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Foreword

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The Secretariat's draft report was prepared for the Committee by Robert Grundke, Enes Sunel, and Christian Wittneben under the supervision of Mame Fatou Diagne. Research inputs from Lisa Gerland, Rudy Verlhac and Martin Reinhard from the DynEmp team of the OECD Directorate for Science, Technology and Innovation as well as Cristiana Vitale and Eszter Danitz from the OECD Economics Department are gratefully acknowledged.

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The economic situation and policies of Germany were reviewed by the Committee on 2 April 2025 with participation of representatives of the German authorities. The draft report was then revised in light of the discussions and given final approval as the agreed report of the whole Committee on 28 May 2025.

The previous Survey of Germany was issued in May 2023.

Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at [OECD Economic Surveys | OECD](#).

Table of contents

Foreword	3
Basic statistics of Germany, 2024	7
Executive summary	8
1 Strengthening fiscal policy and continuing structural reforms to revive economic growth	15
1.1. Continuing structural reforms and further reducing policy uncertainty is key for reviving economic growth	16
1.2. Addressing financial vulnerabilities and deepening capital markets	27
1.3. Strengthening fiscal policy to ensure medium-term fiscal sustainability	35
References	52
2 Fostering competition to revive business dynamism and productivity growth	57
2.1. Business dynamism and productivity growth have slowed down	58
2.2. Making regulation and public policies more competition friendly	61
2.3. Further strengthening competition enforcement	69
2.4. Reducing the risk of regulatory capture and continuing the fight against corruption to level the playing field	71
References	76
3 Addressing Skilled Labour Shortages	81
3.1. Skilled labour shortages risk becoming a major bottleneck for economic growth	82
3.2. Strengthening incentives for labour supply and supporting longer working lives	83
3.3. Continuing to reduce barriers to skilled migration and the labour market integration of migrants	92
3.4. Strengthening vocational training and adult learning and improving the quality of basic education	94
References	101
4 Fostering regional development in times of structural change	107
4.1. Regional disparities in living standards have narrowed but ongoing structural changes risk widening gaps	108
4.2. Improving coordination between place-based policies and other policies with regional impact	112
4.3. Improving the financial and administrative capacity of local governments to foster regional development	117
4.4. Designing horizontal policies to facilitate the green and digital transitions in the regions	126
4.5. Mitigating distributional consequences and supporting workers in times of structural change	139
References	147

Tables

Table 1. Private consumption will lead the recovery	10
Table 1.1. Structural reforms are needed to raise living standards	17
Table 1.2. Macroeconomic indicators and projections	26
Table 1.3. Events that could lead to major changes in the outlook	27
Table 1.4. The fiscal balance has turned negative during the pandemic and the energy crisis	36
Table 1.5. Potential fiscal impact of OECD recommendations	41
Table 1.6. Past recommendations and actions taken	50
Table 1.7. Findings and recommendations (key recommendations in bold)	51
Table 2.1. Past recommendations and actions taken	74
Table 2.2. Findings and recommendations (key recommendations in bold)	75
Table 3.1. Past recommendations and actions taken	99
Table 3.2 Findings and recommendations (key recommendations in bold)	100
Table 4.1. Municipalities receive a relatively small share of national tax revenues	119
Table 4.2. Past recommendations and actions taken	144
Table 4.3. Findings and recommendations (key recommendations in bold)	145

Figures

Figure 1. Economic growth has slowed down	10
Figure 2. Post-entry growth of firms is weak	11
Figure 3. Firms face severe difficulties to fill open positions	12
Figure 1.1. Economic growth has slowed down	16
Figure 1.2. Energy prices have come down but remain higher than before the war in Ukraine	18
Figure 1.3. Many firms were able to pass on higher input costs and profits have been high	19
Figure 1.4. Inflation has come down and nominal wages have increased strongly	19
Figure 1.5. High policy uncertainty has weighed on investor and consumer confidence	20
Figure 1.6. Manufacturing production declined but value added has performed better	23
Figure 1.7. Manufactured capital goods dominate exports	23
Figure 1.8. Export competitiveness has deteriorated	24
Figure 1.9. ICT and business services have expanded strongly	25
Figure 1.10. Corporate insolvencies have increased but risks to lenders remain contained	28
Figure 1.11. Risks related to residential real estate have decreased	30
Figure 1.12. Venture capital investments are relatively weak	31
Figure 1.13. Non-bank institutional investors play a relatively small role in capital markets	32
Figure 1.14. Net public investment should increase to address the large infrastructure backlog	38
Figure 1.15. Rapid population ageing will increase spending for pensions, health and long-term care	38
Figure 1.16. Implementing structural reforms and addressing the fiscal effects of ageing is key to safeguard fiscal sustainability	40
Figure 1.17. Shifting expenditures towards public investment and the tax structure away from labour taxes would raise GDP per capita	42
Figure 1.18. The tax mix is skewed towards labour taxes	44
Figure 1.19. Raising the effective retirement age and coupling the legal retirement age to life expectancy is crucial to stabilise pension spending	49
Figure 2.1. GDP per capita growth has slowed down	58
Figure 2.2. Firm entry rates have declined and post-entry growth is weak	59
Figure 2.3. Exit rates are low and reallocation rates have declined	60
Figure 2.4. Employment is increasingly concentrated in larger incumbent firms	61
Figure 2.5. The administrative burden for firms has declined, but overall costs of compliance with new regulation have increased	62
Figure 2.6. Regulation has become more competition friendly, but there is room for further improvement	65
Figure 2.7. Employment protection regulation is relatively strict	68
Figure 2.8. Resources of the competition agency have increased while leniency applications in cartel cases declined	71
Figure 2.9. The fight against corruption and money laundering must continue	73
Figure 3.1. Firms face severe difficulties to fill open positions	82
Figure 3.2. Working hours have declined and mismatch in the labour market has increased	83
Figure 3.3. Part-time employment is widespread among women	84

Figure 3.4. Participation tax rates for second earners are high	85
Figure 3.5. Labour taxes are high	87
Figure 3.6. Marginal effective income tax rates are high for low-income earners and households with children	88
Figure 3.7. Paid parental leave entitlements are unequally distributed across both parents	90
Figure 3.8. Better integrating migrants in the labour market can help address labour shortages	94
Figure 3.9. A rising number of VET positions remains unfilled, yet many applicants do not receive a suitable offer	95
Figure 3.10. Educational outcomes have deteriorated and educational inequality remains high	98
Figure 4.1. Regional disparities are large	108
Figure 4.2. Regional disparities in GDP per capita have narrowed over the last two decades	109
Figure 4.3. Regional disparities across districts remain high	109
Figure 4.4. The green transition implies challenges and opportunities for regions	110
Figure 4.5. The old-age dependency ratio is high in many regions	111
Figure 4.6. Inter-governmental transfers to municipalities are large	112
Figure 4.7. Disparities between East- and West Germany remain significant	115
Figure 4.8. The capital stock has declined at the municipal level since 20 years	117
Figure 4.9. Revenue from recurrent taxes on immovable property is low	121
Figure 4.10. Fiscal equalisation and federal transfers strongly reduce revenue differences across the Laender	122
Figure 4.11. A large proportion of municipalities have small populations	125
Figure 4.12. The greening of the electricity network has accelerated while emissions in transport have not been decreased	130
Figure 4.13. Approval procedures for grid expansion projects have accelerated	132
Figure 4.14. Research and development spending is high, but regional disparities remain large	134
Figure 4.15. Innovation activity is relatively high but concentrated in urban areas	135
Figure 4.16. Investment in knowledge-based capital is relatively low	137
Figure 4.17. There is scope to improve the adoption of more sophisticated digital technologies	137
Figure 4.18. Internet download speeds are slow in many German regions	138
Figure 4.19. Income and wealth disparities between cities and commuting zones are high	140
Figure 4.20. Lower incomes are correlated with discontent with the economic situation and institutions	141
Figure 4.21. The green and digital transitions will have heterogenous effects on regions	141
Figure 4.22. Participation in adult learning is very low in many regions	143

Boxes

Box 1.1. Recent reforms at the federal level	22
Box 1.2. The effects of digital services trade restrictions on firm-level productivity and trade	25
Box 1.3. Germany's pension system	33
Box 1.4. Growth and welfare effects of compositional shifts in government expenditure and revenue: A dynamic general equilibrium approach	43
Box 3.1. Childcare services in Denmark	91
Box 4.1. Germany's federal system	113
Box 4.2. Structural adjustment and economic policies in Eastern Germany	115

Basic statistics of Germany, 2024

(Numbers in parentheses refer to the OECD average)

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million, 2023)	83.3		Population density per km² (2023)	238.4	(39.2)
Under 15 (% , 2023)	13.9	(16.9)	Life expectancy at birth (years, 2022)	80.7	(80.6)
Over 65 (% , 2023)	22.8	(18.2)	Men (2022)	78.3	(78.0)
International migrant stock (% of population)	19.8	(15.7)	Women (2022)	83.0	(83.2)
Latest 5-year average growth (%)	0.1	(0.4)	Latest general election	February 2025	
ECONOMY					
Gross domestic product (GDP)			Value added shares (% , 2023)		
In current prices (billion USD)	4 659.7		Agriculture, forestry and fishing	0.9	(2.7)
In current prices (billion EUR)	4 307.9		Industry including construction	29.4	(27.1)
Latest 5-year average real growth (%)	0.0	(1.7)	Services	69.7	(70.2)
Per capita (thousand USD PPP, 2023) ¹	69.2	(59.0)			
GENERAL GOVERNMENT (Per cent of GDP)					
Expenditure (OECD: 2023)	49.5	(42.4)	Gross financial debt (OECD: 2023)	63.2	(110.6)
Revenue (OECD: 2023)	46.7	(37.9)	Net financial debt (OECD: 2023)	25.8	(67.2)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.92		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.73		Machinery and electronics	26.9	
In per cent of GDP			Transportation	19.5	
Exports of goods and services	42.2	(30.5)	Chemicals	14.6	
Imports of goods and services	38.3	(30.2)	Main imports (% of total merchandise imports)		
Current account balance	5.7	(-0.5)	Machinery and electronics	26.7	
Net international investment position	78.0		Chemicals	12.6	
			Transportation	11.9	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	59.7	(58.0)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	3.4	(4.9)
Men	64.5	(65.4)	Youth (aged 15-24, %)	6.6	(11.1)
Women	55.1	(51.0)	Long-term unemployed (1 year and over, %, 2023)	0.9	(1.0)
Participation rate (aged 15 and over, %)	61.8	(61.0)	Tertiary educational attainment (aged 25-64, %, 2023)	33.4	(41.0)
Average hours worked per year (OECD: 2023)	1 332	(1 669)	Gross domestic expenditure on R&D (% of GDP, 2022)	3.1	(3.0)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2023)	2.9	(3.7)	CO ₂ emissions from fuel combustion per capita (tonnes, 2023)	6.5	(7.6)
Renewables (% , 2023)	19.6	(12.5)	Water abstractions per capita (1 000 m³, 2019)	0.2	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2020)	54.0	(56.5)	Municipal waste per capita (tonnes, 2023)	0.6	(0.6)
SOCIETY					
Income inequality (Gini coefficient, 2020, OECD: latest available)	0.303	(0.316)	Education outcomes (PISA 2022 score)		
Relative poverty rate (% , 2020, OECD: 2022)	11.6	(11.7)	Reading	480	(476)
Median disposable household income (thousand USD PPP, 2020, OECD: 2021)	36.2	(30.0)	Mathematics	475	(472)
Public and private spending (% of GDP)			Science	492	(485)
Health care (2023)	11.8	(9.2)	Share of women in parliament (%)	35.3	(33.3)
Pensions (2021)	11.6	(9.9)	Net official development assistance (% of GNI, 2022)	0.9	(0.4)
Education (total spending, 2020)	4.6	(5.1)			

Note: 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.

1. 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

After a decade of strong export-led growth, the COVID-19 pandemic, Russia's war of aggression against Ukraine and rising trade tensions have hit the German economy and emphasised the need to accelerate structural reforms:

- Ensure medium-term fiscal sustainability by raising spending efficiency, reallocating spending and broadening the tax base, while addressing rising spending pressures due to population ageing
- Reduce the administrative burden and regulatory barriers to competition to revive business dynamism, innovation and productivity growth
- Address skilled labour shortages by strengthening the work incentives of women, low-income and older workers, further reducing barriers to skilled migration and continuing to improve education, training and adult learning policies
- Foster regional development during the green and digital transition by better coordinating place-based with industrial, infrastructure and innovation policies, and improving the financial and administrative capacity of municipalities

The energy crisis and geo-political tensions have emphasised the need to accelerate structural reforms

Fostering business dynamism and innovation while addressing skilled labour shortages and raising infrastructure investments would help revive economic growth. Supporting regions to thrive during the green and digital transition would help maintain high living standards across the country.

After a decade of strong export-led growth, fiscal surpluses and falling unemployment, economic growth has slowed down. Supply chain bottlenecks during and after the COVID-19 pandemic, higher energy prices and rising trade tensions have affected the globally integrated German economy more than others. Strong government support and a quick substitution of Russian pipeline gas by gas from other sources have prevented a deeper economic downturn. The rapid expansion of renewable energy supply has improved energy security. However, structural challenges remain that had already weighed on growth even before the pandemic started.

Continuing to accelerate structural reforms is key for reviving economic growth. Reducing the administrative burden, including by accelerating the digitalisation of the public sector, and fostering competition will help raise business dynamism and productivity growth. Skilled labour shortages should be addressed by improving labour supply incentives for women, older and low-income workers, further lowering barriers to skilled migration and strengthening education and training policies. Designing policies to help regions embrace structural change while ensuring the provision of key public services and public investment is key for maintaining high living standards across the country.

Reducing policy uncertainty and combining the reform of fiscal rules with structural reforms is essential for supporting the economic recovery

Raising spending efficiency, reallocating spending and broadening the tax base, while addressing rising spending pressures due to population ageing, would help fund infrastructure and defence spending and ensure medium-term fiscal sustainability.

GDP will grow by 0.4% in 2025 and 1.2% in 2026. Declining domestic policy uncertainty, following the formation of a new government, and higher real wages will support a recovery in private consumption. Defence spending and infrastructure investments are set to increase strongly due to the recent reform of fiscal rules and large investment needs. Although high tariffs and trade policy uncertainty will hamper exports and investments in export-oriented manufacturing, total private investment will pick up, supported by high corporate savings and declining interest rates. Core inflation will remain elevated due to a tight labour market and rising domestic demand.

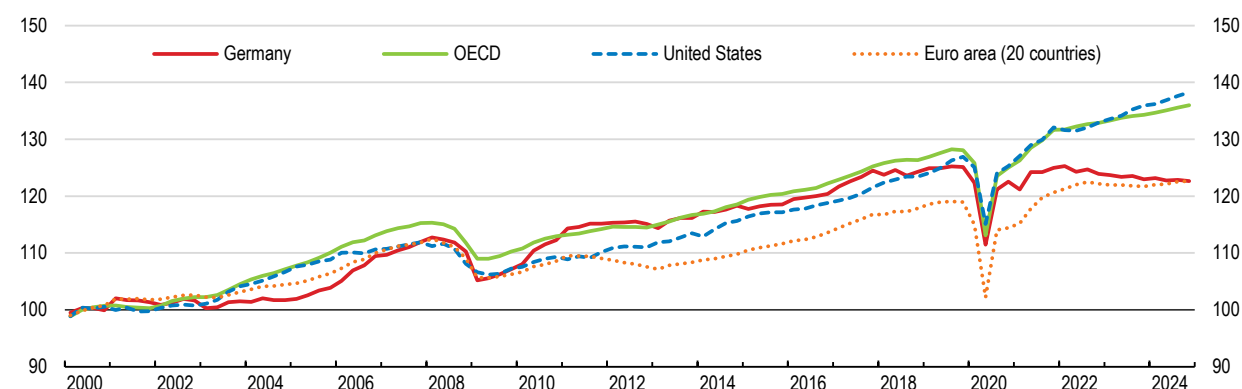
The quick approval of a 2025 budget is key for further reducing policy uncertainty, including on public investment plans. Infrastructure planning and approval procedures and procurement processes should be accelerated to ensure the quick

implementation of investment and spending plans. To avoid rising inflationary pressures due to the significant demand shock, it is key to reduce the administrative burden and barriers to competition and address skilled labour shortages, particularly in the construction sector.

Ensuring medium-term fiscal sustainability will hinge on raising spending efficiency, reallocating spending and broadening the tax base. Accelerating the digitalisation of the public administration, improving policy impact evaluation and public procurement, and broadening the scope of spending reviews could help increase spending efficiency. Raising more revenue by increasing property taxes, reducing tax expenditures in capital income, inheritance, VAT and environmental taxation and strengthening tax enforcement would also help address fiscal pressures and allow to lower high labour taxes.

Figure 1. Economic growth has slowed down

Real GDP per capita, 2000 =100



Source: OECD Economic Outlook database.

StatLink  <https://stat.link/a7ug6z>**Table 1. Private consumption will lead the recovery**

Annual growth rates, %, unless specified

	2023	2024	2025	2026
Real GDP	-0.1	-0.2	0.4	1.2
Private consumption	-0.2	0.2	0.9	1.0
Government consumption	-0.1	3.2	1.2	1.5
Investment	-0.7	-2.5	2.3	4.5
Exports of goods and services	0.2	-1.7	-0.3	0.6
Imports of goods and services	-0.3	-0.6	1.7	2.1
Unemployment rate (% of labour force)	3.0	3.4	3.6	3.5
Inflation (HCPI)	6.0	2.5	2.4	2.1
Government financial balance (% of GDP)	-2.5	-2.7	-2.7	-3.3
Government debt (Maastricht, % of GDP)	62.9	62.4	63.4	64.6

Source: OECD Economic Outlook 117 database.

Rising spending pressures due to population ageing should be addressed by reforming the public pension and health systems. Gradually phasing out fiscal incentives for early-retirement, while improving working conditions and incentives for older workers to work longer, would help stabilise the pension system and raise labour supply. Complementing the recent hospital reform with further measures to strengthen outpatient care and continuing to accelerate the digitalisation of health services would help raise spending efficiency and treatment quality.

Strengthening funded occupational pension plans could improve social protection and help deepen capital markets. More than half of workers are covered by occupational pension schemes but a significant share of these schemes is based on book reserves and unfunded. Gradually phasing out book reserves by introducing mandatory enrolment in asset-backed occupational pension schemes for new employees, raising regulatory limits for investment in private assets and strengthening financial literacy among social partners would help deepen capital markets.

Fostering competition is key to revive business dynamism and economic growth

Barriers to entry and firm growth have weighed on business dynamism, innovation and productivity growth. Reducing the administrative burden, including by accelerating the digitalisation of the public sector, and making regulation more competition-friendly would help foster business dynamism, innovation and productivity growth.

Barriers to competition in services remain high.

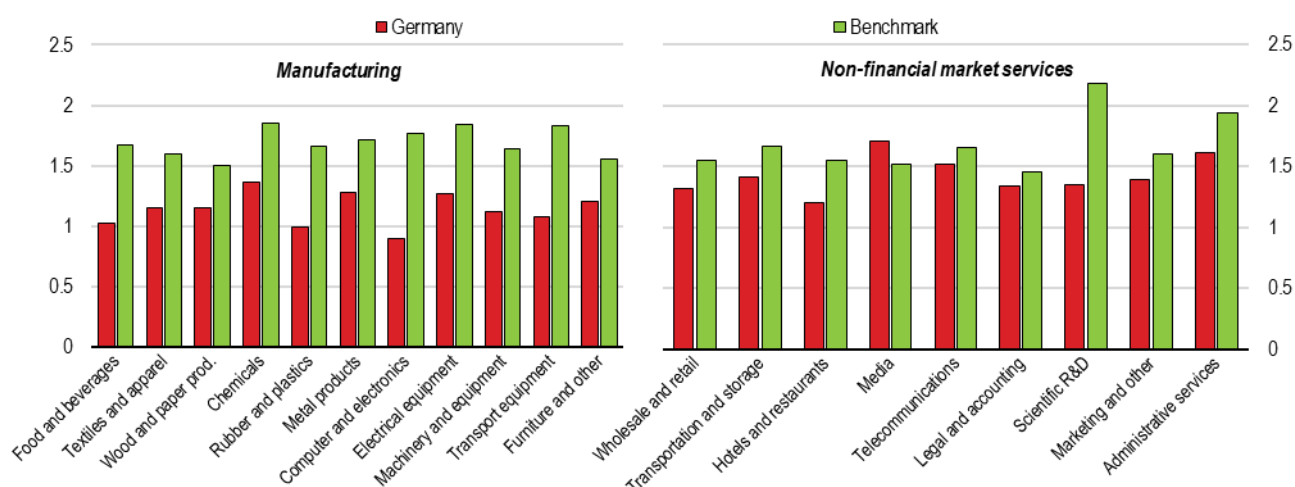
Occupational entry regulations and licensing requirements to open a business are high and should be reduced. The scope of state-owned enterprises (SOEs) is larger and their governance weaker than on average in the OECD, and the enforcement of competitive neutrality has room for improvement. Strengthening the power of the competition agency to challenge decisions by public bodies and regulators that hamper competition, while improving transparency on public subsidies to SOEs, would help. Continuing to fight corruption is key to level the playing field.

Accelerating the digitalisation of public administration would help reduce the administrative burden.

A one-stop shop for starting a firm does not exist, as many decentralised registers and administrative procedures are still not digitalised or inter-linked. Setting mandatory common IT standards and encouraging the harmonisation of administrative procedures across levels of government, while improving digital skills of public employees, is key. Recent efforts to review, simplify and harmonise regulations and administrative procedures across levels of government should be expanded.

Figure 2. Post-entry growth of firms is weak

Post-entry growth rate of firms, after 3 years, %



Source: OECD DynEmp (v3_2) database.

StatLink  <https://stat.link/wp8bvg>

Addressing skilled labour shortages is needed to support economic growth

High-skilled labour shortages are related to a decline in working hours and rising skill mismatch, and will be exacerbated by rapid population ageing. It is key to raise labour supply incentives, particularly for women, older and low-income workers, improve education and training policies, and facilitate skilled migration.

High part-time employment, particularly among women, leads to low working hours. Lowering the marginal tax rate on second earners while improving the provision of all-day childcare would help raise female labour supply. Social security and tax exemptions for part-time work (*Mini-jobs*) should be restricted to students, while withdrawal rates of social benefits should be reduced.

Fiscal incentives for early-retirement contribute to explain why many well-educated and healthy

workers leave the labour market before the legal retirement age, while skilled labour shortages are high. These incentives should be phased-out so that pension benefit reductions when retiring early are at least actuarially neutral.

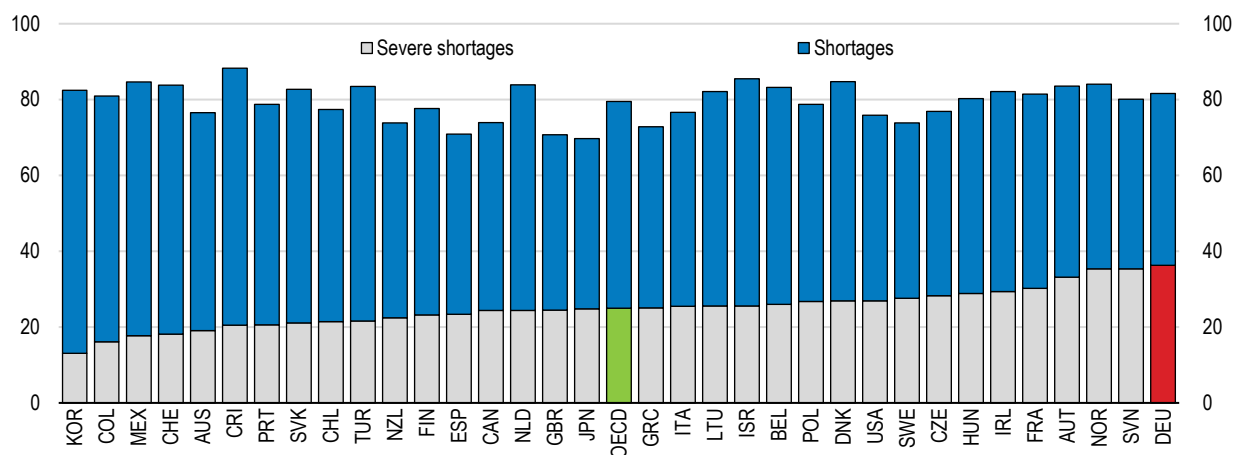
A high share of young adults has no professional degree due to weak foundational skills, while structural change will require more up- and re-skilling of workers. Improving adult education and the VET transition system, while raising the quality of

early-childhood and basic education, including by introducing a mandatory pre-school year focusing on foundational skills, should become a key priority. To raise training quality and participation, standardised quality certifications that set clear benchmarks for

content, teaching quality, and learning outcomes of training courses should be established, while funding for non-formal training and re-skilling should be expanded.

Figure 3. Firms face severe difficulties to fill open positions

Firms reporting difficulties recruiting, 2022-2023, % of firms



Source: Filippucci, Laengle and Marcolin (forthcoming) based on GFP Employer Survey data.

StatLink  <https://stat.link/pc8o7h>

Fostering regional development is key in times of structural change

Regional disparities remain high and green and digital transitions risk widening gaps. Fostering regional development requires better coordination of place-based with industrial, infrastructure and innovation policies, and improving the financial and administrative capacity of municipalities.

Inter-governmental transfers impacting regional development should be better coordinated. Place-based policies are not coordinated with conditional federal grants or industrial policies, which have much larger funding size. While objectives may differ, target areas often overlap, reducing spending efficiency.

Municipal revenue from recurrent taxes on immovable property is low, although house and land prices have strongly risen. Using updated property values to raise property tax revenue would improve municipal finances and incentives for spending efficiency, as local populations have stronger incentives to hold local governments accountable. Strengthening cooperation across municipalities, including joint procurement initiatives, has large potential to raise spending efficiency and improve administrative capacities.

Grid charges are higher in areas with high renewable energy supply. This reduces public

acceptance of renewables and incentives for firms to relocate to where green electricity is produced. As many of these regions are poorer, equalising network charges or further improving grid charge incentives for firms to relocate to areas with renewable electricity supply could support regional development objectives and the green transition.

The green and digital transitions will require reallocation of labour across sectors and firms and risk increasing inequalities. Expanding re- and up-skilling opportunities for the unemployed, including by completing VET degrees or formal education, and improving coordination between public employment services and local employers is key for reducing individual adjustment costs and addressing skilled labour shortages. Using revenue from carbon pricing to support vulnerable households can minimise adverse distributional effects more generally and raise acceptance for the green transition.

Main findings	Key recommendations
Strengthening fiscal policy and financial markets	
Investment is needed to improve defence capacity and address a large infrastructure backlog. Recent reforms of the fiscal framework allow additional borrowing to address these needs, while spending pressures will further increase due to rapid population ageing.	Create fiscal space for public investment by raising spending efficiency, reallocating spending and broadening the tax base, including by reducing tax expenditures and strengthening tax enforcement.
Effective labour taxes are high, reducing labour supply incentives. Revenue from property, capital gains and inheritance taxes and excise duties on alcohol and tobacco is low relative to other OECD countries.	Lower personal income taxes, while raising revenue from property taxes and excise duties on alcohol and tobacco and reducing tax expenditures in capital income, inheritance, VAT and environmental taxation.
Around half of workers are covered by an occupational pension scheme but a significant part of these schemes are based on book reserves and are unfunded, reducing available funds in capital markets.	Gradually phase out book reserves by introducing mandatory enrolment in asset-backed occupational pension schemes for new employees.
Fostering competition to revive business dynamism and productivity growth	
High administrative burden is related to complex regulations and administrative procedures that differ across Laender and municipalities, hampering firm entry and growth in many markets, e.g. in construction.	Expand efforts to review, simplify and harmonise existing regulations and administrative procedures across levels of government.
The administrative burden for starting a company is high. A one-stop shop does not exist because many decentralised registries and administrative procedures are not yet digitalised or interlinked.	Set mandatory common standards on design and inter-linkage of data and IT tools, while addressing legal hurdles to the inter-linkage of decentralised registries, and establish a one-stop shop for all administrative procedures required to start a firm.
Barriers to competition in services remain higher than the OECD average. Many workers are subject to licensing and qualification requirements, while labour shortages are a major supply constraint.	Reduce occupational entry restrictions, particularly in crafts and trade related occupations.
The new market investigation tool requires consensus with the regulatory agency to address market distortions. Recent licensing decisions for local infrastructure provision have favoured municipal SOEs.	Strengthen the power of the competition agency to challenge decisions by public bodies and regulators that hamper competition.
Capacity constraints, duplications and weak cooperation between law and tax enforcement authorities of the Laender and the federal level complicate the fight against money laundering and tax crimes.	Implement plans to establish the Federal Financial Police, and strengthen its investigative capacities, data access and cooperation with enforcement agencies of the Laender.
Addressing skilled labour shortages	
More than one sixth of the workforce works in part-time jobs exempted from employees' social security contributions (Mini-Jobs), where social protection, training access and career prospects are low.	Restrict Mini-Jobs to school and university students and make social security contributions increase progressively for earnings below the current Mini-job threshold.
The effective age of labour market exit is significantly below the legal retirement age. Early-retirement schemes are mainly used by workers with higher education and incomes and above-average health status.	Phase-out fiscal incentives for early-retirement so that pension benefit reductions when retiring early are at least actuarially neutral, and link the statutory retirement age to life expectancy.
The joint income taxation of married couples leads to high marginal income tax rates for second earners. More than half of women work part-time in jobs for which they are over-qualified.	Lower the marginal tax rate for second earners by reforming the current joint taxation of couples.
The lack of harmonised quality standards and certifications in the fragmented CVET system weighs on training quality and creates information asymmetries hampering training participation.	Create standardised quality certifications that set clear benchmarks for content, teaching quality, and learning outcomes of CVET courses.
Educational outcomes have deteriorated and educational inequality remains high. The quality of early-childhood education is key for skills development later in life.	Introduce a mandatory high-quality pre-school year and lengthen the school day in primary school while raising hours for teaching of foundational skills.
Fostering regional development in times of structural change	
Conditional federal grants or industrial policies are not coordinated with place-based policies. While objectives may differ, target areas often overlap.	Better coordinate conditional federal grants and industrial policies with place-based policies to improve spending efficiency and the effectiveness of regional development policies.
Municipal revenue from recurrent taxes on immovable property is low, although house and land prices have strongly risen and municipal finances suffer from strong cyclicalities of revenues.	Use the recent update of property values to better link property taxation to market values and raise revenue, while providing tax deferrals to cash-poor homeowners.
Grid charges are higher in areas with high renewable energy supply, reducing public acceptance of renewables and incentives for firms to relocate to where green electricity is produced.	Ensure that recent reductions on network charges are passed on to users and consider further improving grid charge incentives for firms to relocate to areas with renewable electricity supply.
Many workers will need to change jobs during to the green and digital transitions. Formal vocational education and training courses (VET) are of high quality.	Expand opportunities for the unemployed to complete formal VET degrees and further improve coordination between public employment services and local employers.



1 Strengthening fiscal policy and continuing structural reforms to revive economic growth

Robert Grundke

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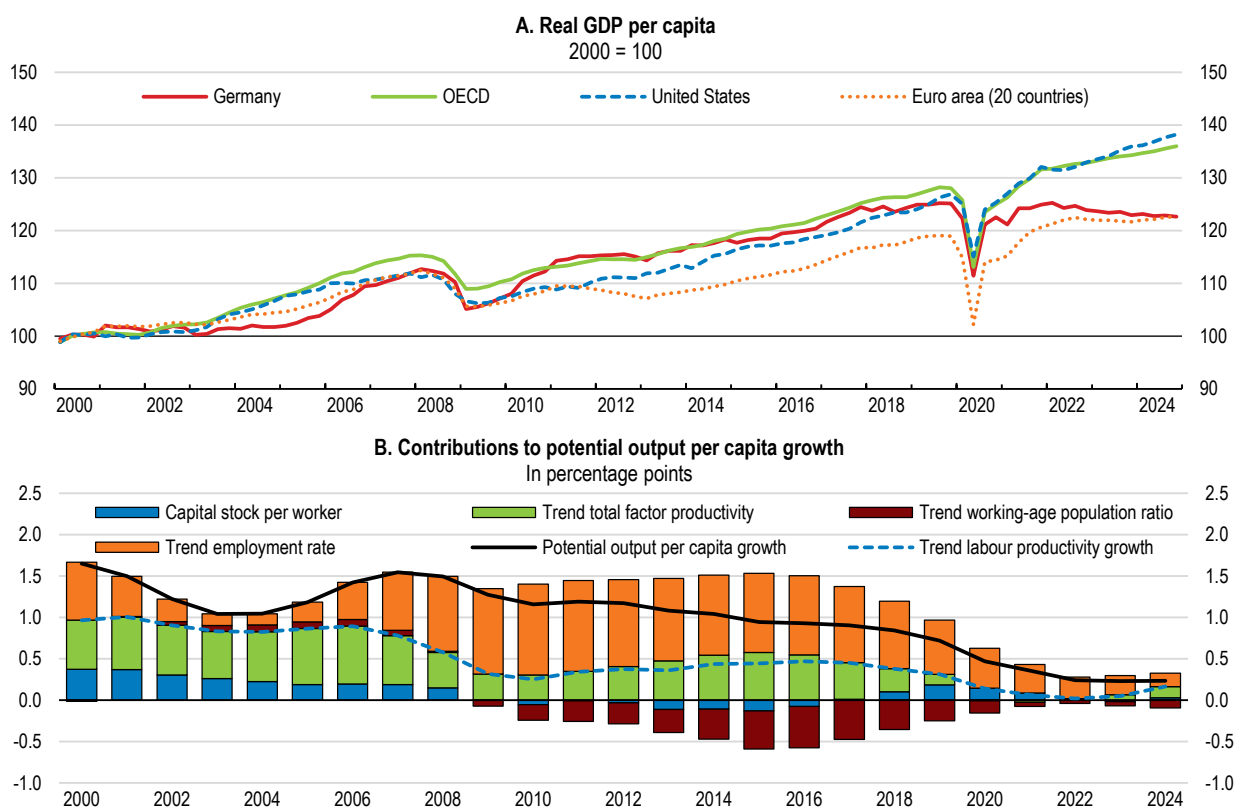
After a decade of strong export-led growth, the COVID-19 pandemic, Russia's war of aggression against Ukraine and rising trade tensions have hit the German economy and emphasised the need to accelerate structural reforms. The recent reform of fiscal rules will allow to raise spending to improve defence capacity and address a large infrastructure backlog. However, to ensure medium-term fiscal sustainability, it should be combined with raising spending efficiency, reallocating spending and broadening the tax base, while addressing rising spending pressures due to population ageing by reforming the pension, health and long-term care systems. To ensure that increasing domestic demand is matched by supply, it is key to address skilled labour shortages and reduce the high administrative burden and barriers to competition, which have weighed on business dynamism, innovation and productivity growth. To deepen capital markets and support access to finance for start-ups, strengthening asset-backed occupational pension funds and fostering financial literacy would help.

1.1. Continuing structural reforms and further reducing policy uncertainty is key for reviving economic growth

1.1.1. The economy is stagnating due to a mix of exogenous shocks and structural factors

After a decade of strong export-led growth, decreasing unemployment, fiscal surpluses and declining public debt, the COVID-19 pandemic, Russia's war of aggression against Ukraine and rising trade tensions have hit the German economy (Figure 1.1). Supply chain bottlenecks during and after the pandemic and rising trade tensions have affected it more than others. Its manufacturing sector accounts for a higher share of GDP than in many other OECD countries and it is strongly integrated into global value chains, in particular within Europe and with the United States and China. Moreover, although a strong dependency on Russian energy imports was reduced quickly, energy prices remain higher than before the war, lowering the terms of trade and hampering production in energy-intensive industries (Figure 1.2). In addition, high inflation due to supply chain disruptions and high energy prices as well as heightened uncertainty have weighed on domestic demand.

Figure 1.1. Economic growth has slowed down



Source: OECD calculations based on OECD Quarterly National Accounts database and OECD Economic Outlook database.

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The recent exogenous shocks are compounded by longer-term structural challenges which have already weighed on economic growth before the pandemic started (Figure 1.1, Panel B). High administrative burden and barriers to entry, growth and exit of firms have hampered business dynamism, investment and innovation, including the adoption of digital technologies by firms, weighing on productivity growth (see Chapter 2). Rising skilled labour shortages exacerbated by rapid population ageing and a decline in working hours per worker

have weighed on labour supply (see Chapter 3). Complex planning and approval procedures and weak infrastructure planning capacity at the municipal level have hindered public investment in many areas, including in schools as well as transport and digital infrastructure (see Chapter 4). Continuing to address these challenges through a comprehensive set of structural reforms discussed in this Survey is key to revive economic growth and raise living standards. According to OECD simulations, these reforms would allow raising potential GDP per capita growth by about 0.8 percentage points per year until 2035 (Table 1.1). Funding these reforms while at the same time addressing rising spending pressures due to rapid population ageing will require raising spending efficiency, reallocating spending and broadening the tax base (see below).

Table 1.1. Structural reforms are needed to raise living standards

Average yearly additional growth in GDP per capita during the next 10 years (in percentage points)

Structural reform	Additional GDP per capita growth (in percentage points)
Reducing the administrative burden, improving public governance and making regulation more competition-friendly	0.2
Reducing labour taxes, particularly for low-income and second earners	0.1
Raising public investment in infrastructure and R&D	0.1
Improving adult education and training opportunities	0.1
Improving access to childcare and early-childhood education	0.1
Improving education quality, particularly for children from disadvantaged households	0.1
Coupling the legal retirement age to life expectancy from 2031	0.1
Total	0.8

Note: The effects of structural reforms are quantified using the methodology of Guillemette and Turner (2021^[1]). The set of structural reforms comprises: improving the Product Market Regulation Index to the average of top five performers and the quality of public governance by half of the difference to the average of top five performers; a reduction in labour tax wedges by a quarter of the difference to the OECD average; increasing public investment as a share of GDP to the OECD average and R&D expenditure to the average of top five performers; improving access to adult education to lower the share of adults without completed secondary education or VET degrees to the average of the top five performers and raising spending for active labour market policies by 25%; improving access and quality of childcare and early childhood education by increasing public spending as a share of GDP to the average of top five performers; reducing the distance between educational outcomes of children from the highest and the lowest decile of the household income distribution and average education outcomes to the ones observed in Canada, which is a top performer; linking the legal retirement age to life expectancy from 2031 (increase by two thirds of a year for each additional year of life expectancy). The scenario for improving educational quality shows the average yearly additional GDP per capita growth from 2025 until 2060, as the effects of changes in educational quality will affect human capital of the workforce with a larger time lag.

Source: OECD Long-term Model.

1.1.2. The economy has weathered the recent crises relatively well

The government has used the ample fiscal space accumulated during the 2010s to set up large support programmes for firms and households which has stabilised the economy during the pandemic and the energy crisis. Pandemic-related support, including grants to firms and the short-term work scheme, amounted to about 5.5% of GDP from 2020 to 2022. Energy price support totalled about 1% of GDP in 2022 and 2.4% in 2023. The strong acceleration of planning and approval procedures for the construction of LNG terminals has enabled a quick substitution of Russian pipeline gas with gas from other sources. The design of energy price support measures preserved energy saving incentives for firms and households, which helped to reduce gas demand by about 20% due to fuel switching and import substitution of some energy-intensive inputs (Moll, Schularick and Zachmann, 2023^[2]). Following the explosion of the Northstream gas pipeline in September 2022, these measures were key to avoid a much deeper economic downturn, which had been forecasted by many observers in case of a breakdown of Russian gas supply.

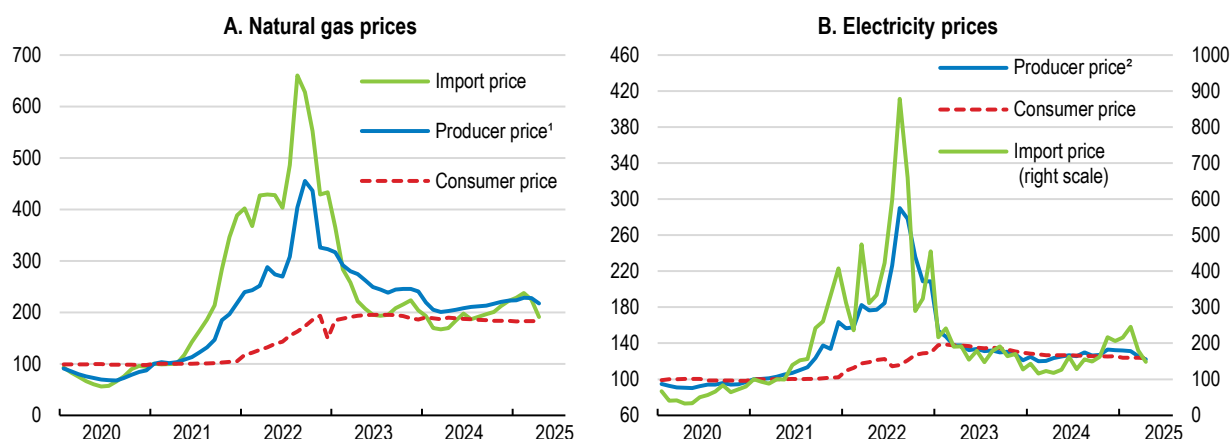
However, a better targeting of support measures at vulnerable households and highly exposed firms could have lowered fiscal costs while facilitating necessary structural change. In particular, the design of grants to firms and the short-term work scheme during the pandemic likely hindered the reallocation of production factors to expanding sectors and firms, thereby weighing on business dynamism and productivity growth (see

Chapter 2). To better design and target support measures during the next crisis, policy impact evaluation should improve, which notably requires abolishing legal constraints to access, merge and analyse administrative micro data across levels of government, improving data and IT capacities and fostering a culture of policy impact evaluation (see the previous OECD Economic Survey of Germany and below).

Together with large support programmes, high equity ratios and market power have helped firms cope with higher input and energy prices and the stagnating economy. The average equity ratio of small and medium size firms had strongly increased from 18% in 2002 to 32% in 2019 and stood at 31% in 2024 (KfW, 2024^[3]). The average equity ratio of manufacturing firms has risen from 29% in 2019 to 34% in 2023 (Bundesbank, 2023^[4]). Moreover, due to strong positions in global markets, many firms were able to pass on higher input and energy prices to foreign consumers and clients, contributing to rising firm profits until the end of 2023 (Figure 1.3, see also the previous OECD Economic Survey of Germany). In domestic markets, market power and high mark-ups have also helped many firms to absorb input price shocks (see Chapter 2). Although firm insolvencies have started to accelerate in 2024, they remain below the pre-pandemic ten-year average (see below).

Figure 1.2. Energy prices have come down but remain higher than before the war in Ukraine

Gas and electricity prices, January 2021 = 100



1. Producer price index of natural gas when supplied to industry.

2. Producer price index of electricity when delivered to special contract customers.

Source: Federal Statistical Office.

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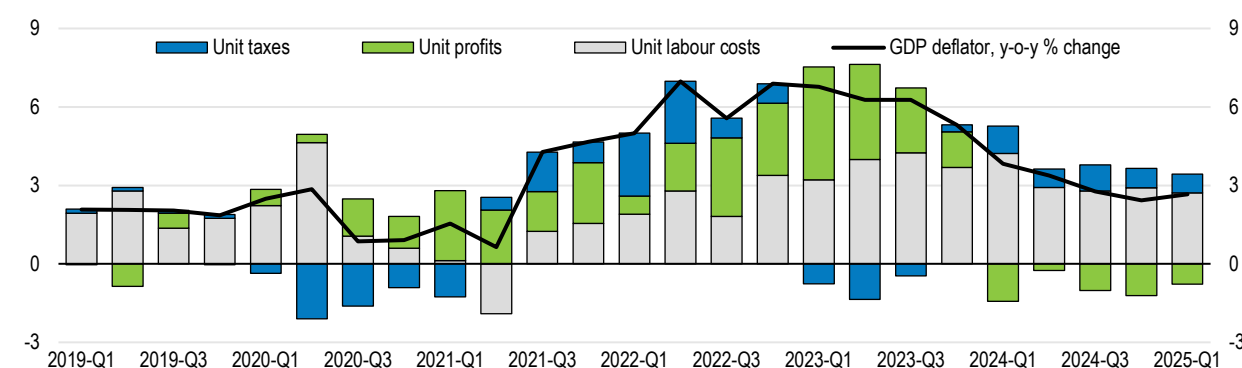
Headline inflation has fallen rapidly and monetary policy started to ease, while core inflation remains sticky. The quick substitution of Russian energy supply and significant energy savings have contributed to a rapid decline of energy prices and falling headline inflation (Figure 1.2, Figure 1.4). Fiscal consolidation in 2024, including the phase-out of energy-price-support measures, has helped to reduce inflationary pressures. The European Central Bank (ECB) has started to ease monetary policy with policy rates declining from 4% in June 2024 to 2.25% in April, while market inflation expectations over the next 12 months are well-anchored at the ECB's target of 2%. However, core inflation remains high at 3.1% in April due to high services price inflation of 4.5%, driven by strong nominal wage gains.

Rising nominal wages on the back of a tight labour market have supported the purchasing power of households and private consumption (Figure 1.4). Nominal wages per employee increased by 5.4% in 2024, pushing up real wages by 3.1%. The strong increase of the minimum wage from 48% to 60% of the median wage in October 2022 has particularly increased wages for workers in the first quintile of the earnings distribution. However, inflation for lower-income households has been particularly high, mitigating the effects of the minimum wage increase on real incomes (see Chapter 3). In 2023 and 2024, one-off payments of up to EUR 3 000 were exempted from income tax and social security contributions, which has benefitted about 86% of all employees

covered by a collective bargaining agreement, with an average bonus payment of EUR 2 680. The phase-out of this tax exemption in January 2025 will help to avoid a wage-price spiral and bring down core inflation. However, the temporary nature of the one-off payments might also partly explain why many households preferred to save a larger part of the additional income, thus mitigating its effects on private consumption. Although the labour market has started to cool, it remains robust (Figure 1.4). Employment continued to increase in 2024 reaching an all-time high of 46.3 million employees. The unemployment rate remains low and vacancies are high relative to historical norms, still signalling skilled labour shortages (see Chapter 3). The slight rise in the unemployment rate since early 2023 is mainly explained by the arrival of about 1.3 million Ukrainian refugees, whose employment rate is relatively low (see Chapter 3).

Figure 1.3. Many firms were able to pass on higher input costs and profits have been high

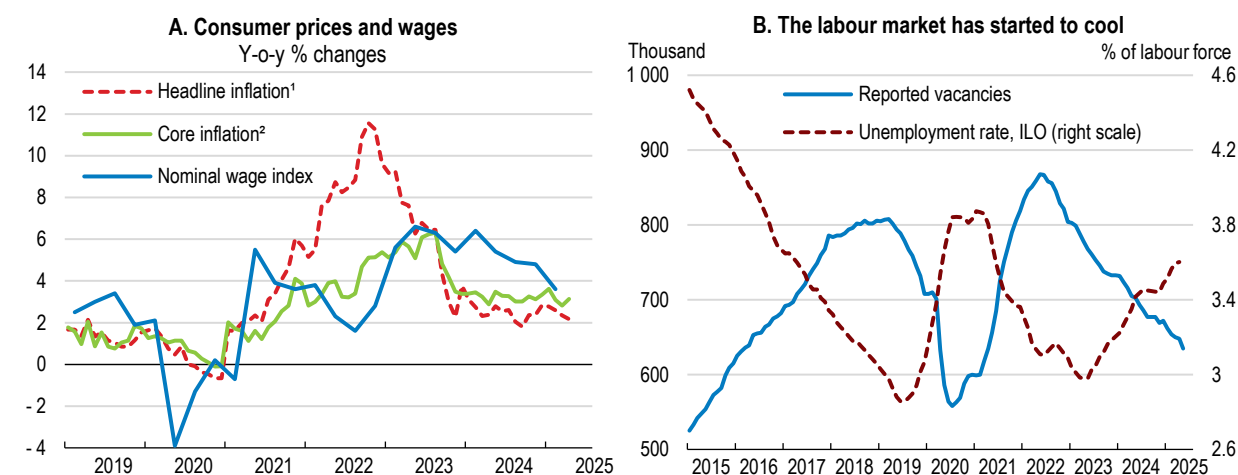
GDP deflator decomposition by income side, contributions, % points



Source: OECD calculations based on OECD National Accounts database.

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Figure 1.4. Inflation has come down and nominal wages have increased strongly



1. Harmonised index of consumer prices.

2. Harmonised index of consumer prices excluding food, energy, alcohol and tobacco.

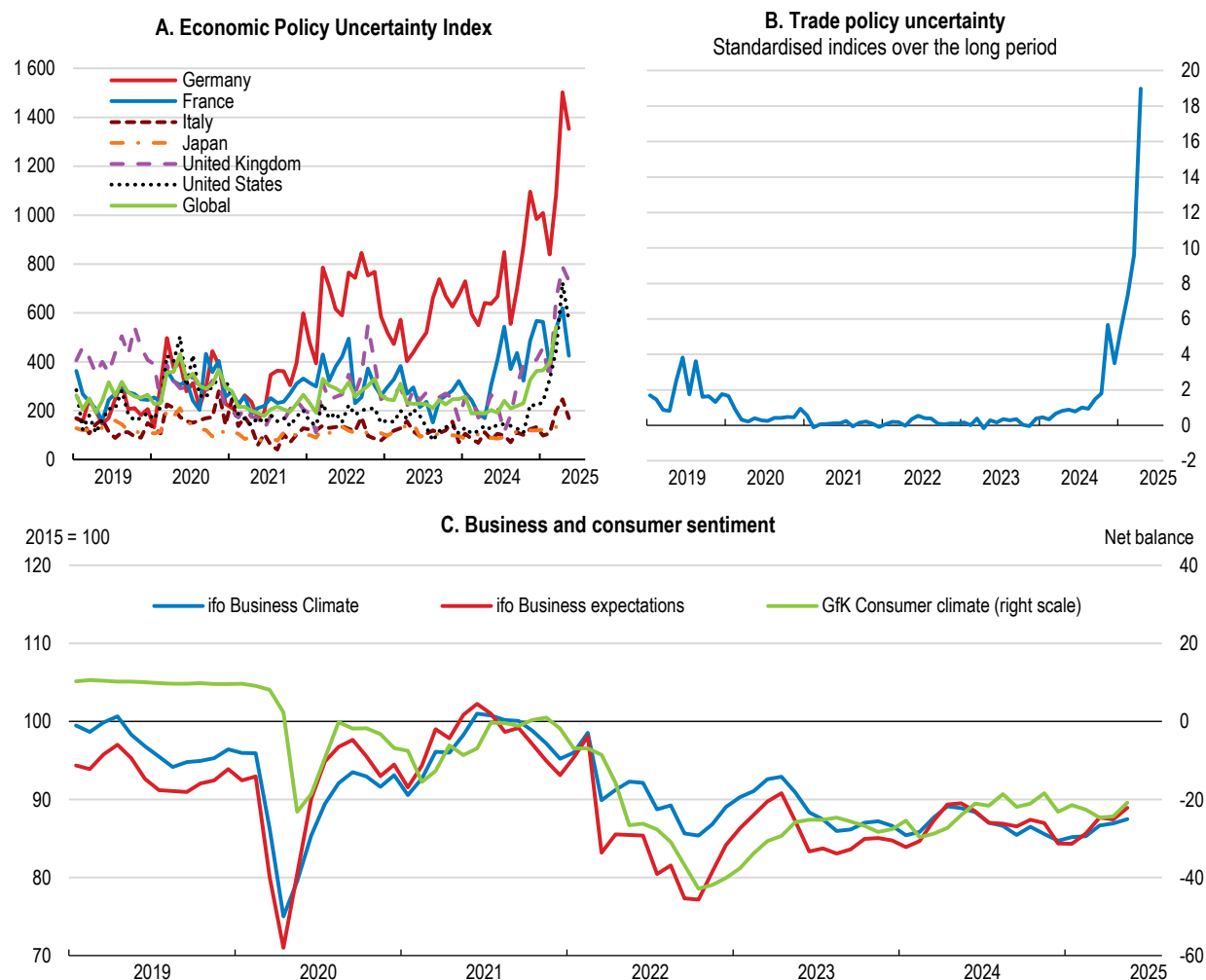
Source: Federal Statistical Office; and Eurostat.

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High uncertainty has weighed on investment and private consumption (Figure 1.5). The war in Ukraine has threatened energy security, while at the same time emphasising the need to invest more in defence capacity. Rising trade policy tensions and supply chain disruptions have weighed on investor confidence, particularly in export-oriented manufacturing sectors. This has been compounded by high uncertainty regarding fiscal policy and the design of measures to support households and firms during the green transition. The ruling of the

Supreme Court in November 2023, which had declared the use of emergency related borrowing authorisations to finance investments in consecutive years as unconstitutional, led to a reduction of funds available to support firms and households during the green transition and a sudden phase-out of energy support measures, leading to a stronger-than-expected fiscal tightening in 2024. Subsidies for electric vehicles (EV) were phased out in January 2024, which contributed to a large drop in car sales, and plans to reduce grid charges and extend subsidies to reduce energy costs of firms until 2030 were cancelled. Conflicts about fiscal policy, including on how to fund defence spending and military aid for the Ukraine, and the design and financing of support measures for the economy and the green transition finally led to the fall of the coalition government in November 2024 and the failure to approve the federal budget for 2025. Although a provisional budget for 2025 extended spending levels from 2024 to 2025, new public investment projects requiring budget approval have been put on hold resulting in tighter fiscal conditions than expected (see below).

Figure 1.5. High policy uncertainty has weighed on investor and consumer confidence



Source: <http://www.policyuncertainty.com/index.html>; <https://www.matteiacoviello.com/tpu.htm> on May 19, 2025; OECD calculations; ifo business surveys; GfK.

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Since 2022, a broad range of reforms has been conducted, which will positively affect potential growth and living standards in the medium term (Box 1.1). However, after major economic and social disruptions due to the pandemic, the war in Ukraine and the energy crisis, some reforms, particularly related to the green transition, might have also contributed to further public discontent and rising policy uncertainty. In particular, a 2023 draft bill prohibiting the new installation and replacement of irreparably damaged fossil fuel-based heating systems in residential and non-residential buildings to be implemented gradually after 2024 caused public discontent and conflicts within the coalition government, as more than three fourths of households still use fossil-fuel based heating systems. Although the green energy transition is a key policy lever to raise energy security and lower dependency from energy imports, such regulation might have weighed on German households already suffering from the economic and social consequences of the pandemic and the energy crisis (Normenkontrollrat, 2024^[5]). As recommended by the previous OECD Economic Survey of Germany, the country should strengthen carbon pricing, including by abolishing tax exemptions for fossil fuels and other environmentally harmful subsidies, while using the additional revenues to support vulnerable households. This would help reduce emissions where it is less costly and raise support for the green transition. Importantly, integrated communication of large structural reform packages is key for raising public acceptance and addressing resistance of interest groups. Making costs and benefits of reforms transparent and combining policy measures so that eventual losses for some parts of the population are adequately compensated can help the successful implementation of reforms. While it is welcome that the new federal government intends to simplify regulation and strengthen carbon pricing and technological openness, the announced reinstatement of previously phased out fossil fuel subsidies in agriculture are a step in the opposite direction.

