed float regime, and only maintains an option to use foreign exchange interventions in case of exceptional circumstances (especially to prevent excessive fluctuations of the exchange rate). As stated in the previous *Economic Survey* (OECD, 2023[4]), the key policy rate

should remain the main monetary policy tool. Foreign exchange interventions are not a sustainable tool to stave off persistent depreciation pressures, especially in an environment of narrowing interest rate differentials with the rest of the world.

Monetary policy should continue to gradually ease restrictiveness contingent on underlying inflationary pressures durably subsiding. The tight labour market with brisk wage growth together with sticky services prices call for a continued prudent approach. Hence, any further easing of monetary policy should be cautious, informed by data and forward-looking.

The banking sector is resilient, but vulnerabilities should be monitored

The financial sector appears resilient overall. Banks dominate the financial sector, holding over three-quarters of financial sector assets, with foreign-owned banks accounting for around 85% of total assets of banks. Banking sector profits remained solid in 2023 and first half of 2024 despite some slowing of interest income as interest rates started to come down in late 2023. Capital and liquidity ratios well exceed their regulatory requirements, and non-performing loan ratios are low. Stress tests show that banks are able to withstand a significant adverse macroeconomic shock, although banks would have to use up their countercyclical capital buffers (CNB, 2024[5]).

After a moderate price correction, property markets have stabilised. Residential property prices doubled in the period from 2016 to 2022 and grew much faster than income. House prices dropped by around 4% between Q3 2022 and Q2 2023 but have since stabilised and started to moderately increase again in 2024. The CNB assessed apartment prices still to be overvalued in the first half of 2024. However, the probability of a significant price correction (drop of more than 10% over the next two years) has declined from close to 30% in mid-2022 to around 1% in mid-2024, according to CNB estimates (CNB, 2024[6]). The price correction for commercial property was more pronounced, with prices declining by around 16% between Q2 2022 and Q3 2023. Prices have stabilised since then, but the CNB assesses commercial property prices to be still overvalued in mid-2024 (CNB, 2024[6]).

Macroprudential measures have been eased. The CNB lowered the countercyclical capital buffer in several steps between July 2023 and July 2024 from 2.5% to 1.25% as it assessed cyclical systemic risks to have receded. Moreover, the CNB decided to deactivate the upper limit on the debt-service-to-income (DSTI) ratio and the debt-to-income (DTI) ratio on new mortgage loans from July 2023 and January 2024, respectively. The DSTI had been set at 45% of the net monthly income (50% for under 36-year-olds) and the DTI at 8.5 times net annual income (9.5 for under 36-year-olds) in April 2022. The CNB continues to recommend that mortgage lenders should exercise high prudence when assessing applications for loans with DSTI ratios over 40% and DTI ratios over 8, test loan applicants' ability to *inter alia* withstand rising lending rates and adverse income shocks, and not provide loans with maturities above 30 years. The loan-to-value ratio limit has been kept at 80% (90% for under 36-year-olds) since April 2022. Moreover, the Capital Requirement Directive (CRD) IV introduced a new systemic risk buffer into the EU regulatory toolkit. The CNB decided to activate the systemic risk buffer from January 2025 and set it at 0.5%, due to systemic risks including Czechia's high trade openness, concentration of the economy in manufacturing and high costs associated with the green transition (CNB, 2024[5]).

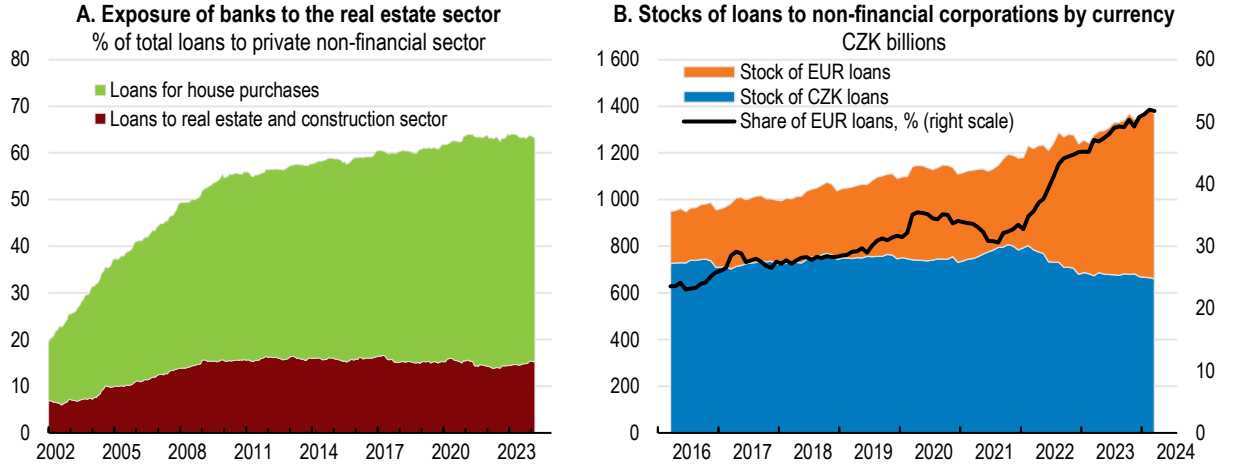
Risks are related to the substantial exposure of the banking sector to the property market. Loans to the real estate sector account for 63% of total bank loans, with household mortgages accounting for 48% and corporate loans to the real estate and construction sector for 15% (Figure 1.6, Panel A). With the recent property price correction and falling interest rates, risks have declined. However, property prices still appear overvalued, and interest rates remain elevated compared to the pre-pandemic period. Moreover, the share of riskier loans in the loan portfolio has increased, partly in response to the deactivation of the DSTI and DTI limits. For example, the share of new mortgage loans with a DSTI in the range 50-60% increased from below 10% in 2023 to around 22% on average in July/August 2024. With mortgage loan

growth expected to pick up, the authorities should continue to closely monitor risks in this market sector and consider reactivating the DSTI and DTI limits.

Structural and tax reforms can help alleviate imbalances in the property market. As discussed in previous *Surveys,* the process for obtaining construction permits has been one of the slowest and most cumbersome in the OECD, hampering a supply response to demand pressures. A new building act came into force in 2024 that aims to streamline and digitise the building permitting process but will take time to exert its full effect. Moreover, increasing recurrent taxes on immovable property and basing them on regularly updated market values would strengthen incentives to use the dwelling stock efficiently and reduce property price fluctuations (see tax section below).

Vulnerabilities related to the increasing share of foreign currency loans to corporates should continue to be closely monitored. The share of foreign currency (predominantly euro) loans to non-financial corporations has been growing quickly to slightly over 50% in early 2024 (Figure 1.6, Panel B). As the majority of non-financial corporations with FX loans is hedged, either through their foreign currency income or through FX derivatives, the CNB does not consider FX loans a systemic risk. Nevertheless, the exposure makes the banking sector more vulnerable to exchange rate volatility and external demand developments, and should therefore be closely monitored. Moreover, the high share of FX loans may weaken monetary policy transmission channels.

Figure 1.6. Banks are strongly exposed to the property market and foreign exchange loans



Source: Czech National Bank.

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Addressing fiscal challenges

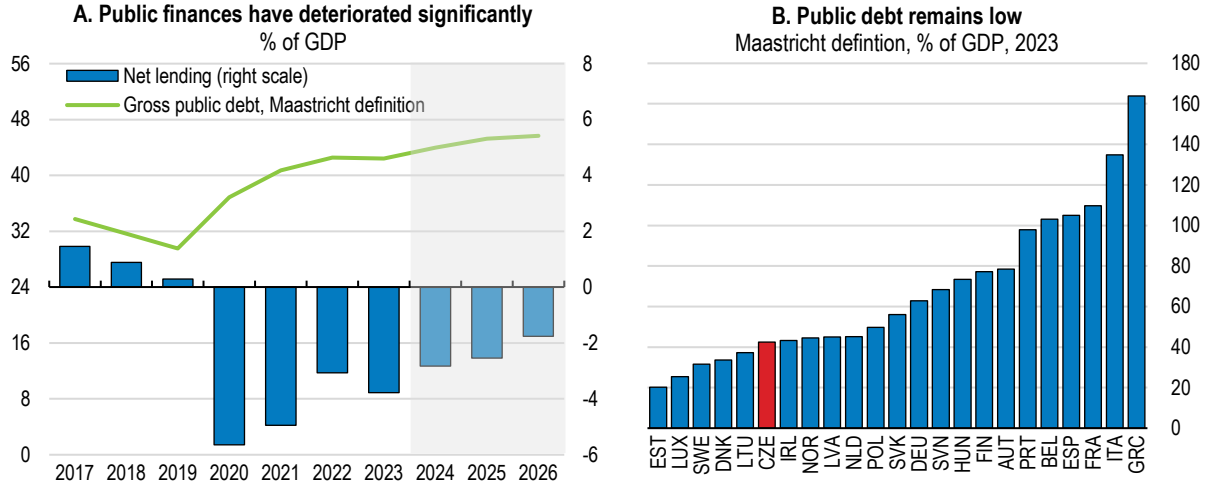
Consolidation should continue to rebuild fiscal buffers

The authorities have appropriately started to consolidate public finances in 2024. The fiscal position deteriorated markedly between 2019 and 2023 due to fiscal support to cushion the effects of the pandemic and the energy crisis as well as permanent measures, most notably the reduction of personal income taxes effective from 2021. As a result, public debt rose by over 12 percentage points to slightly above 42% of GDP in 2023 (Figure 1.7). The budget for 2024 foresees a moderate consolidation, with the budget deficit expected to fall below 3% in 2024 (Table 1.1). The fiscal improvement reflects the phasing-out of almost all energy support measures at the end of 2023 as well as a consolidation package in force since 2024. The consolidation package is largely focused on revenue measures worth around 1.2% of GDP, including increases in social security contributions, corporate income tax rates and real estate taxes (see detailed discussion below). On the expenditure side the package focuses on reduced compensation of public sector

employees (0.2% of GDP) (MoF, 2023[7]). At the same time, expenditure increased in particular for defence to fulfil NATO commitments and for pensions due to their indexation to past high inflation. Reparations after the heavy floods in September 2024 also add temporary expenditure needs.

Consolidation should continue in the medium term to comply with the national and EU fiscal rules, rebuild fiscal buffers, and prepare for long-term spending pressures and support the disinflationary process. The budget for 2025 targets a further reduction of the budget deficit from 2.8% to 2.3% of GDP, largely thanks to cyclical effects as economic growth is projected to pick up. The Convergence Programme (MoF, 2024[8]) and medium-term fiscal-structural plan set a path to reach a structural budget deficit of 1% of GDP by 2028, which is the target level according to the national fiscal rules. The Czech Fiscal Responsibility Act defines the fiscal rules consisting of a debt rule (with a debt-to-GDP limit of 55%, after deducting cash reserves) and a structural deficit rule. The latter was loosened during 2020-2022. The 1% structural deficit is to be reached at the latest by 2028, as approved in 2023 as part of the consolidation package. According to the new EU fiscal governance framework for countries that meet both the EU debt (60% of GDP) and the deficit (3% of GDP) criteria, the European Commission (EC) can provide "technical information" at the request of a Member State. Czechia has received such technical information from the EC to achieve a primary structural surplus of 0.4% of GDP by 2028. The EU primary structural surplus target is consistent with the national structural deficit target. The authorities should specify consolidation measures in the amount of around 0.5%-1% of GDP that are needed to reach the structural deficit target.

Figure 1.7. Moderate fiscal consolidation is underway



Note: Panel A shaded area depicts forecasts.
Source: OECD Economic Outlook 116 database.

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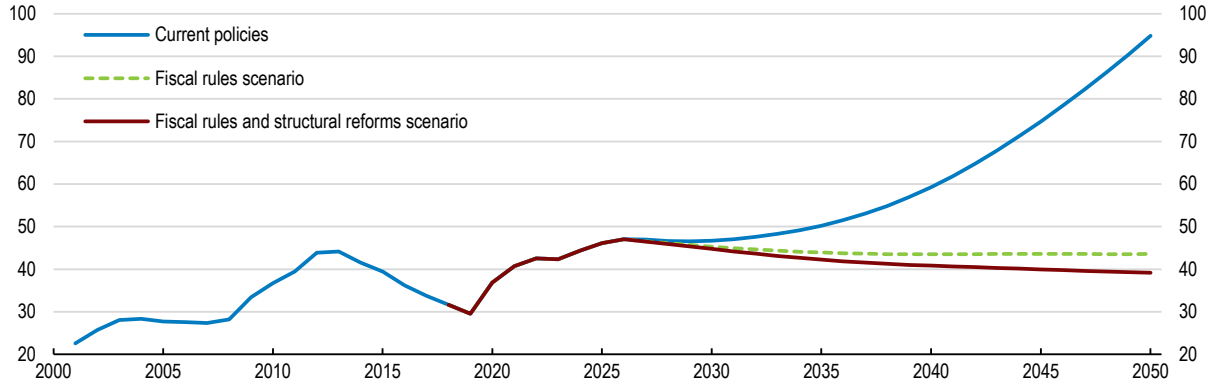
Pension reforms have improved fiscal sustainability, but longer-term spending pressures due to ageing and the green transformation remain significant. The public investment needs to reach climate mitigation and adaptation targets are substantial (see *Chapter* 3), although they are partly covered by EU funds. Moreover, both the European Commission and the national fiscal council assess Czechia's long-term sustainability situation as medium-risk. This is mainly due to Czechia's ageing population. In 2023 and 2024, pension reforms were enacted to limit pension expenditure, including by reducing pension benefit growth, tightening early retirement options and increasing the statutory pension age (see below). According to the latest EU Ageing Report (EC, 2024[9]), which only takes into account the pension reforms enacted in 2023, ageing-related costs, notably on pensions, health care and long-term care, would increase between 2024 and 2050 by 3.9 percentage points of GDP (peaking in 2060 at around 5 percentage points). This is larger than the EU average of 1.2 percentage points. Without further measures to contain ageing-related costs, debt would rise to close to 100% of GDP by 2050 (Figure 1.8, current policies scenario).

Preliminary estimates suggests that if the pension reforms enacted in late 2024, which include an increase in the statutory retirement age, were fully implemented, debt would increase less steeply, to around 70% of GDP in 2050. Moreover, consolidation to reach a structural deficit of 1% of GDP and maintain it from 2028, in line with the national fiscal rule, would stabilise debt at the current level (Figure 1.8, fiscal rules scenario). Combining fiscal consolidation with structural reforms would bring debt on a downward trajectory (Figure 1.8, fiscal rules and structural reforms scenario).

A combination of tax and spending reforms can help ensure fiscal sustainability without harming growth. On the revenue side, a further shift away from social security contributions towards property and indirect taxes, including environmental taxes, could make the tax system more growth friendly. On the spending side, fully implementing the recent pension reforms would go a long way in mitigating ageing-related spending pressures, although further reforms are still needed to ensure debt sustainability. Moreover, there is scope to realise efficiency gains for example by strengthening spending reviews and performance budgeting, reforming the highly fragmented local government system and rebalancing family benefits. Significant inflows of EU funds will support investment, help the green transition and mitigate the social impact of climate policies. Investment spending from the EU Recovery and Resilience facility (EUR 9.2 billion or around 3% of GDP) is expected to peak in 2025 and 2026. Investments related to the new 2021-27 programming period of the EU cohesion funds (EUR 21.1billion, around 7% of GDP) will gradually increase. Moreover, Czechia is expected to receive around EUR 2 billion from the newly established EU Social Climate Fund and EUR 20 billion from the EU Modernisation Fund to mitigate the social impact of the green transition.

Figure 1.8. Stylised debt scenarios

General government debt, as a percentage of GDP



1. The "Current policies" scenario is based on the OECD Economic Outlook 116 database until 2026 and the OECD Long-Term Economic Model thereafter. Increases in ageing related costs are not offset and based on the EU Ageing Report 2024. The scenario does not include pension reforms enacted in December 2024.
2. The "Fiscal rules scenario" assumes that a structural budget deficit of 1% is reached until 2028 and maintained thereafter.
3. The "Fiscal Rules and structural reforms scenario" assumes in addition to the fiscal rules scenario higher real GDP growth of about 0.5 p.p. on average over projection period compared to the baseline scenario, based on the reforms scenario outlined in Box 1.1.
Source: OECD Long-term Economic Model; EU Ageing Report 2024

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Making the tax system more growth friendly

The tax burden is comparable to the OECD average, but the revenue structure is biased towards social security contributions. Tax revenues as a share of GDP stood at 33.7% of GDP in 2023, close to the OECD average (33.9% of GDP). However, Czechia relies significantly more on social security contributions and less on personal income taxes (PIT) and property taxes than other OECD countries (Figure 1.9). As pointed out in previous OECD *Surveys, a* lower reliance on social security contributions and higher revenues from property taxes and indirect taxes, including environmental taxes, would make the tax system more growth-friendly and reduce the exposure of government revenue to ageing.

Tax policy changes in 2024 as part of the consolidation package (see above and Table 1.5) are expected to increase revenues but are unlikely to lead to a significant change in the tax structure. As discussed further below, changes included an increase of the employee sickness insurance contributions, a hike in immovable property tax rates, a reduction in the number of VAT rates from three to two as well as some hikes in excise tax rates (e.g. on tobacco and alcohol). Moreover, the progressivity of the personal income tax (PIT) system was increased by lowering the threshold for the top marginal tax rate, while the tax base was broadened by reducing some tax exemptions. These changes are broadly in line with recommendations in the previous Survey (Table 1.6). Finally, the corporate income tax rate was hiked from 19% to 21%. With this change, the statutory income tax rate, which is higher than in most other central and eastern European countries, is moving closer to the OECD average rate (23.9%).

The tax and benefit system puts a high burden on low-income earners and does not encourage second earners to work. Due to high social security contributions, the average tax wedge – the gap between the net take-home pay of workers and their costs to employers – for low-income earners and people without children is high in international comparison (Figure 1.10, Panel A). A lower tax wedge could help ease labour market tightness by attracting workers at the margins of the labour market. The high tax wedge may also incentivise workers to shift to self-employment, the incidence of which is relatively high in Czechia and is often quasi-dependent employment (OECD, 2020[10]). The recent reintroduction of the employee sickness insurance contribution has further increased the tax wedge. A significant number of tax credits and allowances reduces the tax burden for families, with the fiscal preference for families with children among the highest among OECD countries (OECD, 2024[11]). At the same time, the tax wedge for second earners in families with children is among the highest in the OECD (Figure 1.10, Panel B), which reduces the incentives for second earners to take up work. The high tax wedge is due to the loss of some cash and tax benefits when the second spouse takes up work, as well as the high social security contributions. The recent limitation of the dependent spouse tax credit to spouses who take care of a child up to the age of three will lower the tax wedge for second earners.

Further shifting the tax mix towards revenues from recurrent taxes on immovable property could make the tax system more growth-friendly. In 2023, revenue from recurrent taxes on immovable property accounted for 0.18% of GDP, compared to an OECD average of 1% of GDP (Figure 1.11). In 2024, the centrally set base tax rates on immovable property were raised on average by around 80%, albeit from a very low level. At the same time, the range of local coefficients that municipalities can apply to the tax rate has been widened (from 1.1-5 to 0.5-5), which has led a few municipalities to reduce the real estate tax by setting a lower local coefficient. In addition, the tax per square metre of the property was indexed to consumer price developments. The reform will lead to higher property tax revenues overall, which is welcome. However, even after these changes, revenues from property taxation will remain very low. Further increasing revenues from recurrent taxes on immovable property would create some room to lower more distortive taxes. Moreover, indexing the property tax to consumer price developments will prevent the erosion of real tax revenues but does not appropriately account for housing price cycles and regionally different developments of property valuations.

Box 1.2. Quantification of selected policy recommendations

Table 1.3 presents estimates of the fiscal impact of selected recommendations. The results are indicative and do not allow for behavioural responses. Moreover, revenue gains from the recommended reform package via higher employment are not included.

Table 1.3. Illustrative fiscal impact of recommended reform package

Fiscal saving (+) and costs (-)

	% of GDP
Spending measures	
Education reforms (increasing funding for schools with a high share of disadvantaged students, improving career opportunities for teachers, grants for disadvantaged students in tertiary education, rationalizing the school network)	-0.5
Boosting active labour market policies, especially training	-0.2
Increasing government support for business R&D	-0.1
Performing regular spending reviews to identify efficiency savings and integrating them into the budget process	+0.5
Pension reform (implementing December 2024 reform, linking retirement age to life expectancy, aligning the pension contribution base between employees and self-employed workers with similar earnings)	+1 (by 2050)
Reducing the effective duration of parental leave and redirecting savings to expanding supply of early childcare education	+0
Cancelling fossil fuel subsidies	+0.1
Total spending measures	*+0.8*
Revenue measures	
Reducing the labour tax wedge for low-income and second earners, financed by higher immovable property and environmental taxation and reducing VAT tax exemptions.	0
Total revenue measures	*0*
Total budgetary impact	**+0.8**

Table 1.4 quantifies the GDP impact of the main recommendations based on the OECD Economics Department long-term model.

Table 1.4. Illustrative impact of reform package on GDP per capita

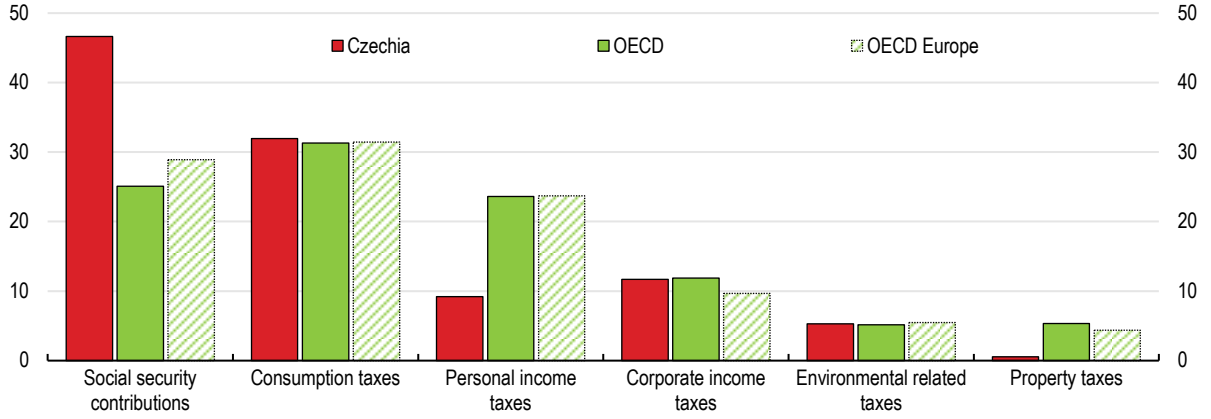
Relative to baseline

Reform	10-year effect	Effect by 2060
Education reforms (expanding early childcare education, reducing inequality in education, improving VET education and adult learning, increasing tertiary attainment)	0.7%	4.3%
Labour market reforms (boosting active labour market policies (training); reducing the average tax wedge)	2%	2.9%
Pension reform (linking retirement age to life expectancy)	0.2%	2.9%
Increasing research and development spending	0.2%	2.1%
Improving business environment and regulatory framework	0.9%	4.2%
Total impact	**4.1%**	**16.4%**

Source: OECD Economics Department Long-Term Model

Figure 1.9. Revenues rely heavily on social security contributions

Share in total tax revenues, % of total taxation, 2022 or latest available year



Note: The OECD and OECD Europe aggregates are an unweighted average.
Source: OECD Revenue Statistics database; OECD Environmental Related Tax Revenue Database (ERTR).

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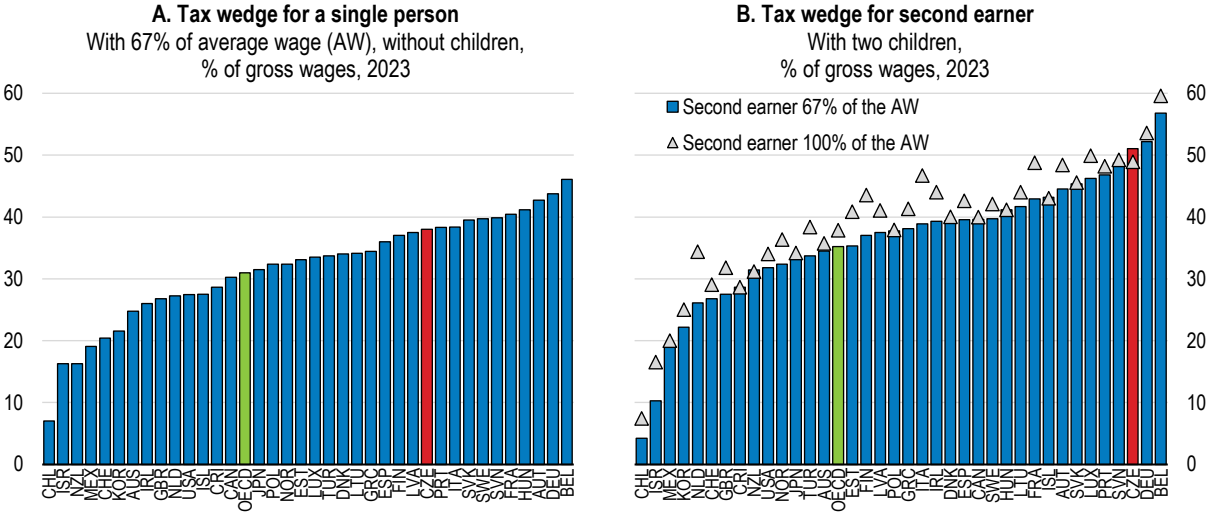
Table 1.5. Main tax policy changes as part of the 2024 consolidation programme

Measure	Estimated revenue effect in 2024
Personal income tax: including lower threshold on the top marginal tax rate, lower tax credits or limitation of eligibility for spouses, students and pre-school placements	+ CZK 8.1 billion (0.1% of GDP)
Social security contributions: reintroduction of sickness insurance contributions for employees	+ CZK 12.3 billion (0.15% of GDP)
Corporate income tax: 2 percentage-point increase in statutory tax rate	+ CZK 21.1 billion (0.26% of GDP)
Value-added tax: reduction in the number of reduced rates and reclassification of items	- CZK 3.7 billion (0.05% of GDP)
Excise taxes: higher tobacco and alcohol taxes	+ CZK 4 billion (0.05% of GDP)
Real estate taxes: increase in rates of recurrent taxes on immovable property	+ CZK 10 billion (0.13% of GDP)

Source: (MoF, 2024[8])

Figure 1.10. The tax wedge is high for low- and second-earners



Note: The principal earner in the two-earner married couple works at 100% of the average wage (AW).
Source: OECD Taxing Wages database; OECD (2024), Taxing Wages 2024: Tax and Gender through the Lens of the Second Earner, OECD Publishing, Paris, https://doi.org/10.1787/dbcbac85-en.

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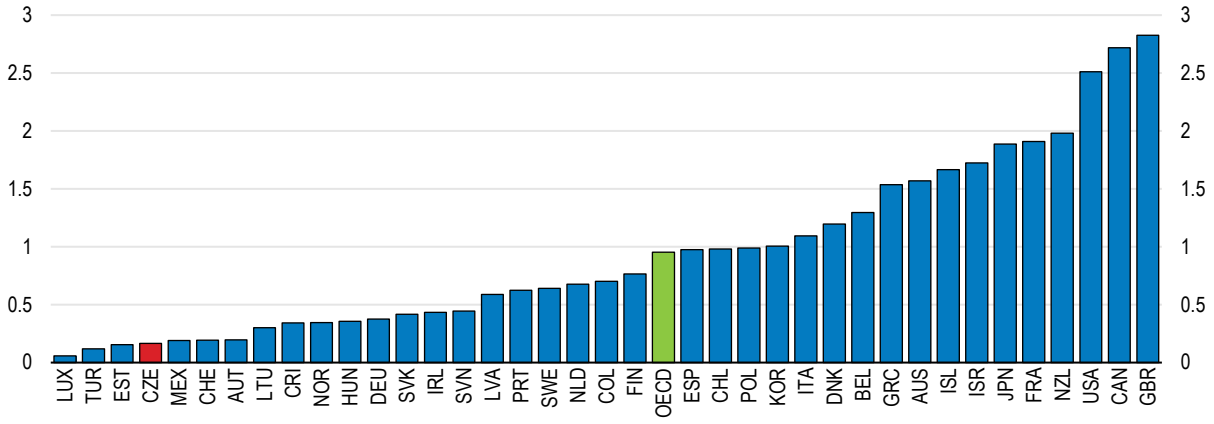
Figure 1.11. Revenues from recurrent taxes on immovable property are very low

Revenue from recurrent taxes on immovable property, % of GDP, 2023 or latest available year



Source: OECD Revenue Statistics database.

StatLink https://stat.link/8hm7nr

Changing the tax base to regularly updated market values could make the tax more efficient and fairer. Czechia is one of very few OECD countries (together with Slovakia, Israel and Poland) that bases recurrent taxes on immovable property on the size (in square metres) of the property rather than its estimated market value. A system based on the property size is less accurate in accounting for taxpayers' housing wealth, as it disregards other physical characteristics of the property which are determinants of its value, such as quality, number of rooms, age, or the presence of balcony. Additionally, in a size-based property tax system, tax revenues are not responsive to changes in the housing cycle. This limits the effectiveness of the tax as a stabiliser of fluctuations in the housing market. If the tax base was changed to property values, it would be important to regularly update the values. Taxing properties based on outdated values can make the tax regressive as houses that experience large increases in market values become relatively under-appraised and under-taxed. Moreover, homeowners have an incentive to remain in undervalued homes, thereby reducing residential and labour mobility (OECD, 2022[12]).

A property value-based recurrent tax on residential property can also encourage a more efficient use of the current housing stock. According to 2021 Census data, around 16% of dwellings are vacant in Czechia (Ministry of Regional Development, 2023[13]), which is a high share in international comparison (De Pace, 2024[14]). A significant share of unoccupied family houses are cottages, mainly in recreational areas of the country. Nevertheless, there are also significant vacancies in densely populated areas, for instance about 94 000 vacant dwellings in Prague, although, due to the statistical definition, this may include rented apartments of people who work in Prague but regularly commute to their family homes outside of Prague. Vacancies reduce the supply of dwellings available for purchase or rent, putting upward pressure on house prices, especially when located in highly demanded areas. Gradually transitioning to a higher recurrent tax on residential property based on regularly updated values would help address this issue, as it would increase the cost of keeping properties unused. Additionally, the authorities could consider introducing specific taxes on vacant dwellings (on top of regular property taxes), as in Australia, Canada and France. These taxes have proven to be successful in reducing vacant homes. However, they require thorough monitoring and compliance checks, which add to administrative costs (OECD, 2022[12]).

The tax design can make higher property taxes more politically acceptable and address issues for households that are rich in assets but have low income. Property tax reforms are unpopular, especially in countries like Czechia where owner-occupied housing is widespread, including among low-income households. Switching from size to market-based property valuations could imply a steep rise in the tax bill for many households. Country experiences for example from Denmark and Ireland suggest that a

gradual phasing-in of the tax changes on residential property, accompanied by lower statutory tax rates, tax rebates or tax deferrals, for example paying the tax only when a house is sold or bequeathed, can increase acceptance and help avoid an abrupt hike in tax bills for homeowners. Additionally, allowing for paying the tax in instalments, as is done in Canada, Denmark, or the United States, may help households to overcome liquidity constraints and improve tax compliance. Furthermore, progressive taxation, by setting progressive tax rates or by granting exemptions or credits, can protect low-income households and thereby bolster fairness and acceptability of increased property taxation.

Regularly updating the value of residential properties can be administratively costly, but digitalisation can limit the burden on the administration. The most common method for property evaluation in OECD countries is based on sales comparisons, which use detailed data on recent sales for properties with similar characteristics. Digitalisation can reduce the costs of regular appraisals. Computer-assisted mass appraisals (CAMA), as done in the Netherlands, estimate values for a group of properties using mathematical modelling. Alternatively, data from digital platforms advertising properties for sale can be used. These methods reduce the costs associated with frequent property revaluations (OECD, 2022[12]). As these approaches require technical capacities, they may be best undertaken by higher levels of government, for example at the level of the central government or regions.

The VAT tax base could be further broadened. By unifying the reduced rates of 10% and 15%, the number of VAT rates was reduced from three to two in 2024 - the standard 21% rate and a reduced rate of 12%. Some selected goods and services were also shifted from the regular to the reduced rate (e.g. some food items). While the simplification is welcome, maintaining VAT exemptions or reduced rates is inefficient. Reduced VAT rates for equity reason is also a poorly targeted instrument as all households benefit from the reduced rates, including the affluent. Furthermore, differential VAT rates provide opportunities for tax evasion by re-classifying goods to benefit from lower rates. According to the VAT Revenue Ratio indicator (OECD, 2022[15]), Czechia lost about 41% of its potential VAT revenues in 2020 (or about 5% of GDP) due to VAT exemptions, reduced rates, weak enforcement or VAT non-compliance, a slightly lower share than the average OECD country (44%). In addition, in 2022, the VAT registration threshold was doubled to CZK 2 million (around USD 86 000). This is a relatively high threshold (OECD, 2022[15]). While this reduces the tax administration and compliance costs for SMEs, it can have a negative impact on revenues and introduces a competitive distortion. A number of OECD countries combine a low VAT registration and collection threshold with simplified procedures to calculate the VAT liability for SMEs.

Table 1.6. Past recommendations on the tax system

Recommendations in previous Surveys	Action taken since 2023
Strengthen tax revenues, including through more progressive personal income taxation	In 2024, the progressivity of the personal income tax (PIT) system was increased by lowering the threshold for the top marginal tax rate from 4 to 3 times the average wage.
Shift towards real estate, consumption and environmental taxes, and reduce social security contributions.	In 2024, real estate tax rates were increased on average by around 80% and the tax indexed to consumer price developments. Excise taxes on alcohol and tobacco have been increased and previously untaxed tobacco products included. However, employee social security contributions were also increased.
Gradually broaden the base for the VAT, including by reversing the VAT exemptions introduced during the pandemic.	In 2024, the number of VAT rates were reduced from three to two, including the standard 21% rate and a reduced rate of 12% (by unifying reduced rates of 10% and 15%).

Enhancing spending efficiency

Increasing the efficiency of the public administration can help to improve fiscal sustainability and raise the quality of services provided to citizens. The size of the public sector in the Czech Republic in terms of general government expenditures (43% of GDP in 2022) is close to the OECD average but significantly below the OECD-EU average (50% of GDP in 2022). In terms of employment (17.3% of total employment in 2021), it is also somewhat smaller than the OECD average (18.6%). Nevertheless, given medium- to long-term spending pressures the authorities should strive to identify potential areas for spending efficiency gains based on evidence.

Czechia has recently piloted spending reviews. Spending reviews are widely used in OECD countries. If well designed they have the potential to systematically analyse the government's existing expenditure, to prioritise and reallocate expenditures, and to improve the effectiveness within programmes and policies. In 2023, Czechia established a small unit within the Ministry of Finance dedicated to spending reviews. So far, the unit has completed two pilot spending reviews (on ICT spending in the public sector and subsidies in the culture sector). A review of all public subsidies is ongoing. As discussed in this *Survey*, future spending reviews could be particularly useful in the areas of family (see below) and innovation policy (*see Chapter 2*), in particular the system of direct (e.g. grant) R&D support. The pilot reviews revealed some challenges especially related to obtaining relevant performance data and regarding cooperation with line ministries (EC, 2024[16]).

The government should continue efforts to institutionalise spending reviews. The OECD *Best Practices for Spending Reviews* (Tryggvadottir, 2022[17]) stress that political leadership is crucial to ensure the viability and sustainability of spending reviews, and ensure the cooperation of all ministries. Political commitment is likely to be greater if the relevant line ministries can retain a proportion of the efficiencies identified to fund new priorities within their ministries (Tryggvadottir, 2022[17]). Once sufficient capacity has been built-up, spending reviews should be systematically integrated into the budget and medium-term frameworks. For example, in Denmark the decision on which reviews to conduct is taken at the beginning of the year with the aim of having the findings available to inform the budget negotiations in June. Moreover, it is essential that the Ministry of Finance monitors the implementation of spending review decisions and holds line ministries accountable for delivering to the agreed conclusions. In the United Kingdom for example, the Treasury is responsible for overseeing the implementation and monitoring potential risks through regular engagement by the Treasury's spending teams with line Ministries.

Increasing analytical capacities and data sharing across the administration is essential to strengthen evidence-based policymaking, including high-quality spending reviews. Strengthening evidence-based policy making has been identified as one of the key priorities for the Czech government in the recent *OECD Public Governance Review* (OECD, 2023[18]). The recent creation of the Government Analytical Unit (VAU) in the Office of the Government is an important step to develop analytical capacity and support more evidence-based policymaking. Several ministries and agencies have also started to build-up analytical capacity. One significant challenge relates to data interoperability, including merging or linking administrative datasets. Moreover, accessing micro-level information from the Czech Statistical Office is difficult (OECD, 2023[18]). Overcoming difficulties related to cumbersome administrative procedures to access data and addressing privacy concerns are essential to foster a more open and transparent data culture across the Czech administration. Stronger collaboration with research institutions can also help foster more evidence-based policy making. This may require creating formalised agreements with research institutions covering matters of data access and use. In Denmark, for instance, there are agreements between all research institutions and Statistics Denmark, which, among other things, clarify roles and responsibilities.

Czechia's local administrative organisation is highly fragmented, hampering the efficient provision of high-quality public services and investment. In 2022, the average municipal size was 1 710 inhabitants, the smallest among OECD countries (Figure 1.12). The median size of Czech municipalities was 442

inhabitants and 95.7% of municipalities had fewer than 5 000 inhabitants. The strong fragmentation has historical reasons, as the increase in the number of municipalities and municipal self-government after the Velvet Revolution was, to a certain extent, a response to the previous centralised system. However, as discussed in detail in a previous *Survey* (OECD, 2020[10]) and the *OECD Public Governance Review* (OECD, 2023[18]), most Czech municipalities are too small to ensure cost-effective and good-quality public services. The small size of municipalities also brings challenges due to low staff and administrative capacity.

Despite important political challenges, merging municipalities should remain on the political agenda. Several OECD countries have opted for municipal mergers. In the Netherlands and Switzerland, municipal mergers have been a gradual process. Nordic countries have implemented successive waves of mergers. Several OECD countries have used incentives to encourage municipal mergers, such as providing financial subsidies, guidance and technical assistance (e.g. Norway, Switzerland). Some countries encouraged mergers by keeping the former municipal administration with a sub-municipal status, as in Ireland, Korea, New Zealand, Portugal, the United Kingdom or in France, with the delegate mayors. Incentives need to be accompanied by appropriate consultations, negotiations and communication efforts to gain support from local stakeholders and civil society and ensure buy-in.

Table 1.7. Competences of municipalities

	Type I: Municipalities with basic delegated powers (6 258)	Type II: Municipalities with authorised municipal authority (338)	Type III: Municipalities with extended powers (205)
Autonomous powers	Management of municipal property and issuance of generally binding decrees. Territorial and regulatory plan of the municipality. Establishing/regulating local fees. Creating and managing nursery and primary education, basic art education		
Delegated powers	• Elections • Population records • Water management	**Type I competencies plus**: • Building authority • Registry offices • Selected environmental and agricultural agenda • Social work • Overlooking war graves	**Type I + Type II competencies plus** • Law enforcement offences • Road authority • Issuing identification cards (driver's license, trade license) and travel documents • Management and co-ordination of motor vehicle and population registries • Co-ordination of social services provision

Source: (OECD, 2023[18])

The tax sharing formula should be tweaked to strengthen incentives for municipalities to get larger. Total tax revenue is shared among different levels of governments according to a complex tax sharing formula. The tax sharing formula mainly takes into account population size (88%), but also the number of children in nursery and primary schools, and the cadastral area. As analysed in a past *Economic Survey* (OECD, 2020[10]), the tax sharing formula implicitly benefits municipalities with very few inhabitants, which is largely due to the inclusion of the cadastral area component in the formula. As a result, the average tax revenue per inhabitant follows a U-shaped curve, with the smallest municipalities having higher revenues per inhabitant than medium-sized municipalities. It is important to compensate small municipalities for the higher per capita costs of delivering basic services. However, given the strong administrative fragmentation, the tax-sharing formula could be made more neutral for small municipalities, to reduce incentives to remain small.

Voluntary intermunicipal cooperation is common but lacks stability and is often focused on a single purpose. Voluntary associations of municipalities (VAMs) are a common form of inter-municipal cooperation. VAMs generally include only a limited number of municipalities and the majority are single-

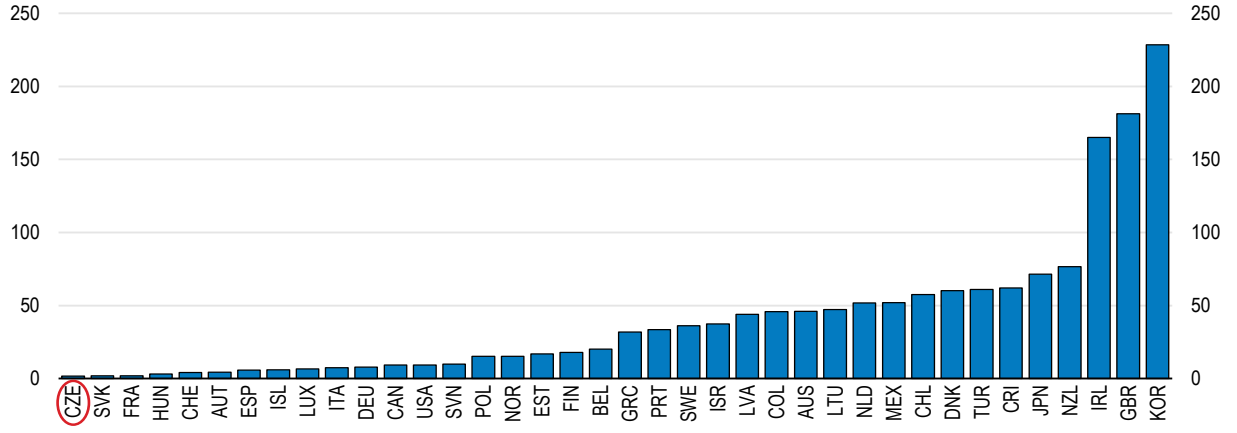
purpose and may focus on a one-time investment project or the ongoing provision of services (e.g. waste management). VAMs often importantly rely on external, temporary sources of financing such as EU funds.