While uncertainty related to US trade policy has strongly increased, domestic policy uncertainty has declined since the federal elections in February (Figure 1.5). This is due in particular to a reform of fiscal rules in March, which will allow for higher defence and infrastructure investment spending (see below), as well as a relatively quick and successful end of coalition negotiations. The policy plans laid out in the coalition treaty of the three coalition partners emphasise the need to strengthen defence and internal security, address the large infrastructure backlog, revive the stagnating economy, modernise and digitalise the public administration, and address skilled labour shortages. To revive the economy, the new government plans to raise depreciation allowances for equipment investments from 2025-27 and lower the corporate income tax from 2028 by one percentage point per year over a period of five years, reduce the electricity tax and network charges, raise subsidies for energy-intensive firms, and support the car industry by increasing subsidies for electric vehicles and the commuter allowance. Labour supply incentives are planned to be raised by exempting additional income from working extra-hours, wage premia to switch from part-time to full-time work as well as earnings of workers above the statutory retirement age from labour taxes. A general reduction of personal income taxes for lower-to-middle incomes is planned from 2027. However, the financing of many of the announced measures remains unclear, in particular as the coalition treaty falls short of addressing the rising spending pressures due to rapid population ageing (see below). With the government having been elected in early May, a budget for 2025 and 2026, including detailed investment plans, as well as a medium-term financial plan should be approved quickly to further reduce policy uncertainty.

Box 1.1. Recent reforms at the federal level

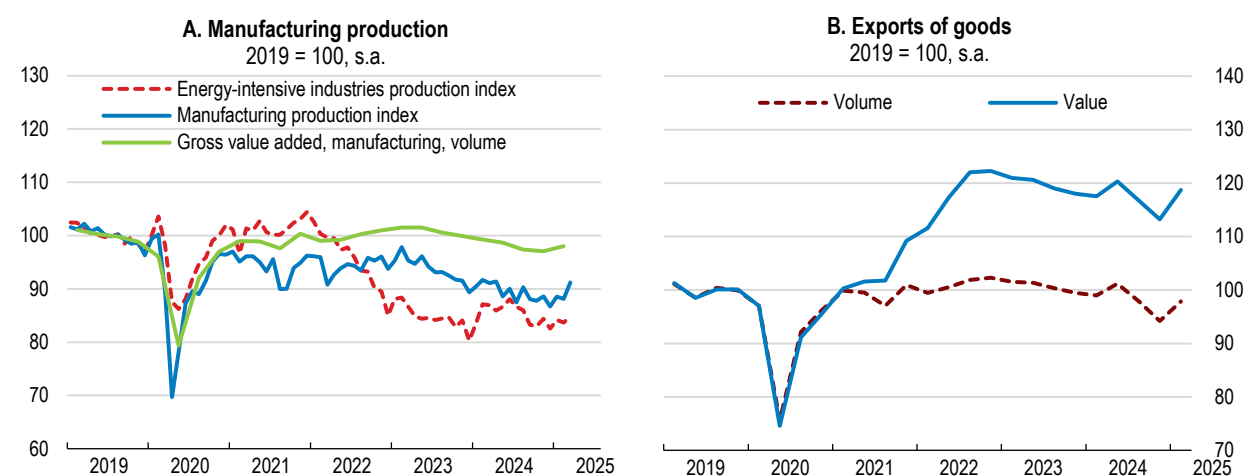
The federal government has enacted many reforms related to a broad range of areas since 2022:

- **Policies to accelerate the green transition** (simplifying planning and approval procedures for renewable energy and grid expansion projects, elimination of the electricity surcharge for renewable energy, increased flexibility in sectoral emission targets to allow for compensation by other sectors, higher energy efficiency standards for new constructions and renovations, newly installed heating systems have to run with at least 65% of renewable energy from 2028)
- **Tax policy** (adjusting the income tax schedule to inflation, raising depreciation allowances for investments, raising the threshold until which social security contributions increase progressively (*Midi-jobs*), reduction of fossil fuel subsidies for agriculture)
- **Migration policies** (skilled migration was facilitated by introducing a job search visa and facilitating work permits and visas for migrants with a job offer, refugees are now permitted to work after 6 months)
- **Labour market policies** (increase of the minimum wage, reform of the basic income support to allow for more fundamental re- and up-skilling of the unemployed, reduction of withdrawal rates of social benefits to improve labour supply incentives)
- **Education and training policies** (introduction of a training guarantee for applicants that have not found a VET position, expansion of aid for trainees and students, increased financial incentives for firms and workers to participate in adult learning, platform to reduce information asymmetries in adult learning market, support programme for disadvantaged schools)
- **Health policies** (hospital network reform partly replacing case-based payments with retention allowances, introduction of the digital patient file, health data access law facilitating the use of health data for research objectives and raising spending efficiency)
- **Reducing the administrative burden** (introduction of stakeholder consultations to improve regulatory quality and reduce compliance costs, reduction of reporting requirements in some administrative procedures, modernisation of the building code, started coordinated simplification and acceleration of planning and approval procedures at the federal and Laender level)
- **Competition enforcement** (a market investigation tool has been introduced to correct for market distortions, such as tacit collusion or vertical integration, which are hard to address with traditional enforcement tools)
- **Fighting corruption and money laundering** (strengthening of the lobby register to include contacts with lower levels of the administration, introduction of a legislative footprint, broadening the definition of corruption for members of parliament)
- **Defence and national security** (an extra-budgetary fund of EUR 100 billion was established to improve the defence infrastructure, while defence procurement was accelerated)

In addition to weak domestic demand, export volumes have stagnated and recently declined below pre-pandemic levels due to several factors (Figure 1.6). Supply chain bottlenecks, which had increased input prices and weighed on manufacturing production and exports during and after the pandemic, have eased since 2022, notably supporting machinery and equipment, automotive and electronic goods industries. However, at the same time, production and exports of energy-intensive industries declined significantly due to increasing energy prices following the war in Ukraine. High interest rates reduced global demand for investment goods, which make up for a large part of German exports (Figure 1.7), and this was compounded by a weak Chinese economy and rising trade tensions. The United States has replaced China as Germany's most important trading partner outside the EU in 2024. However, recently rising uncertainty related to US trade policy is strongly affecting business expectations, particularly in export-oriented manufacturing (Figure 1.5). At the same time, German manufacturers face increasing competition from Chinese producers in their export markets. Despite

a recovery in export markets due to monetary easing, exports volumes have declined in the second half of 2024 and the competitiveness of manufacturers has decreased (Figure 1.8). Rising unit labour costs have also contributed to weaker export performance, emphasising the need to foster business dynamism and productivity growth and address skilled labour shortages to improve international competitiveness (see Chapter 2 and 3). This is also important to attract more foreign direct investment, the inflow of which has decelerated since 2022 (Bundesbank, 2024^[6]).

Figure 1.6. Manufacturing production declined but value added has performed better

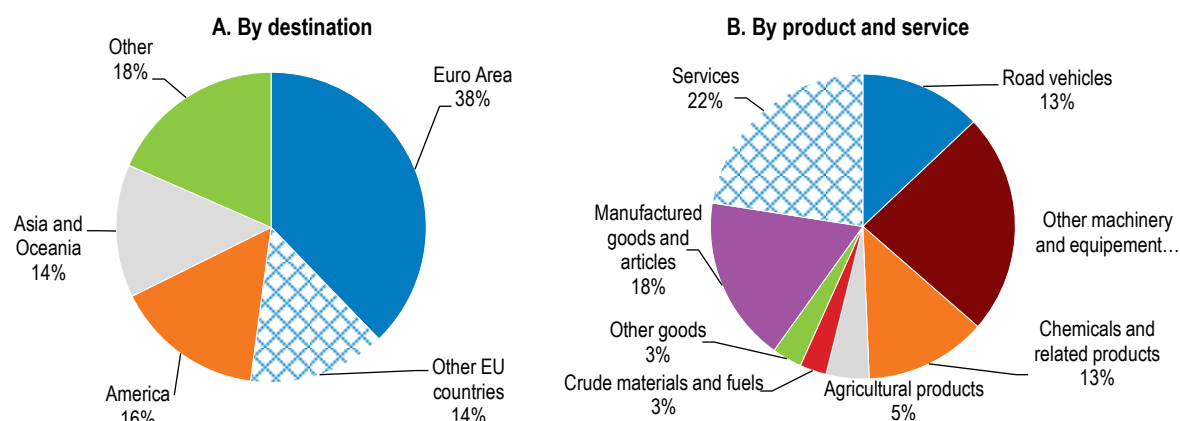


Source: Federal Statistical Office; OECD National Accounts database.

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Figure 1.7. Manufactured capital goods dominate exports

Exports of goods and services, % of total, 2023



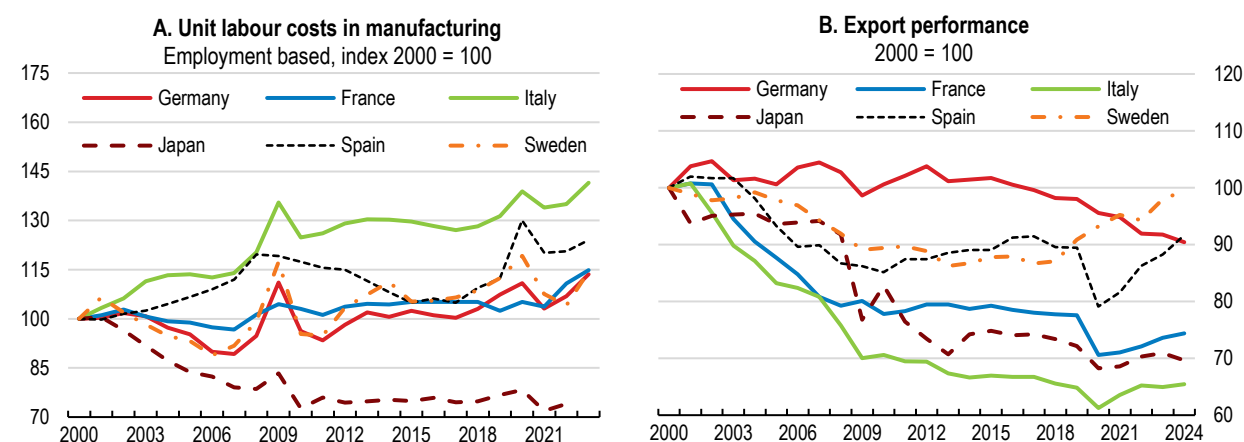
Source: OECD calculations based on IMF DOTS Database; UN Comtrade Database; and OECD Trade Statistics.

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Manufacturing firms have adjusted to higher input prices and increasing competition from China by shifting towards higher value-added products. In the aftermath of the pandemic, the value of exports has increased much more than volumes, and firm profits strongly increased until the end of 2023 (Figure 1.6, Figure 1.3). Although this was partly due to market power of German exporters in global markets, which allowed them to pass on higher input costs to foreign clients (see the previous OECD Economic Survey of Germany), a shift to higher value-added products has played an important role. Price-adjusted value added in manufacturing has remained above production since the pandemic (Figure 1.6). Production has shifted from producing energy-

intensive inputs towards more sophisticated products in the chemical industry. In the automotive industry, scarce and more expensive inputs due to supply chain bottlenecks were rather used for vehicles with a higher value-added content and higher margins. Even before the pandemic, spending for research and development in the automotive industry had increased, signaling a structural shift towards higher value-added products. Across manufacturing sectors, the weight of ICT goods in total production and exports has risen strongly due to strongly rising global and domestic demand for ICT goods.

Figure 1.8. Export competitiveness has deteriorated



Note: Export performance is measured as actual growth in exports relative to the growth of the country's export market.

Source: OECD Productivity Database; OECD Economic Outlook database.

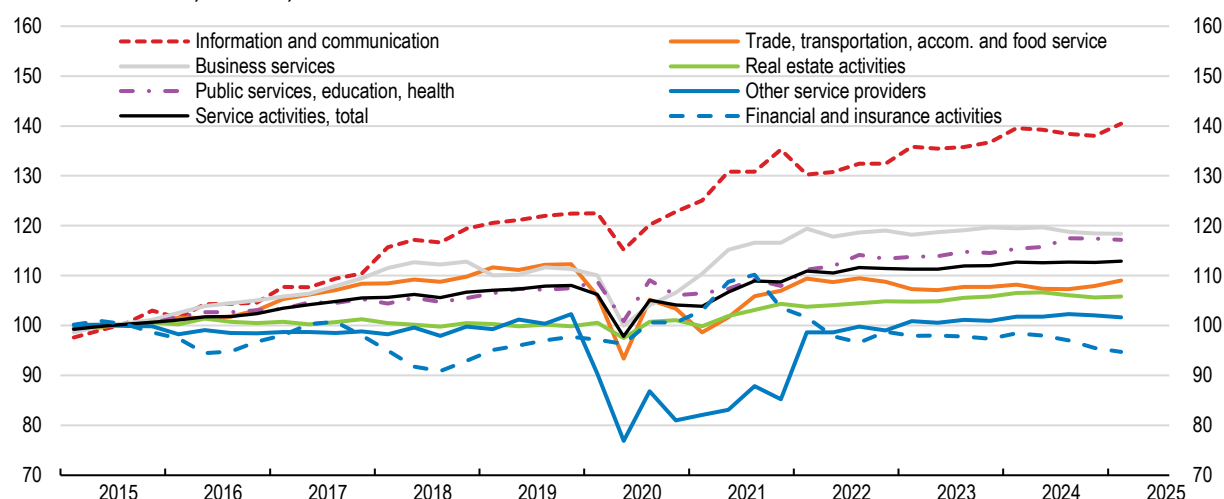
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Structural change within manufacturing has been complemented with a structural shift of economic activity towards services (Figure 1.9). ICT and business services have strongly increased value-added and employment. The public sector has also expanded value-added and employment, in particular in health and education services. Employment in manufacturing remained relatively constant throughout the pandemic and the energy crisis due to the short-term work scheme and other support measures, but also because of labour hoarding of firms in the context of skilled labour shortages. However, it has recently started to decline by 50 000 jobs in 2024. Structural change and the reallocation of workers to thriving sectors and firms, also within manufacturing, are key for fostering productivity growth and should be facilitated by reducing barriers to entry, growth and exit of firms (see Chapter 2). However, workers should be supported in their transition to new jobs by improving vocational training and adult learning opportunities (see Chapter 3). To address high energy prices and support manufacturing firms in a horizontal way, the government should focus its efforts on accelerating the expansion of renewable energies and the modernisation of the electricity grid (see Chapter 4).

To support export-oriented manufacturing and services sectors in times of rising trade policy uncertainty, in particular related to US tariff and non-tariff barriers, the government should step up efforts to reduce barriers to trade with key trading partners. Within the EU, the potential to further reduce barriers to services trade and strengthen the common market remains high (Dorn, Flach and Gourevich, 2024^[7]). Analysis conducted for this Survey shows that further reducing barriers to digital services trade could help raise productivity, also in manufacturing sectors that use these services as inputs (Box 1.2). In Germany, there is also scope to reduce high administrative burden and barriers to entry and growth of start-ups, particularly in services (see Chapter 2).

Figure 1.9. ICT and business services have expanded strongly

Gross value added, volume, 2015 = 100



Source: Federal Statistical Office.

StatLink  <https://stat.link/fhkrtw>**Box 1.2. The effects of digital services trade restrictions on firm-level productivity and trade**

A study conducted for this Survey examines the impact of digital services trade restrictions on productivity using an international firm level panel dataset (ORBIS) combined with the OECD Digital Services Trade Restrictiveness Indicator (DSTRI) and novel data on enforcement of the General Data Protection Regulation (GDPR) of the EU. Firm-level productivity is regressed on regulatory stringency in digital services, an index for GDPR enforcement as well as dummy variables for country-sector, sector-year, firm age and firm size, while a second specification uses firm fixed effects. Using data on bilateral services trade flows (BACI) and a gravity model, the study also analyses the impact of services trade restrictions and the GDPR enforcement on service trade flows between countries.

The overall effect from digital services trade restrictions on productivity is negative, with the negative effect being more pronounced for larger firms. In particular, restrictions that hamper data flow and connectivity have a strong negative effect on productivity of firms in all sectors. However, stricter local presence requirements for providing digital services and restrictions related to payment systems have a positive effect on productivity, indicating that they may shield domestic services firms from foreign competition. Stricter enforcement of the GDPR, measured as the number of lawsuits related to GDPR, shows a negative effect on productivity. However, the introduction of the GDPR has increased trade in digital services within EU countries.

1.1.3. Rising domestic demand will lead the recovery

GDP will grow by 0.4% in 2025 and 1.2% in 2026 (Table 1.2). Private consumption will increase due to low inflation, higher nominal wages and decreasing domestic policy uncertainty following the formation of a new government. High trade policy uncertainty will hamper investments in export-oriented manufacturing. However, as investment needs due to supply-chain realignments, digitalisation and the green transformation are high, overall private investment will pick up, supported by high equity rates of firms, declining interest rates and decreasing domestic policy uncertainty, including on the financing of measures to support firms during the green transition. Public investment in defence and infrastructure will rise strongly due to the

increased flexibility in the fiscal rules and a large investment backlog. However, rising US tariffs and trade policy tensions will weigh on export demand.

The fiscal stance will tighten in 2025 by 0.3% of GDP and expand by 0.9% of GDP in 2026. Due to the fall of the previous coalition government and the failure to conclude negotiations on the 2025 budget, a provisional budget for 2025 extended nominal spending levels from 2024 to 2025. After the formation of a new government, a recent reform of the national fiscal rules will provide significant fiscal space to raise investments in defence and infrastructure during the next years (see below). However, the effects of this reform on public investment will start to materialise in 2026 as the approval of the 2025 budget and detailed investment plans as well as infrastructure planning and procurement procedures will take time. With restrictive fiscal policy in 2025, a large negative output gap and lower energy prices, headline inflation will fall to 2.4% in 2025 and 2.1% in 2026. However, core inflation will remain sticky, reflecting the impact of wage gains amidst skilled labour shortages and rising investment demand.

Table 1.2. Macroeconomic indicators and projections

Annual percentage change, volume (2020 prices)

	2021 Current prices (billion EUR)	2022	2023	Estimates and projections		
				2024	2025	2026
Gross domestic product (GDP)	3 667.3	1.4	-0.1	-0.2	0.4	1.2
Private consumption	1 837.5	5.6	-0.2	0.2	0.9	1.0
Government consumption	820.2	0.1	-0.1	3.2	1.2	1.5
Gross fixed capital formation	774.6	0.0	-0.7	-2.5	2.3	4.5
Housing	248.6	-4.1	-3.7	-4.9	0.6	1.7
Final domestic demand	3 432.2	3.0	-0.3	0.3	1.3	1.9
Stockbuilding ¹	48.2	-0.1	0.0	0.0	0.0	0.0
Total domestic demand	3 480.4	3.0	-0.2	0.3	1.2	1.9
Exports of goods and services	1 558.8	3.2	0.2	-1.7	-0.3	0.6
Imports of goods and services	1 371.9	7.1	-0.3	-0.6	1.7	2.1
Net exports ¹	186.9	-1.3	0.2	-0.5	-0.8	-0.6
<i>Other indicators (growth rates, unless specified)</i>						
GDP without working day adjustments	3 676.3	1.4	-0.3	-0.2	0.3	1.5
Potential GDP	..	0.8	0.8	0.6	0.5	0.6
Output gap ²	..	0.3	-0.6	-1.4	-1.5	-0.9
Employment	..	2.6	1.1	0.3	0.7	0.2
Unemployment rate (% of labour force)	..	3.1	3.0	3.4	3.6	3.5
GDP deflator	..	6.1	6.1	3.1	2.4	2.1
Harmonised index of consumer prices	..	8.7	6.0	2.5	2.4	2.1
Harmonised index of core inflation ³	..	3.9	5.1	3.2	2.7	2.4
Household saving ratio, net (% of disposable income)	..	10.3	10.4	11.2	10.8	10.6
Current account balance (% of GDP)	..	3.9	5.6	5.7	4.8	3.7
General government financial balance (% of GDP)	..	-2.2	-2.5	-2.7	-2.7	-3.3
Underlying government primary financial balance ²	..	-1.9	-1.8	-1.6	-1.3	-2.2
General government gross debt (% of GDP)	..	64.7	63.8	63.2	64.2	65.5
General government gross debt (Maastricht, % of GDP)	..	65.1	62.9	62.4	63.4	64.6
General government net debt (% of GDP)	..	26.4	26.6	25.8	27.8	30.2
Three-month money market rate, average	..	0.3	3.4	3.6	2.1	1.8
Ten-year government bond yield, average	..	1.1	2.4	2.3	2.5	2.5

1. Contribution to changes in real GDP.

2. Percentage of potential GDP.

3. Harmonised consumer price index excluding food and energy, alcohol and tobacco.

Source: OECD Economic Outlook 117 database.

Economic growth perspectives will hinge on the implementation of key structural reforms by the new federal government (see above). If public procurement and infrastructure planning and approval procedures are not accelerated, the implementation of public investment projects will be delayed, reducing GDP growth in 2026. Moreover, if structural reforms to reduce administrative burden and regulatory barriers to entry and growth of firms, particularly in construction and services, are not implemented, the significant demand shock from increased public investment may lead to strongly rising inflationary pressures. Further increases in trade policy uncertainty would hamper a recovery in consumer and investor confidence and hold back private consumption and investment, particularly in manufacturing sectors that are highly integrated in global value chains. On the upside, a quick approval of the 2025 and 2026 budgets and detailed investment plans could raise investor and consumer confidence and accelerate the increase of public investment. A stronger recovery in China could significantly improve exports of investment and other goods.

Table 1.3. Events that could lead to major changes in the outlook

Risks	Possible outcomes
Further increases in trade barriers and other trade distorting measures, such as subsidies and local-content rules, globally.	A new wave of tariff- and non-tariff barriers, trade distorting subsidies and local-content rules would lower export demand and disrupt global supply chains. This would be particularly harmful for the German economy, which is highly integrated in international supply chains.
Disruptions in global energy markets and supply chains due to an escalation of conflict in the Middle East or in other world regions.	Higher energy prices would raise inflation, reduce the purchasing power of households and private consumption, and weigh on the competitiveness of domestic manufacturing firms. Disruptions in global supply chains would harm manufacturing production.
The war in Ukraine ends faster than expected and geopolitical tensions decrease.	Confidence could recover more strongly, spurring investment and private consumption.

1.2. Addressing financial vulnerabilities and deepening capital markets

1.2.1. Financial market risks remain contained

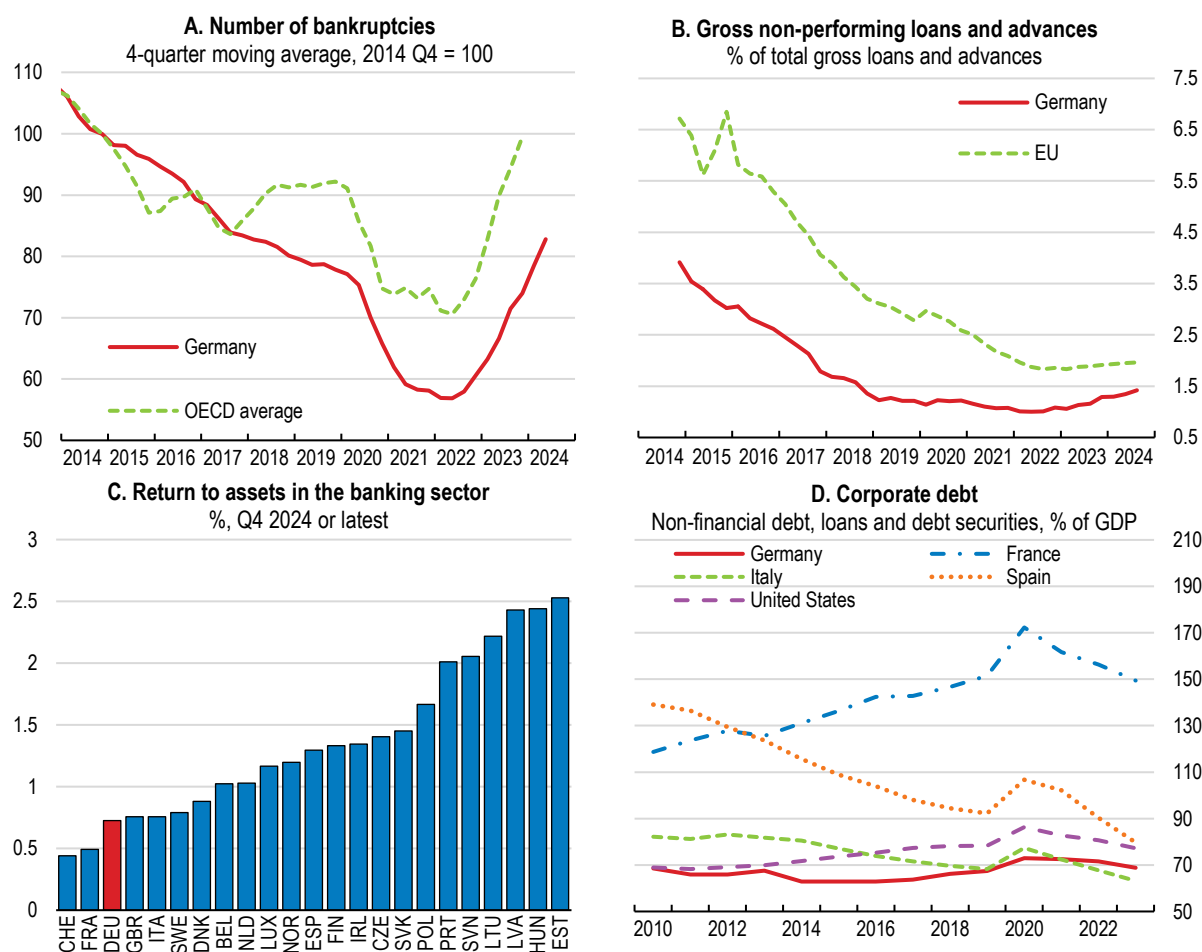
After a period of low insolvency rates during the pandemic and the energy crisis, business failures have increased due to the phase-out of support measures, monetary tightening and a weaker economy (Figure 1.10). However, banks have remained resilient despite their relatively low profitability, which largely reflects high administrative and operating expenses (see below). Banks' net interest income has increased, as lending rates to firms and households have increased more than bank funding rates. Only about 10% of the increase in policy rates has been reflected in average overnight deposit interest rates (Bundesbank, 2024^[8]). Risk-weighted capital ratios are well above regulatory minimums. Low corporate borrowing, high equity rates of firms and a relatively long maturity of outstanding loans to corporates reduce credit risk (Figure 1.10). However, risk weights applied to corporate loans by systemically important banks may understate the vulnerability to rising corporate insolvencies due to continued economic weakness. An additional source of bank vulnerability is duration risk from higher interest rates. Duration risk arises from the decline in the market value of fixed-income securities with longer maturities in response to abrupt increases in market interest rates, resulting in unrealised losses (OECD, 2023^[9]). Such unrealised losses have been declining thanks to monetary policy easing, but were still at 6% and 15% of the common equity tier 1 capital of local savings banks and cooperative banks, respectively, in the second quarter of 2024.

Previous monetary tightening has led to a decline in house prices, but the risk of further price corrections is low. The rapid tightening of monetary policy has led to a significant increase in mortgage interest rates and reduced demand for housing, leading to a fall in house prices by 13% in the fourth quarter of 2023 from their peak in the second quarter of 2022 (Figure 1.11). The strong increase in household disposable income, declining debt-to-income ratios, and falling inflation have improved housing affordability and contributed to a slight recovery in housing prices. Monetary policy easing could lead to further declines in mortgage rates during the next quarters, leading to additional price increases. However, vulnerabilities in the commercial real

estate markets should be carefully monitored. Commercial real estate prices have fallen by more than 20% since their peak in 2022 (Bundesbank, 2024_[8]). The Bundesbank's price-at-risk analysis suggests that, in contrast to residential real estate, the likelihood of further falls in commercial real estate prices has increased. Tight financing conditions and weak profitability due to a stagnating economy could lead to rising non-performing loans for commercial real estate developers and losses for real estate investment trusts or for banks through the fire sale of commercial real estate collateral (OECD, 2024_[10]). Around half of bank loans exposed to insolvency concern the real estate sector (Bundesbank, 2024_[8]). While exposure to commercial real estate lending is concentrated among a few lenders, the risks of spillovers to the rest of the financial system should be carefully monitored.

The macroprudential stance should be maintained. In early 2022, the counter-cyclical capital buffer rate was set to 0.75% and the sectoral systemic risk buffer rate at 2% of loans secured by residential real estate. The latter was lowered to 1% in April 2025, due to the partial receding of vulnerabilities in the residential real estate market. Although the easing of monetary policy will reduce pressures on balance sheets of banks, the macroprudential stance should be maintained to address the risks from rising corporate insolvencies and the decline in commercial real estate prices. In the medium term, the authorities should consider moving to a positive neutral counter-cyclical capital buffer approach, as in Sweden, Poland, Spain and the Netherlands (Bundesbank, 2024_[8]).

Figure 1.10. Corporate insolvencies have increased but risks to lenders remain contained



Source: OECD Timely Indicators of Entrepreneurship database; ECB; IMF Financial Soundness Indicators database.

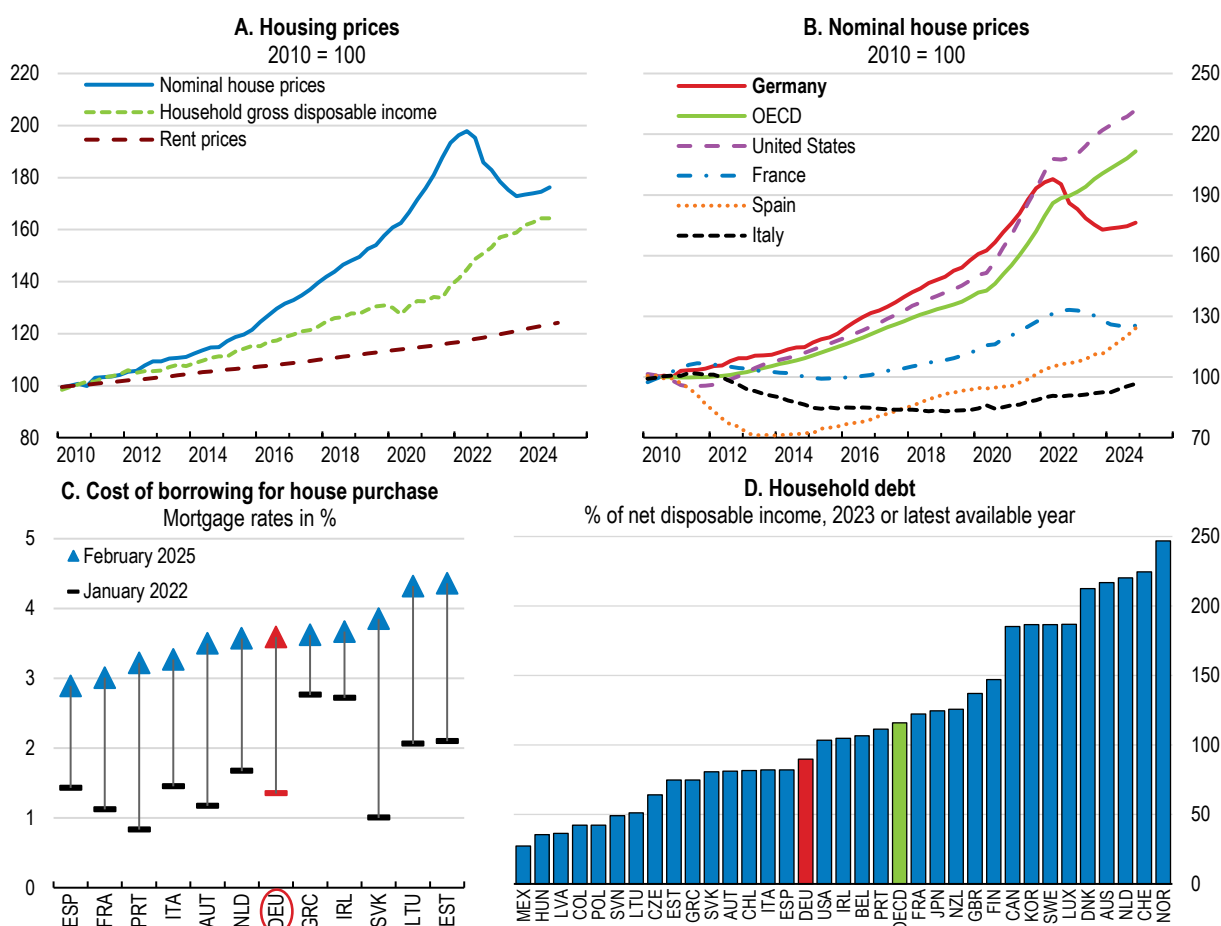
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There is scope to improve banking sector profitability (Figure 1.10, Panel C). The banking market is highly fragmented, with numerous small, local savings banks, contributing to relatively low returns to assets in the banking sector. Although significant consolidation has occurred since the early 1990s, it has mainly resulted from territorial reforms merging municipalities or districts rather than competitive pressures. Local savings banks, owned by local governments, are restricted by the regional principle – enshrined in federal-state savings bank laws – which confines their operations to specific geographic areas and shields them from cross-regional competition, creating institutional barriers to consolidation and limiting competition (Hallerberg and Markgraf, 2018^[11]). As local savings banks are not listed and risk sharing is ensured through cooperation in Laender-level public deposit guarantee schemes, market-based discipline to incentivise banks to gain greater market share and increase profitability is also weak (De Haan, 2022^[12]). Since forced mergers due to territorial reforms have been shown to have increased profitability, lowered borrowing costs for firms and boosted regional investment and employment, the regional principle should be reviewed with a view to strengthen competition and consolidation in the banking sector (Koetter et al., 2018^[13]).

Banking sector profitability should also be improved by reducing administrative burden and operative costs through increased digitalisation, particularly in local public and cooperative banks. This would also help improve access to finance for intangible-intensive industries, foster investments in knowledge-based capital and increase business dynamism (Bontadini et al., 2024^[14]) (see Chapters 2 and 4). Accompanying increased digitalisation in the banking sector with improvements in the efficiency of electronic payment systems and electronic invoicing would also strengthen tax enforcement and the fight against money laundering by increasing traceability (Bellon et al., 2022^[15]).

The linkages between domestic banks and global non-bank financial intermediaries should also be carefully monitored. While the German financial system remains largely bank based (see below), the direct exposure of German banks to global non-bank financial intermediaries has reached 12% of banking system assets (Bundesbank, 2024^[8]). An integrated stress testing framework to analyse the spillover of adverse shocks from global investment funds to the German banking system has not yet been developed. Contributing to fill data gaps in the alternative investment fund sector at the EU level would facilitate the monitoring of banks' exposures to global non-bank financial intermediaries (ESRB, 2024^[16]). This should be achieved by transposing the revised EU Alternative Investment Fund Managers Directive into German law and implementing it.

Figure 1.11. Risks related to residential real estate have decreased



Source: OECD Analytical House Price database; ECB; OECD National Accounts database.

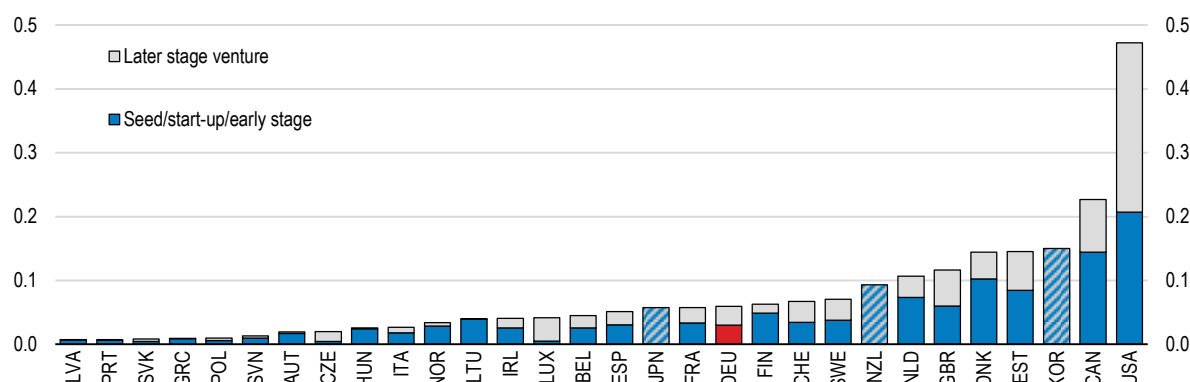
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1.2.2. Deepening capital markets would foster access to finance for start-ups

Limited access to finance for innovative start-ups is one factor behind weak business dynamism, hampering innovation, investment, productivity growth and competitiveness (Draghi, 2024^[17]) (see Chapter 2). Banks are reluctant to lend to innovative start-ups due to limited collateral, weak cash flows, and a lack of credit history as well as missing expertise to assess the economic viability of intangible investments that underly disruptive innovations. Non-bank sources of finance could fill the funding gap, but they remain weak (Figure 1.12). While venture capital investments increased in 2021 due to the rising attractiveness of digital business models during the pandemic, these effects reversed in 2022-24. The number of deals surpassed pre-pandemic levels in 2024, with cash flow-based German venture capital investments amounting to less than 0.2% of GDP, compared to around 0.5% of GDP in the United Kingdom and the United States (KfW, 2024^[18]). In 2024, venture capital investments in start-ups stood at EUR 7.4 billion, still below pre-pandemic levels, with the health, energy and defence sectors accounting for the largest share of deals.

Figure 1.12. Venture capital investments are relatively weak

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



Note: Deal-based statistics. No breakdown available for Japan, Korea and New Zealand.

Source: OECD Entrepreneurship Financing Database.

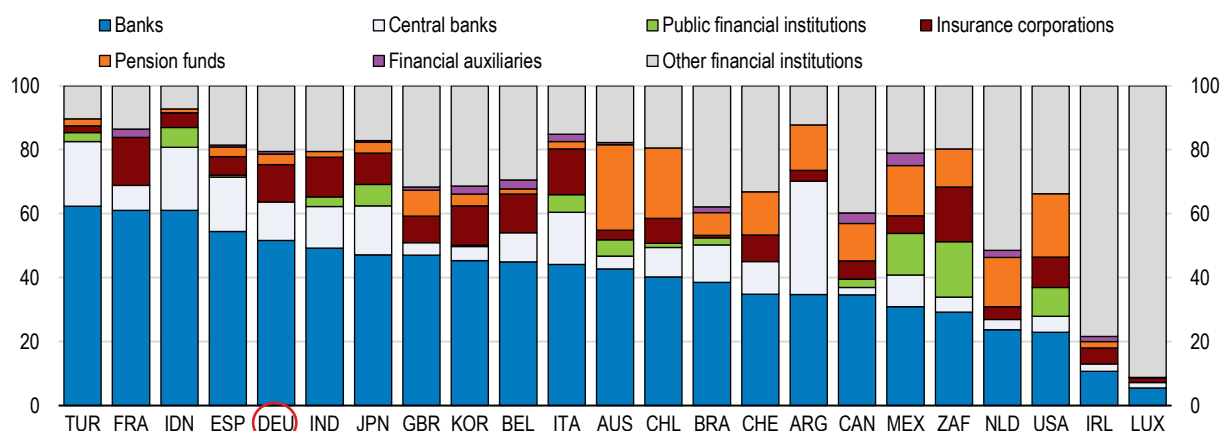
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To address the funding gap for start-ups, the federal government and its development bank have strengthened public co-financing of venture capital. The Growth and Innovation Capital for Germany programme, launched in September 2024, mobilises around EUR 12 billion and aims to crowd in private investors to secure a total of EUR 30 billion in innovative start-up financing by 2030. A fund-of-funds (*Zukunftsfond*) has also been established to increase the participation of institutional investors in the venture capital and private equity markets, as recommended in the 2020 OECD Economic Survey of Germany. However, incentives to crowd in private investments should be further strengthened. For example, in Israel's *Yozma* venture capital initiative, the government provided up to 40% of the required venture capital investment and granted private investors the right to buy out the government's stake at a guaranteed price in the five years following the investment. The programme reduced the share of total public funding for venture capital from 50% to almost zero within 7 years, successfully crowding in private investors (OECD, 2022^[19]). Israel recently launched *Yozma 2.0*, allocating about USD 160 million to leverage total institutional investment of USD 700 million in the financing of innovative start-ups, again by introducing guaranteed buy-out options for the government's stake, accompanied by loss-sharing arrangements.

Increasing the participation of institutional investors in capital markets is key to raise access to finance for start-ups. Well-developed capital markets with a broad participation of institutional investors facilitate the exit of early-stage investors and increases their post-exit returns, encouraging them to take relatively high risks by providing early-stage and growth financing to innovative start-ups (Arnold, Claveres and Frie, 2024^[20]). In Germany, however, institutional investors, and particularly pension funds, play a limited role in capital markets (Figure 1.13). While only about 6% of domestic equities were owned by domestic institutional investors in 2023, more than 24% were owned by foreign ones. Between 2019 and 2023, domestic institutional investors financed just over 10% of private equity fundraising, compared to 30% on average in Europe (OECD, 2024^[21]).

Figure 1.13. Non-bank institutional investors play a relatively small role in capital markets

Ownership structure of total domestic financial assets, 2023, %



Source: Financial Stability Board.

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Strengthening asset-backed occupational pension schemes could help deepen capital markets and contribute to more efficient financial intermediation (Draghi, 2024^[17]). Over half of workers are covered by an occupational pension scheme, but the assets managed by supervised occupational pension schemes, including *Pensionskassen* and *Pensionsfonds*, and pension funds for workers in liberal professions and life insurers, stood at only 17% of GDP in 2023, compared to around 50% of GDP in the average OECD country (Box 1.3) (OECD, 2024^[22]). This relatively low value is related to the fact that about 40% of occupational pension scheme liabilities are based on book reserves, which are firm-specific defined-benefit pension plans that are not supervised by the Federal Financial Supervisory Authority. These liabilities amount to about 12% of GDP, with large companies included in the German stock exchange benchmark index (DAX) accounting for about 60% of these liabilities (Bazzazi, 2025^[23]). About 80% of these liabilities of DAX companies are backed by insurance contracts. However, 20% are unfunded as employees' contributions are retained within the firm for internal investment, and this number is even higher for smaller companies that account for 40% of all pension liabilities based on book reserves. Many employers prefer book reserve schemes due to tax advantages, as there is no maximum threshold for subtracting the present value of liabilities from profits to lower corporate income tax payments, and because of lower regulatory costs compared to externally invested funds, which are subject to stricter solvency and liquidity requirements (OECD, 2016^[24]).

Gradually phasing out book reserves by introducing mandatory enrolment in asset-backed occupational pension schemes for new employees would not only help deepen capital markets but also strengthen social protection while supporting structural change and reducing financial vulnerabilities. Many companies have a funding deficit in their book reserve schemes. Asset provisions set aside for pension payments fell short of pension liabilities by about 5% of market capitalisation for the average listed firm between 2000 and 2017 (Heusel and Mager, 2023^[25]). Around 9% of firms had no provision at all. In the event of a firm bankruptcy, employees have only low seniority for their pension claims and the recovery rate for employee pension claims in bankruptcy has been less than 5%. The exposure of employees' pension claims to the risk of firm failure is instead insured through a mutualisation scheme. However, the contribution rates paid by firms to the mutualisation scheme do not vary with the risk of bankruptcy, making book reserve schemes attractive for firms with a high risk of failure (OECD, 2016^[24]). Firms with a funding deficit in their book reserves have shown higher stock market returns than other firms, likely suggesting that a bail-out in case of bankruptcy to ensure pension payments might be expected by the market (Heusel and Mager, 2023^[25]). This could distort competition, weakening business dynamism, innovation and productivity growth (see Chapter 2). The lack of portability of assets in book reserves to a new employer reduces accumulation benefits of pension contributions, as in other defined-benefit occupational pension schemes, and might act as a barrier to labour

reallocation, hindering structural change. Introducing mandatory enrolment into asset-backed occupational pension schemes for new hires would help deepen capital markets and reduce financial vulnerabilities due to unfunded book reserves. Moreover, minimum funding levels for book reserves should be introduced, as in the United Kingdom and the United States (Heusel and Mager, 2023^[25]).

Facilitating greater exposure of asset-backed occupational pension funds to private assets would also help deepen capital markets. German occupational pension funds have one of the lowest equity exposures in Europe at 10%, even after including indirect exposures through investment fund shares (OECD, 2024^[21]). They have underperformed those of the best performing OECD countries over the past two decades, with an average annual real return of 1.8%. The low equity exposure is due to a combination of low regulatory limits for investment in private assets and a conservative investment behaviour of pension funds. For example, investment limits for equity, real estate, corporate bonds and private investment funds for the occupational pension scheme *Pensionskassen* are low at 35%, 25%, 50% and 7.5%, respectively (OECD, 2024^[26]). Investment limits in single issuer instruments are also low in all private asset categories. In Denmark, Sweden, Norway, and the Netherlands, where the real returns of asset-backed pension funds have been higher than the OECD average over the past two decades, portfolio limits for these assets are either set at 100% for direct investments or there is no specific limit (OECD, 2024^[22]). In all of these countries, investment limits in single-issuer instruments are also higher. Investment and concentration limits for occupational pension funds should be raised for single-issuer private assets, real estate and private investment funds, while ensuring appropriate risk management and governance processes. Moreover, incentives for pension fund managers should be improved to raise equity exposure. Gradually transitioning from defined-benefit to defined-contribution systems, as recently done in the context of collective bargaining in the chemical industry, could help to raise returns. Improving the financial literacy of social partners involved in collective bargaining on pension schemes and regularly informing occupational pension plan holders about the return on their pension savings could help raise incentives for pension fund managers to seek higher returns from their investment portfolios (OECD, 2024^[27]).

German insurers participate more in capital markets than pension funds, but they could invest more directly in private assets to support innovative start-ups (Figure 1.13). Financial assets managed by German insurers have reached 50% of GDP by the end of 2023. Compared to European peers, insurers invest less in government bonds, with a portfolio share of less than 15%, and have a strong equity portfolio allocation of almost 30%. However, most investment fund shares are invested in debt, limiting the financing of innovative start-ups. The asset allocation of insurance companies is largely driven by liquidity considerations and regulatory concerns regarding the targeted solvency ratios associated with Solvency II (OECD, 2024^[21]). However, Solvency II also allows lower risk-weights for insurers' investments in long-term equity asset categories, and it does not impose regulatory restrictions on equity or alternative investment fund allocation limits (Arnold, Claveres and Frie, 2024^[20]). Reviewing whether the implementation of relevant regulations unduly restricts insurance companies' investment opportunities, especially in equity, could help unlock a large pool of funds for financing innovative start-ups.

Box 1.3. Germany's pension system

First Pillar – The Statutory Pension Insurance (Gesetzliche Rentenversicherung, GRV)

The statutory pension insurance is the cornerstone of Germany's pension system and is mandatory for most employees. It covers the risk of income loss in old age and disability and supports surviving dependants via survivors' pensions. It operates on a pay-as-you-go (PAYG) basis, where contributors gain future entitlements, funded by the next generation. Pensions in Germany are generally subject to income tax as well as contributions to health and long-term care insurance. Pension contributions are split equally between employers and employees, each paying 9.3% of gross wages (total contribution rate: 18.6% in 2025). Besides employees, certain self-employed professionals (e.g. craftsmen, artists, authors, midwives) are also mandatorily insured under the state pension scheme. Unlike employees, these self-employed must

usually pay the full 18.6% contribution themselves, though flat-rate or reduced rates (for new entrepreneurs) are available. Voluntary public pension insurance is open to other self-employed. Civil Service Pensions (Beamtenpensionen) are not part of the system and are fully tax-funded.

The retirement age is gradually increasing to 67 by 2031: For insured persons born in 1964 or later, the standard retirement age is 67. Individuals with at least 35 contribution years can retire with benefit deductions of 3.6% per year (0.3% per month) of early retirement. Those with 45 contribution years can retire at a full pension two years before the statutory retirement age. Since the abolishment of income caps in 2023, old-age pensions can be claimed fully without any earnings limit. For disability pensions, income limits remain. Individuals who delay retirement will receive a pension bonus of 0.5% for each month beyond the regular retirement age without claiming their pension, amounting to a 6% increase for one year of delayed retirement. Additionally, if the individual continues working, pensions will increase due to the contributions paid during continued employment.

The pension benefit formula is income-related, linking pensions to lifetime earnings through a point-based system. Pension benefits are adjusted depending on national wage and population growth and decline with demographic ageing. Annual expenditures are covered by revenues from pension contributions and federal subsidies. The subsidies cover around 23% of pension spending (approximately 2.5% of GDP in 2024), covering non-contributory pension entitlements and helping to limit contribution rates. Surpluses in the pension system are allocated to a sustainability reserve, and the contribution rate is adjusted based on the reserve's level relative to average expenditures. A 2018 pension reform introduced a “double stop-line”, fixing the minimum benefit level at 48% of average earnings and the contribution rate at 20% of gross wages. The minimum benefit level has been extended to date, avoiding the decline of pensions due to the sustainability factor from demographic ageing. Recent policy plans announced in the coalition treaty envision to maintain the 48% benefit level until 2031, while potentially removing the contribution rate cap.

Parents receive pension points for raising children, without having to make contributions themselves. During the period of child-rearing, insured persons are treated as if they had paid contributions equivalent to those of an average-earning employee. Following two recent reforms (Mütterrente I and II), parents are credited with three earnings points for each child born from 1992 onwards and with 2.5 points for each child born before 1992. One point is equivalent to contributions based on the national average income, so each child increases future pension entitlements by around EUR 100 to 120 per month. Pension expenses for child-rearing periods (Mütterrente) amounted to EUR 21.8 billion in 2024.

Second Pillar - Occupational Pensions (Betriebliche Altersversorgung)

Occupational pensions are voluntary but increasingly widespread, supported by tax incentives and social partner agreements. They are often arranged via direct insurance, pension funds, or pension schemes administered by employers, including book reserves. Around 56% of employees in larger firms participate, but coverage is lower in small enterprises and among low-wage workers. Since 2019, the “social partner model” allows collective bargaining parties to establish defined contribution schemes with minimum employer contributions.

Third Pillar - Private Pensions (Private Altersvorsorge)

Private pension plans are supported through state subsidies and tax deductions. The Riester pension, introduced in 2002 to boost private retirement saving, targets employees eligible for the statutory pension scheme and offers subsidies to top-up contributions. However, uptake has stagnated, with particularly limited uptake among lower-income groups. Roughly 17% of publicly insured workers have no supplementary pension. The Rürup pension is a tax-advantage aimed at the self-employed and high-income earners.

Facilitating listing conditions for start-ups would help attract VC investors by improving viable exit options. Although technology companies have accounted for a larger share of initial public offerings than in the rest of Europe, total initial public offerings have amounted to less than 0.2% of GDP per year over the past two decades (OECD, 2024^[21]). The high administrative burden and the fragmentation of capital markets in Europe have contributed to the low level of listing activity. The Future Financing Act is welcome as it simplifies the requirements for initial public offerings by reducing the minimum market capitalisation from EUR 1.25 million to EUR 1 million and introducing dual-class shares (up to 10-to-1 voting rights). The extension of the deferral period for taxing employee share ownership and the increase in the maximum annual tax allowances is also welcome as it facilitates the use of stock-ownership option plans by smaller firms. A recent bill aims at further fostering viable exit options for innovative start-ups and should be approved. It facilitates reinvestment in corporate equity by raising the cap on the transfer of gains from the sale of shares in corporations and reduces restrictions for private investment funds to increase their positions in venture capital funds. In addition, eliminating inconsistencies in national insolvency frameworks and lowering the restrictions for individual qualified investors and for institutional investors to invest in foreign assets would help raise liquidity at EU stock exchanges (Arnold, Claveres and Frie, 2024^[20]). This should be complemented by establishing a single central counterparty platform and a single central securities depository, and finalising the EU banking union (Draghi, 2024^[17]).

Improving financial literacy of households and incentivising funded individual pensions plans is also key to deepen capital markets. German households have one of the highest saving ratios in the OECD, but only a small fraction of the large household savings is invested in capital markets. More than 40% of household savings are in currency and deposits, depriving capital markets of a large funding base. Although German households score relatively well on basic financial literacy indicators and save actively, only 18% of them own an investment product, with around 12% of total household financial assets allocated to stocks and shares (OECD, 2024^[28]). Individuals with high levels of financial literacy are also more likely to hold a pension product. Financial literacy initiatives should focus on providing the knowledge and skills needed to navigate an increasingly digital investment landscape and to adequately plan for retirement. Moreover, incentives and conditions for investing in funded pension plans should be improved. Subsidies for contributions to capital-funded pension plans (*Riester Rente*) were initially successful in increasing participation, but high fees and low returns have curbed further participation. Introducing caps to limit fees, while extending eligibility for subsidies to the self-employed, could help raise incentives for individuals to participate in capital markets (OECD, 2024^[21]). Moreover, abolishing mandatory minimum guarantees for these defined contribution schemes, which explain why most plans have taken the form of insurance-based products with low returns, could help make them more attractive. Alternatively, introducing a standardised investment product with an opt-out option, as for example done in Sweden, could help lower costs and raise returns and participation in funded individual pension schemes.

1.3. Strengthening fiscal policy to ensure medium-term fiscal sustainability

1.3.1. *The fiscal stance is projected to tighten in 2025 and strongly ease in 2026*

After a decade of fiscal surpluses and strongly decreasing public debt, the fiscal balance turned negative due to pandemic- and energy-crisis-related fiscal support (Table 1.4). This support was mainly funded by the federal level, strongly increasing the federal deficit, while the fiscal balances of the Laender remained contained. The national debt brake was suspended during 2020-23 due to the pandemic- and energy-crisis related emergency situations, and then reinstated in 2024. The reinstatement led to a contractionary fiscal stance in 2024, which will further tighten in 2025, supporting ongoing disinflation (see above). The tightening fiscal stance is mainly due to a strong reduction in the federal deficit, while the deficits of the Laender and the municipalities as well as the social security and health insurance fund have strongly increased in 2024 (see Chapter 4 and below).

Table 1.4. The fiscal balance has turned negative during the pandemic and the energy crisis

General government, % of GDP

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total revenues	45.2	45.5	45.9	45.8	46.5	46.8	46.8	47.7	46.9	45.9	46.7
Taxes on production and imports	11.3	11.3	11.3	11.1	11.1	11.1	10.8	11.2	10.9	10.2	10.3
Current taxes on income and wealth	11.8	12.1	12.4	12.6	12.9	12.9	12.5	13.3	13.4	12.7	12.8
Social contributions received	16.1	16.3	16.4	16.5	16.7	16.9	17.7	17.2	16.9	17.0	17.5
Capital taxes and other revenues	5.9	5.8	5.8	5.6	5.8	5.8	5.9	5.9	5.7	6.0	6.1
Total expenditures	44.4	44.5	44.8	44.5	44.6	45.5	51.2	50.8	49.1	48.4	49.5
Social protection	18.4	18.7	19.1	19.0	18.9	19.2	21.4	20.5	20.0	19.7	20.5
Education and health	11.2	11.2	11.2	11.1	11.2	11.5	12.9	13.0	12.8	12.0	12.2
General public services	6.2	5.9	5.7	5.7	5.6	5.7	6.0	6.0	6.0	6.3	6.6
Economic affairs	4.4	4.4	4.4	4.4	4.5	4.6	5.9	6.5	5.7	5.8	5.4
Other ¹	4.4	4.3	4.3	4.4	4.5	4.6	5.0	4.7	4.6	4.6	4.9
Net lending	0.7	0.9	1.1	1.3	1.9	1.3	-4.4	-3.2	-2.2	-2.5	-2.7
Net primary balance	1.9	1.9	2.0	2.1	2.6	1.9	-3.9	-2.7	-1.7	-2.1	-2.2
Gross debt	83.3	79.3	76.6	71.8	68.8	67.6	81.0	78.7	64.7	63.8	63.2
Gross debt, Maastricht definition	74.4	71.3	68.4	63.9	60.7	58.6	68.2	68.3	65.1	62.9	62.4
Net debt	44.4	40.7	38.8	34.2	31.4	28.9	36.4	34.1	26.4	26.6	25.8

1. Defence; public order and safety; housing and community amenities; recreation, culture and religion; environment protection.