In 2024 an amendment to the Law on Municipalities introduced a new form of VAM, so-called communities of municipalities. To form a community of municipalities, at least 15 municipalities (or three-fifths) from the same *municipality with extended powers* (*i.e.* municipalities that fulfil several administrative functions delegated by the central government on behalf of smaller surrounding municipalities) need to participate. The aim is to strengthen cooperation at a larger scale, for instance to ensure coordination and joint delivery of certain public services, and incentivise multi-purpose and more stable cooperations for territorial development. The municipalities within a community can hire shared staff as employees of the community. However, membership remains voluntary.

Incentives for longer-term municipal cooperation should be strengthened. Forming voluntary associations of municipalities involves transaction and coordination costs, for example to search for a suitable partner municipality to form an association with. Coordination costs also tend to increase with the number of participants in a VAM. Together with political costs, these costs can hinder the establishment of otherwise beneficial cooperations. Many OECD countries have recently introduced financial incentives to encourage inter-municipal co-operation. For instance, France offers special grants and a special tax regime in some cases. Other countries, like Estonia and Norway, provide additional funds for joint public investments. Slovenia introduced a financial incentive in 2005 to encourage inter-municipal co-operation by reimbursing 50% of staff costs of joint management bodies – which led to a notable rise in the number of such entities (OECD, 2023[18]). In Czechia, the central government could for example offer financial support to hire shared staff of communities of municipalities, as is currently being discussed. In addition, mandating inter-municipal co-operation over a legally defined set of public services, delegated or independent competences can be an effective way of improving the quality and efficiency of service delivery and supporting wider use of inter-municipal co-operation schemes. Developing data on functional areas, i.e. territorial areas of economic activity rather than administrative units, would help municipalities establish the most beneficial cooperations.

Figure 1.12. Czech municipalities are very small

Average number of inhabitants per municipality, thousand, 2022



Source: OECD Subnational government structure and finance database.

StatLink https://stat.link/jy1mp7

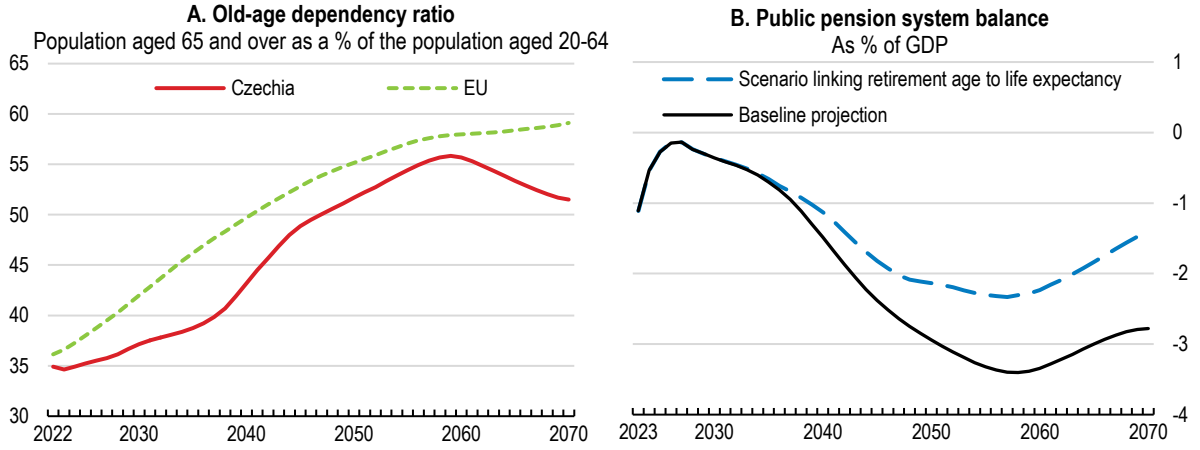
There is a need to build administrative capacity and skills at the local level. The small size of municipalities also brings problems of low capacity. The lack of adequately educated and skilled staff and expertise in small municipal offices is an acute challenge when dealing with investment projects, procurement and financial management (OECD, 2023[18]). Evidence shows that investment per capita in small municipalities in Czechia is significantly lower than in mid-sized or larger municipalities (OECD, 2020[10]), partly reflecting

different needs. A backlog of investment projects due to insufficient capacity may also partly explain why local authorities have been running substantial surpluses for several years. Support to build capacity should be tailored to groups of municipalities that face similar challenges and designed and provided in a systemic and sustainable way, rather than offering technical assistance on a case-by-case basis (OECD, 2023[18]). Support could also target VAMs for example by encouraging peer exchanges and knowledge sharing across VAMs. The National Development Bank plans to open so-called investment hubs in regions to facilitate project preparation. In addition, Czechia is piloting regional competency centres for public procurement purposes. These competency centres, if proving successful, could potentially be expanded to areas beyond public procurement.

Recent reforms have improved the overall sustainability of the pension system

Population ageing is putting pressure on the sustainability of the public pension system. The ratio of elderly people (65 and over) to the working-age population (20-64 years) is projected to rise from 34.9% in 2024 to 55.7% in 2060 before falling slightly (EC, 2024[9]) (Figure 1.13). These demographic developments are the main driver of rising public pension expenditure in the future. According to the latest EU Ageing Report, public pension expenditure will increase rapidly from 2030 onwards, from 8% to 11% of GDP in 2060, and the balance of the pension system will reach a deficit of 3.3% of GDP in 2060 (EC, 2024[9]). Pension expenditure is expected to decline slightly after 2060 to 10.4% in 2070 mainly due to cohort effects as smaller cohorts enter retirement age.

Figure 1.13. Population ageing puts pressure on pension spending



Note: The baseline projection in Panel B does not account for the pension reforms enacted in December 2024.
Source: European Union, 2024 Ageing Report, Economic and budgetary projections for the EU Member States (2022-2070); Ministry of Finance of the Czech Republic.

StatLink https://stat.link/2ao4rg

Recent reforms will significantly improve the sustainability of the pension system if fully implemented. In early 2023, pension benefits for parents were increased, raising pension expenditures. However later in 2023, the first phase of a comprehensive pension reform was enacted, including a reduction of the indexation of pensions and a tightening of early retirement options. In particular, since January 2024 pensions will be indexed to a pensioner cost of living index plus a third of the growth in real average wages (instead of one half of the real wage growth previously). Moreover, from October 2023, early retirement can only be taken 3 years before the statutory retirement age (instead of 5 years) with at least 40 years of contributions (35 years previously). In addition, the penalties for early retirement were increased (1.5% for every 90 days). The second part of the pension reform was approved by parliament in December 2024. The original plan of the reform would have established an automatic link between the statutory retirement age and gains in life expectancy from 2030 onwards when the current cap of the statutory retirement age of 65 is reached. This would have reduced pension expenditures by about 1 percentage point from 2050

(Figure 1.13, Panel B). The enacted reform limits the increase of the statutory retirement age to one month per year and caps the retirement age at 67. In addition, the second part of the pension reform foresees a reduction of the accrual rates.

Reforms to delay retirement should be accompanied by policies that foster employability of older workers. Research suggests that increasing the statutory retirement age and tightening early retirement options will significantly increase the average age of labour market exit (e.g. (Turner and Morgavi, 2020[19]) (Morgavi, 2024[20])). However, the effect will depend on labour market settings and accompanying policies. To ensure that older workers remain in employment it is important to strengthen incentives for them to participate in adult learning (*see Chapter 4*) and facilitate access to part-time work and flexible work arrangements. In Finland, for example, the working time act allows older workers to work fewer than the regular working hours in order to retire on partial early old-age pension or partial disability pension. In Norway, employees were given a statutory right to reduced working hours from the age of 62 in 2008. Moreover, job rotation programmes help older workers, particularly those with health-related issues or those in arduous occupations, to identify and transition into roles that better align with their skills and aspirations (OECD, 2024[21]).

Financing some of the redistributive parts of the pension system through general taxes would allow to lower mandatory contributions or increase accrual rates for higher earners, as recommended in the *OECD Pension Review* (OECD, 2020[22]) and previous *Economic Surveys* (OECD, 2023[4]). The Czech pension system is strongly redistributive. The old-age pension consists of a flat-rate component (basic pension) and an earnings-based component with caps on pensions of higher-income earners, weakening the link between pension contributions and future benefits. Old-age poverty rates are low. While the net replacement rate of the average wage earner is around the OECD average, the difference between high and low earners is large in international comparison. At 41.5%, the replacement rate of high-income earners (at twice the average wage) is well below the rate of low-income earners (at half of the average wage), at 89.7%, a large gap by international comparison (OECD average: 52.8% for high-income versus 73.2% for low-income earners) (OECD, 2023[23]). Redistribution takes place exclusively within the pension system as all pension revenues come from contributions, although deficits of the pension system are covered by general government revenues. In contrast, many countries finance part of pension spending through taxes. Financing some redistributive parts of the system (e.g., part of basic pensions or credits for non-employment periods) through taxes could create room to strengthen the link between paid contributions and benefits. Alternatively, it could help reduce high mandatory social security contributions and thereby lower the high tax wedge (see above).

Table 1.8. Past recommendations on the pension system

Recommendations in previous Surveys	Action taken since 2023
Continue to raise the statutory and minimum early retirement ages and link them to life expectancy.	In 2023, a first part of a comprehensive pension reform was enacted and includes a reduction of the indexation of pensions and a tightening of early retirement options. In December 2024, parliament approved a second part of the reform that foresees an increase of the statutory pension age and reduced accrual rates.
Consider financing some redistributive components of the public pension system (e.g., basic pensions) through general taxes and lowering burdensome social security contributions.	No action taken.
Reduce tax advantages for the self-employed, including by increasing the assessment base for social security contributions.	A reform in 2023 gradually increased the general assessment base from 50 to 55% of profits and the minimum assessment base for social security contributions from 25% to 40% of the average wage.

The self-employed contribute significantly less to the pension system than dependent workers. Until recently, the assessment base for social security contributions of the self-employed was set at 50% of profits, with a minimum contribution base of 25% of the average wage. This set-up effectively lowers the

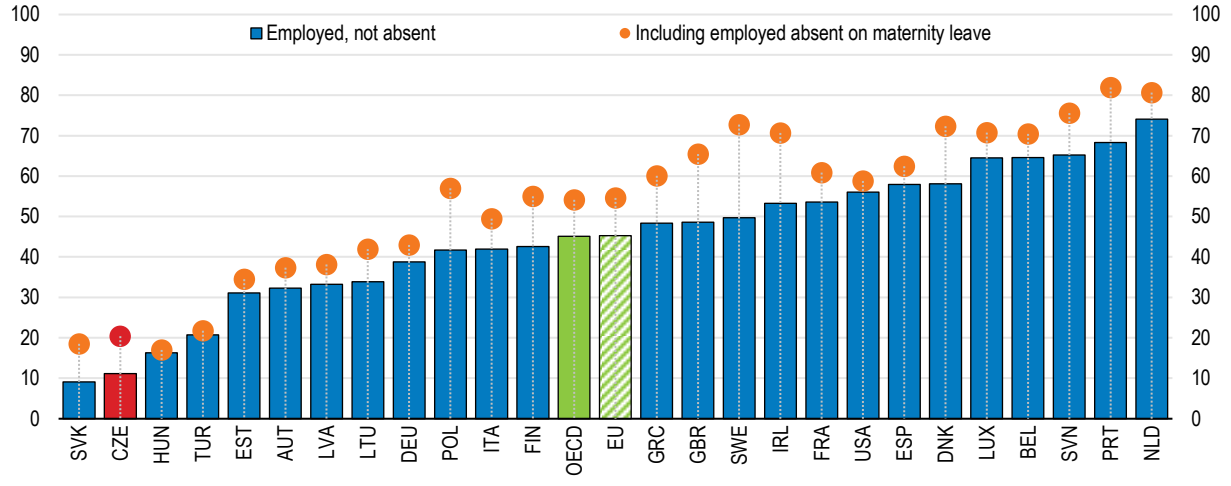
overall contributions of self-employed workers compared to employees with a comparable income. While the lower pension contributions of the self-employed lead to lower pension benefits, the high solidarity within the pension system redistributes strongly in their favour. A reform in 2023 gradually increases the general assessment base from 50% to 55% of profits and minimum assessment base from 25% to 40% of the average wage. While this change will ensure higher pension contributions and benefits, it mainly affects self-employed persons with low profits while self-employed persons with high profits continue to enjoy a strongly favourable treatment (Prokop, Pertold and Ostrý, 2023[24]). To further improve the system, the assessment base for social security contributions of the self-employed should be further increased. Analyses by the OECD (OECD, 2020[22]), the Fair Pension Committee in 2020 and the National Economic Council to the government (NERV) suggest that an increase of the assessment base to 70-75% of profits would ensure better harmonisation of contributions between self-employed workers and employees with similar earnings.

Rebalancing family benefits to raise employment of women with young children

The employment rate of mothers with young children is very low in Czechia (Figure 1.14). While female employment is high overall, it drops significantly in the years after childbirth. Long leave periods for women reduce chances of re-entering the labour market and lead to negative consequences for career progression as well as earnings mobility over the life course *(e.g.* (Thévenon and Solaz, 2013[25])*)*. This contributes to the gender pay gap, which is above the OECD average, as well as lower pension income, leading to a higher risk of poverty in old age for women. Increasing employment rates of mothers with young children would help mitigate labour shortages and the impact of a shrinking work force as well as likely lead to additional tax revenues. Family benefits need to be reviewed, in particular the balance between cash benefits (e.g. parental leave allowances) and in-kind benefits (e.g. early childhood education and care), with a view to reducing disincentives for mothers with young children to work outside the home.

Figure 1.14. The employment rate of mothers with young children is very low

Employment rates for women (15-64 year-olds) with children aged 0-2, by maternity leave status, %, 2021 or latest available year



Source: OECD Family database, https://www.oecd.org/els/family/database.htm.

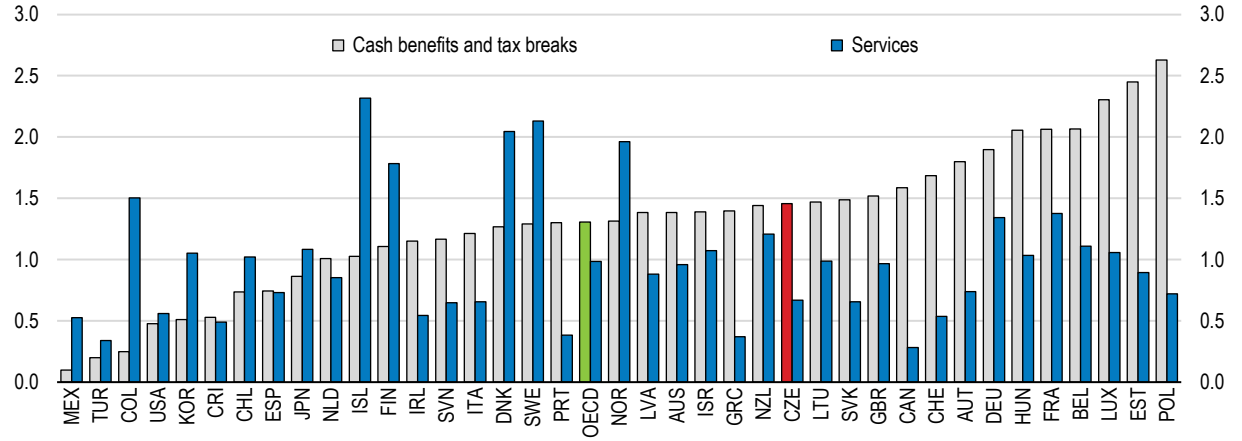
StatLink https://stat.link/ojt5vy

Very long parental leave and relatively generous associated cash benefits discourage women from returning to work, as discussed in detail in previous *Surveys* (OECD, 2023[4]). In 2024, the maximum length of time the parental allowance can be drawn was reduced. For children born after 1 January 2024, the benefit can be drawn until the child reaches the age of three, down from four previously. On average across

OECD countries, parental leave is around 33 weeks. At the same time, the benefit amount was increased. While parental leave is not gender specific, in 2023/24 more than 98% of parental allowance beneficiaries were mothers. Over the years, more flexibility has been introduced to give parents a choice over the length of parental leave. Each recipient of the parental allowance is entitled to a fixed budget (currently CZK 350 000 for one child, CZK 525 000 for twins) and chooses their monthly instalments, which in turn determines the length of the parental leave. On average beneficiaries were drawing the benefits for 31 months. The design of the benefit induces lower income beneficiaries to draw the benefit for a longer period. This is because the maximum monthly instalment is a fraction of the beneficiary's income, leading to lower monthly instalments for lower-income beneficiaries and hence longer drawing periods to exhaust the total allowance. The authorities plan to increase the minimum amount that can be drawn, allowing for faster drawing of the benefit by low-income households, which is welcome. While it is possible to draw the parental allowance and work, data on how many recipients work are currently not available. Research shows that an increase in the parental allowance by 36% in 2020 led to a decline of labour market participation of mothers on average by 4.8 percentage points (Grossmann, Pertold and Šoltés, 2024[26]).

Figure 1.15. Public support to families is tilted towards cash benefits

Public expenditure on family benefits by type of expenditure, % of GDP, 2019



Source: OECD Family database, http://www.oecd.org/social/family/database.htm.

StatLink https://stat.link/kx0deq

The effective duration of paid parental leave should be gradually reduced, and part of the parental leave should be made conditional on both parents taking some of the parental leave in households with two parents. The amount of commensurate cash benefits should be reduced accordingly. The savings should be redirected to expand affordable childhood education and care facilities. Different ways exist to reduce the effective duration of parental leave. The maximum duration of parental leave could be further shortened. Moreover, some OECD countries with relatively long paid parental leave entitlements reduce the generosity of the benefits over time (e.g. Hungary and Finland). In addition, some countries offer a childcare allowance or a subsidy of childcare fees available to working parents as an alternative to parental allowances. For instance, in France, income-related childcare allowances are provided to parents who use nurseries.

Further expanding affordable, high-quality childhood education and care (ECEC) should remain a key priority. Enrolment of children under the age of three in ECEC is among the lowest in the OECD. As discussed in detail in *Chapter 4,* there is a lack of affordable childcare places in Czechia. This is an important constraint hindering mothers' return to work. The introduction of children's groups (under the Ministry of Labour and Social Affairs) in addition to kindergartens (under the Ministry of Education) has helped increase capacity. However, there is a risk that the quality of provided services differs. Kindergartens must follow a framework education programme prepared by the Ministry of Education, while

children's groups do not follow any centralised education programme. As discussed in detail in *Chapter 4*, rebalancing public spending from parental leave towards expanding ECEC capacity and supporting low-income families to cover ECEC fees, ensuring children benefit from minimum standards of learning and development opportunities across ECEC providers, and attracting a qualified workforce can help mothers return to work and ensure equality of opportunity for children.

Increasing the flexibility of working arrangements can help mothers (re-) enter the labour market. Part-time work is used more rarely compared to other OECD economies, despite an increase in recent years, especially for women. Increasing the use of part-time work and incentivising employers to provide flexible work options suitable for mothers with pre-school children is one of the priorities set out in the government's Gender Equality Strategy for 2021-30 (Office of the Government of the Czech Republic, 2021[27]). In 2020, job sharing was legislated with the aim of encouraging a higher uptake of part-time work by mothers. Higher flexibility of jobs, better enforcement of rights for part-time work and flexible teleworking arrangements can support the re-entry of women into the market. In Sweden, for instance, mothers can split the parental leave period of 18 months into a number of shorter spells and use them to shorten working hours until their children reach the age of eight. They also have the right to shorten working hours up to 25% of the normal hours even if the parental leave days are used up in this period.

Table 1.9. Past recommendations on family benefits

Recommendations in previous Surveys	Action taken since 2023
Lower untargeted family cash benefits and gradually reduce the maximum duration of parental leave	The maximum support period of the parental leave allowance has been reduced to three years (from four years) for children born after 1 January 2024. At the same time, the cash benefit has been increased. In September 2024, the government approved a draft law that combines four existing income-tested social benefits (child benefit, housing allowance, subsistence allowance, housing benefit) into one benefit and digitised and simplified the application process.
Reserve part of parental leave for fathers at sufficiently generous replacement rates.	No action taken

Table 1.10. Recommendations on monetary, financial and fiscal policies

Main findings	Recommendations (key in bold)
Monetary and financial stability	
Headline inflation has fallen close to the 2% target, but services price inflation is elevated and wage growth is brisk.	**Continue to gradually ease the restrictiveness of the monetary policy stance, contingent on underlying inflationary pressures durably subsiding**.
The banking sector is heavily exposed to the property market.	Closely monitor risks in the property market sector and consider reactivating the debt-service-to-income and debt-to-income limits.
Addressing fiscal challenges	
Public debt- has increased significantly after the recent crises, although it remains low in international comparison. The government has started fiscal consolidation, but measures to reach the fiscal target of a structural budget deficit of 1% of GDP have not yet been specified.	**Continue fiscal consolidation and specify measures to meet medium-term fiscal targets and rebuild fiscal buffers.**
Revenues rely heavily on social security contributions and result in a high tax wedge, especially for low- and second earners. Recurrent tax rates on immovable property have been increased but revenues remain low.	Shift towards real estate, consumption and environmental taxes, and reduce social security contributions. Reduce the tax wedge in particular for low-income and second earners. Further broaden the VAT base, including by reducing the number of items under the reduced VAT rate.
The tax base of recurrent taxes on immovable property is the size of the property, which harms efficiency and equity.	Change the base for recurrent taxes on immovable property from area to regularly updated market values. Introduce options to protect the most vulnerable property owners, such as tax deferrals or payments in instalments.
There is a need to strengthen evidenced-based policy making and performance-oriented budgeting. Spending reviews were piloted in 2023.	**Build capacity to conduct comprehensive spending reviews and integrate them into the budgetary process, and ensure availability and access to adequate performance data and inter-ministerial cooperation.**
Czech municipalities are the smallest in the OECD. High fragmentation poses challenges to efficiency and the quality of services. The lack of staff and administrative capacity in many small municipalities poses a challenge for providing services and investment.	Introduce financial incentives to encourage mergers or long-term municipal cooperations and make inter-municipal co-operation mandatory for a set of clearly defined public services. Provide capacity building support to groups of municipalities including through regional competency centres.
Recent reforms of the public pensions have improved sustainability. Nevertheless, a pension funding gap will remain.	**Link increases in the statutory retirement age from 2030 to gains in life expectancy**.
The Czech pension system is strongly redistributive. The tax wedge is high due high social security contributions.	Consider financing some redistributive components of the public pension system through general taxes and lowering social security contributions.
The self-employed benefit from tax advantages vis-à-vis employees, resulting in significantly lower social security contributions.	Align the pension contribution base between employees and self-employed workers with similar earnings.
Paid parental leave is longer than elsewhere, negatively affecting the career prospects of mothers and gender wage equality. In 2023/24, more than 98% of parental leave beneficiaries were mothers.	**Reduce the effective duration of parental leave and make part of it conditional on the second parent's participation**. **Redirect family cash benefits towards the expansion of high-quality and affordable early education and care capacity**.

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2 Boosting innovation and business dynamism

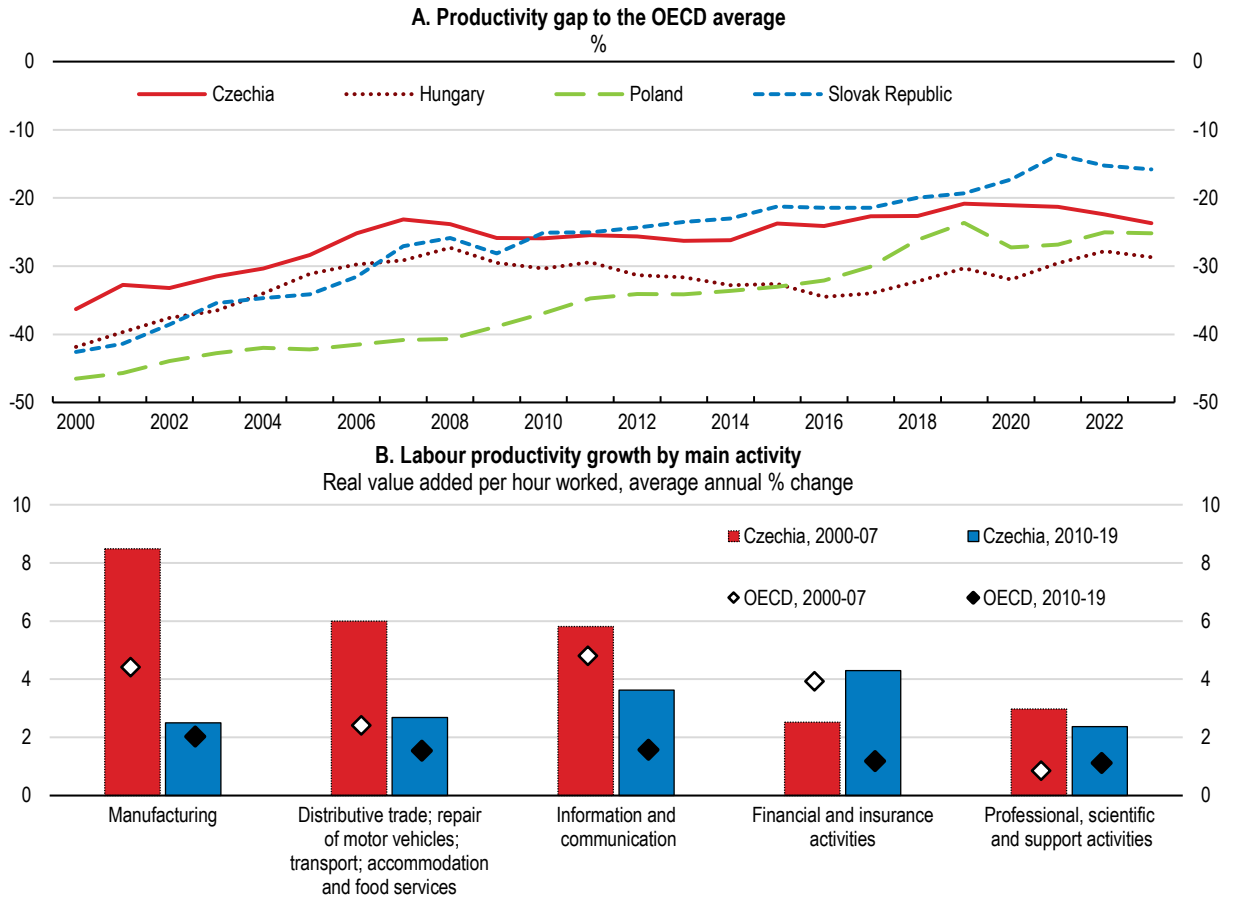
Oliver Röhn, OECD

Czechia's growth has slowed down since the global financial crisis and has stalled since the pandemic, leaving a sizeable productivity gap with the OECD average. Boosting the innovation capacity and business dynamism can help revitalise productivity growth. Improving the innovation ecosystem requires better targeting business support for R&D, developing capital markets and strengthening linkages between businesses and science. The business environment can be strengthened by improving regulations to facilitate the entry and scaling up of productive firms, and the exit of unproductive firms as well as further enhancing the anti-corruption framework.

Productivity convergence has stalled

Productivity growth has slowed down significantly after the global financial crisis. Growth in GDP per hour (in constant PPPs) declined from close to 5% per year on average in the period 2000-2007 to under 2% in the period 2010-2019, and has stalled since the pandemic. As a result, productivity convergence to the average OECD country has also slowed and a significant productivity gap of around 20% remains (Figure 2.1, Panel A). Strong productivity growth in the period before the global financial crisis was mainly driven by the integration into global value chains, especially downstream activities in the automotive sector, and accompanied by significant FDI inflows into manufacturing. The productivity slowdown has been most pronounced in manufacturing but has been broad-based across sectors, with the exception of the finance and insurance sector (Figure 2.1, Panel B). Meanwhile, FDI inflows have become more diversified in the past decade, with particularly strong inflows into finance and real estate as well as non-automotive manufacturing sectors (OECD, 2024[1]).

Figure 2.1. Productivity growth has significantly slowed



Note: In Panel A, productivity is calculated as GDP (USD, constant prices, 2015 PPPs) per hour worked.
Source: OECD calculation based on OECD Productivity database

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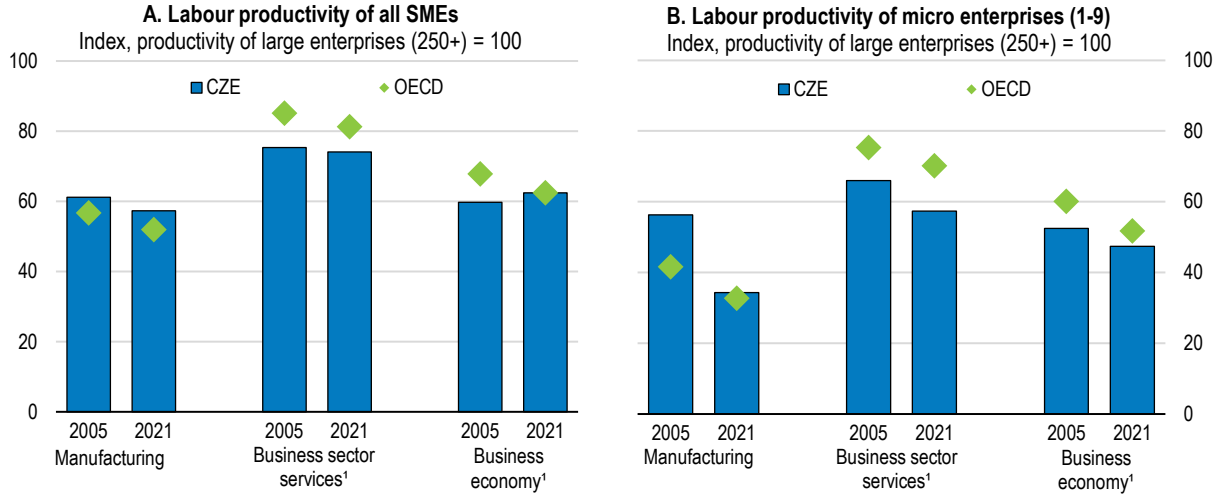
Small and medium-sized enterprises (SMEs) play an important role in the business landscape but lag in productivity. SMEs account for around two-thirds of employment and a bit over half of value-added in the business sector. As in other OECD countries, SMEs have lower productivity than large firms in Czechia (Figure 2.2). Low-productivity micro-firms (1-9 employees) dominate the business landscape, accounting for 96% of all active enterprises in 2020 (compared to 91% on average in OECD countries). The

productivity gap between large and micro firms has widened over time, especially in manufacturing and in higher technology services sectors (OECD, 2024[2]). Mid-sized firms (50-249 employees) only account for less than 1% in the business sector. This lack of mid-sized firms is common across OECD countries but more pronounced in Czechia in the manufacturing sector than in other OECD countries. Mid-sized firms account for less than 2% of firms in the manufacturing sector while they account for more than 5% in Germany, Austria, Denmark and Switzerland. Mid-sized firms are often seen as key drivers of innovation, productivity growth and job creation since they have better capacity than smaller firms to invest in R&D and adopt new technologies, while being more agile and adaptive than large firms. The lack of mid-sized firms may reflect deficiencies that prevent small firms from scaling up.

Figure 2.2. Productivity of SMEs is lagging behind



1. Except financial and insurance activities. OECD average is a simple average of 23 OECD countries.
Source: OECD Structural and Demographic Business Statistics Database.

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The productivity gap partly reflects limited productivity spillovers from foreign multinational enterprises (MNEs) that source less from domestic SMEs compared to other OECD countries. MNEs are twice as productive as domestic firms in Czechia, highlighting the potential of productivity spillovers (OECD, 2024[2]). However, foreign affiliates in Czechia import almost half of their intermediate inputs compared to around a third in other OECD countries. Moreover, domestic-owned firms are responsible for only around a third (32%) of the inputs sourced by foreign affiliates, compared to half on average in other OECD countries. Similarly, foreign affiliates' output is mostly exported or sold to other foreign affiliates operating in the Czech market (OECD, 2024[2]).

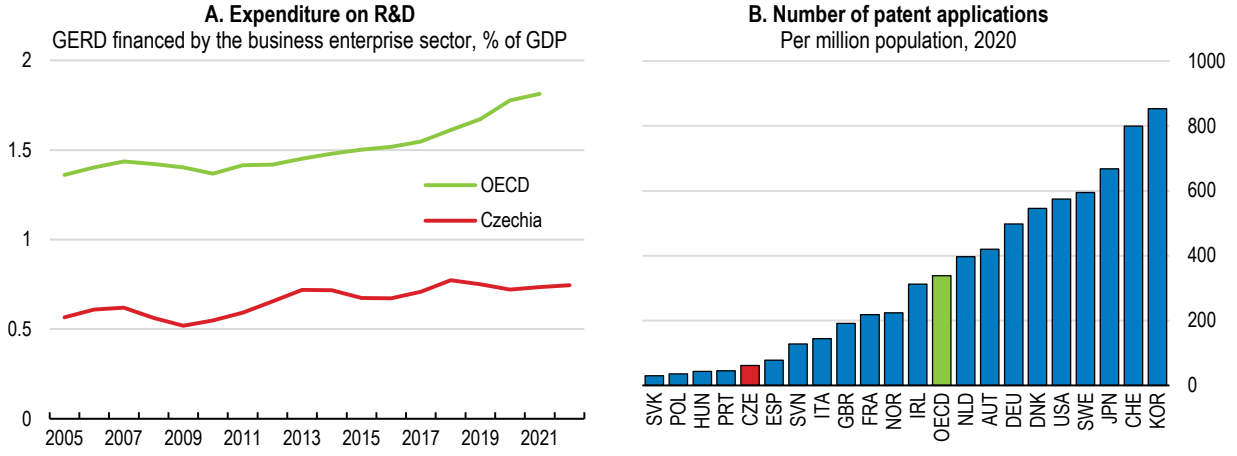
Research intensity and innovation capacity have improved but still lag many OECD peers. Despite an upward trend, R&D spending of businesses, in particular SMEs, continues to significantly lag behind the average OECD country (Figure 2.3). FDI has been traditionally concentrated in sectors that spend less on R&D. Only 4% of greenfield FDI that took place in Czechia over the period 2003-2022 involved R&D activities, about half the share in leading economies like Ireland, Austria and Denmark (OECD, 2024[2]). Moreover, the number of patent applications is low, and Czechia remains a moderate innovator according to the European Innovation Scoreboard, although the gap to the EU average is closing (EC, 2023[3]). The performance of SMEs in introducing product, process and organisational innovations has improved in recent years (OECD, 2024[2]).

Business dynamism is relatively low. Entrepreneurship and a dynamic business sector are crucial for the diffusion of new technologies. Young firms are often the first adopters of new technologies and engage more in risky break-through innovations. They therefore account for a significant part of aggregate

innovative activity and are a vital factor in making new technologies more broadly available to the rest of the business sector. Moreover, the green and digital transitions will require economic renewal, highlighting the need for structural policy settings that facilitate capital and labour reallocation. In Czechia, the birth and churn rate of firms are lower than on average in the OECD and especially low compared to the most dynamic economies such as Denmark (Figure 2.4). Furthermore, the share of start-ups (0-2 year old firms) in the business population and in employment (4.5%) is lower than in other OECD economies (Panel C).

Improving human capital and reducing skill mismatches in the labour market are also crucial areas to boost productivity and innovation in Czechia. Areas for reform to enhance education and skills are discussed in detail in *Chapter 4.* For example, a larger number of tertiary-educated persons would help foster innovation. Boosting tertiary educational attainment requires income support to vulnerable students, and also strengthening core and transversal skills in VET programmes to help students transition from VET to tertiary education. The share of STEM graduates is high overall but needs to be increased among women especially in ICT fields. Expanding opportunities for adult learning (e.g. coding) through flexible, modular and high-quality training programmes would make the workforce more adaptable to changing skill needs. Finally, strengthening continuous professional development of teachers, for example in the field of digital competences, can improve teaching quality and better equip pupils with skills for the labour market. This chapter focuses on the business side of the innovation ecosystem and business environment as policy levers to revitalise productivity convergence.

Figure 2.3. Research intensity and innovation performance are lagging behind



Note: GERD stands for Gross Domestic Expenditure on R&D. In Panel B, the number of patent applications refers to applications by inventor and priority year to the PCT (Patent Co-operation Treaty), the EPO (European Patent Office) and the US (US Patent and Trademark Office).
Source: OECD Main Science and Technology Indicators (MSTI) database; OECD Patents Statistics database; and OECD calculations.

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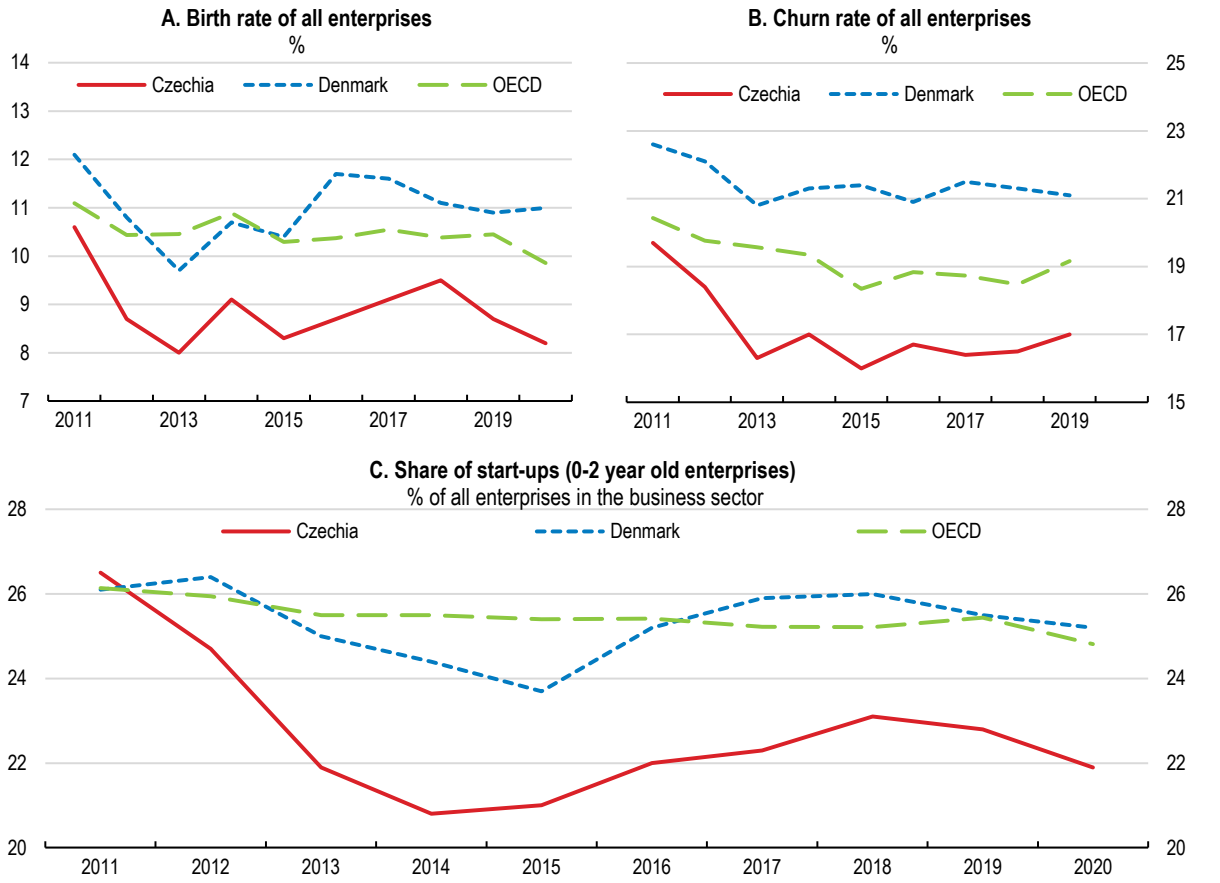
Figure 2.4. Business dynamism is relatively low

Total business economy



Note: The total business sector refers to total industry, construction and market services except holding companies. OECD average is calculated as a simple average of 24 OECD countries.

Source: OECD calculations based on OECD Structural and Demographic Business Statistics (SDBS).

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Strengthening the innovation ecosystem

Improving the governance of the innovation system

The authorities have adopted various strategies and programmes to boost the economy's innovation capacity, but the governance framework should be enhanced. There are at least six different strategies with a main aim to support innovation (OECD, 2024[2]). Among the most important strategies is the *Innovation Strategy of the Czech Republic 2019-2030,* which aims *inter alia* to increase R&D expenditure to 3% of GDP by 2030 from currently around 2%. In addition, The *National Research and Innovation Strategy for Smart Specialisation (RIS3)* sets up sectoral and thematic priorities (e.g. sustainable mobility, advanced materials) over the EU programming period 2021-27. To reduce overlap between these strategies and clarify responsibility for their implementation, the Office of the Government is currently preparing a law that specifies the hierarchy of strategies, giving the *National Policy of Research, Development and Innovation 2021+* an overarching role. However there remains a need to enhance coordination among various ministries, national implementing agencies, their regional branches, and regional innovation centres involved in innovation policy (OECD, 2024[2]) (OECD, 2020[4]).

Box 2.1. The Czech innovation governance system is complex

A large number of actors are involved in the formulation, implementation and funding of R&D and innovation policies. The main bodies include:

- Advisory and coordinating bodies**:** The *Section for Science, Research and Innovation* was established in 2022 within the Office of the Government of the Czech Republic under the authority of the Minister for Science, Research and Innovation and tasked to coordinate policies. The *Council for Research, Development and Innovation* (CRDI) is the main advisory body to the government and responsible *inter alia* for the preparation of national strategies (e.g. *National Policy of Research, Development and Innovation 2021+)* and for overseeing and validating the allocation of R&D funds.
- Ministries: *Ministry of Education, Youth and Sports* (mainly public R&D and higher education policies)*, Ministry of Industry and Trade* (MIT; mainly business R&D and innovation polices, start-up environment), *Ministry of Finance* (e.g. R&D tax credit).
- Implementing bodies: *Technology Agency of the Czech Republic* (under the supervision of the CRDI) is the main agency and runs in-house programmes and programmes on behalf of different ministries in the area of applied research and experimental development. Other implementing agencies include the *Business and Innovation Agency* (under MIT, mainly EU-funded business support), *CzechInvest* (under MIT, e.g. start-up support), and the *National Development Bank* (e.g. risk capital funding).
- Other bodies: The *Czech Academy of Science* funds 54 research institutes; the *Czech Science Foundation* provides public funding exclusively for basic research projects.