Source: Federal Statistical Office; OECD National Accounts database; and OECD Economic Outlook database.

The fiscal tightening at the federal level in 2024 partly reflects the impact of the November 2023 Supreme Court ruling that declared the use of emergency related borrowing authorisations to finance investments in consecutive years as unconstitutional. The ruling has led to a reduction of available funds in the Climate and Transformation Fund (KTF) by EUR 60 billion and the closure of the energy support fund, which led to the earlier phasing out of energy price support measures in January 2024. Spending from the KTF was reduced by a quarter to 1% of GDP in 2024 and by half to 0.6% of GDP in 2025. The planned spending of 1.9% of GDP in 2024-25 from a special defence fund has not been affected by the ruling, as this fund has been enshrined in the constitution by a two-third parliamentary majority. The fiscal tightening in 2025 is also related to the fall of the coalition government and the failure to conclude negotiations on the 2025 budget. While a provisional budget for 2025 extended spending levels from 2024 to 2025, planned but not yet approved public investment projects for 2025 were put on hold, including projects financed by the KTF.

In 2026, the fiscal stance is expected to ease strongly due to a recent reform of national fiscal rules. The reform of fiscal rules approved in March allows to raise spending for defence and public investment during the next years to address a large infrastructure backlog. Spending exceeding 1% of GDP in the areas of defence, civil protection, intelligence services, protection of IT systems, and support for states attacked in violation of international law will be exempted from the fiscal rules. A special infrastructure fund financed by public debt issuance will provide up to EUR 500 billion for additional investment in infrastructure and the green transformation over the next 12 years. Out of this new fund, EUR 100 billion will be allocated to the KTF to support the green transformation and the energy transition by funding public investment and fiscal incentives for private investment. EUR 100 billion will be allocated to the Länder and municipalities, which are responsible for a large share of public investment projects (see Chapter 4). Moreover, the structural deficit

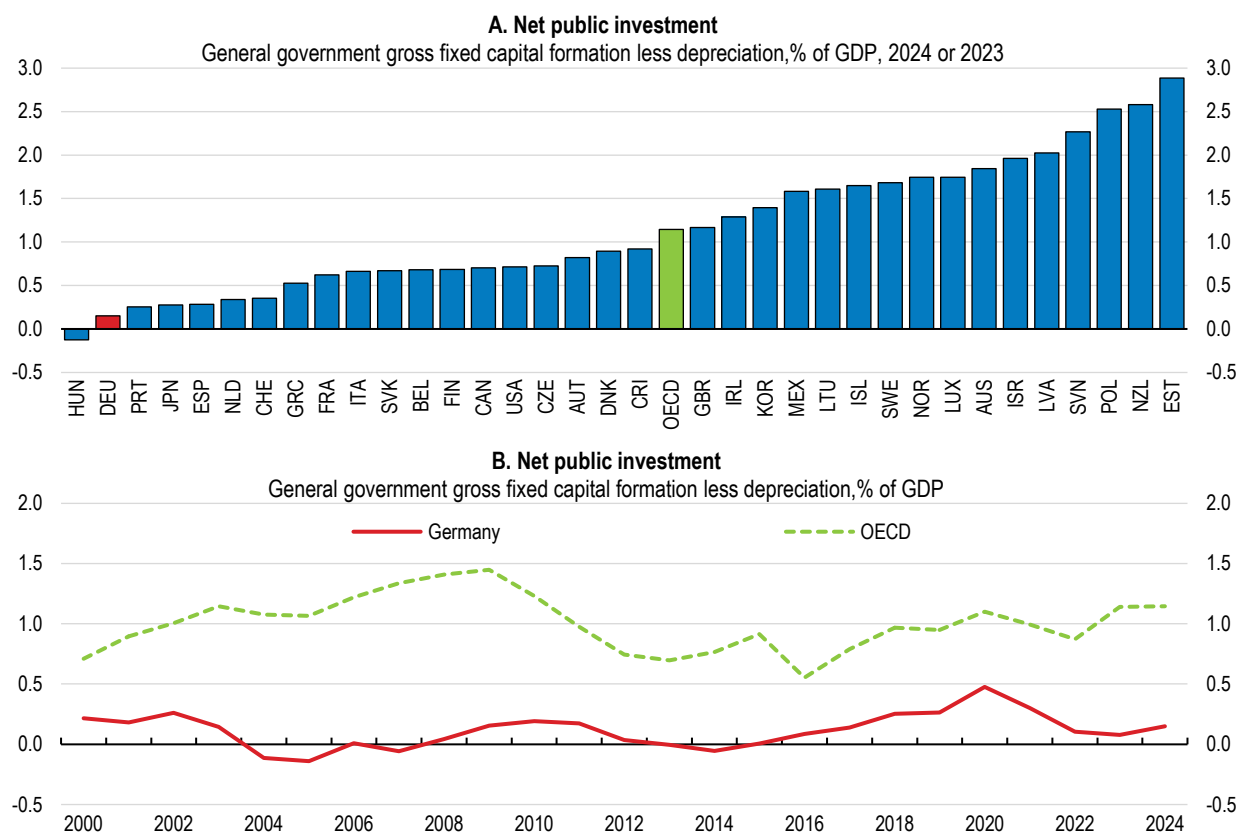
ceiling for sub-national governments will be raised from 0% to 0.35% of GDP, which combined with the ceiling of 0.35% of GDP for the federal government raises the general government structural deficit ceiling to 0.7% of GDP.

The effects of this reform of the fiscal framework on public investment will start to materialise only from 2026, as the formation of a government, the approval of the 2025 budget and detailed investment plans as well as their implementation will take time. To ensure a quick and efficient implementation of public investment projects, it is key to further simplify and accelerate infrastructure planning and approval as well as procurement procedures, improve cost-benefit analysis and policy impact evaluation and strengthen the capacity of local public administration (see Chapters 2 and 4 and below). To avoid rising inflationary pressures due the fiscal demand shock, the reform of national fiscal rules should be combined with structural reforms to reduce administrative burden and barriers to firm entry and growth, particularly in the construction and services sectors, and address skilled labour shortages (see Chapters 2 and 3).

1.3.2. Creating fiscal space to finance rising spending for defence and public infrastructure is key for ensuring medium-term fiscal sustainability

The increased flexibility in the fiscal rules to address large public investment needs is welcome. In 2024, net public investment has been among the lowest across OECD countries and the quality of public infrastructure has strongly deteriorated during the last decade (Figure 1.14) (SVR, 2023^[29]). Recent studies estimate that addressing the large public infrastructure backlog will require additional investment of EUR 40 to 60 billion (1% - 1.5% of GDP) per year until 2035, including public investment to accelerate the green transition and raise energy security (Dullien et al., 2024^[30]; BDI, 2024^[31]). Moreover, spending pressures to improve defence capacities have strongly increased due to Russia's full-scale invasion of Ukraine. Defence spending in the core budget should increase from 1.2% in 2024 to at least 2% of GDP in 2028 to reach the current NATO target, as resources in the special defence fund established in 2022 will be depleted in 2027. The increased flexibility in fiscal rules will allow to temporarily finance part of these urgent spending needs through increased borrowing.

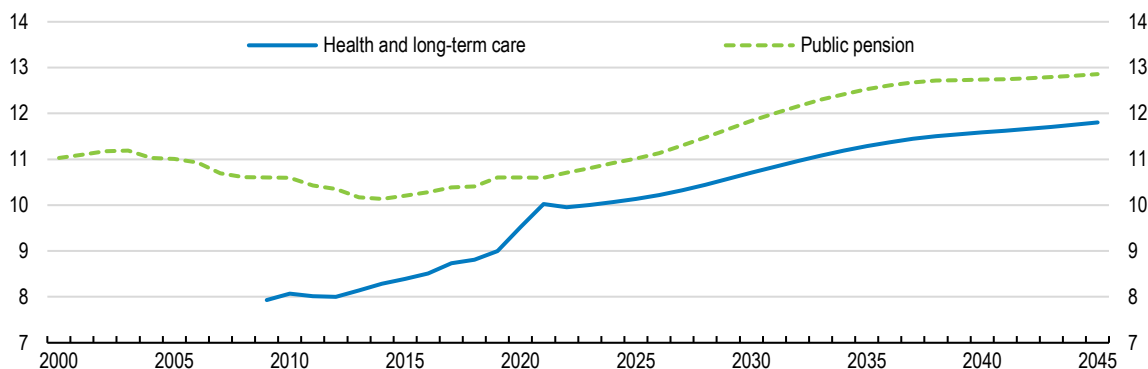
However, to ensure medium-term fiscal sustainability, the increased flexibility of fiscal rules should be combined with reforms to raise spending efficiency, reallocate spending and broaden the tax base, including by reducing tax expenditures and strengthening tax enforcement (as recommended by the previous OECD Economic Survey of Germany). This is even more important as fiscal pressures will strongly rise during the next years due to the retirement of large cohorts and rising life expectancy (Figure 1.15). Without reforms, spending on pensions, health and long-term care is projected to rise by about 1.4% of GDP by 2030, and by about 3.5% of GDP by 2045. In addition, costs for interest payments have risen to 1.1% of GDP in 2024 and are projected to further rise during the next years, while the repayment of pandemic- and energy-crisis related debt will start in 2028, putting additional pressure on the federal budget.

Figure 1.14. Net public investment should increase to address the large infrastructure backlog

Source: OECD National Accounts database; and OECD calculations.

StatLink  <https://stat.link/3ajme6>**Figure 1.15. Rapid population ageing will increase spending for pensions, health and long-term care**

Public spending on health and pension, % of potential GDP, baseline scenario

Note: The graphs show baseline projections for Germany based on latest policy announcements and following the methodology of Guillemette and Turner (2021^[32]).

Source: OECD Long-term Model.

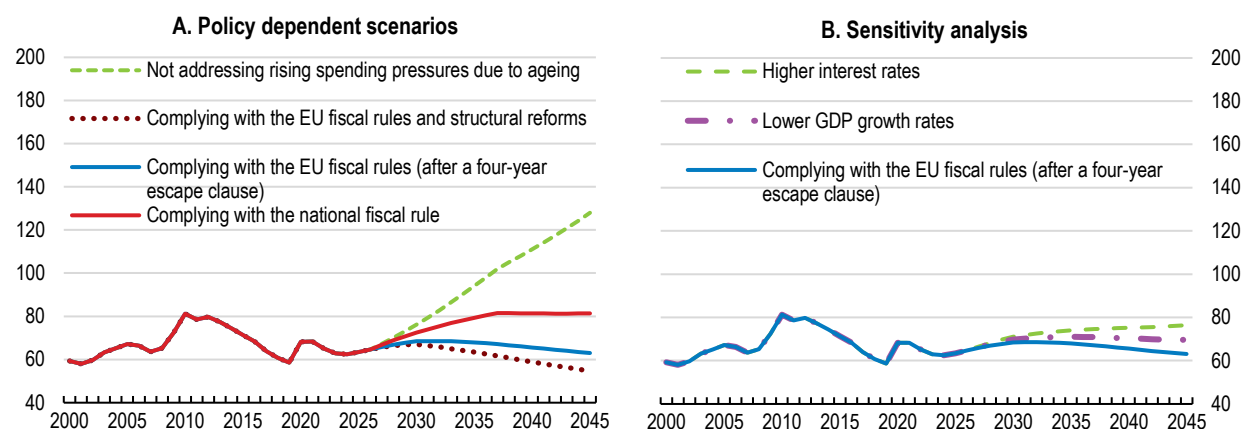
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Simulations conducted for this Survey show that issuing public debt to finance additional spending (exceeding 1% of GDP) to raise defence spending to 2.5% of GDP and using the new debt-financed infrastructure fund to spend about 1% of GDP for infrastructure investments over the next 12 years, while fully using the general government structural deficit limit of 0.7% of GDP, would increase the debt-to-GDP ratio to about 81% by 2045 (Figure 1.16, Panel A). Moreover, this scenario already implicitly assumes that rising spending pressures due to ageing, which increase to about 3.5% of GDP by 2045, are addressed by reforming the pension, health and long-term care systems (see below). If these additional spending pressures are not addressed, the public debt-to-GDP ratio would increase to about 128% of GDP in 2045. Thus, it is essential that debt-financing of increased defence and infrastructure spending over the next few years is combined with a gradual fiscal consolidation that puts public debt back on a declining path. Complying with the EU fiscal rules by debt-financing additional defence spending of up to 1.5% of GDP during 2027-30 after activating a national escape clause, and then reducing the structural deficit by 0.5% of GDP in 2031 would allow to stabilise public debt. The gradual decrease of the structural deficit to 1.7% of GDP by 2031 would require an improvement in the structural primary balance from 2024 until 2031 by 1.2% of GDP, which could be achieved by implementing the tax and spending recommendations suggested in Table 1.5. In this scenario, the increased spending of about 1% of GDP per year out of the new infrastructure fund needs to be financed by fiscal adjustments, as the national escape clause does not allow to exclude it from the deficit limit according to EU fiscal rules. If this scenario of fiscal adjustment is combined with structural reforms recommended by this Survey (Table 1.1), the public debt-to-GDP ratio would fall below 60% by 2039.

The sustainability of public debt is sensitive to interest rate movements. In the scenario “Complying with EU fiscal rules”, interest rate payments would increase from 1.1% of GDP in 2024 to 1.9% in 2031 and 2.7% in 2045. In 2031, the structural deficit of 1.7% of GDP would already be fully used to pay for interests, and in 2045 the structural primary balance would need to reach 1% of GDP to be able to finance interest payments. In a scenario, where interest rates increase by 100 basis points, a consolidation to a structural deficit of 1.7% of GDP in 2031 would not be enough to stabilise public debt (Figure 1.16, Panel B). Thus, to build fiscal buffers and insure against the risks of rising interest rates, it might be necessary to further adjust the structural deficit by 0.5 percentage points in 2032, which would require a total fiscal adjustment of the primary structural balance of 1.7% of GDP in Table 1.5.

Figure 1.16. Implementing structural reforms and addressing the fiscal effects of ageing is key to safeguard fiscal sustainability

Gross government debt, % of GDP (Maastricht definition)



Note: The “Complying with the national fiscal rule” scenario uses the projected real growth and interest rate paths from the baseline of the OECD Long-term model and assumes that the structural budget deficit reaches 3.2% of GDP in 2027 and remains constant until 2037, reflecting the recent reform of fiscal rules, including the full use of the 0.7% of GDP general government structural budget deficit limit and the debt-financing of additional defence and infrastructure spending of 1.5% and 1% of GDP, respectively. In the absence of structural reforms, this scenario abstracts from the potential growth effects of increasing defence and infrastructure spending. The structural budget deficit declines to 2.2% of GDP in 2038 after the depletion of the special fund for additional infrastructure spending and remains constant thereafter. This implies that the structural primary balance improves from a deficit of 1% of GDP in 2024 to a deficit of 0.7% of GDP in 2037, switches to a surplus of 0.3% in 2038 due to the phase-out of the infrastructure fund and reaches a surplus of 0.5% of GDP over the projection horizon. The “Complying with the EU fiscal rules (after a four-year escape clause)” scenario assumes that during 2027-30, the full use of the 0.7% of GDP general government structural budget deficit limit and the debt-financing of additional defence spending of 1.5% GDP is allowed under EU fiscal rules due to the activation of the national escape clause so that the structural budget deficit remains constant at 2.2% of GDP until 2030, is reduced to 1.7% of GDP in 2031 and remains constant thereafter. This requires that the structural primary balance reaches a surplus of 0.2% of GDP in 2031 and approaches 1% of GDP over the projection horizon. The “Complying with the EU fiscal rules and structural reforms” scenario builds on the previous scenario and includes the impact on government debt of a comprehensive set of structural reforms and recommendations, which lead to a 0.8 percentage points higher real GDP growth per year over the projection period relative to the baseline scenario of the OECD Long-term model (Table 1.1). The scenario “Not addressing rising spending pressures due to ageing” builds on the “Complying with the national fiscal rule” scenario, but assumes that pension, health and long-term care related spending is assumed to be debt-financed, leading to a deterioration in the structural primary balance of 3.5 percentage points of GDP until 2045. In the “Higher interest rates” scenario, interest rates increase by 100 basis points over the projection period relative to the “Complying with the EU fiscal rules (after a four-year escape clause)” scenario. In the “Lower GDP growth rates” scenario, nominal GDP growth is lowered by 0.5 percentage point over the projection period relative to the “Complying with the EU fiscal rules (after a four-year escape clause)” scenario. Following the methodology of the European Commission, general government financial assets remain constant at their nominal 2024 level in all scenarios.

Source: OECD Long-term model; and OECD calculations.

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Table 1.5. Potential fiscal impact of OECD recommendations

Recommendation	Fiscal impact (in percentage points of GDP)
Tax revenue related recommendations	
Reduce the labour tax wedge, in particular for low-income and second earners, and reform the joint taxation for couples	-1.3
Abolish tax expenditures for income from selling or renting real estate	0.3
Reduce generous allowance thresholds for gift and inheritance taxes and reduce exemptions for business assets	0.2
Use the ongoing update of property values to better link property taxation to asset values and raise revenue	0.3
Reduce VAT exemptions and improve tax enforcement	0.4
Raise excise duties on alcohol and tobacco	0.2
Reduce environmentally harmful tax expenditures	0.4
Total fiscal impact tax revenue measures	0.5
Spending related recommendations and government plans	
Increase defence spending to reach 2.5% of GDP	-1.3
Reduce subsidies, including environmentally harmful subsidies	0.8
Better prioritise spending by strengthening spending reviews in budgeting procedures and raising spending efficiency through better impact evaluation and policy targeting at all levels of government ¹	1.5
Improving public procurement procedures and fostering joint procurement across all levels of government ²	1.0
Improve active labour market policies and adult education	-0.1
Raise public investment in infrastructure and R&D	-1.0
Improve educational quality and access to childcare and early-childhood education	-0.2
Total fiscal impact spending related measures and government plans	0.7
Total fiscal impact of revenue and spending related measures	1.2

1. The effects of reforms related to prioritising spending and raising spending efficiency at all levels of government are difficult to quantify using available methodologies, but would significantly contribute to increasing fiscal space.

2. The estimate for the fiscal impact of improved public procurement procedures is derived from an OECD study which has estimated the gains in spending efficiency to be about 1 percentage point of GDP, if risk assessment and analysis of market capacity for infrastructure contracting decisions are improved across all levels of government by applying the OECD Support Tool for Effective Procurement Strategies (STEPS) (Makovšek and Bridge, 2021^[33]; OECD, 2021^[34]).

Note: Feedback effects of structural reforms on tax revenue are not included in the calculations. For example, the lowering of labour taxes or higher spending to improve training and adult learning policies would increase employment rates and the quality of human capital, which would increase economic growth but also raise tax revenues and lower the required net spending for these reforms.

Source: OECD calculations based on the OECD Long-term model.

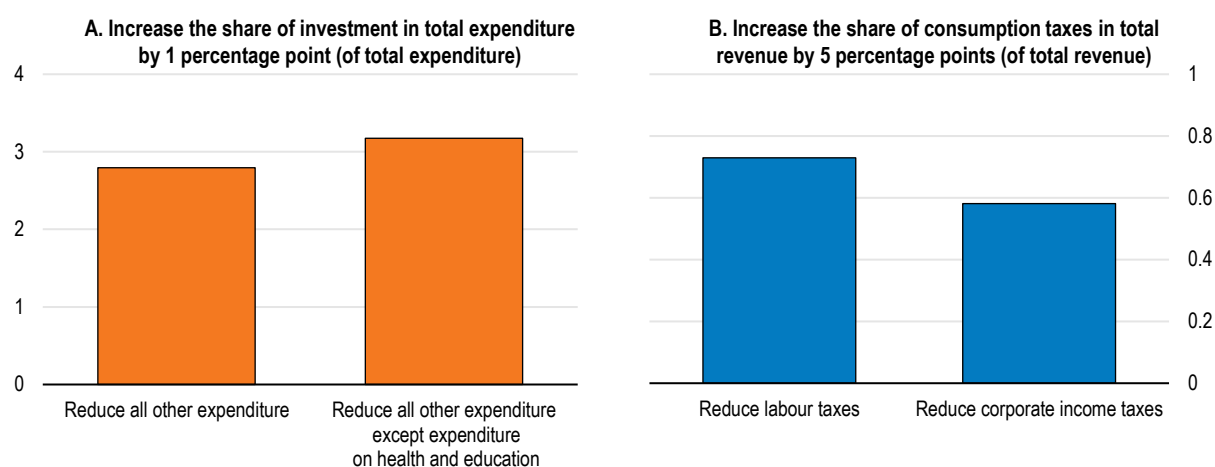
Increasing spending efficiency and better prioritising spending

To ensure fiscal sustainability in the medium term, rising defence and public investment spending should primarily be financed by better prioritising spending and raising spending efficiency (see the lower part of Table 1.5). Public spending has strongly increased during the pandemic and energy crisis and still remains about four percentage points of GDP higher than during the 2010s. The overall tax burden stood at 38.1% of GDP in 2023, which is about four percentage points of GDP higher than the OECD average. As discussed in the previous OECD Economic Survey of Germany, accelerating the digitalisation of the public administration, strengthening policy impact evaluation and the use of spending reviews in budgeting procedures, and fostering joint procurement across levels of government have large potential to raise spending efficiency (see also Chapter 2 and 4). In addition, reforming the pension and health systems is essential to reduce spending pressures due to population ageing. This should include coupling the retirement age to life expectancy and continuing to increase efficiency in the hospital sector and digitalise health services (see below). There is also room to lower government consumption, which has increased in recent years due to rising public employment and wages, including by better cooperation and bundling of tasks across municipalities and accelerating the digitalisation of the public administration. As shown by OECD simulations using a dynamic general equilibrium

model calibrated to the German economy, increasing public investment by reducing social transfers, including for pensions, and government consumption, while keeping the spending for education and health constant, could significantly contribute to raising economic growth (Figure 1.17, Box 1.4).

Figure 1.17. Shifting expenditures towards public investment and the tax structure away from labour taxes would raise GDP per capita

Percentage point change in long-term real GDP per capita resulting from compositional shifts in the expenditure or revenue structure, holding total government revenue and expenditure in terms of GDP constant



Note: In Panel A, “other expenditure” refers to the sum of three expenditure items: spending for health and education, government consumption and social transfers, including pensions. In Panel B, consumption taxes refer to VAT and excise duties. Labour taxes refer to the sum of taxes paid by employees and employers. See Box 1.4 for further details.

Source: Sunel (forthcoming^[35]).

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Better integrating the spending review framework into the regular budget process, creating a culture of impact evaluation and improving the necessary data infrastructure and IT capacities are key to improve spending efficiency and support the prioritisation of spending (Tryggvadottir, 2022^[36]). The federal government introduced spending reviews in 2015, and they have been done regularly since then. However, their impact on the budget and role in aligning spending with policy objectives remains limited. Budget allocations are determined through a top-down approach with few linkages to policy impact evaluation, and within the allocated spending ceilings ministries retain a high degree of independency (Tryggvadóttir, Park and van den Akker, 2024^[37]). Although each ministry is required by the budget law to define policy objectives of programmes and conduct ex-ante and ex-post impact evaluation, weak monitoring capabilities hamper the enforcement of this requirement. As a result, budgeting procedures in the ministries focus more on inputs, that is whether timelines are met and budgets are spent, rather than performance outcomes of policy programmes (Deloitte and ZEW, 2024^[38]). Introducing a centralised digital monitoring tool to inform about the performance outcomes of policy programmes would be an important step forward. This should be combined with broader spending reviews that have clear savings targets, as for example done in Denmark, Canada and the Netherlands. This could reinforce the top-down budgeting approach and incentivise ministries to use performance information and policy impact evaluation to prioritise spending. Thereby, performance budgeting efforts should be closely aligned to the spending review framework to better identify information gaps and inefficiencies in spending. In addition, providing assistance to raise awareness and improving data and IT capacities for policy impact evaluation in the respective auditing or budgeting units of the ministries is key.

Similar efforts to introduce performance-based budgeting should also be pursued by the Laender. This would help raise general government efficiency, as an increasing share of spending of the Laender is financed by the federal level, weakening accountability and incentives for spending efficiency (see Chapter 4). Improving policy

impact evaluation could also help to enhance peer learning opportunities between and across levels of government. A comprehensive reform of the data sharing infrastructure and corresponding regulation, which complicates accessing, linking and analysing administrative data by the authorities, is key to facilitate evidence-based policy making (Riphahn, 2023^[39]; Bachmann, Peichl and Riphahn, 2021^[40]). Implementing the planned research data act and the mutual recognition in the implementation of data protection legislation across the Länder would be important first steps (see Chapter 2).

Box 1.4. Growth and welfare effects of compositional shifts in government expenditure and revenue: A dynamic general equilibrium approach

The study conducted for this Survey calibrates a dynamic general equilibrium model to the German economy and complements previous empirical work on the effects of compositional shifts in government expenditure and revenue. The model assumes a closed-economy environment with a representative household, a representative firm and a government. The household maximises preferences over consumption flows and leisure, earns wage, dividend and transfer income, and decides how much to save in firm shares. The representative firm maximises the present value of future dividend flows by deciding how much to invest and demand labour. The government taxes wage and dividend income, household consumption and corporate profits. Each of these taxes affects the optimal decisions of private agents and finances spending on government consumption, which does not influence the production of goods, public investment, investment in education and health, and transfers to households. A balanced budget is assumed throughout. Spending on health and education increases human capital measured as the efficiency of the hours of labour supplied. Public investment increases the public capital stock, which increases the productivity of the private factors of production used by firms.

The model is calibrated with German data to reflect the various main macroeconomic variables averaged over the period 2000-19. In the next step, policy experiments are run in which the government expenditure or revenue structure (defined by the shares of budget items in total expenditure/revenue) is changed, while the total size of government (the ratio of total expenditure or revenue to GDP) is fixed at its level in the initial state of the economy. If more than one expenditure/revenue item is allowed to change to finance the revenue decrease due to a change in another item, compensating relative changes compared to the pre-policy state are equally distributed across items. For example, in the left bar of Figure 1.17 Panel A, all three items decrease in proportion to their size before the policy change to compensate for the increase in public investment expenditure. In the expenditure side experiments, the revenue structure is fixed at its initial level, and vice versa. The policy experiments lead to a change in the level of GDP per capita or welfare in the long term, because, for example, a change in the structure of government spending affects how much expenditure is split between more productive and less productive expenditure. Similarly, a change in the structure of government revenue, implying changing labour, corporate and consumption tax rates, affects the consumption, saving, labour supply and investment decisions of the private sector.

Source: Sunel (forthcoming^[35]).

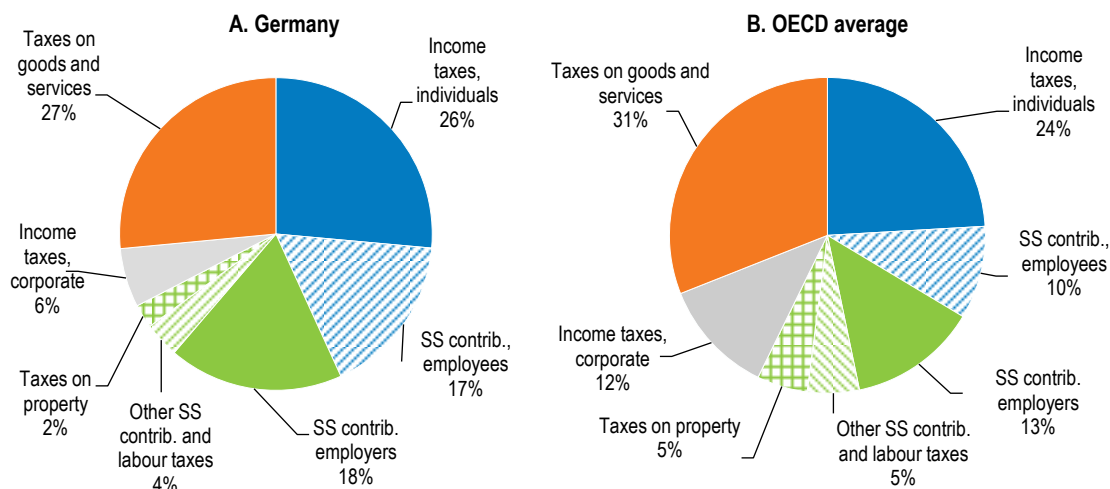
Broadening the tax base and shifting the tax burden away from labour

Structural reforms to improve spending efficiency should be combined with broadening the tax base and shifting the tax burden from labour towards capital income, wealth and consumption. The tax mix is highly skewed towards labour taxes, with a much lower contribution of property, capital and corporate income and value added taxes to total tax revenues compared to other OECD countries (Figure 1.18). These high labour taxes reduce labour supply incentives, while labour shortages are high, and thus should be reduced by decreasing personal income tax rates (see Chapter 3). This could be financed by increasing revenue from property taxes, reducing tax expenditures in inheritance, capital and corporate income, environmental and value-added (VAT) taxation, increasing excise duties on alcohol and tobacco, and strengthening tax

enforcement (see the previous OECD Economic Survey of Germany) (see the upper part of Table 1.5). According to OECD simulations, such a shift in the tax structure could also raise GDP growth (Figure 1.17). Reducing corporate income taxes instead of labour taxes would have a lower effect on GDP growth. In this context, the reductions of personal income taxes for lower-to-middle incomes announced in the coalition treaty are welcome, but the financing of such a measure remains to be specified. Likewise, the announced accelerated depreciation rules for investments and the reduction in corporate income taxes will likely raise incentives to invest but also further reduce revenue from capital income.

Figure 1.18. The tax mix is skewed towards labour taxes

General government tax revenues, % of total, 2023 or latest available year



Source: OECD Tax Revenue Statistics database.

StatLink  <https://stat.link/ae35t>

Allowance thresholds for gift and inheritance taxes and exemptions for business assets should be reduced, while extending instalments for tax payments. Although taxes on wealth and its transfer, such as inheritance and gift taxes, likely create less distortions than labour or capital income taxes and contribute to raise the equality of opportunities, Germany makes little use of them (OECD, 2021^[41]; Scheuer and Slemrod, 2021^[42]; Guvenen et al., 2019^[43]). Moreover, wealth inequality is high compared to other OECD countries, mainly because of the high concentration of home and business ownership (Schularick, Bartels and Albers, 2022^[44]). Reducing tax allowances for gifts to family members, which are among the highest across OECD countries, and accounting for tax exempted gifts when applying tax allowances for inheritance could significantly contribute to raising tax revenue and improving equality of opportunities (OECD, 2021^[41]). Moreover, generous inheritance and gift tax exemptions for business assets including shares result in tax expenditures of up to EUR 10 billion per year, which are highly regressive (Jirmann, 2022^[45]; BMF, 2021^[46]). The objective of these exemptions is to prevent the forced split-up of large family-owned firms due to liquidity issues and ensure the successful continuation of family management of firms providing well-paid jobs. However, an empirical evaluation of the 2009 German inheritance tax reform, which had strongly expanded tax exemptions for family business successions, concluded that the less generous system before 2009 had not jeopardised business succession of family firms due to liquidity issues (Houben and Maiterth, 2011^[47]). Moreover, these tax exemptions facilitate tax avoidance schemes that allow to declare private wealth as business assets and lead to very low effective inheritance and gift tax rates for wealthy households (Trautvetter and Schwarz, 2021^[48]). Limiting tax exemptions to business assets below a value of EUR 26 million, as foreseen by a 2016 reform but not implemented due to existing loopholes, and lowering personal tax allowances could be combined with decreases in tax rates and would still significantly raise revenue (Grabka and Tiefensee, 2017^[49]; Bach, 2021^[50]). To address concerns about forced liquidation of family-owned firms, instalments for tax payments could be further extended.

Generous tax expenditures for capital income from selling or renting existing buildings, which distort capital allocation, contribute to rising housing prices and increase inequality, should be abolished or better targeted to incentivise the expansion of housing supply. This could raise up to EUR 12 billion per year (Fuest, Hey and Spengel, 2021^[51]; Bach and Eichfelder, 2021^[52]). Capital gains from selling real estate are fully exempted from personal income tax, if the property has been held for more than 10 years, leading to revenue losses of around EUR 6 billion per year. Moreover, taxable rental income is reduced by overly generous tax depreciation allowances that strongly reduce tax burden on immovable property (Bach and Eichfelder, 2021^[52]). Profits of real estate companies are fully exempted from the *Gewerbesteuer*, which is a municipal-level corporate income tax with an average rate of 15%, entailing a revenue loss of around EUR 5 billion (see Chapter 4). Loopholes also allow real estate holdings to avoid paying the tax on land acquisition (Bach and Eichfelder, 2021^[52]). Finally, real estate property above 299 apartments is automatically classified as a business asset and exempted from the inheritance tax, which is not the case for smaller properties, leading to revenue losses of about EUR 1 billion (Bach and Eichfelder, 2021^[52]). In combination with low interest rates, the generous tax treatment of real estate has attracted many institutional and private investors to the German real estate market, leading to misallocation of capital. As this beneficial treatment was not only granted for new constructions, but also for investments into the existing housing stock, they contributed to strongly rising property prices. This has also exacerbated the concentration of real estate assets in the hands of the highest income-decile and crowded-out many middle-class households searching for owner-occupied property (Fuest, Hey and Spengel, 2021^[51]). Increasing recurrent taxes on immovable property, which are low compared to other OECD countries, can also help raise revenue and at the same time support municipal finances (see Chapter 4).

Reducing VAT reductions and exemptions and establishing transparent criteria for remaining ones would raise tax revenue and improve tax fairness (OECD, 2022^[53]). The share of taxes on goods and services in total tax revenue is significantly lower than in the average OECD country (Figure 1.18). This is mainly due to high VAT reductions or exemptions, including for real estate, financial and insurance services, education services, and gold, silver, precious stones and art pieces (Trautvetter, 2020^[54]). Many of these tax expenditures are likely distortive or regressive, but transparency is weak and impact evaluations are missing for many of these measures (Aliu, Grundke and von Haldenwang, 2023^[55]). A subsidy report is published every other year that covers a specific set of tax expenditures and includes evaluations for half of the reported measures. A report by the environmental agency of the federal government has identified environmentally harmful tax expenditures and subsidies, which amount to about EUR 65 billion per year, which is more than estimates presented in the subsidy report (Burger and Bretschneider, 2021^[56]). Conducting a comprehensive review and impact evaluation of existing tax expenditures as recommended by the previous OECD Economic Survey of Germany could help to better prioritise the use of public resources at all levels of government, as tax expenditures tend to be scrutinised less than direct spending which is inspected in yearly budget negotiations. In this context, some of the announced tax policy measures in the coalition treaty would not contribute to lowering tax expenditures. Reducing the value added tax for restaurant services and increasing tax expenditures for diesel used in agriculture as well as the commuter allowance are costly, while impact evaluations for these measures have shown their distortive effects.

Relatively low revenue from taxes on goods and services is also related to low statutory tax rates and weak tax enforcement. Excise taxes on alcohol and tobacco are low compared to other OECD countries and raising them would not only improve revenue but also contribute to better health outcomes (see below). Raising the statutory VAT rate would also help raise revenue. Moreover, estimations of the VAT gap by the European Commission indicate that Germany loses around 9% of VAT revenue, equivalent to EUR 22 billion each year, related to tax fraud and evasion schemes. Although this share is about average across EU countries, progress in tax enforcement has been weak since 2011, as the number of VAT inspectors and VAT-related inspections declined, and the IT infrastructure and the coordination between enforcement authorities of the Länder and with European enforcement agencies are still weak (see the previous OECD Economic Survey of Germany). Introducing the obligation to use electronic cash registers and automatic e-invoicing for all firms and setting a maximum threshold for cash payments would be important steps to reduce VAT evasion as well as money

laundering. Spain, Italy, Hungary and Chile, for example, have successfully implemented mandatory electronic invoicing at the national level (OECD, 2022^[57]).

This should be complemented by improving the estimation of domestic tax gaps for all tax types as well as incentives for the sub-national governments to raise tax enforcement. In Germany, domestic information on tax gaps is not available, mainly due to data protection and IT issues, which are exacerbated by the decentralised tax administration system and strict tax secrecy rules (BMF, 2020^[58]). Tax collection and enforcement is under the responsibility of the Laender, including for federal and co-participated taxes, which is a unique feature of the German system compared to other federal countries like the United States or Australia (see Chapter 4). This in combination with the federal fiscal equalisation scheme also reduces incentives for the tax administrations of the Laender to improve tax enforcement, as only a small share of additionally collected tax revenue will accrue to the sub-jurisdiction (see the previous OECD Economic Survey of Germany). Reducing effective tax rates by underinvesting in tax enforcement might also serve to attract firms and wealthier households to the sub-jurisdiction, similar to detrimental international tax competition (Troost, 2016^[59]; BMF, 2004^[60]; OECD, 2021^[61]). Establishing an independent fiscal institute and the necessary data sharing and IT infrastructure to collect and publish information on tax gaps, including at the Laender level, would help ensure an objective and independent analysis of tax data while maintaining high data protection standards (as discussed in the previous OECD Economic Survey of Germany). This should be combined with including targets on tax enforcement capacities in the binding guidelines for the tax administrations of the Laender and making the guidelines as well as data on the capacity of tax administrations publicly available to hold Laender governments accountable. If Laender specific tax gap estimates become available, performance targets for tax administrations based on these estimates could be introduced in the guidelines.

1.3.3. Further improving the fiscal framework

Although the recent reform of the fiscal framework is welcome, there is a risk that it delays some needed fiscal adjustments. The constitutional reform mentions that the new infrastructure fund should finance additional investments and keep an adequate level of investment spending in the core budget, but this is to be defined in a specific law. Clearly defining what investment means is key to ensure an efficient use of scarce fiscal resources. As a high share of the infrastructure backlog relates to maintenance and replacement of existing infrastructure, the law implementing the fund should make sure that such spending can also be financed. Moreover, defence spending stood at 1.2% of GDP in 2024 and including other spending exempted from the fiscal rules by the reform, such as spending for civil protection, intelligence services or protection of IT systems, this share rises to 1.5% of GDP. As any spending for these budget items above 1% of GDP will be exempted from fiscal rules, this allows financing other non-defence related core budget spending of about 0.5% of GDP by public debt. Avoiding such fiscal slippage is key to reduce the necessary fiscal adjustments in the future (see above). Moreover, the implementation of allocations from the infrastructure fund to Laender and municipalities could be used to help build a necessary consensus on simplifying and harmonising regulations and administrative procedures across and between levels of government and encourage the bundling of tasks across municipalities (see Chapter 2 and 4).

Increased flexibility in fiscal rules should be combined with more transparency in fiscal accounts to strengthen the fiscal framework. Despite the reinstatement of the debt brake in 2024, which limited the structural fiscal balance of the federal and Laender governments to 0.35% and 0% of GDP, respectively, and the strengthening of fiscal rules by the ruling of the constitutional court in November 2023, the fiscal deficit according to EU rules stood at 2.8% of GDP in 2024. This is because the net spending from special funds is not reflected in the federal deficit relevant for the debt brake anymore, although it appears in the fiscal balance according to EU fiscal rules (see the previous OECD Economic Survey of Germany). Moreover, the fiscal balance of the Laender has strongly deteriorated from a surplus of 0.38% of GDP in 2022 to a deficit of 0.64% in 2024. This is because some Laender have not reinstated their debt brake or started to use net spending from their own extra-budgetary funds, which were created in 2023 and funded through additional borrowing when the debt brake was suspended. The recent inclusion of state-owned enterprises (SOEs) providing public transport into the government sector in the national accounts has also increased deficits for Laender and municipalities. Borrowing through SOEs is in many other cases

still not reflected in government deficits. In addition, the large heterogeneity in accounting and fiscal rules across the Laender makes it increasingly difficult to compare the financial situation of sub-national governments (Bundesbank, 2024^[61]).

As recommended by the previous OECD Economic Survey of Germany, net spending of all extra-budgetary funds should be gradually included into the core budget at the federal and the Laender level. Including structural investment spending in key policy areas such as defence, digital and green infrastructure or education in the core budget would help to facilitate the necessary political discussions on how to finance important investment needs, which spending to prioritise and how to raise additional revenue. This is particularly important as fiscal pressure from pension and health systems will strongly increase over the coming years and repayment for the debt issued during the pandemic will start from 2028. The inclusion of extra-budgetary funds into the core budget should be combined with a transparent quantification of contingent liabilities associated with the quasi-fiscal activities of federal and sub-national SOEs, such as development banks, the public rail company or other SOEs (IMF, 2022^[62]; Asatryan, Heinemann and Nover, 2022^[63]).

The constitutional court ruling from November 2023 has strengthened the principles of *Jährlichkeit* (annuality) and *Jährigkeit* (annual validity) of the federal budget, limiting the possibility of allocating funds to finance infrastructure investments in future years. Although specific legal provisions exist that allow the administration to enter into multi-year contractual obligations (commitment appropriations), a carry over of funds to future years is generally not possible, with some exceptions for defence procurement. Introducing multi-year budgeting could improve fiscal planning related to longer-term commitments, such as public investment projects but also commitments like the defence spending quota or a stable benefit replacement ratio for pensions. Extending the possibilities for roll-over of funds to the next fiscal year could also help raise spending efficiency. Current budgeting rules set incentives to spend funds before the end of the fiscal year, which could lead to large inefficiencies and lower quality spending (Liebman and Mahoney, 2017^[64]). Another option to facilitate public investment within the current fiscal framework is to increase equity-injections or transfers to public companies such as the rail operator, the highway or housing infrastructure agency or the public development bank. Establishing a permanent infrastructure fund financed by steady revenue streams, such as toll revenues, could help ensure stable funding for public investment in roads and railways. Spending could be allocated for maintenance, replacement, and expansion, as in Switzerland, to avoid prioritising new construction over maintenance. Alternatively, autonomous, revenue-financed infrastructure corporations, like Austria's ASFINAG, could operate outside the debt brake while aligning with EU fiscal rules, ensuring user preferences shape infrastructure development (SVR, 2024^[65]).

1.3.4. Stabilising pension, health and long-term care systems to ensure long-term fiscal sustainability

Without further policy changes, rapid population ageing will increase yearly public spending on pension benefits by around 2 percentage points of GDP until 2045 (Figure 1.15). As labour taxes are already among the highest across OECD countries, weighing on labour supply incentives, these spending pressures should not be addressed by further increasing social security contribution rates (see Chapter 3). However, recent reforms and reform plans are not sufficient to stabilise the pension system and transfers from the general budget to the public pension system have increased to about 2.5% of GDP in 2024. After the 2007 decision to gradually raise the retirement age to 67 until 2031, the introduction of generous early retirement options, which allow individuals with at least 45 working years to retire without loss of pension entitlements as well as relatively low benefit reductions for individuals with at least 35 working years have reduced incentives to work longer (see Chapter 3 and Box 1.3). In 2018, a minimum threshold for the replacement rate (48%) and a maximum threshold for the contribution rate (20%) were fixed until 2025. The new coalition treaty intends to fix the minimum threshold for the replacement rate until 2031 and raise benefits for mothers with children born before 1992 who have low pension entitlements (Box 1.3). Implementing these plans would raise spending pressures substantially and further reduce fiscal space for public investment and other key expenditures (Bundesbank, 2022^[66]).

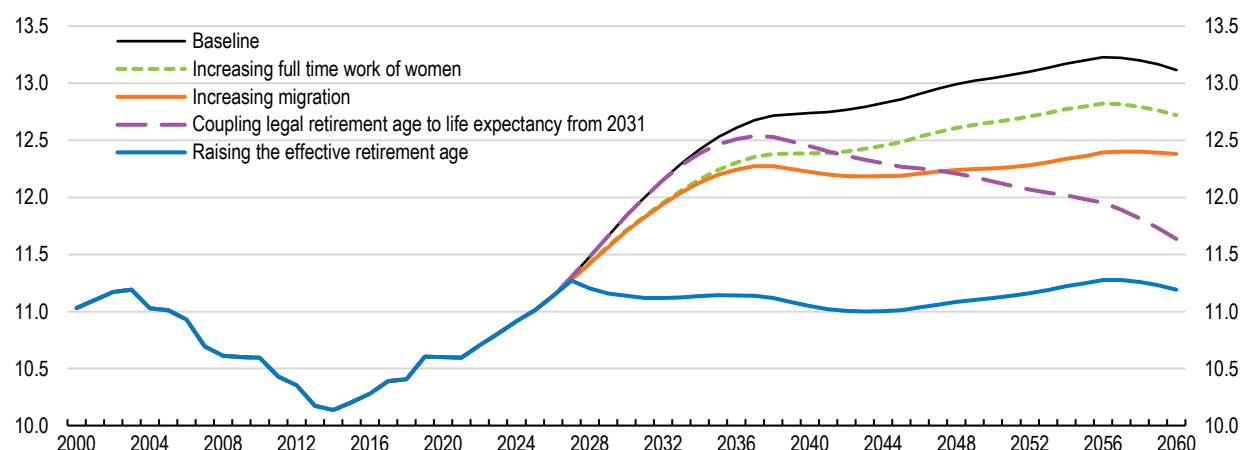
Creating the conditions for older workers to work longer is key to stabilise the public pension system in the medium-term (Figure 1.19, Box 1.3). This requires reducing fiscal incentives for early-retirement, improving working conditions and adult learning opportunities for older workers, and raising incentives to continue working beyond the statutory retirement age (see Chapter 3). Simulations using the OECD Long Term Model show that raising the effective retirement age by phasing out incentives for early-retirement, while keeping pension entitlements constant, would be most effective in stabilising the pension system and reducing fiscal pressures, when compared to other policy scenarios such as raising immigration or the labour force participation of women. Increased migration and higher labour supply of women are, however, key for addressing skilled labour shortages (see Chapter 3). Linking the legal retirement age to life expectancy from 2031 onwards, when the statutory retirement age will have reached 67, is a necessary step to stabilise the pension system in the longer term. This could be complemented with a reduction of pension benefits, which should be combined with a guaranteed minimum pension or an increase in the existing basic income support for old age to reduce the risk of old age poverty (OECD, 2023^[67]). Making funded individual pension schemes (*Riester Rente*) more attractive and strengthening asset-backed occupational pensions would help complement public pensions and deepen capital markets (see above).

Including public servants and the self-employed in the statutory pension insurance system could help stabilise the system and increase fairness (Box 1.3). Public servants are insured in a separate system and receive higher benefits compared to the statutory public system, which also reduces labour mobility (see the 2016 OECD Economic Survey of Germany). Including them in the statutory system would increase pension contributions, but due to their longer life expectancies and above-average wages it would only provide short- to medium-term relief. However, it could help lower barriers to labour mobility (see Chapter 2). Including the self-employed in the public pension system would have stronger effects on the sustainability of the public pension system. Around 3 million self-employed individuals in Germany currently lack mandatory retirement coverage and often face significant savings gaps, which leads to high costs for the basic income support system for old age as they will need to be supported when they retire (SVR, 2023^[29]). Mandating pension contributions for new self-employed individuals or setting an age limit for inclusion could help reduce "free-rider" behaviour, strengthen the public pension system, and reduce costs of tax-funded basic income support.

Germany's long-term care (LTC) insurance system, funded through pay-as-you-go contributions, faces significant challenges due to rising costs driven by demographic changes, medical advances, and expanding service coverage. By 2040, LTC expenditures per insured individual are projected to increase by over 90%, with population ageing alone accounting for a 23% rise (BMWK, 2022^[68]). This would push contribution rates to between 4.4% and 5.2% of gross wages, adding further pressure to already high labour taxes weighing on labour supply. On the other hand, as nearly half of the care for older people is provided informally and predominantly by women, who care for spouses or parents, improving the supply and funding of long-term care services is key for strengthening the formal labour market participation of women (see Chapter 3). Limiting the increase of LTC benefits, raising spending efficiency in institutionalised care and encouraging personal savings for care-related expenses would promote generational fairness and help reduce financial pressures on the public LTC system. Spending efficiency should be increased by strengthening home-based professional care, as the share of individuals with low or moderate care needs allocated to institutionalised care is much higher than in other OECD countries (OECD, 2024^[69]). Moreover, gradually increasing transfers from the core budget to strengthen the care reserve fund would help prevent strongly rising contribution rates. This could be combined with introducing a mandatory supplementary private care insurance, which is capital-funded and complemented with targeted tax-funded support for low-income groups (BMWK, 2021^[70]).

Figure 1.19. Raising the effective retirement age and coupling the legal retirement age to life expectancy is crucial to stabilise pension spending

Public spending on pensions (% of GDP)



Note: The graphs show the effects of different scenarios for public spending on pensions in Germany using the methodology of (Guillemette and Turner, 2021^[1]). The scenario "Increasing full time work of women" assumes that the share of women working part time is reduced to the one in Sweden (reduction from 35 to 15 percentage points) until 2035. The scenario "Raising the effective retirement age" assumes that the effective retirement age increases by 0.6 years until 2032 relative to the baseline (and by 1.3 years until 2045), while pension entitlements do not increase with longer working lives. The scenario "Increasing migration" assumes net migration inflows over the projection horizon of 400 000 migrants per year (from 2026 onwards), whereas the baseline assumes the Destatis baseline of 206 000 migrants per year).

Source: OECD Long Term Model.

StatLink  <https://stat.link/81rn6j>

The public health insurance faces strong financial pressures due to demographic changes, increased medical progress and treatment costs, and lifestyle-related diseases. The scope to increase spending efficiency is large, as health spending per capita is among the highest across the OECD, while health outcomes are only about average (OECD/European Commission, 2024^[71]). Over-capacity in the inpatient care sector is contributing to severe labour shortages, while the case-based payment system has led to overtreatment lowering spending efficiency and likely reducing treatment quality. A recent hospital reform has the potential to enhance spending efficiency by consolidating the inpatient care sector and focusing on gains from specialisation of hospitals in specific treatments, while partly replacing the case-based system with allowances for hospitals to retain capacity. The successful restructuring of the hospital landscape will require significant investments in buildings and equipment, for which the Laender are responsible and which remained weak in recent decades. Moreover, as some hospitals will have to close, it is key to strengthen outpatient and digital care services to ensure coverage of primary care and the allocation of patients to specialised hospitals according to their needs. The introduction of the electronic patient file is a big step forward and, if fully implemented in the outpatient and inpatient care sector, will significantly increase treatment quality and spending efficiency by avoiding duplication of examinations and laboratory tests as well as incompatibility of different treatments. So far, fragmented implementation due to low awareness of health personnel, concerns of health provider associations and limited interoperability of existing IT systems hinder its full implementation, although standardised interfaces have been recently established and made mandatory. Preventive care should be strengthened by fostering awareness of life-style related diseases and excise duties on alcohol and tobacco products, which are low compared to other OECD countries, should be increased. Increasing transparency on prices and discounts in public procurement of medicines and improving competition enforcement could help contain strongly increasing spending for medicines (Seldesjachts et al., 2024^[72]; Berndt, Grill and Schumann, 2024^[73]).

Table 1.6. Past recommendations and actions taken

Past recommendations	Action taken
Gradually include extra-budgetary funds in the core budget, while introducing more flexibility in the fiscal rules to allow for adequate investment spending.	No action taken.
Allow for accessing, linking and analysing administrative datasets across levels of government, while ensuring adequate data protection and confidentiality standards.	The Research Data act aims at facilitating the linkage and use of administrative data for improving policy impact evaluation and better targeting of support measures. However, its approval is pending.
Implement plans for a centralised and transparent e-procurement platform for tenders from all levels of government and encourage joint procurement initiatives of municipalities through financial incentives.	A federal e-procurement website has been established where tenders from all levels of government above the EU threshold have to be published, while the publication of tenders below the threshold remains voluntary for Laender and municipalities.
Remove barriers to the portability of civil servant pensions.	No action taken.
Index the legal pension age to life expectancy.	No action taken.
Include private insurers in the financing system based on the central health fund.	No action taken.
Reduce allowance thresholds for gift and inheritance taxes and exemptions for business assets, while extending instalments for tax payments.	No action taken.
Improve tax collection and reduce distortions by abolishing tax expenditures for income from selling or renting real estate and VAT exemptions.	No action taken.
Set binding guidelines on tax enforcement capacities and performance for the Laender, using Laender-specific tax gap estimates, and regularly publish guidelines and performance outcomes.	No action taken.
Introduce the obligation to use electronic cash registers and automatic e-invoicing for all firms, including an electronic clearing procedure for border crossings, and set a maximum threshold for cash payments.	A maximum threshold for cash payments has been set for selling real estate.
Allow public and private pension funds and other retirement saving plans to invest a larger share of their assets in VC funds.	No action taken.
Strengthen supervision of direct pension commitments of employers.	No action taken.
Improve the effectiveness of start-up and growth financing instruments, including by avoiding complexity, scaling up later stage funding and improving conditions for institutional investors to invest in venture capital.	The Future Financing Act has been introduced to simplify the requirements for initial public offerings. The Future Financing Act II aims at further fostering viable exit options for innovative start-ups. The established Future Fund aims at crowding in institutional investors in the venture capital and private equity markets.

Table 1.7. Findings and recommendations (key recommendations in bold)

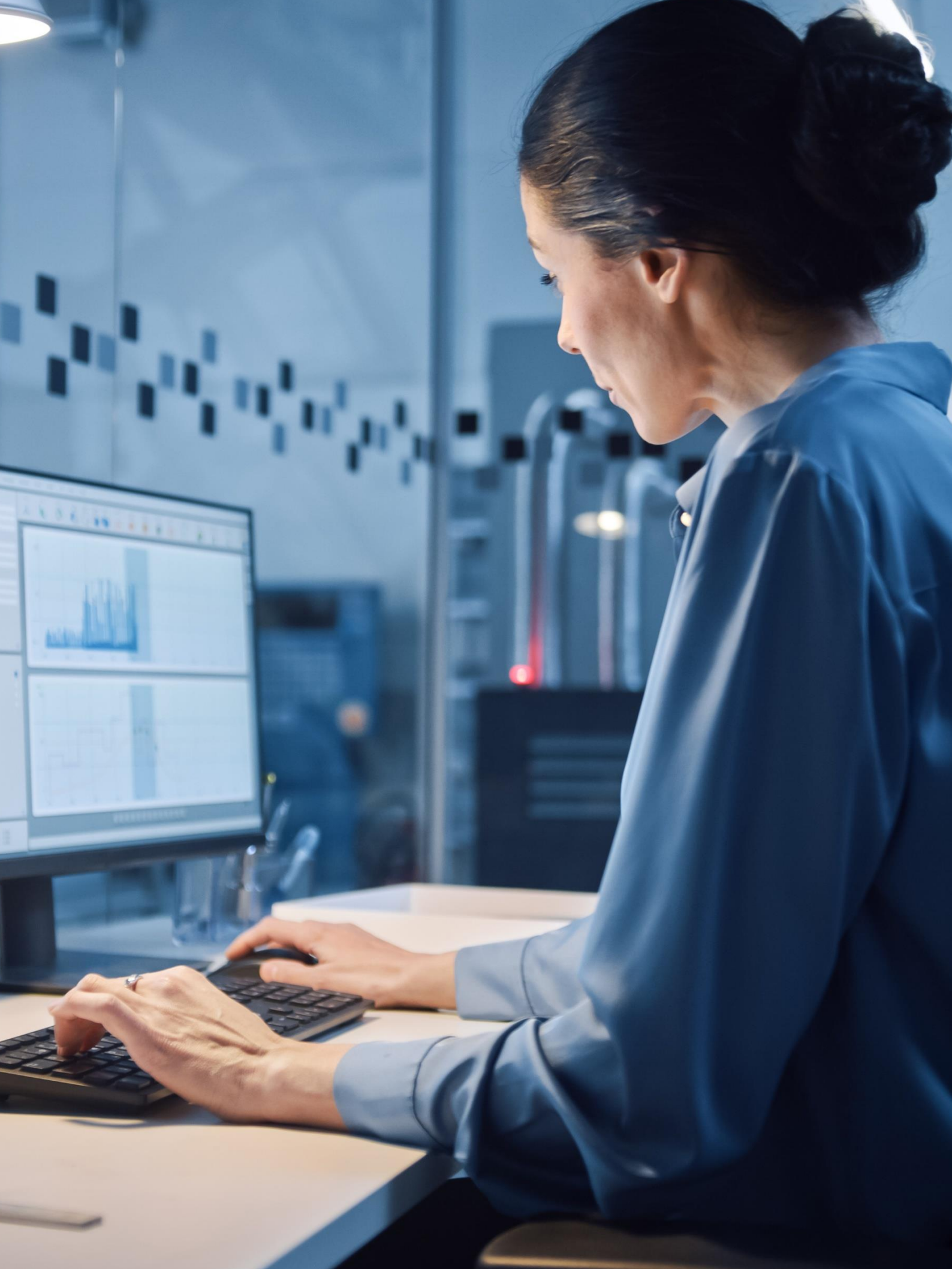
Main findings	Recommendations
Strengthening fiscal policy and addressing rising spending pressures	
Investment is needed to improve defence capacity and address a large infrastructure backlog. Recent reforms of the fiscal framework allow additional borrowing to address these needs, while spending pressures will further increase due to rapid population ageing.	Create fiscal space for public investment by raising spending efficiency, reallocating spending and broadening the tax base, including by reducing tax expenditures and strengthening tax enforcement.
Extra-budgetary funds at the federal and the Laender level reduce transparency and weaken the credibility of the national debt brake. Investment needs are high.	Gradually include all extra-budgetary funds in the core budget of the Laender and the federal government, while introducing more flexibility in the fiscal rules to allow for adequate investment spending.
Effective labour taxes are high, reducing labour supply incentives. Revenue from property, capital gains and inheritance taxes and excise duties on alcohol and tobacco is low relative to other OECD countries.	Lower personal income taxes, while raising revenue from property taxes and excise duties on alcohol and tobacco and reducing tax expenditures in capital income, inheritance, VAT and environmental taxation.
Budgeting procedures remain focused on inputs and not outcomes of policy programmes, weighing on spending efficiency and complicating the prioritisation of spending.	Foster a culture of policy impact evaluation, including by conducting broader spending reviews with clear saving targets and improving monitoring, data and IT capacities.
Around 3 million self-employed individuals in Germany lack mandatory retirement coverage and often face significant savings gaps, increasing costs in the basic income support system.	Make enrolment in public old-age pension mandatory for the self-employed who are not covered by old-age pension insurance.
Nearly half of old-age care is provided informally and predominantly by women, reducing their formal labour market participation. The deficit in the public long-term care system has strongly increased.	Raise spending efficiency in the public long-term care system by focusing on home-based professional care for individuals with low or moderate care needs and gradually increase transfers from the core budget.
A recent hospital reform consolidating the hospital sector is not combined with additional measures to strengthen outpatient care.	Complement the recent hospital reform with further measures to strengthen outpatient and digital care services.
Addressing vulnerabilities in financial markets and deepening capital markets	
Commercial real estate prices have declined strongly and non-performing loans in the sector have risen. Persistently higher energy prices might raise risks related to the debt of energy-intensive firms.	Maintain a tight macroprudential policy stance and consider moving to a positive neutral counter-cyclical capital buffer approach.
Around half of workers are covered by an occupational pension scheme but a significant part of these schemes are based on book reserves and are unfunded, reducing available funds in capital markets.	Gradually phase out book reserves by introducing mandatory enrolment in asset-backed occupational pension schemes for new employees.
Most asset-backed occupational pension funds are defined benefit systems and regulatory limits for investment in private assets are low, while risk-aversion is high, leading to low equity exposure.	Raise concentration limits for single-issuer assets, real estate and private investment funds, while ensuring appropriate risk management and governance processes. Strengthen financial literacy among social partners and consider gradually transitioning to defined contribution occupational pension funds.
Insurance firms invest mostly in debt and not equity. Solvency II regulation allows lower risk-weights for insurers' investments in long-term equity asset categories.	Review whether the implementation of relevant Solvency II regulations restricts insurance companies' investment opportunities, especially in equity.
High fees and low returns of individual funded pension plans lead to low up-take despite public subsidies.	Introduce caps to limit fees for individual funded pension plans and establish a standardised investment product with an opt-out option.

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2 Fostering competition to revive business dynamism and productivity growth

Robert Grundke

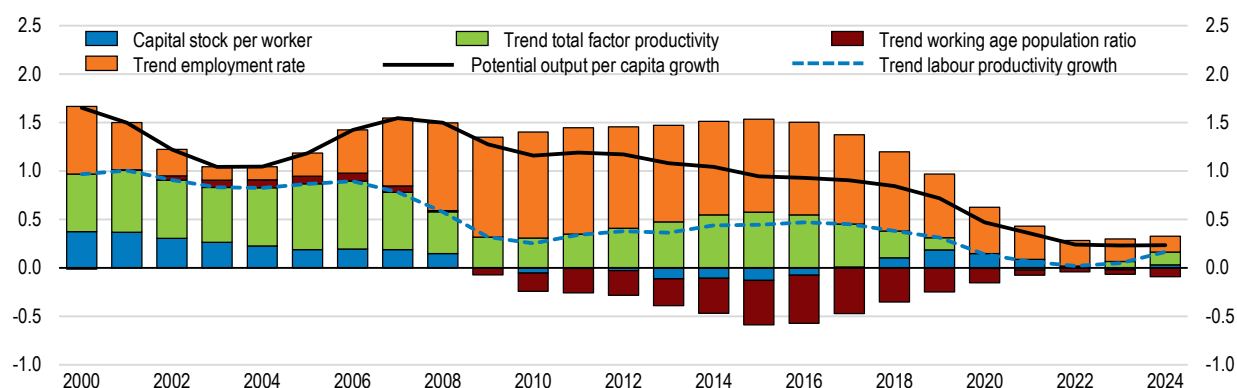
Already before the pandemic and the energy crisis, economic growth had slowed down, driven by weak business dynamism and productivity growth. High administrative burden and regulatory barriers to competition have hampered the entry and growth of innovative firms and reduced competitive pressures on incumbents to innovate, invest in adopting new technologies and improve productivity. Industrial and labour market policies have tended to favour incumbents and hampered the reallocation of resources to young and innovative firms, weighing on allocative efficiency and slowing down structural change. To revive business dynamism and productivity growth, it is key to reduce the administrative burden and make regulation and public policies more competition friendly. This will require accelerating the digitalisation of the public administration and harmonising and simplifying administrative procedures and regulations across levels of government. Reducing occupational licensing requirements would help lower barriers to firm entry. Strengthening the power of the competition agency to challenge regulation that hampers competition as well as better governance of state-owned enterprises, particularly at the local level, are also needed.

2.1. Business dynamism and productivity growth have slowed down

Already before the pandemic and the energy crisis, economic growth in Germany had slowed down more than in other OECD countries (see Chapter 1). The slowdown in potential economic growth has been driven by weak investment, a shrinking working age population and declining productivity growth (Figure 2.1). As rapid population ageing will continue to reduce the working age population and energy prices are likely to remain above pre-crisis levels and weigh on the competitiveness of manufacturing firms, fostering investment and productivity growth is key for maintaining high living standards.

Figure 2.1. GDP per capita growth has slowed down

Contributions to potential output per capita growth, in percentage points



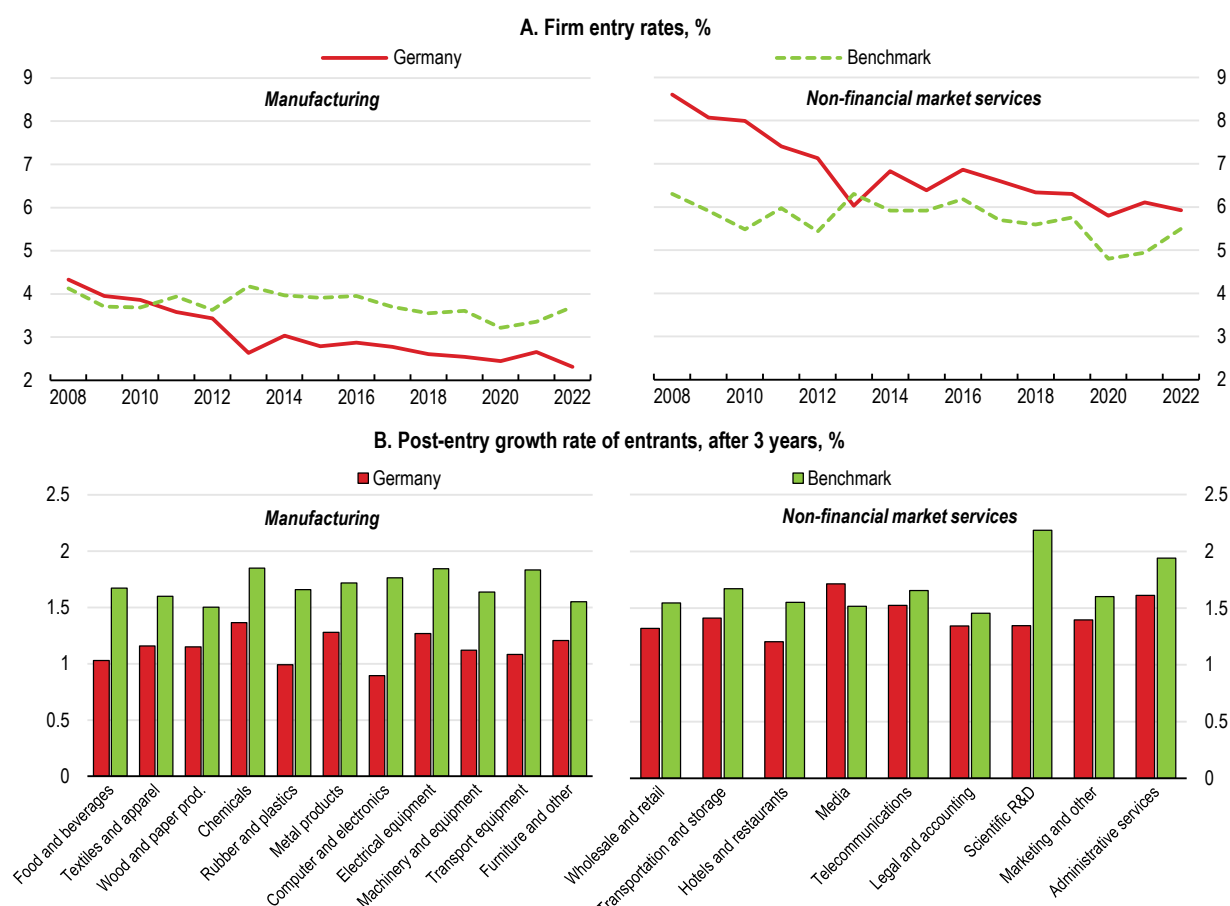
Source: OECD Economic Outlook database.

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Since the mid-2010s, the decline in labour productivity growth has been increasingly driven by declining total factor productivity growth, which captures technological progress, skills of workers and managers as well as how efficiently capital and labour are allocated within and across sectors of the economy (Figure 2.1). Recent evidence shows that in manufacturing resources have been increasingly locked in firms with lower productivity hampering the growth of more productive and innovative firms and reducing average productivity growth (SVR, 2023^[1]). The increase of employment in services sectors has also contributed to a decrease in average productivity growth, as employment growth has been strongest in sectors with lower average productivity, such as public services, health and social services (SVR, 2019^[2]). Also within firms, productivity growth has suffered from a weak adoption of digital technologies and innovation (as discussed in the 2020 OECD Economic Survey of Germany).

The decline in allocative efficiency and firm-level productivity growth is related to the existence of barriers to entry and firm growth. If incumbent firms are less challenged by new market entries, they have lower incentives to innovate, upgrade their management skills, invest in adopting new technologies and improve productivity, particularly in high-technology sectors (Bloom and Van Reenen, 2007^[3]; Bloom, Draca and Van Reenen, 2015^[4]; Aghion et al., 2009^[5]). Moreover, new firm entries have been found to significantly contribute to innovation, structural change and productivity growth (Dent et al., 2016^[6]; Gourio, Messer and Siemer, 2016^[7]). Since 2008, market entry rates of firms with at least 2 workers or owners have declined in Germany compared to a benchmark group of countries, both in manufacturing and services (Figure 2.2). Moreover, the post-entry growth of firms has been much lower than in benchmark countries, and this applies to almost all sectors of the economy. This points to the existence of important barriers to firm entry and growth, such as administrative burden, regulatory barriers to competition, market power and anti-competitive practices of incumbents or weak access to finance for new firms (Calvino, Criscuolo and Verlhac, 2020^[8]). Rapid population ageing has also contributed to lower entrepreneurial activity and entry rates but cannot explain the weak post-entry growth of firms.

Figure 2.2. Firm entry rates have declined and post-entry growth is weak

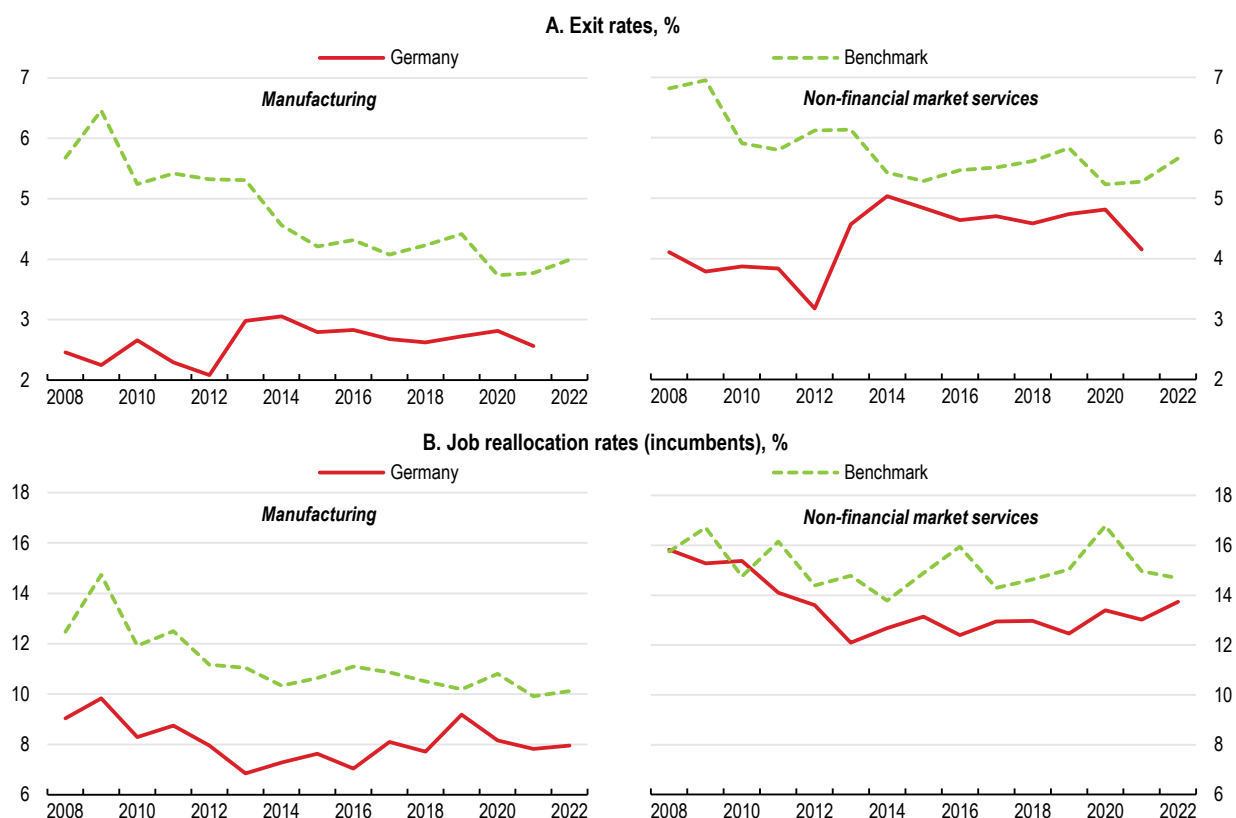


Note: Panel A illustrates entry rates (in percentage), computed as the number of entering firms divided by the total number of active units in the same period (i.e. incumbent and entering firms), focusing on employer businesses, i.e. firms with at least 2 workers or owners. Panel B illustrates post-entry growth of surviving entrants, computed as total employment of all surviving entrants three years after entry divided by the total employment at entry for the same firms, focusing on employer businesses. Entry is defined as the first year of activity with positive employment. Figures may differ from official statistics owing to data source and methodological differences. The benchmark includes an unweighted average of data from the following countries: Finland, France, Italy, Portugal, Slovenia, Spain, United Kingdom (for which data was available up to 2022).

Source: OECD DynEmp (v3_2) database.

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Moreover, low and declining exit rates as well as decreasing job reallocation among incumbents indicate that employment is increasingly concentrated in larger and older incumbent firms (Figure 2.3, Figure 2.4). This has likely contributed to the decline in allocative efficiency and average productivity growth, as resources were locked in less productive incumbent firms instead of fuelling the growth of younger and more productive firms (Hsieh and Klenow, 2009^[9]; Adalet McGowan, Andrews and Millot, 2017^[10]). Moreover, the declining job reallocation can also be associated with a lack of knowledge diffusion across the economy, which has contributed to weak digital adoption and innovation in many firms and a decrease in average productivity growth (Akçigit and Ates, 2021^[11]; Andrews, Criscuolo and Gal, 2016^[12]). Low and declining firm exit and job reallocation rates are likely related to policies and regulations favouring incumbent firms and hampering job mobility as well as rising market power of incumbents (Calvino, Criscuolo and Verlhac, 2020^[8]; SVR, 2019^[2]).

Figure 2.3. Exit rates are low and reallocation rates have declined

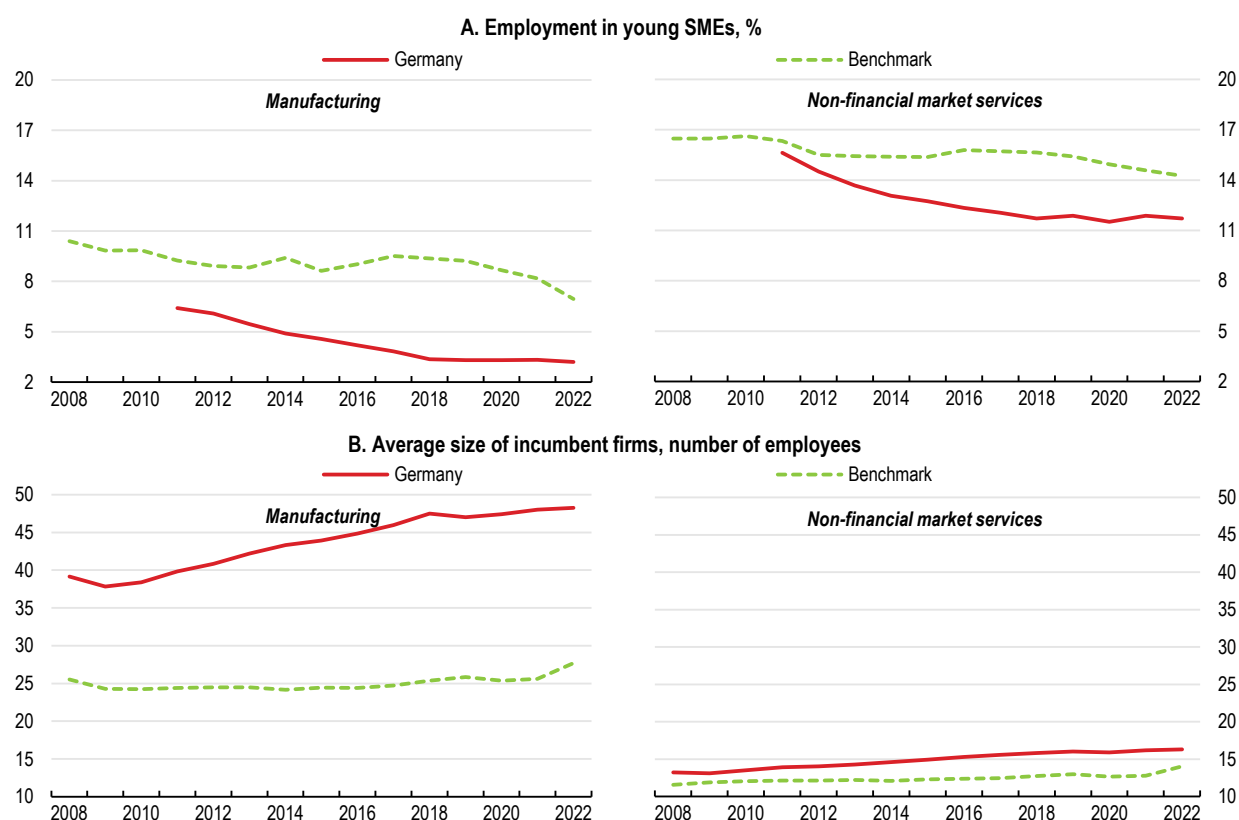
Note: Panel A illustrates exit rates (in percentage), computed as the number of exiting firms divided by the total number of active units in the previous period (i.e. incumbent and exiting firms), focusing on employer businesses, i.e. firms with at least 2 workers or owners. Exit is defined as the last year of activity with positive employment. Panel B illustrates the job reallocation rates of incumbents (in percentage), computed as the sum of job creation rates and job destruction rates of active firms with positive employment, focusing on employer businesses and excluding entering and exiting firms. Figures may differ from official statistics owing to data source and methodological differences. The benchmark includes an unweighted average of data from the following countries: Finland, France, Italy, Portugal, Slovenia, Spain, United Kingdom (for which data was available up to 2022).

Source: OECD DynEmp (v3_2) database.

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Weak investment has been another factor for declining labour productivity and GDP per capita growth, especially in the early 2010s (Figure 2.1). This has been partly related to weak public investment since the 2000s, particularly at the local level, due to weak infrastructure planning capacity and financial difficulties in many municipalities as well as complex and lengthy planning and approval procedures (see Chapter 1 and 4 as well as the previous OECD Economic Survey of Germany). Weak public infrastructure investment has also negatively affected private investment due to spill-over effects. For example, the lack of high-quality digital connectivity has reduced incentives for firms to invest in digital technologies (see Chapter 4). Moreover, private investment has also been hampered by other factors, which have also weighed on business dynamism and innovation, such as high administrative burden or regulatory barriers to entry and firm growth. As discussed in the previous OECD Economic Survey of Germany, firms and households have invested a significant part of their savings abroad and not in the domestic economy, contributing to a record high current account surplus.

Figure 2.4. Employment is increasingly concentrated in larger incumbent firms



Note: Panel A illustrates the percentage of employment in young SMEs relative to total employment. Young SMEs are defined as firms with less than 250 persons engaged and less than 6 years old, focusing on employer businesses, i.e. firms with at least 2 workers or owners. Panel B illustrates the average size of incumbent firms, computed as total employment divided by the number of active firms with positive employment, focusing on employer businesses and excluding entering and exiting firms. Figures may differ from official statistics owing to data source and methodological differences. The benchmark includes an unweighted average of data from the following countries: Finland, France, Italy, Portugal, Slovenia, Spain, United Kingdom (for which data was available up to 2022).

Source: OECD DynEmp (v3_2) database.

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2.2. Making regulation and public policies more competition friendly

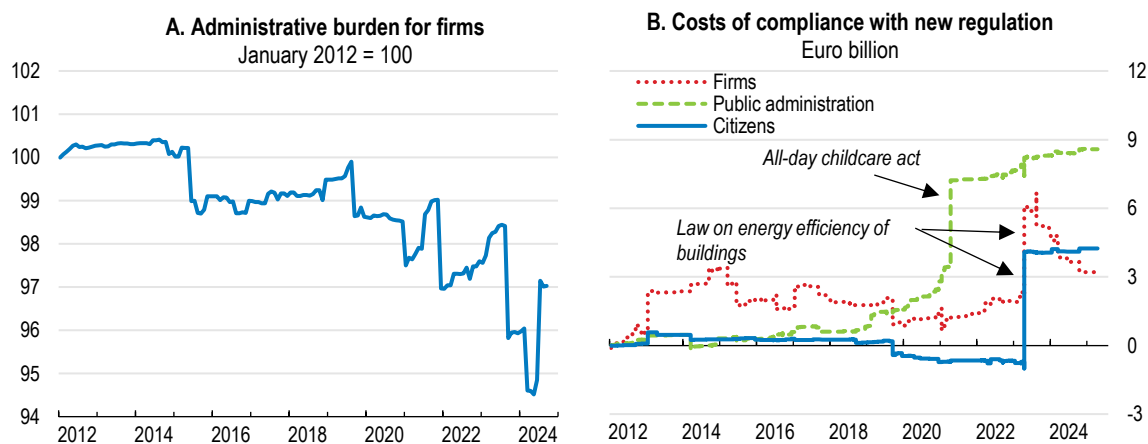
Administrative burdens can hinder the entry and growth of new firms and hamper business dynamism and competition. This is because young and smaller firms have more difficulties than larger incumbents to pay for fixed costs implied by regulatory requirements and administrative procedures, for example related to compliance with tax laws, environmental regulations or planning and approval procedures for investments. Moreover, regulation and the related compliance costs can directly hamper the entry and growth of new firms, for example in the case of administrative requirements for starting a company, or hamper competition, for example if technical standards, procurement design or subsidies favour certain companies over their competitors (Calligaris et al., 2024^[13]).

2.2.1. Continuing to reduce the administrative burden

According to the bureaucracy cost index of the Federal Statistics Office, which measures the administrative burden for businesses due to reporting requirements, administrative burden for firms has declined since 2020 (Figure 2.5, Panel A). This is due to several measures simplifying invoicing and accounting, including the

introduction of e-invoicing between firms, the increase of reporting thresholds, and the digitalisation of public services (Nationaler Normenkontrollrat, 2024^[14]). However, this index does not consider other forms of administrative burden, such as costs incurred due to lengthy administrative procedures for obtaining licenses and permits, which are also influenced by the capacity of the public administration. Another index that measures broader compliance costs implied by regulation has increased significantly in recent years (Figure 2.5, Panel B). This regulatory compliance cost index is used as the basis for the federal one-in-one-out (OIOO) rule, which mandates that at the end of each legislative period, the balance of costs for firms related to all newly introduced federal legislation should be balanced or negative. However, despite an increasing index, the government has complied to the OIOO rule in recent years, which is due to discretionary exemptions of certain regulations from the OIOO rule, in particular the exclusion of all direct implementations of EU regulations. For example, the strengthening of regulation concerning investment in energy efficiency of buildings is included in the index (Figure 2.5) but was excluded from the OIOO rule as it is defined as a direct implementation of EU regulation. In addition, certain regulations have also been excluded from the regulatory compliance cost index, for example the increase of the minimum wage in 2022. Although the costs related to the excluded regulations are not necessarily related to administrative burden, discretionarily excluding certain regulations from the OIOO rule or the regulatory compliance cost index hampers transparency and credibility. Instead, the OIOO rule should be better based on the bureaucracy cost index and focus exclusively on the administrative costs of regulation, while this index should include the administrative costs related to the implementation or transposition of EU regulation as well as the costs for households and the public administration. Raising awareness on regulatory compliance costs for the public administration could help decrease administrative burden within the public administration, which is key to free scarce resources and shorten the time for administrative procedures for firms and households. Laender governments should also introduce their own one-in-one-out rule.

Figure 2.5. The administrative burden for firms has declined, but overall costs of compliance with new regulation have increased



Note: The Index on administrative burden for firms includes costs related to interactions with the public administration, such as requesting licenses and permits, filling in forms, notifying information, providing statistics or complying with reporting requirements. Costs of compliance with new regulation includes costs related to administrative burden but also all other costs implied by the regulation, e.g. due to monitoring, training or recruitment of staff, organisational adjustments, equipment or building investments or the purchase of goods or services. The minimum wage increase has been excluded from the regulatory compliance index for firms in Panel B after a decision by the federal government in September 2024. Source: Destatis and Normenkontrollrat.

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Better monitoring the administrative costs implied by regulation should be combined with strengthening qualitative approaches to improve the quality of laws and regulations. To reduce administrative burden implied by the existing stock of regulation, a workshop-based approach (*Praxis Checks*) has been introduced that focuses on a specific administrative procedure, for example registering a company, and engages relevant stakeholders to identify particularly cumbersome bureaucratic hurdles and potential solutions. This approach

is welcome and should be expanded. While regulatory impact assessment is mandatory for all primary and secondary legislation prepared by the federal government, there is room for improvement. Although an evaluation of alternatives to the proposed regulation, which can reach the same policy objective, should be included in each assessment, this is often not the case due to weak capacities for cost-benefit analysis and a lack of enforcement. Strengthening the powers and capacities of the *Normenkontrollrat* to scrutinise the regulatory impact assessment of ministries, in particular the assessment of policy alternatives, and raise awareness among legislative drafters could help improve the quality of legislation and reduce regulatory costs. This should be combined with improving capacities for data analysis and policy impact evaluation, as recommended by the previous OECD *Economic Survey* of Germany. The Federal Statistics Office already supports ministries in calculating compliance costs of proposed regulation and conducts workshops to improve capacities for ex-post impact evaluation. Also expanding training to improve capacities for cost-benefit analysis should be a key priority to improve ex-ante regulatory impact assessment, including the assessment of alternatives. This should be combined with other measures to improve regulatory quality at early stages of the legislative process. Plans to establish a government think tank for legislative drafting, which will provide tools, training and advice for public officials involved in legislative drafting, should be implemented. Thereby, efforts should particularly focus on improving stakeholder engagement in the legislative drafting process, possibly building on the first experiences with the *Praxis Checks*.

To significantly reduce the administrative burden, fundamental institutional changes are necessary, which will require a cross-party consensus including Laender governments. High administrative burden for firms is in many cases related to complex regulations and administrative procedures that differ across Laender and municipalities, which act as local market entry barriers and lead to fragmented markets. For example, construction standards differ across Laender and even across municipalities, as in the case of fire protection standards or regulation on the steepness of roofs, which prevents realising returns to scale through modular construction approaches. Another example is the fragmentation of IT standards for the digitalisation of the public administration, which protects many smaller local IT firms, increases administrative burden within the administration and leads to large public spending inefficiencies (see below). Redesigning the allocation of responsibilities within the federal system and allowing for more centralisation in certain domains, such as registries and IT standards as well as the building code, is a top priority to reduce administrative burden for all stakeholders (see Chapter 4). In addition, promoting the bundling of tasks and harmonisation of administrative procedures at all levels of government could help to reduce administrative burdens and improve the capacity of the public administration, in particular given skilled labour shortages (Nationaler Normenkontrollrat, 2025^[15]). This would require a joint commitment of all levels of government to the bundling of tasks and a strong steering and implementation unit at the centre of the federal government as well as including a general requirement for cooperation in the constitution and reducing legal uncertainties due to the prohibition of mixed administration (see Chapter 4).

First steps have been taken to review, simplify and harmonise existing regulations and administrative procedures across levels of government, particularly related to planning and approval procedures for transport, digital and renewable energy infrastructure, and these efforts should be expanded. The definition of specific infrastructure projects as projects of overriding public interest has accelerated planning and approval procedures, as uncertainty about possible legal challenges is reduced. The creation of a specialised senate for energy infrastructure projects at the federal administrative court has accelerated legal proceedings. Silence-is-consent rules have been introduced, for example in the context of onshore wind park projects, and should be expanded to other administrative procedures where appropriate (Nationaler Normenkontrollrat, 2024^[14]). Reducing reporting and certification requirements and allowing for more self-declarations where possible, while improving enforcement through inspections and better monitoring tools, would also help reduce the administrative burden. The maintenance of existing infrastructure should be subject to fast-track approval procedures, while for new projects common environmental standards and animal-population based-approaches for protecting biodiversity should be adopted. Stakeholder involvement early in the project planning process is key to facilitate public consensus and reduce litigation. The simplification and harmonisation of approval procedures for heavy machinery transport is a pre-condition for ensuring that

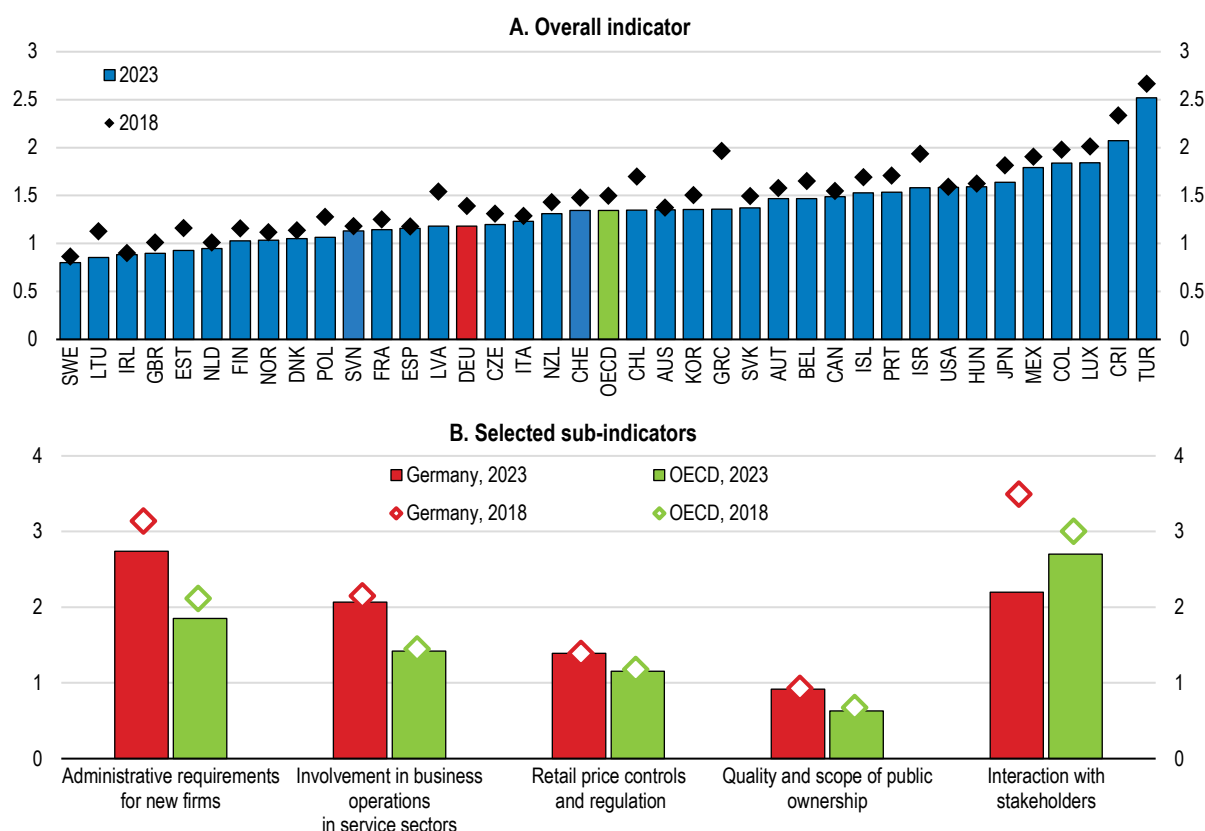
projects are not put on hold due to missing construction inputs. To reduce administrative burden, accelerate procurement procedures and simplify project management, the requirement to split infrastructure projects in smaller parts to favour the participation of smaller firms in tenders should be aligned with EU guidelines and made more flexible, as planned in a recent draft bill.

Accelerating the digitalisation of public administration has large potential to reduce the administrative burden and improve the capacity of the public administration. The ongoing digitalisation of public services in the context of the online access law has slightly reduced the administrative burden for starting a company (Figure 2.6). However, an online one-stop shop that integrates all different licensing and registry procedures necessary to start a firm still does not exist. This is related to the fact that different levels of government are responsible for different administrative procedures. Many registries are decentralised and not interlinked, so that for starting a limited liability company it is necessary to complete 14 different procedures with 7 different administrative bodies, which is more than in other OECD countries. A common electronic firm identifier for tax and other administrative procedures has been established in November 2024, which is a significant step forward given the decentralised nature of the tax administration (see the previous OECD Economic Survey of Germany). However, this firm identifier still does not allow to enter firm information only once for all interactions with public bodies (once-only), as many decentralised registers are not yet digitalised and legal and technical hurdles as well as heterogenous interpretation of the EU data protection regulation across Laender hamper their inter-linkage. If firms and households would need to enter their information electronically only once for all interactions with public bodies, the cost of bureaucracy could be reduced by about half for firms and households (Normenkontrollrat, 2017^[16]). The potential gains for the public administration due to automation of data entry and processing are even larger, while improvements in public spending efficiency due to better policy impact analysis and targeting would further increase these benefits. Before a one-stop shop for starting a business is implemented, providing information on all licenses and permits required for running a business in a centralised online inventory and regularly updating it would help.

Accelerating the digitalisation and linkage of registries, implementing the once-only principle and digitalising administrative procedures should become a key policy priority. This will require setting mandatory common standards on design and inter-linkage of data and IT tools and further encouraging the harmonisation of administrative procedures and joint software development across levels of government (as discussed in the previous OECD Economic Survey of Germany). The recent establishment of a platform providing common IT standards and code lists for e-government projects is an important step forward. However, progress in other areas, such as digitalising public services, has been slow and financial and staff resources for the digitalisation of the public administration have been reduced due to the phase-out of pandemic-related funding (Nationaler Normenkontrollrat, 2024^[14]). Core functions of already established online services, such as the possibility to reset passwords for the electronic identity card, which is necessary to access and use many public services online, have been cancelled due to funding issues. To make the modernisation of registries and the digitalisation of the public administration a top priority, the responsible bodies should be located at the centre of the federal and Laender governments or receive an independent budget line. Funding for digital infrastructure and software development should be increased and included in the medium-term budgeting to raise planning certainty but should focus on the development of open common standards, interface definitions and standardised and interoperable IT tools available to all levels of government (Nationaler Normenkontrollrat, 2024^[14]). Electronic folders and data storage should become the default across levels of government. The heterogenous interpretation of the EU data protection regulation across the Laender should be harmonised to reduce legal uncertainty among decision makers in the public administration related the digitalisation of public services and the exchange and inter-linkage of data. Joint procurement of software and IT infrastructure across municipalities can help reap gains from specialisation and returns to scale, as weak procurement capacities at the local level affect tender design, selection and management of IT suppliers and contribute to weak outcomes.

Figure 2.6. Regulation has become more competition friendly, but there is room for further improvement

OECD Indicators of Product Market Regulation (PMR), index scale of 0-6 from least to most restrictive (higher values indicate worse performance)



Note: In case specific policy domains are regulated at the sub-national level, the PMR indicators refer to one representative state, Bavaria.

Source: OECD PMR database, January 2025, <https://www.oecd.org/en/topics/product-market-regulation.html>

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To modernise the public administration and raise its capacity, it is also crucial to improve skills development, recruitment policies and incentive structures. Centralising recruitment procedures, as currently planned at the federal level, would pool resources and raise the quality of recruitment. It would also facilitate mobility across institutions improving peer-learning, coordination and cooperation across different parts of the government. Including higher administration posts in standardised recruitment procedures and opening recruitment at higher levels to external and international candidates could improve management skills sets and organisational quality, and help make the administration more agile, client-oriented and less risk averse, notably concerning the use of digital tools. For example, the pilot project “Work for Germany”, which allows experts from the private sector to contribute with their management, organisational and digital skills to teams in the public administration, could be expanded. Improving performance incentive structures, better defining skill needs of jobs and providing sufficient training opportunities, particularly related to digital, management and language skills, would strengthen skills development and motivation of current staff. The federal Digital Academy is an important step forward, but it should be expanded and encourage similar efforts at the Laender level. Introducing more flexibility in current pay schedules to offer better conditions for specialised posts with high shortages, such as IT or infrastructure planning and procurement experts, strengthening performance-related pay and better defining career paths and job profiles would help meet recruitment needs and increase the motivation and training of current staff (Nationaler Normenkontrollrat, 2021^[17]).

2.2.2. Designing regulations to foster competition and better enforcing competitive neutrality of state-owned enterprises

According to the OECD PMR indicators, barriers to competition in services, as measured by the indicators ‘involvement in business operations in services’ and ‘retail price controls and regulation’, remain much higher than the OECD average (Figure 2.6). This is related to entry barriers in many services professions, such as restrictions on who can open a business or exercise a certain occupation. While certain educational and training requirements are necessary to ensure quality of service provision, Germany stands out in the share of workers and self-employed subject to occupational entry regulations (von Rueden and Bambalaite, 2020^[18]). Qualification requirements to open a business have even been re-introduced in 12 crafts and trade related occupations in 2020. At the same time, high labour shortages have contributed to strongly rising prices and supply constraints in construction, hampering the implementation of infrastructure and housing projects. Reducing occupational entry restrictions, while ensuring the quality of vocational education and training, has large potential to foster competition, lower prices and revive business dynamism and productivity growth (Bambalaite, Nicoletti and von Rueden, 2020^[19]; Affeldt et al., 2021^[20]). It is also a key complement to recent efforts facilitating skilled migration and the labour market integration of migrants (see Chapter 3). As discussed by the 2020 OECD Economic Survey of Germany, regulators could rely more on quality standards for services rather than for the workers providing them. Moreover, regulation of prices, for example of lawyer and notary fees, or restrictions on where non-prescription medicines can be sold should be abolished to strengthen competition. Awareness of the potentially negative effects of regulation on competition, and hence on consumer welfare and productivity, could be raised by including a mandatory assessment of such effects in the established evaluation of regulatory compliance costs.

Improving the governance of state-owned enterprises (SOEs) would help ensure competitive neutrality and reduce barriers to competition. The scope of SOEs is larger and their governance weaker than in the average OECD country (Figure 2.6). Across levels of government, SOEs operate in 14 out of 24 commercial activities, such as transport services, banking, manufacturing, utilities, hospitality or gambling. The rationale for state-ownership is not regularly evaluated, particularly at lower levels of government, although OECD best practices recommend such an evaluation every five years. Better defining assets, goods and services of strategic interest and conducting in-depth analysis on the presence of market failures and the consequences of state-ownership on competition is key for making decisions on the rationale for state-ownership more transparent and improving social welfare (IMF, 2019^[21]; OECD, 2021^[22]). For those SOEs that remain public, ensuring that ownership is separated from the state’s other roles as regulator or policy maker is key to ensure competitive neutrality. This, however, is complicated by the applied dispersed ownership model of SOEs, as SOEs are managed by ministries that also set policy priorities and exercise regulatory powers in areas that affect the operations of these SOEs. Ministries are involved in selecting CEOs and serving politicians are not prohibited to sit on the board of SOEs, creating conflicts of interest (Akcigit, Baslandze and Lotti, 2023^[23]; Diegmann, Pohlen and Weber, 2024^[24]). Moreover, commercial SOEs have no formal rate-of-return targets. Following the 2024 OECD Guidelines on Corporate Governance of SOEs, centralising ownership rights in all SOEs into a single holding entity could help clarify their objectives, unify transparency, accountability and performance standards and better ensure competitive neutrality (OECD, 2015^[25]). This entity should also set performance standards for local SOEs and monitor their performance (OECD, 2021^[26]).

Improving transparency on financial statements and the internal use of public subsidies, in particular for municipal but also some federal SOEs, such as the public rail operator, would strengthen the monitoring of level playing field conditions in markets where SOEs and private companies compete (Monopolkommission, 2023^[27]). In line with the OECD Ministerial Council Recommendation on competitive neutrality, all SOEs should be required to apply high standards of transparency, accounting separation and disclosure for activities that pursue public policy objectives, including those of statutory monopolies, and their commercial activities, which compete with private market players (OECD, 2021^[28]). The competition agency should receive the power and necessary resources to regularly monitor this accounting separation and assess whether SOEs are cross-subsidising their commercial activities. This requires full access to data collected by the respective regulator.

For example, the Australian Competition and Consumer Commission provides comprehensive guidance for SOEs to assess cross-subsidisation and monitors its implementation. In Germany, local public savings banks have a large market share in many regions, while local elected officials are often part of the board. As empirical evidence points to political lending, which might also include lending with preferential rates to local SOEs, raising transparency on loan conditions and lending practices is key for ensuring competitive neutrality (Veron and Markgraf, 2018^[29]; Asatryan and Havlik, 2020^[30]; Kropp and Saadi, 2015^[31]). Following the 2024 OECD Guidelines on Corporate Governance of SOEs, elected officials should be prohibited from serving as board members of local public banks and other SOEs.

To strengthen the enforcement of competitive neutrality, the competition agency should receive the power to challenge decisions of public bodies, in case certain administrative decisions, regulations, or institutional arrangements hamper competition (Motta and Peitz, 2021^[32]; OECD, 2021^[33]). The new market investigation tool only focuses on measures against firms and requires consensus with the regulatory agency to address distortions in regulated markets. However, in many cases the management of SOE's is under the same ministry that is also responsible for setting policy objectives and regulating markets where the SOE is active, which leads to conflicts of interest (Monopolkommission, 2024^[34]). At the municipal level, the competition agency has identified many cases where licensing decisions for infrastructure provision have favoured municipal SOEs preventing private firms from competing on a level playing field, for example in markets for charging infrastructure for EVs (Bundeskartellamt, 2024^[35]). Although in specific cases, licensing activities by municipalities could be perceived as economic actions and thus be subject to competition law, strengthening the power of the competition agency to challenge decisions by public bodies and regulators in the context of the new market investigation tool would help. In other OECD countries, such as Italy and Spain, or in Romania, the competition authority can challenge administrative decisions and regulations issued by public bodies, including procurement procedures, in case it finds that they hamper competition (OECD, 2016^[36]) (Motta and Peitz, 2021^[32]) (OECD, 2021^[33]).

Public procurement rules and procedures differ across lower levels of government, contributing to a high administrative burden and information asymmetries that restrict competition in tenders. A recent draft bill aims at reducing barriers for younger and smaller firms to participate in public tenders, including by facilitating reporting requirements and raising thresholds for direct contracting. While this is welcome, it should be combined with the requirement to publish information on planned tenders in advance, as currently bids in many cases must be submitted 30 days after publishing the tender, which is often not enough for younger and smaller firms to prepare their bids, particularly if the bid requires partnering with other firms. Moreover, to reduce information asymmetries and further lower barriers to bidder participation, the publication of all tenders on the recently introduced federal e-procurement website should be made mandatory for all levels of government, including tenders below the EU threshold for public procurement (Fazekas and Blum, 2021^[37]). Further incentivising Länder and municipalities to also use the new centralised federal e-procurement platform for procurement processes and harmonise heterogeneous procurement rules and procedures would have large potential to reduce the administrative burden for firms applying for public contracts. It would also help raise public spending efficiency by facilitating joint procurement across the public sector and realising economies of scale and gains from specialisation (Allain-Dupré, Hulbert and Vincent, 2017^[38]). In addition, data from this e-procurement platform could be used to establish a red-flag system to identify risks for bidder collusion. Many countries, such as the United Kingdom, have established databases of public tenders, improving accountability and facilitating data analysis to detect irregularities and bidder collusion. The competition agency could be tasked to operate such a centralised red flag system, as currently supervision of procurement procedures is decentralised across the Länder. In any case, it should receive access to such data to be able to screen for potential bid rigging.

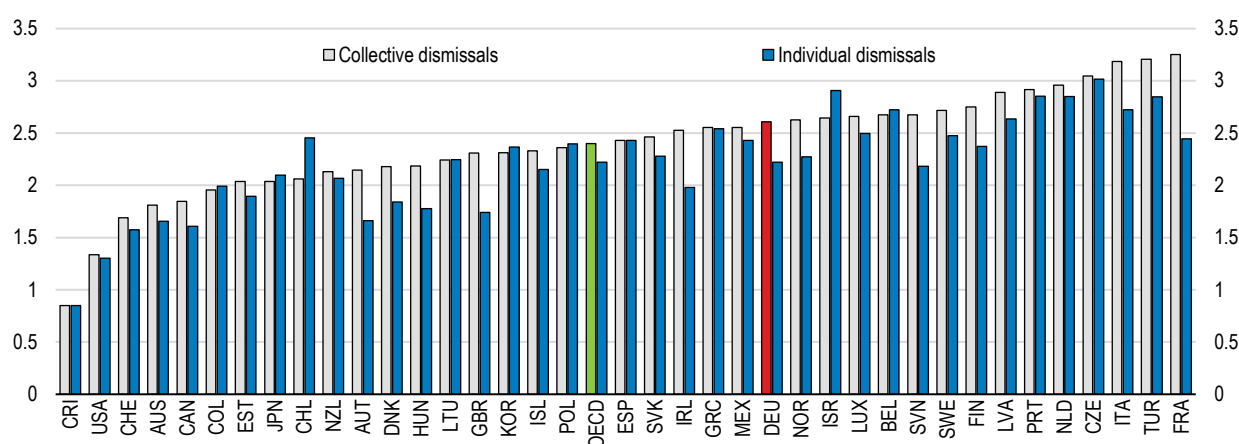
2.2.3. Designing regulation and public policies to facilitate structural change

Declining business dynamism is also related to labour market policies and regulation that can hinder firm growth and hold back structural change. Start-ups in technology-intensive activities face high uncertainty

about their future income streams and are hesitant to scale up employment if costs of eventual dismissals are high. This also applies to other firms in sectors exposed to large fluctuations in demand, for example crafts businesses in the construction sector. Although Germany only ranks slightly above average in the aggregate OECD Employment Protection Legislation (EPL) Index (Figure 2.7), it stands out concerning large exemptions for small firms, which act as an incentive for firms to stay small. Firms with 10 or less employees do not have to pay severance payments or follow social considerations when deciding on whom to dismiss, while firms with 20 or less employees are exempt from regulation for collective dismissals. Reducing exemptions for small firms, while making employment protection regulation more flexible, could help to support the employment scale-up of startups and other small firms and facilitate structural change. The possibility for start-ups to extend fixed-term contracts up to four years after firm birth should be maintained as it provides flexibility to test business models and incentivises market entry.

Figure 2.7. Employment protection regulation is relatively strict

Strictness of employment protection, individual and collective dismissals of regular workers, 0-6 scale, 2019



Source: OECD Indicators for Employment Protection, <https://www.oecd.org/en/data/datasets/oecd-indicators-of-employment-protection.html>

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Although the short-term work scheme helped maintain productive worker-firm matches during the pandemic and energy crisis, it has also hindered the reallocation of workers to booming sectors and firms facing high skilled labour shortages (see Chapter 3). During the pandemic, Germany was the only EU country with rising replacement rates over time in the short-term work scheme. This in combination with an extended eligibility period of 24 months has reduced job-search incentives and labour reallocation (Heinemann, 2022^[39]; Calligaris et al., 2023^[40]; Bundesbank, 2022^[41]) (Brinkmann et al., 2024^[42]). Training uptake within the scheme was low as the pandemic-related special clause, which reimbursed 100% of social security contributions for employers, counteracted the training incentives of the main scheme, which consist in reimbursing 50% of social security contribution during training periods. The total fiscal costs of the short-term work scheme amounted to about EUR 42 billion in 2020 and 2021 (about 1.2% of GDP). To facilitate structural change and reduce labour shortages in booming sectors and firms, the short-term work scheme should be re-designed to increase incentives for job-search, mobility and training over time, and the maximum duration of benefits should be reduced. This would also lower its costs and allow using scarce public resources for re-training workers to equip them with the skills required in expanding sectors and firms (see Chapter 3).

The weak portability of occupational pensions, which cover more than half of the work force, is another barrier for labour mobility across firms and sectors. A large share of occupational pensions are defined-benefit systems that are based on book reserves of firms, where employees' contributions are retained within the firm for internal investment, hindering the portability of pension entitlements when transitioning to another job (see Chapter 1). Although in some sectors, such as construction, metal products, electronic goods or the

chemical industry, firms agreed on a sector-wide system, portability to other sectors is still problematic. Requiring occupational pensions to be funded defined-contribution systems could help improve their portability and deepen capital markets (see Chapter 1).

The recent rise in subsidies to firms in specific industries has been justified by geo-political reasons and supply chain risks, for example in chip production, but they also risk distorting the level playing field and hamper competition and innovation. An impact evaluation of generous firm support programmes during the pandemic and energy crisis is still pending, as legal constraints to access, merge and analyse administrative micro data had to be addressed delaying the project. Generous firm support in the form of grants might have contributed to declining business dynamism and slowed down structural change (Bundesbank, 2022^[41]). The temporary crisis and transition framework that has relaxed EU state aid rules during the pandemic and energy crisis is still in place. Together with France, Germany accounts for the large majority of approved subsidies, including subsidies to specific firms in the context of the green transition as well as to support chip production. Conducting rigorous evaluations on the effects of subsidies and tax expenditures on competition and designing them to prevent distortions to competition is key for fostering business dynamism, innovation and productivity growth. A subsidy report is published every other year by the Ministry of Finance, but it applies a specific subsidy definition and includes simple evaluations for half of the measures, although many subsidies and tax expenditures introduce market distortions (Laaser and Rosenschon, 2020^[43]). It should be a key policy priority to adopt and implement the planned research data act to facilitate policy impact evaluation and better target support measures in the future.

Inefficient insolvency procedures might also weigh on business dynamism and productivity growth, as they discourage entrepreneurs to declare insolvency, hampering structural change and the reallocation of resources to more innovative and productive firms (Adalet McGowan, Andrews and Millot, 2017^[44]). However, according to the OECD Insolvency Indicator, the efficiency of insolvency procedures has improved from 2016 to 2022, positioning Germany slightly better than the average OECD country (André and Demmou, 2022^[45]). This is mainly due to a 2020 reform that reduced the debt discharge period for bankruptcy from six to three years, facilitating a fresh start for failed entrepreneurs. Nevertheless, room for improvement remains. Introducing simplified insolvency frameworks and counselling for smaller firms could facilitate restructuring, which in smaller firms is often complicated due to high costs of insolvency procedures and because record-keeping is poor and business and personal finances are strongly intertwined (André and Demmou, 2022^[45]). Allowing other types of personal assets to be exempted from insolvency procedures, which currently only comprise modest personal assets, might also facilitate restructuring of smaller firms.

As discussed in the previous Economic Survey of Germany, simplifying the tax system and strengthening tax enforcement is also key for levelling the playing field between firms and fostering competition and productivity growth. Multi-national firms make larger use of tax-avoidance schemes to lower their effective tax rates compared to domestic firms, as they can exploit loopholes due to differences between complex national tax systems and can afford the high fixed costs of specialised tax optimisation services (Sarin and Summers, 2019^[46]; Tørsløv, Wier and Zucman, 2022^[47]). Strengthening tax enforcement requires stronger incentives for the tax administrations of the Laender to scale up their enforcement capacities, improve IT and data infrastructure and enhance the cooperation with other Laender to avoid duplication and allow for more bundling and specialisation of enforcement efforts. The inter-linkage and analysis of tax and other data across Laender is key to better detect suspicious cases, focus scarce investigative capacities and strengthen international cooperation to fight cross-border tax avoidance and fraud schemes (Spengel, 2017^[48]).