Moreover, numerous strategic frameworks exist to support innovation with different responsible institutions. Main strategies include (responsible body in parenthesis): *Innovation Strategy: The country for the future* (Prime Minister office and CRDI); *National Policy of Research, Development and Innovation 2021+* (CRDI); *National Research and Innovation Strategy for Smart Specialisation* (MIT); *Industry 4.0 Strategy* (MIT); *National Artificial Intelligence Strategy* (MIT); *Digital Economy and Society* (MIT).

Better targeting business support for R&D to SMEs and young firms

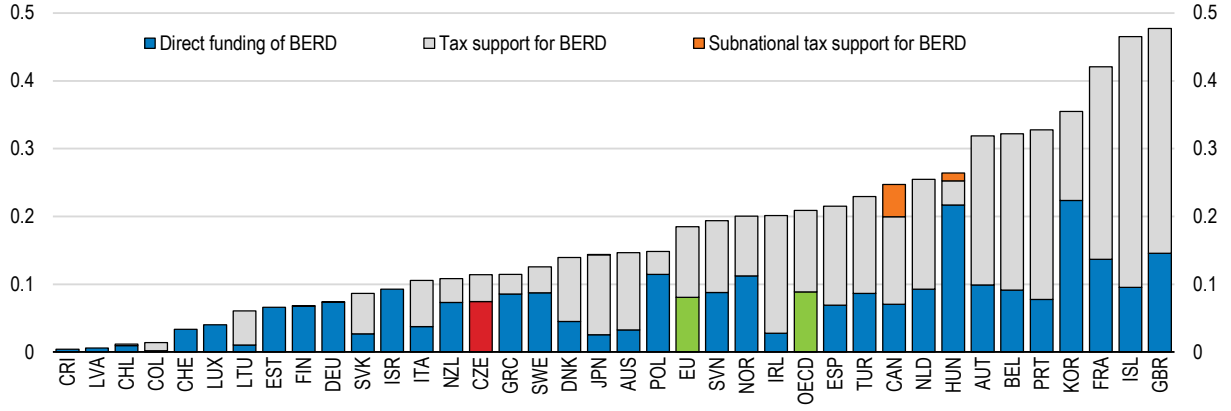
Government support for business R&D is relatively low in Czechia and focused on direct support (Figure 2.5). Government support for business R&D can help overcome market failures related to positive externalities from R&D and financial constraints. Firms often cannot fully appropriate the returns to their investment in new knowledge. Also, intangible capital is more difficult to use as collateral than physical capital, limiting private financing options, especially for small start-up firms without other collateral. This results in a socially suboptimal level of private investment in R&D. Many OECD countries use a combination of direct support to business R&D (e.g. grants) and tax incentives to support business R&D. The authorities should therefore consider increasing the overall government support for business R&D.

Recent empirical OECD research confirms the overall effectiveness of government support to crowd in private R&D. In particular, OECD research finds that one extra unit of R&D support (direct support or tax incentive) translates into around 1.4 extra units of R&D (OECD, 2023[5]). In addition, OECD research highlights the complementarity between tax incentives and direct funding for innovation support. R&D tax incentives tend to encourage experimental development more strongly, while direct funding tends to encourage basic and applied research (OECD, 2023[5]). At the same time, direct R&D support is better suited to support specific policy priority areas.

The R&D tax allowance should be made more beneficial for small and young firms. Since 2005, Czechia operates an R&D tax allowance (OECD INNOTAX). In 2020, about 800 firms benefited from the tax allowance, which is a relatively low number compared to countries of similar size such as Austria, Portugal and Sweden. Moreover, over 70% of the total amount of tax support went to large firms, a large share in international comparison (OECD, 2023[6]). To make R&D tax benefits more beneficial for small and young firms, it is important that they include carry-forward provisions or cash refunds. The large majority of OECD countries that offer R&D tax incentives, offer refundable or equivalent incentives. The R&D tax allowance in Czechia can be carried forward up to three years and the authorities plan to increase this period to 5 years. This is welcome, but shorter than for instance in Poland (6 years), Portugal (8 years), Spain (18 years), and the United States (20 years) (OECD, 2023[6]). In addition, cash refunds may be more beneficial for young firms, who may not have sufficient tax liability for several years and need financial support early in the innovation process. Australia, Canada, Colombia and the United States are examples of countries that offer refundable R&D tax credits targeted at SMEs and start-ups. OECD research suggests that firms' responsiveness to tax support (i.e. into how many units of extra R&D one unit of tax support translates) is nearly twice as large when refund provisions are available in case the tax provision cannot immediately be claimed because of insufficient tax liability. It is three times as large when tax incentives are redeemable against payroll taxes and thus disconnected from the profit situation of firms (OECD, 2023[5]). A number of OECD countries also offer more generous R&D tax credit rates for SMEs and/or young firms (e.g. Australia, Canada, Iceland, Korea).

Figure 2.5. Government support for business R&D is low

Direct government funding and government tax support for business R&D, as a percentage of GDP, 2021 or 2020



Note: BERD stands for Business Enterprise R&D.
Source: OECD R&D Tax Incentives database, July 2024, https://oe.cd/rdtax.

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Direct R&D support to businesses should be thoroughly evaluated and effective programmes scaled up. The Ministry of Industry and Trade and the Technology Agency of the Czechia offer numerous grant schemes to support R&D and innovation activities. This support targets mostly domestic SMEs in specific regions and sectors (OECD, 2024[2]). However, there are overlaps across programmes and some are perceived as cumbersome, procedurally difficult and time-consuming, therefore considerably limiting their relevance for smaller enterprises (OECD, 2020[4]). More generally, there is a need to thoroughly evaluate the support programmes. The Technology Agency generally evaluates its completed programmes and publishes the results. The evaluation of the ALFA programme of the Technology Agency is a good example of a thorough evaluation conducted in collaboration with academia (Bajgar and Srholec, 2023[7]). The study finds that the subsidies significantly stimulated R&D expenditures in SMEs, but not in large firms. This suggests that follow-up programmes could potentially become more efficient by reallocating funding from large firms to SMEs. Moreover, the evaluation found that the programme supports more established firms

(median age of 15 years). Support could more specifically be targeted to young firms. Based on the results of thorough evaluations, programme designs should be optimised, ineffective programmes cancelled, and effective programmes scaled up.

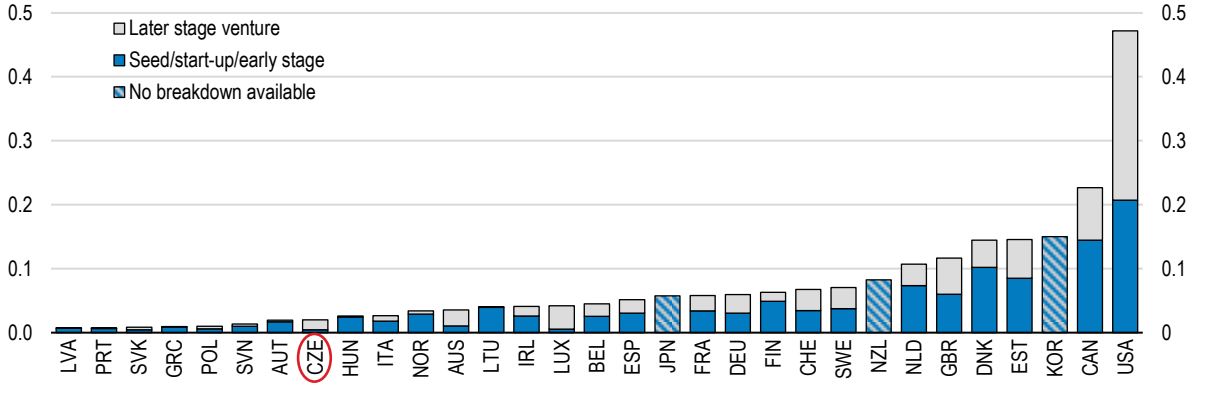
Further developing capital markets

Despite significant progress, access to risk capital remains a challenge for start-ups and young firms. Bank credit is readily available for SMEs but capital markets are underdeveloped in Czechia (OECD, 2023[8]). Risk capital funding is critical for young SMEs without collateral, corporate and credit history. The venture capital market has grown significantly in Czechia in recent years but remains shallow compared to other OECD countries (Figure 2.6). Moreover, business angel networks are fragmented, lack visibility and involve only a limited number of investors (OECD, 2020[4]). Aside from providing funding at a critical and early stage of an innovative firms' life cycle, these angel investors can provide mentoring services, business advice and access to networks. Czech founders view access to finance as one of the most important areas to improve the start-up ecosystem (Czech Founders, 2024[9]).

The authorities have made sustained efforts to boost risk capital markets. In 2018, three private venture capital funds were established, backed financially by the European Investment Fund (EIF) (OECD, 2024[10]). As part of the Recovery and Resilience Plan, the authorities also launched a EUR 55 million fund-of-funds in 2023, managed by the EIF and focused on equity financing for early-stage Czech start-ups and spin-offs developing digital technologies. Moreover, the Ministry of Industry and Trade in cooperation with the National Development Bank (NDB) established a venture capital - IPO fund in 2020, which helps SMEs enter the Prague Stock Exchange SME market (START) (OECD, 2024[10]). Crowdfunding, an alternative form of financing, has become more popular in Czechia, although the overall funds raised remain small. In 2022, the EU regulation on crowdfunding was transposed into Czech law. Crowdfunding service providers are supervised by the Czech National Bank (CNB). Empirical evidence suggests that the introduction of explicit regulation is associated with an increase in retail crowdfunding volumes (Rau, 2017[11]). This may be because explicit regulation and supervision strengthen investor protection and regulatory clarity. In addition, the regulation allows providers to expand their services to other EU countries without the need to obtain additional licenses (OECD, 2023[12]).

Figure 2.6. Venture capital investments are low

Venture capital investments, % of GDP, 2023 or latest available year



Source: OECD Entrepreneurship Financing Database

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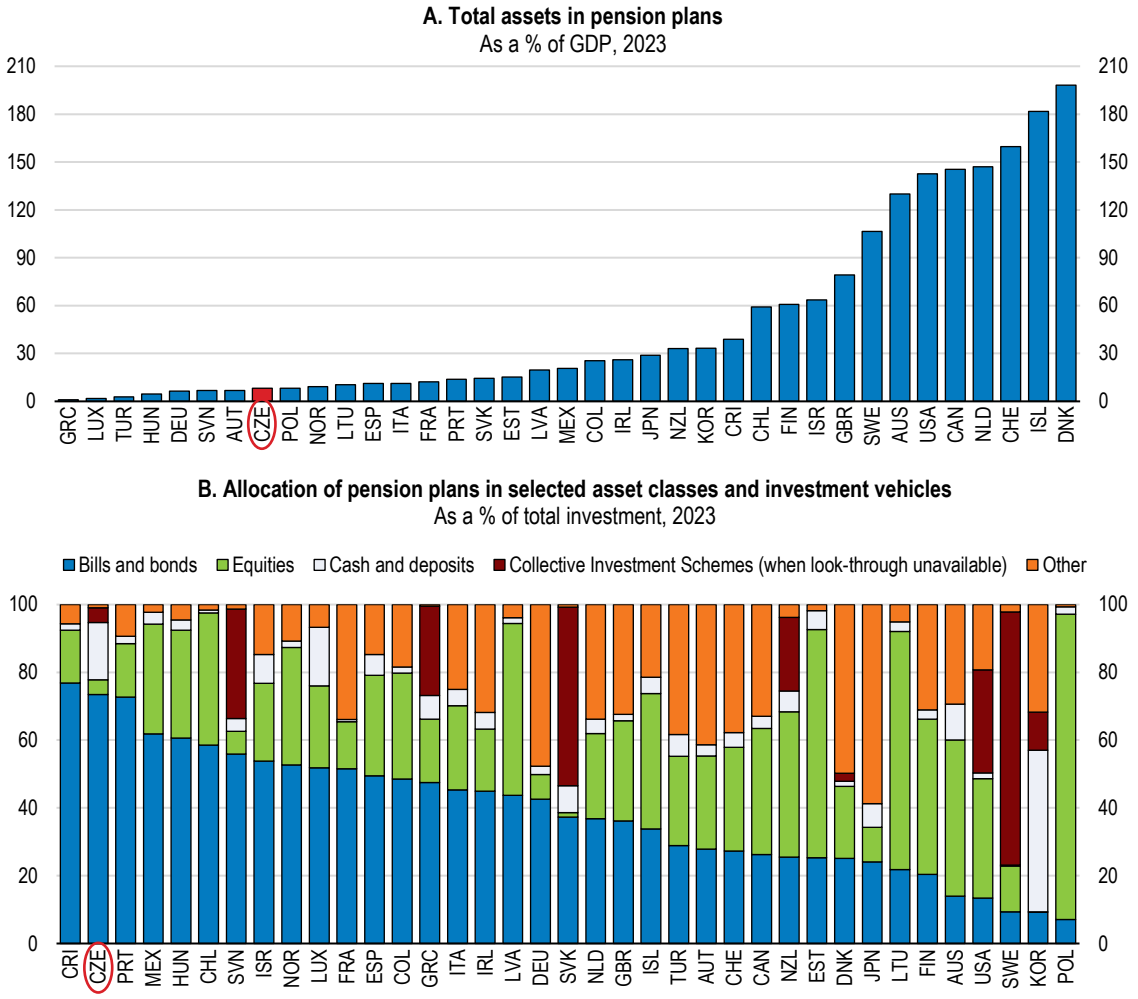
Incentives to invest in risk capital can be further enhanced. The authorities could consider tax incentives to stimulate the provision of private risk capital, including by experienced foreign venture capital investors. A number of European countries provide tax relief measures targeted at business angels (ESNA, 2024[13]). The United Kingdom's Enterprise Investment and Seed Enterprise Investment schemes, which grants tax breaks for investments in start-ups and other eligible firms, has been successful in stimulating financing of young firms (EC, 2017[14]). Israel developed its venture capital industry around the YOZMA group, established by the government in the early 1990s. The group took equity stakes in Israeli start-ups and provided equity guarantees for foreign investors (OECD, 2003[15]). As the venture capital industry grew and matured, the government successfully phased out its equity involvement. Moreover, the authorities could support the creation of a formal and structured business angel network, to boost activities, and raise the profile of angels as a driver of innovation diffusion (OECD, 2020[4]).

Pension funds have played an important role in capital market development and venture capital funding in some OECD countries. Capital-based pension systems can contribute to providing risk capital. However, many OECD countries have strict quantitative restrictions that limit investment in private equity and venture capital. In Czechia, pension fund investment into private equity was prohibited until recently. Prudent regulations are important to protect pensioners' contributions. However, quantitative restrictions may currently be too restrictive to make greater use of pension funds as a source of scale up funding of innovative start-ups. Reforms to pension fund legislation have been key to the development of venture capital markets in some OECD countries. For example, reforms in Sweden in 1996 allowed investment in equity funding for SMEs, and pension funds now play a dominant role in Swedish venture capital funding (OECD, 2018[16]).

Encouraging higher pension fund allocations to risky assets, while ensuring prudent regulations to protect pensioners' contributions, could help develop the capital market and improve pension income. In Czechia, the funded pension system only consists of a voluntary personal pension scheme (Pillar 3). The participation rate is quite high, with around 64% of the working age population participating in pension plans, but the total amount of assets under management remains moderate, at around 9% of GDP (Figure 2.7 and (OECD, 2023[17])). Most importantly, returns of the funds have been extremely low. For example, the average annual real return over the past ten years was -2.4%, the lowest in the OECD (OECD, 2023[17]). This is due to a very conservative asset allocation, with the highest share of assets in low-risk bills and bonds across OECD countries (Figure 2.7, Panel B). To improve the performance of the pension funds the *OECD Pension Review* of Czechia (OECD, 2020[18]) recommended for example to incentivise participants to switch to funds without an annual non-negative nominal return guarantee, as the guarantee incentivises pension fund providers to invest in low-yielding short-term bonds. The government should also promote access to an appropriate default life-cycle based investment strategy. In the OECD, pension providers have to offer a life-cycle investment strategy as a default in Australia, Canada, Chile, Israel, Lithuania, Mexico, Poland, Slovenia, Sweden, the United Kingdom and the United States. In Czechia, some pension management companies already offer life-cycle based investment strategies by mixing different participating funds. The regulatory framework could require all companies to offer such strategies as a default option.

In 2024, the authorities introduced a number of reforms to strengthen participation in private pension schemes and offer a wider variety of old-age savings products with fewer restrictions, with the potential to help develop capital markets. For example, to increase contributions into Pillar 3, the minimum monthly contribution to receive a proportional state contribution was increased. Moreover, a new and additional participatory pension fund was introduced with fewer investment restrictions. For instance, the fund is allowed to invest a share in private equity or venture capital funds. Finally, long-term investment accounts were introduced. Investment in these accounts is tax favoured and the investor can allocate contributions freely into a set of approved investment products (e.g. stocks and bonds).

Figure 2.7. Pension fund assets are low and conservatively invested



Source: OECD (2024), Pension Markets in Focus 2024, OECD Publishing, Paris, https://doi.org/10.1787/b11473d3-en.

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Strengthening linkages between businesses and science

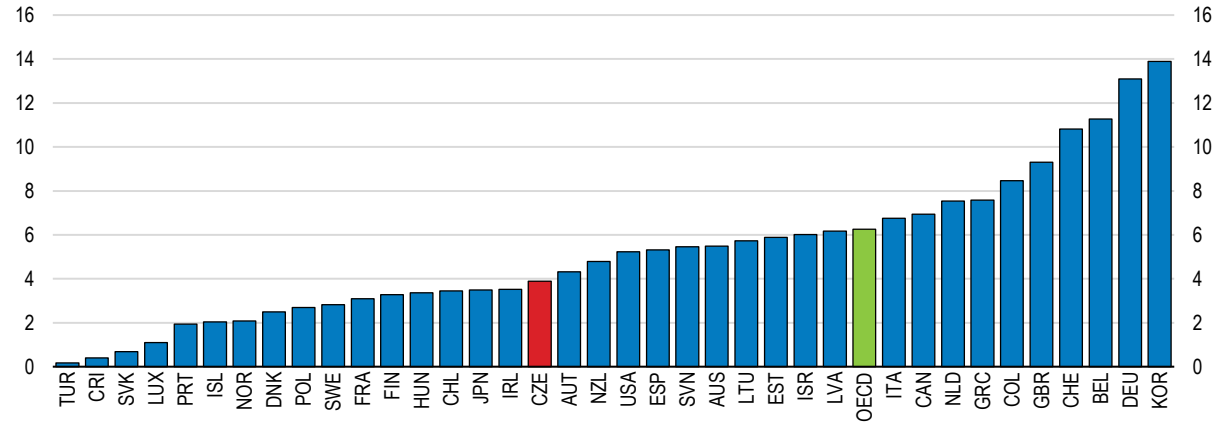
The transfer of knowledge and technology from higher education and research institutes to firms can be further strengthened. For instance, higher education expenditure on R&D financed by domestic business enterprises remains below the OECD average (Figure 2.8). The number of researchers employed by businesses lags the EU average (EC, 2023[19]). Moreover, academic spin-offs are relatively rare (OECD, 2020[4]). Academic spin-offs have a significantly higher propensity to patent than non-academic start-ups (OECD, 2019[20]). The authorities use several instruments to stimulate business-science linkages, although the amounts involved are relatively small. For instance, innovation vouchers, which are widely used to purchase R&D services from universities or public research institutions, typically involve amounts below EUR 10 000. Nevertheless, beneficiaries considered them easy to apply for and receive support, enabling smaller enterprises to successfully apply (OECD, 2020[4]). Moreover, every technical university has a (small) technology transfer office, and the Academy of Sciences operates a central technology transfer centre.

There are a number of policy options to enhance business-science linkages. For example, the performance-based funding of universities (around 17% of the total university budget) could include a higher weight on collaborations with businesses. University governance structures include a board as the

main decision-making body with private-sector participation in 25 OECD countries, but this is not the case in Czechia (OECD, 2019[20]). Private sector participation in boards enhances the propensity of institutions to cooperate with industry and support knowledge transfer. Furthermore, a number of OECD countries support mobility schemes that allow public researcher to work temporarily in the business sector or *vice versa*, including by subsidising a portion of the researchers salary (e.g. Canada, Norway). Finally, legal uncertainty and cumbersome procedures appear to hinder the creation of academic spinoffs. Three universities have created subsidiary entities with the aim to initiate and develop spin-offs. This model could potentially be rolled out at more universities. In 2024, the government introduced the "knowledge transfer" reform to enhance the utilisation of scientific and research knowledge. The reform includes for example measures to strengthen technology transfer offices and innovation centres, and support for the establishment of a fund of funds for transfer activities, specifically for seed and pre-seed investments into spin-off companies, in cooperation with the European Investment Bank.

Figure 2.8. There is scope to foster business-science linkages

Share of higher education expenditure on R&D financed by the business sector, %, 2022 or latest available year



Source: OECD Main Science and Technology Indicators (MSTI) database.

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Improving the communication infrastructure

Czechia faces some challenges in digital connectivity. Access to reliable and high-quality fixed and mobile broadband connections constitutes the backbone of a knowledge-based and digital economy. In 2023, only around 51% of households (EU average 79%) were covered by very high capacity networks (VHCN) (EC, 2024[21]). According to the OECD broadband statistics, the share of fibre connections in total fixed broadband connections was only 21.6% at the end of 2023, compared to an OECD average of 42.5%. The coverage in rural areas is among the lowest in the EU. Moreover, the share of firms with broadband speeds higher than 100 Mbit/s is low (46% in 2024 compared to 63.3% on average in the OECD, and 65.2% in the EU) (OECD ICT Survey). In contrast the 5G coverage was above the EU average in 2023 (95% of populated areas compared to 89%) (EC, 2024[21]).

Czechia should accelerate its roll-out of high-speed communication infrastructure, especially in rural areas. To encourage the deployment of high-quality broadband networks in underserved areas, the authorities could consider a competitive tender process for public funds that operators can receive in underserved or unserved areas. According to the 2024 OECD Product Market Regulation indicators, there is also room to improve transparency about the location, level of occupation and planned works on fixed and mobile infrastructure. Network operators are not required to publish such information and there is no electronic platform where it is published. Having access to such georeferenced information can encourage faster and

more efficient deployment of very high-capacity networks, promote infrastructure sharing, reduce costs associated with duplicated infrastructure, and ensure that small operators can identify all potential access points to the network.

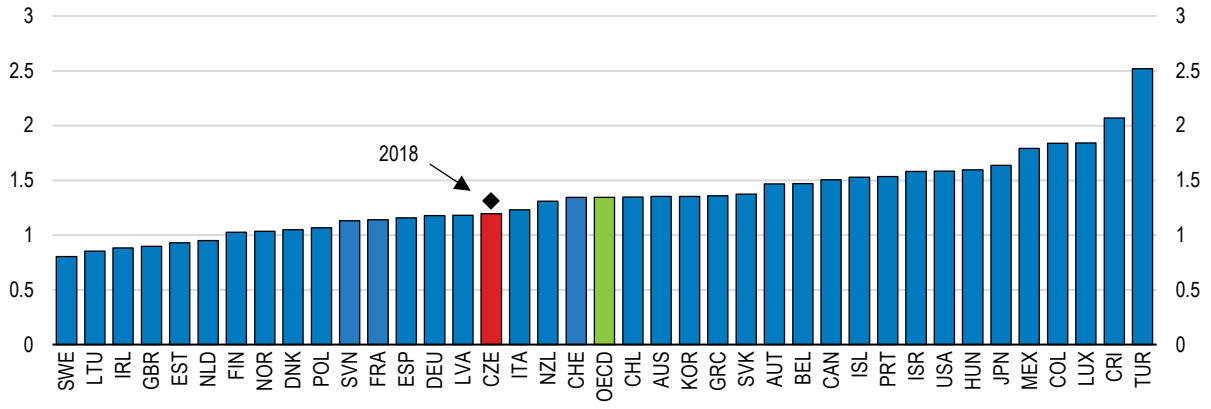
Enhancing the business environment

Improving regulations to foster business dynamism

According to the 2024 OECD Product Market Regulation indicators, regulations are overall less restrictive than on average in OECD countries (Figure 2.9). Nevertheless, there are areas for improvement including by simplifying procedures to start a business and to obtain licences as well as regulation of professional services (see below).

Figure 2.9. Product market regulations are not overly restrictive but can improve in some areas

OECD Indicators of Product Market Regulation (PMR), overall economy-wide indicator, index scale of 0-6 from least to most restrictive, 2023



Source: OECD PMR database, January 2025.

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Progress has been made to facilitate starting a business but administrative requirements to obtain licences and permits can be further streamlined. In July 2023, the company law was amended which *inter alia* decoupled the process of starting a company from the process of obtaining licences and permits, and allowed to start a limited liability company fully electronically. To streamline the process of obtaining licences and permits, the authorities could consider setting up a one-stop-shop, which would further reduce barriers to entry. Furthermore, while there is an online inventory of all licenses and permits, there is no requirement to regularly review it and assess whether such licenses and permits are still necessary or should be removed. This regular revision of the inventory is a good way to reduce red tape. Moreover, public bodies are not required to apply the 'silence is consent' principle when issuing permits and licenses to businesses. Adopting such a principle would provide strong incentives for authorities to respond in time, while enhancing certainty about timelines for entrepreneurs. At the same time, there has been some progress in the area of building permits for large infrastructure projects, with the establishment of a new Transport and Energy Construction authority in 2024, that centralises and streamlines building permitting for large transport and energy construction projects.

The ecosystem for start-ups needs to be further improved. Czechia is a member of the EU Startup Nations Alliance (ESNA) and in 2022, the Czech government signed up to implement 8 Startup Nations Standards (SNS). According to the latest Startup Nations Standards Report (ESNA, 2024[13]), there is room for Czechia to improve several standards. For instance, while a virtual helpdesk for startups and scale-ups

("Justina") assists with frequently asked question, the scope could be broadened to include regulatory issues and information on funding opportunities. Also, legal documents without apostille from some other EU countries are not recognised to start a business. Moreover, stock options are an important means to attract talent for start-ups. A new legal framework for employee stock options has been enacted in 2023. However, taxation of stock option could be reviewed, as it does not comply with the recommended standard set out by ESNA, namely for stock options to be subject to capital gains taxes upon cash receipt rather than beforehand. Czech founders attach the highest priority to improving the framework for employee stock options (Czech Founders, 2024[9]). Lastly, no special regulatory regimes or regulatory sandboxes exist for start-ups. Regulatory sandboxes are special legal frameworks with the aim to test innovative solutions.

Regulatory impact assessments (RIA) are well developed but their effectiveness can be strengthened. An obligation to conduct ex-post RIAs was introduced in 2023 and came into effect in January 2025. However, RIA for primary laws only cover processes carried out by the executive, which initiates approximately 45% of primary laws in Czechia. There is no requirement for RIA for primary laws initiated by parliament (OECD, 2021[22]). In addition, the RIA Board, an independent watchdog, is responsible for overseeing the quality of RIAs produced by individual ministries and other agencies. However, RIAs are seldomly amended by the submitting authority in response to recommendations of the RIA board (OECD, 2023[23]). An obligation to redraft a RIA after a negative statement of the Board could be reintroduced. A reform of the RIA process that aims to strengthen incentives for submitting authorities to incorporate the RIA Board's feedback and improve the quality of RIAs more broadly is currently in preparation.

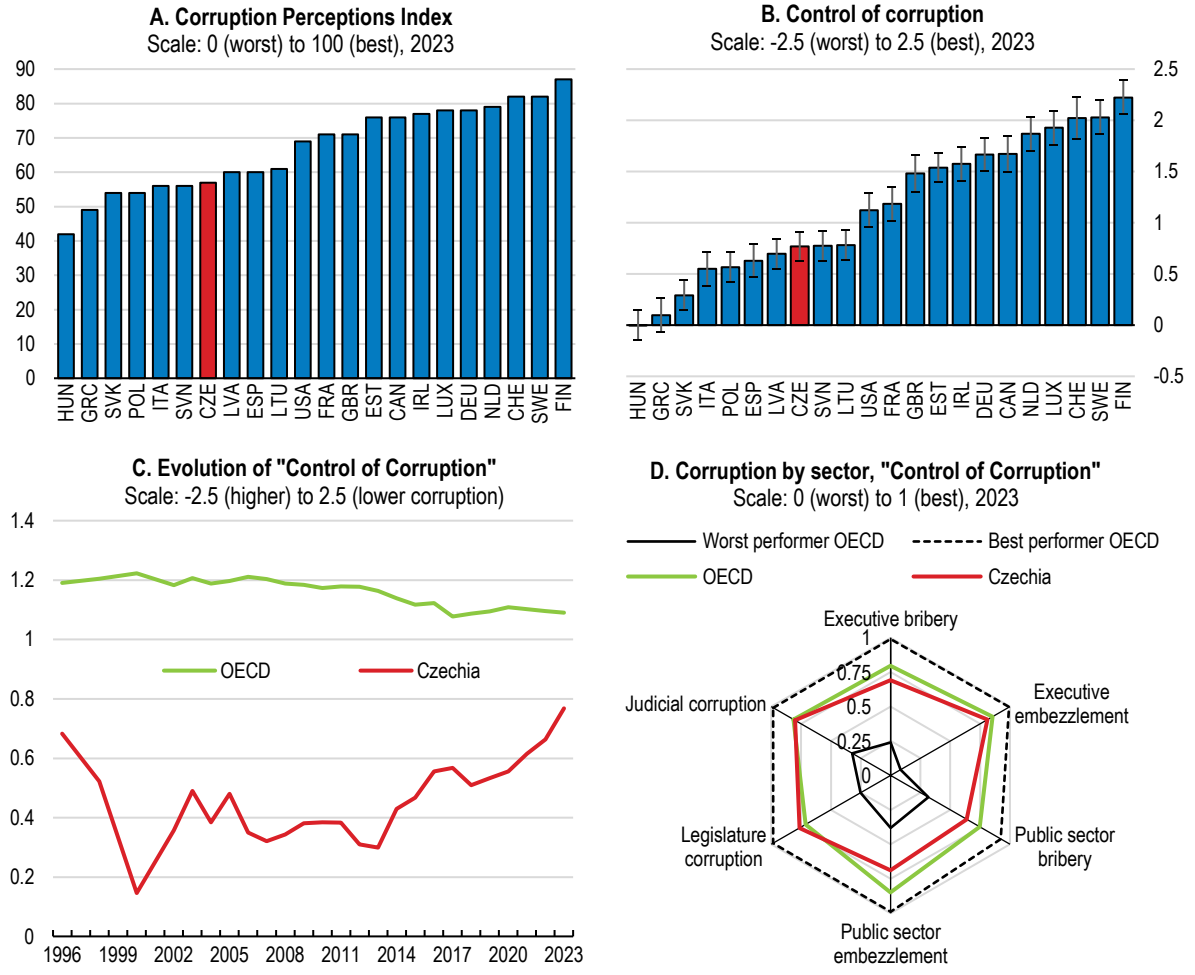
Regulations in professional services remain more restrictive than in other OECD countries. Restrictions in regulated professions reduce competition, job mobility and negatively impact on the competitiveness of firms in downstream industries that use these services. According to the 2024 OECD Product Market Regulation indicators lawyers, notaries, architects and civil engineers are more regulated than in other OECD countries. This is partly due to the compulsory membership in relevant professional associations and prohibition of firms in these professions to incorporate. Moreover, cooperations between lawyers and other professions are restricted and only lawyers can have ownership and voting rights in law firms. Lifting conduct restrictions to allow multidisciplinary practices could lower costs, provide economies of scope, and offer clients the benefits of a one-stop shop. Similarly, allowing non-lawyers to invest and manage legal firms could provide new sources of investments as well access to better management skills, and encourage the development of more innovative business models. The United Kingdom and Portugal have recently undertaken reforms in these directions (OECD, 2024[24]). Moreover, the notary profession is heavily regulated in most civil law countries. Nevertheless, Czechia could follow the example of some OECD countries like Italy, the Netherlands and France that have eased restrictions on the number of notaries and/or liberalised fee regulations. Finally, certain property services are currently reserved exclusively for estate agents, which could be opened to other professionals (EC, 2024[21]).

Czechia has made progress in improving its insolvency regime. Efficient insolvency frameworks can foster business dynamism, resource reallocation and productivity. According to the updated OECD insolvency framework indicator (André and Demmou, 2022[25]), the insolvency framework has become more efficient since 2016. Moreover, Czechia transposed the EU Directive on preventive restructuring frameworks in 2023 and 2024. This should lead *inter alia* to the further development of early warning tools for debtors, and access of honest insolvent entrepreneurs to full discharge of their debt after a maximum of three years. Nevertheless, further progress can be made. For example, the number of stages in which the court is involved in the liquidation and restructuring process remains higher than in other OECD countries. Further promoting out-of-court proceedings can speed up and lower the costs of restructurings and liquidations (André and Demmou, 2022[25]).

Further strengthening the anticorruption and public integrity framework

The perception of corruption among citizens and businesses remains relatively high (Figure 2.10). In 2024, 79% of survey respondents considered corruption widespread in Czechia (EU average 68%) (Eurobarometer 548, 2024). Among businesses, 67% of companies consider that corruption is widespread (EU average 64%) and 42% consider that corruption is a problem when doing business (EU average 37%) (Eurobarometer 543, 2024).

Figure 2.10. Perceived corruption is elevated



Note: Panel B shows the point estimate and the margin of error. Panel D shows sector-based subcomponents of the "Control of Corruption" indicator by the Varieties of Democracy Project.
Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Project, V-Dem Dataset v12.

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Czechia has the legislative and institutional framework to prevent and fight corruption largely in place. A new Anti-Corruption Strategy 2023-2026 was adopted in April 2023 and is complemented by the Government's Action Plan to Fight Corruption for 2023-2024. In March 2024, the government approved a draft law that introduces lobbying rules for the first time, including a transparency register with obligations for both lobbyists and the lobbied parties. The law is pending approval by the parliament. New ethics rules for civil servants entered into force from January 2024 but there are still no codes of ethics in place for either chamber of parliament, and a comprehensive framework is lacking in relation to gifts and benefits

for members of parliament (EC, 2024[26]). A Committee of the Chamber of Deputies approved a resolution in February 2024 that sets out recommended ethical behaviour for its Members to partly address this shortcoming. Moreover, post-employment rules remain limited, covering the civil service and the government only in limited cases. A limited number of civil service positions have a mandatory one-year cooling-off period from working in the same sector. This concerns mostly positions dealing with sensitive matters such as public procurement for certain sectors. The lack of broader rules on revolving doors represents a gap in the legal framework (EC, 2024[26]). Regulations comprehensively define conflict-of-interest situations for various levels of government and include proportional sanctions for breaches of conflict-of-interest provisions. The submission rate of asset declarations is close to 100% for members of government, parliament and the judiciary. However, verification of the filed declaration can be further strengthened (OECD, 2024[27]).

Table 2.1. Past recommendations to boost innovation and business dynamism

Recommendations in previous Surveys	Actions taken since 2023
Better target R&D support to small and young dynamic firms	No action taken.
Adopt the new Building Act and reduce the time and number of procedures for starting a business.	The new Building Act became fully effective on 1 July 2024. It *inter alia* digitizes processes and streamlines permitting procedures by combining zoning and construction permits.
Adopt measures to strengthen the management and prevention of conflict of interest in Parliament. Improve integrity and transparency in lobbying.	In June 2023, the chamber of deputies approved revised legislation on conflicts of interest including the clarification of the definition on beneficial ownership. A first reading of a draft law that introduces lobbying rules took place in the Chamber of Deputies in May 2024.
Continue efforts to guarantee greater independence to prosecutors and enact appropriate protection to whistleblowers from discriminatory or disciplinary action.	In July 2024, a law amending the process of appointing and dismissing prosecutors and the Prosecutor General came into force. In June 2023, Legislation on whistleblower protection, aiming to transpose the EU Whistleblower Directive, was adopted by parliament and signed by the President.

Table 2.2. Recommendations to boost innovation and improve the business environment

Findings	Recommendations (key recommendations in bold)
Improving the innovation ecosystem	
The governance system of innovation policy remains fragmented with a significant number of ministries, and national and regional agencies involved.	Enhance coordination between ministries and agencies responsible for innovation policy.
Business R&D expenditure is comparably low. Government support for R&D investment is low and mostly focused on direct (e.g. grant) support. The authorities plan to increase the duration of the carry-forward option from 3 to 5 years.	**Make the R&D tax allowance refundable or extend the duration of the carry-forward option for small and young firms.** Thoroughly evaluate direct R&D support and scale up effective programmes.
Capital markets are underdeveloped, and venture capital investment is low.	**Improve conditions for institutional investors to invest in venture capital and consider strengthening tax incentives for business angels.** Encourage pension fund participants to switch to funds without a capital guarantee and promote access to a default life-cycle-based investment strategy**.**
Public expenditure on R&D financed by domestic business enterprises as percentage of total public expenditure on R&D remains below the OECD average.	Develop mobility schemes for public researchers to work in industry and *vice versa*.
Enhancing the business environment	
Business dynamism is relatively low. The share of start-ups (0-2 year old firms) in the business population and in employment is lower than in other OECD economies.	**Establish a one-stop-shop and introduce silence-is-consent rules to streamline administrative procedures to obtain licenses and permits.** Broaden the scope of the virtual helpdesk to inform potential start-ups about regulatory requirements and funding opportunities. Introduce regulatory sandboxes to allow firms to test new products, services or business models.
Regulatory oversight is a critical component of a well-functioning regulatory system. The Regulatory Impact Assessment (RIA) Board is responsible for overseeing the quality of RIAs but there is no obligations to take its assessments into account. An obligation to conduct ex-post RIAs will came into effect in January 2025.	Strengthen the role of the Regulatory Impact Assessment (RIA) Board to ensure high quality RIAs, for example by reintroducing an obligation to redraft an RIA after a negative assessment by the Board. Systematically conduct regulatory *ex-post* evaluations as planned.
Restrictions for lawyers, notaries, architects and civil engineers remain above the OECD average.	Continue to ease entry and conduct regulations in professional services to allow for more competition.
The number of stages in which the court is involved in the liquidation and restructuring process remains higher than in other OECD countries	Promote out-of-court proceedings for restructurings and liquidations.
The perceived level of corruption remains elevated. The lack of broader rules on revolving doors represents a gap in the legal framework according to the EU Rule of Law Report.	**Continue to strengthen the public integrity framework, including by broadening post-employment rules for members of government, parliament and civil service.**

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3 Transitioning to net-zero

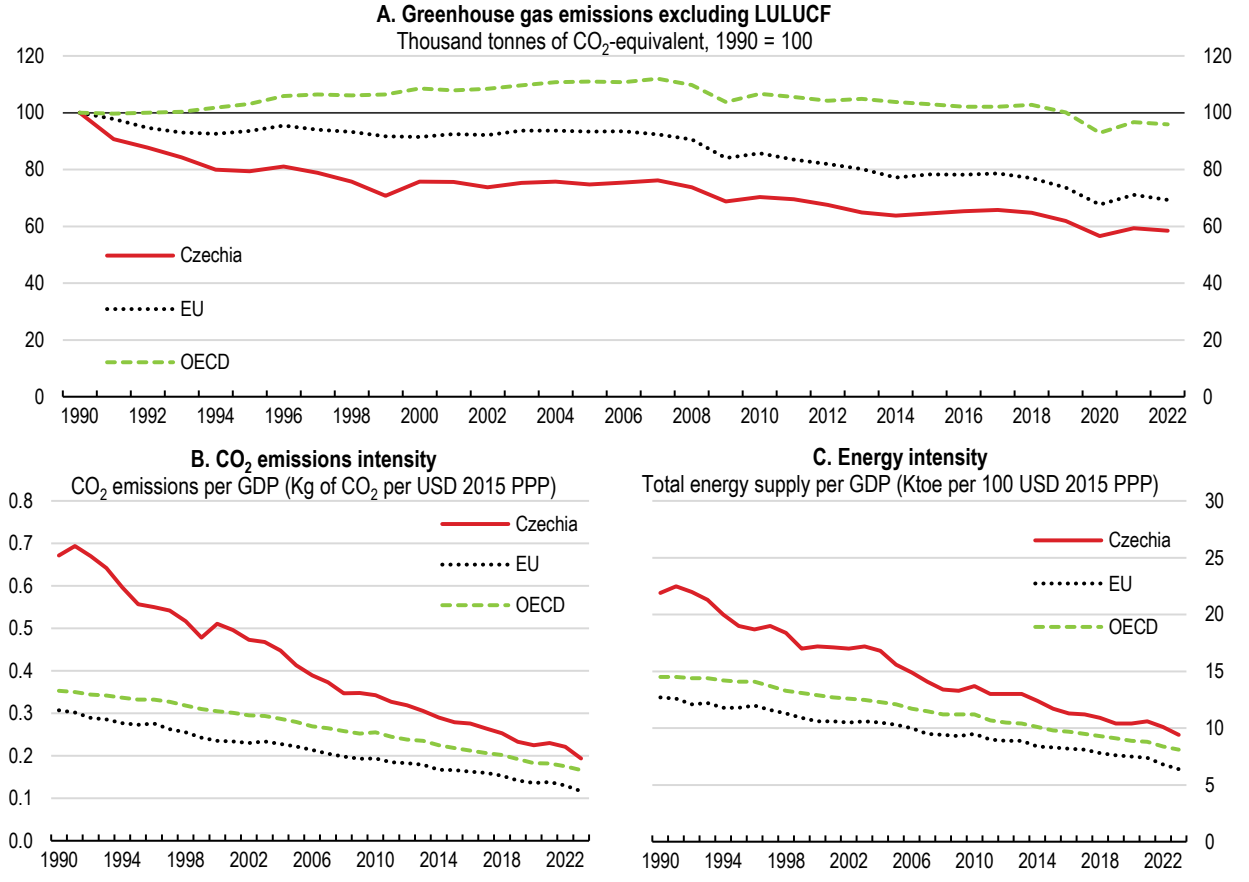
Oliver Röhn, OECD

Czechia has significantly reduced greenhouse gas (GHG) emissions over the past three decades, but the emissions- and energy-intensity of the economy remain high. Accelerated policy action is needed to put the economy on a path to net-zero emissions. This requires a cost-effective policy package that includes more consistent pricing of carbon, facilitating the deployment of renewable energy and strengthening incentives to increase the share of low- or zero-emission vehicles and to shift transport off the road. Implementing stricter regulation and targeted financial assistance would help incentivise housing renovation to reduce the high emission and energy intensity of the building stock. Measures to alleviate the impact of the net-zero transition on vulnerable communities and to adapt to climate change are also required.