2.3. Further strengthening competition enforcement

The decline in business dynamism, investment and productivity has been accompanied by rising mark-ups and concentration in many sectors of the economy, indicating the importance of strengthening competition enforcement to foster innovation and productivity growth (Weche and Wagner, 2021^[49]; De Loecker and Eeckhout, 2018^[50]; Monopolkommission, 2024^[34]). Rising concentration might be positive for productivity

growth, as long as employment is increasingly concentrated in high productivity firms, scale effects in production can be realised and competitive pressures on incumbents remain strong, for example due to international competition or market integration (Bighelli et al., 2022^[51]; Draghi, 2024^[52]; Calligaris et al., 2024^[13]). Higher mark-ups can also be compatible with competitive and innovative markets, if they represent returns to innovation and fixed investment, such as intangibles, and encourage the entry of new and innovative firms, which uphold competitive pressures on incumbents. However, rising mark ups have been negatively correlated with intangible investments as well as research and software intensity, and firm entry rates have declined, including in sectors with rising mark ups (Weche and Wagner, 2021^[49]). This indicates that rising market power of incumbents might act as a barrier to firm entry and growth as well as knowledge diffusion, discouraging investment, innovation and productivity growth (De Loecker, Eeckhout and Unger, 2020^[53]; Akcigit and Ates, 2021^[11]).

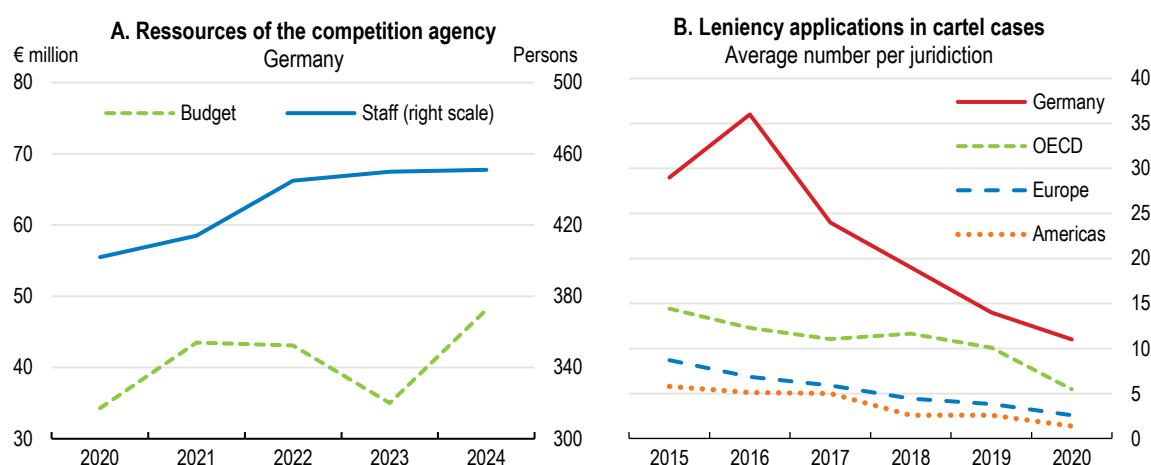
Competition enforcement has been recently strengthened by introducing a market investigation tool. Prior to the reform, the competition authority could only correct market distortions if it was able to prove explicit collusion of firms or abuse of dominance cases but had no legal tools to deal with cases of tacit collusion. Enforcement was also challenging when confronted with vertical integration or other anti-competitive market structures. The new market investigation tool enables the competition authority to issue binding orders to firms to correct for market distortions if a sector-specific market investigation has identified such distortions. Market investigations involve information requests, ex-officio investigations and data analysis, and need to be completed within 18 months. Possible measures can include the request to design products to be inter-operable with complementary products of other producers, the prohibition of locking in customers in long duration contracts or even, as a last resort measure to enforce competition, the forced selling of firm parts. In the United Kingdom, for example, the use of such a market investigation tool enabled the competition authority to split up a monopoly in the air transport sector with significant benefits reported for customers (Whish, 2020^[54]).

Further improving IT and staff capacities of the competition agency is key to strengthen enforcement and enable the effective application of the new market investigation tool as well as the EU Digital markets Act. Although staff and budget resources have increased since 2020 (Figure 2.8), there is a need to further improve data infrastructure and IT capacities. Establishing data bases including all merger control and cartel cases and related rulings and improving digital skills of staff would allow using ex-ante risk-based approaches such as automated cartel screening tools, which can help better focussing scarce resources. Regular ex-post evaluations of rulings would help improving the effectiveness of future applied policy measures (Monopolkommission, 2024^[34]). Moreover, the investigative capacity of the competition agency should be expanded to enable tracking concerted practices involving the exchange of sensitive commercial data, which would also require legal adjustments (OECD, 2017^[55]). Additional resources for stepping up IT capacities could be freed by increasing the revenue threshold above which the investigation of notified mergers is mandatory. At the same time, criteria for mandatory merger notification should be expanded to also include technological criteria or the purchasing price for the merger. This could be instrumental in digital markets, as competition has been hampered by take-overs of innovative start-ups with low revenues but large innovation potential.

Making leniency agreements more attractive and further strengthening the protection of whistleblowers and public officials can help improve detection of misconduct and enforcement. Since 2014, leniency applications in cartel cases have strongly declined (Figure 2.8). This is related to the implementation of an EU directive in 2017 that has increased the scope for damage claims of third parties, including against first successful leniency applicants in cartel cases (Monopolkommission, 2022^[56]). Shielding first successful leniency applicants of any damage claims from third parties would help improve the attractiveness of leniency agreements and, thus, the detection and prosecution of cartels. A 2023 law has significantly improved whistleblower protection against retaliation by employers, improving incentives for insiders to provide information. However, the compensation of whistleblowers for non-financial damages, such as mental health issues due to bullying, and the protection of compliance officers investigating cases within firms could be improved. Moreover, raising awareness about the legal protections of public officials against damage claims of investigated firms can help reduce risk aversion and improve competition enforcement. Recent court rulings have stated that officials of

the competition authority are only liable for damage claims by an investigated company if they have acted in bad faith to harm the company, which has increased legal protection for public officials (Bundeskartellamt, 2022^[57]; Oberlandesgericht Duesseldorf, 2014^[58]).

Figure 2.8. Resources of the competition agency have increased while leniency applications in cartel cases declined



Note: Comparable data on resources of competition agencies was not available for other large EU or OECD economies.

Source: OECD Competition Trends 2024; Federal Cartel Office; (Monopolkommission, 2022^[56]).

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To improve enforcement in merger control, the *Ministererlaubnis* should be reformed to reduce scope for political or special interest influence. It allows the government to override the decision of the competition authority to block a merger, if the decision hurts important public interests. For example, the merger in the energy sector between EON and Ruhrgas in 2002 was allowed by the government, against the ruling of the competition authority, with the argument that it would raise energy security in Germany. However, together with other decisions that followed, it had contributed to reduce incentives to develop the supply of LNG terminals and increased dependency on the supply of Russian gas through pipelines (Budzinski and Stoehr, 2023^[59]). In 2016, a merger in the food retail market was allowed against the ruling of the competition authority with the argument that the likely loss of jobs would hurt public interests. Plans to re-introduce the possibility of legal action against the *Ministererlaubnis* by third parties, such as competing firms and consumers, should be implemented. Moreover, it is key to better define the notion of public interest for justifying a *Ministererlaubnis* to reduce scope for lobby influence (Budzinski and Stoehr, 2023^[59]).

2.4. Reducing the risk of regulatory capture and continuing the fight against corruption to level the playing field

Given the high regulatory density, the risk that incumbent firms use political lobbying to influence the design of laws and regulation as well as their enforcement, favouring their interests against the interests of potential competitors, is high. To reduce this risk and rebuild trust in institutions, a centralised lobbying register has been introduced at the federal level, increasing transparency on lobbying activities. As a result, regulation has become more competition friendly according to the OECD PMR Indicators (Figure 2.6). In 2024, the register has been further strengthened by including contacts with lower administration levels, where many lobbying activities take place to influence draft bills (OECD, 2022^[60]). However, the threshold above which lobbying organisations have to register was only lowered to 30 contacts with the administration within three months, which is still too high. Although objectives of lobbying activities are now tracked by the register, the monitoring of regulatory outcomes of lobbying activities is not yet included. A mandatory regulatory footprint has been

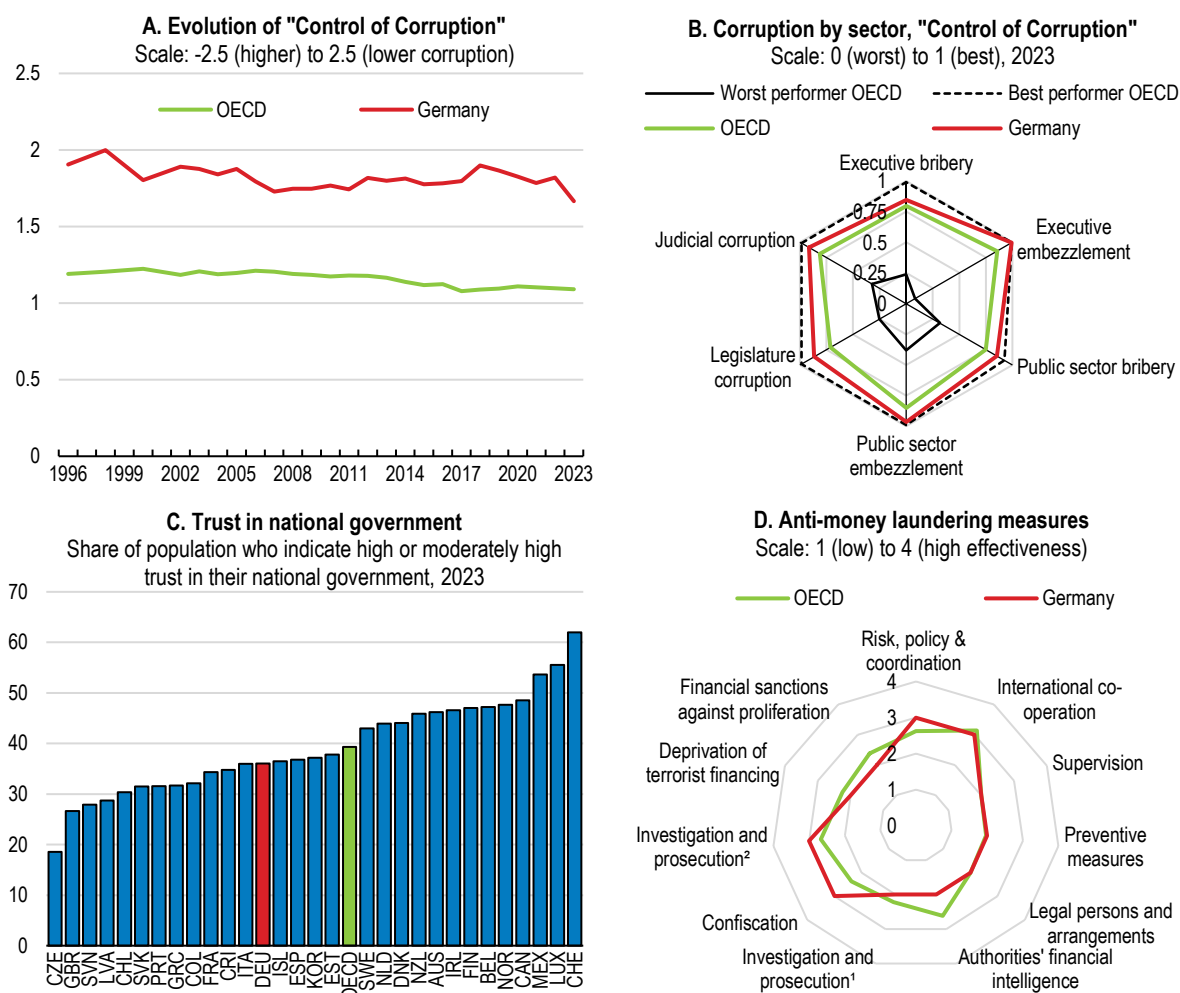
introduced in 2024 that details for each draft bill the stakeholders who were consulted for drafting the regulation as well as the inputs taken on board, which is a big step forward. However, the provision of technical information is still excluded from this requirement and should be included to close potential loopholes. The information on outcomes of lobbying activities should be included in the lobbying register. Implementing and enforcing the improved lobby register will require equipping the responsible administration of the parliament with sufficient staff and IT capacity, improving investigative powers and ensure its independence (Lobby Control, 2021^[61]). Moreover, as the Laender are responsible for the implementation of federal laws and regulations and have the jurisdiction about many important policy areas, the register should also be expanded to sub-national governments. The public integrity framework for public officials should be better adapted to the specific risks of lobbying by establishing more detailed standards and guidelines for interactions with lobbyists and other stakeholders at all levels of government (OECD, 2021^[62]).

Continuing the fight against corruption and money laundering is key to level the playing field and foster business dynamism and productivity growth. It is also key to strengthen trust in institutions, which has declined recently, although it is still above the OECD average (Figure 2.9) (OECD, 2024^[63]). As recommended by the previous OECD Economic Survey of Germany, the definition of corruption by members of parliament has been expanded to include side activities where legislators might use their status to unduly influence the public administration, for example in procurement decisions. Data on side activities and other income of legislators is now published on the website of the parliament. Moreover, transparency related to campaign and party financing has been significantly strengthened, as thresholds for immediate disclosure of individual donations have been lowered to EUR 35 000, loopholes related to sponsoring activities and campaign financing have been closed, and the information on donations is published at a centralised and publicly available up-to-date data base. However, maximum thresholds for party donations and campaign financing, which exist in 19 EU countries, are still absent (OECD, 2016^[64]). To reduce the risk that politicians and other public officials use their acquired network and insider information directly for specific firms and interests after their mandate ends, the supervision and enforcement of cooling-off periods should be strengthened. Transparent rules for the selection of the three members of the responsible advisory body – nominated by the federal government and appointed by the President – and binding sanctions for non-compliance with the regulation should be introduced (European Commission, 2022^[65]; GRECO, 2019^[66]). Moreover, cooling-off periods should also apply to medium-level officials in the public administration and the notification of any activity should become mandatory after leaving public office. Data on job transitions and applied cooling-off periods should be made publicly available. As regulations on conflict of interest remain much weaker at the Laender level than at the federal level, efforts should particularly focus on improving the public integrity framework at all levels of government.

Despite recent improvements in fighting money laundering, significant challenges remain. A bill drafted by the previous government to establish a new federal agency to combat financial crime is welcome. The new government should continue this reform and improve it by strengthening the investigative powers of the new agency, while avoiding duplication of responsibilities vis-vis the Federal Police (*BKA*) and the enforcement agencies of the Laender, as recommended in the previous OECD Economic Survey of Germany. Moreover, the supervision of the about 300 decentralised anti-money laundering agencies for the non-financial sector should be centralised under the roof of the new agency. Bringing together data analysis, investigation capacities and supervision related to anti-money laundering and sanction enforcement in one federal agency would allow to realise returns to scale across fragmented agencies and levels of government, improve international cooperation and strengthen enforcement capacities (FATF, 2022^[67]). This should be combined with accelerating the digitalisation and inter-linkage of commercial, real estate, company and other registers and allowing to link them with other data including on bank accounts and financial assets – as far as it is consistent with the EU General Data Protection Regulation – to improve the quality of the beneficial ownership register (see the previous OECD Economic Survey of Germany). Another draft bill to improve investigative capacities in the context of undeclared ownership of assets is welcome and should also be pursued by the new government. Complementing this draft bill with a suspicious wealth order to facilitate the confiscation of ill-obtained assets within the constitutional limits and strengthening cooperation between tax authorities and

the planned federal agency to combat financial crimes could further support the fight against money laundering and the enforcement of sanctions. Improving data collection on confiscation and case-related information would help to better understand the structural patterns and scale of money laundering activities (Transparency International, 2021^[68]). Moreover, automatic international exchange of tax relevant-information on crypto-assets, which can be used for money laundering, should be established according to the OECD Crypto-Asset Reporting Framework. Newly introduced legislation to prohibit cash payments for real estate purchases will help reduce the scope for money laundering activities, but cash payment thresholds should also be introduced for other asset purchases by implementing the EU anti-money laundering rules (FATF, 2022^[67]).

Figure 2.9. The fight against corruption and money laundering must continue



Note: Panel D shows ratings from the FATF peer reviews of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a country's measures are effective against 11 immediate outcomes. "Investigation and prosecution¹" refers to money laundering. "Investigation and prosecution²" refers to terrorist financing.

Source: Panel A: World Bank, Worldwide Governance Indicators; Panel B: Varieties of Democracy Project, V-Dem Dataset v12; Panel C: OECD (2024), OECD Survey on Drivers of Trust in Public Institutions – 2024 Results: Building Trust in a Complex Policy Environment, OECD Publishing, Paris, <https://doi.org/10.1787/9a20554b-en>; Panel D: OECD, Financial Action Task Force (FATF).

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Table 2.1. Past recommendations and actions taken

Past recommendations	Action taken
Set mandatory common IT standards and encourage the harmonization of administrative procedures and joint software development across levels of government.	No action taken.
Streamline planning and approval procedures for infrastructure investments.	Planning and approval procedures for renewable energy, grid expansion, industrial plants and transport infrastructure projects have been simplified. The federal government and the Laender have started to harmonise and simplify construction standards and planning and approval procedures to further accelerate infrastructure projects (Planungsbeschleunigungspakt).
Accelerate the digitalization and inter-linkage of municipality-specific commercial, real estate and firm registers and allow linking them with other data including on bank accounts and financial assets.	No action taken.
Allow for linking tax registers of different tax types and combining them with other data sources, including by establishing a single electronic firm identifier	A common electronic firm identifier for tax and other administrative procedures has been established in November 2024.
Implement plans for a centralised and transparent e-procurement platform for tenders from all levels of government and encourage joint procurement initiatives of municipalities through financial incentives.	A federal e-procurement website has been established where tenders from all levels of government below the EU threshold can be published, while publication of tenders above the EU threshold is mandatory.
Liberalise entry conditions, prioritising sectors subject to supply constraints (such as construction) and preserving the strengths of the vocational education and training system.	No action taken.
Consider a vertical separation between Deutsche Bahn's infrastructure management and operations.	No action taken.
Implement plans to establish a Federal Financial Police and improve cooperation and data analysis across levels of government as well as the enforcement of reporting requirements.	A draft bill to establish a Federal Financial Police was submitted to parliament in 2023 but remains to be approved.
Provide sufficient staff and IT resources to implement and enforce the new lobby register, increase its coverage, including contacts with lower administration levels, and introduce a legislative and regulatory footprint.	The lobby register has been strengthened in 2024 by including contacts with lower administration levels. A mandatory regulatory footprint has been introduced in 2024 that details for each draft bill the stakeholders who were consulted for drafting the regulation as well as the inputs taken on board. However, although objectives of lobbying activities are now tracked by the lobby register, regulatory outcomes of lobbying activities are not yet included.

Table 2.2. Findings and recommendations (key recommendations in bold)

Main findings	Recommendations
Reducing the administrative burden	
The one-in-one-out rule is based on an index that measures costs implied by regulation that go beyond administrative burden. However, it does not capture costs related to EU regulation and only focuses on costs for firms.	Focus the one-in-one-out rule on administrative costs of regulation, while including costs for households and the public administration as well as costs related to EU regulation.
While regulatory impact assessment is mandatory for any proposed legislation, alternative options to reach the same policy objective are not properly assessed due to weak capacities and enforcement.	Strengthen the power of the <i>Normenkontrollrat</i> to scrutinise the regulatory impact assessment of ministries, improve capacities for cost-benefit analysis in ministries and strengthen stakeholder engagement.
High administrative burden is related to complex regulations and administrative procedures that differ across Laender and municipalities, hampering firm entry and growth in many markets, e.g. in construction.	Expand efforts to review, simplify and harmonise existing regulations and administrative procedures across levels of government.
The administrative burden for starting a company is high. A one-stop shop does not exist because many decentralized registries and administrative procedures are still not digitalized or interlinked.	Set mandatory common standards on design and inter-linkage of data and IT tools, while addressing legal hurdles to the inter-linkage of decentralized registries, and establish a one-stop shop for all administrative procedures required to start a firm.
Modernising the public sector and raising its capacity requires updating the skill sets of public employees. Skilled labour shortages are high.	Improve public sector recruitment procedures, performance incentive structures and training opportunities, particularly related to digital, management and language skills.
Designing regulation and public policies to foster competition and facilitate structural change	
Barriers to competition in services remain higher than the OECD average. Many workers are subject to licensing and qualification requirements, while labour shortages are a major supply constraint.	Reduce occupational entry restrictions, particularly in crafts and trade-related occupations.
The scope of state-owned enterprises (SOEs) is large and their governance weaker than on average across the OECD. Ministries owning SOEs also set public policy objectives and supervise the market regulator.	Establish a single holding entity for all federal SOEs, set unified performance standards for all SOEs (state and municipal), centrally monitor their performance, and improve transparency.
Public procurement is highly decentralized at lower levels of government. Competition in tenders is restricted due to information asymmetries.	Make the publication of all tenders on the recently introduced federal e-procurement portal mandatory for all levels of government and harmonize procurement rules and procedures between the Laender.
As small firms are exempt from stringent employment protection regulation, technology intensive start-ups and other firms facing high uncertainty about future income streams have incentives to stay small.	Make employment protection regulation more flexible, while lowering barriers to firm growth by reducing exemptions from employment protection regulation for small firms.
The design of the short-term work scheme has likely hindered factor reallocation to thriving sectors and firms and exacerbated skilled labour shortages during the pandemic and the energy crisis.	Redesign the short-term work scheme to improve incentives for training and job-search, and reduce the maximum duration of benefits.
Further strengthening competition enforcement	
Although resources of the competition agency have increased, capacities for ex-ante and ex-post evaluations and digital investigation tools remain weak.	Improve IT capacities and data infrastructure of the competition agency and continue strengthening its investigative capacity.
Leniency applications in cartel cases have strongly declined, weakening anti-trust enforcement.	Shield the first successful leniency applicants in cartel cases of any damage claims from third parties.
Competition enforcement in markets where SOEs and private companies compete is hampered by weak data transparency on the use of public subsidies.	Provide data access and resources for the competition agency to regularly monitor accounting separation between activities pursuing public policy objectives and commercial activities of all federal, state and local SOEs.
The new market investigation tool requires consensus with the regulatory agency to address market distortions. Recent licensing decisions for local infrastructure provision have favoured municipal SOEs.	Strengthen the power of the competition agency to challenge decisions by public bodies and regulators that hamper competition.
Fighting corruption and money laundering	
The risk that incumbent firms use political lobbying to influence the design and implementation of laws and regulation to hamper competition is high.	Include the regulatory outcomes of lobbying activities in the federal lobby register and expand the register to include lobbying activities in the Laender.
Capacity constraints, duplications and weak cooperation between law and tax enforcement authorities of the Laender and the federal level complicate the fight against money laundering and tax crimes.	Implement plans to establish the Federal Financial Police, strengthen its investigative capacities, data access and cooperation with enforcement agencies of the Laender.

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3

Addressing skilled labour shortages

Christian Wittneben

Robert Grundke

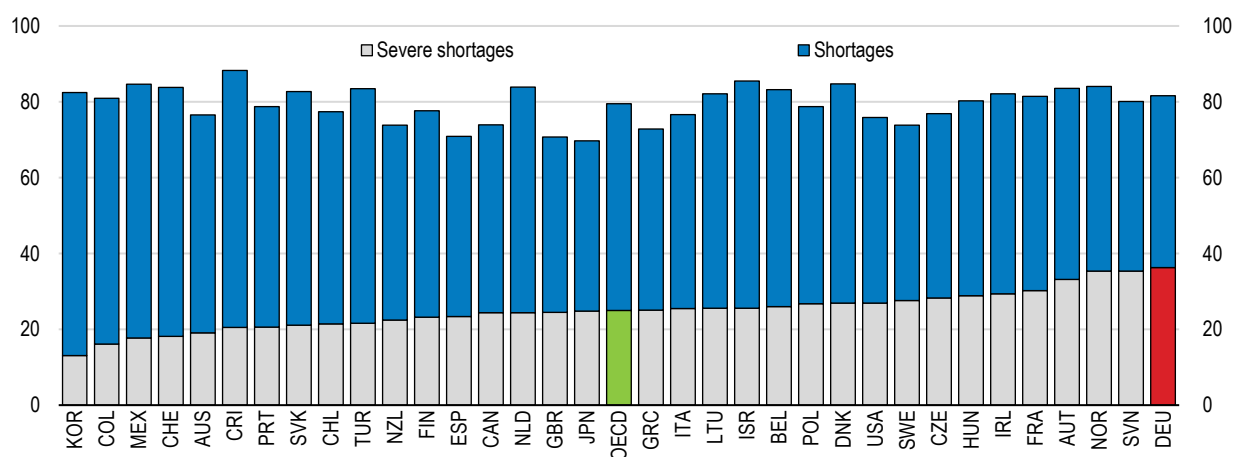
Skilled labour shortages are becoming a major bottleneck for economic growth and the green and digital transitions. Labour supply incentives for women, low-wage earners and families with children should be strengthened by reducing effective tax rates when taking up employment or transitioning from part-time to full-time work, as well as through better childcare access and parental leave policies. This would not only boost labour supply but also help mitigate gender inequalities in career prospects, wages, and social protection, as most part-time workers are women. Reducing incentives for early retirement and improving working conditions and training for older workers are key to raise the effective retirement age. Reducing barriers to skilled migration and the labour market integration of migrants would also help address skilled labour shortages. As a high share of young adults has no professional degree due to weak foundational skills, including language skills, improving the quality of adult education and the VET transition system as well as basic education should become a key priority. Standardising quality certifications for training courses and improving the governance of the adult learning system would help increase take up and the quality of training.

3.1. Skilled labour shortages risk becoming a major bottleneck for economic growth

The German labour market has exhibited notable resilience in recent years. Despite a declining working age population and an economy that has been disrupted by COVID-19 and the energy crisis, employment has increased to a record high, standing above 46.1 million in 2024. The increase of employment since 2010 has been driven by immigration and higher employment rates. While migrants from within the European Economic Area were the primary contributors to employment growth in the mid-2010s, the largest increase in recent years has come from third-country nationals, including refugees from Ukraine and non-European asylum-seeking countries (Gemeinschaftsdiagnose, 2023^[1]). However, despite the strong increase in employment, the share of firms reporting severe difficulties to fill vacancies is the highest among OECD countries (Figure 3.1).

Figure 3.1. Firms face severe difficulties to fill open positions

Firms reporting difficulties recruiting, 2022-2023, % of firms



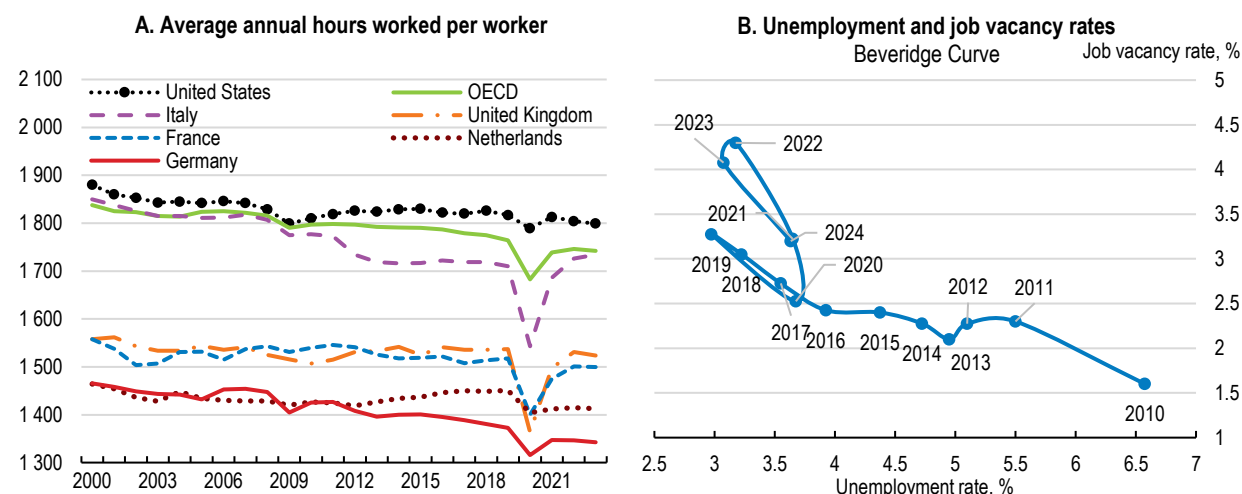
Note: Respondents were asked if their firm encountered any difficulties in recruiting employees in the last 24 months. Severe shortages occur if all or most (as opposed to some, few or none) of the opened vacancies in the firm were hard to fill. OECD is computed as the unweighted average of the member countries shown on this graph.

Source: (Filippucci, Laengle and Marcolin, forthcoming^[2]) based on GFP Employer Survey data.

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Rising skilled labour shortages are related to a secular decline in working hours and increasing mismatch in the labour market (Figure 3.2). The decline in working hours is mainly due to an increase in the number and share of employees working part-time, which increased from 19% in 2000 to 29% in 2023. Although part-time employment increased across genders and age groups, this has been particularly pronounced among women, parents and older workers, who have increasingly entered the workforce (Bick, Blandin and Fuchs-Schündeln, 2022^[3]). The high vacancy rates and low unemployment indicate that it is also increasingly difficult to match job seekers with open positions, which is related to rising skill mismatch or decreasing labour mobility (Figure 3.2). Labour hoarding and declining reallocation rates during and after the pandemic have likely contributed to decreasing matching efficiency and exacerbated skilled labour shortages (see Chapter 2) (Deutsche Bundesbank, 2022^[4]). Demand for skilled workers exceeds supply particularly in renewable energy and heating, nursing and healthcare, civil engineering and construction, hospitality, and transport (BA, 2024^[5]). The lack of qualified workers in construction and renewable energies risk becoming a major bottleneck for infrastructure investments, hampering the green and digital transitions. Skilled labour shortages in some sectors and occupations are also related to working conditions and low wage levels, the increase of which could help making these jobs more attractive, including for young apprentices.

Figure 3.2. Working hours have declined and mismatch in the labour market has increased



Note: The job vacancy rate (JVR) is the number of job vacancies expressed as a percentage of the sum of the number of occupied posts and the number of job vacancies.

Source: Eurostat; OECD Employment and Labour Market Statistics (database).

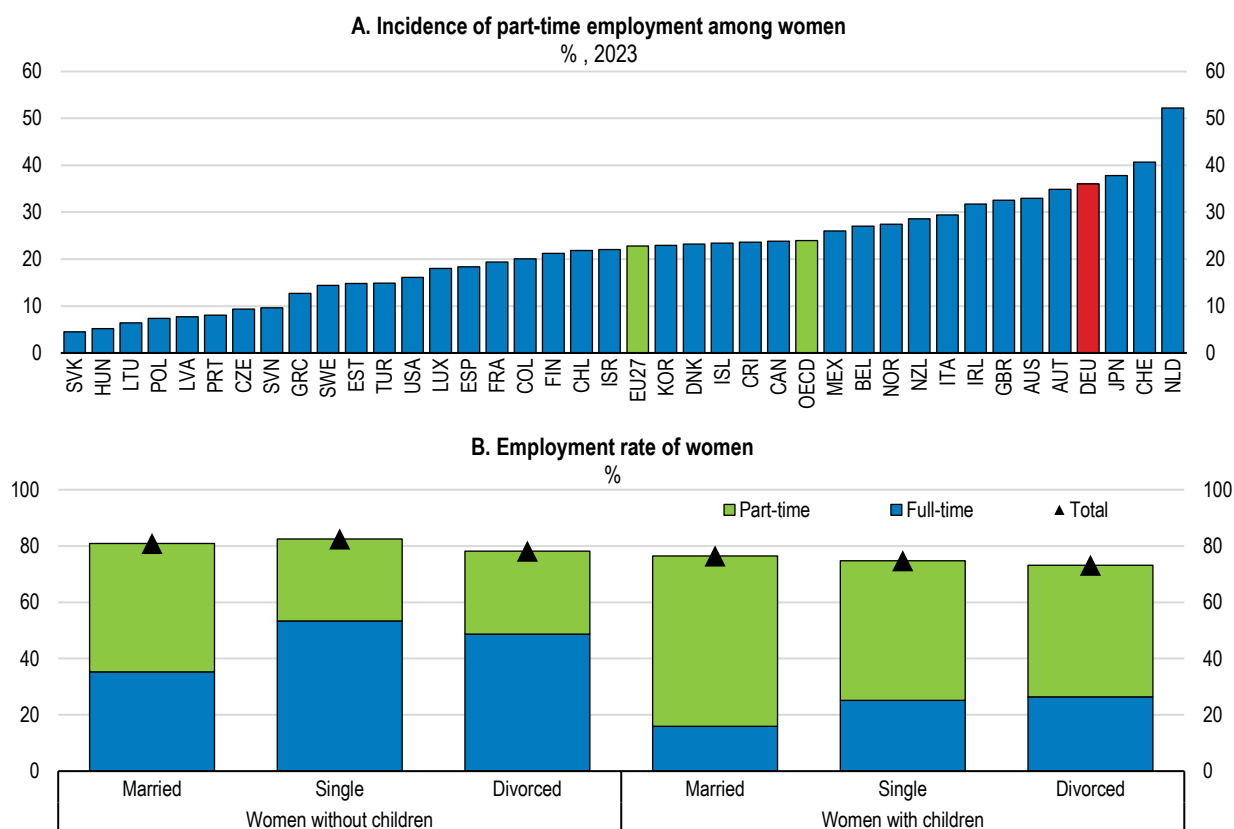
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Existing labour shortages will be exacerbated by rapid population ageing, as the working age population is expected to shrink by about 9% over the next 10 years (BMWK, 2024^[6]). The share of workers above the age of 55 is particularly high in many occupations, which are already experiencing severe labour shortages, for example medical doctors but also lower-skilled occupations in logistics, construction and retail. Birth rates have also been on a downward trend, reducing future labour supply potential. To mitigate the decline in labour supply, it is key to improve work incentives in the tax and transfer system, continue to expand childcare services, support longer working lives and further reduce barriers to skilled migration and the labour market integration of migrants. Strengthening training and adult learning policies is needed to equip workers with the skills needed in the labour market, in particular as skill needs will change due to the green and digital transitions (OECD, 2024^[7]). Improving the quality of education is key for mitigating skilled labour shortages and raising economic growth in the long term.

3.2. Strengthening incentives for labour supply and supporting longer working lives

3.2.1. Reducing marginal effective income tax rates to raise labour supply incentives

High part-time employment among women is a main reason for low average working hours per employee (Figure 3.3). While this is partly related to social norms and preferences as well as the availability of childcare, economic incentives embedded in the tax and transfer system play a significant role for labour supply choices and can also influence these preferences (Bick and Fuchs-Schündeln, 2018^[8]). Countries with joint or partially joint taxation of couples and progressive tax rates show higher part-time employment rates of women than those with individual taxation systems (Lembcke, Nöh and Schwarz, 2021^[9]). Although the availability of childcare services and the design of child benefits also influence labour supply decisions of women with children, they cannot explain the high share of married women without children working part-time which stands at about 45% (Figure 3.3) (Lembcke, Nöh and Schwarz, 2021^[9]).

Figure 3.3. Part-time employment is widespread among women

Note: Part-time employment is defined as working less than 30 hours per week in the main job. Children are defined as children under 14 years of age living in the household.

Source: OECD Employment and Labour Market Statistics (database); (SVR, 2023^[10]) based on SOEP v37.

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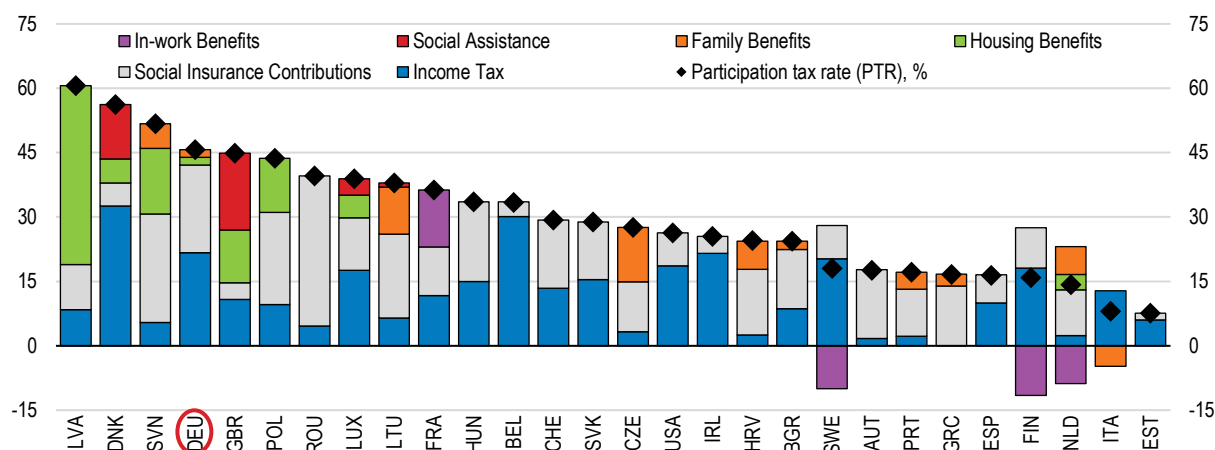
The current joint taxation of married couples strongly benefits households with unequal income distributions between spouses, leading to high effective tax rates for second earners, who are mostly women (Blömer, Fischer and Peichl, 2023^[11]). Germany's participation tax rate for taking up full-time work, if the married partner is working full-time is among the highest across the OECD (Figure 3.4). Due to the progressivity of the tax schedule, the advantage for married couples over individual taxation increases with income: For a single earner couple with average household income, the advantage in 2021 was EUR 5 500 per year, but it can be as high as EUR 17 000 for high income earners (Becker, 2021^[12]). Replacing the joint taxation of couples with individual taxation would improve work-incentives for second earners but lead to significantly higher tax payments for households where one partner earns substantially less. This would decrease work incentives for first earners and raise tax revenue by about EUR 30 billion annually (Bach et al., 2020^[13]). Any reform of the current joint income taxation of couples should therefore be combined with a reduction in income tax rates or social security contributions, which taken together are among the highest across the OECD (see below).

Moreover, replacing joint taxation with individual taxation does not comply with the constitutional requirement to account for financial support obligations between spouses in the tax system. One option in line with constitutional requirements would be a real-splitting system, which taxes spouses individually but allows for partial income transfer in the form of a fixed allowance, which can be freely split between partners, to recognise mutual financial obligations. While larger effects on labour supply are possible with more fundamental changes to the tax system, this proposal best balances incentives and legal requirements (Bach et al., 2020^[13]). Combining real-splitting with an increase in child allowances that cannot be split between partners would further decrease marginal tax rates for second earners and favour families with children.

Simulations show that replacing the current joint taxation system by a real splitting system combined with additional child allowances and lower income tax rates can be budget-neutral, inequality-reducing and raise working hours by 0.16 % or 59 thousand full-time equivalents (FTEs), mostly driven by increased labour supply by women (Blömer, Fischer and Peichl, 2023^[11]).

Figure 3.4. Participation tax rates for second earners are high

Disincentive to take up work when partner is working full-time (participation tax rate), %, 2024



Note: The participation tax rate is the percentage of additional gross income that is withheld through taxes, social contributions, and benefit withdrawal when taking up a job, while the partner is already working full-time. The figure shows the participation tax rate for a married couple with two children when the main earner works full-time at 90% of the average wage and the other partner takes up 60% part-time employment at the same wage level. Calculations assume two children aged 4 and 6 and an annual rent equal to 20% of the average wage.

Source: OECD calculations based on output from the OECD tax-benefit model (version 2.7.1.).

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Another important factor for high marginal effective tax rates for second earners is the current system of joint health insurance (Blömer and Peichl, 2020^[14]). It allows married couples to insure a non-earning spouse at no additional cost if they earn less than the *Mini-Job* income threshold (below a monthly income of EUR 556). If second earners pass this threshold, marginal effective tax rates strongly increase not only due to the joint income taxation of couples but also due to the obligation to pay social security contributions for health insurance (Figure 3.4). A more balanced approach would involve adjusting health insurance premiums to reflect the number of adults in a household, regardless of employment status, as suggested in previous OECD Economic Surveys of Germany. This would raise work incentives for second earners while ensuring a fairer distribution of health insurance costs across households.

The reform of the joint income taxation and health insurance of couples should be combined with a reform of the *Mini-Job* regulation. Subsidising employment by exempting *Mini-Jobs* from income taxes and employees' social security contributions has been successful in stimulating employment for low-skilled workers. However, in combination with other features of the tax and transfer system, such as the joint income taxation of couples, it has locked many workers in part-time jobs with low levels of social protection, training access and career prospects (Bruckmeier et al., 2022^[15]). About 7.9 million workers or about one sixth of the work force are working in *Mini-Jobs*, 4.5 million of which have no other regular job, while 56% are women. They often work in jobs for which they are over-qualified (Blömer and Consiglio, 2022^[16]). *Mini-Jobs* are most prevalent in hospitality, retail, and domestic services. Although a 2022 reform has introduced smoothly increasing social security contributions for employees above the *Mini-Job* income threshold, second-earners with a *Mini-Job* still face steeply increasing effective marginal tax rates due to joint income taxation rules for couples (Blömer and Consiglio, 2022^[16]). To partly finance the decrease of contributions for employees above the threshold, employer contributions above the threshold were increased, which creates incentives for firms to shift employment from regular jobs to *Mini-Jobs* (Bruckmeier et al., 2022^[15]). The income threshold until which social security contribution rates progressively increase for employees was raised from EUR 1 600 to

EUR 2 000 (*Midi-Jobs*), raising labour supply incentives and real incomes for low-wage earners, but incentivising workers with incomes above this threshold to reduce working hours (Blömer and Consiglio, 2022^[16]).

To improve the attractiveness of regular jobs, *Mini-Jobs* should be restricted to school and university students, who cannot work full-time besides their studies. At the same time, the income threshold at which social security contributions for regular jobs progressively increase (*Midi-Jobs*) should be lowered towards zero (Bruckmeier et al., 2022^[15]). Arguments against restricting the use of *Mini-Jobs* include lower administrative burden and firing costs, which provides more flexibility to firms in sectors with high demand fluctuations (Sperrmann, 2022^[17]). However, the market for temporary work agencies is well-developed in Germany, providing firms with a flexible pool of about 1 million workers (Spermann, 2013^[18]). In addition, firms also have the option to hire workers on temporary contracts which can be extended up to two years (Feld, Iglesias and Weigert, 2015^[19]). Although *Mini-Jobs* might help to reduce informality in sectors such as hospitality, recent studies indicate that since the introduction of *Mini-Jobs* in the early 2000s informality has not decreased on average and remained at about 16-17% of GDP (Elgin et al., 2021^[20]; Kelmanson et al., 2019^[21]). Another policy lever to fight informal work is to improve enforcement capacities and introduce an obligation to document working hours of employees.

As the decline in average working hours is also related to employees working fewer hours on average, it is important to improve labour supply incentives by lowering effective labour taxes, which are among the highest across the OECD (Figure 3.5). Although the payment of social security contributions entitles workers to receive pension benefits, a measure adjusting for these entitlements still indicates a relatively high taxation of labour in Germany (Bundesbank, 2024^[22]). Moreover, as thresholds in the progressive income tax schedule are not indexed to inflation, effective personal income tax rates increase when wages rise in the context of high inflation, particularly for low- and middle-income households. Although the government has regularly adjusted the tax schedule and tax allowances, adjustments have not always been sufficient to fully account for inflation (Dziadkowski, 2022^[23]). Linking allowances and the tax schedule directly to inflation would prevent automatic increases in effective tax rates. This should be combined with a reform of the tax schedule that improves labour supply incentives by lowering income tax rates and smoothing kinks at the lower end of the linear progressive tax schedule (Bach, 2021^[24]). The total fiscal cost of a comprehensive reform of labour taxation depends on the exact design of reforms but will likely need to be financed by raising revenue from property taxes and health excise duties and reducing tax expenditures in capital income, inheritance, VAT and environmental taxation (see Chapter 1).

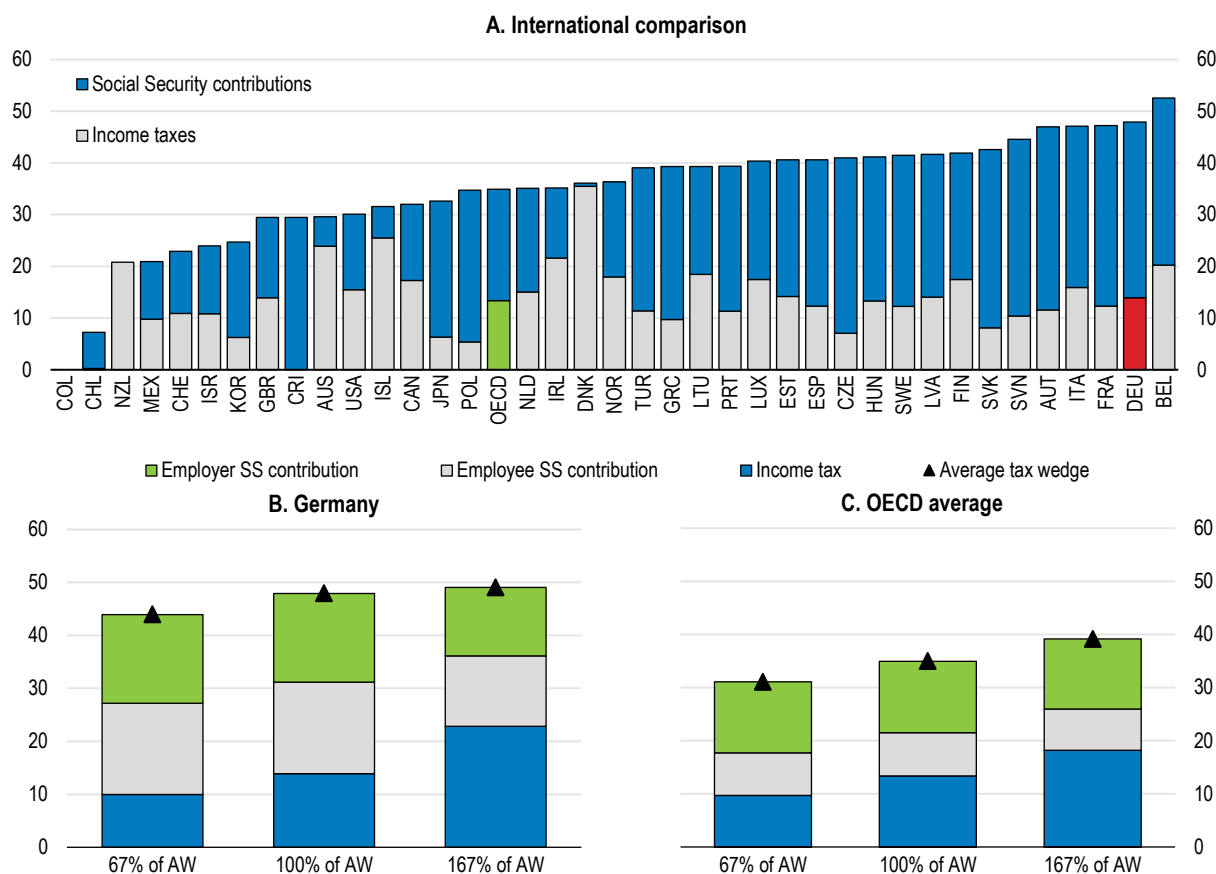
Another reason for low average working hours is the relatively high amount of sick leave. Already before the pandemic, Germany had one of the highest sick leave rates among advanced countries. Employees are entitled to up to six weeks of sick leave at full pay (OECD, 2024^[25]). The rise in sick leave days since 2022 is likely driven by improved electronic tracking of sick leave through insurers and greater awareness of infection risks, which encourages sick employees to stay home (Ziebarth and Pichler, 2024^[26]). Despite the recent tracking improvements, Germany still lacks a unified and representative administrative database that accurately records sick leave by cause and duration, as information whether a worker is back to work earlier than originally notified is not collected. While higher sick leave days may adversely affect labour costs in the short run, enabling sick employees to recover fully before returning to work could ultimately support productivity and workforce participation (Saint-Martin, Inanc and Prinz, 2018^[27]). However, there is scope for making sick leave more flexible, for example by making more use of instruments like gradual re-integration. The current possibility to certify sick leave remotely should not be abolished, as its potential benefit to reduce infection transmission outweighs potential costs (Ziebarth and Pichler, 2024^[26]).

To a certain extent, the decline in working hours, in particular for higher-skilled workers, is also related to changing preferences and increasing consumption of leisure with rising incomes (Bick, Blandin and Fuchs-Schündeln, 2022^[3]). The share of workers in the highest quintile of the salary distribution, who would like to work at least four hours less than they currently do, increased from 44% in 1993 to 51% in 2018 (Beckmannshagen and Schröder, 2022^[28]). Early retirement is also partly related to this change in preferences

and rising incomes, as a significant share of workers retiring early are high-wage workers (see below). As rising wages in occupations in shortage might lead to even stronger decline of labour supply among high-skilled workers, a reform of labour taxation should be combined with fostering business dynamism and innovation to raise productivity and stimulate labour-saving technological change (see Chapter 2).

Figure 3.5. Labour taxes are high

Average tax wedge decomposition, % labour costs, 2024



Note: The tax wedge is the sum of personal income tax, employee plus employer social security contributions, minus social benefits as a percentage of labour costs. In panel A, the tax wedge is shown for a single individual without children earning 100% of average wage. In panel B and C, the tax wedge is shown for a single individual without children earning different income levels of the average wage (AW).

Source: OECD Taxing Wages database.

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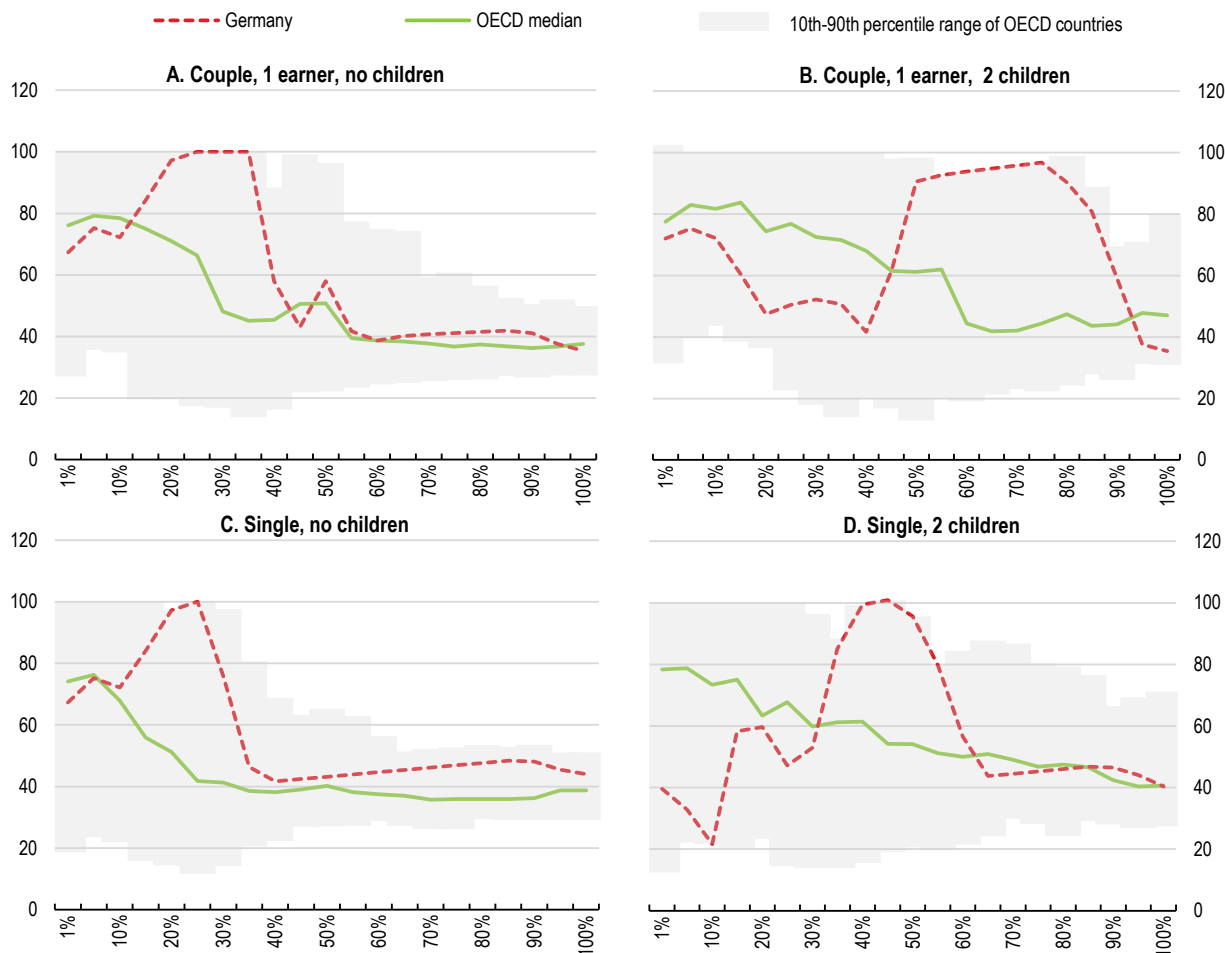
3.2.2. Improving the design of social transfers to raise labour supply incentives of low-income earners and households with children

Incentives in the tax and transfer system to expand working hours are particularly weak for low-wage earners. The share of workers in the lowest quintile of the salary distribution, who would like to work at least four hours more than they currently do, strongly increased from 8% in 1993 to 23% in 2018 (Beckmannshagen and Schröder, 2022^[28]). Despite recent reforms to smooth the labour tax schedule for low-income earners by introducing progressively increasing social security contributions above the *Mini-Job* threshold, effective marginal tax rates were still close to 100% or above for lower incomes in 2023 (Figure 3.6, Panel A and C). Due to the design and withdrawal rates of different social transfers, including basic income support, the child-supplement and housing benefits, net incomes remain constant or even decrease with an increase in gross

income (Blömer et al., 2021^[29]; SVR, 2023^[10]). This effect is even more pronounced for lower-middle income households with children which receive child benefits (Figure 3.6, Panel B and D). The lack of coordination between housing and different child-related benefits creates steep effective marginal tax rates as high as 100% for these households.

Figure 3.6. Marginal effective income tax rates are high for low-income earners and households with children

Effective marginal tax rate (in %) per gross income measured in % of average earnings, 2024



Note: The vertical axis shows the marginal effective tax rate for a 10 percentage point increase in earnings at selected gross earnings levels (measured in % of average wage on the horizontal axis) when working full-time. Scenarios with children are based on two children at the ages of 4 and 6. Annual housing costs are assumed to be 20% of average wage. Median and percentile values for OECD are based on OECD countries except Germany and Chile. Results are based on rules as of 1 January 2024 for Germany, and as of 1 January 2023 for the OECD average.

Source: OECD calculations based on output from the OECD tax-benefit model (Model version 2.7.0).

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Better designing and coordinating the different social transfers so that effective marginal tax rates do not rise with incomes as benefits are withdrawn is key to improve labour supply incentives for low-income earners and households with children. However, this requires better coordination across social transfers which is complicated by the fragmentation of social transfer administration across ministries. Consolidating the different social transfers under one ministry could facilitate coordination to lower effective marginal tax rates for low-income earners. For example, integrating housing benefits into the basic income support while lowering transfer withdrawal rates and introducing allowances could increase labour supply by an estimated 144 000 full-time equivalents (Blömer, Hansen and Peichl, 2024^[30]). However, lower transfer withdrawal rates

will also increase the number of eligible transfer recipients, extending benefits to some middle-income households and implying rising fiscal costs. Nevertheless, comprehensive reform options can be made fiscally neutral, while raising labour supply by about 100 000 full-time equivalents, mainly through higher participation rates among formerly inactive workers, and poverty could be reduced by 0.9 percentage points (SVR, 2023^[10]).

Increases in the level of basic income support have had limited effects on labour supply incentives of low-wage earners. Although the level of basic income support was raised by 26% from 2021 until 2024, taking up a job out of unemployment still leads to higher net income (Blömer et al., 2024^[31]). This is because wages strongly increased at the bottom of the wage distribution due to minimum wage increases of about 30% since 2021: According to the Federal Statistical Office, nominal wages of full-time employees increased by 36% in the first quintile from January 2022 to October 2024. Moreover, as costs for food, which form a large part of the consumption basket of poorer households, have increased by about 30%, the real value of social benefits has not increased much. Taking up a full-time job for unemployed singles results in participation tax rates of around 75 to 80%, and participation tax rates never exceed 100% for other household types (Blömer et al., 2024^[31]). Of the 5.5 million people eligible to receive basic income support, only a minority could work but instead receives social benefits: 1.5 million are children and about 2 million are adults who work and receive benefit top-ups as their wages are too low for financing the subsistence consumption of their households. They are engaged in trainings or caring for children or older persons, or they face temporary illness or incapacity, with most recipients facing multiple hardships (Fitzenberger, 2024^[32]).

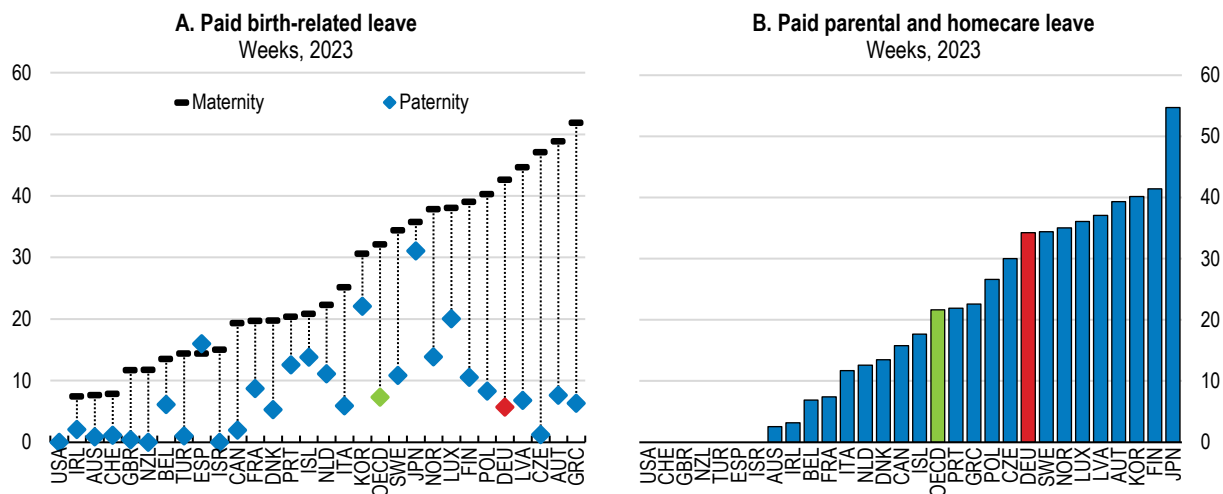
Nevertheless, since 2022, job finding rates for individuals receiving basic income support have decreased (Weber, 2024^[33]). This is mainly related to the large influx of Ukrainian refugees receiving basic income support, for whom it was more difficult to find jobs due to limited German language skills and supply constraints in childcare services, as well as fewer job offers due to the economic downturn. However, the relaxation of sanctions for non-compliance with mandatory employment services for people who receive basic income support have also played a role. The recent strengthening of sanctions for refusal of job counselling, training or job offers is welcome. However, the prioritisation of job placement over vocational education and training or adult education, which was abolished by the 2022 reform, should not be reintroduced. About 55% of unemployed individuals lack a vocational or professional degree, severely hampering their long-term employability (Bundesagentur für Arbeit, 2022^[34]). Fostering the re- and up-skilling of the unemployed is key to address skilled labour shortages and help displaced workers adjust to the changing skill demands during the digital and green transition. It is a major step forward that the employment agency can fully fund vocational training as well as foundational skills courses (e.g., literacy or computer skills), and pay a monthly education premium of EUR 150 for training leading to a qualification.

3.2.3. Stepping up family policies to raise female labour supply: childcare and long-term care

While the share of fathers taking parental leave has increased considerably since the 2000s, paid parental leave entitlements still exhibit significant gender disparities, with women receiving among the longest paid birth-related leave across OECD countries (Figure 3.7). This reinforces gender roles in care activities, reduces labour market participation of women and negatively affects their future earnings, contributing to explain why the gender wage gap remains above the OECD average. Currently, the 12 months of paid parental leave can be split between parents, but each parent is required to take a minimum duration of two month. Parents are also entitled to two months of extra paid parental leave extending the total to 14 months. Since April 2024, parents can receive paid parental leave simultaneously for only up to one month during the first 12 months of the child's life, which is welcome. Further increasing the minimum duration of parental leave for each parent while limiting the overlap of leave periods could help further increasing the role of fathers in childcare. This could help further lower the opportunity costs of childbearing for women, particularly among higher-educated women for whom birth rates are particularly low in Germany (Raute, 2019^[35]; OECD, 2024^[36]). A 2023 reform abolishing paid parental leave for high-income couples earning over EUR 175 000 of taxable income should be

evaluated in this context. Reducing the total duration of paid parental leave, which is high in international comparison, could help reduce fiscal costs, which amounted to about EUR 8 billion in 2024.

Figure 3.7. Paid parental leave entitlements are unequally distributed across both parents



Note: Panel A and B refer to paid leave entitlements reported in full-rate equivalent. For example, if leave entitlements only cover 50% of previous earnings, the duration shown in the figure is half of the leave duration.

Source: OECD Family Database, <https://www.oecd.org/en/data/datasets/oecd-family-database.html>

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Further expanding access to affordable, high-quality childcare is critical for boosting labour force participation of women and supporting children's skills development. A major step forward was Germany's 2013 introduction of a legal entitlement to childcare for kids between the age of one and three years. Large investments have expanded the supply of institutional childcare infrastructure, and childcare costs are comparatively low by international standards according to the OECD Social and Welfare Statistics. However, the share of children under the age of three enrolled in day care remains low at about 34% in 2019, although it has significantly increased from 12% in 2006. Severe labour shortages still hamper access to childcare services and an estimated additional 400 000 childcare places are still needed (Bertelsmann Stiftung, 2023^[37]). Improving recruitment and training, facilitating the recognition of foreign qualifications, reducing the administrative tasks of childcare staff, and raising salaries are key to address these shortages (Bock-Famulla et al., 2022^[38]). Moreover, expanding options for regulated, high-quality home-based care could help address shortages and provide more flexibility to working parents (Box 3.1). The number of home-base care places stood at about 150 000 in 2024 and has declined in the past four years. Educational requirements for home-based providers are low, with a standard curriculum of just 160 hours. When expanding home-based care places, improving the quality of vocational education of home-based providers is key to help equip children with the foundational skills needed to succeed later in life (see below).

Improving long-term care (LTC) for older individuals could also help raise female labour supply. In Germany, most of the care for older people is provided informally and predominantly by women, who care for spouses or parents. This reduces their formal labour market participation, affecting wages and pension entitlements, and significantly reduces overall tax revenues and social security contributions by about 1% of GDP (Llena-Nozal, 2022^[39]). As the share of older individuals requiring daily assistance will rise further, putting pressure on women to reduce formal labour supply, it should be a key policy priority to improve the supply and funding of long-term care services. Although a mandatory public long-term care insurance has been introduced in 1995 financed by social security contributions, the deficit in the current system has increased strongly in recent years and only a part of individual care costs can be funded (see Chapter 1). A significant portion of older peoples' care costs is privately funded, with about one-third of nursing home residents relying on means-tested social assistance (Geyer et al., 2024^[40]). To improve the supply of old-age care services and allow

women to increase labour market participation, the rising deficit of the public long term care insurance should be addressed by limiting the increase of LTC benefits, raising spending efficiency in institutionalised care and encouraging personal savings for care-related expenses (see Chapter 1). Spending efficiency should be increased by strengthening home-based professional care, as the share of individuals with low or moderate care needs allocated to institutionalised care is much higher than in other OECD countries (OECD, 2024^[41]). Moreover, gradually increasing transfers from the core budget to strengthen the care reserve fund would help prevent strongly rising contribution rates that would increase the tax-wedge on labour even further (see above). Shifting care from private to professional care will also require addressing skilled labour shortages, for example by facilitating the recognition of foreign qualifications for nurses and care personnel (see below) and improving working conditions.

Box 3.1. Childcare services in Denmark

The Danish early childhood education and care (ECEC) system includes day care centres (age-integrated or separate nurseries/kindergartens) and regulated private home-based care. Municipalities provide ECEC for children from 26 weeks until primary school, covering at least 75% of costs, with free provision for low-income households. Children typically start ECEC at around 10 months of age, and participation rates are among the highest in the EU (72% for under-threes and 97.5% for over-threes as of 2017). ECEC settings follow binding pedagogical guidelines, and municipalities guarantee a legal right to a place for every child. If local provision is unavailable, parents are compensated through subsidies for private care coverage. Participation is generally voluntary but mandatory from age one for children in marginalised areas. The system is overseen by the Ministry of Children and Education.

Source: (European Commission, 2024^[42]; DESTATIS, 2024^[43])

3.2.4. Supporting longer working lives

Creating the conditions for older and more experienced workers to work longer is key to address skilled labour shortages. Germany made remarkable progress in fostering employment among older workers. Employment rates of persons between 60 and 64 years grew continuously from 20% in 2000 to 65% in 2023. Employment expanded particularly strongly among women in this age group. The average retirement age strongly increased during the 2000s, but it has not changed much since 2012 (BMAS, 2022^[44]). This is related to the extensive use of early retirement options which keeps the effective retirement age significantly below the legal retirement age of currently 66, which will increase to 67 by 2031. The average effective age of labour market exit is below 64 for men and women, which is almost one year below the OECD average for men; for women the difference is about 0.2 years (OECD, 2023^[45]).

Reducing incentives to retire early is key to extend working lives. Pension benefit reductions for early retirement for individuals with at least 35 working years are much smaller than in other OECD countries, explaining the relatively high share of workers that retire early and accept pension reductions (see Chapter 1) (OECD, 2021^[46]). In addition, since 2012 individuals with at least 45 working years can retire without any loss of pension entitlements. While this policy aims to support people in physically demanding jobs who started working at an early age, have not completed a tertiary degree and earn on average lower wages, it is not well targeted (SVR, 2023^[10]; Buslei et al., 2024^[47]). Many workers in physically demanding jobs drop out of the workforce due to health issues and fail to qualify for the scheme, while most workers on the scheme have higher wages and pension claims, and better health outcomes than non-beneficiaries. Thus, the scheme further increases the overall regressivity of the German pension system (Buslei et al., 2024^[47]). These fiscal incentives for early-retirement should be phased-out so that pension benefit reductions are at least actuarially neutral (Pimpertz, 2022^[48]). At the same time, there is scope to increase basic income support in old age and disability pension benefits or introduce a guaranteed minimum pension, as the risk of old age poverty is relatively high compared to other countries such as Denmark or the Netherlands (OECD, 2021^[46]).

Another scheme allows employees aged 55 or older to transition into part-time work, while a mandatory top-up of reduced wages is exempted from taxes and social security contributions. The bilateral agreement between workers and employers is for up to five-years and requires a reduction of working hours but allows for part-time to be taken “en-bloc”, i.e. working full-time the first years and exiting the labour market afterwards, which is by far the most frequently chosen option (BMWK, 2024^[6]). To increase incentives for experienced and healthy workers to work longer, early-retirement through subsidised “en-bloc” part-time arrangements should be abolished. In addition, the statutory retirement age should be linked to life expectancy increases beyond 2031 (see Chapter 1). Maximum thresholds for wage earnings that are not deducted from pension entitlements received before the statutory retirement age have been recently abolished. This should be carefully evaluated, as this might further increase incentives to retire early.

This should be combined with improving adult learning opportunities to help older workers transition to less physically demanding jobs and support longer working lives. Older workers with higher digital skills have better employment chances, higher wages and are less likely to be replaced by technology (Falck, Lindlacher and Wiederhold, 2022^[49]). However, older workers are much less likely to participate in adult learning, which is related to lower returns to participate in training given shorter remaining working lives, ageist attitudes of employers, and limited or inadequate training opportunities, but also to lower foundational skills and motivation of older workers (OECD, 2021^[50]; van Dalen and Henkens, 2019^[51]). A promising step to tackle the participation gap was taken by the Skills Development Opportunities and Work of Tomorrow Acts, which cover training costs of workers older than 45 years for SMEs. However, continuing vocational education and training (CVET) programmes need to be better targeted and adapted to older workers, for example by providing greater support when using digital learning devices, and combined with targeted career advice and guidance services (KOFA, 2022^[52]; OECD, 2019^[53]). In addition, working conditions and preventative health services should be improved to promote longer working lives. Increasing the retirement age of women from 60 to 63 has increased psychological and other health problems, as many employers have not adapted working conditions (Barschkett, Geyer and Haan, 2022^[54]). To adjust working conditions to the needs and capacities of older employees, firms should offer more flexible working hours, more vacation and extend home office arrangements (KOFA, 2022^[52]). Promoting longer working lives is also key for the public sector. In 2018, only 20% of public employers planned to retain their workers eligible for retirement, which is significantly below the average in the private sector (Westermeier and Wolf, 2020^[55]).

In addition, incentives to continue working beyond the legal retirement age should be improved. While only 26% of companies wanted to keep their workers who were eligible for pensions in 2015, the share increased to 58% in 2018. However, more than half of workers who were retained after reaching the statutory pension age switched to part-time employment, mostly in *Mini-Jobs* that are exempted from social security contributions (Westermeier and Wolf, 2020^[55]). This is mainly due to stringent employment protection, which makes it very costly for firms to end regular contracts (see Chapter 2). Plans to abolish restrictions on repeated fixed-term contracts for workers above the retirement age should be implemented, while *Mini-jobs* should be restricted to students. Moreover, since 2017, the *Flexi-Rente* introduced incentives to continue working beyond the statutory retirement age by introducing the option to raise pension benefits by working longer. Implementing plans to also allow for direct pay out of these accumulated additional pension benefits upon retirement would strengthen incentives to work longer for people with lower life expectancy. Introducing additional flexibility by allowing the pay-out of social security contributions for pensions and unemployment insurance instead of the accumulation of additional pension benefits would also be an option.

3.3. Continuing to reduce barriers to skilled migration and the labour market integration of migrants

Since the early 2010s, high net immigration from other EU countries has compensated for population ageing and has been a major driver of economic growth. With mounting labour shortages in these countries exacerbated by population ageing, skilled migration will increasingly need to come from non-EU countries (Adunts et al., 2022^[56];

SVR, 2022^[57]). Simulations conducted for the previous OECD Economic Survey of Germany show that net migration of about 600 000 workers per year, about the average yearly net immigration during the 2010s, would be needed to maintain living standards at their current levels. To maintain the competitiveness of export-oriented manufacturing sectors, integration of workers with vocational education and training (VET) is particularly important (Bickmann, Grundke and Smith, forthcoming^[58]).

The recent changes in migration policies are a major step to reduce barriers to skilled migration from non-EU countries and enhance labour market participation. Economic migration of low- and medium skilled workers from non-EU countries to Germany has been complicated in the past due to complex and lengthy recognition procedures for foreign qualifications, which were often needed for labour migrants, even in unregulated professions. A new law allows individuals with a minimum of two years of work experience and a recognised qualification by the country of origin to receive a temporary residence permit for employment and migrate to Germany, if they have a job offer in a non-regulated profession. The job offer must assure an annual gross salary of at least EUR 43 470 or the employer must be bound by a collective agreement. Regulated professions, for example in healthcare, education or certain professional services, require recognition of foreign qualifications. Moreover, a point-based job seeker visa has been introduced, which ranks candidates based on qualifications, language proficiency (in German and English), work experience, and other factors like connections and family ties to Germany. It allows selected individuals to enter Germany for one year to search for a job. Moreover, the EU Blue Card regulation, which had significantly facilitated migration of tertiary education graduates with a job offer in IT sectors and a salary above a certain threshold, has been extended to other sectors and occupations. At the same time, agreements with several source countries have been established to return asylum seekers who did not receive refugee status, reduce irregular migration and promote the newly established skilled migration paths, for example from Western Balkan states.

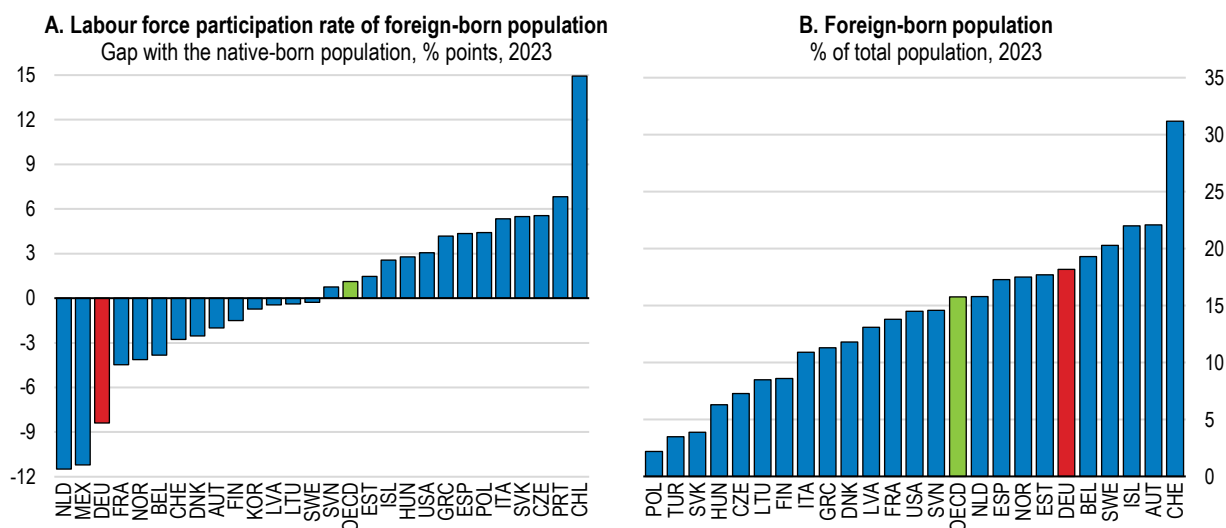
Despite these significant improvements, complex and lengthy administrative procedures necessary to receive a visa and temporary residence permit and a lack of digitalisation cause uncertainty and high costs for migrants and potential employers. Continuing the digitalisation and acceleration of bureaucratic procedures, particularly the visa application, and improving the coordination of the different procedures in centralised migration offices at the Laender level is key. Moreover, lengthy administrative procedures for the recognition of qualifications in regulated professions are a large barrier for skilled migration, although labour shortages in sectors such as healthcare, child and long-term care, and education are high. The recognition procedures are decentralised at the district level and coordination across the different administrations remains weak. Establishing a nationally centralised database, where all successful recognitions of foreign qualifications must be recorded, would greatly facilitate the recognition of foreign qualifications and create efficiency gains for the public administration. Such a database exists already for the recognition of foreign university degrees and should be expanded to include all professional degrees in regulated professions.

Reducing administrative burden should be combined with strengthening policies to attract potential labour migrants. Potential migrants from non-EU countries value the career and employment opportunities, high quality of life and security in Germany and are willing to learn German if this improves their chances to work in Germany (OECD, 2022^[59]). As intra-EU migration will likely slow down further, scaling up current advertisement and recruitment measures to facilitate skilled migration from non-EU countries, improving support for job-search and promoting German language courses abroad is key to realise this migration potential. Germany is already active in the field of international VET cooperation, and these initiatives could help to attract future skilled migrants (Azahaf, 2020^[60]). Visa processes for international students should be accelerated, as students represent a talent pool that is likely to stay (OECD, 2024^[61]).

Improving the labour market integration of migrants who are already in Germany is another key policy lever for addressing skilled labour shortages. The gap in labour market participation rates between migrants and natives is among the highest across OECD countries (Figure 3.8). However, while the employment rate of refugees in Germany is very low at less than 10% in the first year after arrival, refugees achieve an employment rate of 63% after seven years (Brücker et al., 2024^[62]). Lengthy asylum procedures, employment and residence restrictions hamper labour market integration of humanitarian arrivals during the first years, while

participation rates for women are particularly low, in part due to the limited availability of childcare services. The time asylum seekers have to wait until they can participate in the labour market has been reduced to a maximum of six months recently, which is welcome. This should be combined with accelerating asylum procedures, allocating asylum seekers according to local labour market opportunities, and improving access to childcare services. Measures such as the *Chancen-Aufenthaltsrecht*, which provides legal residency for migrants with temporary status (i.e. who were denied asylum status but cannot be re-transferred), can also help improve labour market integration. As many refugees have significant deficits in foundational skills, improving basic education and vocational training for migrants is key (OECD, 2024^[61]).

Figure 3.8. Better integrating migrants in the labour market can help address labour shortages



Note: OECD is calculated as an unweighted average of OECD available countries.

Source: OECD Migration Statistics (database); OECD (2024), International Migration Outlook 2024, OECD Publishing, Paris, <https://doi.org/10.1787/50b0353e-en>.

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3.4. Strengthening vocational training and adult learning and improving the quality of basic education

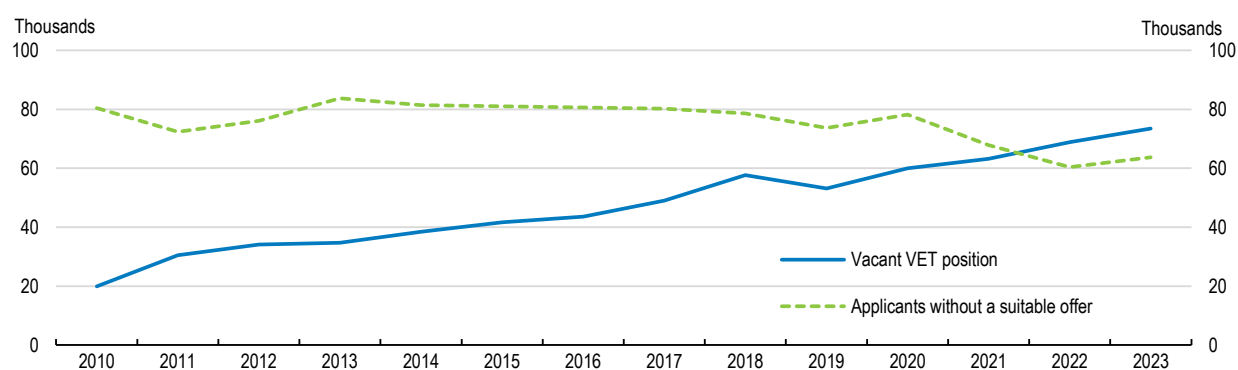
3.4.1. Improving vocational education and training (VET)

Germany's work-and-school-based “dual” vocational education and training (VET) programme has been very successful in preparing young individuals with the skills needed in the labour market. However, despite firms complaining about skilled labour shortages, about 16% of applicants to apprenticeship positions did not receive a suitable offer while the number of unfilled positions is increasing (Figure 3.9). This mismatch is related to regional mismatch of applicants and vacancies, information asymmetries regarding labour market opportunities and training content, unattractive wages and working conditions, as well as a lack of foundational skills among applicants, in particular concerning language and social skills. Efforts to better inform students in lower secondary education about the content of apprenticeship programmes and skill needs in the labour market should be strengthened. The recently introduced mobility subsidies for apprentices and housing subsidies should be expanded to match support available to university students, with firms helping fund the expansion. Relocation grants could further improve regional mobility.

Social partners also have a large role to play in raising the attractiveness of VET for young people. Vacancy rates are highest for many occupations in the construction and health sectors, where wages and working conditions are often less attractive than in other occupations. Although wages have increased for some

occupations with the highest shortage in apprentices in recent years, collective bargaining agreements should focus more on wages and working conditions for apprentices, including better regulating working hours. Regular audits can help ensure a safe and conducive learning environment in all participating firms. Strengthening outreach activities of firms in secondary schools, including training fares, can help reduce information asymmetries and improve the image of VET among upper secondary students. Raising investments in vocational schools, technical equipment and teacher training is needed to maintain the quality of VET (Hippach-Schneider and Huismann, 2024^[63]). Given rapidly changing skill requirements due to the digital and green transition, the acquisition of general transversal skills, such as literacy, numeracy, creative thinking, social and language skills as well as digital skills should become a key part of VET programmes, which would also increase their attractiveness for secondary school graduates (Hampf and Woessmann, 2017^[64]).

Figure 3.9. A rising number of VET positions remains unfilled, yet many applicants do not receive a suitable offer



Note: The graph shows the number of vacant VET positions and applicants without a suitable offer at the end of the application cycle in each year (30 September).

Source: Datenreport zum Berufsbildungsbericht 2024 (BIBB, 2024^[65]).

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Improving foundational skills of students, including language and social skills, is also key for reducing the mismatch between vacancies and potential apprentices. In 2022, the number of young adults between 20 and 34 years of age without any professional degree has increased to 2.9 million (BIBB, 2024^[65]). In the context of mounting skilled labour shortages, it should be a key priority for policy makers and firms to expand initial and continuing VET opportunities to upskill young adults without a professional degree. The recently established guarantee for applicants that did not find an apprenticeship to obtain a place in a VET school (*Ausbildungsgarantie*) in combination with personalised counselling services is an important step forward but should be combined with strengthening foundational skills of potential apprentices. Allowing the use of English and expanding and better targeting language courses to the workplace can help raise participation in VET for applicants with language issues. These efforts can build on positive experiences during the refugee crisis in 2015 and 2016. Strengthening foundational skills should also be one key focus for reforming the current VET transition system (*Übergangsbereich*), which supports young adults who have not succeeded in finding a VET position in a firm on their own. So far, several federal and state-level programmes coexist, with a lack of coordination, systematic information, and guidance services, and foundational skill acquisition is not a focus in many Länder (Enquete-Kommission Berufliche Bildung, 2021^[66]). On-the-job training also needs to be strengthened in the transition system. An internship programme subsidised by the federal employment agency proved to be successful in matching VET applicants with employers and should be expanded (BIBB, 2022^[67]).

3.4.2. Improving adult learning policies

About 15% of all workers have low foundational skills as they have neither completed upper secondary nor any vocational education, hindering their adjustment to changing skill demands during the green and digital transition (OECD, 2022^[68]). They are less likely than other workers to participate in Continued Vocational Education and Training (CVET) programmes, which shows the need to expand, better promote and target adult education programmes for acquiring foundational skills. Employers and employer associations should play a larger role in promoting adult education opportunities by providing workers with sufficient training time and supporting efforts to raise awareness and disseminate information on adult education opportunities among low-skilled workers. The recent introduction of wage compensation to improve training opportunities for workers at high risk of job loss due to structural change is welcome. In addition, existing funding schemes for adults to complete basic or vocational education degrees could be expanded to also include non-formal learning and reskilling. Plans to introduce Individual Learning Accounts (ILAs), which provide cumulative training entitlements for individuals to choose among available adult learning courses, are welcome. However, reducing information asymmetries by establishing harmonised quality standards and certification for training courses is key for a successful implementation (see below). Additional funding programmes at the Laender level should be connected to the planned ILAs platform, possibly as available top-up to the federal funding.

Another key policy lever to promote participation in vocational training, particularly for low-skilled workers without a professional degree, is to rely more on partial qualifications and combine this with better recognition of prior learning, particularly of knowledge accumulated on the job. Partial qualifications allow individuals to complete training modules on a step-by-step basis, providing more flexibility for workers and firms. Coupled with recognition of prior learning, this could significantly reduce entry costs, shorten training times and encourage low-skilled workers to participate in CVET and eventually complete a VET degree (OECD, 2021^[50]). So far, partial qualifications only exist for certain occupations, are not standardised across training providers, and not well linked to career guidance or the existing skill validation system. Implementing nationwide quality standards in career guidance, skill validation and partial qualifications and setting precise qualification requirements for career guidance counsellors in calls for tender would improve the services to workers with low skills (OECD, 2022^[68]). A new legal framework came into force in January 2025 to facilitate skill validation and certification by business chambers, which should support the upscaling of the skill validation system. Importantly, partial qualifications should also be accessible for low-skilled adults below 25 years of age, as this would facilitate the completion of a VET degree for young adults without any professional degree. In parallel to expanding partial qualifications, the recently introduced possibility to complete a full three-year VET programme while receiving basic income support is an important step forward and should be maintained.

The fragmented nature of the CVET system and a lack of harmonised quality standards and certification creates information asymmetries hampering training participation and weighs on training quality. Fragmentation is related to complex governance structures and overlapping responsibilities across ministries and levels of government that hinder coordination. While the federal government is responsible for active labour market policies and CVET outside schools, the Laender are responsible for school-based CVET and local adult learning initiatives. Social partners also play an important role in advising the federal and Länder governments and are responsible for certain aspects of regulation. Since 2019, the National Skills Strategy has started to improve collaboration among key stakeholders, but a standardised quality certification system that sets clear benchmarks for course content, teaching quality, and learning outcomes still does not exist. Developing a unified CVET law could help consolidate the regulatory framework, define clear responsibilities, and set minimum quality standards. A centralised information platform has been established recently by the Ministry of Labour and Social Affairs to better match local course providers and workers looking for training by providing information on course content, changing skill needs in the labour market as well as funding options for training. However, as standardised quality certifications for CVET, which are under the responsibility of the Ministry of Education and Science, are still missing, comparability of courses is still limited. Improving coordination between active labour market and adult learning policies should be a policy priority at the federal and Laender level. In this context, the Federal Employment Agency's nationwide training and

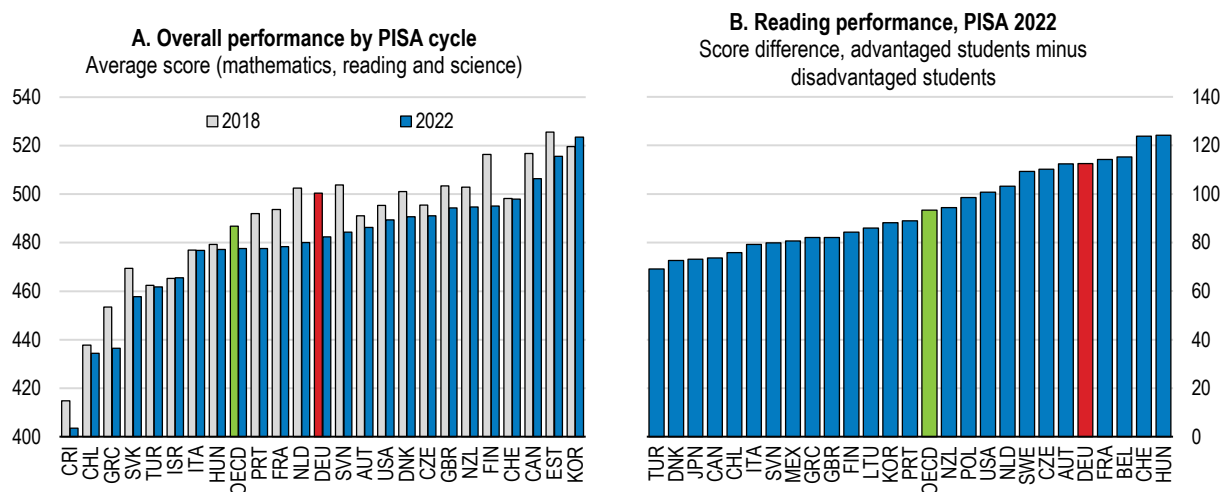
career counselling services as well as existing quality certifications for publicly funded courses could also be leveraged more to foster training participation of workers, improve training quality and better match local providers and training content (SVR, 2022^[57]).

3.4.3. Improving the quality of early-childhood and basic education

Improving educational outcomes is of particular importance for addressing skilled labour shortages and raising economic growth in the longer term, including at the regional level (Hanushek, Ruhose and Woessmann, 2017^[69]). According to the OECD PISA study, average learning outcomes of 15-year-old students have strongly deteriorated from 2018 to 2022 and educational inequality remains high (Figure 3.10). Low foundational skills are one of the main reasons why about three million young adults have no professional degree, while at the same time skilled labour shortages are high (see above). To improve learning outcomes, it is key to raise the quality of early-childhood education (Heckman and Mosso, 2014^[70]). High quality education at an early age fosters the acquisition of language, cognitive, social, and emotional skills and strengthens self-regulation and confidence for a smooth transition to primary school (OECD, 2024^[71]). The benefits extend to long-term educational attainment, well-being, and earnings, particularly for children from disadvantaged backgrounds.

Enrolment in early childhood education of children between three and six years of age is relatively high with an enrolment rate of about 90%. However, the absence of mandatory high-quality pre-schooling focusing on the development of foundational skills, both cognitive, and social and emotional, is a concern, particularly for children from disadvantaged households. Hamburg has successfully experimented with using competence screening tests of four-year-old children to mandate a pre-school year for children with low language skills. Moreover, access to early-childhood education still needs to be improved for children from disadvantaged households. As information and applications are not centralised within municipalities, applications are based on bilateral interviews and access costs are high in some Laender, access to child care services is particularly difficult for many disadvantaged households (Jessen, Schmitz and Waights, 2020^[72]) (Hermes et al., 2021^[73]). Raising subsidies for vulnerable households should be combined with centralising application procedures within municipalities and improving guidance services (see Box 3.1).

Extending the primary school day beyond the early afternoon to allow for more hours of teaching foundation skills could help improve learning outcomes and reduce the need for childcare during these hours. Hamburg has introduced a stronger focus on teaching foundational skills in primary school, while increasing the length of the school day and using frequent student performance tests to provide additional teaching support to classes with low outcomes. This in combination with introducing a mandatory pre-school year for children with low language skills has improved learning outcomes of children from disadvantaged households and raised average student performance (Stanat et al., 2023^[74]). Establishing a close cooperation with teacher and parent associations has also been essential to build consensus around the reforms. The German government is providing 3 billion Euro to the Laender by 2027 to expand all-day education and care for primary school children, as a legal entitlement to all-day education and care was introduced in 2021. While this initiative is welcome, overall funding is insufficient and needs to be complemented by additional funding from the Laender, particularly to attract and employ more teachers and ensure that a longer school day is used for additional learning activities. Severe labour shortages in early-childhood and basic education should be addressed by improving recruitment and training, and raising salaries (Bock-Famulla et al., 2022^[38]). Facilitating the recognition of foreign qualifications can help recruit more personnel trained abroad (see above).

Figure 3.10. Educational outcomes have deteriorated and educational inequality remains high

Note: The Programme for International Student Assessment (PISA) assesses the knowledge and skills of 15-year-old students in mathematics, reading and science. The tests explore how well students can solve complex problems, think critically and communicate effectively. This gives insights into how well education systems are preparing students for real life challenges and future success. Advantaged students are students from households in the upper quartile of the PISA index of economic, social and cultural status, while disadvantaged students are from households in the lowest quartile.

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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Strengthening peer learning across the Laender is key to improve education policies. The federal government together with the Laender have dedicated EUR 20 billion during the next 10 years to improve educational quality in about 4 000 disadvantaged schools. While this is welcome, this initiative should be complemented with a comprehensive evaluation of learning deficits and education policy tools across the Laender to foster peer learning and improve the quality of education. Education policy is under the responsibility of the Laender, which leads to a wide heterogeneity in education policy design and learning outcomes. Allowing for linking and analysing data on learning outcomes of students across the Laender would help to foster peer learning and realise the benefits of the decentralised education system. Moreover, coordination with municipalities needs to improve. While the Laender are responsible for the remuneration of teachers, municipalities are responsible for the remuneration of teaching and psychological assistants, as well as the provision and maintenance of educational infrastructure (see Chapter 4).

Table 3.1. Past recommendations and actions taken

Past recommendations	Action taken
Raise labour supply incentives for second and low-wage earners by reforming the joint taxation rules for couples, while reducing the income threshold at which social security contributions progressively increase.	No action taken.
Lower personal income taxes by raising tax-free allowances and decreasing tax-rates.	The income tax schedule has been adjusted for inflation in from 2023 to 2026.
Reduce marginal effective tax rates for low-income earners through slower and more coordinated withdrawal of different benefits.	Withdrawal rates in basic income support have been reduced, but the uncoordinated increase in housing benefits has exacerbated the issue. A planned reform to merge child benefits did not succeed.
Reduce incentives for early retirement.	No action taken.
Expand access to early-childhood education and centralise application procedures within municipalities.	Childcare places have been further expanded. Centralised application procedures only exist in some municipalities.
Raise the quality of basic education by using performance evaluations to better target support to children with weaker learning outcomes.	No action taken.
Accelerate the digitalisation of administrative processes for migrants, notably with respect to visa issuance, and improve the coordination of the different processes in centralized migration offices at the Laender level.	Digital visa procedures for migrants have been introduced.
Expand the scope of Active Labour Market Programmes, focusing on retraining and foundational skills acquisition, while improving adult education by introducing nationwide quality standards and better coordination and marketing of training supply across regions.	The 2022 Citizen's Benefit reform abolished the prioritisation of job placement over vocational or adult education. The employment agency funds VET and foundational skills courses more flexibly. A platform has been established that links training providers with workers, but the quality of courses still needs to improve.
Make standardised partial qualifications available nationwide and better link them with recognition of prior-learning and career guidance services.	A new legal framework came into force in January 2025 to facilitate skill validation and certification by business chambers, which should support the upscaling of the skill validation system.

Table 3.2 Findings and recommendations (key recommendations in bold)

Main findings	Recommendations
Strengthening incentives in the tax and transfer system to raise labour supply	
The joint income taxation of married couples leads to high marginal income tax rates for second earners. More than half of women work part-time in jobs for which they are over-qualified.	Lower the marginal tax rate for second earners by reforming the current joint taxation of couples.
More than one sixth of the workforce works in part-time jobs exempted from employees' social security contributions (<i>Mini-Jobs</i>), where social protection, training access and career prospects are low.	Restrict <i>Mini-Jobs</i> to school and university students and make social security contributions increase progressively for earnings below the current Mini-job threshold.
Weak coordination of different social transfers and high withdrawal rates lead to high marginal effective tax rates, reducing labour supply incentives.	Lower effective marginal tax rates for low-income earners by reducing withdrawal rates of social benefits.
Paid parental leave entitlements exhibit significant gender disparities, reducing labour market participation and future earnings of women.	Increase the minimum duration for parental leave each parent has to take while keeping the overlap of leave periods limited.
The effective age of labour market exit is significantly below the legal retirement age. Early-retirement schemes are mainly used by workers with higher education and incomes and above-average health status.	Phase-out fiscal incentives for early-retirement so that pension benefit reductions when retiring early are at least actuarially neutral and link the statutory retirement age to life expectancy. Abolish early exit options in subsidised "en bloc" part-time schemes for older workers.
Continuing to reduce barriers to skilled migration and the labour market integration of migrants	
Complex and lengthy administrative procedures for work permits and a lack of digitalisation that slows down the process of visa issuance cause uncertainty and high costs for migrants and potential employers.	Accelerate the administrative processes for migrants, notably with respect to visa issuance, and improve the coordination of the different processes in centralised migration offices at the Laender level.
Labour shortages in sectors such as health, child and long-term care, and education are high. The recognition of foreign qualifications for regulated professions is decentralised with long waiting times.	Expand the existing centralised database for the recognition of foreign university degrees to all qualifications in regulated professions and make the information publicly available.
The gap in labour market participation rates between migrants and natives is high, which is related to lengthy asylum procedures, residence restrictions and weak foundational skills.	Accelerate asylum procedures, allocate asylum seekers according to local labour market opportunities, and expand access to childcare services, while improving basic education and vocational training for migrants.
Strengthening vocational training and adult learning and improving the quality of basic education	
Low foundational skills, including language and social skills, are a major factor why many young adults have no professional degree. The VET transition system is highly fragmented across Laender.	Improve and harmonise the VET transition system by strengthening on-the-job training and the acquisition of foundational skills, including language skills, and introducing personalised guidance services.
Partial qualifications coupled with recognition of informal prior-learning can facilitate training uptake of low-skilled adults but are only available for a few occupations and exclude adults below 25 years of age.	Make standardised partial qualifications available nationwide, including for adults below 25 years of age, and better link them with recognition of prior-learning and career guidance services.
The lack of harmonised quality standards and certification in the fragmented CVET system creates information asymmetries hampering training participation and weighs on training quality.	Create standardised quality certifications that set clear benchmarks for content, teaching quality, and learning outcomes of CVET courses.
Educational outcomes have strongly deteriorated and educational inequality remains high. The quality of early-childhood education is key for skills development later in life.	Introduce a mandatory high-quality pre-school year and lengthen the school day in primary school while raising hours for teaching of foundational skills.
Access to early-childhood education and childcare is limited due to informal and decentralised application procedures which act as a barrier for disadvantaged households.	Further expand access to early-childhood education and childcare by centralising application procedures within municipalities and lowering costs for vulnerable households.

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4

Fostering regional development in times of structural change

Enes Sunel

Robert Grundke

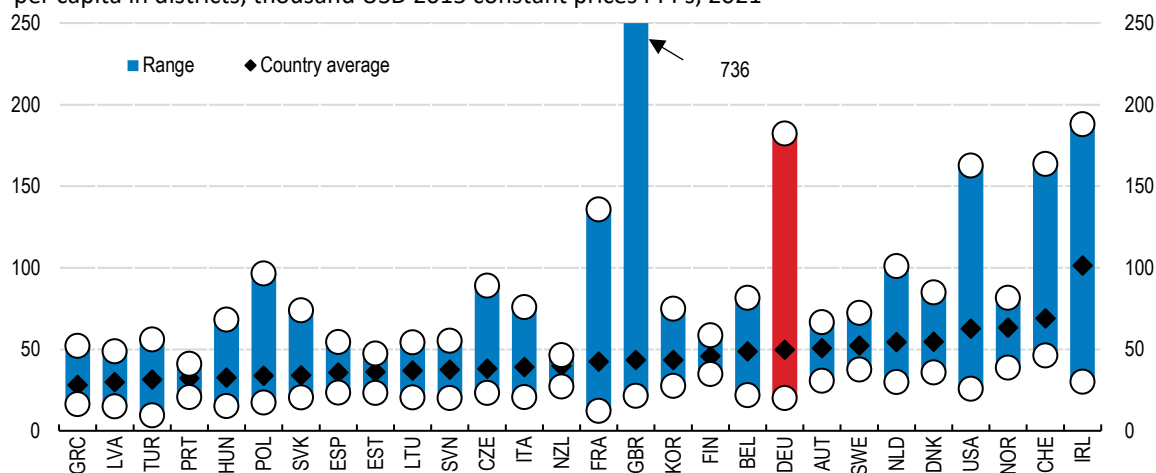
Regional disparities have decreased but remain high and may rise during the green and digital transition. Weak coordination of place-based policies with conditional federal grants and industrial policies, which are much larger in scale, reduces their effectiveness and spending efficiency. Better coordination of funds should be combined with more forward-looking allocation criteria by including projected climate mitigation and adaptation costs. The weak financial and administrative capacity of many municipalities has contributed to a large infrastructure backlog and weighs on the quality of local public services. Raising more revenue from property taxes should be combined with compensating municipalities for federal legislative changes affecting their budgets. Strengthening cooperation across municipalities, including by bundling of tasks such as procurement or infrastructure planning, can raise spending efficiency and improve administrative capacity, particularly in the context of rising labour shortages. Improving digital, energy, innovation and transport infrastructure is key for regional development. To reduce adjustment costs during the green and digital transition, it is key to expand re- and up-skilling opportunities for workers and use carbon pricing revenues to support vulnerable households.

4.1. Regional disparities in living standards have narrowed but ongoing structural changes risk widening gaps

Germany is a highly decentralised federal country with significant economic and social disparities (Figure 4.1). In particular, the reunification with the socialist German Democratic Republic in 1990 strongly increased regional disparities, as the transition from central planning to a market economy implied major structural changes with high economic and social adjustment costs in the East. Furthermore, structural change related to globalisation and technological change as well as the green transition have strongly affected some Western regions, such as the Ruhr area or other areas with a high concentration of carbon-intensive manufacturing industries and mining (Dauth, Findeisen and Suedekum, 2014^[1]) (see the previous OECD Economic Survey of Germany).

Figure 4.1. Regional disparities are large

GDP per capita in districts, thousand USD 2015 constant prices PPPs, 2021



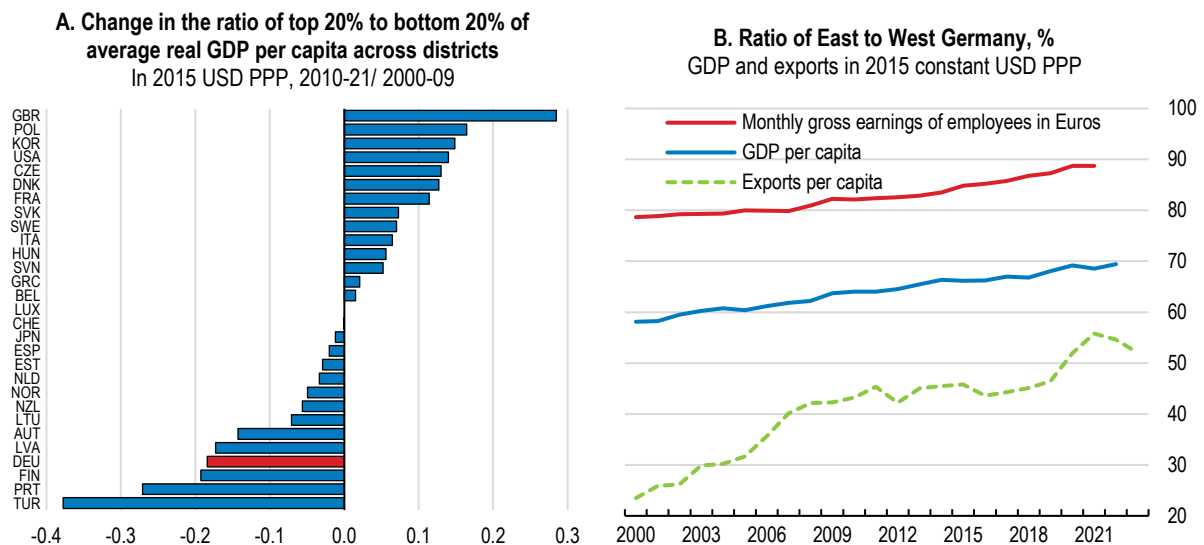
Note: "Districts" refer to TL3 regions (Kreise for Germany). Country coverage is limited by the availability of regional data at TL3 level. Country averages are weighted by population across districts.

Source: OECD Regional Statistics database.

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Over the last two decades, however, economic disparities between districts, and especially between the eastern and western Laender, have narrowed substantially (Figure 4.2). The eastern Laender have benefitted from large public and private investments, improvements in institutional quality and a high quality of education and vocational education and training (VET), which enabled many displaced workers to adapt to changing skill demands (Gagliardi, Moretti and Serafinelli, 2023^[2]; von Hagen, Strauch and Wolff, 2002^[3]). The high quality of human capital and research allowed for the targeted development of innovation clusters, which have strongly benefitted certain regions, as for example the chip industry cluster in Dresden. An increase in the total fertility rate from a low level and a reversal of net internal migration outflows have decelerated the population decline, while rapidly falling unemployment rates and longer working hours than in western Laender have supported the wage income of middle-income workers in the eastern Laender (BBSR Bonn, 2024^[4]). A higher share of value added in the services sector explains why rising energy prices during the last years have affected economic activity less than in many western Laender (BMWK, 2024^[5]). Federal and EU place-based policies, which aim to foster economic development in specific geographic areas, have facilitated an increase in public and private investments, which supported the economic integration of the eastern Laender into global markets. As a result, per capita exports in the eastern Laender have strongly increased since the 2000s (Figure 4.2, Panel B).

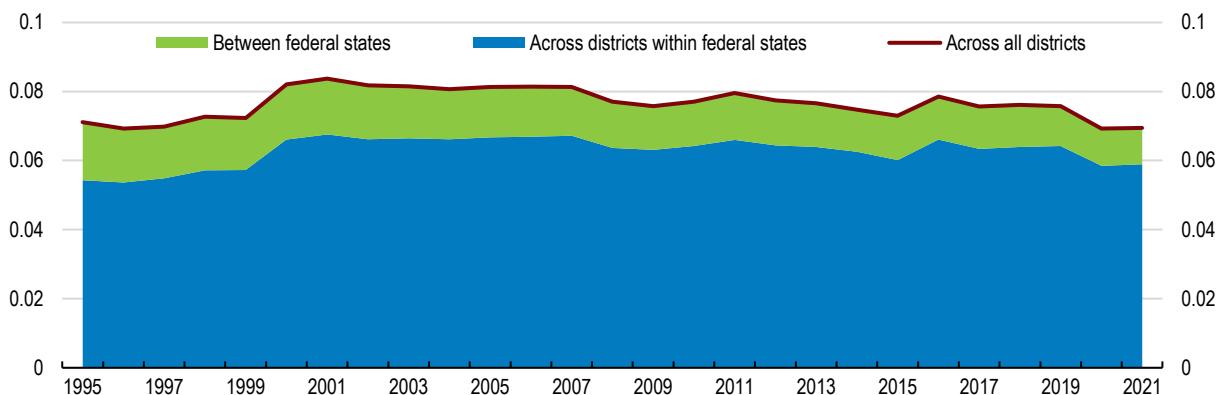
Figure 4.2. Regional disparities in GDP per capita have narrowed over the last two decades



While economic convergence between the Laender occurred in the last two decades, regional disparities in GDP per capita between districts remain large (Figure 4.3). Agglomeration effects, urban amenities and cultural factors have led to an increasing concentration of economic activity and population in larger metropolitan areas, as observed in many other OECD countries (OECD, 2023^[7]). Income and wealth inequality across districts has even increased due to the decline in the share of labour income compared to other income sources, strongly rising property prices in economic centres and the weak progressivity of property taxation and outdated property valuations (see below).

Figure 4.3. Regional disparities across districts remain high

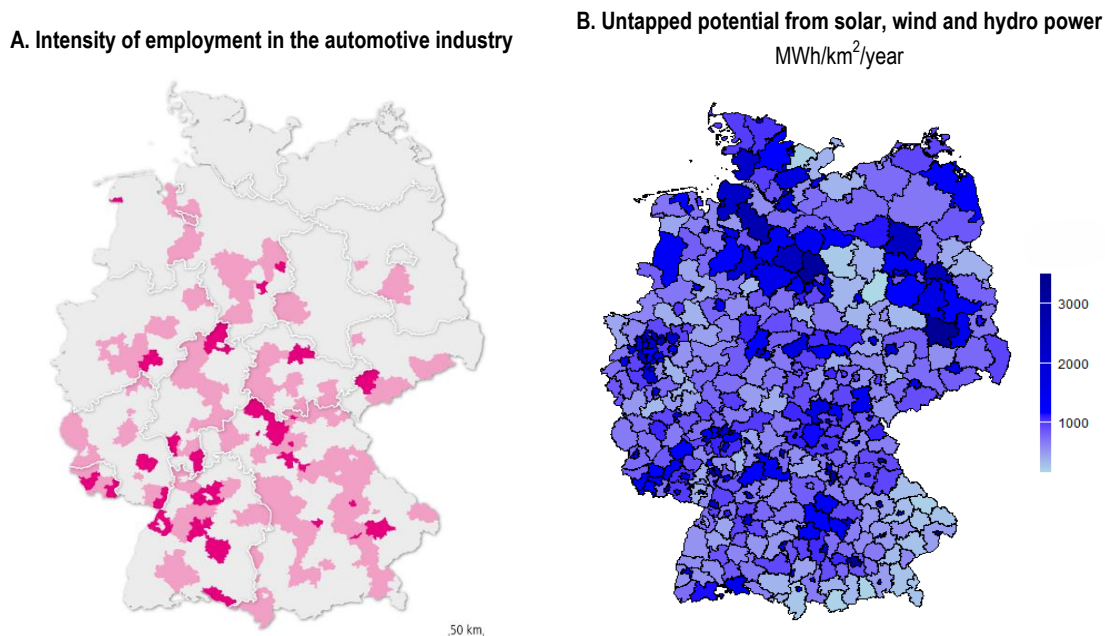
Theil indices of real GDP per capita in 2015 constant USD PPPs across districts



Ongoing structural change risks to further widen these regional gaps within the Laender (OECD, 2023^[8]). As discussed in the previous OECD Economic Survey of Germany, regions where economic activity is concentrated in carbon-intensive or energy-intensive sectors will be more affected by climate change mitigation policies. Moreover, the structural shift from the internal combustion engine technology to electric vehicles will particularly affect regions with automotive clusters, such as the Stuttgart region or several regions in Bavaria

(Figure 4.4, Panel A). However, the green transition will also provide opportunities for some of the currently lagging regions in the North and the East that have a comparative advantage in renewable energy expansion due to weather-related factors and lower population density, facilitating public acceptance of solar and wind parks (Figure 4.4, Panel B). This could help to attract firms from other regions that aim to decarbonise their production, provided that the transmission network and incentives in the grid charge system are improved (see below).

Figure 4.4. The green transition implies challenges and opportunities for regions



Note: In Panel A, dark colour regions refer to greater than 10% employment share in the automotive industry and lighter colours refer to up to 10% employment share in the automotive industry. The rest of the regions have negligible employment shares in the automotive industry. Regions shown in Panel B are at the level of TL3 districts (Kreise for Germany).

Source: Heider et al. (2023_[9]); European Commission (2024_[10]).

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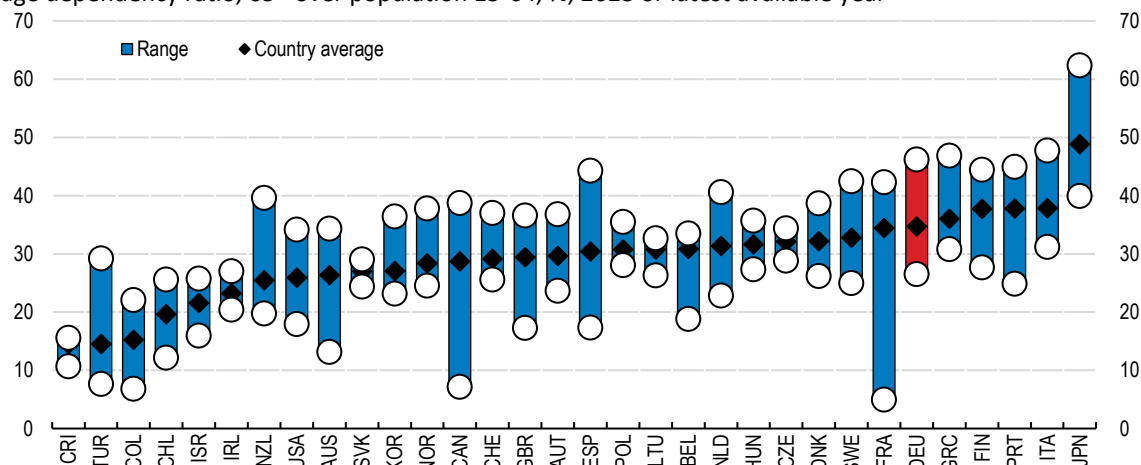
Moreover, digitalisation will continue to significantly change production processes and the world of work, with heterogeneous effects across regions. German urban regions are home to innovation leaders in traditional technologies, but the diffusion of digital technologies remains a challenge due to a lack of digital and entrepreneurial skills and weak access to high-speed broadband among smaller firms (OECD, 2024_[11]; BBSR Bonn, 2024_[6]). To embrace the digital transformation, investing more in knowledge-based capital, skills and innovation is key. German firms invest less than firms in the United Kingdom, France, and the United States in knowledge-based capital, and the adoption of digital technologies is low compared to top-performing OECD countries. Automation or artificial intelligence (AI)-based solutions will also lead to significant changes in the task content and skill requirements of jobs as well as the need for workers to relocate to other sectors and firms (OECD, 2024_[12]). Thus, policies to support the digital transformation should be complemented by well-targeted training and adult learning policies to help workers adjust to changing skill needs (see Chapter 3).