Significant emission reductions are needed to reach net zero

Czechia has significantly reduced greenhouse gas (GHG) emissions over the past three decades, but the emissions- and energy-intensity of the economy remain high (Figure 3.1). In 2022, GHG emissions excluding land use, land-use change and forestry (LULUCF) were around 42% below the level in 1990. These significant reductions reflect changes in the production structure of the economy in the 1990s and a declining share of coal in energy supply in the following two decades (Figure 3.2). Nevertheless, emissions and energy intensity remain above EU and OECD averages (Panel B and C). This reflects a large industrial sector, a still high share of coal in electricity and heat generation, and an energy-inefficient stock of residential buildings. Furthermore, as noted in the previous *Economic Survey* (OECD, 2023[1]), active protection against the further spread of bark beetles since 2015 has required increasing timber harvesting, temporarily moving the forestry sector from a carbon sink to a net carbon emitter.

Figure 3.1. Emissions have declined markedly but emissions and energy intensity remain high



Note: LULUCF refers to land use, land-use change and forestry.
Source: OECD Environment Statistics database; IEA database.

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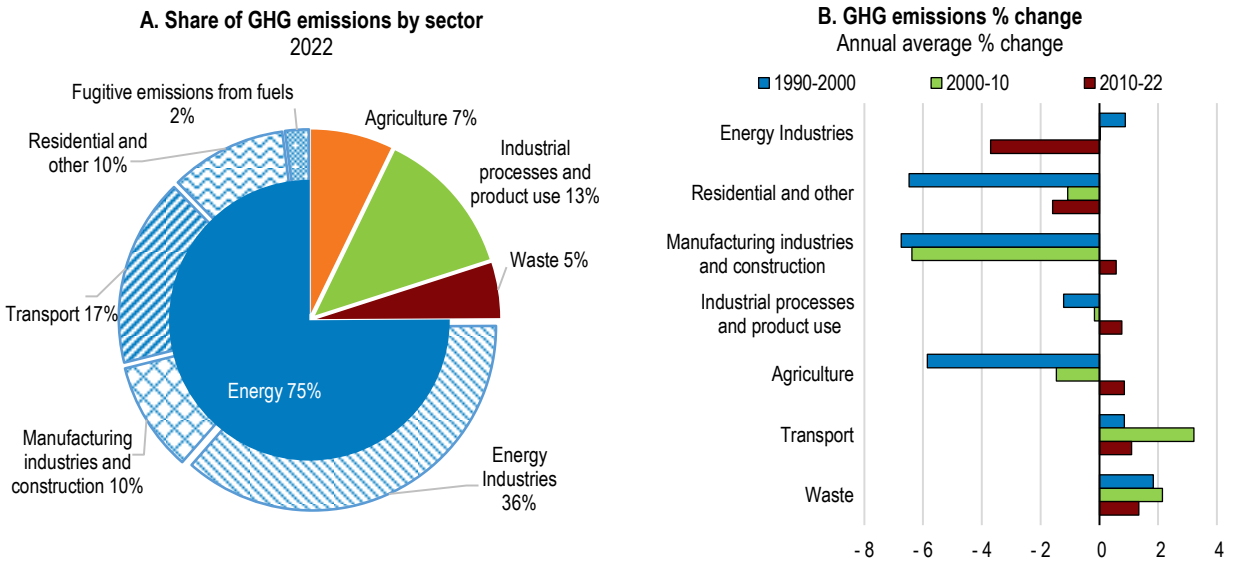
In February 2024, a draft updated strategy *Climate Protection Policy in the Czech Republic*, which aligns Czechia's climate goals with the EU's "Fit for 55" targets was prepared. According to the draft, greenhouse gas emissions should be reduced by at least 55% by 2030 compared to 1990.The draft also includes the goal of achieving climate neutrality by 2050. According to simulations in the draft updated *National Energy and Climate Plan* (NECP) from Spring 2024, emissions outside of the EU ETS sector are set to fall by 35.4% compared to 2005 with existing measures, which is higher than the target under EU legislation of 26% (Figure 3.3). A shift in the energy mix is among the main goals to reach these targets. In particular,

the strategy aims to reduce the share of unabated fossil fuels in primary energy consumption to 50 % by 2030 and to zero by 2050, with coal being completely phased out of power and heat generation by 2033. Moreover, the strategy targets to increase the share of renewable energy in gross final energy consumption to 30% in 2030 (from 13% in 2020), which is somewhat lower than implied by EU legislation (33%). Finally, a return of the LULUCF sector to a carbon sink is expected by 2024.

Figure 3.2. The energy industries account for the largest share of emissions



Note: GHG emissions exclude land use, land-use change and forestry (LULUCF).
Source: OECD Environment Statistics.

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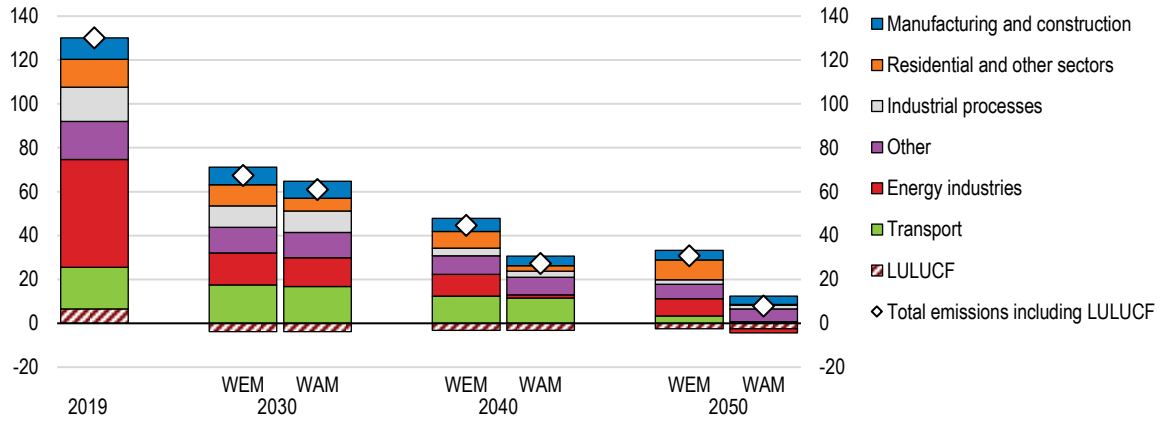
Accelerated policy action and large investments are needed to reach climate targets. The updated OECD Environmental Policy Stringency (EPS) indicator (Kruse et al., 2022[2]; Botta and Koźluk, 2014[3]) suggests significant scope to step-up environmental policies compared to other OECD countries, in particular in the areas of market-based policies (e.g. carbon taxes) and technology support (e.g. for R&D). Moreover, the draft updated NECP estimates investment needs of around CZK 3.4 trillion (EUR 140 billion, around 45% of 2023 GDP) to reach the 2030 targets and for climate adaptation measures. Around one third of the climate mitigation investments in key sectors are expected to be financed from public, mainly EU, sources. For example, the Recovery and Resilience Plan of Czechia allocates around 42% of total funds or about EUR 3.9 billion to the green transition, including for housing renovations, modernisation of the electricity grid and electrification of railways. Climate policies need to be stepped up to stimulate the large private investments needed to reach the targets.

Figure 3.3. Accelerated policy action is needed to reach net zero

Simulated greenhouse gas emissions including LULUCF, million tonnes of CO2-equivalent



Note: LULUCF refers to land use, land-use change and forestry. WEM stands for scenario with existing measures. WAM stands for scenario with additional measures.
Source: Ministry of Environment of the Czech Republic, draft updated National Energy and Climate Plan (NECP) for 2021 - 2030.

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Designing a cost-efficient policy mix

Strengthening carbon pricing

The EU ETS has effectively helped to reduce emissions in Czechia. Around half of GHG emissions in Czechia are covered by the EU ETS. The reduction in free allowances (and complete phase-out for power generators) has strengthened the price signal over time. Verified emissions in EU ETS sectors have fallen by 43% in Czechia over the period 2005 to 2023 (EEA). Progress in sectors outside the EU ETS has been much more modest, with emissions in transport and waste increasing (Figure 3.2).

Carbon prices outside the EU ETS are too low to reach climate targets. Effective carbon prices are the sum of explicit (e.g. carbon tax; ETS price) and implicit (e.g. fuel excise tax) carbon prices. In 2021, the average effective carbon price, at about EUR 52 per tonne of CO_2e, was relatively low compared to other OECD countries and especially EU countries (Figure 3.4, Panel A). Data for 2023 suggests that the average effective carbon price increased to about EUR 64 per tonne of CO_2e due to the increase in the EU ETS price. However, effective carbon prices remained lower than in most EU countries, due to the lower effective taxation of carbon outside of the EU ETS sectors (Figure 3.4, Panel B). Moreover, around 25% of GHG emissions were not priced at all (OECD, 2023[4]). The large differences in tax rates across sectors and activities mean that marginal abatement costs are not equalised, potentially increasing the cost of emission reductions. Furthermore, the absence of a unified carbon price produces uneven conditions for similar activities within and outside the ETS. This is particularly apparent in the Czech heating sector, where larger district heating systems fall under the ETS whereas smaller heating systems for residential buildings as well as individual systems are not covered (see below). The smaller installations therefore enjoy a competitive edge over the larger district heating systems, even if they are less environmentally friendly.

The government should increase effective carbon prices in sectors not covered by the EU ETS. This would send more consistent price signals and make abatement more cost-efficient. OECD simulations suggest that broad-based carbon pricing is effective in reducing emissions in most sectors and can accelerate coal phase-out, with a EUR 10 increase in carbon pricing estimated to decrease CO_2 emissions from fossil fuels

by 3.7% (D'Arcangelo et al., 2022[5]). Carbon pricing could take the form of a carbon tax element in the fuel excise levies. The rate should be gradually raised according to a pre-determined schedule until it reaches a level that is consistent with emission reduction targets. An EU reform of the Energy Taxation Directive, which aims to take the environmental characteristics of fuels into account more broadly, has not yet been finalised. While a new EU-wide emission trading system (EU ETS 2) will extend carbon pricing to transport and heating fuels from 2027, Czechia could consider introducing a national carbon tax before 2027 and align pricing with the EU ETS 2 system once operational. Fifteen EU countries (e.g. Austria and Germany) have already unilaterally implemented a national carbon pricing scheme, in the form of carbon tax or emission trading.

Fossil fuel subsidies weaken and distort price signals and should be phased out. In 2022, government support to fossil fuels amounted to around CZK 22.57 billion (0.33% of GDP) (OECD, 2023[6]). Temporary support for households and firms to cushion the effects of the energy crisis accounted for about half of these subsidies, and was largely phased out by end-2023. The remaining fossil fuel subsidies are mainly related to excise tax refunds for diesel in agriculture, and excise tax exemptions for certain uses of natural gas, oil and coal, including heating for households. Moreover, CNG/LNG and LPG vehicles are also subsidised. While subsidies for household consumption of fossil fuels may improve affordability, the support is not well targeted. Instead, fossil fuel subsidies should be phased out and impact on vulnerable households mitigated via targeted transfers (see below).

Higher carbon prices raise concerns about the competitiveness of export-oriented manufacturing sectors. However, not all sectors will lose competitiveness, even within energy-intensive industries. Results depend for instance on market power in export markets, which allows to pass on part of the costs to consumers in other countries. Less carbon- and energy-intensive sectors tend to benefit from reduced factor demand in shrinking sectors and lower factor prices. OECD simulations for Germany based on a computation general equilibrium model show for example for the baseline Fit-for-55 scenario, that output reductions are strongest for oil refineries, metal industries as well as some non-EU ETS sectors such as consumer goods and transport services. At the same time chemical, automobile and machinery and equipment would increase output and exports (OECD, 2023[7]). Well-designed abatement subsidies to incentivise emission reductions, for instance via competitive tenders, can help to address competitiveness concerns. However, subsides should be limited to companies exposed to international competition and include sunset clauses, announced upfront, to strengthen abatement incentives and reduce future fiscal costs. Facilitating the expansion of renewable energy supply and better integrating the European electricity grid would mitigate electricity price rises and volatility and support energy-intensive industries. Moreover, competitiveness is influenced by many factors besides energy prices. Competitiveness can be improved for example by boosting the innovation capacity and business dynamism as discussed in detail in *Chapter 2.*

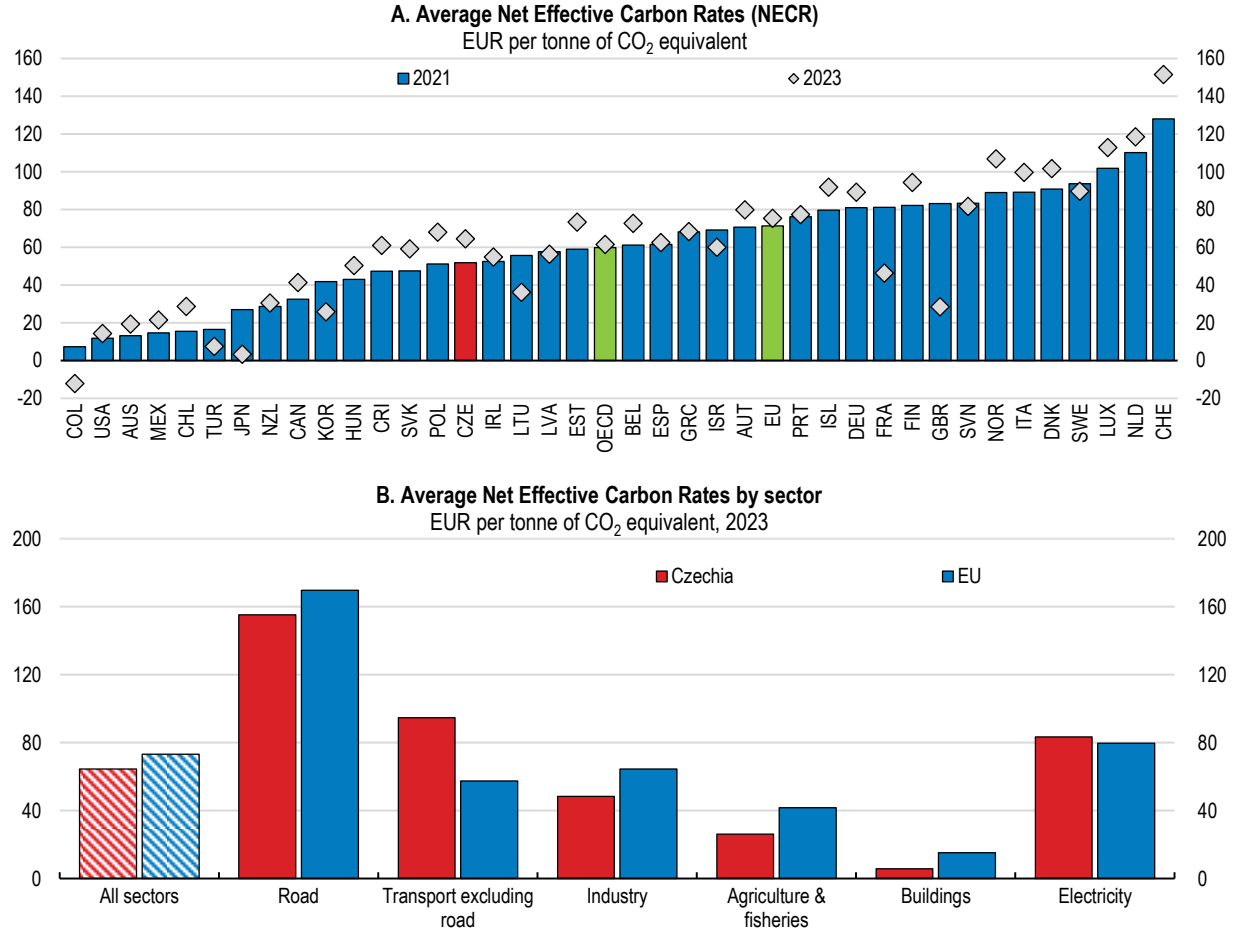
Phasing out coal from the energy mix and accelerating renewable energy deployment while ensuring energy security

Decarbonising the energy mix will be key for reducing GHG emissions. Fuel combustion in energy industries accounted for around 36% of total emissions in 2022, the largest source of emissions (Figure 3.2). This largely reflects the still dominant share of coal in electricity and heat generation (Figure 3.5). In addition to decarbonising the energy mix, Czechia needs to expand electricity generation to allow for the electrification of sectors such as transport and industry. Electricity accounted for only 18.5% of final energy consumption in 2021 compared to an OECD average of 23%.

Phasing out coal from the energy mix by 2033 is imperative to get on track to net zero but needs to be well planned to ensure energy security. The draft update of the State Energy Policy from February 2024 confirms the goal to phase out coal completely from electricity and heat generation by 2033. Instead, the authorities aim to significantly expand nuclear and renewables (Table 3.1), including through public subsides. Nuclear power can contribute to improving energy security, and nuclear electricity production is

more stable over time compared to intermittent renewables while also being low-carbon, although concerns involve high-impact negative risks in case of severe nuclear accidents. It is important for nuclear projects, as well as any other energy project, to be underpinned by transparent and comprehensive life-cycle cost-benefit analyses that inter alia account for the cost of constructing power plants, storing nuclear waste and decommissioning disused power plants. Such analysis must also consider the (direct and indirect) subsidies granted through the entire production cycle. New nuclear capacity in Czechia will only come online in the mid-2030s, leaving an expansion of renewables and to a lesser extent natural gas as the main instrument to offset declining coal capacity and to satisfy increasing electricity demand. The draft updated Climate Protection Policy targets an additional 8 GW of solar capacity and 1.2 GW of wind capacity by 2030. By 2050, 26.1 GW of solar and 5.5 GW of wind capacity is planned to be installed.

Figure 3.4. Carbon prices are relatively low and vary widely across sectors



Note: Excluding biofuels CO2. Unweighted average for EU (22 EU countries) and OECD. Cross country comparison of effective carbon prices for 2023 is affected by temporary energy price support measures in many OECD countries in response to the energy crisis.
Source: OECD (2024), Pricing Greenhouse Gas Emissions 2024: Gearing Up to Bring Emissions Down, OECD Series on Carbon Pricing and Energy Taxation, OECD Publishing, Paris, https://doi.org/10.1787/b44c74e6-en

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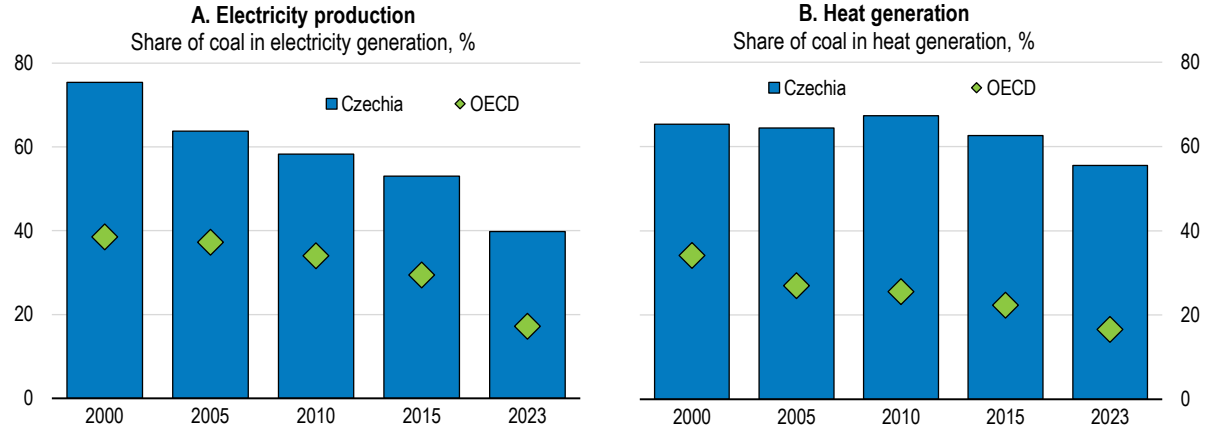
Despite recent improvements, permitting procedures for renewable energy can be further streamlined. As noted in the previous *Economic Survey* (OECD, 2023[1]), cumbersome regulations and lengthy construction processes are severe barriers to renewable investment. In 2023, Czechia amended the Energy Act and related laws. One amendment ('Lex RES 1') raised the limit for installing small photovoltaic plants without

a licence from 10kW to 50kW. Further progress can be made by introducing a one-stop shop for administrative procedures to connect renewables to the grid. In April 2024, the government approved a resolution to establish renewable acceleration zones, as part of Czechia's REPowerEU chapter of the Recovery and Resilience Plan. In line with the third EU Renewable Energy Directive, these zones benefit from simplified permitting processes, including for environmental impact assessments, while preserving the landscape and biodiversity. The authorities should identify and assign suitable land for these acceleration zones as soon as possible.

Figure 3.5. Coal is still a core component of power generation



Source: IEA (2024), IEA World Energy Statistics and Balances (database).

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Table 3.1. The envisaged energy mix

Fuel Source	2022 share	2030	2040	2050
Primary energy consumption, % of total				
Coal	31.3	13	4	3-4
Natural gas	14.8	20	12-16	7
Oil and oil products	22.2	24	20-22	12-13
Nuclear	18.9	22	30-40	32-42
Renewables	12.8	21	24-27	36-44
Electricity generation sources, % of total				
Coal	44.1	10	0	0
Natural gas	5.1	7	1-5	0
Nuclear	36.6	45	47-65	36-50
Renewables	13.7	37	33-47	43-56
Other	0.5	1	1-2	7-8

Source: IEA and draft update of the State Energy Policy (MIT) here

Expanding renewable energy capacity requires further investments in the electricity grid capacity and system flexibility. Czechia's transmission grid is well connected with neighbouring countries, with a significant capacity to transport electricity across borders, helping to ensure security of supply in the coal phase-out period (IEA, 2021[8]). However, the transmission grid needs to be upgraded to allow for a higher share of variable renewable energy sources. Challenges linked to the overbooking of available capacities need to be addressed (EC, 2023[9]). Czechia should also accelerate the rollout of smart meters to improve demand response. Smart meters enable the introduction of dynamic price contracts, which encourage customers to adapt their electricity consumption to market conditions, for example by reducing

consumption at peak times when prices are high. By the end of 2022, thirteen EU countries met the EU target of covering 80% of households with the smart meters, and another four are expected to reach this target by 2024 (ACER/CEER, 2023[10]). In Czechia rollout is still in its early stages.

Support for renewables could be better targeted. In 2022, support for renewables was shifted from feed-in tariffs to competitive auctions for large scale installations, and green bonuses (feed-in premia) for smaller scale installations. While auctions improve cost-effectiveness of support to renewables, Czechia should over time focus support for utility-scale projects from cost-competitive technologies such as solar, wind and hydroelectric power, towards those where cost-competitiveness remains a challenge such as electricity storage and hydrogen. In addition, price volatility in electricity markets pose challenges for renewables producers reliant on stable long-term revenues for recovering high fixed costs. To address price volatility, several European countries, including France, Greece, Hungary, Ireland, Italy, Poland, Spain and the United Kingdom, have introduced *contract for difference* schemes. *Contracts for difference* schemes reduce price (and therefore revenue) uncertainty for renewable generators by providing a guaranteed (strike) price for the electricity produced. The government provides subsidies if the wholesale market price falls below the strike price and requires payment if the price exceeds the strike price.

Decarbonising the building sector

The residential building sector remains highly energy inefficient and polluting. In 2021, the sector accounted for about 11% of total GHG emissions and 83.7% of fine particulate matter ($PM_{2.5}$). Exposure to $PM_{2.5}$ air pollution was linked to 8500 premature deaths in 2021 (EEA, 2023[11]). Many households still use individual coal boilers to heat their homes, and coal is the dominant fuel in district heating systems (IEA, 2021[8]). This together with the high share of coal in electricity generation explains the high carbon intensity of the residential sector (Figure 3.6, Panel A). Furthermore, the energy use in Czech dwellings, per square meter, is among the highest in the European Union, reflecting a large share of older and energy-inefficient dwellings (Figure 3.6, Panel B). By 2019, 25% of single-family houses and 40% of multi-apartment buildings had undergone partial renovations at least once (EC, 2022[12]). This has positively contributed to the reduction in energy intensity in the residential sector. However, a large part of already renovated dwellings will need to undergo further and more substantial renovations to meet energy efficiency targets.

The authorities have set ambitious targets to reduce the energy intensity of buildings. The draft updated NECP includes a very ambitious scenario from Czechia's *Long-Term Renovation Strategy,* according to which final energy consumption in the building sector shall be reduced by 17% by 2030 and 44% by 2050 compared to the baseline year 2013. This scenario requires the deep renovation of 85% of the building stock by 2025/30 and a doubling of the current rate of renovations. Investment needs are large, estimated at CZK 1.1 trillion (EUR 45 billion, about 14.5% of 2023 GDP) until 2030. Around CZK 393 billion of public funds, largely from EU sources, are foreseen for energy efficiency measures until 2030, such as building renovations and boiler replacements. This leaves a large private investment gap.

Increasing carbon prices would provide strong incentives for housing renovations and for shifting to lower-emission heating systems. Carbon prices are low in the residential sector (Figure 3.4, above). Higher prices would also level the playing field between district heating (already under ETS) and individual heating (outside ETS). While pricing carbon is the most effective way to internalise climate externalities, the buildings sector is not as responsive to price signals as other sectors. This is partly because housing renovations are typically carried out infrequently, and several market imperfections lead to underinvestment in energy retrofitting. These include credit constraints for households, limited homeowner awareness regarding the quality of insulation in their homes, and coordination issues for buildings with several apartments.

The role of certifications could be strengthened to complement pricing instruments. Energy performance certificates (EPCs) represent a reliable and standardised source of information on the energy performance

of buildings, which also include practical guidance on how to move from one performance class to another. This enables easy comparison of energy performance of properties and tracking of the worst-performing properties. In line with current European regulations, Czechia requires new buildings, properties for rental or sale, and properties that have undergone a renovation to have an EPC. Currently around 10% of the building stock are estimated to have EPCs. The authorities should consider extending coverage of EPCs before 2030 to help achieve energy efficiency targets and better target financial support for renovations to the worst-performing dwellings. For instance, authorities could follow the example of other countries, such as the Netherlands or France, where certifications have become mandatory for all properties in multi-family buildings from January 2023. To alleviate the burden on vulnerable households for the acquisition of EPCs, financial support could be provided.

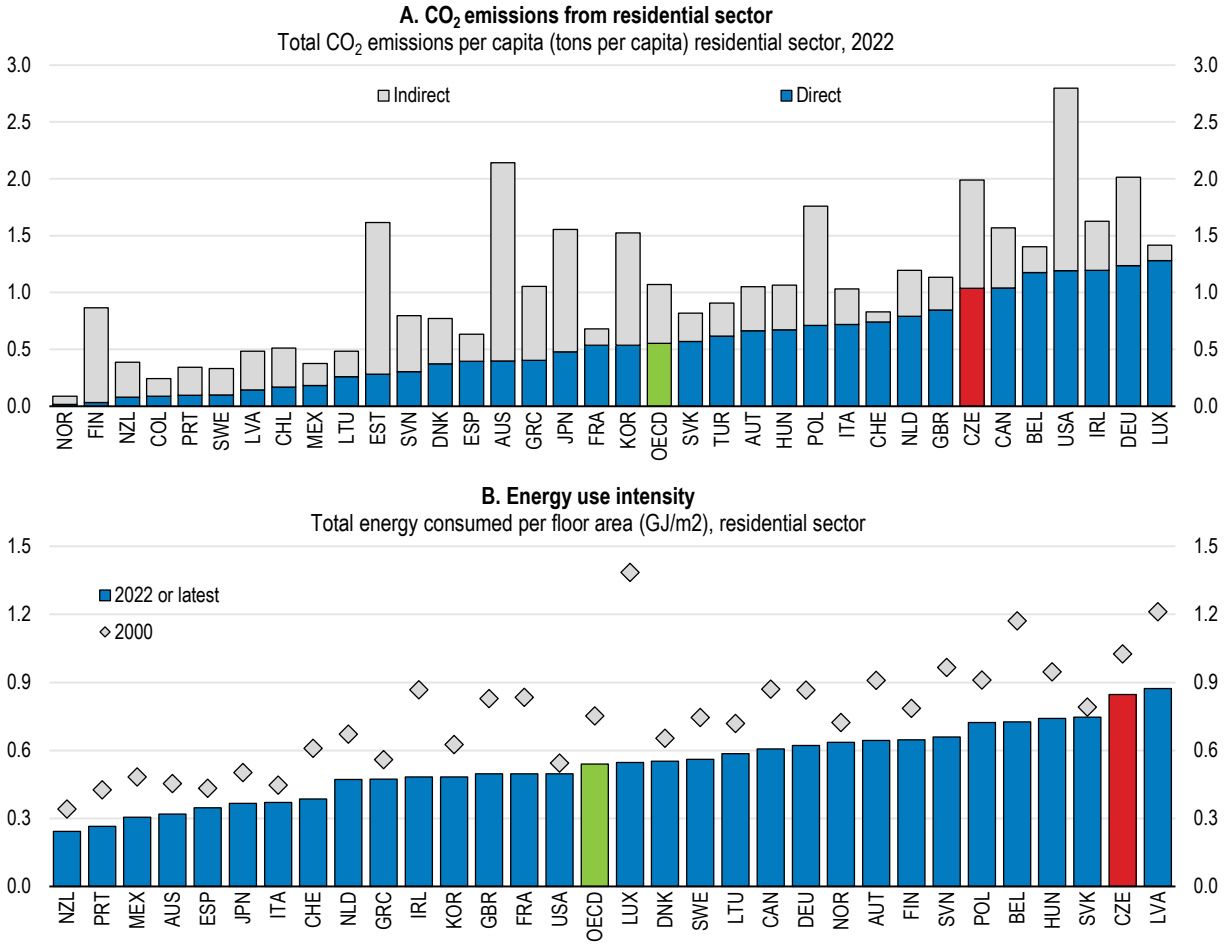
Financial support for building renovations could be better targeted to the most vulnerable households and energy-inefficient buildings. Czechia has been operating subsidy programmes for residential renovations for many years, partly funded by EU ETS proceeds. The main instrument is the New Green Savings Programme that supports the renovation of residential buildings with up to 50% of total eligible expenses. Low-income and vulnerable households can receive special up-front grants and a new programme for comprehensive renovations also provides favourable loan conditions in addition to the subsidy. Given large investment needs and limited fiscal resources, renovation grants could be better targeted at the most vulnerable households living in the most energy-inefficient dwellings. Untargeted grants face the risk of disproportionately benefitting middle and high-income households, and funding renovation works that would have been undertaken even in the absence of support. In contrast, lower-income households are less likely to undertake renovation projects without assistance. For example, since 2022 in France grants from the programme “Ma Prime Renov” have been subject to means testing and have been contingent on the energy savings generated by the renovation works. Extending the coverage of EPCs can help better target the worst-performing dwellings.

The use of favourable loan programmes should be expanded for all households and realised energy savings better monitored. A good example of a loan programme is Slovakia’s State Housing Development Fund (SHDF). The SHDF operates as a revolving fund and is almost totally financed by its own resources, reducing the burden on the state budget. Projects funded by loans from the SHDF target multi-apartment buildings or family houses, which have been in use for at least 10-years, and are subject to achieving at least 35% in energy savings. Such projects are conditioned on technical ex ante and ex post evaluations, which increase the potential effectiveness of the renovations in terms of energy savings. In Czechia, there is a need to better monitor realised efficiency gains. Ex-post evaluations of renovation programmes in the past showed that in many cases the ex post energy savings were much lower than anticipated ex ante (Valentová, Karásek and Knápek, 2018[13]). Such evaluations also provide essential inputs for further optimising energy efficiency support programmes. The New Green Savings Programme uses EPCs to measure energy efficiency gains, which is welcome.

Split-incentives between landlords and tenants and diverse preferences in multi-apartment buildings can slow down renovations. Tenants usually have limited options to react to higher energy costs, while property owners may have weak incentives to invest in energy efficiency because they typically do not pay the energy bills (Hoeller et al., 2023[14]). However, this split-incentives problem in rented dwellings is less of an issue in Czechia because of the limited rental market. Nevertheless, the authorities could consider following Germany’s approach, which in 2023 introduced a law that the carbon tax liability in residential buildings is split between landlords and tenants depending on the building’s emission performance, with landlords being liable for most of the tax (up to 95%) in emission-intensive rental dwellings. Renovations of worst-performing dwellings can be incentivised by excluding the possibility of renting them, as done in France from 2023 onwards. However, given the small size of the rental market, this should be done in conjunction with efforts to promote the expansion of the rental market. In addition, renovating multi-apartment blocks presents the additional complexity of balancing diverse preferences and financial contributions of multiple homeowners. In 2014, Czechia changed the voting rules from a two-thirds majority

of owners needed to agree to renovations in a multi-apartment building to a simple majority. This is welcome as it expedites decision making (Hoeller et al., 2023[14]). In addition, agreement on renovation works could be coupled with easier access to financial assistance for low-income owners. For instance, in Lithuania heating aid to low-income households is conditional on a household's agreement to multi-apartment building renovation.

Figure 3.6. The residential sector is carbon intensive and energy inefficient



Note: Unweighted average for OECD. Indirect emissions are calculated as follows: (Energy use)*(pe+pdh)*EF; where pe=proportion of energy generated by electricity, pdh=proportion of energy generated by district heating, and EF is the emission factor for electricity and district heating (Hoeller et al., 2023, https://doi.org/10.1787/cbda8bad-en)
Source: IEA (2024), IEA Energy end-uses and efficiency indicators database; IEA (2021), Emission Factors Database and OECD calculations.

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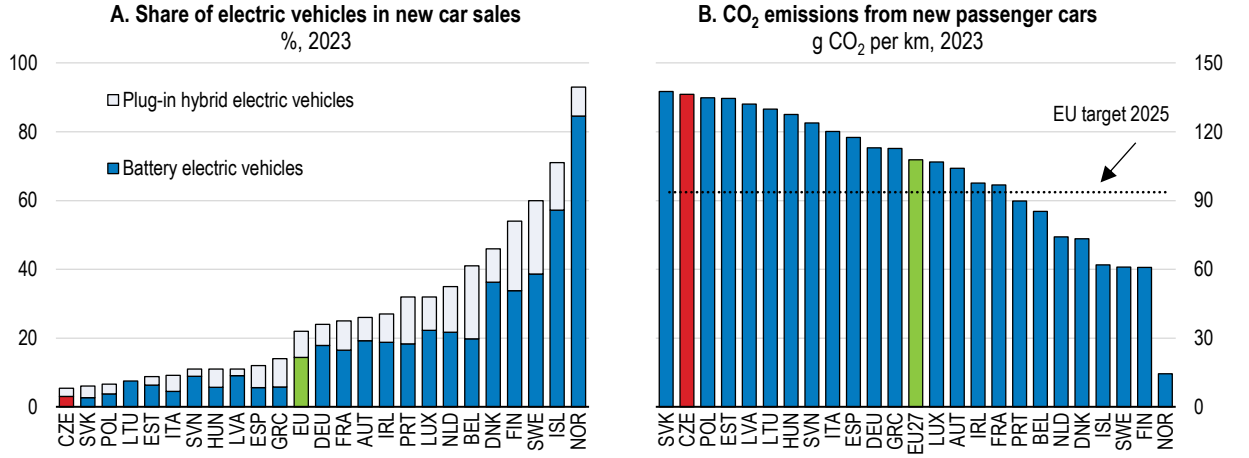
More needs to be done to decarbonise residential heating. The most inefficient solid fuel boilers have been banned in Czechia since September 2024. The replacement of inefficient boilers with heat pumps and biomass boilers is subsidised, especially for low-income households, while subsidies for gas boilers were abolished in 2022. Since September 2024, support for the replacement of more efficient coal boilers continues albeit with lower subsidies. Besides individual heating, district heating systems have great potential to decarbonise the building sector, by facilitating the integration of renewables into the heating energy mix (Hoeller et al., 2023[14]). However, there is a need to modernise and increase the efficiency of the district heating system in Czechia. District heating systems already cover 40% of Czech households, one of the largest shares in the EU. However, it is still dominated by coal and other fossil fuels. The draft updated NECP aims to increase renewable and nuclear energy in district heating, although concrete

quantitative goals are missing. In 2023, the European Commission approved a EUR 401 million scheme to expand district heating capacity based on renewable energy and waste heat. This is welcome but a more comprehensive plan to decarbonise district heating is needed.

Reducing transport emissions

Emissions in the transport sector continue to increase rapidly. Emissions have increased by close to 72% between 1990 and 2022, and the sector contributed around 17% to total emissions in 2022. Vehicle ownership increased strongly in the past decade and is now above the EU average. Moreover, the car fleet is older and more polluting than on average in the EU. The average age of the passenger car fleet is about three and a half years above the EU average (15.9 compared to 12.3 years) (ACEA, 2024[15]). The share of electric vehicles in new car sales is among the lowest in the EU, while the carbon emissions of new passenger cars are among the highest (Figure 3.7). Decarbonising the transport sector will hence require increasing the share of low- or zero-emission vehicles and shifting transport off the road.

Figure 3.7. Few new cars are electric and many are carbon intensive



Note: In panel B, performance is assessed on the basis of CO2 emissions under the Worldwide Harmonised Light Vehicle Test Procedure (WLTP).

Source: IEA, Global EV Data Explorer, https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer; European Environment Agency, CO2 emissions performance of new passenger cars in Europe.

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Incentives to shift to less polluting cars should be strengthened. Decisions to purchase electric vehicles typically depend on the retail price, operating costs as well as concerns about practicability, such as the range and the availability of charging stations. The charging infrastructure is expanding but is lagging behind other EU countries (ACEA, 2024[16]), although the number of electric vehicles per charging station is below the EU average. In 2024, the government introduced a new loan guarantee and subsidy programme for the purchase of electric vehicles and charging stations for private use. Subsidies need to be carefully designed to avoid being regressive, as electric car buyers are on average richer than the average household, and to avoid incentivizing the purchase of larger, less energy efficient cars. A less fiscally costly way to incentivize the shift to low emission vehicles is to further refine the registration tax to directly reflect the CO_2-emissions of the vehicle. Currently, the one-time registration tax only includes a surcharge for vehicles of very poor emission standards (euro norm 1 and 2) and electric vehicles are tax exempt (OECD, 2022[17]). The annual ownership tax (road tax) has been largely replaced by a road toll (for vehicles above 3.5 tonnes) and highway fees (electronic vignettes, for vehicles below 3.5 tonnes). The road toll varies inter alia with the distance driven and the CO_2 emission class. Czechia should also close the gap between petrol and diesel excise taxes. Diesel fuel is taxed at a lower rate than petrol, despite

diesel's higher emissions of air pollutants per litre (e.g. nitrogen oxides and fine particulates). To enable consumers to conduct more accurate cost comparisons in their vehicle purchase decision, the government can require car dealers to prominently display the total typical cost of vehicle ownership for consumers over a period of time.

Promoting the shift from individual road transport towards lower-emission modes like rail and public transport requires further investment. The draft updated NECP estimates investment needs in rail and road transport to meet the 2030 climate targets of around CZK 229 billion (EUR 9 billion). While the rail network is one of the densest in the EU, investment is needed for instance into electrification, modernisation and track speed. Improving the quality of the rail network and public transport availability would particularly benefit rural areas that are more reliant on car use. Better public transport also tends to increase support for climate policies. The Recovery and Resilience Plan allocates EUR 1.2 billion for sustainable mobility, notably to improve the railway infrastructure, and to promote electric charging stations and cycling pathways. The Supreme Audit Office found that transport projects often suffer from inadequate project preparation and implementation, which lead to changes in the design, delays and costs overruns (SAO, 2023[18]). Hence, implementing large transport projects to accelerate the green transition will also require improving public investment governance and management.

Mitigating adverse social impacts of the green transition

Climate policies have distributional impacts. Carbon pricing and the removal of fossil fuel subsidies would lead to higher energy prices. Poorer households tend to spend large shares of their incomes on energy, giving rise to equity and affordability concerns (OECD, 2024[19]). Energy accounts for around 10% of private consumption expenditures in Czechia, and expenditure shares on electricity, gas and heating are particularly high among poorer households (OECD, 2023[1]). Simulations show that implementing policies to achieve the emission reduction goals in EU's Fit-for-55 could reduce real income, with lower income households likely to see the largest reductions. However, the distributional consequences hinge on how environmental tax revenues are used to support households (OECD, 2023[1]) (OECD, 2024[19]). At the same time, positive health effects from climate mitigation policies (e.g. phasing out of coal) may disproportionally benefit more disadvantaged households.

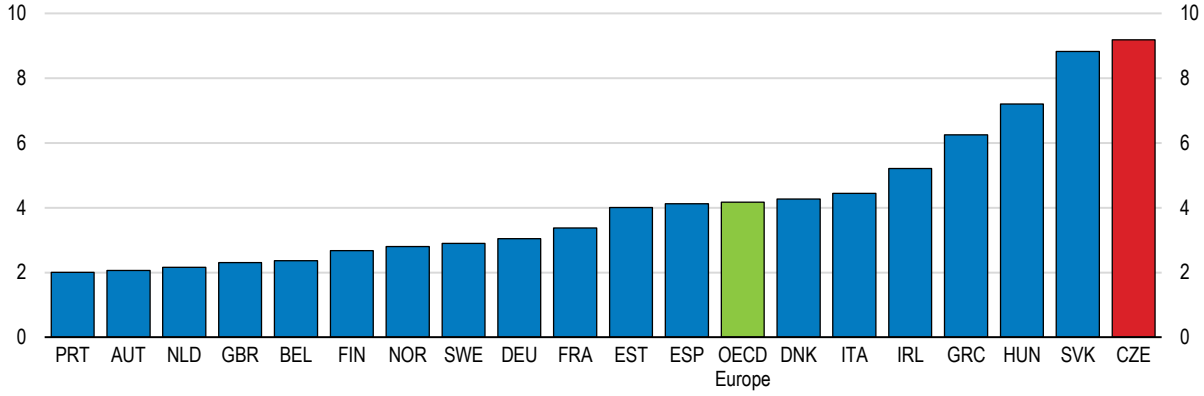
The impact of climate policies on vulnerable households needs to be addressed. Many OECD countries recycle revenues from environmental taxes to address distributional concerns (D'Arcangelo et al., 2022[20]) (Marten and van Dender, 2019[21]). Public acceptability of carbon prices tends to increase if it is combined with progressive use of revenues (such as cash transfers to the poorest or most impacted households) (Dechezleprêtre et al., 2022[22]). Czechia is expected to receive around CZK 50 billion (EUR 2 billion) from the new EU Social Climate Fund to mitigate distributional impacts, including to support vulnerable households and to enhance energy efficiency and sustainable transport. To support households, lump-sum transfers (as in Switzerland) are efficient and simple to administer but not well targeted and hence expensive. Targeted transfers to low-income households would be more cost-effective. For example, Ireland raised its carbon tax rate and used some of the extra revenue to enhance some social welfare schemes (OECD, 2021[23]). Several countries have also used revenues to lower other taxes such as personal income taxes (e.g. Austria, British Columbia). In Czechia, environmental revenues could be used to lower social security contributions or to fund transfer programmes towards those more affected by higher energy prices. To this end, an operational definition of energy poverty is needed. Such a definition is currently under preparation. Moreover, data requirements to identify and target eligible households need to be addressed, for example by connecting income data with data from land registry and environmental performance certificates (EPC) databases.