Finally, strong heterogeneity in demographic trends risks further widening regional disparities (Figure 4.5). The old-age dependency ratio is much higher than the EU average in the territorial Laender in the East, in Rhineland and in rural areas, potentially exacerbating skilled labour shortages and weighing on entrepreneurial activity (European Commission, 2024_[10]). Over the past two decades, the population of regions far from a midsize or large functional urban area has fallen, while metropolitan regions have seen their population grow. These challenges are exacerbated as young people move to metropolitan regions for educational and employment reasons. As a result, the share of skilled workers among the unemployed and the share of vacancies in professions that require high-skilled workers have increased in the eastern Laender

and in the rural regions, indicating a stronger mismatch of skilled workers (BBSR Bonn, 2024^[6]). Labour shortages have also been exacerbated by relatively low birth rates in eastern Germany and net migration into western Germany between the reunification and the last decade, particularly for younger people. Foreign migration has mainly entered West Germany and urban regions due to network effects related to existing migrant stocks and the rise of anti-immigration political representation in the East. As knowledge spillovers and network effects with other countries are important for international integration and innovation, this risks to be a major barrier to further economic convergence. Population in some economically weak regions is projected to decline further by more than 10% over the next two decades, significantly increasing the cost of public service provision and changing public service needs due to population ageing (BMWK, 2024^[5]).

Figure 4.5. The old-age dependency ratio is high in many regions

Old-age dependency ratio, 65+ over population 15-64, %, 2023 or latest available year



Note: The dots indicate the national average. The range indicates the regional variation at the level of TL2 regions (Laender for Germany).

Source: OECD Regional statistics database.

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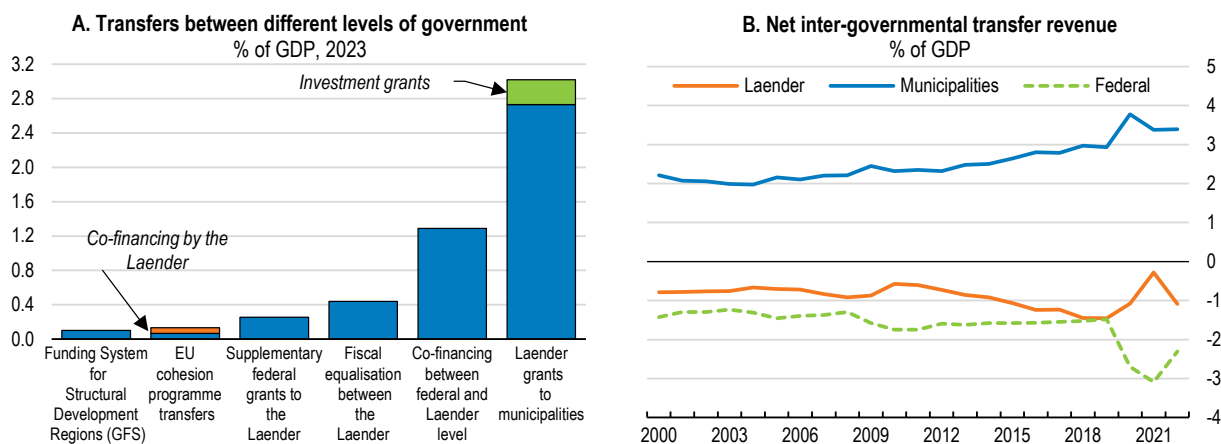
To address these challenges, it is key to improve and better coordinate policies in different areas that shape the conditions for regional development. Ongoing structural change requires equipping regional and local governments with the necessary financial and administrative capacity to address large infrastructure and human capital investment needs. This should be complemented by increasingly introducing the rule-based regional focus of national and EU level place-based policies into industrial, energy and transport infrastructure policies. Policies aimed at fostering regional innovation clusters and entrepreneurial activity, including in green technologies, should facilitate knowledge diffusion and commercialisation and scale-up of new ideas, products and services. Active labour market and social policies can go a long way in supporting workers that face real income losses due to structural change and need to adapt to changing labour market needs. Education policies, which are also a key lever for regional development as they form the human capital needed for fostering economic growth (Hanushek, Ruhose and Woessmann, 2017^[13]), are referred to in Chapter 3 and will not be discussed in detail in this chapter.

4.2. Improving coordination between place-based policies and other policies with regional impact

4.2.1. Place-based funds are much smaller than other transfers with regional consequences

To ensure similar living standards across regions despite large differences economic activity and fiscal capacity, large fiscal transfers exist that are not defined as place-based policy. These include fiscal equalisation and support systems as well as additional inter-governmental transfers to ensure the funding and provision of public services and infrastructure (Box 4.1) (Figure 4.6). Fiscal equalisation across the Laender is based on revenue equalisation through the redistribution of VAT revenues. In addition, unconditional supplementary federal grants to specific Laender further reduce differences in fiscal capacity. Compared with these transfers, the size of fiscal transfers within the Laender is much larger, resulting in Laender being net fiscal contributors to municipalities. The transfers within the Laender comprise grants to municipalities to fund public services, investment and the public administration and are mainly funded through inter-municipal equalisation systems (Thöne and Bullerjahn, 2020^[14]). In addition, conditional federal transfers with co-financing by the Laender or municipalities exist to safeguard local public investments in areas such as research, digital and transport infrastructure, public transport, urban development, education, childcare, and housing. All these inter-governmental transfers have significant distributional consequences across the Laender and their municipalities and support framework conditions for local economic development, but are not defined as place-based policies (BMF, 2023^[15]). In addition, sizable implicit transfers across regions exists within the health and pension system, the unemployment insurance as well as other federal cash benefit programmes such as student aid, parental benefits, and basic income support (BMF, 2023^[15]).

Figure 4.6. Inter-governmental transfers to municipalities are large



Note: Panel A covers 2022 data for the Federal Funding System for Structural Development Regions. Panel B covers data until 2022. Net transfer revenue is the difference between non-consolidated transfer revenue and transfer expenditure.

Source: Federal Government Equivalence Report (2024^[15]); OECD Fiscal Decentralisation database; Federal Ministry of Finance; European Commission; OECD Economic Outlook database; and OECD calculations.

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Box 4.1. Germany's federal system

Germany is one of nine OECD countries with a federal structure. Germany's administrative structure comprises 16 federal states (*Laender*) and 400 districts (*Kreise*), corresponding to the OECD (EU) regional classifications of TL2 (NUTS1) and TL3 (NUTS3), as well as 10 775 municipalities. While the city states of Berlin, Bremen and Hamburg, have an average population density of more than 12 times the national average, the eastern territorial states of Brandenburg, Mecklenburg-Vorpommern, Saxony-Anhalt, Saxony, and Thuringia have an average density of half the national average.

As Germany is a federal country, many government functions are allocated to sub-central levels of government. Defence and foreign policy are under the responsibility of the federal government, while other legislative areas and the public administration of policies are delegated to the *Laender*. The *Laender* oversee most public policies in education, research, transport, environmental protection, housing and community amenities, and social and cultural affairs, and delegate some of these functions to the municipalities, which then administer them locally. The level of decentralisation of functions to municipalities strongly varies across the *Laender* (Thöne and Bullerjahn, 2020^[14]). In health policies, overlapping responsibilities exist between the *Laender* and the federal government. Taxes are collected by the *Laender*, except for trade and certain excise taxes collected by the federal customs administration.

To finance these functions, personal income, interest and capital gains, value added and corporate income taxes are shared between the federal government, the *Laender* and municipalities according to fixed revenue shares. The shares from revenues from these joint taxes for *Laender* and municipalities are directly linked to economic activity in their territory, except for VAT, which is distributed among the *Laender* according to population of the *Laender*. In addition, *Laender* also receive revenue from the inheritance and real estate transfer tax as well as the beer and gambling duty, while municipalities receive revenues from the local business and property tax, and other local fees. As economic activity differs across the *Laender* and municipalities and shared taxes are allocated based on the territorial source principle, regional fiscal capacities differ substantially. The *Laender* are subject to a constitutional debt brake that limits their combined structural annual budget deficits to 0.35% of GDP. The distribution of the permitted borrowing across the *Laender* is regulated by federal law and requires the consent of the second chamber of the parliament, the *Bundesrat*. In contrast, municipalities are subject to balanced budget requirements that limit borrowing to finance spending on education infrastructure and other infrastructure investments.

Within the federal framework, place-based objectives are directly addressed by the Federal Funding System for Structural Development regions (GFS) which are much smaller in size and not coordinated with the other fiscal transfers (Figure 4.6). The federal government's place-based policy framework aims at fostering business activity and employment in disadvantaged regions and supporting them during the green and digital transitions. Funding is administered by seven ministries through 16 programmes and is mainly allocated to disadvantaged regions according to a regional development index. The index measures productivity and employment outcomes, infrastructure quality as well as demographic prospects (BMWK, 2024^[16]). The GFS programmes provide investment grants, wage subsidies, below-market loans, support for research and innovation, employee training and digitalisation for firms as well as funding for public infrastructure. This domestic place-based policy framework is further complemented by the EU cohesion policy, which targets transition regions, and is mainly administered by the *Laender* to provide additional funding to municipalities, research institutions and small and medium-sized enterprises (SMEs).

Inter-governmental transfers impacting regional development are fragmented and need to be better coordinated to be more effective and raise spending efficiency. Compared to the GFS programmes and EU cohesion funds, conditional federal grants to the *Laender* are much larger and often overlap with the target areas of place-based funds, for example concerning urban development, transport and digital infrastructure, education and research infrastructure or social housing (Figure 4.6). However, they are not provided according to the regional development index used to allocate most of the GFS funding. Instead, they rely on bilateral

agreements between the federal government and the Laender, which require approval by the majority of Laender governments in the Bundesrat and in many cases use an index based on tax revenues and population shares (*Koenigssteiner Schluessel*) for allocation across the Laender. Although co-financing requirements ensure a certain degree of ownership and incentivise the efficient use of resources by the Laender or local governments, a better coordination of these conditional grants with the GFS programmes and EU cohesion funds could improve spending efficiency and the effectiveness of regional development policies. This is particularly important as a recently created infrastructure fund will allocate EUR 100 billion over the next 12 years to support public investment in the Laender and municipalities (see Chapter 1). Allocating the funds to regions where public investment needs are largest and improving coordination with other funding programmes is key to ensure the efficiency of public spending. The wider use of the regional development index to determine funding allocation within the GFS programme, where so far only three out of 16 programmes exclusively use this index to allocate funding, would also support this objective. Strengthening coordination between the national and EU place-based policies is particularly important as both are under review to set funding targets for 2028 onwards.

More transparency and better coordination across funding programmes would also reduce the administrative burden and information asymmetries created by the fragmented funding application procedures, particularly for municipalities with limited administrative capacities (see below). For example, the integration of the funding programme Joint Task: “Improving the Regional Economic Structure” (GRW) into the GFS in 2019 has improved coordination and efficiency by harmonising application procedures and introducing conditional transferability of funds between programmes, raising the flexibility and predictability of funding for recipients (Suedekum, 2023^[17]). A planned one-stop shop for funding applications (*Foerderzentrale Deutschland*), including for programmes aimed at municipalities, should be expanded to include more federal funding programmes, EU cohesion policy funds and Laender programmes and should be used to harmonise and simplify application procedures. Moreover, to further reduce the administrative burden related to the application and monitoring of conditional investment grants, they could be partially replaced with lump-sum grants using cost-based calculations (Blesse, Hoegner; Leon and Necker, 2024^[18]; OECD, 2021^[19]).

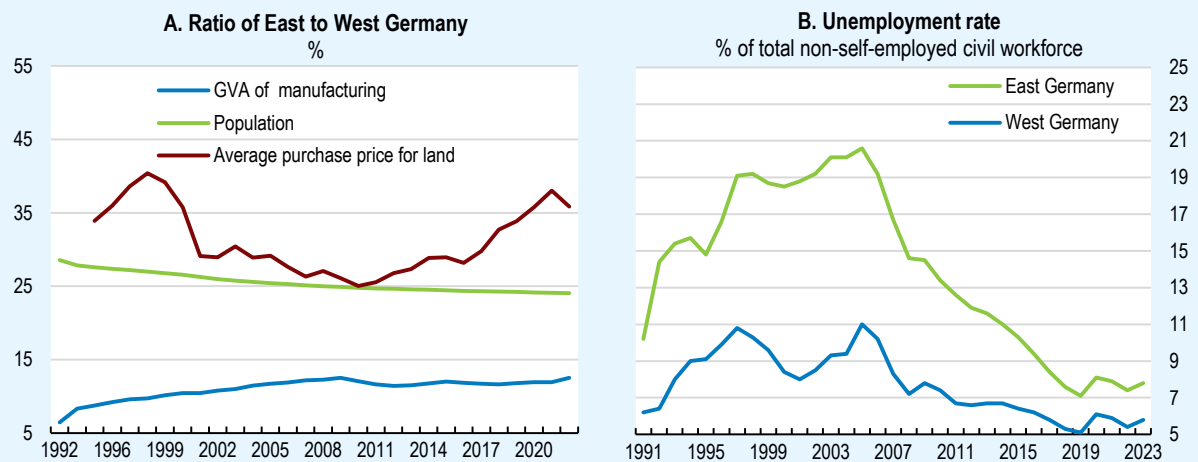
4.2.2. Making place-based policies more effective and forward-looking

Despite large transfers to economically weaker regions, disparities in labour productivity remain high across districts (Figure 4.1; Figure 4.3). This is due to agglomeration effects, the persistent regional heterogeneity in industrial structures and innovation activities, different levels of trade integration as well as intra-national migration. Building on experiences from past place-based policies and fiscal transfers, in particular related to the structural transformation of the Eastern German economy, can help improve the design of future policies (Figure 4.2). Despite large fiscal transfers that considerably reduced income inequality and improved infrastructure quality, labour productivity in the eastern Laender is still about 80% of the average of western Laender. One main factor is that large scale subsidies for private investment have led to capital misallocation towards industries with lower-skill intensity and benefitted more mature and bigger firms, hampering business dynamism and innovation, and resulting in spatial displacement of activity. Stringent labour market protection in combination with collective bargaining dominated by Western German worker unions incentivised new firms to stay small, weighing on productivity growth. The privatisation process has led to the fragmentation of the industrial network, reducing agglomeration effects and innovation activity within clusters that had previously linked firms and local research institutions. Moreover, East Germans are significantly underrepresented in economic, political and cultural leadership roles, while trust in institutions is low in the eastern Laender (Vogel, 2022^[20]).

Box 4.2. Structural adjustment and economic policies in Eastern Germany

Economic disparities between East and West-Germany began to increase from the Second World War until the building of the Berlin Wall in 1961, driven by large-scale selective migration and relocation of firms from the socialist German Democratic Republic (GDR) to the Federal Republic of Germany as well as higher war-related damages and reparation costs (Becker, Mergele and Woessmann, 2020^[21]). During the following decades, these disparities have grown, in particular during the 1970s when expropriation of more entrepreneurial smaller and medium-size firms led to an increasing centralisation of the Eastern economy (Blum, 2019^[22]). The reunification in 1990, encompassing the transition from a central planning to a market-based economy, including a large-scale and rapid privatisation of firms and real estate property, a strong real appreciation due to the introduction of a single currency and a collapse of export markets in other ex-Soviet countries, first exacerbated these disparities (Figure 4.7). Real GDP in the East had declined by 35% from 1989 until 1991 and industrial production and employment by one third until 1993.

Figure 4.7. Disparities between East- and West Germany remain significant



Note: Berlin is included in the East Germany. In Panel A, "GVA" refers to gross value added in EUR billions and average purchase price for land is in EUR per m².

Source: German Regional Statistical Office; BBSR Bonn (2024^[6]); Federal Employment Agency; and OECD calculations.

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By 1996, however, real GDP had recovered to its pre-reunification level, mainly thanks to a booming construction industry supported by sizable transfers and subsidised loans for infrastructure projects and large fiscal incentives for private investments (von Hagen, Strauch and Wolff, 2002^[3]). Other sizable transfers from western to eastern states included transfers within the fiscal equalisation system as well as within the unemployment benefit and the pension system. Despite the sizable transfers and investments, however, real GDP growth slowed down in the second half of the 1990s and unemployment rates remained persistently high, reaching 20% on average in 2005 (Figure 4.7). Including people in active labour market programmes, unemployment was even closer to 30%. In addition to the initial real currency appreciation, the wider application of West German labour market institutions in East Germany led wages to grow faster than labour productivity during the 1990s, raising unit labour costs further and weighing on the competitiveness of firms in East Germany. Today, labour productivity and wages remain at about 80% of the level of western states. The population in eastern states (excluding Berlin) has decreased by 15% since 1989, mainly due to outward migration and strongly declining birth rates, while in western states population increased by about 10%.

The slowdown in convergence can be attributed to several factors, including selective migration of the high-skilled and more entrepreneurial youth to western states, the heavy subsidisation of investments that tried to compensate for high unit labour costs and led to the misallocation of capital, an industry structure

skewed towards lower skill intensity, as well as the nature of the privatisation process leading to many dispersed smaller firms and a lack of headquarters and innovation activities in East Germany (Akcigit et al., 2023^[23]; Blum, 2019^[22]). In particular, significant tax deductions for investments benefited larger and more mature firms incentivising the acquisition of East German firms by West German firms without necessarily generating new production, business start-ups or innovation activities in the East (Sinn, 1995^[24]).

During the privatisation process, large state-owned conglomerates were first split up into smaller entities leading to about 11 000 firms, which were then privatised from 1990 until 1994. Fast privatisations favoured West German investors as buyers, particularly of the more productive firms, as foreign or East German investors lacked market knowledge or political connections. International investors acquired less than 7% of all privatised firms, while 45% were acquired by West German investors, limiting competitive pressures on West German firms (Estrin et al., 2009^[25]). About 45% of firms, which were generally the less productive firms, were acquired by East German investors, including by associations of employees. This negative selection, limited knowledge about the functioning of markets and firm management as well as weaker access to finance for East German investors due to low wealth levels, but also the decision to not cancel outstanding debt as done for many firms sold to West German investors, contribute to explain why survival rates of firms acquired by East German investors were much lower (Mergele, Hennicke and Lubczyk, 2022^[26]). By 1994, one third of all firms were shut down, and by 2010 half of the remaining privatised firms had ceased to exist. This considerably weakened the industrial network and reduced agglomeration effects and innovation activity in East Germany (Blum, 2019^[22]). Moreover, labour market institutions have incentivised firms in the East to stay small to avoid collective bargaining and high firing costs, weighing on aggregate productivity growth (Bachmann et al., 2024^[27]).

Previous evaluations of investment subsidies within the place-based programme GRW, which accounted for around 30% of all GFS funding evaluated in 2022, have shown mixed results (BMWK, 2024^[5]). The evaluations have found that GRW programmes increased investment, employment and turnover in the beneficiary regions, particularly for smaller firms and in services, but had weak effects on labour productivity and wages and led to a declining share of high-skilled workers over time compared to untargeted firms (Brachert et al., 2024^[28]). This may be because size-dependent eligibility criteria for the subsidies have encouraged firms to remain small, and wage subsidies were not conditional on skill profiles of employees (Garicano, Lelarge and Van Reenen, 2016^[29]; Desiere, Toniolo and Bijmens, 2025^[30]). In particular, firms below a certain size threshold can claim a larger share of their investment costs compared to larger firms. Conditioning subsidies on trade with more distant regions to boost exports may also have resulted in higher trade costs for supported firms (Siegloch, Wehrhöfer and Etzel, 2021^[31]). A 2022 reform is welcome as it links wage subsidies to high-skilled employment and removes the eligibility condition of a minimum distance for trade in goods and services, which is key to foster regional value chains and spillovers (Atalay et al., 2023^[32]). Better evaluating investment subsidies and considering abolishing firm size thresholds in eligibility criteria and setting higher wage subsidy rates for the employment of higher-skilled workers with adequate training could help encourage beneficiaries to scale up and support regional innovation and productivity growth. Making all GFS funding conditional on the disclosure of the common electronic identifier – as has been the case for GRW – for applicant firms would facilitate the impact evaluation of GFS programmes. Applying this principle to industrial policies and other funding programmes would further facilitate policy impact evaluation.

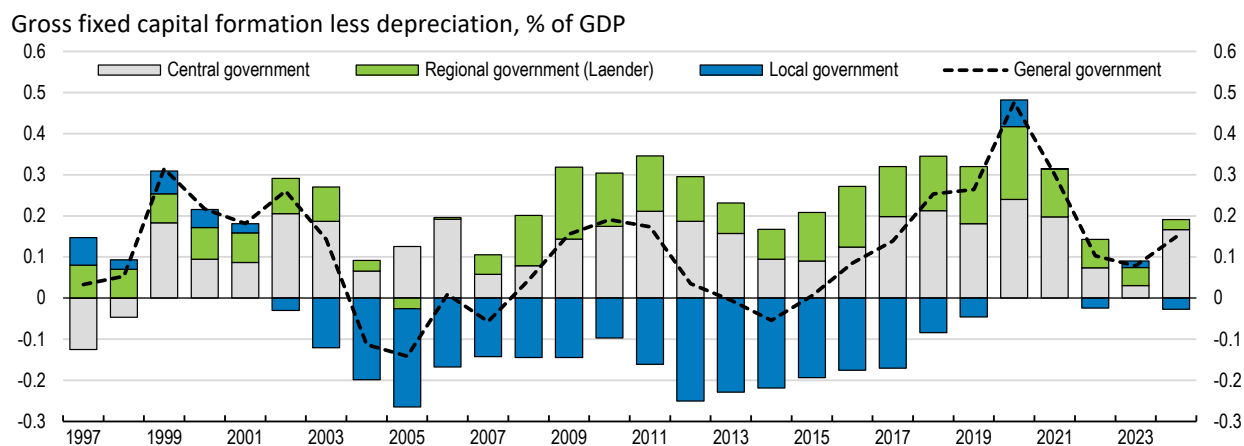
Including a forward-looking perspective in all GFS programmes could help regions master the green and digital transitions. The place-based policy framework remains largely a mechanism to equalise existing living conditions across Germany. However, the green and digital transitions will create challenges for currently unassisted regions which should be taken into account to better prepare these regions for structural changes before the costs of addressing them become much larger (Suedekum, 2023^[17]). For example, the decarbonisation of energy-intensive industries and the structural transformation of the automotive industry will strongly affect regions which are outside the currently targeted regions, and require large training investments to help workers move to jobs in expanding sectors and firms (OECD, 2023^[8]). Moreover, climate change is projected to cause high adaptation costs in almost 90% of all municipalities (Friedrich et al., 2023^[33]).

So far, demographic projections are the only forward-looking criteria included in the funding allocation mechanism of most of the GFS programmes. Other forward-looking criteria, such as higher risk from climate change or costs from decarbonisation of industries, should also be included in the funding allocation, for example by using the medium-term regional temperature and drought projections of the National Meteorological Service and the long-term regional climate extremes projections of the German Environment Agency. Regional vulnerability to planned climate mitigation measures could be included by using a regional composite indicator approach based on employment and emissions shares (Rodríguez-Pose and Bartalucci, 2023^[34]). The relaxation of eligibility conditions for investment subsidies for climate-friendly and research-intensive investments after the 2022 reform of the GRW are welcome (BMWK, 2024^[16]). New initiatives to support regions during the green, digital and demographic transitions should be merged with the GFS programmes to improve coordination and strengthen the proactivity of the place-based policies.

4.3. Improving the financial and administrative capacity of local governments to foster regional development

A large infrastructure backlog at the municipal level has weighed on economic development and the quality of public services, making it difficult for regions to cope with ongoing structural changes (Figure 4.8). Municipalities account for about 40% of all general government expenditure on investment, including half of all climate-significant investments, and the investment backlog has reached 4.2% of GDP in 2022 (BMF, 2023^[15]). Municipalities are responsible for investing in schools and other educational infrastructure, childcare facilities, waterways, energy utilities, local roads, public transport infrastructure, administrative buildings and wastewater management infrastructure. Investments in these areas are needed for the green and digital transitions. Municipalities are also responsible for a range of public and social services, such as health and long-term care, youth assistance services, the administration of basic income support, disability and housing benefits, and the accommodation of refugees, among others, which are key for ensuring high living standards and well-being and building citizens' trust in institutions.

Figure 4.8. The capital stock has declined at the municipal level since 20 years



Source: OECD National Accounts database.

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The reasons for the infrastructure backlog range from weak infrastructure planning capacities, as discussed in the 2020 OECD Economic Survey of Germany, and lengthy planning and approval procedures, which the government has started to address (see Chapter 2), to a deteriorating financial situation in recent years. Higher social transfers due to the pandemic and energy crisis and benefit increases legislated by the federal government, large inflows of refugees, rising energy prices, public wages and construction costs as well as high interest rates have increased spending pressures, while tax revenues have stalled. However, the disparities across districts remain large due to differences in economic activity (Figure 4.3): For example, in 2022,

municipal investment expenditure per capita in Bavaria was 50% more than the average of all territorial Laender, and around 2.5 times that of Saarland (Freier, Geißler and Gnädinger, 2023^[35]). The heterogeneity in municipal finances, public investment and the provision of public services is also strongly correlated with trust in institutions (see below). To improve the financial situation of poorer municipalities, it is key to strengthen their local tax bases, devote a larger part of shared taxes to municipalities, improve municipal equalisation systems and increase spending efficiency by incentivising cooperation and bundling of tasks across municipalities and transferring some of their tasks to other levels of government.

4.3.1. Improving public finances of municipalities

Municipalities have a broad range of functions but to finance them they are dependent on transfers from the Laender. Tax revenues of municipalities, including their share from joint taxes, are only about 16% of national tax revenues while they are responsible for close to one fifth of public spending (Table 4.1). The financing gap is filled by grants from the Laender to the municipalities, of which about 90% are recurrent grants, which are mostly unconditional transfers through state-level municipal equalisation systems, and 10% are earmarked investment grants, which cover only around a third of municipal investment expenditure (Figure 4.6) (Deutscher Städtetag, 2023^[36]). To address the municipal investment backlog in specific areas such as school and childcare infrastructure, the federal government has also established extra-budgetary funds in agreement with the Laender to circumvent the constitutional ban on providing direct funding to municipalities.

Most state-level municipal equalisation systems are not cost-based and transfers to municipalities strongly fluctuate with state revenues, which exacerbates financial difficulties of municipalities in economic downturns. As municipalities are responsible for part of social protection and housing benefits, their spending pressures increase in economic downturns, while the main revenue source is the local business tax, which is highly pro-cyclical. Laender grants through the municipal equalisation system exacerbate this issue. Many Laender use a pure quota system that allocates a constant share of all state revenues to the municipal revenue equalisation fund. As personal and corporate income taxes are the main resources for state revenues beside VAT, transfers to municipalities also decline during economic downturns. To address this issue, Hesse and Rhineland-Palatinate use a stabilisation model, that combines the pure quota system with a stabilisation fund that is built up in years of high state revenues and drawn down in years of low state revenues. On the other hand, Brandenburg and Schleswig-Holstein additionally consider differences in the costs of fulfilling municipal tasks in their municipal equalisation system and Saxony-Anhalt uses a fully needs-based model. Fostering the use of cost-based equalisation systems should be considered, as for example in Norway and Sweden, where equalisation responds more effectively to external cost shocks, such as rising refugee inflows, increasing energy prices or demographic changes. To facilitate the shift from revenue redistribution to more cost-based equalisation, horizontal contributions from low-cost regions could be included – as practiced in Sweden. Given the difficulty of estimating costs independently from revenues, this could help promote spending efficiency through inter-municipal peer pressure (Thöne and Bullerjahn, 2020^[14]; OECD, 2021^[37]).

The financial situation of municipalities is further complicated by the high share of rigid expenditures that are determined at other levels of government. For example, federal decisions that lead to higher social benefit payments, including for refugees, severely constrain the budgets of municipalities and reduce their funds for productive investment (Thöne and Bullerjahn, 2020^[14]). The federal government temporarily provides earmarked grants or higher VAT shares to the Laender to support municipalities in carrying out these functions, but in many cases funding is not sufficient. Additional federal transfers for basic income support for the elderly and housing benefits have eased the pressure on municipalities with a faster ageing population and a higher number of unemployed persons. However, estimates suggest such transfers cover only about 40% of municipal expenditure on social benefits and not in all cases have the transfers to the Laender also been passed on fully to their municipalities (Freier, Geißler and Gnädinger, 2023^[35]). To ease the burden of refugee inflows for municipalities, a cost-based increase in the VAT share for the Laender has been introduced from 2024 to help compensate for the increased costs (Deutscher Städtetag, 2023^[36]).

Table 4.1. Municipalities receive a relatively small share of national tax revenues

Distribution of joint taxes between levels of government and taxes accruing exclusively to each level of government

	Distribution of joint taxes (in %)				Share in total general government tax revenue
	Personal income	Capital gains	Corporate income	VAT	
Federal government	42.5	44	50	46.6	33.7
Laender	42.5	44	50	50.5	34.9
Municipalities	15	12	-	2.8	6.6
Share in total general government tax revenue	37.6	0.7	5.2	31.8	75.3
	Own tax revenues (% of total general government tax revenue)				Share in total general government tax revenue
	Excise duties, insurance tax, surcharges	Inheritance tax, real estate transfer tax, beer and gambling duty	Local business tax	Local property tax, and other fees	
Federal government	10.8	-	0.2	-	11
Laender	-	3.4	0.5	-	3.9
Municipalities	-	-	7.1	1.9	9
Share in total general government tax revenue	10.8	3.4	7.8	1.9	23.9

Note: "Personal income" includes wages. "Capital gains" include interest income. "Corporate income" excludes local business taxes. 0.7% of total tax revenue accrues to the EU through customs duties. Other fees collected by municipalities account for 0.2% of total national tax revenue. The local business tax is not part of the joint taxes but since 1970 municipalities share some of their revenues with the federal government and the Land in exchange for receiving 15% of personal income tax revenues within their Land.

Source: Federal Ministry of Finance (2023^[15]).

Ensuring sufficient and stable funding for local governments

One key policy priority should be to ensure sufficient and stable funding for municipalities to fulfil their core functions, which according to the constitution is a responsibility of the Laender. If functions of municipalities become more costly due to legislative changes at the federal level, municipalities should receive a higher share of value added tax (VAT) or other joint tax revenues, while ensuring that grants from Laender through the municipal equalisation systems or supplementary federal grants are not reduced in exchange (Table 4.1). This is key to preserve balanced public service provision across regions when spending pressures increase. Over-reliance on grants introduces funding uncertainty, also related to the political cycle, which is particularly harmful for infrastructure investments that require spending commitments over longer planning horizons. Capacity in construction services will only increase, within firms or due to new entries, if infrastructure planning is accompanied by stable long-term financing. The recent establishment of a special fund for infrastructure investments, which will allocate EUR 100 billion for public investment to Laender and municipalities over the next 12 years, could significantly increase the resources available for local investments (see Chapter 1). However, financing a high share of municipal expenditure with grants reduces incentives for spending efficiency, as local populations might have less incentives to scrutinise local governments for their spending decisions (Herrmann, 2022^[38]; Blöchliger and Kim, 2016^[39]). This is a particular problem for conditional grants, in particular if they do not require co-funding by the municipality receiving the grant (Bergvall et al., 2006^[40]). As personal income and capital gains taxes fluctuate strongly with the business cycle, receiving a higher share in VAT revenue would help ensure stable funding of core functions. On the other hand, any tax reform at the federal level should be evaluated with respect to its effects on municipal tax revenues and combined with sufficient compensating measures to ensure the stable funding of municipalities.

Another priority should be to raise more revenue from local tax bases, such as recurrent taxes on immovable property or personal income taxes (PIT) (Table 4.1). This would raise accountability, incentivise more effective budgeting and decrease dependence on transfers. Combining the strengthening of municipal tax autonomy with capacity-building initiatives and oversight measures would help ensure responsible management of local revenue (OECD, 2021^[37]). If a larger part of municipal revenues is collected from local tax bases and institutional quality is strong – minimising the risk of local capture – local populations are more likely to hold local governments accountable for their spending decisions. This in turn motivates local governments to improve public service quality and spending efficiency (OECD, 2016^[41]). A higher share of local tax revenue in local government revenues is also associated with narrowing regional growth disparities, reducing the need for equalising transfers (Blöchliger, Bartolini and Stossberg, 2016^[42]).

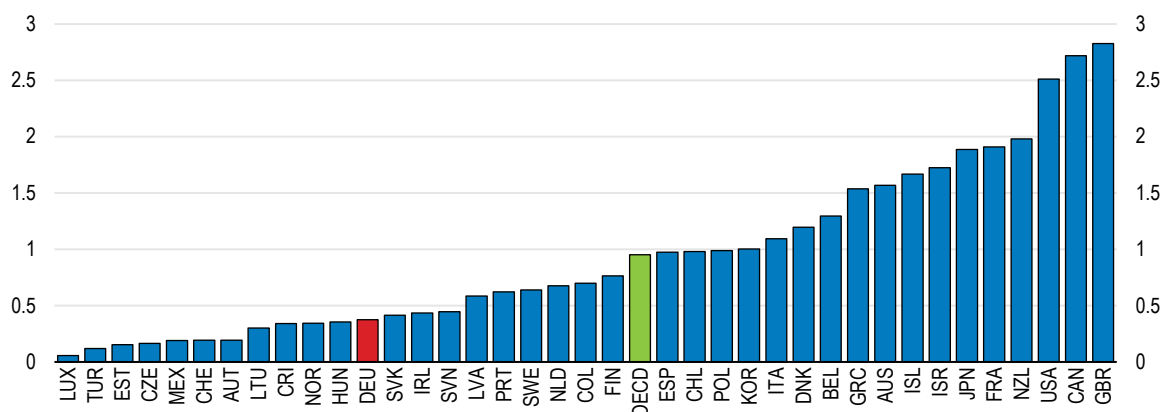
The PIT in Germany is shared across levels of government according to the territorial source principle, but the share allocated to municipalities is low (Table 4.1). Increasing this share or allowing Laender or municipalities to introduce top-up tax rates on PIT above the national rate, as for example done in the US, could improve incentives to improve public service quality and spending efficiency (Blöchliger and Kim, 2016^[39]). The local business tax (*Gewerbesteuer*), which is the largest local revenue source for municipalities that can set rates freely above a national statutory minimum tax rate, already provides strong incentives for improving local governance and developing the local tax base, but it is highly procyclical and suffers from detrimental tax avoidance schemes (Dinauer, Kammerer and Ott, 2022^[43]). Due to their weak financial situation, many poorer municipalities need to set higher rates, which can lead to shifting of economic activity and profits between regions (Beznoska and Hentze, 2019^[44]). Increasing the minimum statutory tax rate for municipalities from 7% to 10% would improve capital allocation across regions and reduce the scope for profit shifting, while leading to a combined minimum tax rate of 25% (the federal corporate income tax (CIT) rate is 15%), which would be slightly above the OECD average of 23.3% in 2021 (OECD, 2022^[45]). The federal CIT rate could be reduced in response to the higher minimum statutory rate for municipalities, which could be financed by increasing consumption taxes (see Chapter 1). This should be combined with improving data exchange and cooperation between the tax enforcement agencies of the Laender to reduce the scope for tax evasion (see the previous OECD Economic Survey of Germany).

As recurrent taxes on immovable property provide relatively stable revenue streams, increasing effective tax rates based on regularly updated market values of properties would help to reduce the large fluctuations in municipal tax revenue (OECD, 2021^[37]). Revenue from taxes on immovable property such as land or buildings are low compared to other countries and have stagnated as a share of GDP since the 1990s, although land prices have more than doubled and real estate prices have increased by about 80% during the last 10 years (Figure 4.9) (Fuest, Hey and Spengel, 2021^[46]; Bach and Eichfelder, 2021^[47]). In other OECD countries such as the United States or Switzerland, property tax accounts for a much larger share of municipal tax revenues than in Germany, reaching more than 90% in thirteen US federal states (OECD, 2021^[37]).

A recent reform of the land tax (*Grundsteuer*) is an important step into the right direction, as it introduces a regular update of land and property values with market values, whereas so far valuations from the 1960s (and 1930s) had been used to determine the property tax base in West- (and East-) Germany (Bach and Eichfelder, 2021^[47]). However, in many Laender the implementation of the reform aims at keeping tax revenues constant, implying a reduction in rates as property and land values are updated to higher market values. In principle, tax rates can be freely set by municipalities. Introducing a national minimum tax rate, however, could help avoid detrimental tax competition and use the regularly updated property values to increase revenue for municipalities (Bach and Eichfelder, 2021^[47]; OECD, 2021^[48]). As the distribution of wealth and immovable property is relatively unequal compared to other OECD countries, this would also help lowering personal income inequality (see the previous OECD Economic Survey of Germany). To support cash-poor but asset-rich households, tax deferrals could be introduced as in Canada, Denmark, Ireland and some US federal states, provided that the unpaid tax is settled when the property is sold or inherited. The Laender could then finance such deferral programmes to guarantee property tax revenue for municipalities, as is done in nine US federal states (Dougherty and Kim, 2023^[49]).

Figure 4.9. Revenue from recurrent taxes on immovable property is low

Recurrent taxes on immovable property, % of GDP, 2023 or latest available year



Note: "OECD" refers to an unweighted average.

Source: OECD Revenue Statistics; and OECD calculations.

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As economic activity, the age structure of the population and land prices differ strongly across districts, relying more on revenue from local tax bases to encourage spending efficiency would risk exacerbating disparities in fiscal capacity of municipalities. Municipal equalisation schemes, which often consist of formula-based grants that are transferred to financially weak municipalities, should be designed to maintain funding for core local public services, while preserving incentives to develop local tax bases and raise spending efficiency. State-level municipal equalisation schemes remain partly funded by shared taxes, unconditional and conditional federal grants and in about half of all Laender, do not involve horizontal transfer of funds between municipalities. Financing a larger share of the municipal equalisation system with funds from richer municipalities and ensuring strong accountability and direct interaction between municipalities could help raise municipal spending efficiency due to peer pressures. For example, in Sweden, municipalities with higher per capita tax bases contribute to the revenue equalisation system by forgoing central government grants. Those with below-average public service costs also pay into the needs-based cost equalisation pillar. These mechanisms significantly equalise resources and ensure delivery of municipal services at a relatively low overall cost, as their spending share of total government expenditure is only about half the share observed in Germany (OECD, 2021^[37]). To maintain incentives to develop the local tax base, contributions to the equalisation scheme should be calculated based on measures of municipal tax capacity rather than actual revenues, which is why standardised tax rates are used to compute local business and property tax capacity. Recently updated cadastral values should be used without adjusting these standardised rates to properly reflect municipal tax capacity.

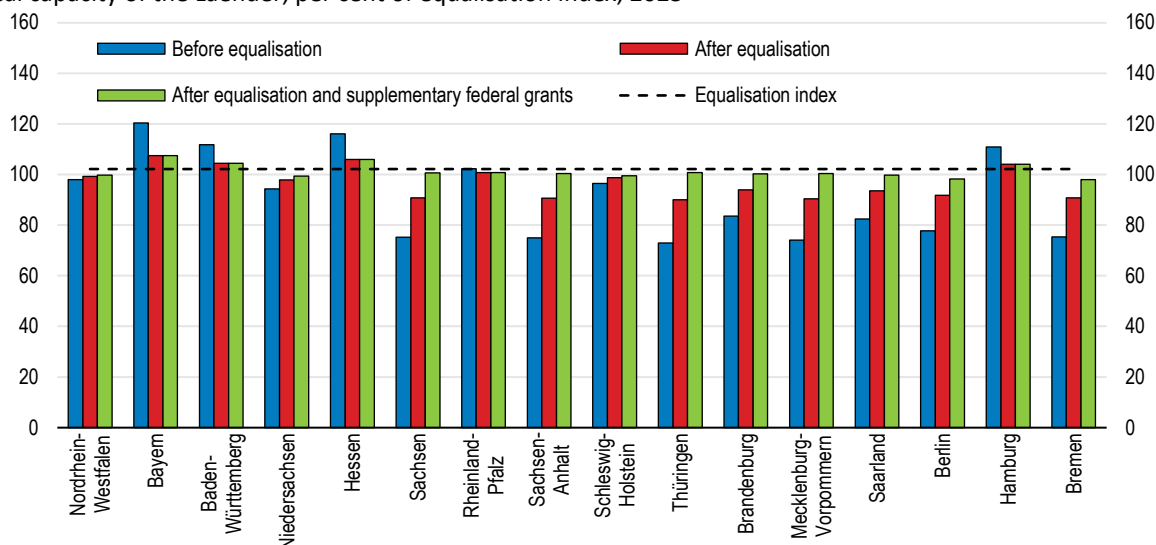
To create incentives for the Laender to introduce well-designed municipal equalisation systems and better use local tax bases, the fiscal equalisation system between the Laender should be re-adjusted. A strong equalisation of revenue differences across the Laender through the redistribution of VAT revenues, which indirectly affects state-level municipal equalisation schemes, reduces incentives to rely on own efforts to improve the financial situation of municipalities (Figure 4.10). The 2020 fiscal federal reform has made the system more vertical by reducing direct horizontal equalisation across the Laender and strengthening the use of federal supplementary grants to support specific Laender and their municipalities (Bury and Feld, 2023^[50]). At the same time, the weight of municipal tax capacity in calculating contributions of Laender to the equalisation system has increased, which has likely raised incentives for municipal tax collection and increased contributions from richer Laender, as they also tend to have richer municipalities. Before the reform, municipalities in richer southern Laender had relatively low tax rates for local business and property taxes, as municipal revenue from shared taxes is high enough to finance municipal tasks. In North Rhine-Westphalia, in contrast, tax rates for local business and property taxes are higher as transfers from the federal equalisation system are low and municipal debt and interest payments are relatively high (Thöne and Bullerjahn, 2020^[14]).

In eastern Laender, which benefit substantially from the federal equalisation system and supplementary grants that indirectly finance state-level municipal equalisation schemes, tax rates for local business and property taxes are low, which is also a way to attract businesses and households.

An evaluation of observed differences in local tax rates should be conducted to further redesign the federal and municipal equalisation systems to focus on the capacity to deliver core public services across municipalities rather than compensating for the failure to fully use local tax bases (OECD, 2021^[37]). In an efficient fiscal equalisation model, local tax differentials should respond only to differences in preferences and tax collection efficiency across regions. Further increasing the weight of municipal tax capacity in computing fiscal capacity of states in the federal equalisation scheme or raising the rate at which the excessive revenue growth is deducted from fiscal capacity would help strengthen incentives to use the local tax base. As discussed in the previous OECD Economic Survey of Germany, the fiscal equalisation system might also reduce incentives for the Laender to collect joint taxes. Increasing transparency about tax gaps and enforcement capacity and setting binding guidelines and performance targets would help strengthen tax enforcement at the Laender level (see Chapter 1).

Figure 4.10. Fiscal equalisation and federal transfers strongly reduce revenue differences across the Laender

Fiscal capacity of the Laender, per cent of equalisation index, 2023



Note: The equalisation index is computed by taking the weighted average across the Laender of the revenue accruing to each Land from joint and own taxes, including 75% of the revenue accruing to its municipalities, divided by population. The populations of Berlin, Bremen and Hamburg are weighted at 135% while for municipal revenues in Mecklenburg- Western Pomerania, Brandenburg and Saxony-Anhalt populations are weighted at 105%, 103%, and 102% respectively. The bars show different levels of fiscal capacity as a percentage of the equalisation index depending on the impact of the inter-state equalisation scheme (through the redistribution of VAT revenues), the general supplementary federal grants and the supplementary federal grants for municipalities with low revenue-generating capacity.

Source: Federal Ministry of Finance.

StatLink  <https://stat.link/128spu>

Strengthening the fiscal and financial management capacity of municipalities

Improving the incentives for the Laender to ensure that their municipalities remain funded to fulfil their tasks also requires an incentive-compatible resolution of large debts accumulated by some municipalities. In contrast to the Laender, which under the German debt brake have to limit their annual structural budget deficits, municipalities have the possibility to finance investment spending by issuing debt or taking on loans, and temporarily finance deficits related to current expenditure by cash advances (Bury and Feld, 2023^[50]). These cash advances are overdrafts on current accounts with local public saving banks, which are often owned by the municipalities, to meet payment obligations for current expenditure. Due to the strong pro-cyclical

fluctuations in municipal revenues, including local business taxes and Laender grants, and the counter-cyclical fluctuations in expenditures, especially social benefits, many municipalities have used this option to finance deficits, which reached 0.4% of GDP in 2024 for all municipalities. Some municipalities were not able to repay the debt during upturns or refinance debt when interest rates were low, leading to rising debt.

The rising municipal debt is weighing on public investment in many regions. Regional disparities in municipal debt at the district level have increased steadily between 2010 and 2019, with municipal debt reaching EUR 10 000 per capita in some districts, more than five times the national average (BBSR Bonn, 2024^[6]). In the states of Rhineland-Palatinate, Saarland and North-Rhine Westphalia with high levels of municipal indebtedness, per capita municipal investment expenditure is between 40% and 70% of the national average. While three-quarters of all municipal debt is for investment purposes, equal to about 3% of GDP in 2022, the remaining municipal debt is cash advances (BMF, 2023^[15]). Although total cash advances have been declining since 2016 as a share of GDP, in the states of North-Rhine Westphalia, Rhineland-Palatinate and Saarland they were still around 3 times the national average per capita in 2022. Municipalities with high cash advances often lack liquidity reserves and are vulnerable to interest rate increases. Some Laender, such as Lower Saxony, Hesse and Brandenburg, have conducted debt relief programmes to reduce excessive cash advance balances and create fiscal space for investment spending. Laender such as North-Rhine Westphalia, Rhineland-Palatinate and Saarland have asked the federal government to help bail out their municipalities, as the high debt is weighing on investment expenditure and necessary higher local business taxes disincentivise economic activity. Although some of the legacy debt is related to long-term challenges related to structural change, moral hazard and excessive spending have also played a role in generating the local debt overhang. It is key to implement the proposed federal debt relief programme and integrate it into a general reform of the fiscal federal system that strengthens incentives for municipalities to raise spending efficiency, improve accounting practices and develop their own tax bases. Governance issues related to local public banks also need to be addressed (see Chapter 2).

A lack of transparency and standardisation in municipal accounting practices hampers comparability and the early detection of fiscal problems. In Germany, accounting practices for different levels of government are less standardised than in other federal OECD countries, such as Australia, Austria, Canada and Spain that have similar standards for all levels of government (OECD, 2021^[51]). While Hesse and Hamburg and most of their municipalities use accrual accounts, Schleswig-Holstein allows its municipalities to choose between the two methods, and Bavaria and Thuringia use cash-based accounting, while allowing their municipalities to voluntarily switch to accrual accounts (BMF, 2023^[15]). Making accrual-based accounting mandatory for all municipalities would improve transparency and strengthen early warning mechanisms for fiscal risks. Accrual-based accounting is resource based and thus places greater emphasis on the division of responsibilities and revenue autonomy compared to cash-based accounting. It also creates incentives for municipalities to be more fiscally prudent, as for example, expenditures are recorded when invoiced rather than when paid. 24 OECD countries have moved to accrual-based accounting for their sub-central governments during the 2010s (OECD, 2021^[51]). Differences in accounting practices are exacerbated by heterogeneous document formats, and different delineations of tasks between the Laender and their municipalities, which is the reason why German municipal finances data is not included in the OECD Municipal Government Finance database. Introducing mandatory accrual-based accounting should be accompanied by prudent cash flow management. For example, requiring municipalities to maintain a minimum liquidity buffer, as is the case in Baden-Württemberg and Hesse, would prevent the unsustainable accumulation of cash advances. These liquidity buffers could be used in periods of high interest rates to cover current expenditure, including the service of previously accumulated debt, while cash advances could be increased in periods of low interest rates (Freier, Geißler and Gnädinger, 2023^[35]).

Integrating spending reviews in the budget process to align spending with policy objectives can help raise spending efficiency at the local level. In most municipalities, spending reviews are seen as an administrative formality that does not discipline the budgeting process. One exception is the state of Brandenburg, where a history of financial difficulties in fiscally weak municipalities required difficult spending prioritisation which helped restore financial stability. In economically stronger Laender, high revenues from shared taxes have

weakened the importance of spending reviews, but weak monitoring capabilities also help explain why budget allocations are decided with few linkages to policy impact evaluation (OECD, 2021^[52]). The slow digitalisation of the public administration and data protection issues, which prohibit the use and linkage of micro data, hinder policy impact evaluation at all levels of government (see Chapter 2). As recommended by the previous OECD Economic Survey of Germany, developing the necessary data sharing infrastructure, strengthening spending reviews in budgeting procedures and encouraging peer learning across levels of government is key to raise spending efficiency. The Stability Council meetings between the federal and state finance ministries could provide opportunities for peer learning on the use of spending reviews by the Laender to be applied to municipal budgeting procedures.

Introducing medium-term budgeting would help reduce uncertainty for investment financing. Co-financing arrangements between the different levels of the government suffer from a lack of mutual commitment to multi-year budgeting, which complicates the financing of long-term municipal investment projects. Multi-year expenditure ceilings are adopted only on a rolling basis, with the ceilings updated annually by adding an extra outer year, to preserve the constitutional principle of yearly budgeting (Moretti, Keller and Majercak, 2023^[53]). The five-year financial plans are instruments adopted by the federal and state governments for longer-term projects, but they are also non-binding. In contrast, in the United Kingdom, binding and fixed expenditure ceilings are set for five years for capital expenditure and three years for other current spending, excluding cyclical spending such as spending for welfare and pensions, and they are updated every two years as a result of the spending review process. In the Netherlands and Finland, such ceilings are set for four years for all expenditures. Setting credible and binding multi-year expenditure ceilings at both aggregate and sectoral levels in line with the OECD Spending Better Framework would help reduce funding uncertainty and address the large investment backlog of municipalities. This should be accompanied by allowing for some degree of flexibility under clearly defined conditions, for example to address the consequences of a rapid rise in social benefits spending due to federal legislation (Deutscher Städtetag, 2023^[36]).

4.3.2. Improving the administrative capacity of local governments

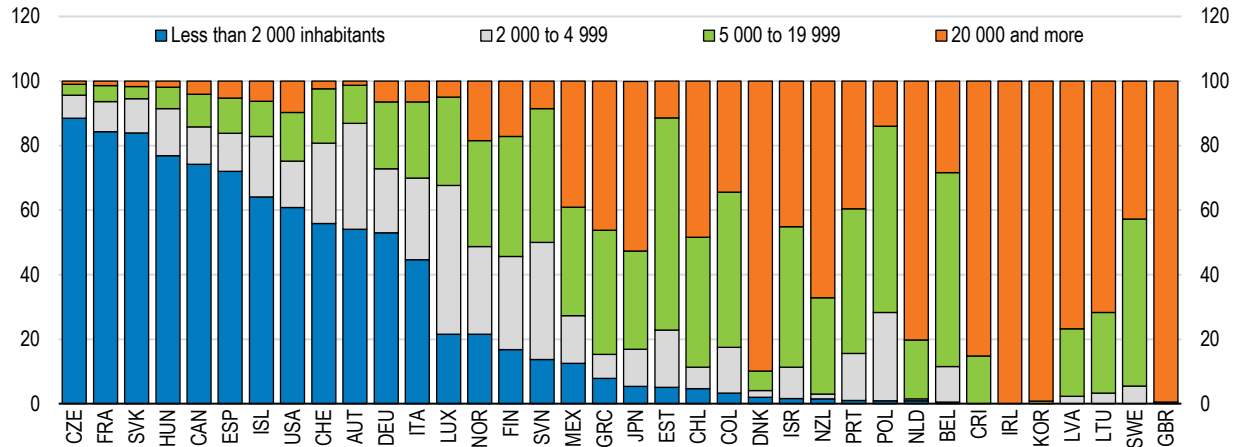
Besides financial difficulties, limited capacities for strategic planning and project management have also contributed to large regional disparities in the municipal investment backlog. Limited administrative capacities also complicate the application for and management of conditional grants from other levels of government or the EU, which weakens the effectiveness of these funds to address the local infrastructure backlog. For example, the absorption of GFS funds varied widely, even across municipalities within structurally weak regions (BMWK, 2024^[5]). Skilled labour shortages are mounting and it is increasingly difficult to recruit and retain the necessary talent for municipal administrations. Accelerating the digitalisation of the public administration, reducing the administrative burden and improving human resource policies are key policy levers to improve administrative capacities and the quality of public services at the local level (see Chapter 2). This should be combined with better cooperation and the bundling of tasks across municipalities, while delegating certain tasks with large economies of scale to other levels of government.

The potential for lowering unit costs of public services through state-level territorial reforms is high (Figure 4.11). Due to rapid population ageing and decline in specific regions, the unit costs of municipal services and infrastructure investments could rise sharply over the next two decades, exacerbating regional disparities (BMWK, 2024^[5]). Although municipal reforms have significantly reduced the number of municipalities since 1990, this consolidation has mainly taken place in the eastern Laender. There are still more than 10 500 municipalities, with an average population of less than 8 000, compared with around 26 000 in the median OECD country. Municipalities employ more than one third of all public employees, and in some municipalities staff numbers per capita have reached four times the national average in 2019 (BBSR Bonn, 2024^[6]). Each federal state should consider the likely benefits of a territorial reform in its jurisdiction and implement one if necessary. In Denmark, a 2007 reform of local government largely standardised municipal population sizes and functions in areas such as social welfare administration, environmental protection, and water supply management to improve economies of scale (OECD, 2021^[37]). The reform also ensured that local

taxation remains the main source of revenue (around three-fifths), while the new costs for municipalities are compensated by higher grants from central government (Bland, Kilpatrick and Dimitrova, 2021^[54]).

Figure 4.11. A large proportion of municipalities have small populations

Size structure of municipalities, based on resident population, %, 2022



Source: OECD Subnational Government Structure and Finance database.

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If the scope for territorial reforms is limited, inter-municipal associations provide an appropriate institutional setting to facilitate cooperation between smaller municipalities, already applied in areas such as waste management, public transport or tourism (Zimmermann, 2017^[55]). Potential gains from cooperation in the provision of water supply, firefighting and hospital management services but also investment and urban planning across municipalities are possibly large, as the average municipal area is less than one-tenth that of the median OECD country (De Mello, 2019^[56]). However, the fear of local administrations of losing autonomy as well as data protection concerns are barriers for institutional cooperation between municipalities. To address these issues, North Rhine-Westphalia has established a central contact point to advise municipalities in the early stages of cooperation, mainly to communicate the potential added value of increased synergies. To raise awareness of successful examples of cooperation, the state provides information on 633 cooperation projects between a total number of 427 cities, municipalities and districts. In the federal state of Brandenburg, municipalities can cooperate extensively to fulfil their public functions, and there are no state regulations against cooperation. In addition to institutionalised models of inter-municipal cooperation, the state also encourages informal networks and working groups to facilitate the exchange of knowledge and experience in urban development, local economic development, and transport, which can also help to build administrative capacity. These efforts should be strengthened and complemented with financial incentives to strengthen municipal cooperation in public service delivery, for example through incentives in municipal equalisation schemes. Mandating cooperation of municipalities for certain services would also be an option.