A relatively large share of workers is directly affected by the green transition. Recent OECD research estimates that the employment share of high-polluting jobs in Czechia is the highest among EU countries

with available data (Figure 3.8). The share is particularly high among middle and low-educated, male and older (55-64) workers (Causa, Nguyen and Soldani, 2024[24]). While the green transition is likely to have limited aggregate employment effects (OECD, 2021[25]), it will imply shifts from more polluting to less polluting sectors or firms within sectors. Some of the labour reallocation has already started in Czechia, with employment in mining and quarrying (mostly coal) having decreased by more than 50% since 2005 (OECD, 2023[1]). Moreover, greener production processes or products (e.g. electric vehicles) will require new or modified skills of the workforce (see *Chapter 4*).

Figure 3.8. Many work in high-polluting jobs

Share of employment in high-polluting jobs across countries, %, 2019



Note: High-polluting jobs are identified at the occupation level, based on industry emissions and the distribution of occupations by industry. OECD Europe is an unweighted average of countries shown. The figure shows all countries with available data.
Source: Orsetta Causa, Maxime Nguyen, Emilia Soldani, A new measurement approach for identifying high-polluting jobs across European countries, Economics Department Working Papers n. 1796. https://www.oecd-ilibrary.org/economics/a-new-measurement-approach-for-identifying-high-polluting-jobs-across-european-countries_f5127e4c-en

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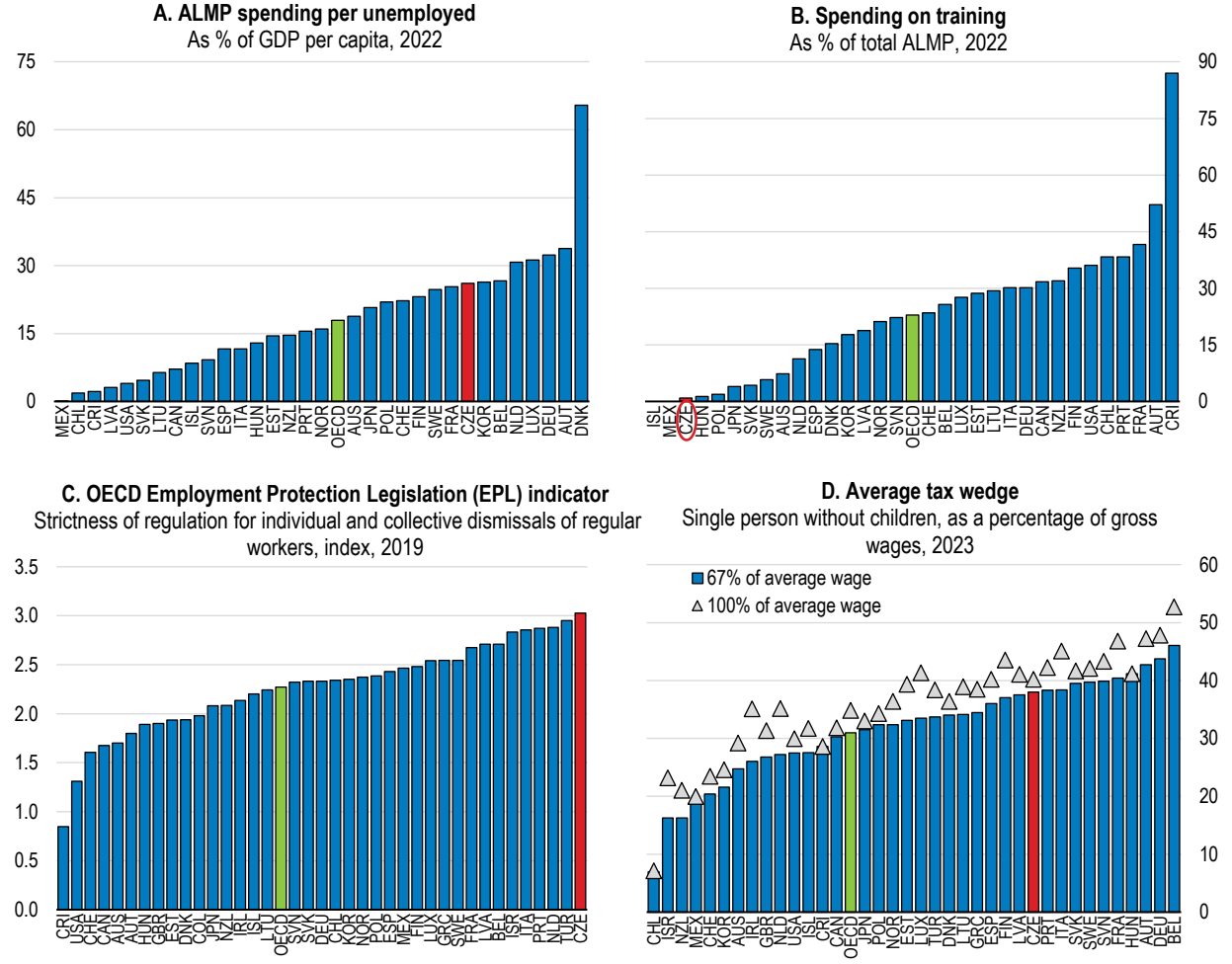
Adjusting labour market settings can facilitate labour mobility and strengthen opportunities to re- and upskill the workforce. Policy measures are needed to cushion the social and employment impact of the net-zero transition (OECD, 2024[19]), including skill-need assessments, social and transitional plans to support workers at risk of being displaced, as well as place-based policies for the most affected regions, as discussed in more detail in the previous *Survey*. One important area is to facilitate labour reallocation. OECD research suggests that labour mobility in Czechia is among the lowest in the EU, especially in terms of job-to-job mobility (Causa et al., 2022[26]). This at least partially reflects labour market settings that are not conducive to foster labour reallocation. Reforms are needed especially in the following areas (Figure 3.9):

- Boosting spending on active labour market policies, especially on training. This can help displaced workers find new jobs more quickly to effectively match jobseekers with emerging job opportunities (Botta, 2019[27]) (Causa et al., 2022[26]). This should be accompanied by strengthening the counselling and guidance capacity of the public employment service and effective profiling of jobseekers to identify their needs and the most relevant training paths. New OECD evidence suggests that spending on training, public employment services and employment incentives can be effective at supporting transitions to green jobs (Causa et al., 2024[28]).
- Adjusting employment protection legislation. The employment protection legislation is among the strictest in the OECD (Figure 3.9, Panel C). This may reduce workers' incentives to change jobs and firms' incentives to hire displaced workers from the pool of unemployed. Indeed, stringent job protection on regular contracts and large differences in job protection between regular and temporary contracts are associated with lower job-to-job and unemployment-to-job transitions, especially for low-educated workers and young people (Causa et al., 2022[26]).

- Reducing the average tax wedge especially for low-income earners (see Chapter 1). Higher levels of labour tax wedges, especially in the lower-half of the wage distribution, tend to depress job-to-job mobility, particularly for low-skilled and young people; as well as jobless-to job mobility, including inactivity-to-job mobility for women (Causa et al., 2022[26]).

Figure 3.9. Labour market settings are not conducive to mobility and reallocation



Note : ALMP refers to active labour market programmes. OECD average is an unweighted average of available OECD countries.
Source : OECD Labour market policy (LMP) database; OECD Economic Outlook database; OECD Employment Protection Legislation database; OECD Taxing Wages database.

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As discussed in detail in the previous *Economic Survey* (OECD, 2023[1]), climate policies will also have impacts that vary across regions, with the coal and heavy industry regions in Czechia (especially the Northeast, Northwest and central Moravia) particularly affected. Czech governments have since the 1990s implemented policies to mitigate the impact on the most affected regions, supported by EU funds (mainly the Just Transition Fund). For example, the Czech RE:START strategy was initiated in 2015 to support economic restructuring and fair transformation in the coal regions. Ensuring sufficient absorption capacity in the regions, engaging local stakeholders from higher education institutions, innovative businesses, regional and local governments, and building consensus around future specialisations are key to the success of regional development policies.

Adapting to climate change

Extreme weather and climate events have significant health and economic costs. Over the period 1980-2023, these events caused over 700 fatalities and economic losses worth around EUR 18.5 billion (6% of 2023 GDP) in Czechia (EEA, 2024[29]). Economic losses were higher than in most EU countries when adjusted for population or size of the country. Floods are the most significant natural disaster risk in Czechia in terms of direct threat to life and damage to property. The population and the built-up area exposed to the risk of river flooding is higher than in most OECD countries (Figure 3.10; (Maes et al., 2022[30])). Severe floods in September 2024 have caused substantial damage. Moreover, climate models predict a worsening in terms of frequency and intensity of droughts (MoEnv, 2021[31]). Droughts weaken forests and may make forest infestation, such as the outbreak of bark beetles in 2015, more likely (OECD, 2023[1]). Adaptation to climate change is crucial to managing these challenges and limiting economic and fiscal costs (OECD, *forthcoming*). Overall, the Ministry of Environment estimates total investment needs for climate change adaptation of CZK 275 billion (4% of 2023 GDP) until 2030.

The authorities have made a comprehensive assessment of climate vulnerabilities and reflected these in the adaptation strategy but implementation of adaptation measures at the local level needs to be strengthened. The *National Assessment of Impacts, Vulnerabilities and Risks* of climate change, last updated in 2019, provides a detailed analysis of climate impacts and risks. Moreover, the PERUN project was established to research the consequences of climate change in Czechia. Based on the risk assessment, the government updated the *National Adaptation Strategy* and the *National Action Plan for Adaptation* for the period 2021-2025 in 2021. The Action Plan contains 108 adaptation measures to preserve agricultural, forests and the water-related ecosystems; enhance the resilience of human settlements and strengthen early warning systems. The expected total investment needs for the measures amount to CZK 139 billion (1.9% of 2023 GDP) until 2025. In 2025, the implementation of the action plan will be evaluated and the plan updated. The updated plan should make better use of the detailed data on municipal climate risks and impacts to prioritise adaptation measures. Moreover, many municipalities still lack adaptation plans and lag behind in the implementation of measures (Křištofová et al., 2022[32]). This points to the need to establish systemic coordination at the national level and strengthen the professional capacity of local authorities (see *Chapter 1*).

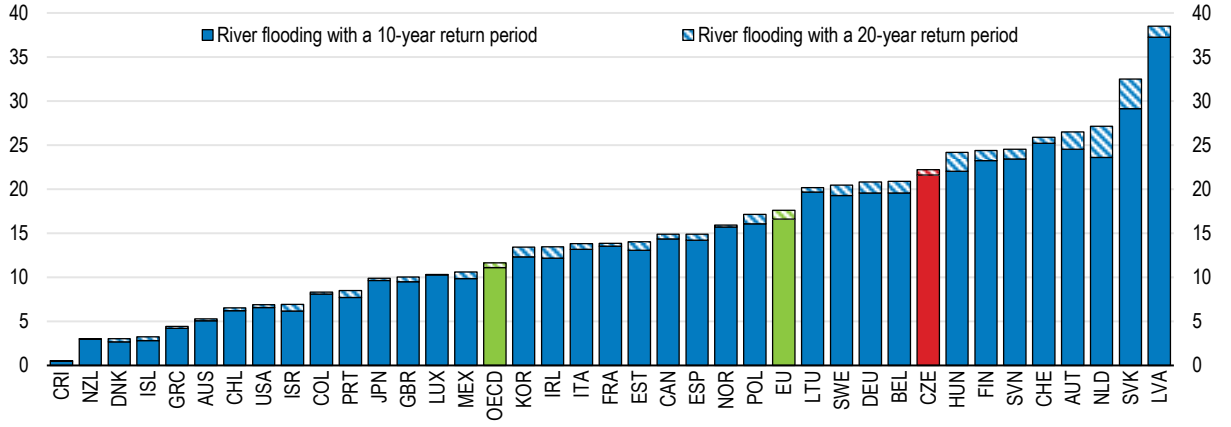
Private insurance coverage is relatively broad, but pockets of vulnerability exist and will be increasing. Estimates of insured losses of past climate-related disasters vary widely across sources, but generally suggest a coverage of around 30% and 40% (e.g. EIOPA, 2023), which is relatively high in international comparison. Flood risk insurance is generally voluntary in Czechia but mandatory for new mortgages as part of the real estate property insurance. Demand for property insurance has increased in recent years and insurance covers most risks caused by natural disasters. In 2023, about 56% of properties were insured. However, many properties are underinsured, which is partly due to fact that property values (see *Chapter 1*) and insurance policies are not regularly updated. Moreover, insurance companies generally do not provide flood insurance for properties in high-risk flood zones, leaving homeowners in these areas particularly vulnerable. In the agricultural sector, the Czech government provides subsidies for (natural disasters, adverse climatic events, plant pests, and animal diseases) insurance premia for small and medium-sized enterprises. While this helps broaden insurance coverage, it may reduce incentives to adopt resilience-enhancing practices, such as crop switching or planting drought resistant crops.

The government should evaluate the overall availability and affordability of insurance coverage for all potential climate-related risks, with a view to broadening insurance coverage. Greater private insurance coverage for climate-related disasters could reduce burdens on the public budget for disaster relief and financial support for rebuilding. Identifying segments that are uninsured due to market failures, for example in flood zones, can help inform adaptation priorities. Raising public awareness of catastrophe risks could help increase insurance take up, for instance by developing online mapping tools based on existing flood maps. The government could build public awareness further by demanding information on disaster risk at

the time of a rental or purchase transaction, similar to the requirement for energy certificates in real estate transactions. For example, France and Australia already require sellers and landlords to disclose information on compensation paid in the past for a property as a result of a natural disaster. Furthermore, the authorities could consider mandatory insurance against disaster risks (especially flooding) as in France and Switzerland. In France, for example, private insurers must include insurance against flood risk in property insurance policies. Coverage is funded from a fixed share of all premiums. Insurers in turn benefit from government-backed reinsurance through the "Cat Nat" system. A state guarantee ensures that damages from extreme events can be covered. An advantage of the French system is that it provides complete coverage and affordable premiums while keeping a large role for private insurers, with benefits in terms of cost effectiveness.

Figure 3.10. The population is highly exposed to river flooding

Share of population exposed to river flooding, %, 2020



Note: A return period is the average or estimated time that a flood event is likely to recur.
Source: OECD International Programme for Action on Climate (IPAC) dashboard, https://www.oecd.org/climate-action/ipac

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Table 3.2. Past recommendations on environmental policies

Recommendations in previous Surveys	Actions since 2023
Upgrade the grid and provide adequate incentives for scaling up renewable and low-emission energy capacity and boosting energy efficiency.	In 2023, an amendment of the Energy Act (Lex RES 2) was adopted, introducing support for energy communities. Investment support for RES was scaled up, especially from the Modernisation Fund.
Keep commitments to phase out coal from the energy mix by 2033.	The draft update of the State Energy Policy strategy from February 2024 confirms the goal to phase out coal completely from electricity and heat generation by 2033.
Once energy prices subside from their current high levels, introduce an explicit carbon price (with a pre-announced price trajectory) to cover all emissions for sectors outside the EU ETS.	No action taken.
Strengthen incentives for installing efficient green heating technologies in residential buildings. Scale up investments into energy efficiency retrofits of buildings.	In 2023, the New Green Savings Light was introduced. Energy efficiency retrofits are now financed also from the Recovery and Resilience Facility and the Just Transition Fund.
Streamline permitting processes for renewable investments and simplify regulations and processes in construction and spatial planning.	In 2023, the Energy Act was amended (Lex RES 1), including a higher limit for installing small photovoltaic plants without a license (from 10kW to 50kW). In April 2024, the government approved a resolution to establish renewable acceleration zones.
Expand active labour market policies - including targeted training and reskilling programmes - to help displaced workers find jobs more quickly and to effectively match jobseekers with emerging opportunities	The Just Transition Fund supports training and reskilling in the three regions most affected by the transition.

Table 3.3. Recommendations on decarbonising the economy

Main findings	Recommendations (key recommendations in bold)
Improving carbon pricing	
The effective carbon price is relatively low and carbon prices vary significantly across sectors in the economy. Fossil fuel subsidies and tax expenditures weaken price signals and can jeopardise climate goals.	**Phase out fossil fuel subsidies and increase effective carbon prices in sectors outside the EU Emission Trading System. Mitigate the impact on vulnerable households via targeted transfers.**
Phasing out coal and accelerating renewable energy deployment	
Coal is still dominant in the energy mix. The planned phase out of coal by 2033 and the further electrification of the economy will require a significant expansion of renewable energy capacity.	Ensure the planned decommissioning of coal-fired power plants by 2033. **Further simplify permitting procedures for renewable energy, including by establishing administrative one-stop-shops and assigning suitable land for acceleration zones.** Accelerate investment in electricity grid capacity, system flexibility and electricity storage. Accelerate the rollout of smart metres to improve demand response. Consider the use of Contract for Difference schemes to stimulate investment in renewables.
Decarbonising the building sector	
The residential building sector is highly energy and carbon intensive. It is the main emitter of fine particulate matter.	**Target renovation grants to low-income households living in the most energy inefficient dwellings.** **Expand loan programmes with favourable terms for housing renovations.** Extend coverage of energy performance certificates and incentivise renovations of worst-performing dwellings before 2030. Accelerate investment in the modernisation of district heating systems and increase the use of renewables and waste as alternative energy sources.
Reducing transport emissions	
Transport emissions are increasing. The car fleet is older and more polluting than in other EU countries.	Revise the vehicle registration tax so that it increases with the vehicle's emissions of CO_2 and air pollutants.
Mitigating adverse social impacts of climate policies	
Energy accounts for relatively larger share of consumption expenditure than in most OECD countries. The share of employment in high-polluting jobs is high, implying a significant need to reskill and upskill workers.	Introduce a multi-dimensional definition of energy poverty while addressing data requirements to identify and target eligible households. **Expand active labour market policies, especially targeted training and reskilling programmes, and strengthen the capacity of the public employment service to effectively profile jobseekers.**
Adapting to climate change	
Climate change will intensify Czechia's vulnerability to natural disasters such as floods and droughts. Many smaller towns and rural areas still lack adaptation plans and lag behind in the implementation of adaptation measures. Expanding private insurance coverage for climate-related disasters could reduce burdens on the public budget.	Ensure adequate professional capacity to plan and implement climate adaptation measures at the local level. Make a thorough evaluation of the private insurance coverage for climate related disasters, and consider mandatory insurance while providing public reinsurance for catastrophic losses.

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4 Improving education and skills

Federica De Pace, OECD

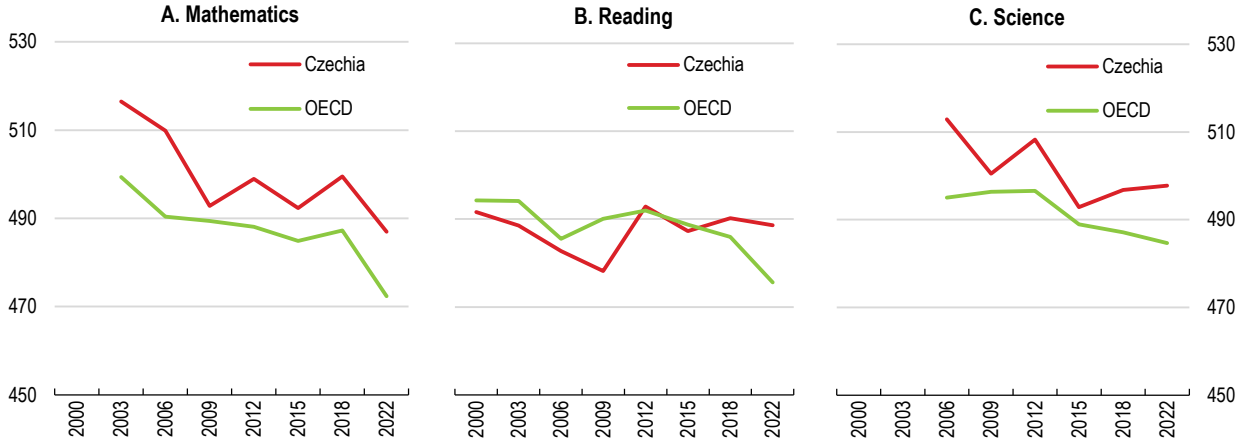
School outcomes are strong, but students' performance has been declining among the most vulnerable. Moreover, high skills shortages and mismatches pose a threat to productivity growth. Improving skills requires boosting educational outcomes for all students and expanding opportunities to reskill and upskill workers throughout their careers. There is scope to improve educational outcomes by expanding capacity and participation to high-quality affordable early childhood education and care, especially for disadvantaged children. Offering more individualised support to pupils with special education needs, delaying school tracking and reducing disparities in quality across educational paths are crucial to reduce inequality in education. Improving teachers' working conditions and increasing the efficiency of the school network would enhance the quality of education. Enhancing the labour market relevance of vocational education programmes and promoting work-based learning, while expanding tertiary education attainment and boosting participation in adult learning for the low-skilled would improve the alignment of skills with labour market needs.

The education and skills provision system faces increasing challenges

Education outcomes in Czechia are strong. In 2022, Czech 15-year-old students performed better than the OECD average in all subjects of the OECD's Programme for International Student Assessment (PISA) (Figure 4.1). A large share of Czech students (around 80%) met the minimum proficiency level (Level 2 or above) across all three subjects, surpassing the OECD average (OECD, 2023[1]). In addition, 10.6% of students were top performers (Levels 5 or 6) in mathematics compared to the OECD average of 8.7%. Moreover, the decline in PISA scores has been less negative than in other OECD countries. Specifically, in reading and science, results have been stable over the long term, and in mathematics 2022 results are on par with those observed in 2009 and 2015.

Figure 4.1. Education outcomes compare well to OECD averages, but student performance has been stagnating

Mean performance by PISA cycle, score



Source: OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education, PISA, OECD Publishing, Paris, https://doi.org/10.1787/53f23881-en

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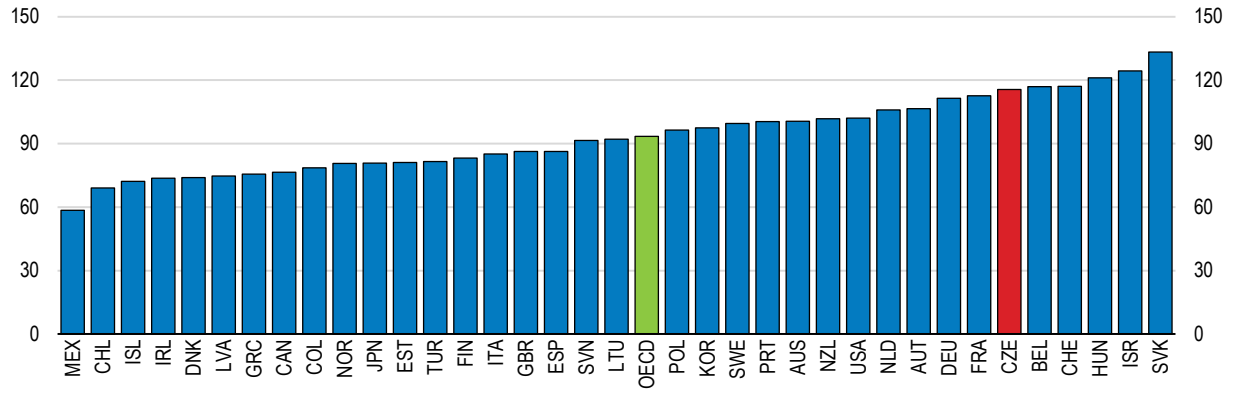
However, the education system is characterised by strong inequalities. Pupils from weaker socio-economic background perform worse than their more advantaged peers in PISA (Figure 4.2 and (OECD, 2023[2])). In addition, the share of students who did not achieve minimum proficiency rose by 10 percentage points between 2012 and 2022 among students with the weakest economic background, while it remained constant among advantaged students (OECD, 2023[1]). Moreover, students from disadvantaged backgrounds and low-achieving students are often clustered in different schools (Figure 4.7). Roma students suffer from particularly high segregation in education, which has further increased in the past years (Figure 4.11 and (FRA, 2022[3])). In addition, the system tracks students into different streams earlier than most of OECD countries, exacerbating the role of parental background on students' education choices and putting talented pupils who lack strong family support at a disadvantage.

The low attractiveness of the teaching profession and inefficiencies in the school network hinder the provision of high-quality education. Teachers' salaries hardly rise with teachers' skills and teachers face limited career progression. This contributes to high shortages of qualified teachers (Figure 4.3), and heavily weighs on students' performance. Recent reforms have primarily focused on broadly increasing salaries, which could help attracting more graduates to the profession but can be very costly and may reduce motivation of high-quality teachers. Moreover, the high decentralisation of education policy in combination with high territorial fragmentation results in many small schools who struggle to hire qualified teachers and provide high-quality education (CSI, 2023[4]).

Figure 4.2. Student performance and socio-economic background are strongly linked

Difference in mathematics performance by national quarter of ESCS (top versus bottom quartile), PISA score, 2022



Note: Represents the simple difference in scores, not controlling for any other explaining factors. A socio-economically advantaged (disadvantaged) student is in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.

Source: OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education, PISA, OECD Publishing, Paris, https://doi.org/10.1787/53f23881-en.

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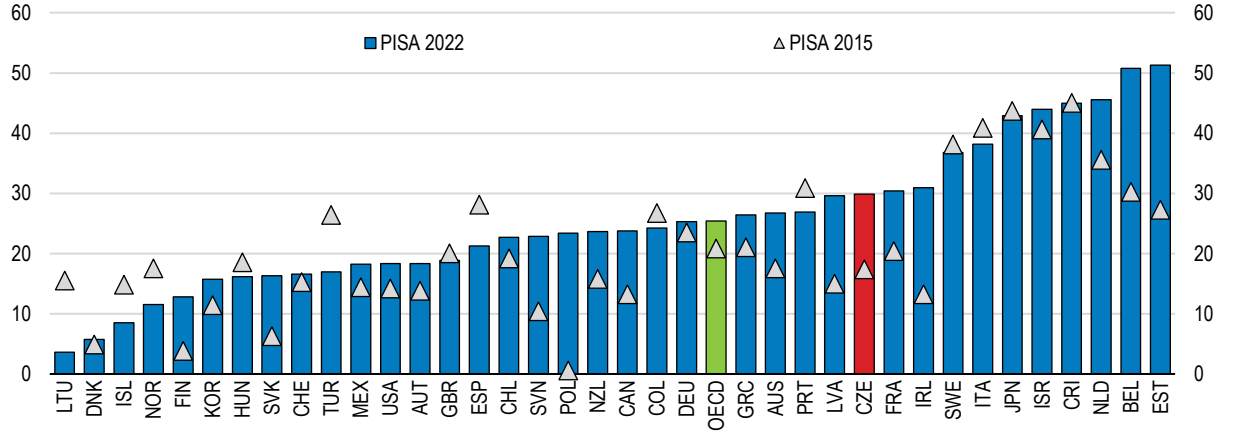
Figure 4.3. Shortages of qualified teachers have worsened

Students in schools whose principal reported that the school's capacity to provide instruction is hindered to some extent or a lot by inadequate or poorly qualified teaching staff, %



Source: OECD (2023), PISA 2022 Results (Volume II): Learning During – and From – Disruption, PISA, OECD Publishing, Paris, https://doi.org/10.1787/a97db61c-en.

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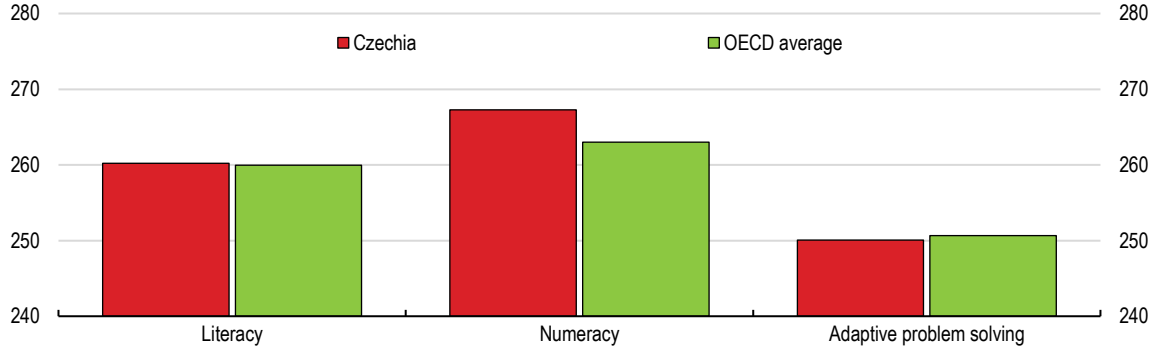
The skills of Czech adults are around the OECD average, with particularly strong performance in numeracy (Figure 4.4). However, the education system does not always provide students with the right skills, and there are limited opportunities for upskilling and reskilling of workers. Finding a job is relatively easy for graduates across all educational levels, but skill mismatches are high (Figure 4.5). Graduates from vocational education, especially of shorter 2-3 years programmes, rarely work in jobs directly related to their field of study (NPI, 2021[5]). Despite progress and high industry demand, tertiary education attainment is still significantly below the EU target of 45%, and a high share of tertiary education graduates work in occupations which do not require their degree (OECD, 2024[6]; EC, Forthcoming[7]). More women compared to men have tertiary education attainment, yet their representation in highly demanded scientific fields remains lower than that of men (OECD, 2024[6]). Work-based learning opportunities are limited, and

participation in adult education is particularly low among low-skilled workers, primarily due to a lack of interest and time constraints. Firm engagement in training is also limited among small and medium-sized enterprises (SMEs), which tend to invest minimal resources in these activities (Eurostat, 2024[8]).

Figure 4.4. Adults' skills are around the OECD average

Average adult skills scores for literacy, numeracy and adaptive problem solving, 2023



Source: OECD (2024), Do Adults Have the Skills They Need to Thrive in a Changing World?: Survey of Adult Skills 2023, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/b263dc5d-en

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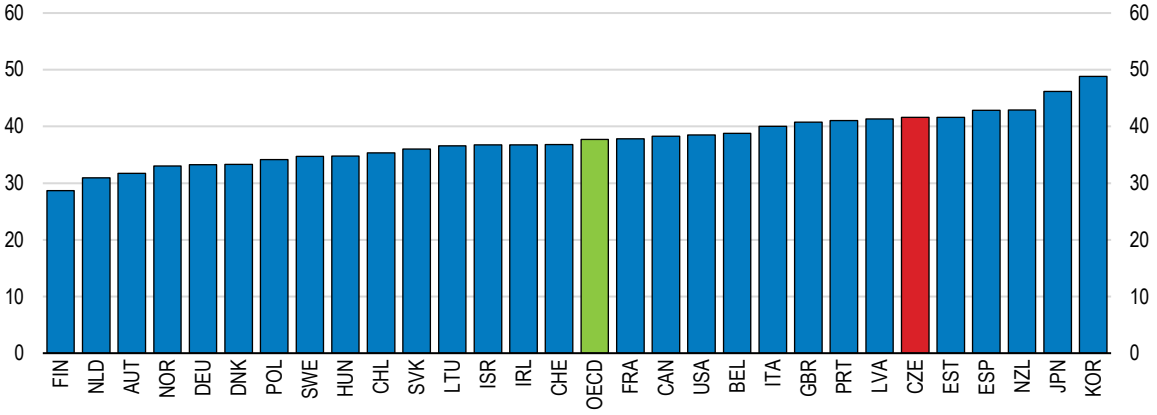
Figure 4.5. A high share of workers experiences an education mismatch

Workers that have a qualification in a field-of-study that does not match their job's requirements, %, 2023



Source: OECD (2024), Do Adults Have the Skills They Need to Thrive in a Changing World?: Survey of Adult Skills 2023, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/b263dc5d-en.

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While many of the described challenges affecting the Czech education system have been longstanding, the implementation of education reforms has lagged. The Ministry of Education, Youth and Sport (MoEYS) identified many of the described challenges faced by the education system as priorities already in the Strategy for Education Policy until 2020 (Strategy 2020). However, most of the objectives in the Strategy 2020 were not met and were subsequently incorporated into the follow-up Strategy for Education Policy until 2030+ (Strategy 2030+). A 2016 OECD review of the Czech education system highlighted several barriers to the implementation of education reforms (Shewbridge et al., 2016[9]). They include political instability and excessive fragmentation of local government administration. In addition, there is a lack of stable resources and an overreliance on one-off funding, such as EU funds. Recently, steps have been taken to enhance the implementation of the Strategy 2030+, including through the establishment of a special implementation unit within the ministry, and the outlining of specific objectives and associated indicators to track annual progress. Nonetheless, implementation barriers persist.

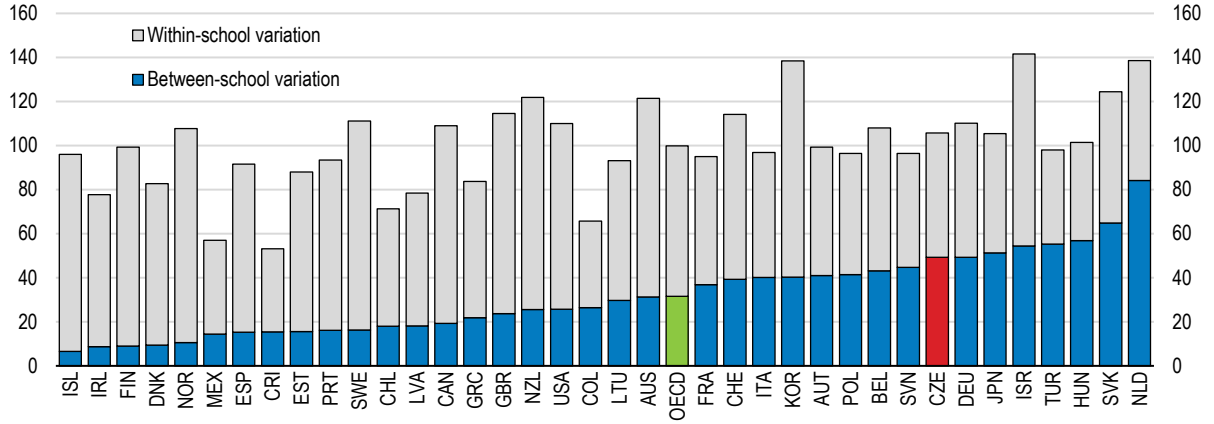
Boosting the performance of all Czech students and ensuring that the workforce is ready to meet labour market needs is essential to revamp economic growth. OECD estimates show that enhancing the quality of human capital through education reforms can raise productivity by 1.3% on average in the OECD and by 3.6% in Czechia (OECD, 2024[10]). Boosting education outcomes in Czechia primarily requires raising the performance of the weakest students, investing in the quality of teaching and improving the efficiency of the school network. This is also essential for expanding the size of the skilled labour force at a time of strong labour demand. Global trends, such as population ageing, digitalisation, and the low-carbon transition, which hinge on the creation of many skilled jobs, will further test the Czech labour market's ability to supply labour in expanding industries. This calls for an education system that offers opportunities for all workers to upskill and reskill throughout their careers. This chapter examines the main structural challenges facing the Czech education system and proposes options to enhance equity, quality, and efficiency, and better align skills with labour market needs.

Addressing inequalities in education

The education system is characterised by strong inequalities. Differences in Czech students' performance in PISA between schools are more prominent than in other OECD countries (Figure 4.6). In addition, while the variation in test scores between children within schools is in line with the OECD average, it remains considerable, and the influence of students' socio-economic background on their educational outcomes is high (Figure 4.2). Moreover, school segregation by socio-economic background and performance is high (Figure 4.7). Several factors contribute to such outcomes, including low participation of children from disadvantaged backgrounds in high-quality early childhood education and care, school admission policies and early tracking into different educational streams.

Figure 4.6. Inequalities in learning outcomes are high

Variation in mathematics performance between and within schools, as a percentage of the average total variation in mathematics performance, 2022



Source: OECD (2023), PISA 2022 Results (Volume I): The State of Learning and Equity in Education, PISA, OECD Publishing, Paris, https://doi.org/10.1787/53f23881-en.

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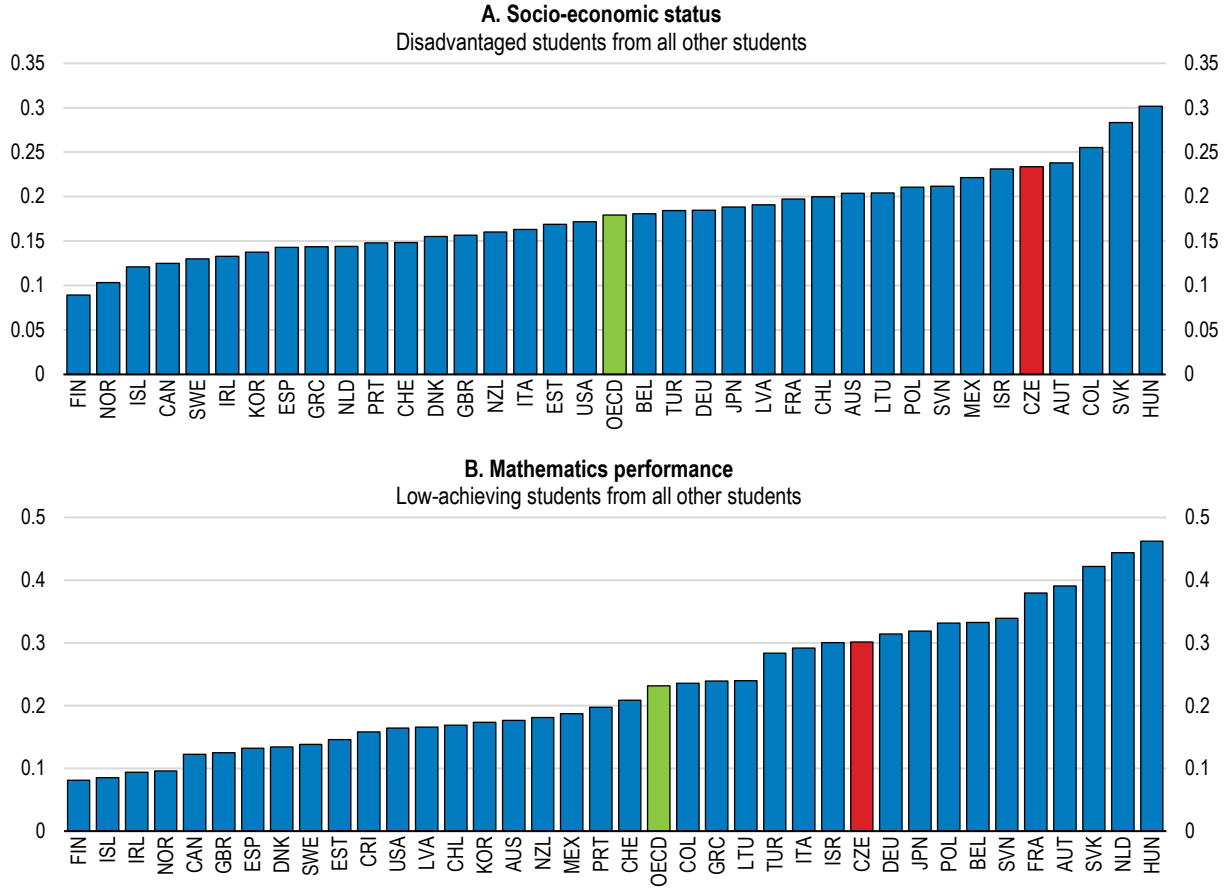
This section discusses options for reducing inequalities in education and boosting performance of underperforming students and schools. First, it looks at strategies to raise participation in high-quality affordable early childhood education and care for young children from disadvantaged backgrounds. Then, it considers measures to reduce segregation of disadvantaged and low-achieving students and to mitigate the negative effects of early tracking on students' educational outcomes.

Figure 4.7. Disadvantaged and low-achieving students are clustered in certain schools more often than on average in the OECD

Isolation index, from zero (full exposure) to one (full isolation), 2022



Note: The isolation index measures the extent to which certain types of students (e.g. disadvantaged students) are isolated from other all other types of students, or from a specific group of students (e.g. advantaged students), based on the schools they attend. Low-achieving students are students who score among the bottom 25% of students within their country or economy on the PISA test.
Source: OECD (2023), PISA 2022 Results (Volume II): Learning During – and From – Disruption, PISA, OECD Publishing, Paris, https://doi.org/10.1787/a97db61c-en.

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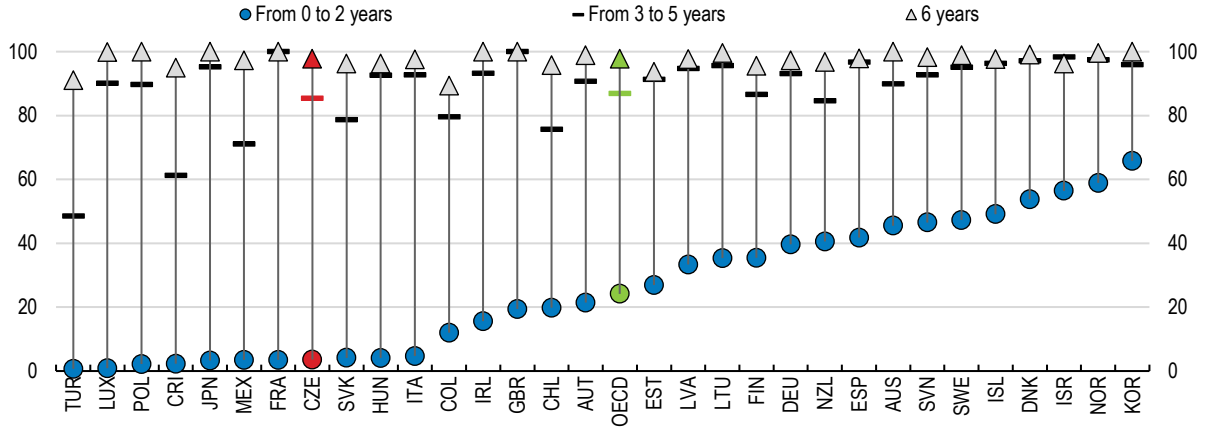
Enhancing participation in high-quality early childhood education and care for younger children from disadvantaged backgrounds

Participation in early childhood education and care (ECEC) is among the lowest in the OECD, especially for children below the age of 3. In 2022, only 3.6% of children under 3 years old were enrolled in ECEC (Figure 4.8), significantly below the OECD average of 24%, the national target of 12% and the EU target of 45% to be achieved by 2030. ECEC enrolment rates significantly rise with the children's age, but participation of children between 3 and 6 years (the starting age of primary school), at 85.3%, remains below the target of 96% agreed at the EU level.

Participation in ECEC is uneven by socioeconomic background. It is lower in socioeconomically disadvantaged regions, such as Karlovy Vary and Ústí nad Labem (EC, 2023[11]) and for younger children of poorer households. For example, in 2020, ECEC participation was 2.2% for 0–2-year-olds in households in the lowest income tertile, compared to 6.7% in the highest income tertile (OECD, 2023[12]).

Figure 4.8. Enrolment in ECEC for children below 3 is among the lowest in the OECD

Enrolment rate in early childhood education and care (ECEC) and primary education, by age, %, 2022



Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

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Expanding the supply of affordable high-quality early childhood education and care

Efforts to increase participation in ECEC should continue. Besides facilitating mothers' participation in the labour market, raising access to high-quality ECEC from early ages has a strong positive impact on the development of children from vulnerable groups, provides a crucial foundation for future learning, and raises equality of opportunity (Heckman et al., 2010[13]; Felfe and Lalive, 2018[14]).

Raising participation in ECEC requires expanding the supply of childcare places. Despite recent improvements, spending per child on ECEC is still lower than the OECD average (Figure 4.9), and the capacity of ECEC facilities, i.e. kindergartens (caring for 2-6 year-olds) and children's groups (mostly caring for children under 3) (Box 4.1), is insufficient to meet demand. The Czech School Inspectorate reports that 27% of kindergarten applications submitted for the 2022/2023 school year were denied, mostly for 2-year-olds in the areas of Prague and Central Bohemian region (CSI, 2023[15]). While these numbers include rejections for multiple applications of the same child, they indicate demand pressures. Applications for children's groups are not systematically monitored. Nevertheless, more than 70% of the children's groups providers reported sharing a single slot between several children. Some children rotate throughout the day, while others rotate on a weekly basis, to address the challenge of insufficient capacity (RILSA, 2023[16]). Capacity constraints have worsened since the beginning of the war in Ukraine. As of June 2023, around 3% of Ukrainian children enrolled in kindergartens. Prague had the highest enrolment rate, with 6.7% of Ukrainian children attending kindergartens, followed by Karlovy Vary and Ústí nad Labem, where over 4% of Ukrainian children were enrolled (CSI, 2023[15]).

Investment in ECEC capacity should be based on better monitoring of ECEC supply and demand. While data on kindergarten capacity and attendance by age group is systematically monitored by the MoEYS for 3 to 6-year-olds and integrated into the national education information system, this is not the case for children's groups enrolling younger children. In addition, systematic monitoring of demand is missing. The actual number of rejected applications and the use of alternative (out of school) childcare for 0 to 6-year-old children are not tracked. The authorities should start collecting this information regularly. Linking it with population developments across regions is also crucial to help providers, i.e., municipalities, plan capacity expansions where they are most needed.

Box 4.1. ECEC facilities in Czechia

ECEC in Czechia is provided by:

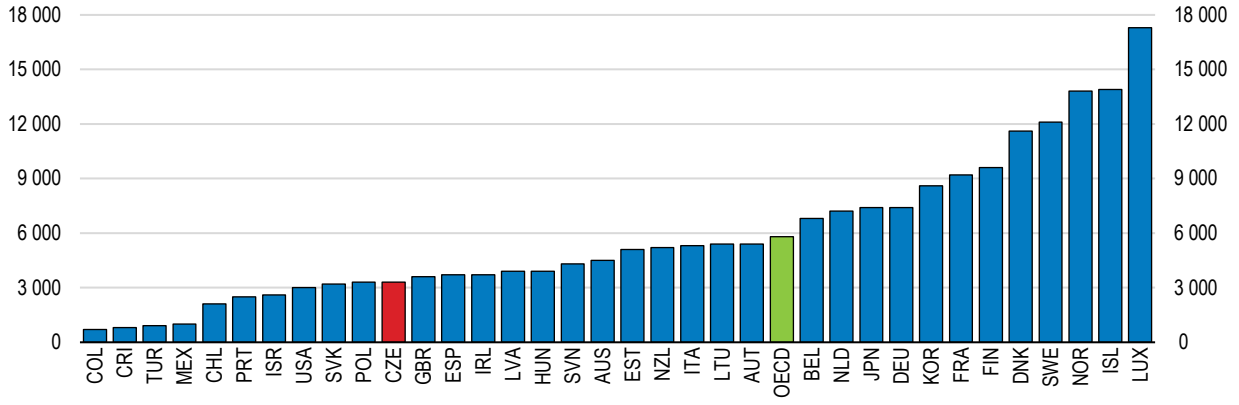
- Kindergartens (*mateřské školy*): primarily addressed to children between 3 and 6 years old. 2-year-olds can also enrol, provided that there is available capacity. Access to pre-primary education is mandatory and free of charge for 5-year-olds. Kindergartens are largely established by municipalities (only 8% are private) and operate the under the responsibility of the MoEYS, Kindergartens follow a centralised education programme prepared by the MoEYS and are subject to regular quality inspections by the Czech School Inspectorate.
- Children's groups (*dětské skupiny*): primarily addressed to children between 6 months and 3 years, but children between the age of 3 and 6 can also enrol paying a higher fee. Children's groups can be established by public and private entities, and in groups of up to 4 children also by the childminders. They operate under the responsibility of the Ministry of Labour and Social Affairs (MoLSA). They were initially funded by European Social Funds (ESF), but since 2022, 88% of providers are covered by the state budget, while about 10% is covered by the ESF..
- Additionally, private entities (overseen by the Ministry of Industry and Trade) can offer childcare options for young children, though these are less common.

Efforts should be made to enhance ECEC affordability, especially for families with children below the age of three. Net childcare costs are relatively high in Czechia (Figure 4.10). This is mostly due to high opportunity costs faced by families with 0–2-year-old children, who lose eligibility to the parental allowance when using childcare for more than 92 hours per month. This reduces incentives to use full-time childcare and discourages mothers from returning to work. Therefore, the time restriction on using ECEC while receiving parental allowances should be abolished. Positive steps in this direction have recently been made, and a proposal for this change is now before Parliament. In addition, the duration of parental leave should be gradually shortened, and the amount of commensurate cash benefits reduced accordingly, as discussed in *Chapter 1*. The savings could be redirected to expand affordable ECEC facilities and to extend subsidies of childcare fees for working parents in low-income families to children's groups, as it is the case of kindergartens since September 2024.

The authorities should ensure that the whole ECEC system, for children from 0 to 6 years of age, is of high-quality and has educational content in addition to care. While kindergartens must follow a centralised education programme prepared by the MoEYS, children's groups do not have such obligations, raising risks that the quality of services differs significantly. Moreover, quality in kindergartens is monitored by the Czech School Inspectorate, which conducts regular inspections of each school every 6 years. This is not the case in children's groups, where information on the performed activities and quality of the staff and infrastructure is only collected through ad-hoc surveys (RILSA, 2023[16]). The authorities should ensure effective coordination between the two ministries overseeing the services to regularly monitor and maintain the quality of the entire ECEC system, safeguarding standards across providers (OECD, 2023[17]). A reform in this direction is currently underway. In September 2023, an EU-funded project was launched to develop a comprehensive framework for monitoring and evaluating the whole ECEC system for children from 0 to 6 years of age. The project will support the creation of an integrated data systems to collect information on demand, supply, and the quality of ECEC. Alternatively, the authorities should consider consolidating the responsibility of the entire 0-6 ECEC system under a single ministry, i.e., the MoEYS. A similar reform was enacted in Italy in 2017 through the *Zerosei Integrated System*, which formally recognised ECEC services for children below the age of three as educational in addition to social services, and led to the introduction of educational guidelines, objectives and monitoring for the integrated system.

Figure 4.9. Public spending per child in ECEC is low

Public expenditure on early childhood education and care, per child aged 0-5, in USD PPP, 2019



Source: OECD Family database.

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Reducing late entry into primary school to alleviate demand pressures on ECEC

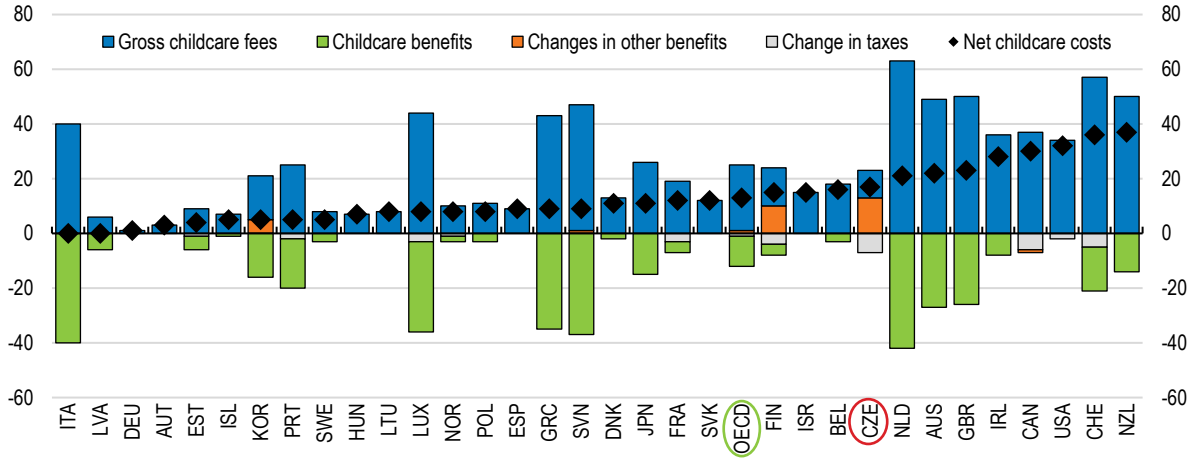
Delayed entry into primary school should be reduced to mitigate demand pressures on ECEC from families with older children. In the 2023/2024 school year, a quarter of pupils postponed entry into primary school, putting further strain on the demand for kindergarten spaces (CSI, 2023[15]; CSI, 2024[18]). This issue is particularly severe in some poorer regions such as Karlovy Vary and Ústí nad Labem, where the percentage of children who delay entry into primary school reaches 30% (CSI, 2023[15]). The reduction of the share of children who delay entry into primary school has been one of the goals of the MoEYS for several years. However, progress has been limited, with the share consistently above 20% since 2010, and higher than neighbouring countries, such as Germany (7%) and Slovakia (14%) (CSI, 2024[18]).

The authorities should define objective criteria for kindergartens and specialists to assess requests to delay entry into primary schools. At present, delayed entry into primary school may be granted at the request of parents who have concerns about their child's maturity, following consultation with kindergarten teachers and a general practitioner. These requests are often approved on the grounds of the child's lack of maturity (CSI, 2024[18]). Establishing clear, objective methods in kindergartens to assess children's progress against predefined developmental goals and limiting postponements to cases evaluated by specialists, would help limiting delayed entries. In September 2024, the government approved a proposal which include some of these changes (i.e. the requirement of a diagnosis from a specialised doctor) and will be discussed in Parliament. This is welcome and should be accompanied by efforts to strengthen the quality of kindergartens' staff and ability to support children with special learning needs. For example, raising the quality of initial kindergartens teachers' education and offering more opportunities for continuous professional development would enhance their ability to provide timely support to children with special learning needs and improve children's preparedness for primary school.

Primary schools should also be adequately prepared to support children as they transition from kindergartens. This requires more coordination and information sharing between kindergartens and primary schools, setting up verbal assessments in the first school year, and ensuring the presence of teaching assistants for children with special learning needs as planned.

Figure 4.10. Net childcare costs are high for families with children below age 3

Net childcare cost for parents using childcare, % of two-earners earning 100% and 67% of average earnings, 2022



Note: Cost figures report the user cost, net of any childcare allowance, tax concessions, fee rebates or increase in other benefit entitlements, to full-time working parents for two children aged two and three using full-time centre-based childcare. Two-earners earning 100% and 67% of average earnings.
Source: OECD Social and Welfare Statistics (database).

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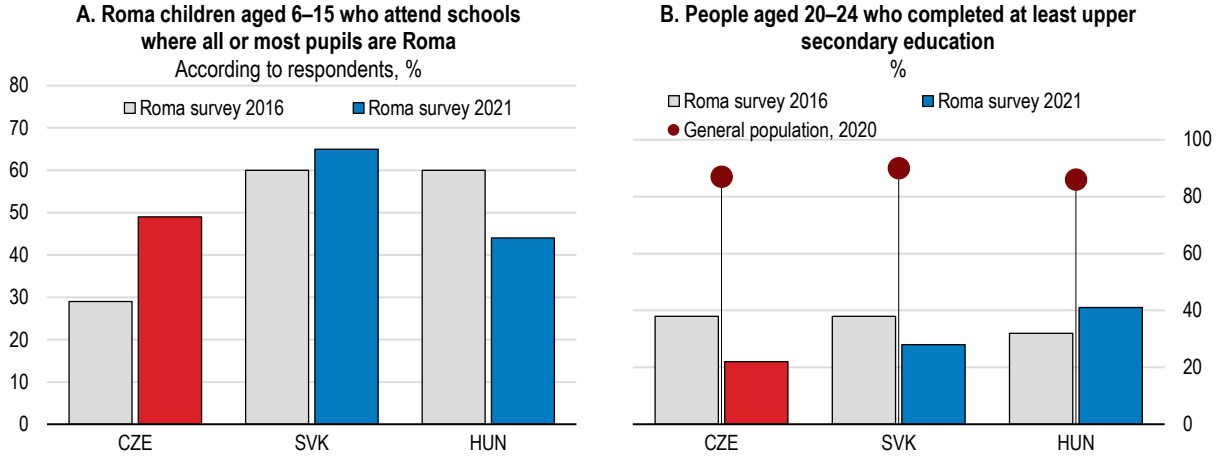
Supporting and boosting the inclusion of children from disadvantaged backgrounds and the Roma community

Students from disadvantaged socioeconomic backgrounds are more often clustered in certain schools than on average in the OECD (Figure 4.7). International evidence shows that high segregation in education can have detrimental effects on the general performance of the school system (Sacerdote, 2011[19]). This is especially true for low-achieving students, who are more negatively influenced by low-performing peers, while high-performing students are generally less affected by the composition of their classes (Mendolia, Paloyo and Walker, 2018[20]).

Children from the Roma community suffer from particularly high segregation. The Roma community is estimated to be 2.2% of the population, and Roma children make up 3.6% of the population in elementary school. About 50% of Roma live in social exclusion, mostly in the Ústí nad Labem and the Moravian-Silesian regions (Slepickova and Bobakova, 2020[21]). Only 50% of Roma pupils between 3 and 6 years attend kindergartens, a significantly lower share than the 86% in the general population (FRA, 2022[3]). The percentage of Roma children attending schools where all or most pupils are Roma increased from 29% in 2016 to 49% in 2021 - significantly more than in neighbouring countries - (Figure 4.11, panel A), and Roma parents, guardians or students often experience discrimination (FRA, 2022[3]). Roma students are often enrolled in special education, with reduced hours and curricula compared to non-Roma children (PAQResearch and STEM, 2023[22]). This translates into lower education outcomes (Figure 4.11 panel B) which hinder their future opportunities and perpetuates social exclusion and inequalities.

Figure 4.11. Roma pupils experience high segregation in education and have lower educational attainment



Source: European Union Agency for Fundamental Rights (FRA), Roma Survey 2021.

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Monitoring the impact of residence-based school enrolment

Segregation of students from different socio-economic backgrounds in different schools can be attributed to school policies and external factors, such as the level of residential segregation. Allocation of children in pre-primary, primary and lower secondary education in Czechia is primarily based on residence. With high residential segregation, prioritising the enrolment of students according to parents' place of residence can hinder social integration in schools (PAQResearch and STEM, 2023[22]). This especially affects children from the Roma community. A significant portion of the Roma resides in Roma-only neighbourhoods, resulting in children mostly attending Roma-only schools (Černušáková, 2020[23]). Moreover, Roma families often don't have a valid permanent residence address, reducing their chances of enrolling children in (non-compulsory) ECEC education, with negative consequences on their future educational outcomes (CSI, 2023[15]). Finally, there is evidence that some municipalities have established school districts to avoid the enrolment of Roma in predominantly non-Roma schools (Mijatović, 2023[24]).

The authorities should monitor the impact of residence-based allocation of children to schools and implement measures to reduce school segregation. For example, the authorities could consider reserving a given number or a share of places in schools to pupils from different socio-demographic backgrounds to maintain a balanced distribution of students. Another approach would be to redefine school districts and introduce a policy of school transportation (busing) (OECD, 2019[25]). However, experience from other countries, for example Israel (Israeli State Archive, 2024[26]), shows that in order to be effective such policies should be accompanied by adequate resources and efforts to foster inclusion, including by providing individualised support to disadvantaged students. The efficient definition of schools' districts, which balances school diversity and quality of educational outcomes, requires regular monitoring of local demographic developments, student enrolment patterns according to their socioeconomic backgrounds, and measures of school performance. This information is crucial to evaluate the costs and benefits associated with different definitions of boundaries, e.g., the potential impact of students' travel times and social diversity on educational outcomes under different scenarios. This calls for strong collaboration between levels of government, with higher levels providing guidance and support in data collection and analysis to local authorities.

Reducing over-representation of Roma children in special education

Roma students are disproportionately represented in special education, with reduced curriculum activities and learning hours, negatively impacting their educational outcomes, and perpetuating social exclusion and inequality. Before 2016, Roma pupils were disproportionately placed in special schools for students with mild learning disabilities, often based on their social disadvantages rather than actual needs, a practice considered discriminatory by the European Court of Human Rights in 2007 (PAQResearch and STEM, 2023[22]). After 2016, the Education Act was reformed to prioritise the integration of all children with special education needs into regular classes with the provision of additional support measures (e.g., a teaching assistant, the adjustment of the class organisation, curriculum content, and evaluation methods). However, the 2016 reform still allows children with special education needs to be educated in special schools and classes upon suggestion of pedagogical advisory centres based on a diagnosis of disability. Within the Roma population, 9% of students attended special schools in 2022, which is much higher than the only 1% in the non-Roma population. Roma pupils are also highly represented in special classes in regular schools, where their share among all pupils is 22% (PAQResearch and STEM, 2023[22]).

Inadequate diagnosis of disabilities contributes to explaining the high representation of Roma children in special education. In 2023, Roma children were 10 times more likely to be diagnosed with mild disabilities than non-Roma children (PAQResearch and STEM, 2023[22]). The methods for detecting disabilities for placing students in special education should be assessed and updated to avoid decisions based on social disadvantages rather than actual needs. In addition, the role of the Czech School Inspectorate could be strengthened, and shifted from merely monitoring to having the legal authority to challenge diagnoses made by pedagogical advisory centres and mandating independent re-assessments when deemed appropriate, as suggested by a previous OECD review (Shewbridge et al., 2016[9]).

Outreach to Roma parents should be enhanced to support them in making the best educational choices for their children. Roma parents often prefer special schools for their children as they are more easily accessible and offer a less demanding curriculum that can be handled at a slower pace and a more familiar environment (PAQResearch and STEM, 2023[22]). They are also often not aware of the negative effects of special schools on educational and labour market prospects. Social workers and Roma mediators could collaborate closely with Roma families to provide relevant information about schools and their impact on children's development. There is evidence that Roma children can do well in regular classes if provided adequate support. A pilot project that followed Roma families who emigrated to the United Kingdom showed that children who had previously been placed in special schools were able to successfully complete primary and secondary education at mainstream schools (World Bank, 2012[27]).

Providing support to disadvantaged students and disadvantaged schools

Recent reforms have enhanced individualised support for children with special education needs, though some challenges remain. With the 2020 reform to school funding (primary and secondary), resources for teachers' salaries are allocated according to the number of teaching hours considering teachers' seniority, class size and the number of students with special education needs. In addition, since 2016, schools have received stable funding (0.16% of GDP in 2024) to hire teaching assistants to support children with special education needs in regular classes. However, severe shortages of qualified teachers, especially in disadvantaged areas (e.g., Karlovy Vary), hinder the ability to provide many of these children with the necessary support. Moreover, three-quarters of primary and secondary schools, and up to 90% of smaller schools suffer from shortages of non-teaching staff (psychologists and special educators) which, in addition to teaching assistants, are crucial to support disadvantaged students. State funding does not cover for such positions, and schools rely on unstable EU funds to fill the gap (PAQResearch, 2024[28]). There are also limited opportunities for high-quality training courses for teachers with a focus on assisting students with special education needs (CSI, 2024[18]).

Ways to attenuate shortages of qualified teachers and improving the quality of teaching are discussed later in this chapter and include bonuses and allowances to teach in schools located in disadvantaged areas, a greater variety in teachers' career and improving the quality of teachers' training. In addition, the authorities should provide disadvantaged schools more support. To do so, the funding formula should be modified to better align resources with the educational challenges faced by schools (OECD, 2017[29]). A reform along these lines is currently being piloted with the support of EU funds in the regions of Karlovy Vary and Ústí nad Labem. These regions are testing an index-funding formula to direct resources to disadvantaged schools for hiring additional teaching and non-teaching staff, providing individualised tutoring to low-achieving students, and offering specialised training courses to teachers to support children with special education needs. Schools eligible for this additional funding are selected on the basis of an indicator which combines the social exclusion conditions of the area where the school is located (based on an existing index), with information provided by the school principal (i.e., the number of foreign, Roma, socially disadvantaged pupils, pupils with special education needs, and the rates of early leaving and grade repetition in the school). The project should be evaluated and if found effective, the authorities should modify the funding formula accordingly. Such a reform would imply additional expenditure of around CZK 1 to 2 billion per year (0.01-0.03% of GDP) (PAQResearch, 2024[30]).

Targeting additional funding to disadvantaged schools through index-funding requires up-to-date and reliable data. The targeting methodology should be regularly evaluated and reviewed to ensure that the indicators determining school's eligibility for additional resources are in line with the desired educational goals and social outcomes. The selection of indicators should seek to minimise the risk of manipulation by schools, which is generally higher in case of self-reported data (OECD, 2017[29]). To achieve this, it is necessary to develop adequate analytical capacity within the MoEYS. Continuous consultation with stakeholders, including local authorities, school representatives, research institutes and NGOs, is crucial to maximise effectiveness, as illustrated by the Ireland experience (Box 4.2) (OECD, 2017[29]).

Postponing school tracking and mitigating its effects

Czech students are tracked into different education programmes earlier than the rest of the OECD countries (Box 4.3), and parents' educational attainment has a strong influence on the choice of the education track. Pupils residing in regions where the educational attainment is lower, such as Karlovy Vary, Liberec and Ústí nad Labem are more likely to enrol in vocational education and training (VET) programmes. In contrast, their more advantaged peers who live in regions where more people have tertiary education attainment, such as South Moravia, and the capital city of Prague more often choose general education tracks, i.e., grammar school and lyceum (Figure 4.12). This reinforces inequalities, as general and vocational education tracks give different opportunities to graduates. Young VET graduates are more likely to be not in employment or in education (NEET) compared to their peers who graduated in general education tracks, and are less likely to access tertiary education, enhanced career opportunities and higher incomes (see last section).

The authorities should postpone tracking to the end of compulsory schooling to increase overall student performance and fairness of the education system, as recommended in other OECD *Economic Surveys* (OECD, 2014[31]). Pupils, especially at such early age, do not have reliable information about their own abilities or about individual secondary schools. Therefore, their decisions heavily depend on parental inputs, disadvantaging talented pupils who lack strong family support (Protivínský, 2023[32]). This is also confirmed by analysis on PISA results for OECD countries, which show that early tracking and inequality in education outcomes are strongly related (OECD, 2023[1]). Allowing students to select into the different programmes only at the end of compulsory schooling would reduce dependence of educational outcomes on their socioeconomic backgrounds. Evidence shows that de-tracking reforms, for example in some German states (see Box 4.4), have been successful in raising overall educational outcomes, especially by increasing the results of students with lower socioeconomic backgrounds (Piopiunik, 2021[33]).

Box 4.2. Developing analytical and technical capacity to tackle educational disadvantage: the DEIS programme in Ireland

In 2005 Ireland introduced an action plan, "Delivering Equality of Opportunity in Schools" (DEIS), to put in place a series of policy interventions to tackle educational disadvantage. A key outcome was to deliver a standardised system to identify disadvantaged schools eligible for additional funding.

Initially, a special survey of school directors and centrally held administrative data were used to predict the schools' educational disadvantage. The survey gathered data on factors like unemployment among parents, local authority housing, single-parent families, traveller families, large families, and eligibility for free books. Administrative data provided information on retention rates, exam results, and fee waivers. Based on these characteristics, approximately 20% of all schools were identified as DEIS (803 schools).

In 2015, the methodology underwent a major review due to concerns about the objectivity of the information provided by school principals, and the reliance on outdated socio-economic data, which were revealed during consultations with stakeholders, including local authorities, school representatives, NGOs, and technical experts. From 2017, disadvantaged schools were identified using an index (HP index) derived from census-based data regularly collected by the Central Statistics Office (every 5 years), in combination with individual students' data collected directly from schools on an annual basis. This HP index synthetises demographic, social and economic information (e.g., change in population by age, educational attainment and profession, unemployment rate) related to students' area of residence to assess their level of disadvantage.

In 2022, after further consultation with stakeholders, the definition of disadvantaged schools was further refined, including by acknowledging unique challenges of additional groups such as the Roma. As a result, a third of schools and a quarter of students were part of the DEIS programme. The programme was evaluated at various points during the DEIS lifespan, yielding positive results in narrowing the gaps in test scores and student' attendance between DEIS and non-DEIS schools.

Source: (OECD, 2017[29]) (OECD, 2024[34])

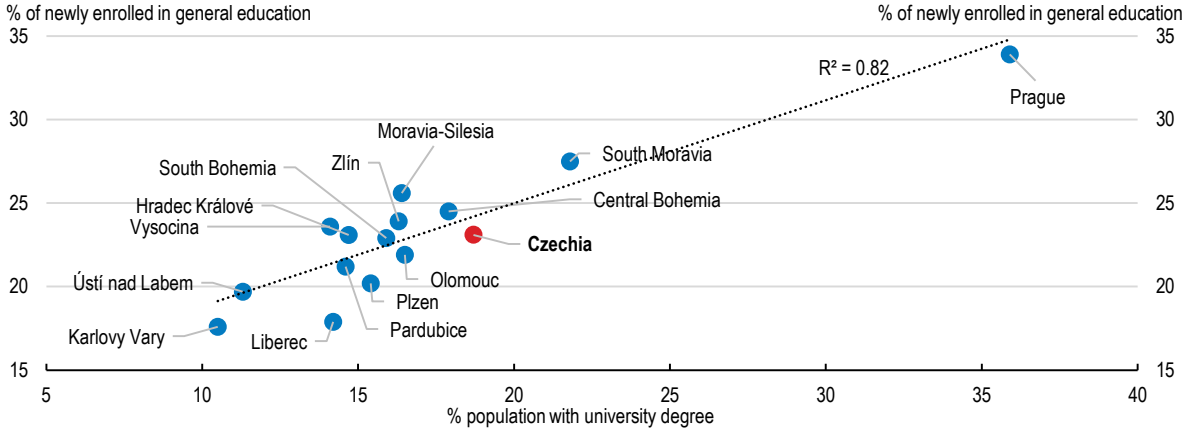
There are concerns about the fairness of the schools' selection procedure into grammar schools and upper secondary schools leading to the *maturita* certificate. Pupils that want to attend schools leading to the *maturita* certificate can apply to at most three (two until 2023) secondary schools, and take a standardised test (*jednotná přijímací zkouška,* JPZ) assessing students' core knowledge in the Czech language and mathematics. Schools evaluate students based on the results of the test (which needs to have a minimum weight of 60%) and in some cases consider additional credentials (e.g., language certificates). Basing the school admission on a standardised test can be an effective way to assess students from different schools with potentially varying curricula and resources in a comparable way. However, the fact that it is only taken by students who want to enrol in programmes with *maturita* certificate may disadvantage students from weaker socioeconomic backgrounds. These students might lack confidence or face difficulties in making informed school choices and end up opting out of the test to enrol in shorter professional schools leading to a VET certificate. There is evidence that parental engagement, through paying private tutoring, plays a crucial role in the test success (Straková, Greger and Soukup, 2017[35]; Zeman and Hrdinová, 2023[36]). In addition, the test's content cannot cover the full school curriculum, leading teachers to focus only on the topics assessed in the test, further disadvantaging pupils who do not take the test.

The selection procedures into secondary schools should ensure higher equity. This requires setting the conditions to ensure that the choice of the secondary school track is the result of a balanced combination of families and teachers' guidance as well as pupils' preferences. A standard national test could be maintained but should be extended to all students at the end of compulsory schooling to give all students similar chances to enrol in more demanded high-quality programmes. This is an objective of the MoEYS to be achieved by 2026. While this would be a positive step, it should be accompanied by efforts to equip

teachers with the adequate skills to give valuable feedback and individualised support to all students through the entire school cycle. This can be achieved by offering high-quality initial and continuous training to teachers to enhance assessment practices (see below).

Figure 4.12. Pupils in areas with high educational attainment are more likely to enrol in general education tracks

Enrolment in general education and tertiary education, by region, 2023



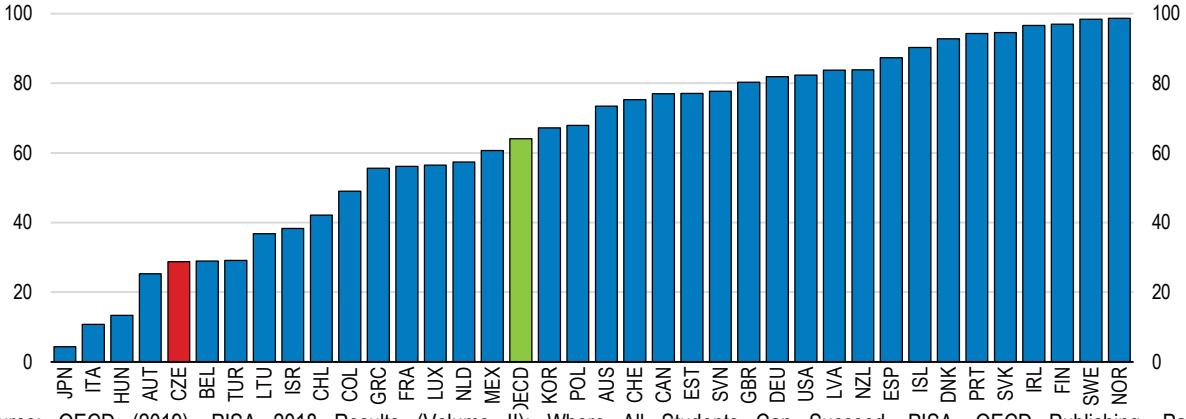
Source: DataPAQ, PAQResearch, https://www.paqresearch.cz/

StatLink https://stat.link/rk7aow

At the same time, participation in school guidance and counselling services to students could be strengthened, especially in more disadvantaged schools. Currently, few students receive career guidance in school (Figure 4.13). This is fundamental for broadening and potentially raising students' aspirations and expectations to boost social mobility from a young age. In Ireland, for example, schools with more disadvantaged students can expect greater financial resources linked to the delivery of career guidance. Within the Delivering Equality of Opportunity in Schools (DEIS) programme, eligible secondary schools receive funding to provide for 44 hours of weekly dedicated staff time to support guidance activities (versus 18 hours in regular schools), including more one-to-one interactions with guidance counsellors, greater integration of career learning within academic subjects and greater engagement of families (OECD, 2024[37]). In Czechia, the piloted index-funding formula provides a good opportunity for enhancing career counselling in disadvantaged schools, where it would be most effective.

Figure 4.13. Few pupils receive career guidance in school

Percentage of 15-year-old students in schools with one or more dedicated career guidance counsellors, 2018



Source: OECD (2019), PISA 2018 Results (Volume II): Where All Students Can Succeed, PISA, OECD Publishing, Paris, https://doi.org/10.1787/b5fd1b8f-en

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Box 4.3. The Czech education system

Students are selected into educational programmes for the first time at the age of 11 (in 5th grade) and for the second time at age 13 (in 7th grade) (Table 4.1 The Czech education system). At these ages, students choose between staying in elementary school (základní škola) or applying for the highly selective 8-year or 6-year grammar (gymnázium) or art schools (konzervatoř). At the age of 14 or 15, students who remain in elementary schools and aim to pursue tertiary education in the future choose between general education (4-year gymnázium or lyceum) and vocational education tracks leading to a school-leaving certificate (maturita) upon successful completion of a standardised exam (maturitní zkouška). They can also opt for shorter (2 to 3 years) professional tracks leading to a vocational education and training certificate, which prepares them for the labour market. This does not give them direct access to tertiary education, but VET graduates can take two-year follow up courses that lead to the maturita certificate.

Table 4.1 The Czech education system

<table>
<tr><td>Educational level</td><td colspan="5">Pre-primary</td><td colspan="9">Basic</td><td colspan="4">Secondary</td><td>Tertiary</td></tr>
<tr><td>Cycle</td><td>Children's groups</td><td colspan="4">Kindergartens or children's groups</td><td colspan="5">Primary</td><td colspan="4">Lower-secondary</td><td colspan="4">Upper-secondary</td><td></td></tr>
<tr><td>Type</td><td colspan="5"></td><td colspan="5">Elementary schools</td><td colspan="4">1) Elementary schools;
2) Grammar schools (8- or 6-year gymnázium);
3) Art schools (8-year konzervatoř)</td><td colspan="4">General tracks with maturita
1) Grammar schools (4-year gymnázium)
2) Lyceum
Vocational tracks with maturita
3) Vocational schools
4) Vocational schools with 50% time in apprenticeship</td><td rowspan="2">Schools leading to bachelor's degree:
1)University
2)Tertiary professional schools</td></tr>
<tr><td colspan="14"></td><td colspan="4">Vocational tracks with VET certificate
5) Shorter professional schools (2/3 years)</td><td></td></tr>
<tr><td>Grade</td><td></td><td colspan="4"></td><td>1st</td><td>2nd</td><td>3rd</td><td>4th</td><td>5th</td><td>6th</td><td>7th</td><td>8th</td><td>9th</td><td>10th</td><td>11th</td><td>12th</td><td>13th</td><td></td></tr>
<tr><td>Tracking</td><td></td><td colspan="4"></td><td>×</td><td>×</td><td>×</td><td>×</td><td>√</td><td>×</td><td>√</td><td>×</td><td>√</td><td>×</td><td>×</td><td>×</td><td>×</td><td></td></tr>
<tr><td>Age</td><td>6 months to 2 years</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19+</td></tr>
<tr><td></td><td colspan="3"></td><td colspan="2">Compulsory education</td><td colspan="9"></td><td colspan="4"></td><td></td></tr>
</table>

Source: Simplified version of the Czech educational system based on Country Note for Czech Republic", in *Education at a Glance 2023: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/9017362a-en

The capacity of programmes providing general education could also be increased to accommodate more students. Czechia has among the lowest enrolment rate in schools providing general education (OECD, 2024[6]). Despite low historical enrolment rates, the interest in general education tracks has been increasing over time with growing numbers of applicants for grammar schools and lyceum across all regions (CERMAT, 2023[38]). The rise in demand has however not been accompanied by adequate capacity expansion, resulting in high rejections rates, especially in poorer regions and large cities. In 2022, for example, 50% of students applying to grammar schools and lyceum were rejected in the regions of Karlovy

Vary and Central Bohemia, and in Prague this share was close to 30% (CERMAT, 2023[38]; Zeman and Hrdinová, 2023[36]). Raising capacity of programmes providing general education would also accommodate the high and increasing demand of tertiary educated graduates and graduates with transversal skills on the labour market.

Finally, efforts should be made to reduce disparities in quality across educational paths. A reform of secondary education which strengthens the core knowledge of pupils in programmes leading to VET certificate would help mitigate social and economic disparities in educational outcomes and the effects of tracking. Weaker core skills are linked to limited adaptability and lead to weaker labour market outcomes of VET graduates later in life. At the same time, it would help better aligning skills with labour market needs, as employers are increasingly demanding greater expertise and flexible skills, which are provided to a greater extent by general tracks and universities (see last section) (Zeman and Hrdinová, 2023[36]).

Box 4.4 De-tracking reforms in Germany

De-tracking reforms in Germany have helped raise equality and boost educational outcomes. Almost all the 16 decentralised school systems in Germany track students at age 10 and many offer at least three different secondary school tracks: (i) basic schools (*Hauptschule*) which provide basic general education and typically lead to a certificate after grade 9; (ii) middle schools (*Realschule*) which provide a more extensive general education and last six years; (iii) academic track (*Gymnasium*) which covers eight or nine grades. Graduates from basic schools generally enter apprenticeship; graduates from middle school can enter apprenticeships but are also entitled to attend vocational schools that lead to a higher education entrance qualification (*Fachhochschulreife*) for applied sciences universities. Gymnasium graduates obtain the university entrance qualification.

Between 2009 and 2012, eight out of the 16 German states have implemented educational reforms that decreased the intensity of secondary school tracking. Some states have combined basic and middle school track into a new secondary school type which offers more than one school-leaving certificate. Others have established a new school type which offers two or even all three school-leaving certificates. In these new school types, students with different family backgrounds learn together in the same courses until they graduate. As a result, students with varying academic abilities and from diverse family backgrounds now tend to attend secondary school together for longer periods. In some states (e.g., Hamburg) to cope with the greater diversity of the student body, class size has been reduced, additional teachers have been hired, teacher training has been strengthened, and children with disabilities have been integrated in the new school type.

An evaluation of these reforms (Piopiunik, 2021[33]) found that reducing the intensity of tracking improved students' educational achievements, especially for boys, students born abroad, and students with lower socio-economic status.

Source: (Piopiunik, 2021[33])

Boosting the quality and efficiency of schooling

Building a strong teaching workforce and improving efficiency of the school network is critical for improving the skills of youth. A number of factors, including limited career opportunities and challenging working conditions, hinder Czechia's capacity to attract and retain qualified teachers, with negative consequences on educational outcomes. Teacher shortages are particularly high in scientific subjects and in some poorer and rural regions. This issue is exacerbated by the existence of many small schools, especially in more rural areas, resulting from the highly decentralised education system coupled with significant administrative fragmentation.

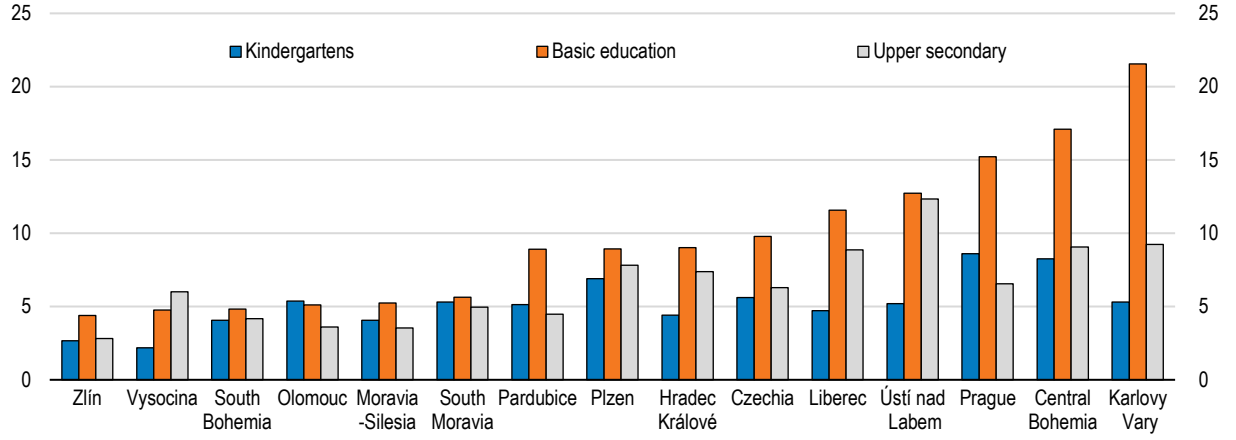
This section discusses options to increase the attractiveness of the teaching profession through targeted financial incentives, improving career opportunities and the quality of working conditions. Then, it discusses options to raise the efficiency of the school network by incentivising enhanced collaboration and mergers of the smallest schools.

Developing an attractive and high-quality teaching profession

As in many other OECD countries, the Czech education system suffers from shortages of qualified teachers, especially in some regions and disciplines. In 2022, 30% of 15-years old students attended schools of which principals reported that the quality of instruction was hindered by the lack of qualified teachers, according to the latest OECD PISA survey (OECD, 2023[1]). This is slightly higher than the OECD average of 25% and has increased over time. Shortages of qualified teachers are present at all levels of education but are particularly severe in primary and lower-secondary education, and in some more socioeconomically disadvantaged regions such as Karlovy Vary, but also in Prague and Central Bohemia region (Figure 4.14) (CSO, 2024[39]). Some fields (computer science, foreign languages, mathematics, and physics) are particularly affected by this issue. For instance, the Czech School Inspectorate documents that around 60% of schools hire non-qualified staff to teach computer science and foreign languages, and 40% of schools hire non-qualified staff to teach mathematics, and physics (CSI, 2023[15]). At the OECD level, a high percentage of unqualified teaching staff is strongly associated to lower students' performance, even after accounting for students' characteristics (OECD, 2023[1]). Moreover, it can contribute to lower the status of teachers in society, as higher selectivity is generally associated with higher social status (OECD, 2023[1]).

Figure 4.14. Shortages of qualified teachers are higher in more disadvantaged regions

Non-qualified teachers, by region and education level, %, 2023



Note: Non-qualified teachers hold master's degrees but lack the required teaching qualifications, i.e. a bachelor's degree in pedagogy or 300 hours of qualifying pedagogical courses.
Source: Czech Statistical Office.

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Population ageing and the low attractiveness of the teaching profession contribute to severe teacher shortages. The teaching workforce is relatively old, with 44% of teachers above age 50 compared to 36% on average in the OECD. Only 7% of teachers are younger than 30 years old (Figure 4.15). Motivation to become a teacher among school graduates is low. In 2022, only 10% of students chose pedagogical fields in tertiary education, and only 50% of those who did were interested in pursuing a teaching career (Münich and Smolka, 2022[40]). In addition, only 50% of teachers with less than five years of professional experience considered teaching as their first career choice (OECD, 2019[41]). Retaining teachers is also challenging. A third of teachers leave the profession, mostly in the first two years of service, a higher proportion compared to neighbouring countries, such as Slovakia (19%) and Poland (25%) (Federičová, 2020[42]).

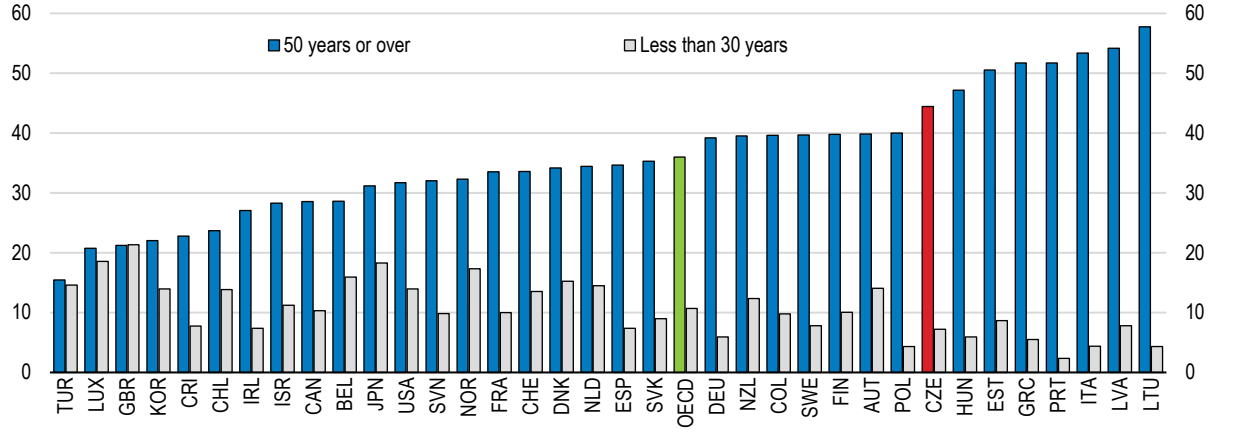
Relaxing teacher entry qualifications requirements whilst maintaining high teaching quality

Relaxing entry qualification requirements into teaching can be an effective way of filling vacancies. As many other OECD countries, Czechia has recently eased conditions to enter the teaching profession. Since 2023, graduates who hold master's degrees can join the teaching profession for a maximum period of 3 years, during which they must obtain the required teaching qualifications (i.e., a bachelor's degree in pedagogy or 300 hours of qualifying pedagogical courses) (EC, 2023[11]). This is a welcome strategy to attract professionals to teach, and is especially relevant for technical subjects and VET programmes where industry professionals can bring practical skills and up-to-date industry knowledge to the classroom and strengthen co-operation between VET systems and the world of work (OECD, 2023[43]).

Relaxed entry requirements should be accompanied by efforts to provide the necessary pedagogical skills to teachers. Providing flexible, modular initial teacher education and training (ITET) can allow prospective teachers to fill skills and knowledge gaps without having to go through a full ITET programme (OECD, 2023[43]). This is common in other OECD countries. In Denmark, for instance, the diploma in VET pedagogy programme can be organised in different ways according to individual needs. Courses can be provided full-time or part-time and can be delivered on the site of the college, in school premises or virtually. Participants also have an option of completing the diploma through self-study. Grants can also be provided to teachers to combine work and studies to obtain a teacher degree, as for example is done in Sweden (OECD, 2023[43]).

Figure 4.15. The teaching workforce is ageing

Share of teachers by age group, primary and secondary education, %, 2022



Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

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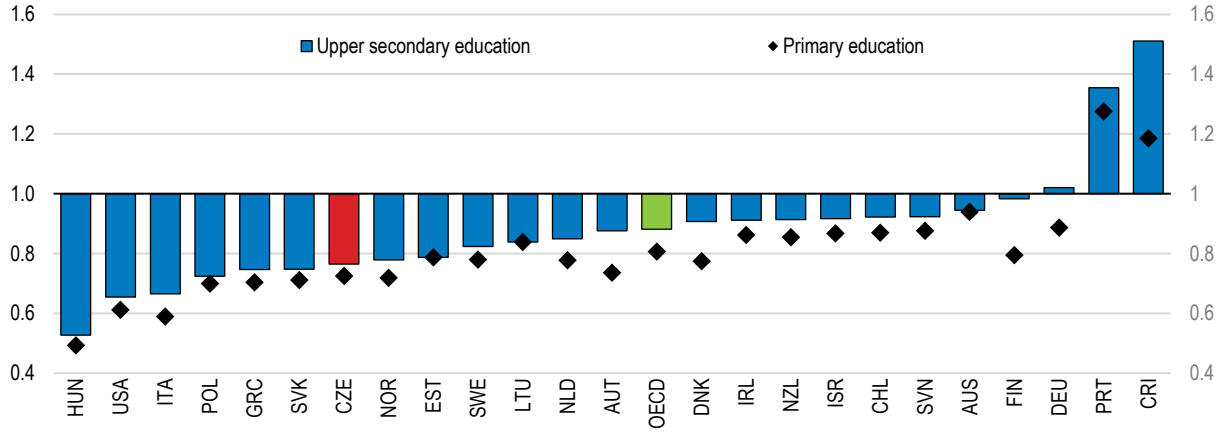
Introducing targeted financial incentives for teachers

Teachers' salaries influence the attractiveness of the teaching profession. Low salaries have been one of the main reasons that makes the teaching profession unattractive to Czech graduate students (Münich and Smolka, 2022[40]). Despite continuous improvements in recent years, in 2023 teachers (at all levels of education) in Czechia earned less than their colleagues in many other OECD countries, and their salaries were significantly lower than in other professions requiring tertiary education (Figure 4.16). This made it particularly challenging to attract graduates in STEM disciplines, who are paid significantly more in sectors other than education (EDUin, 2023[44]).

Increasing comparatively low teachers' salaries has been a priority of the authorities for several years. In line with salaries in the public sector, teachers' actual salaries have risen by 50% in real terms between 2013 and 2021, much faster than the OECD average of 15% (OECD, 2023[45]). In 2023, the government further amended the Education Act to index teachers' salaries at 130% of the monthly average economy-wide nominal wage (of the 2 preceding years) starting from 2024. Such efforts can be effective in reducing teacher shortages (De Witte, De Cort and Gambi, 2023[46]). However, increasing salaries across the board is very costly, as teachers' salaries are the largest components of educational spending. It could also have unintended effects on the quality of teaching, as untargeted salary increases may reduce motivation of high-quality teachers (Münich and Smolka, 2022[40])

Figure 4.16. Teachers' relative salaries have been comparatively low

Actual salaries of teachers relative to earnings of tertiary-educated workers by levels of education, ratio, 2023



Note: Ratio of salary, using annual average salaries (including bonuses and allowances) of full-time teachers in public institutions relative to the earnings of full-time, full-year workers with tertiary education.
Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.
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To attract high-quality teachers in certain fields and areas, the authorities should consider introducing financial incentives, as bonuses and allowances, to teachers working in underserved areas or who teach certain subjects. Experience from OECD countries shows that targeted incentives can be more cost-effective than generalised salary increases in mitigating teacher shortages (De Witte, De Cort and Gambi, 2023[46]). For example, a bonus to certified teachers of maths and science in schools in disadvantaged areas in San Francisco led to a substantial increase in new hires (Hough and Loeb, 2013[47]). Recently, the Czech authorities have introduced a one-off recruitment allowance of CZK 100 000 (around 10% of the 2023 average actual annual salary) to (up to a maximum of) 100 recent graduates (within 5 years of their graduation) to teach in schools located in the Karlovy Vary and Ústí nad Labem regions. If considered effective, this measure could be extended to cover other areas with high shortages. Funding for this measure could be part of the envelope of agreed generalised salary increases.

A register of teachers should be established to better quantify shortages and target financial incentives. Administrative data on teachers' characteristics, including qualifications, age and work location, are not available in Czechia. The MoEYS and Czech Statistical Office only collect and publish data on the total number of teachers in the country. More detailed information on teachers' characteristics is only collected through ad-hoc national and international surveys, as well as school quality inspections of the Czech School Inspectorate, which inspects each school only once every six years. This significantly limits the authorities' capacity to monitor and plan teachers' supply according to needs and effectively target financial incentives.

Promoting a greater variety of career path for teachers

Teachers' salaries follow a relatively flat trajectory. Over their career, Czech teachers see their salaries increase - mainly due to seniority - by around 30%, while this increase is around 65% in OECD countries (Figure 4.17). While recent reforms with across-the-board salary increases have narrowed the average wage gap between teachers and other tertiary-educated workers, they did not address the issue of flat salary progression. Such increases mostly benefit less experienced teachers, leaving mid-career teachers with low relative wages compared to their tertiary educated peers in other sectors, whose earnings grow more substantially with experience (Münich and Smolka, 2022[40]).

To attract high-calibre graduates to the teaching profession while also seeking to retain, motivate and recognise experienced, high-quality teachers, Czechia should provide opportunities for diversifying teachers' salaries by implementing well-designed career structures. Even though by Czech law the teaching profession is characterised by a vertically differentiated career structure - within each broad category of education staff (i.e., teacher, teaching assistant, education manager, etc.) there are six career levels-, in practice there is no clear and concise competence profile stating what teachers are expected to know and be able to do to obtain a promotion. There is also a lack of standardised procedures and instruments to evaluate the performance of teachers. Appraisals are in most cases conducted by school principals based on observations of classroom teaching, but little is known on the procedures and criteria used in the process. Moreover, the law does not establish formal links between career steps and remuneration (Shewbridge et al., 2016[9]; Federičová, 2020[42]).

Promoting a greater variety of career path for teachers entails defining the competences, roles and responsibilities associated to each career step. Creating a complete teachers' competence profile by 2027 is one of the objectives of the MoEYS in the Strategy 2030+. This is welcome and should be accompanied by the definition of formal requirements for appraisals and promotions, as well as formal links between positions and compensation mechanisms. Standardised certification systems, through high-quality continuous development opportunities, can be used to confirm teachers' readiness to assume additional roles and responsibilities. To ensure transparency, fairness and consistency, certification procedures should involve external evaluations, such as a national teaching agency or a teacher council. To effectively motivate and reward professional growth, teachers' access to higher career stages should be voluntary (OECD, 2019[48]).

Career step progression should be linked to salary increases. To do so, salary levels associated to career steps should be included in the statutory salary and therefore in the fixed component of state grants to school founders. This implies adequate cost calculations and budget provisions prior to implementation of the reform. Compared to performance-based payments—another approach countries use to motivate and retain high-quality teachers— linking salaries to career steps can help to mitigate issues linked to measuring teachers' performance and the potential negative effects of doing so, such as narrowing the curriculum or reducing teachers' efforts on tasks not explicitly rewarded (OECD, 2019[48]).

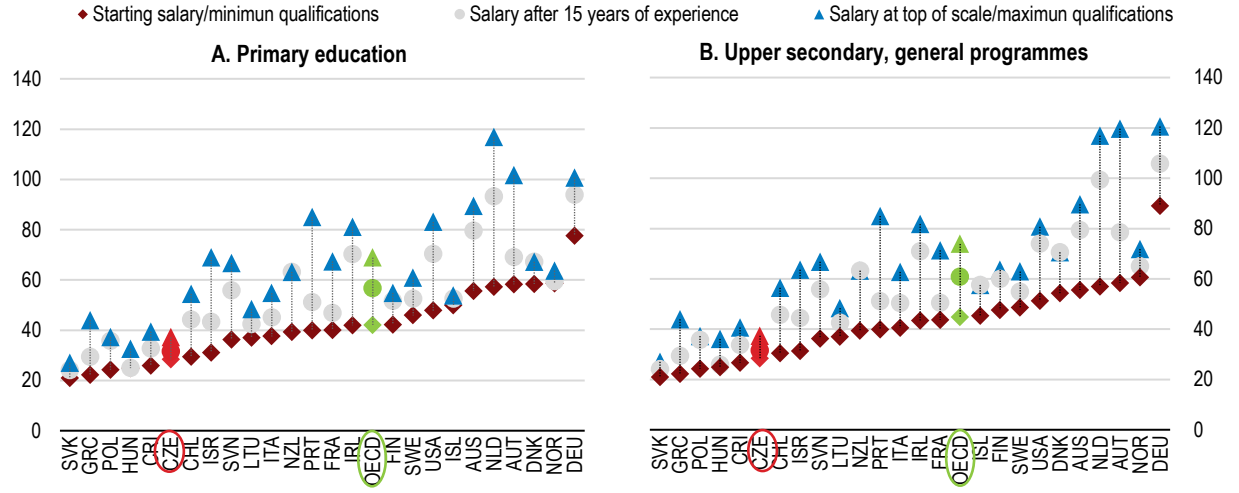
Career diversification can also involve specialisation in a particular aspect of teaching, allowing teachers to progress more horizontally than vertically. In OECD countries, lateral career moves are generally compensated by reducing teaching hours rather than additional pay (OECD, 2019[48]). Recently, opportunities for such lateral career moves have increased in Czechia, and the role of some specialists, such as ICT specialists and mentors, has been strengthened. This is welcome and should be further promoted, given that it provides an important source of motivation to teachers.

Reforming teachers' career structures can pose a series of implementation challenges. Plans to reform the teachers' career structure in Czechia were already advanced in 2016 (Shewbridge et al., 2016[9]), but were not implemented. The proposed reform had insufficient support from the teaching profession, which perceived the introduction of new formal positions associated with additional responsibilities and remuneration as threatening to the profession's egalitarian norms (OECD, 2019[48]). Limited financial

resources to link the newly created roles to compensation were also a major obstacle to the implementation of the reform. To increase the acceptability and implementation success of such a reform, authorities should first design and evaluate pilot projects. These projects can address concerns about new teacher roles and build consensus before finalising and fully rolling out the reforms.

Figure 4.17. Teachers have little salary progression

Annual salaries of teachers in public institutions, thousand USD PPP, 2023



Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

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Boosting the quality of initial teacher education and training programmes

Initial teacher education needs to be improved. A primary reason why university students do not pursue teaching careers is the low perceived quality of the courses at universities (Korbel Václav, 2021[49]). This is confirmed by studies highlighting that only 23% of students feel prepared to manage the challenging behaviour of pupils in classrooms, interact with parents and collaborate with colleagues (MoEYS, 2023[50]).

Efforts are underway to improve the quality of initial teaching education. Pedagogical courses have increasingly introduced practical work in the curriculum, with the share reaching 10 to 15% of the current curriculum in the 2023/2024 school year. Moreover, a new pilot project by the MoEYS was launched in 2023 in some schools with the aim to improve the quality of practical in-school work. The project focuses on enhancing the role of teaching mentors in schools - i.e., experienced teachers who assist the interns - by providing them methodological support and some financial remuneration (MoEYS, 2023[51]). These efforts are welcome and should continue. The authorities should ensure that the role of teaching mentors is adequately recognised and rewarded, for example by including it in a horizontal career structure and reducing teaching hours to allocate more time to the mentoring activity.

Participation in continuous professional development (CPD) programmes should be strengthened. Evidence shows that teachers' participation in high-quality CPD programmes can effectively lower dropouts in the profession while improving education outcomes (De Witte, De Cort and Gambi, 2023[46]). In Czechia, all schools must formulate a plan for CPD, and all education staff is entitled to 12 days of leave per year for self-study purposes (EC, 2021[52]). However, more than 20% of the teaching staff do not participate in CPD (CSI, 2023[15]). One of the main barriers to participation is the overlap with the teachers' work schedule (OECD, 2020[53]). Lack of time is not only related to their teaching activity, but also to administrative tasks. A large share of teachers (61%) reports being stressed by administrative activities compared to 49% in the average OECD country (OECD, 2020[53]). Improving teachers' working conditions,

for example by reducing the number of administrative tasks, could free up time for training. One way to achieve this could be by incentivising schools to collaborate and share administrative tasks as discussed below. To raise participation further, the authorities should make participation in CPD a requirement for career progression. Experience from other OECD countries, such as Estonia, shows that the development of the new career structure provides strong incentives for teachers to engage in professional development (see Box 4.5).

The authorities should also ensure that CPD programmes are of high quality and meet the specific needs of the individual schools. While there is an obligation for each school to outline a plan for CPD, there are no specific requirements for the content of the programme, or defined expected outcomes of professional development activities (EC, 2021[52]; OECD, 2023[54]). Quality assurance mechanisms exist in the form of accreditation and qualification requirements of the providers of the activities. However, there is no information collected to monitor quality, i.e., participation and completion rates, number of certificates issued or satisfaction with the course (OECD, 2023[54]). This should be changed. The authorities should support schools in outlining their training plans, content requirements and expected outcomes to match the particular needs of their community and students and provide learning opportunities to teachers to reflect these needs. This also requires more efforts in collecting data on the specific training needs of the teachers in different schools and on the quality of the courses. In Portugal, for instance, a network of School Association Training Centres (C*entros de Formação de Associação de Escolas, CFAE*) has been created to learn about schools' pedagogical and curricular needs, and deliver locally provided training courses corresponding to school and teacher needs (OECD, 2019[48]). Finally, the Czech School Inspectorate could regularly monitor if the objectives of CPD courses are met.

Raising the efficiency of the school network

The Czech education system is highly decentralised. Municipalities are responsible for organising and providing pre-primary, primary and most of lower secondary education (elementary schools), while regions are responsible for upper secondary education, as well as the whole cycle of grammar and art schools (*gymnázium* and *konzervatoř*). School founders (municipalities and regions) responsibilities include appointing and dismissing the school principal; setting the school districts (see above) and participating in the school decision-making process by establishing the school council and nominating 1/3 of its members. They are also responsible for funding operating and capital expenditures, while teachers' salaries are covered by the central government. Czech schools have high autonomy both in defining the curriculum and allocating resources (OECD, 2023[1]). Within the national framework set by the MoEYS, school principals are responsible for the learning material, students' admission and evaluation criteria. School principals also have autonomy over financial matters, such as the management of school property and staff, the possible development of additional school activities, as well as accounting.

The management of the school system is hampered by the high administrative fragmentation. Czechia has 6 254 municipalities with an average size of 1 710 inhabitants, compared to an OECD average of 10 016 inhabitants. A large majority of municipalities (90%) have only one school and two-thirds of primary and lower secondary schools are in small municipalities (with up to 5 000 inhabitants) (PAQResearch, 2024[55]). In small municipalities, school administration is generally a direct responsibility of the mayor's office, who frequently lacks the time, capacity, and staff necessary to provide professional support to school principals. This includes tasks such as evaluating and rewarding their work, alleviating administrative burdens, and managing school buildings and equipment (Zeman et al., 2024[56]). As a result, most school principals are overburdened with administrative, legal, and financial tasks, and are left with little time to dedicate to pedagogical work and teachers' support, with negative effects on the quality of education. Over 90% of school principals in the TALIS 2018 survey identify administrative duties as a major source of stress, significantly higher than the OECD average of 68% (OECD, 2020[53]).

Box 4.5. Multi-stage career structure in Estonia

In 2014, Estonia introduced a vertical career structure alongside a reformed system of teacher professional qualifications. For general education, it comprises four distinct stages, reflecting different levels of professional skills and experience. Unlike many other multi-stage career structures, the stages are not formally linked to salaries and access to higher stages is voluntary.

- Teacher (Level 6): Applies only to pre-primary teachers upon entrance into the teaching profession, following the completion of an initial teacher education programme (at bachelor's degree level) or following the recognition of professional qualifications for this level by the teacher professional body.
- Teacher (Level 7.1): Awarded upon entrance into the teaching profession, following the completion of an initial teacher education programme (at master's degree level) or following the recognition of professional qualifications for this level by the teacher professional body.
- Senior teacher (Level 7.2): Awarded to teachers who, in addition to their regular teaching activities, support the development of the school and of other teachers and are involved in methodological work at the school level.
- Master teacher (Level 8): Awarded to teachers who, in addition to their regular teaching activities, participate in development and creative activities in and outside their school and closely co-operate with a higher education institution.

The Estonian Qualifications Authority has developed professional standards that define the competencies associated with each stage of the career structure. A teacher professional organisation (the Estonian Association of Teachers) is responsible for the certification process that determines teachers' advancement across career stages. Twice a year, teachers can apply for a new certification. A three-member committee oversees the two-stage application process, which involves an evaluation of the candidate's application materials and an interview.

A 2016 OECD report found that the new structure offered significant advantages, including strong incentives for teachers to continually update their knowledge and skills, particularly through ongoing professional development (Santiago et al., 2016[57]).

Source: (OECD, 2019[48])

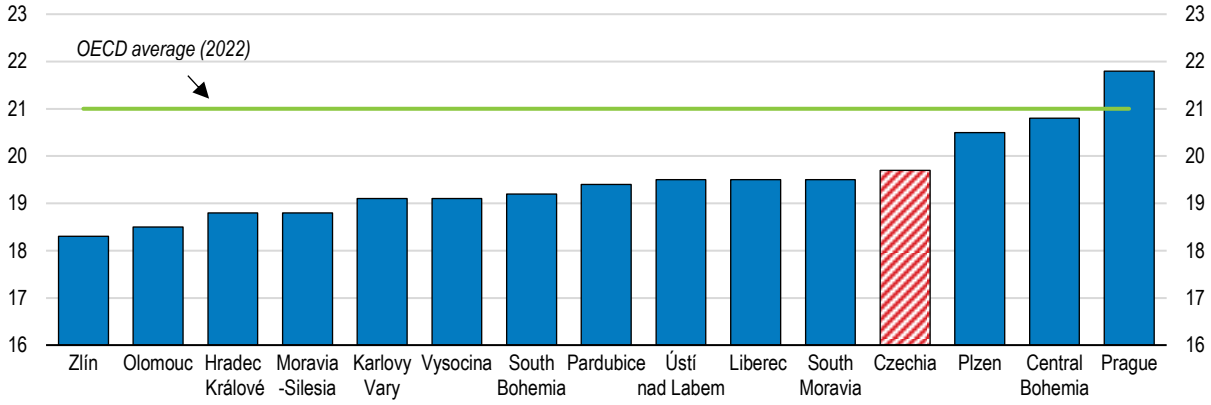
Many schools are inefficiently small and fail to attract high-quality teachers, with adverse consequences on educational outcomes. Class size in Czechia is lower than the OECD average, especially in less urban regions such as Zlín and Olomouc (Figure 4.18). Around 20% of schools fail to meet the legal requirement for the minimum number of pupils per class and operate under exception to the rules (PAQResearch, 2024[55]). While smaller classes are often perceived as beneficial since they allow teachers to focus more on the needs of individual students, this is not always the case in Czechia. Students in small schools have a higher probability of repeating a class and worse grades compared to students in larger schools (CSI, 2023[4]). This is mostly because these schools face greater challenges in attracting qualified teachers, as they lack the number of classes required to offer full-time teaching contracts due to their smaller size. For example, in 2022, a high share of physics (51%) and computer science (72%) classes were taught by non-qualified teachers in small schools (CSI, 2023[4]; EDUin, 2023[58]).

The central government should provide stronger incentives to consolidate the school network in primary and lower secondary education. The central government provides some financial incentives to encourage undersized schools to merge into larger units. For example, the amount of state grants to fund the performance-based component of teachers' salaries is based on the number of pupils enrolled, with higher funding going to larger schools. Moreover, municipalities managing schools that fail to meet the legal requirement in terms of number of pupils must contribute to the funding of teachers' salaries. However, financial incentives are not sufficient to spur consolidation of the school network. Municipalities tend to be highly attached to their local schools, even when these schools are underperforming (OECD, 2020[59]).

International experience shows that, to be effective, financial incentives should be complemented by direct government regulation and support (see Box 4.6). For instance, the government could establish a minimum school size to stimulate mergers and/or cooperation between schools located in different municipalities. In Finland, for example, in 2005 the government restructured local government services by setting minimum population targets for a number of activities, including education, and left municipalities the choice to meet these targets through mergers or cooperation (OECD, 2020[59]).

Figure 4.18. Many schools are small, especially in less urban regions

Average number of pupils per class, primary and lower secondary education, 2022



Source: Czech Statistical Office; OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

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Transferring the responsibility for establishing and managing elementary schools in primary and lower secondary education and the related funding to the municipalities with extended powers would support the consolidation process. The municipalities with extended powers (i.e., municipalities that fulfil several administrative functions on behalf of smaller surrounding municipalities) could have greater resources to effectively manage education. They can employ more specialised officials, who can provide better support to school principals in managing administrative tasks, allowing them to dedicate more time to pedagogical matters, with positive consequences on students' performance (Fischer and Mazouch, 2024[60]). They are also better positioned to identify inefficiencies in individual schools' management and find adequate solutions to allocate resources more efficiently. Alternatively, the authorities could promote transferring such responsibilities to the *communities of municipalities*, a form of intermunicipal cooperation established in early 2024 (see *Chapter 1*). This arrangement establishes a new institutional framework for collaboration as communities of municipalities can also hire shared staff.

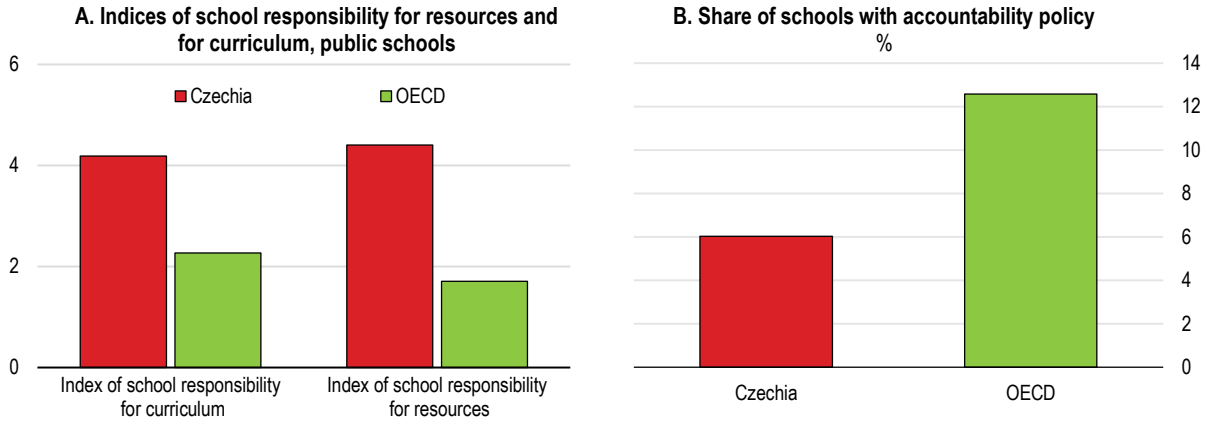
Consolidating the school network would facilitate the hiring of full-time high-quality teachers and free up resources to provide other services, such as free transportation, to the newly created schools. A cost-benefit analysis indicated potential financial savings up to about CZK 3.8 billion (0.05% of GDP) per year mainly through improved cooperation and sharing high fixed costs (e.g., accounting, maintenance, energy, communal services) among schools within the same administrative jurisdiction (Fischer and Mazouch, 2024[60]).

To better inform the school network consolidation process, the government should ensure regular collection and sharing of data on the capacity and quality of schools, as well as demographic projections. This is crucial to identify underperforming schools which could be potential candidates for closures. Data collection should be accompanied by solid analysis of the benefits and costs of consolidation policies, which include the feasibility and acceptability of different alternatives, such as transporting commuting students and teachers to the new schools and/or housing them at boarding schools, as for example was

done in Estonia and Portugal (see Box 4.6). Recently, the authorities have made some progress in this direction by establishing a "*middle link*" institution at the level of the region or municipality with extended power to provide methodical guidance to school founders for school mergers and promote cooperation between neighbouring schools (MoEYS, 2020[61]; EDUin, 2023[62]). Implementation is still in early stages and should be accelerated. Finally, good communication with stakeholders about the benefits in terms of educational outcomes of closing small underperforming schools, and introducing compensation policies such as ensuring free transportation to the new schools for students and teachers is crucial to gain political acceptability (Santiago et al., 2016[57]).

Figure 4.19. Czech schools have high autonomy, but accountability for education quality is low

Indices of school responsibility for resources and for curriculum by type of school, 2022



Note: In panel A, indices of school responsibility for resources and for curriculum measure the extent to which members of the school staff (principal, teachers or the school governing board) assumed governance responsibilities in their schools. They are calculated as a ratio between the responsibilities granted to the school staff and the responsibilities retained by education authorities. The index of responsibility for resources combines the six tasks related to human and financial resources, and the index of responsibility for curriculum combines the four tasks related to the curriculum and assessment. Higher values in the indices imply that the school staff assumed more responsibilities than education authorities. In panel B, the measure is a weighted average of schools with an accountability policy, defined as mathematics results are posted publicly (e.g., in the media).

Source: OECD calculations based on PISA 2022 Results (Volume II): Learning During – and From – Disruption, PISA, OECD Publishing, Paris, https://doi.org/10.1787/a97db61c-en.

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Finally, reducing the number of underperforming schools requires pairing school autonomy with stronger accountability (Égert, de la Maisonneuve and Turner, 2023[63]; OECD, 2023[1]). Currently, the share of schools with accountability policy is limited (Figure 4.19). External evaluations by the Czech School Inspectorate are the main accountability tool. However, schools are inspected only once every six years and, although inspections are increasingly overseeing the quality of teaching and learning, they remain focused on monitoring school compliance with legal requirements (Shewbridge et al., 2016[9]). To enhance accountability, the Czech School Inspectorate could take a more proactive role by following up on recommendations and promoting the dissemination of evaluation reports that are also accessible to non-experts. In addition, motivating principals through performance-based incentives and enhancing their initial education and professional development, as discussed above, would support this goal.

Box 4.6. School network consolidation in selected OECD countries

Belgium

In 1999, the Flemish Community of Belgium introduced "school communities" for primary and secondary education. The government aimed at reducing the managerial burden on school directors to allow them to focus on pedagogical leadership, optimise resources in terms of teaching and non-teaching staff, and promote collaboration in curriculum activities. To incentivise participation, the government provided additional resources to school communities. The reform led to improved collaboration among schools, through sharing resources and rationalising course offerings, and savings.

Estonia

Estonia's demographic challenges have left many rural schools with small classes, few students, and underused facilities. In response, stakeholders—municipalities, school heads, unions, and parent associations—agreed on the need for restructuring the school network. Between 2005 and 2013, 9.5% of schools closed, while others were restructured or clustered. The central government recentralised the management of general upper secondary schools, establishing one state school per county, reducing municipal upper secondary schools, and offering grants to municipalities that reorganised their school network. To support families, the government covered transportation costs to state schools and invested in dormitories.

Portugal

Before 2008, rural schools were typically small with limited facilities, low academic performance, and high teacher turnover, while urban schools were overcrowded and ran double shifts. In 2005–08, the government closed 2 500 small schools with above-average repetition rates and formed school clusters with minimum size of 150 students. The reorganisation of the school network in Portugal was successful thanks to several factors: i) the government set clear rules for school closures and minimum school size based on research and data analysis; ii) local governments received financial support to accommodate students from the closed schools; iii) parents were informed about the benefits of closing small schools such as expected better educational outcomes; iv) school accessibility was ensured through free transportation to the newly created schools.

Source: (Santiago et al., 2016[57])

Aligning skills with labour market needs

Skills shortages and mismatches are a longstanding issue in Czechia. After some easing during the COVID-19 crisis, the labour market has become tight again. The unemployment rate, at 2.6% in 2023, is among the lowest in the OECD, and companies complain of labour shortages as a major obstacle to growth (OECD, 2023[17]; Czech Chamber of Commerce, 2024[64]). Shortages are particularly severe in technical professions, such as mechanics and lab workers, but also customer care services (Eurobarometer, 2023[65]). Moreover, a high share (77%) of Czech enterprises - the second highest in the European Union - reported difficulties in finding ICT specialists (EC, 2021[66]; Eurobarometer, 2023[65]). In addition, assessments of the skill set of the labour force and labour market needs in Czechia suggest significant skill mismatches. Almost 30% of workers experience an education mismatch (Figure 4.5). This is in line with the OECD average but still high. This major imbalance between the supply and demand for skills on the labour market comes with a cost: it has been estimated to reduce the productivity and salaries of Czech workers by an estimated 9%, a high level by international standards (Giorno, 2019[67]).

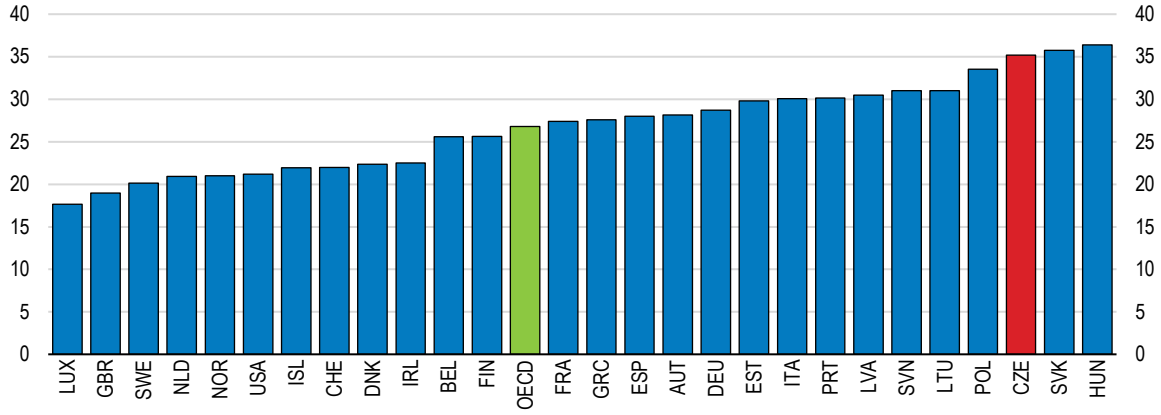
Population ageing and the ongoing digital and green transitions are exacerbating the existing shortages of qualified workers. Occupations will increasingly require higher education and/or professional training, and workers will need to upskill and reskill to adapt to the evolving skill demand (Cedefop, 2023[68]). More than

a third of current jobs in Czechia face a high risk of automation or may be significantly changed by technology, one of the highest shares in the OECD (Figure 4.20). The development and deployment of AI in tasks and jobs is leading to evolving skills requirements (e.g., complex problem solving, high-level management, and social skills) (Lassébie and Quintini, 2022[69]). OECD research also shows that the acquisition of specialised AI skills often requires advanced tertiary education and substantial in-company training (OECD, 2023[70]). In addition, the share of brown jobs is the highest in the OECD (see *Chapter 2*), and the green transition is leading to increasing demand for specialists in green professions, such as insulation workers, civil engineers and construction managers (EC, 2024[71]). For example, estimates suggest that to meet its projected contribution to the EU's 2030 renewable energy target by 2030, Czechia will need between 2 300 and 6 600 additional skilled workers for the deployment of wind and solar energy (EC, 2024[71]). Moreover, the Czech population is aging rapidly. While retaining older workers could help alleviate labour shortages, significant efforts are needed to update their skills, especially in the digital area (Czech Chamber of Commerce, 2024[72]).

These challenges highlight the need for an adaptable education and skill provision system that provides opportunities to re- and upskill workers throughout their career. This section discusses options to align skill provision with skill needs by enhancing the quality of vocational training, boosting the supply of tertiary education workers and participation to adult learning.

Figure 4.20. Many jobs face a high risk of automation

Share of employment in occupations at the highest risk of automation, %, 2019



Note: The SOC 3-digit occupations at highest risk of automation (top quartile). The results are based on a survey of experts who evaluated the degree of automatability for 98 skills and abilities. The risk of automation measure is then computed by occupation as the average rating for each skill or ability used in the occupation across all expert responses weighted by the skills or abilities' importance in the occupation as rated by O*NET.

Source: OECD (2023), OECD Employment Outlook 2023.

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Making vocational education and training more responsive to labour market needs

Czechia has a strong tradition of vocational education and training (VET). In 2022, about 70% of students graduated in VET, which is much higher than the average OECD country (44%). Upper secondary VET comprises two main tracks. The first is a 4-years VET track leading to a *maturita* certificate, which allows students to access the labour market or tertiary education. Within this track, students can opt for a more academic vocational track or a more applied track, with 50% apprenticeship. The second track is shorter, it lasts 2 or 3 years and grants students only a VET certificate (Table 4.1 The Czech education system).

The VET system is not providing all students with the right set of skills. Up to 40% of recently employed VET graduates work outside their field of study, more than the national average of 30% (NPI, 2022[73]).

Moreover, unemployment rates among young VET graduates are high. For example, in 2023, the unemployment rate of graduates who obtained a VET certificate in the previous year was 7.3% (compared to the general unemployment rate of 2.6% in 2023), reaching more than 15% in certain VET specialisations (e.g., textile production, food industry, gastronomy and tourism) (NPI, 2022[74]).

Reducing the fragmentation and enhancing the labour market relevance of VET programmes

Despite significant consolidation in the past years, VET programmes are still highly specialised and have not adjusted to labour market developments. Students can choose from among over 381 vocational education study fields, each with its own curriculum. Excessive specialisation leads to programme overlaps (i.e., the same qualification can be acquired through different programmes), complicating student choices and the signalling of which qualification is appropriate for specific jobs, resulting in high skill mismatches (OECD, 2023[43]). It also undermines quality by leading to the proliferation of many small schools, who face challenges in attracting high-quality teachers and securing resources for modern equipment, both of which are essential for delivering high-quality VET education (EDUin, 2023[75]). Over time, regional authorities – the founders of upper secondary schools – have adjusted the supply of VET fields of study only marginally. Adjusting fields of study to labour market needs has been hampered by the fact that a substantial part of practical training is provided in schools, and changes in provision impose extra costs, for example related to the cost of acquiring new equipment, adapting physical infrastructure to the new courses, and hiring new teachers with the relevant qualifications (OECD, 2014[31]).

The authorities should adjust the whole VET system to allow for more flexibility and make learners more adaptable in a changing labour market. A very large number of VET qualifications may mean that qualifications are defined narrowly to match the needs of a handful of employers, limiting labour market mobility of the qualification holder (OECD, 2023[43]). Various countries have been broadening their vocational programmes (hence reducing the number of specialisations) to make graduates more adaptable to rapidly changing labour markets. Recently, in an effort to increase flexibility and occupational mobility, Finland reduced the number of VET specialisation from 351 to 164, and similarly, the Republic of Türkiye reduced the number of VET study fields from 203 to 109 (OECD, 2023[43]). The 2019 VET reform in Hungary simplified and updated qualifications, reducing the number of qualifications from 760 to 175. In Czechia, the Strategy 2030+ outlines a plan to reform, reduce and modernise the total number of study fields in VET. This is welcome and implementation should be expedited.

Strengthening data collection and analysis is crucial to align the supply of VET programmes with labour market needs. The Czech Statistical Office regularly collects statistics about the unemployment of VET graduates, while other relevant statistics are collected by the National Pedagogical Institute only through one-off and ad-hoc surveys (EC, 2018[76]). There is scope to improve graduate tracking by conducting surveys more regularly and collecting data on the quality of employment (e.g. type of contract, working hours, salary, mismatch rates, participation in further education and training), as is done for example in Germany or Austria (EC, 2018[76]). In addition, the authorities should regularly forecast future skill needs. Forecasts of future skill needs, and labour market trends have been provided from 2017 to 2022 within the framework of the KOMPAS project supported by EU funds. The project delivered employment forecasts by region, sector, and field of study, which can be used to help the education sector identify shifts in skill demand and can help adjust public education funding to labour market developments. However, the project ended in 2022 due to the end of EU funding. This programme should be evaluated and, if considered effective, resumed.

Disseminating information about labour market outcomes can help align student choices with industry demand. The National Pedagogical Institute has recently established an electronic portal to disseminate the results of ad-hoc surveys and administrative data on labour market outcomes, including employment, mismatches and job satisfaction of graduates. This is welcome and the authorities should ensure that the

portal includes information about wages and that is regularly updated. In addition, the portal could include forecasts of future skill needs, making it a comprehensive one-stop shop for all relevant labour market demand information. At the same time, career guidance in schools should be expanded.

Expanding work-based learning

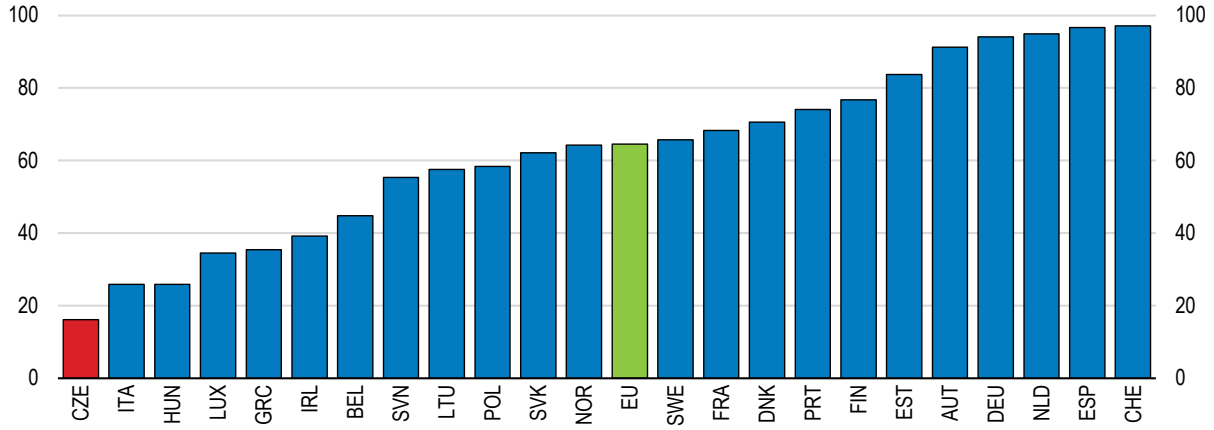
To improve alignment of skills with labour market needs, work-based learning should be expanded. Only 18% of VET students are exposed to work-based learning compared to 60% in the average EU country, and 94% in countries with leading VET systems (i.e., Austria, Germany, the Netherlands and Switzerland) (Figure 4.21). Expanding quality workplace training for VET students requires the development of national rules defining standards of the training provision. In more than a quarter of in-company learning experiences, the expected learning outcomes of training are not defined, and in 40% of companies there is no clear person allocated for professional practice or professional training of pupils (NPI, 2022[73]), limiting the effectiveness of training. As suggested in previous OECD *Economic Surveys*, the authorities should establish rules defining how training is provided in terms of content, duration, assessment criteria, as well as requirements for trainers' qualifications (OECD, 2014[31]). For example, to ensure quality standards, training companies in Germany need to be accredited in order to offer work-based learning for VET students and they must have at least one qualified trainer (i.e., a trainer who passed the trainer aptitude examination), and in Switzerland trainers at companies need a special qualification that is awarded upon attending 100 hours of training in pedagogy, knowledge of the VET system, and problem-solving methods for adolescents (OECD, 2023[43]).

Collaboration between VET schools and social partners in the area of VET, including work-based learning, should be strengthened. By law, the MoEYS should consult social partners in the design of VET curricula and the long-term plan of education policy. Social partners also participate in the final exam committees of VET programmes and in work-based learning activities on a voluntary basis. Moreover, since 2010, social partners jointly with educators and policy makers actively contribute to the development of the National Register of Vocational Qualifications (NSK) - a state-guaranteed public register defining all required competences for each qualification - by taking part to sector councils. Nonetheless, the participation of social partners in VET education and work-based learning activities has long been regarded as insufficient (Cedefop, 2022[77]; NPI, 2022[73]). To strengthen the collaboration with social partners, Czechia could expand the responsibilities of sector councils, for example by including defining the content and delivery of work-based learning. This is standard practice in other VET-leading systems, such as Austria, Denmark, Germany, Norway, the Netherlands and Switzerland, where institutionalised arrangements at local and national level allow social partners to provide their input regularly, timely, and in all relevant areas of VET (curriculum design, examinations, in-company training, etc.) (OECD, 2023[43]).

The funding system of VET could be modified to enhance schools' engagement in work-based learning. VET schools receive funding based on the number of lessons, giving them few incentives to reduce programmes with poor labour market outcomes and few possibilities for opening new programmes in response to changing skills needs in the labour market. To better match VET education and training to labour market needs, funding for vocational schools should be also linked to the number of students in work placements. For instance, failing to find work placements for VET students should have negative financial implications for the school, which would avoid channelling students into programmes with few work-based learning opportunities. Alternatively, apprenticeships could start only once a placement with a company for the work-based part of the programme is secured, as done, for example, in Denmark, Germany and Switzerland (OECD, 2021[78]).

Figure 4.21. Exposure of VET graduates to work-based learning is very low

Exposure of VET graduates to work-based learning, %, 2023 or latest available year



Note: The indicator measures the share of recent graduates from VET (vocational education and training) benefitting from exposure to work-based learning during their vocational education and training. The indicator is defined as follows. (1) The denominator covers people aged 20-34 with an upper secondary or post-secondary non-tertiary educational attainment of vocational orientation who had successfully completed their highest level of education in the last three years. (2) The numerator covers those of the denominator who indicated a work experience while studying of at least one month. "Work experience while studying" refers to work experiences at a workplace e.g. in a company, government institution or non-profit organisation that were part of the curriculum of the formal programme that led to the highest level of education successfully completed. Purely school-based work experiences are not considered. The indicator is based on the EU Labour Force Survey.
Source: Eurostat.

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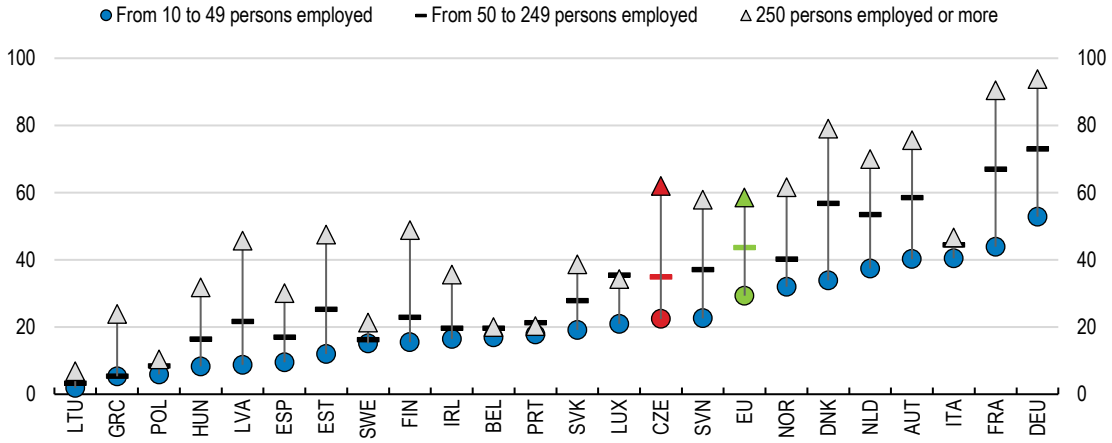
Efforts to encourage companies to provide apprenticeship contracts for initial and continuous training could be boosted. Fewer small and medium companies engage in work-based learning activities in initial VET compared to large companies (Figure 4.22). In addition, investment in continuous VET, at just 0.9% of total labour costs, is among the lowest in the European Union, particularly for SMEs, which allocate only 0.3% of total labour costs to such initiatives. (Eurostat, 2024[8]). To support small companies engaging in work-based learning activities, the authorities should consider arrangements that allow cooperation between employers. The provision of training involves some fixed costs, such as filling administrative duties, applying for subsidies, organising training on the site, appointing and training employees who are responsible for trainees. These costs can be shared among employers, easing the financial burden on small firms. In Austria, for example, small companies may form training alliances (*Ausbildungsverbünde*) to share apprentices with the support of the Economic Chambers. Evidence shows that the institution of training alliances has helped improving the quality of apprenticeship provision (Lachmayr and Dornmayr, 2008[79]). This can be accompanied by a system of training levies collected by employers as a share of payroll and then pooled across companies and sectors to finance training. Evidence from their introduction in Korea shows that, by promoting the provision of joint training involving several firms, they are effective in incentivising SMEs to offer high-quality training. Levy schemes do not require public funds and help to overcome employer concerns that other employers will poach staff in whom they have invested. Moreover, they secure a stable source of funding, regardless of the availability of EU funds (OECD, 2022[80]). However, a levy will increase the tax wedge –already high in Czechia (*Chapter 1*). Therefore, as a complementary measure, the government should reduce employer social security contributions and rely more on property and indirect taxes (see *Chapter 1*).

At the same time, financial incentives for firms to participate in work-based learning could be better designed. Tax deductions for training in the workplace of CZK 200 per person-per hour, and of up to 110% of the costs of assets acquired for the purposes of vocational training were introduced in 2014 to encourage employers to engage more actively in VET. Given the low participation in work-based learning, these

instruments should be evaluated. In Austria, for example, tax incentives for apprenticeships were phased out in 2008 and substituted with direct subsidies, which were considered more effective in targeting SMEs that require additional support to offer apprenticeships (OECD, 2023[43]).

Figure 4.22. Small companies engage less in work-based learning activities

Enterprises employing IVT (Initial Vocational Training) participants by size, %, 2020



Note: Initial Vocational Education and Training within enterprises is defined as a formal education programme (or a component of it) where working time alternates between periods of education and training at the workplace and in educational institutions or training centres. The survey covers enterprises with at least 10 or more employed persons for all sectors excepts agriculture and related, public administration, education, and health and social work.
Source: Eurostat.

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Strengthening general and transversal skills of VET graduates

VET graduates also need sound basic skills (such as in literacy and numeracy) and generic skills (such as in communication, ICT, and problem-solving) to secure their capacity to learn and adapt to changing skills needs and thus their long-term labour market success. VET graduates have on average weaker core skills than their peers in general education. VET students enrolled in programmes leading to *maturita* examination and those that choose to take it are more likely to fail core subjects (Czech language and mathematics) compared to their peers in general education programmes (Figure 4.23) and exhibit lower literacy proficiency as adults as measured by PIAAC assessments (Figure 4.24). This hampers not only their ability to remain adaptable and flexible in a changing labour market with negative effects on their career, but also reduces their opportunities to pursue higher education.

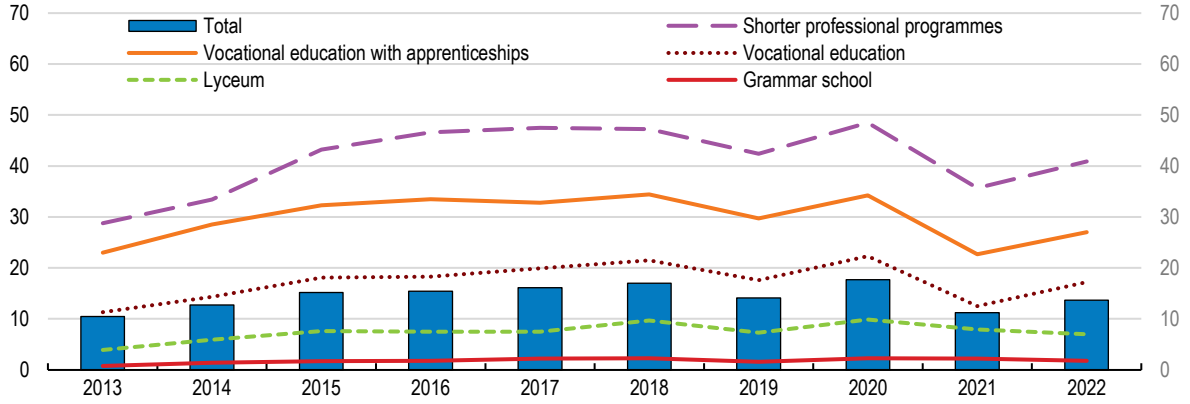
Limited labour market opportunities and lower likelihood of success in tertiary education discourage students to enrol in VET programmes. Students have been increasingly showing interest in general education programmes (grammar schools and lyceum). Low capacity in these programmes, however, limit enrolment in such tracks (see first section). As a result, over 40% of VET graduates in courses with *maturita* certificate and 50% of VET graduates in courses with VET certificate are not satisfied with their chosen field after graduation (NPI, 2021[5]).

A reform of the VET system should aim at strengthening the core skills of all VET graduates. Strong core skills are key to supporting lifelong learning and adapting to new technologies and innovations throughout careers. In Czechia, general education constitutes 15% of the curriculum in 3-year VET programs and 30% in 4-year programs with apprenticeships leading to a *maturita* certificate. To strengthen core skills of VET graduates, the share of the core subjects in the 3-year VET curriculum could be increased. In addition, more efforts should be made to raise the quality of the core knowledge component in the VET curriculum

of all programmes, as planned in the Strategy 2030+. This does not necessarily require more time for instruction, but more effective teaching practices. Innovative pedagogical approaches can be explored, such as learning approaches that focus on investigation and problem solving (i.e., inquiry-based learning), which have been shown to foster the development of soft and transversal skills (OECD, 2023[43]). This requires *inter alia* improving the quality of teachers as discussed above.

Figure 4.23. VET graduates are more likely to fail the common component of *maturita*

Net failure rate in the *maturita* exam (end of upper secondary school), by type of school, %, 2022



Source: Cermat, Centre for Education Results, June 2022.

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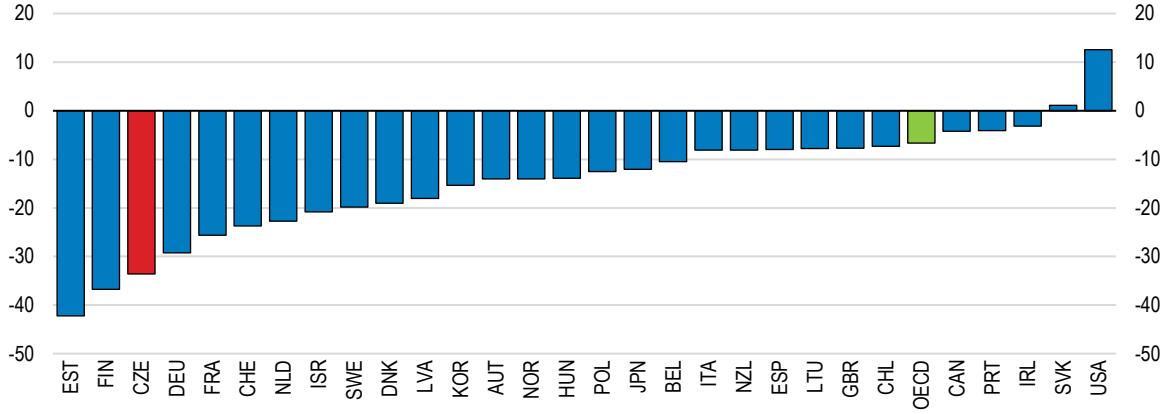
Figure 4.24. VET graduates have lower literacy skills

Difference in average literacy skills between vocational education and general education students, score points, 2023



Source: OECD calculations based on OECD (2024), Survey of Adult Skills 2023

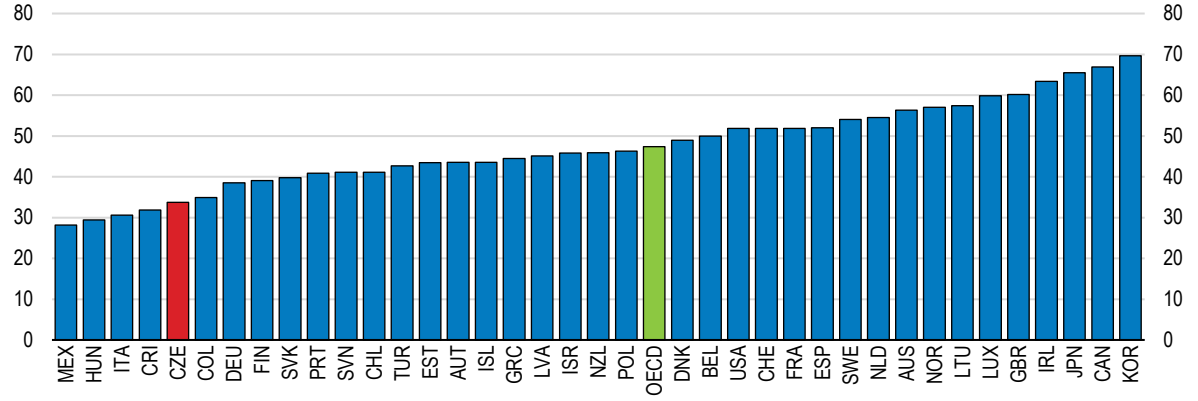
StatLink https://stat.link/ms8r9i

Increasing tertiary education attainment

The supply of tertiary education graduates has not kept pace with demand. Despite progress, tertiary attainment still lags behind the OECD average. In 2022, 34.6% of young adults had a tertiary education degree, compared to 47.4% in the average OECD country (Figure 4.25). The share of tertiary education graduates has not been in line with the growing demand, resulting in a high wage premium (Figure 4.26). Demand is projected to further rise. In 2022, the KOMPAS project, a tool to forecast the future skill needs on the labour market (see above), predicted a 16% increase in the overall demand for tertiary educated workers by 2026 and a 26% increase in more technical fields such as civil engineering, ICT and natural sciences (OECD, 2023[17]).

Figure 4.25. Tertiary education attainment is low

Share of population (25-34 year-olds) with tertiary educational attainment, %, 2023

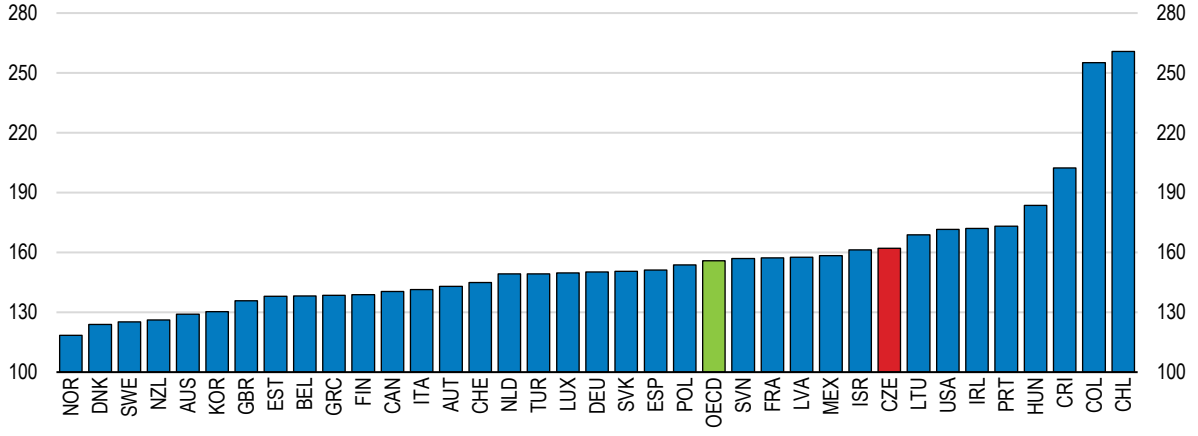


Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

StatLink https://stat.link/n0kqs8

Figure 4.26. The wage premium of tertiary educated workers is high

Relative earnings of workers with tertiary education attainment compared to those with upper secondary attainment; 25-64 year-olds; upper secondary attainment = 100, 2022



Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en

StatLink https://stat.link/oikyb5

Helping more VET students to transition to tertiary education would help increase tertiary educational attainment. VET graduates are less likely to apply and enrol to university than their peers from general education tracks. Between 2018 and 2022, only about 26% to 30% of graduates from shorter VET programmes (after two additional year of courses leading to the *maturita* certificate) enrolled in tertiary education, compared with 55% to 60% of graduates from VET tracks leading to a *maturita* certificate and 91% of general education graduates (NPI, 2024[81]). Moreover, VET graduates record much higher university drop-out rates. While only 6% of general education graduates drop out, this figure exceeds 40% for VET graduates (NPI, 2024[81]). As discussed above, supporting VET graduates requires reducing quality disparities between general and vocational educational tracks, and enhancing their core and transversal skills.

Boosting tertiary education attainment also requires increasing efforts to raise participation and success rates among students from vulnerable backgrounds. Only 18% of tertiary-educated graduates have parents with low educational attainment (below upper secondary education), compared to 28% in the EU-27, and this share has remained unchanged over the past decade (Eurostat, 2019[82]). Despite the absence of tuition fees in public universities in case of study programmes taught in Czech, students from vulnerable backgrounds still encounter significant financial challenges. Czech students bear high living expenses – for example, housing represents 43% of their expenses, the highest share in the EU -, and a large majority (92%) balance studies with employment to meet their living costs (Gwosc et al., 2021[83]). Difficulties in combining work and studies contribute to high drop-out rates from tertiary studies, especially among students from weaker socioeconomic background (Gwosc et al., 2021[83]). The support to students in tertiary education is low compared to other European countries (Figure 4.27). Accommodation scholarships are the most widespread support. However, the amount is very low, covering roughly 10% of housing costs, and not linked to parents' income. There are other direct instruments, such as social scholarships and child benefits for students from poor socio-economic background. However, they reach very few students (about 1% of students received social scholarship in 2020), and the amount is low. Indirect support exists, such as non-refundable tax breaks to students' parents, and a tax credit for students was available until January 2024. These instruments, however, would benefit mostly higher income families and students given their higher tax liabilities (Münich and Kořínek, 2021[84]; Eurydice, 2020[85]).

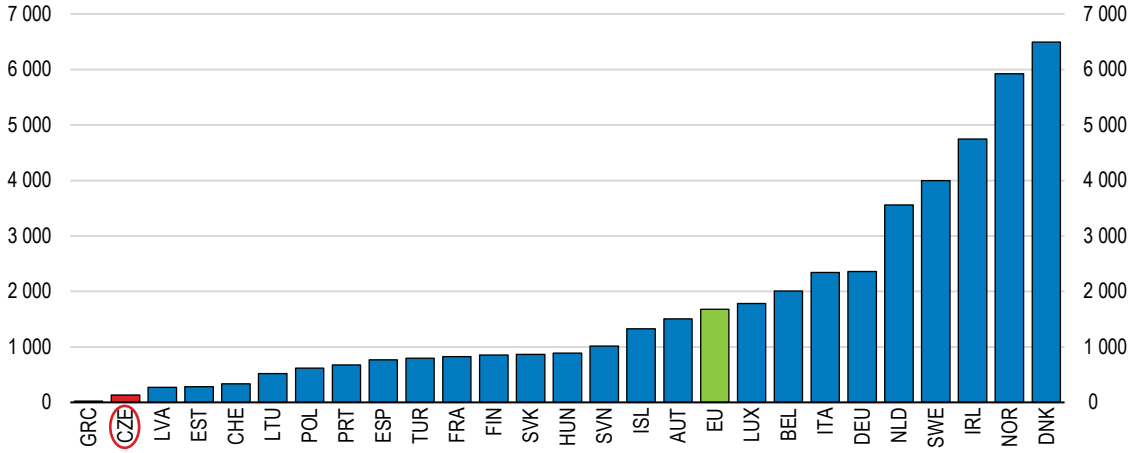
The authorities should evaluate the existing system of support measures for university students and introduce a mix of targeted grants and subsidised loans to support students from vulnerable backgrounds. Targeted grants can remove liquidity constraints for disadvantaged students, improving education access and outcomes. Research has shown that a rise in publicly funded grants increased educational attainment and the probability of attending college in the United States (Dynarski, 2003[86]). In addition, a system of income-contingent repayment could be introduced. Student loans help solve liquidity constraints without excessively weighting on public finances (OECD, 2020[87]). In such a system, repayment is conditional on the borrower's income up to a threshold and debt is forgiven after a certain period. As evidence from Australia and the United Kingdom shows, the introduction of income-contingent repayment has contributed to close the gap in participation rates between advantaged and disadvantaged students, in spite of higher tuition fees (Chowdry et al., 2012[88]). At the same time, a systematic tracking of beneficiaries, linked to their socio-economic characteristics should be put in place to better monitor the effects of such policies. Recently, some progress has been made, and a working group for the creation and implementation of student loans was established in cooperation between the MoEYS the MoF, the Student Chamber of the Council of Higher Education Institutions, the National Development Bank and the Czech Association of Banks.

Conditional on introducing the support measures described above, the authorities could consider raising tuition fees to partially cover the financial costs of higher targeted students' support. Tertiary education is largely publicly funded in Czechia (90% of students attend public universities), with no tuition fees for students enrolled in study programmes taught in Czech language (Figure 4.28). Raising or introducing tuition fees and making them dependent on households' income could increase equity of the tertiary

education system, and the high private returns to tertiary education justifies cost-sharing with students (OECD, 2020[87]). In addition, research shows that higher tuition fees can reduce the risk of drop-out by boosting students' academic effort and raising motivation to complete their studies in time (Beneito, Boscá and Ferri, 2018[89]).

Figure 4.27. There is little financial support for students in tertiary education

Financial aid from government to households and students, tertiary education level, Euros PPS per student, 2021 or latest available year



Note: Financial assistance for education to households or students includes scholarships, public loans and allowances contingent on a student's status.
Source: OECD calculations based on Eurostat.

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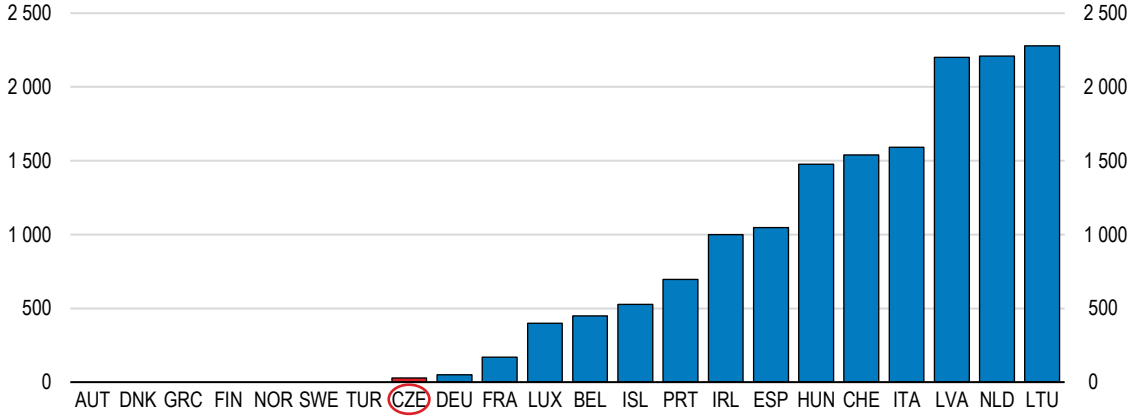
Figure 4.28. Most students do not pay tuition fees

Most common annual student fee amounts, higher education, home students, first cycle, Euros, 2022/23



Note : Students of public higher education institutions in study programmes in Czech don't pay tuition fees. Students are required to pay tuition fees in case of study programmes in English, and if they significantly exceed the standard duration of the study programme. Tuition fees are paid in all programmes at private universities.
Source: EURYDICE, https://eurydice.eacea.ec.europa.eu/data-and-visuals

StatLink https://stat.link/9wqfuk

Incentives in tertiary education should be further strengthened to better align outcomes with labour market needs. Education mismatches among university graduates are high. Around 46% of the 2020/2021 cohort of graduates works in fields where higher education is not required. This share is higher than the 20% in

the average EU country and has increased compared to 2016 when it was 38% (EC, Forthcoming[7]). A way to improve matching would be to modify the funding mechanism of higher education. Public universities receive 80% of their institutional funding for study programmes according to a formula which takes into account input indicators such as the number of students, and the normative costs of programmes by field of study, through a field-specific coefficient. The remaining 20% of funding is linked to outcome variables including graduation rates, international mobility of students, and employment of graduates (Eurydice, 2024[90]). To better align the supply of tertiary education with the demand, the funding formula could be refined to take into account a wide dimension of employability of graduates, e.g., earnings and mismatch rates. This requires strengthening data collection and analysis. Information about detailed labour market outcomes of tertiary education graduates in different fields, such as wages and education mismatch, is in fact only currently available through international surveys. More efforts could be done to regularly collect such information within the country. Such information should also be made available to prospective students and the wider public, for example on the online platform recently developed by the National Pedagogical Institute (see above), to support students making informed choices about study programmes. In addition, Czechia should raise awareness of the importance of careers guidance among university management teams and secondary schools to improve matching between students and study programmes and reduce risks of drop-out.

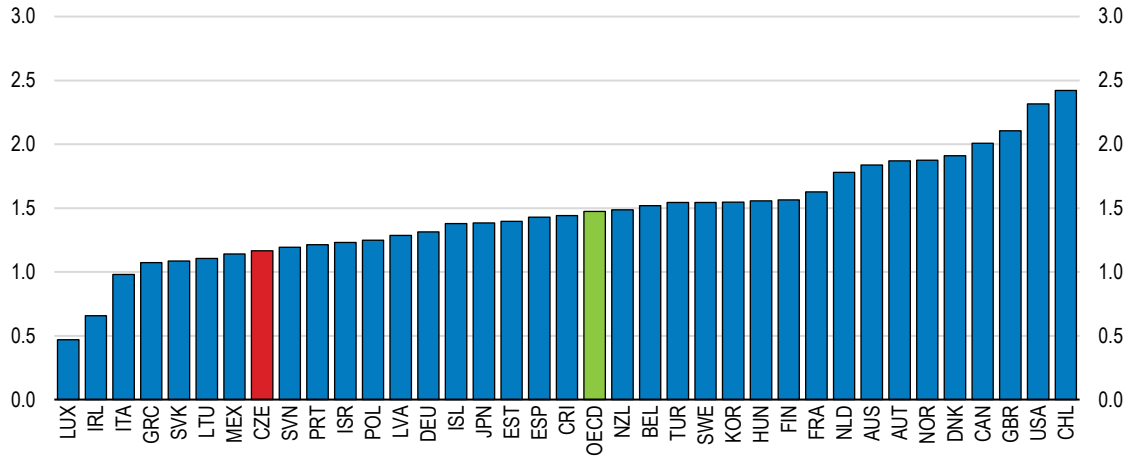
Broadening access to under-represented categories in highly demanded study-fields could help reduce skills shortages and mismatches. In 2023, 60% of higher education graduates in Czechia were women (CSO, 2024[91]). However, only a third of STEM graduates and only 19% of ICT graduates were female (CSO, 2024[91]) . Making female role models more visible, fighting gender stereotypes in careers guidance and providing girls with mentoring and opportunities to interact with technology at earlier stages could help change gender-specific perceptions about ICT careers. For example, a one-hour intervention in French secondary schools by female scientists has increased girls' enrolment in the most selective and math-intensive STEM fields of study at university (such as mathematics, engineering and computer science) by a statistically significant 3.8 percentage points from a baseline of 16.6 percent (Breda et al., 2021[92]).

Efforts to attract more international students can help further address skill shortages. In 2022, the share of international students enrolled in higher education was 16%, significantly higher than the OECD average of 6% (OECD, 2024[6]). Half of these students come from Slovakia and benefit from courses taught in Czech (Czech Republic Alumni, 2022[93]). To attract a more diverse international student body, further steps could include expanding courses taught in English and providing training to help teachers adapt their teaching to an international audience (Pleschová, 2024[94]).

Increasing tertiary education attainment also requires diversifying higher education provision to serve multiple students from a diverse range of backgrounds and sources of funding to limit costs increases. Most of the funding for tertiary education (75%) in Czechia comes from public sources (OECD, 2023[54]). In 2020, public spending on higher education was 0.8% of GDP, lower than the OECD average of 1% (Figure 4.29). Thus, bringing tertiary education attainment close to the OECD average will significantly impact the state budget. To limit such costs, Czechia could consider diversifying higher education provision, by promoting applied programmes and short-cycle degrees, which can be designed and delivered in partnership with employers (OECD, 2020[87]). Applied tertiary education programmes have the advantage of meeting the growing demand for skilled professionals in fields not typically covered by traditional universities, and offering alternative tertiary education opportunities for those, including vocational secondary students, less inclined or able to pursue highly academic university programmes (OECD, 2020[87]).

Figure 4.29. Spending on tertiary education is lower than the OECD average

Total expenditure on educational institutions, tertiary education, % of GDP, 2021 or latest available year



Source: OECD (2024), Education at a Glance 2024: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/c00cad36-en.

StatLink https://stat.link/lmi2c9

In 2021, only 1% of students enrolled in short cycle, applied tertiary degree programmes in Czechia, a much lower share than the OECD average of 19% (OECD, 2023[54]). Incentivising participation in these programs requires to enhance their quality. One way of doing so would be to place them under the assessment of the university accreditation office, as recently proposed by the authorities, and to allow the transfer of qualifications obtained to the second or third year of bachelor's programs at other universities, as for example is done in the US.

Raising participation in adult and life-long learning

A relatively low proportion of adults participates in education and training. On average, around 45% of adults participated in formal and informal education and training in 2022, and less than 10% do so on a regular basis (Eurostat, 2023[95]). Participation in adult learning is particularly low among low skilled workers (Figure 4.30). The main reason mentioned by adults for not participating in education or training is lack of interest. Among those who are interested, participation is hindered by a shortage of time (for family or work-related reasons) and lack of financial resources to cover the costs of education and training (OECD, 2023[43]; OECD, 2024[96]).

Flexible provision of adult education and training is crucial to overcome the time constraints faced by many individuals. Providing more distance and part-time learning opportunities, during weekends and evenings, would effectively allow people to work at the same time as studying. Participation in distance learning in Czechia was low in 2019. Only 6.2% of individuals participated in courses providing distance learning, versus 12% in the average OECD country (OECD, 2019[97]). However, the COVID-19 pandemic accelerated government efforts to promote its expansion by improving broadband connectivity and providing IT devices in education institutions (OECD, 2023[98]; SAO, 2023[99]). Over CZK 8 billion (EUR 314 million) was spent by the ministry during 2019-2021 on supporting digital education, with a significant proportion (80%) coming from EU funds. Going forward, the authorities should establish a sustainable system for financing ICT in education, which requires regular maintenance and upgrades. This requires that financial contributions to the operation of educational institutions come primarily from the state budget and only minimally rely on one-off sources.

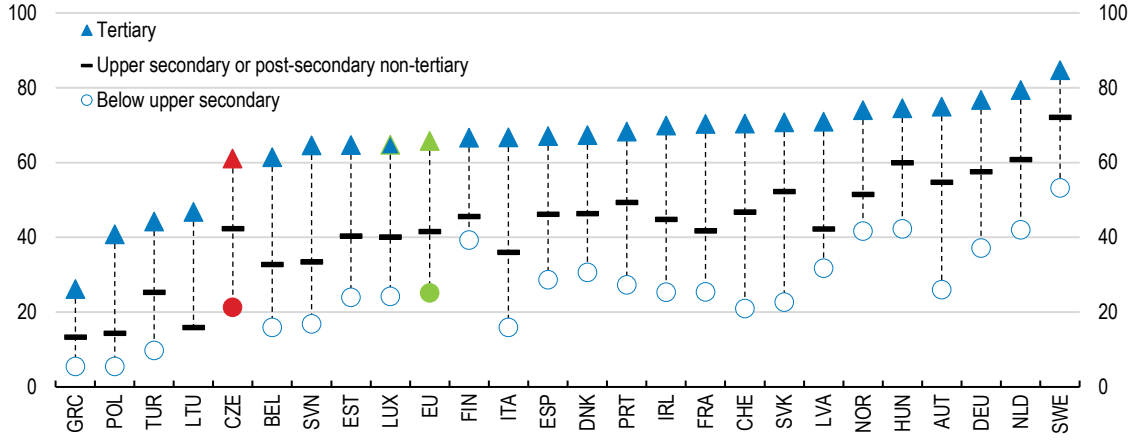
Education and training programmes should be modular to offer greater flexibility in adults' learning. Formal education and training programmes, especially VET programmes, are often relatively long, reducing incentives to participation, especially of low-skill workers (OECD, 2023[43]). Offering modular learning

implies breaking up long programmes into self-contained pieces, each with its own learning outcomes, and providing qualifications upon successful completion of the module, i.e., micro-credentials. This allows adults to focus on developing the skills they currently lack, and to work towards a full formal qualification by successively combining single modules.

Micro-credentials are still under-developed in Czechia compared to other European countries, but there is a rising interest in expanding their use (Cedefop, 2023[100]). For example, a pilot project has been launched to recognise the ICT certification obtained in VET programmes as a standalone qualification (Cedefop, 2023[100]). In September 2024 an OECD project has been launched to develop micro-credential programmes in VET, tertiary education and adult learning. In expanding the use of micro-credentials, the authorities should implement a transparent and reliable assessment system to certify the competencies acquired through them. This would ensure that these certifications are recognisable by all stakeholders in the labour market and education institutions. Including micro-credentials in the national register of qualifications (NSK), which links each qualification to a specific set of competencies and an assessment standard, would be an effective way of ensuring quality and allow candidates to obtain a nationally recognised certificate of their professional qualifications (OECD, 2023[43]). This has started to become common practice in other OECD countries. In Ireland, for example, the National Register of Qualifications (IRQ) contains more than 10% micro-credentials (see Box 4.7).

Figure 4.30. Adults participation in education and training is low, especially among the low-skilled

Participation in formal and non-formal education and training, 25-64 year-olds, %, 2022



Source: Eurostat.

StatLink https://stat.link/yb395d

Giving employees the right to take leave for education and training purposes can increase participation in adult learning. Statutory education and training leave exists only for civil servants and teachers who have respectively the right to take 5 and 12 days of paid leave per year (OECD, 2019[101]). Statutory leave could be extended to all employees to upskill or reskill for labour-market relevant occupations. To ensure its uptake, compensation for both learners and employers could be provided. In the Flanders region of Belgium, for example, since 2019 employees have access to up to 180 hours of education leave per year to attend vocational training courses to build skills in occupations with high shortages. During their training leave, workers receive full pay, while employers are reimbursed by the regional government up to a capped amount (OECD, 2019[101]).

Well-targeted financial incentives to employees can help to increase take-up of training, especially among low-income groups. Around 20% of adults do not participate in adult learning programmes because they are considered too expensive (OECD, 2023[43]). Financial support provided by the state for training activities is very low in Czechia (see *Chapter 3*), and until recently most existing schemes have only targeted (registered) unemployed persons. To address this gap, in 2023 the MoLSA introduced a system

of individual learning accounts (ILA) with training vouchers as part of the EU recovery and resilience programme. Through this project all Czech citizens (employed and unemployed) have access to CZK 50 000 (EUR 2 000) to spend within three years for some selected retraining courses, with a greater focus on boosting digital skills. This amount covers 82% of the cost of each course, while the remaining 18% is paid by individuals. This initiative is welcome. ILAs have the advantage of decoupling the entitlement to training from the employer and of transferring from one job to another. This has the potential to improve the alignment of training with labour market needs, provided that individuals have access to sufficient information, advice and guidance. However, international experience shows that ILAs are more likely to be used by high-skilled workers, if not accompanied by other incentives (OECD, 2020[102]). This is also the case in Czechia where, in 2024, tertiary educated workers were over-represented among the applicants of ILAs courses. Therefore, this scheme should be modified to better target the low-skilled, for example by linking the amount of the vouchers to workers' skills, as it is for example done in France (Perez and Vourc'h, 2020[103]).

Box 4.7. The use of micro-credentials in Ireland

In Ireland, micro-credentials can be offered as stand-alone qualifications which can be combined to form a full formal qualification, and most of them (10%) are included within the National Framework of Qualifications, which provides quality assurance mechanisms. The majority of these credentials are delivered on a part-time basis. They are mostly offered by private higher education colleges, private further education providers, universities, institutes of technology, and education and training boards. They are delivered in both vocational and non-vocational fields. The movement towards shorter credentials has been boosted by COVID-19 restrictions, which accelerated the process of online approaches of teaching and learning, assessment and certification, making learners experience more accessible and flexible.

Source: (OECD, 2023[43])

Table 4.2. Recommendations for boosting equity, quality and efficiency of the education system

FINDINGS	RECOMMENDATIONS (key recommendations in bold)
Addressing inequalities in education	
Limited capacity and low affordability reduce participation in early childhood education and care, especially for children from disadvantaged backgrounds and below the age of 3, weighing on educational outcomes. The quality of early childhood education and care services of children below age 3 is not regularly monitored. 25% of pupils delay entry into primary school due to parental concerns about their child's readiness, increasing demand pressure on ECEC.	**Increase high-quality and affordable early education and care capacity.** Provide subsidies for childcare fees for low-income households of children below age 3. Strengthen and enforce quality standards across all early childhood education and care providers. Define objective criteria for kindergartens and specialists to assess requests to delay entry into primary schools.
Socioeconomic background strongly impacts students' performance and disparities in educational outcomes between schools are high.	**Direct resources to schools with a high proportion of disadvantaged students and use up-to-date, reliable data and methods to target schools.**
Roma pupils are more likely to attend special education with reduced curriculum and teaching hours.	Reduce the participation of Roma in special schools through improved diagnostics and outreach toward Roma parents.
Students are tracked into highly selective education programmes at an early age, and the admission procedure into grammar school and upper secondary schools with *maturita* certificate is based on a voluntary national standardised test. This disadvantages talented pupils who lack strong family support.	Postpone tracking for all students to the end of compulsory schooling and reduce disparities in quality across educational paths. Base the admission into grammar schools and upper secondary schools with *maturita* on a standardised test taken by all students and strengthen the role of teachers' assessment in the admission decision. Enhance participation to career guidance and counselling services for students in disadvantaged school.
Boosting the quality and efficiency of schooling	
There are severe shortages of teachers, especially in urban areas and big cities, and scientific fields.	Facilitate the acquisition of teaching qualifications by offering flexible and modular initial teacher education and training. Introduce financial incentives, such as bonuses and allowances, to teachers working in areas or teaching subjects with shortages. Establish a register of teachers with information on their qualifications and professional development activities to better monitor shortages and target financial incentives.
Opportunities for teachers' career development are limited. More than 20% of teachers do not participate in mandatory continuous professional development programmes.	**Promote a greater variety of career paths for teachers, by creating a complete teachers' competence profile, formal requirements for appraisals involving standardised and externally validated certification systems**. Set formal requirements for promotions which include completion of continuous professional development.
Given the high territorial fragmentation, high decentralisation of education policy results in many underperforming small elementary schools.	**Transfer responsibilities for establishing and managing elementary schools and the related funding to communities of municipalities or municipalities with extended powers and introduce rules on minimum school size to enforce mergers and/or cooperation between schools.**
Aligning skills with labour market needs	
Despite progress, VET programmes are still overly specialised and fragmented, leading to program overlap, complicating student choices, and raising the risk of skill mismatches. VET graduates have weaker core skills than their peers in general education.	Reduce fragmentation of VET programmes. Regularly disseminate information about labour market outcomes of VET qualification holders, e.g., wages and mismatch rates, to better align students' education choices with industry demand. Strengthen general and transversal skills of VET graduates, including by raising the share of the core subjects in the 3-year VET curriculum.
Participation in work-based learning (WBL) for VET students is low and collaboration with social partners in WBL activities is limited. Small firms face higher costs compared to large firms for training activities, limiting their engagement in work-based learning.	Link funding of VET schools to the number of students in work placements and strengthen the role of social partners in defining the content and delivering work-based learning. Introduce training alliances and levies to share fixed costs of apprenticeships among employers.
There are generally no tuition fees for higher education, but lack of students' support hinders access to university to vulnerable groups.	**Introduce grants for vulnerable students and income-contingent loans.**
Participation in adult learning is low, especially among low skilled workers. Lack of time and financial resources are the main barriers in participation.	**Expand the supply of modular learning and introduce high-quality micro-credentials in the national register of qualifications.** Ensure that the new system of individual learning accounts is targeted to the low-skilled and regularly evaluated.

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Economic growth has resumed, and inflation has returned close to target but risks to the outlook remain elevated. Fiscal policy should continue to build buffers and prepare for longer-term spending pressures, including by enhancing spending efficiency, fully implementing recent pension reforms and revising family benefits to reduce disincentives for mothers with young children to return to the workplace. Revitalising productivity growth and convergence requires boosting Czechia's innovation capacity and business dynamism by better targeting business support for R&D to young and small firms, further developing capital markets and strengthening the eco-system for start-ups. To put the economy on a path to net-zero emissions, a more consistent pricing of carbon, accelerating the deployment of renewables, replacing coal, and reducing the energy and emission-intensity of the buildings sector are needed, while alleviating the impact on vulnerable communities. Addressing inequalities in education, increasing the quality and efficiency of schooling, and expanding possibilities to reskill and upskill workers throughout their careers are key to provide equal opportunities for all and tackle skill shortages.

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