Bundling tasks or transferring some tasks, which can be fully digitalised and do not require close local counselling, to other levels of government can help reduce pressure on administrative capacities at the local level. For example, the request and delivery of passports, identity cards and driver licenses are centralised and digitalised in many OECD countries, with the handing out of documents made by secured postal mail. In Germany, the printing of these documents is also centralised, but each municipality has its own administration to deal with applications and hand out these documents. Although many municipalities have digitalised the application procedures, they have used different IT providers and inter-linkage of systems is not possible in many cases. Bundling these administrative procedures across municipalities or centralising them would raise spending efficiency and free staff resources for other functions. Other examples of responsibilities that could be bundled or transferred to other levels of government include the definition and monitoring of certain construction standards, including fire protection standards, motor-vehicle registration or procedures for recognition of foreign professional qualifications (Normenkontrollrat, 2025^[57]). For example, in Ireland, the

building control management, oversight and enforcement processes are streamlined by the introduction of a digital portal to be used by both central and local governments (OECD, 2021^[37]). A joint commitment of all levels of government to task bundling, including by reducing legal uncertainties related to the prohibition of mixed administration and including a requirement for cooperation and the anchoring of experimentation clauses in the constitution, as well as a strong steering and implementation unit at the federal government and raising the mobility of public employees across levels of government would support the reform process (Normenkontrollrat, 2025^[57]).

The potential for raising spending efficiency through bundling of tasks is particularly large in public procurement and the digitalisation of public services. About 30 000 decentralised procurement bodies are responsible for procurement volumes of around 15% of GDP. A centralised online procurement platform has been established but the publication of tenders is only mandatory for Laender and municipalities for contracts awarded above the EU thresholds, and centralised purchasing bodies are rather the exception than the norm including at the federal level (see Chapter 2). Encouraging the use of the central procurement platform as well as the established e-procurement system would facilitate cooperation across municipalities to reap gains from specialisation and economies of scale and raise spending efficiency (OECD, 2019^[58]). Joint procurement has been found to significantly reduce costs compared to local procurement but many standardised goods and services are still procured at the municipal level (Fazekas and Blum, 2021^[59]).

Potential for raising spending efficiency is particularly large in IT and software procurement. Many municipalities have developed different IT systems for different types of public services, which does not allow to exchange information between databases within nor across municipalities and levels of government, and unique individual identifiers do not exist. Each municipality signed separate procurement contracts with private providers, who developed different IT systems for the same public service without using economies of scale across municipalities (BMWK, 2021^[60]). As discussed in Chapter 2, the introduction of mandatory common IT standards and data formats for all levels of government, including the obligation for all IT services providers to develop products for the public administration in conformity with these standards, should be a key policy priority. Moreover, the Laender should encourage their municipalities to establish joint IT development and procurement initiatives, which would require harmonising administrative procedures and reducing municipal autonomy to a certain extent (Normenkontrollrat, 2021^[61]). However, such initiatives would strongly increase spending efficiency and could also lead to significant improvements in the quality of public services due to peer learning effects. At the Laender level, the one-for-all initiative has been successful in developing common IT solutions, for example the digital portal to apply for COVID-19 support. Likewise, in Schleswig-Holstein, a group of municipalities has successfully created an IT procurement group and used a dedicated central purchasing body (OECD, 2019^[58]).

4.4. Designing horizontal policies to facilitate the green and digital transitions in the regions

4.4.1. Aligning industrial policies with place-based development objectives

In many OECD countries, industrial policies are on the rise due to several reasons. Globalisation and technological change have significantly reduced manufacturing employment in many countries (Gagliardi, Moretti and Serafinelli, 2023^[2]). This has led to rising demands for protectionism and place-based industrial policies to support the most affected regions. Fostering the green transition, reducing risk exposure to foreign supply of critical inputs and trade dependency from geopolitical adversaries, and unfair competition from other countries have added to these motives for industrial policies (Millot and Rawdanowicz, 2024^[62]). Estimates show that Germany is among the OECD countries with the highest number of industrial policy interventions over the last decade (Juhász et al., 2023^[63]). Export incentives, below-market rate loans and loan guarantees, R&D subsidies as well as tax exemptions are reported as the main instruments used by Germany, unlike other big OECD countries, where R&D tax incentives are common.

Across OECD countries, targeted and more discretionary measures have become more frequent recently compared to horizontal industrial policies, reducing the rule-based nature of industrial policies. Targeted measures support specific sectors, regions, industries or technologies, including through subsidies, tax reductions, grants or loan guarantees. They may be more effective in correcting industry- or region-specific market failures than horizontal industrial policies, which do not discriminate between sectors and include for example infrastructure provision or funding for applied research institutions. However, they can distort competition and hamper innovation and structural change, as they can be subject to political capture and rent seeking (see Chapter 2) (Millot and Rawdanowicz, 2024^[62]). For example, in many countries firm bailouts have occurred in sectors such as construction, banking, automotive, shipbuilding and retail trade, largely motivated by the goal of protecting jobs. Preventing the failure of firms can lead to moral hazard and distort competition and the efficient allocation of resources. Bail-outs might be exceptionally justified, if the failure of the targeted firm may lead to the economy-wide disruption in the provision of the relevant products or services. Although targeted industrial policy might also be used to maintain strategic autonomy in certain production activities amidst geopolitical fragmentation, for example concerning subsidies for chips or battery production, the economic costs of these interventions should be better evaluated.

Large industrial policy interventions are not systematically coordinated with the place-based GFS programmes but have a strong regional impact due to the spatial clustering of the targeted industries (OECD, 2023^[64]; Suedekum, 2023^[17]). For example, the average annual funding of the coal phase-out programme amounts to about 60% of the entire annual funding of the GFS programmes. Subsidies to the automotive industry to increase the uptake of electric vehicles, boost infrastructure investments for charging stations and support regional innovation clusters that had specialised in internal combustion engine technologies were more than twice the funding under the GFS programmes. Other examples include about EUR 15 billion to subsidise planned chip factories in Magdeburg and Dresden or carbon contracts for difference (CCfDs), which aim at supporting the green transition in carbon-intensive industries with up to EUR 50 billion during the next 15 years. To better use synergies across funding programmes and strengthen spending efficiency, industrial policy should be more closely linked to place-based policy support, which is more rule-based in defining vulnerable regions. Merging some programmes or allowing for conditional transferability of funds between programmes could help improve coordination and reduce administrative burden for recipient regions.

4.4.2. Designing market friendly and fiscally sustainable green industrial policies

Although they have heterogeneous effects across regions due to differences in industrial structures, green industrial policies are mainly designed as horizontal policies. Germany's industrial emission reductions strategy relies on pricing mechanisms, sectoral subsidies and R&D support. The EU Emissions Trading Scheme (ETS) covers about half of emissions and includes energy-intensive industries as well as energy production. This is accompanied by large subsidies to renewable energy producers amounting to more than EUR 18 billion in 2024, which have strongly incentivised the expansion of wind and solar power supply, accounting for almost 60% of electricity supply in 2024. Nuclear power was phased out in 2023 and coal power plants are planned to be phased out by 2038. Finally, R&D support is provided to foster the development of new green technologies, for example green hydrogen, and facilitate emission reductions in sectors with high abatement costs, such as steel and cement production.

Up to EUR 50 billion are planned to be used for CCfD schemes during the next 15 years to reduce uncertainty about future carbon prices, particularly in sectors with high abatement costs and with large long-term investments needs to decarbonise production processes. Based on a competitively auctioned reference carbon price for reducing emissions by switching to green hydrogen, carbon-capture-and-storage, or other low-emissions methods of production, a CCfD guarantees investors a fixed revenue per tonne of non-emitted CO₂. The government reimburses the difference if carbon prices are below the auctioned reference carbon price. Conversely, investors return the difference if carbon prices exceed the reference price. A similar logic also applies to the prices of other energy carriers used for production. The first round of CCfD auctions in October 2024 provided EUR 2.8 billion of support to 15 projects from both SMEs and large firms from energy-

intensive sectors. The scheme provides a 15-year disbursement arrangement, paid in arrears, conditional on reaching annual emission reduction targets. The scheme will also indirectly stimulate investment in the construction of hydrogen production facilities and pipelines, with direct implications for regions where hydrogen refuelling stations are located and existing natural gas pipelines will be repurposed (see below).

Auctions and contracts for CCfDs should be designed in a technology-neutral way to not hamper competition, business dynamism and innovation (see Chapter 2). Broadening the range of technologies to participate in the auctions risks crowding out technologies at a current cost disadvantage but with high potential to become competitive in the future. In contrast, excluding certain technologies may lower competitive pressures and innovation, and waste resources. For example, allocating large subsidies to support integrated green steel production might lower the comparative advantage of innovations replacing the use of steel in construction. The same is true for innovations to change from integrated to partial steel production, involving the import of particularly energy-intensive inputs from countries with a comparative advantage for renewable energy supply. The government should carefully evaluate the introduced scheme before further expanding CCfDs.

The price signals from carbon taxation to incentivise emission reductions are weakened and distorted by many fossil fuel and other harmful environmental tax expenditures and subsidies amounting to up to EUR 65 billion per year (Burger and Bretschneider, 2021^[65]). These subsidies and tax expenditures also hamper the market breakthrough of environmentally-friendly products, and make it more difficult to achieve climate goals. For example, electricity and energy tax as well as grid charge reductions for energy-intensive industries, energy tax concession for diesel fuel, favourable tax treatment for privately used company cars and lower VAT on meat and other animal products lead to annual subsidies of about EUR 21 billion. As discussed in the previous OECD Economic Survey of Germany, existing subsidies and tax expenditures should be carefully evaluated, better targeted and incentivise emission reductions, for example through abatement subsidies or CCfDs. It is key that all subsidies and tax expenditures include sunset clauses announced upfront, to strengthen abatement incentives and reduce future fiscal costs. Tax expenditures indirectly supporting specific sectors, such as those on the consumption of diesel and kerosene fuel, the commuter allowance or the favourable tax treatment for privately used company cars, should be phased out and partly replaced by direct transfers to vulnerable households (see below).

Subsidies to renewable energy producers have helped accelerate the expansion of renewable electricity supply in the North and East, contributing to regional economic convergence by attracting firms that want to produce with green electricity, but have a high fiscal cost. Although the feed-in tariff scheme was reformed to use auction-based electricity price ceilings as a reference for determining the level of the subsidy, the scheme cost about EUR 18.5 billion in 2024. As higher carbon prices make renewable electricity production attractive even without subsidies and the technologies have already matured, renewable energy subsidies should be phased out to free resources for more targeted support for green R&D. Public spending for energy R&D and demonstration in terms of GDP in 2023 was below the OECD average. Estimates show that 35% of global reductions in carbon emissions will have to originate from technologies that are still in prototype or demonstration stage (IEA, 2023^[66]). Raising public support to green R&D can improve the overall cost-effectiveness of the policy mix by reducing future costs of low-carbon technologies and stimulating research in green innovations with positive knowledge externalities.

Production of green hydrogen through electrolysis using water and electricity from renewables can significantly reduce greenhouse gas emissions. It has potential to replace fossil fuels in high-temperature industrial processes of hard-to-abate sectors such as steel production, in road freight traffic, and to store energy produced from intermittent sources. However, the production of green hydrogen is still about three times more expensive than hydrogen made from natural gas (Cordonnier and Saygin, 2022^[67]). Major cost reductions will crucially depend on R&D and large-scale demonstration projects. To incentivise private investments into hydrogen production and its use in industrial processes, it is key to reduce uncertainties for investors through standardisation and a quick construction of the hydrogen core network (Cammeraat, Dechezleprêtre and Lalanne, 2022^[68]). Harmonising quality standards and definitions for the different types of hydrogen (green, blue, turquoise etc.) is key to reduce uncertainty and facilitate coordination, including at

the EU level. Reducing the cost disadvantage of producing green hydrogen also requires improving the electricity grid and its management to lower electricity prices for users (see below). Nevertheless, large quantities of green hydrogen will likely need to be imported.

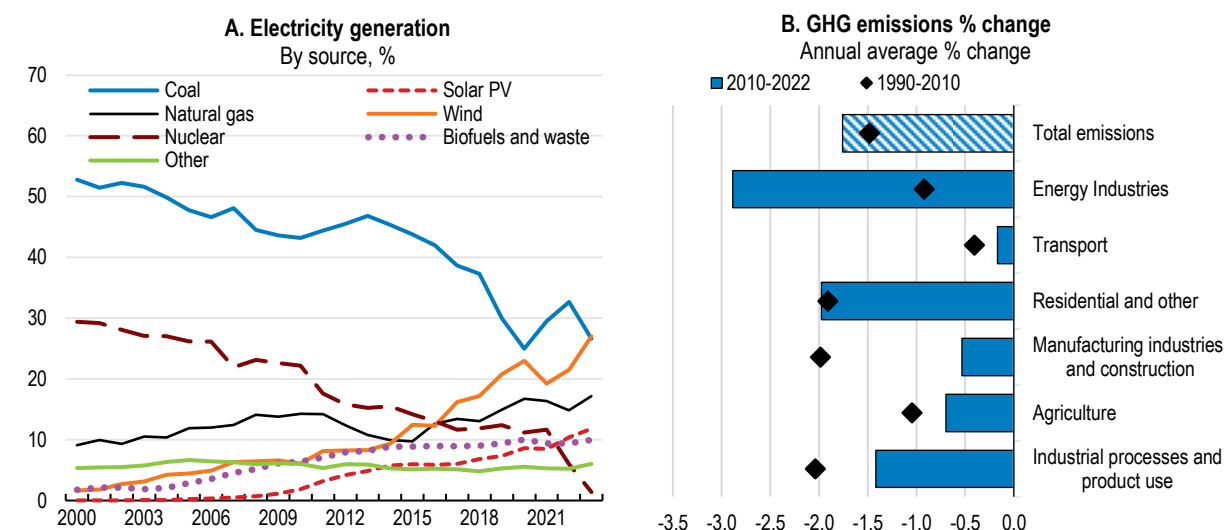
The construction of the hydrogen core network requires close coordination with place-based and industrial policies. The German North Sea and the northern regions have salt caverns suitable for hydrogen storage (OECD, 2023^[8]). Increased industrial use of hydrogen technologies and green energy demand will require large investments in production and storage capacity as well as pipeline infrastructure to connect these regions to the hydrogen core network (OECD, 2023^[8]). A large part of the required pipeline and storage infrastructure will be diverted from the gas distribution network, with the remaining new investments to be completed by 2032. Network charges, which will largely finance the new investments, will be capped due to the small number of initial users, in line with EU state aid rules. An amortisation account will cover the initial shortfall in revenue from increased network tariffs at a later stage. If the increased network tariffs will not cover the shortfall in the amortisation account, federal funding will provide a partial backstop. As pipeline transport of hydrogen is subject to economies of scale, new clean production sites in remote areas will have to reach a critical mass to reduce future network tariffs. In this respect, the planning and implementation of the hydrogen core network infrastructure should be closely coordinated with place-based and other industrial policies to ensure the effectiveness of regional development policies and that network charges are self-sustaining, avoiding fiscal risks.

To reduce hard-to-abate emissions in industrial processes, such as cement production, it is also key to develop a network for carbon capture and storage. Due to low public acceptance for onshore storage, storage sites are planned to be located in the North Sea, requiring the construction of a pipeline network (OECD, 2023^[8]). As existing gas pipelines cannot be rerouted for carbon capture and storage purposes, the network should primarily focus on connecting high-emitting industrial production sites. Thus, designing the network should be closely coordinated with the Laender and place-based federal policies to be aligned with regional development objectives. A draft revision of the carbon management strategy was presented in May 2024 and its implementation would be a significant step forward. It focuses on hard-to-abate emissions in industrial processes and aims to remove existing regulatory barriers, such as long approval times. The draft revision limits offshore storage to Germany's Exclusive Economic Zone in the North Sea, except for an 8 km buffer zone around the marine protected areas, while export for offshore storage will be possible through the ratification of the amendment to the London Protocol. The Laender retain the power to decide whether to allow onshore storage in their territory. Given the geographically dispersed nature of cement production clusters and high costs of establishing the pipeline infrastructure, allowing also for onshore storage in aquifer and gas clusters could facilitate the use of carbon capture and storage technologies.

4.4.3. Mastering the energy transition

According to the latest data of the German Environment Agency, emissions have been reduced by 10% in 2023 compared to 2022, and by 46% compared to 1990. This is mainly due to a strong acceleration in the deployment of renewables in electricity generation (Figure 4.12). The simplification and acceleration of planning and approval procedures for wind and solar installations as well as rising electricity prices due to the energy crisis have strongly contributed to the expansion of renewables (see Chapter 1 and 2). To ensure stable electricity supply and that consumers can benefit from low producer prices of renewables, while fostering regional development in lagging regions, the grid infrastructure and the design of grid charges needs to be further improved. On the other hand, the transport sector has not reduced emissions much, as large subsidies and tax reductions have weakened carbon price signals and the charging infrastructure has not kept up with the rising number of battery electric vehicles (see the previous OECD Economic Survey of Germany). Decarbonising freight traffic poses significant challenges to regions, which must be addressed.

Figure 4.12. The greening of the electricity network has accelerated while emissions in transport have not been decreased



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

Source: IEA, <https://www.iea.org/countries/germany/energy-mix#where-does-germany-get-its-energy>; OECD Environment Statistics.

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Expanding the electricity grid and improving incentives to balance demand and supply

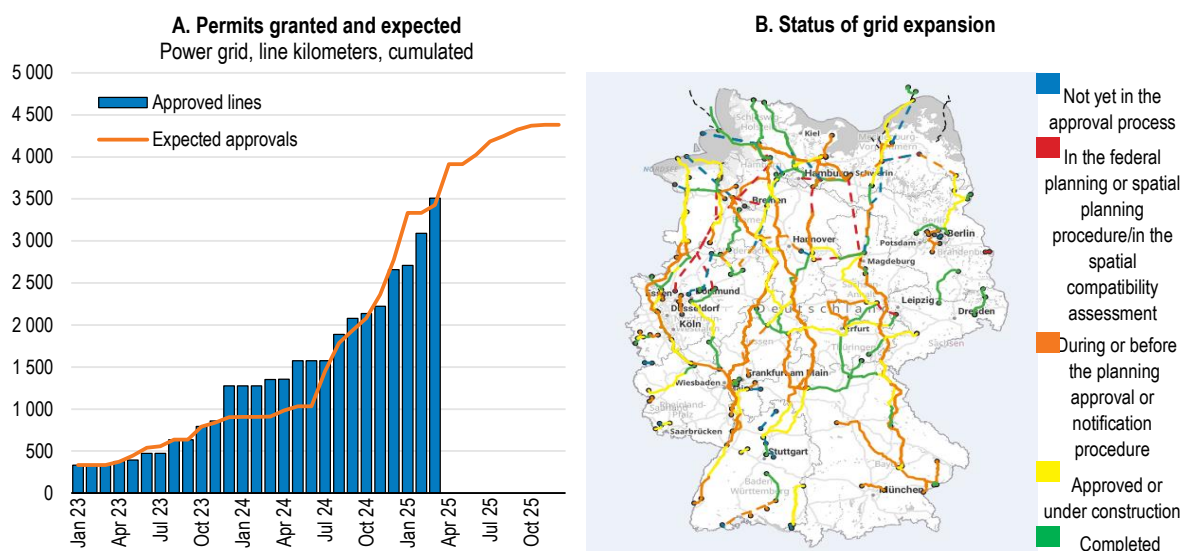
The rapid expansion of wind and solar energy poses challenges for the transmission network: Electricity generation from renewables is less stable over time and the electricity generated by wind turbines in the northern Laender, which have a comparative advantage in wind power, must be transported to the west and south, where most of the population and energy-intensive industries are located. Negative wholesale electricity prices have occurred more frequently in recent years, reflecting coincidences between the increased capacity from wind with periods of low demand (Timera Energy, 2024^[69]). A considerable expansion of the electricity network, better interconnections with other European countries, such as France and the Netherlands, and a better balance of supply to variations in demand are needed. The Federal Network Agency's grid expansion plans indicate that the transmission network could require investments of EUR 160 billion by 2037, while the distribution network will require additional investments of EUR 110 billion by 2033. The connection of the offshore renewable electricity production to the onshore grid will require another EUR 160 billion by 2045.

Electricity security in Germany is high, with power outages among the rarest in Europe – averaging just 13 minutes in 2021 – and declining further despite increased renewable rollout. This reliability is partly due to extensive underground cabling (IEA, 2020^[70]). However, a regional mismatch between electricity generation – mainly in the North – and demand – mainly in the South – exposes weaknesses in the single-zone pricing system of the national electricity market. Without zone-based pricing, these imbalances require costly redispatch measures: curtailing renewable supply in the North when it exceeds local demand and scaling up local generation in the South when demand outpaces supply. Such interventions cause deadweight losses for consumers and can result in unscheduled electricity flows into neighbouring countries, raising price variability and forcing them to invest in expensive grid stabilisation. In response, from 2021, thresholds for mandatory redispatch participation were lowered to help relieve regional congestion, and further plans aim to optimise redispatch at the distribution level. Until grid expansion reduces the need for such measures, adopting zone-based pricing, as in Norway and Sweden, could be considered (OECD, 2024^[71]). Zone-based pricing could also help foster industrial development in the North, which has a comparative advantage for wind power generation, especially in electricity-intensive industries such as batteries for electric vehicles and data centres. These benefits should be weighed against the higher electricity prices that would result in the South, where many energy-intensive firms are located.

To meet the grid expansion targets, permit approvals need to further accelerate. The government has simplified planning and approval procedures by classifying the electricity grid expansion as a project with overriding national interest, which strongly accelerated permit approvals (Figure 4.13, see Chapter 2). Moreover, the role of federal planning in grid expansion projects has been strengthened, which further simplifies permit procedures. The independence of the federal regulator in setting regulations was strengthened, including abolishing the requirement for the Laender to approve the regulator's decisions on network access and tariffs, while maintaining their oversight through an advisory body. The regulator is planning to reform the licencing system for grid expansion projects and shorten the regulatory assessment period for network operators from five to three years, including through the digitalisation of procedures. It also plans to simplify the criteria for proving the financial viability of the applicant network operators. Transposing the EU Renewable Energy Directive legislation into national law and implementing it could further speed up grid expansion procedures and facilitate the integration with the EU electricity grid. The regulator should closely monitor connection times and further reduce administrative burden for the connection of storage facilities. This also applies to the connection of large energy-intensive plants that electrify their production, as long waiting times risk to hinder industrial transformation and regional development.

The design of grid charges has hindered economic development as well as the expansion of renewables in poorer regions in the North and East, which have large potential for renewable energy supply due to abundant wind resources and relatively low population density (Figure 4.4, Panel B). Due to insufficient connections to the main grid access points, the connection of renewable power producers to the grid led to higher grid charges in these regions, as grid charges are regionalised and depend on marginal costs of network expansion. Grid charges have been as large as three times the fees paid by consumers in other regions, which disincentivised the relocation of firms that demand green electricity to these areas and hindered the establishment of storage facilities and green hydrogen production. It has also reduced public acceptance for renewable energy expansion. From 2025, a reform of grid charges evenly distributes additional costs from expanding distribution networks among all electricity users in Germany, which is an important step forward. This will reduce yearly electricity consumption costs by about EUR 200 per year for consumers in Brandenburg, Mecklenburg-Western Pomerania and Schleswig-Holstein. To ensure that these price reductions are passed on to consumers, the competition agency and the regulator should closely monitor electricity markets and act in case they find evidence for abuse of dominance (see Chapter 2). Moreover, further improving grid charge incentives for firms to relocate to areas with renewable electricity supply, for example by equalising network charges across regions, could foster regional development and the green transition.

Some progress has been made in making electricity prices more flexible to better balance electricity demand and supply and reduce generation and transmission costs. All electricity suppliers are required to offer dynamic tariffs from 2025, which will help incentivising the use of available technologies, such as smart thermostats and water heating, to shift electricity use across time and reduce peak demand times on the grid (raise load flexibility). Since September 2024, the regulator publishes current and near-term future electricity prices to raise awareness among consumers and incentivise switching to dynamic tariffs. However, so far, only few electricity consumers use such dynamic tariffs and other parts of the electricity price remain static, such as levies, taxes, and grid charges. The grid charges – which account for about 28% of industrial consumer electricity prices – incentivise stable consumption of electricity, especially because large energy-intensive producers receive grid charge reductions conditional on keeping their electricity consumption constant over time (Hanny et al., 2022^[72]). Abolishing the concessions for energy-intensive industries before the expiry of the Electricity Network Charges Ordinance in 2028 and introducing time-variable electricity charges as well as peak pricing would help ensure that the costs of grid utilisations are based on the actual state of the grid. The recently introduced variable grid charges for EV charging station and heat pump users are a step into the right direction. Moreover, phasing out subsidies to renewable energy producers would help make renewable supply more sensitive to price changes.

Figure 4.13. Approval procedures for grid expansion projects have accelerated

Note: Panel A covers permits under the remit of Federal Network Agency, which account for 60% of all line kilometres.

Source: Federal Network Agency.

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To foster the use of contracts with dynamic electricity tariffs and better manage electricity demand and supply, a better communication network is needed to link generation, consumption, and the grid. Smart meters together with better storage units can help households optimise their electricity consumption and even feed the grid in times of high demand. Likewise, they can provide decision makers with a more precise picture of energy consumption patterns and save resources by eliminating the need to visit the traditional meter readers. However, the rollout rate of smart meters remains lower than in most other OECD countries, at around 14% in 2024 (De Paola, Andreadou and Kotsakis, 2023^[73]). This is mainly due to data protection issues and to avoid cyber-attacks (European Commission, 2020^[74]). A 2023 law aims to accelerate the rollout of smart meters by setting a roadmap for their deployment, reducing unnecessary regulations and facilitating the installation of smart meters' secure communication units at the grid connection points. The law makes the smart meter installation mandatory for industrial users and consumers above a yearly consumption of kWh 6000 by 2032. As this is double the average household consumption, the threshold should be reduced. The law also caps the annual costs of the meters for private consumers at EUR 20 so the grid operators will have to bear a more significant share of the cost. This measure may reduce the incentives of the grid operators to accelerate the deployment of smart meters and should be evaluated carefully. Increasing investments in data protection and cyber security could help increase public acceptance of the smart meter roll-out.

Rising electricity demand and the coal and nuclear phase-out limit the amount of flexible capacity in the electricity market, creating a risk that producers will raise electricity prices by withholding capacity. In 2021, RWE – the largest electricity supplier in Germany, accounting for 25% of the market – was indispensable for meeting the electricity demand in a significantly higher number of hours, which means it has substantial market power (The Monopolies Commission, 2022^[75]). Promoting competition in the market is crucial for keeping electricity affordable. The regulatory set-up in Germany's electricity sector is competition-friendly, but the share of consumers who switch suppliers is lower than in other EU countries (OECD, 2018^[76]). Upgrading grid connections with neighbouring countries and improving transparency and data access for investigating anti-competitive behaviour could help to strengthen competition as well as energy security (see Chapter 2). Fostering competition in the cross-zonal intraday market by expanding trading times is also key. It could boost competition between electricity exchanges, which in turn will promote innovation and investment in the intraday market. Moreover, increasing competition in the management of emergency energy reserves would help maintain energy security at a lower cost. Replacing the system of strategic power plant reserves with a competitive capacity market, in which electricity suppliers and large customers competitively procure their expected future demand for power plant

capacity, would strengthen competition and energy security, while reducing electricity price volatility. Centralised versions of such capacity markets have been introduced in Poland and Italy, and France has piloted a decentralised capacity market with stronger competitive elements.

Decarbonising freight infrastructure while improving connectivity of regions

Decarbonising the transport system poses multiple challenges for the regions. The transport sector plays a key role for Germany, as the country is a manufacturing centre with a strong reliance on intermediate inputs, and its geographical location makes it an important transit country between EU member states. Expanding the role of rail in freight traffic is a key policy lever, but investments in infrastructure are not sufficient to significantly improve the network capacity during the next years. Moreover, inefficient planning of train routes and imbalances in demand for utilisation lead to large regional differences. The lack of passing tracks for longer trains results in low train speeds. The digitalisation of the rail network is also lagging, with less than 2% of the national rail network compatible with the European Train Control System (SVR, 2024^[77]). Due to the slow digitalisation of control and signalling systems, rising skilled labour shortages risk to significantly reduce the supply of passenger and freight rail services. Migration to the EU-wide Digital Automatic Coupling would require additional investment of around EUR 11 billion. Increasing public investment to modernise and expand the existing rail network and accelerate the digitalisation of the control and signalling systems, subject to cost-benefit analysis, is key to improve regional connectivity, enable positive economic spill-overs to lagging regions and reduce emissions in transport. It would also help reduce the high hours of travel lost in urban centres due to peak road traffic (European Commission, 2024^[78]). The federal government aims to increase the competitiveness of rail transport by reducing track access charges for rail freight, creating a network for 740-metre freight trains to increase traffic speed, and strengthening the single wagonload services, where wagons from different consignors and destined for different consignees are combined to form a complete train. Strengthening the role of the rail infrastructure operator to allow for systematic advance planning of routes could help use the limited network capacity most efficiently.

Expanding the role of rail in freight traffic should be combined with accelerating the electrification of road transport to close the last mile from rail to customers. It would also help to accelerate decarbonisation in many rural regions that face low rail network density as the expansion of the network will require time. As the introduction of heavy-duty battery electric trucks has high upfront costs, especially for less innovative transport companies, raising investments for expanding the charging network infrastructure in coordination with the grid expansion is key to improve incentives (SVR, 2024^[77]).

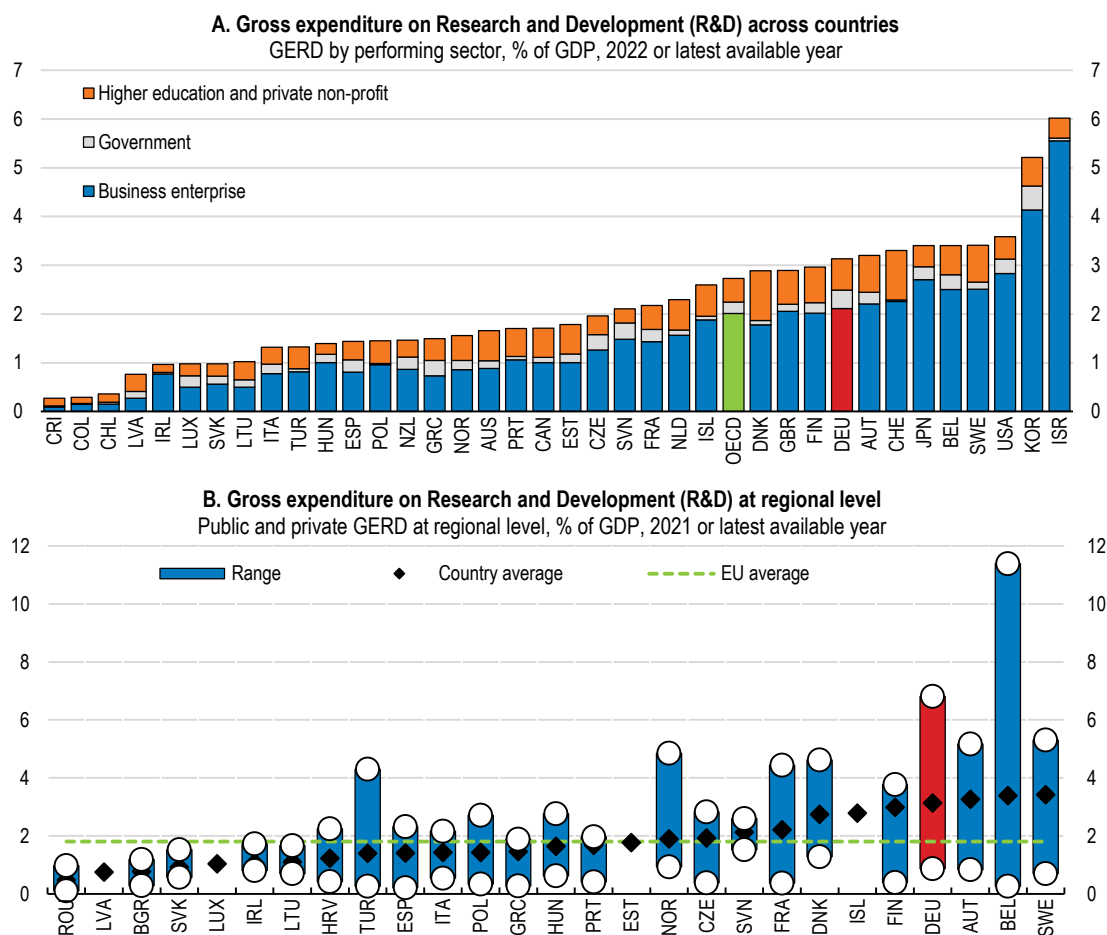
4.4.4. Fostering innovation in the regions

Germany's economic model is based on one of the most advanced innovation systems in the world. Despite regional disparities, expenditure on R&D is higher than in most other OECD countries (Figure 4.14). A robust science, technology, and innovation ecosystem, and close collaboration between research and industry have helped to sustain an export-driven economy (OECD, 2022^[79]). Key sectors such as automotive, machinery, chemicals and pharmaceuticals have both innovation-driven large manufacturers and numerous innovative SMEs in their supply chain. However, low levels of innovation-driven business creation, partly related to weak access to private finance by innovative start-ups as well as barriers to competition (see Chapter 1 and 2), difficulties in transferring knowledge from public research to the creation of new products and services, and slow digital adoption by firms pose challenges for fostering innovation in many regions.

Germany's innovation ecosystem is managed with a decentralised approach. More than 1 000 publicly funded research institutions (excluding higher education institutions) are engaged in both basic and applied research. This includes the many institutes of four major public research organisations – the Fraunhofer Society, the Helmholtz Association, the Leibniz Association, and the Max Planck Society – which are dispersed across the Laender. The Federal Ministry of Education and Research and the corresponding Laender ministries together set federal and regional education and research priorities, while the Federal Ministry for Economic Affairs and Climate Action and corresponding Laender ministries support industry applications of innovations. Extensive

decentralisation and regional autonomy allow policies to be more closely aligned with local priorities, including specific industry needs. In addition, the Länder have a high degree of autonomy in education policy, including university governance, which allows for further tailoring to regional needs. Public research institutes and universities also enjoy considerable autonomy, allowing them to set their own research agendas independent of federal influence (OECD, 2022^[79]).

Figure 4.14. Research and development spending is high, but regional disparities remain large



Note: The range indicates the variation at the level of NUTS2 regions (Regierungsbezirk for Germany).

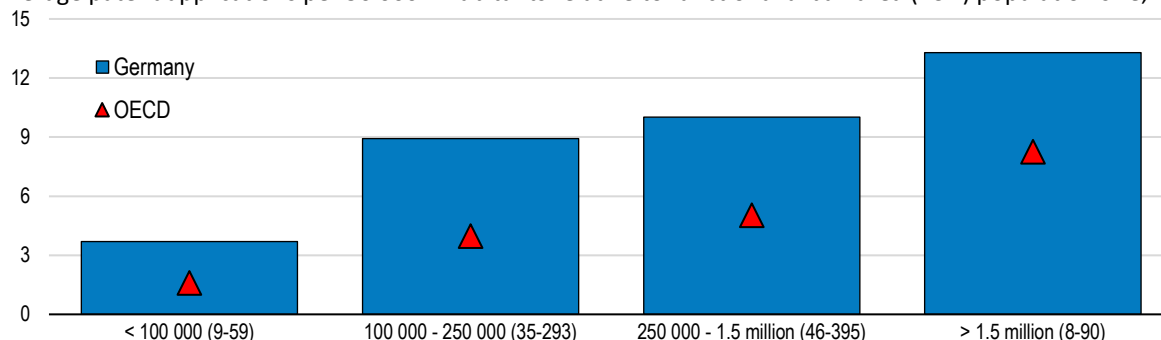
Source: European Commission (2024^[10]).

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Regional heterogeneity in innovation outcomes is large due to the uneven distribution of large firms across regions and weak links between university, research institutes and smaller firms. Innovation activity is particularly concentrated in densely populated, urban regions (Figure 4.15). Bavaria and Baden-Württemberg in the south have the highest number of patent applications per inhabitant in Europe, while in Mecklenburg-Western Pomerania this number is twenty times lower (European Commission, 2024^[10]). The strong innovation outcomes in the south are related to major innovation hubs including large leading companies in automotive and other manufacturing as well as services sectors. The share of large firms in business expenditure on R&D in Germany is the highest in the OECD after Japan (OECD, 2022^[79]). After passing a critical threshold of accumulated knowledge, talent and resources, large firms rely more on their own R&D capabilities and are less dependent on cooperations with public research institutions. To raise innovation activity in smaller firms, it is key to improve the cooperation between smaller firms and universities. Defining collaboration with private sector innovation actors as a formal pillar of research institutions and launching training and information campaigns to local business associations can help enhance university engagement with industry.

Figure 4.15. Innovation activity is relatively high but concentrated in urban areas

Average patent applications per 50 000 inhabitants relative to functional urban area (FUA) population size, 2022



Note: Number of German and OECD FUAs in parentheses. Patent data refer to patent applications at internationalisation phase filled under the Patent Co-operation Treaty (PCT) at the World Intellectual Property Organisation (WIPO). Patent counts are based on the inventor's region of residence. "OECD" refers to the unweighted average of the indicated FUA value.

Source: OECD (2024^[80]).

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The federal government should also review the regulatory framework to allow universities to engage more closely with venture capital funds or banks, to facilitate the commercialisation of knowledge transfer from research institutions to firms. Such practices take place in Belgium, Denmark and the United Kingdom. This would encourage and facilitate the development of university proof-of-concept funds to support academic spin-offs and start-ups. Expanding the use of regulatory sandboxes and creating a public-private laboratory would support experimentation, implementation and monitoring of innovation policy tools. In addition, the government should promote open platforms and networks for data-based innovation, for example as planned by the Research Data Act. To facilitate research cooperations with smaller firms it is key to reduce administrative burden of innovation support applications. According to a recent evaluation, the Central Innovation Programme for SMEs (ZIM) crowded in additional expenditure of 90 cents on R&D and research-related employment in recipient SMEs for every euro of public funding invested in new R&D expenditure (Stehnken et al., 2024^[81]). The programme also encouraged collaboration between firms and research institutions, helping to close the innovation capacity gap in SMEs (BMWK, 2024^[5]). However, applying for funding was found to be time-consuming, especially for first-time applicants, half of which sought to hire external consultants to assist application procedures. Recent reforms to simplify procedures of the programme are welcome. Better coordination of the ZIM programme with EU cohesion policy in support of innovation is key to foster complementarity between national and EU place-based innovation policies and to lower fiscal costs.

Improving evaluation of federal education and research funding could further strengthen the governance of innovation policy. Although the Laender have a high degree of autonomy in higher education and research, the German constitution allows the federal government to co-finance research support with the Laender for projects of national importance. Such co-financing is close to three times higher than for GFS programmes and is allocated primarily to pursue scientific excellence, while regional development policy objectives are only subsidiary (BMF, 2023^[15]). The priorities for these co-financing funds are decided jointly between the Laender and the Federal Ministry of Education and Research, but an evaluation whether the funding has reached its objectives is often not conducted. The federal government can require the recipient state to submit reports and documents, but this is not mandatory. Moreover, the federal government also provides supplementary grants to the Laender to close part of the gap in research expenditure per inhabitant relative to the average Laender. However, these grants are not earmarked to research funding, making them an artificial extension of the fiscal equalisation system without any possibility of evaluating their impact. To improve spending efficiency and better coordinate funding for education and research with regional development policies, an impact evaluation of the supported programmes through these funding arrangements should become mandatory, while taking into account their different objectives.

A key policy lever to support innovation activity in firms are subsidies or tax credits for research and development (R&D) spending. According to the OECD R&D Tax Incentives Database, in 2023, direct government funding and government tax support for business expenditure on R&D amounted to about 0.2% of GDP in the average OECD country, with more than half of the support in tax relief. This was more than twice the amount provided by the refundable R&D tax credit (*Forschungszulage*) in Germany, which was first introduced in 2020. After the latest amendments in 2024, the refundable R&D tax credit subsidises 25% and 35%, respectively, of up to EUR 10 million of business expenditure on R&D per year for large firms and SMEs, respectively. The tax credit is deducted from income tax payments and is paid out in case the firms' tax payments are smaller than the subsidy amount. Paying out the tax credit supports younger and more innovative firms, as these firms often do not generate profits yet and thus don't pay income taxes. The new refundable R&D tax credit should be expanded if, after close monitoring, it proves effective in stimulating business innovation. It would be beneficial for the monitoring to also examine the impact of the size-dependent thresholds for eligible support on firms' decisions to scale up.

Innovative procurement can also play an important role in supporting new ideas and start-ups and the green and digital transitions. A stakeholder consultation revealed that procurement procedures are too burdensome and costly for innovative young firms. A recent draft bill planned to facilitate reporting requirements for the participation of start-ups and innovative firms in public tenders and raise thresholds for direct contracting. Implementing these plans would be an important step forward but should be complemented by making the publication of tenders below EU thresholds on the recently launched federal e-procurement website mandatory for all levels of government. This would reduce information asymmetries and further lower barriers to bidder participation (see Chapter 2).

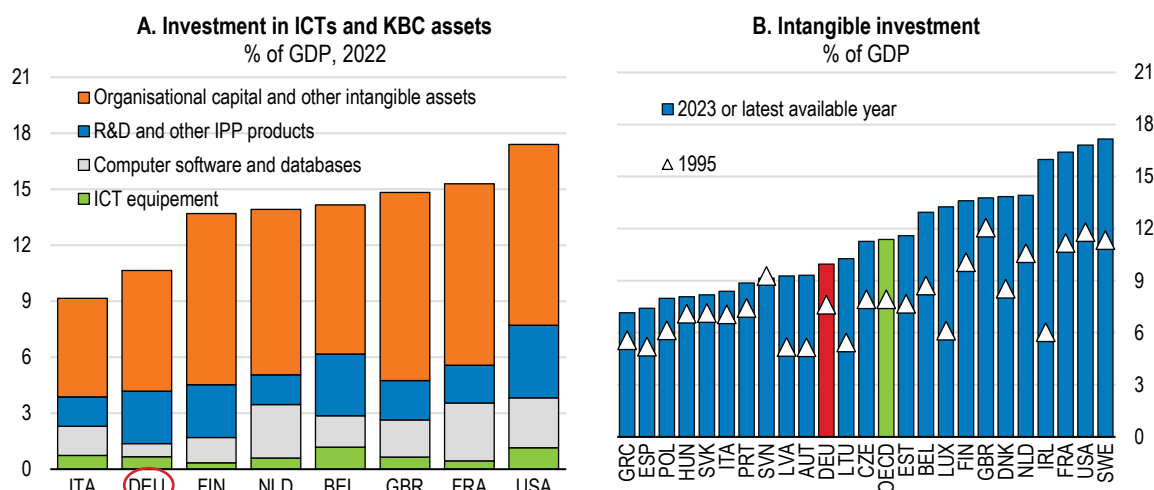
Continuing to facilitate skilled migration can also help foster innovation. Labour shortages are high in knowledge- and research-intensive as well as in IT and natural science-related industries, with large regional differences (BBSR Bonn, 2024^[6]). According to the OECD Twin Transition Tracker database, the share of migrants with a tertiary education degree is low in many German regions. In Australia, a one percentage point increase in the regional employment share of highly educated migrants relative to total employment has increased regional patent applications by 4.8% over five years. The effects are also more pronounced for migrants in scientific occupations and in regions with lower initial patenting activity (OECD, 2024^[82]). In the United States, an increased number of H1-B visa programme admissions for science and engineering occupations led to an increased patenting activity by inventors in recipient cities, with no displacement effect of residents (Kerr and Lincoln, 2010^[83]). Reducing administrative burden related to visa and work permits, creating a one-stop shop for migration-related procedures in the Laender and fostering a welcome culture can help attract more skilled migrants to the regions (see Chapter 2).

4.4.5. Strengthening the adoption of digital technologies

Expanding access to high-performance network connectivity to all regions is a key policy lever to foster the adoption of digital technologies by firms. While business expenditure for R&D is above the OECD average, investment in knowledge-based capital (KBC) remains relatively low, hampering the adoption of digital technologies such as cloud computing and big data analysis (Figure 4.16, Figure 4.17). A key factor is the low average download speed, which varies significantly across regions, particularly between urban and rural areas (Figure 4.18). Although the high capacity network coverage has increased to 76% of households in June 2024, the fibre coverage to premises is still low at 36% (European Commission, 2024^[84]). According to the OECD Broadband Statistics, only around 11% of all fixed broadband subscriptions were fibre-based compared to around 42% in the average OECD country at the end of 2023. The heavy reliance on the Digital Subscriber Line (DSL) technology network, which is mainly based on copper cables, is hampering fibre roll-out. Two-thirds of all household internet connections are either directly through the copper network of Deutsche Telekom or indirectly through other access providers (VATM, 2024^[85]). Without careful planning, the transition from copper to fibre networks could create significant barriers to entry for new entrants, hampering competition and slowing the uptake of fibre. As discussed in the 2020 OECD Economic Survey of Germany, infrastructure

sharing should be facilitated to foster competition and remove connectivity bottlenecks for fibre access. This should be accompanied by simplifying and accelerating planning and approval procedures and establishing national standards for low-cost roll out technologies. A national standard for reducing the required digging depth for earth cables has been established in 2023 and has the potential to significantly reduce uncertainty among local planning and approval agencies and the population regarding security, safety and health concerns.

Figure 4.16. Investment in knowledge-based capital is relatively low



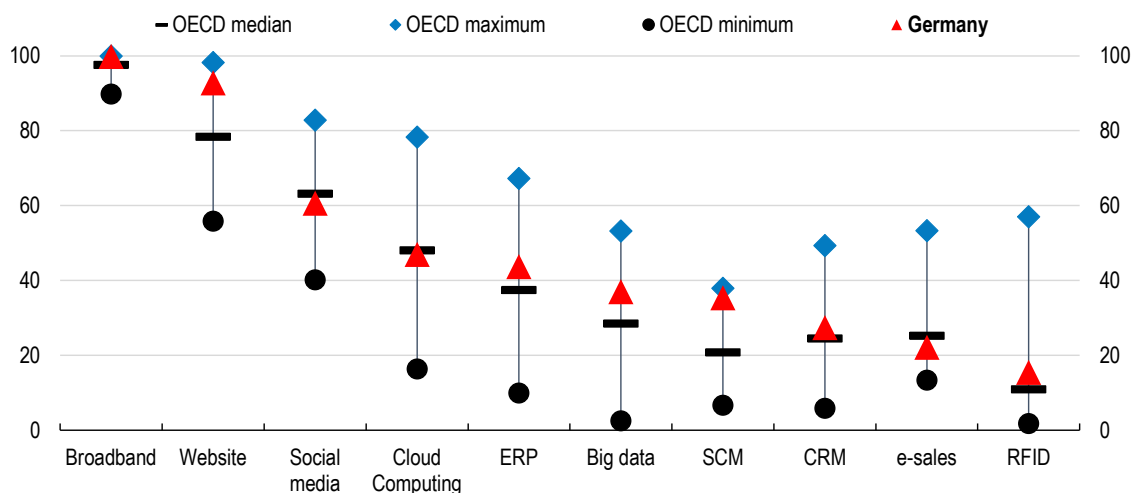
Note: Other intangible assets cover assets not yet classified as investment in national accounts – Attributed designs (industrial), Financial product development design, Market research and branding, Operating models, platforms, supply chains, and distribution networks and Employer-provided training. “OECD” refers to an unweighted average.

Source: OECD calculations based on OECD National Accounts database and Global INTAN-Invest database, <https://global-intaninvest.luiss.it>.

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Figure 4.17. There is scope to improve the adoption of more sophisticated digital technologies

Enterprises using specific digital technologies, % of enterprises, 2023 or latest available year



Note: Data correspond to the share of businesses with ten or more employees with broadband connection (fixed or mobile); with a website or home page; using social media; using Enterprise Resource Planning (ERP) software; using Customer Relationships Management (CRM) software; purchasing cloud computing services; receiving orders over computer networks; sharing electronically information with suppliers and customers (SCM); using Radio Frequency Identification (RFID) technology, and having performed big data analysis.

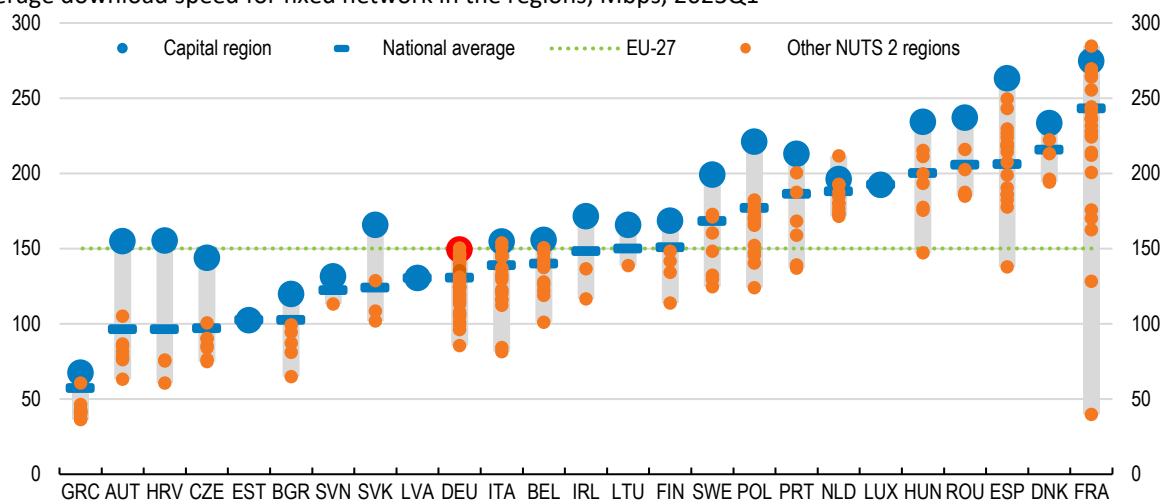
Source: OECD ICT Access and Usage by Businesses Database.

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Adequate funding is also needed to improve connectivity in remote areas, as market failures can lead to underinvestment in high-speed broadband capacity. In this respect, the allocation of about EUR 760 million in broadband support through the GFS programme to lagging regions, as defined by the regional development index of the joint task programme GRW, is a welcome step (BMWK, 2024^[5]). In August 2024, the European Investment Bank approved a EUR 350 million co-financing for a EUR 970 million project to improve fibre optic broadband coverage in rural and suburban areas across Germany. Funding from the Recovery and Resilience Facility for investment in high-speed networks to support communication technologies and advanced cloud infrastructure should be accompanied by more domestic funding to close the infrastructure gap, while ensuring that private sector funding is not crowded out. Better connectivity would not only improve the adoption of digital technologies by firms but could also help to foster regional development by improving the conditions for telework and attracting high-skilled workers to more remote areas. In addition, to raise investment in software and data, ICT equipment as well as in management capacity, which is needed to benefit from the productivity gains offered by digital or AI-based solutions, the newly introduced refundable R&D tax credit could be expanded to include R&D-related capital expenditure. Currently, it does not apply to the purchase of software, licences and IP rights used for R&D.

Figure 4.18. Internet download speeds are slow in many German regions

Average download speed for fixed network in the regions, Mbps, 2023Q1



Note: The range indicates the variation regional at the level of NUTS2 regions (Regierungsbezirk for Germany).

Source: European Commission (2024^[10]).

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The shortage of workers with advanced digital skills is another factor hampering the adoption of digital technologies in firms. Regional differences in demand for workers with advanced digital skills are high and faster ageing in the eastern Länder is exacerbating regional gaps (Figure 4.5). Expanding adult learning opportunities for workers and improving training quality, including by introducing standardised quality certification for training courses, and facilitating skilled migration is key to address skilled labour shortages (see Chapter 3). At the request of the state authorities in Bavaria and North-Rhine Westphalia, an EU Technical Support Instrument has been used to develop approaches to outreach, marketing, and stakeholder engagement to improve digital skills. In Bavaria, the programme has led to a large-scale digital upskilling campaign, launched in April 2023 in cooperation with large technology firms. In North Rhine-Westphalia, the programme focused on fostering digital skills among civil servants to improve the delivery of digital public services. However, knowledge transfer from higher education institutions to the private sector remains limited to traditional industry needs and is slow to adapt to the pressing need for digital skills (OECD, 2022^[79]). State authorities in North Rhine-Westphalia have identified the need to further improve the targeting and curriculum development of digital training programmes. These efforts should be complemented by using the

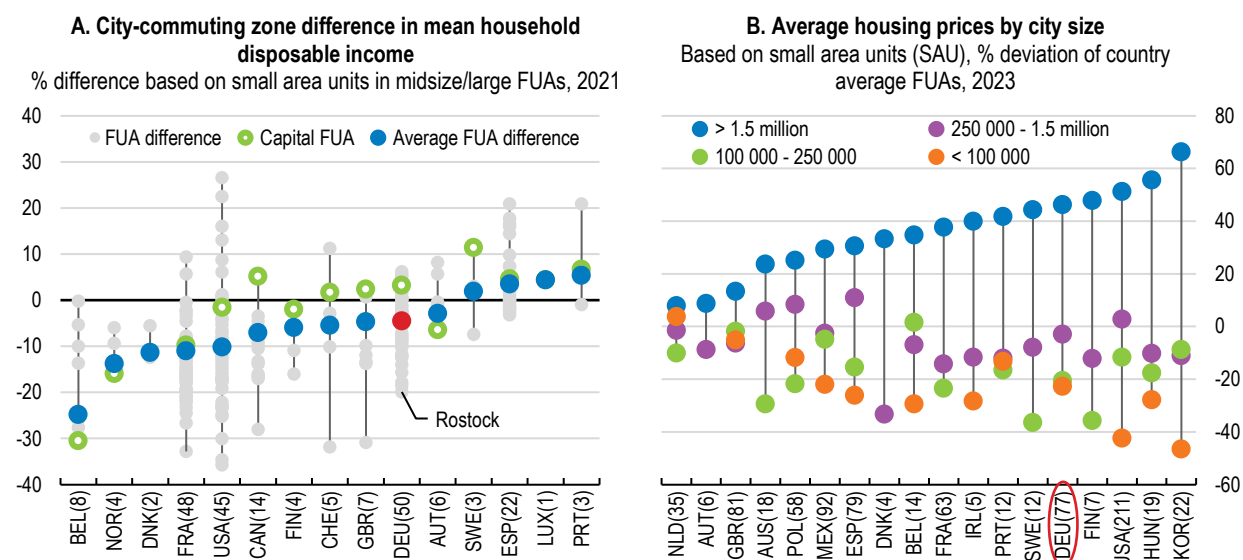
newly introduced digital education platform to establish a skills inventory to assess the competencies of the workforce and identify gaps to inform the design of targeted training and adult learning policies.

Data protection and security concerns contribute to the weak adoption of digital technologies by firms (see the 2020 OECD Economic Survey of Germany). The use of cloud computing, including for software and database hosting, is particularly affected by security concerns (Figure 4.17). Such concerns are high in Germany both compared with other countries, and compared with other obstacles to cloud computing such as interoperability or skills. Many German firms are implementing practical and technical digital security measures but lack a strategic approach to digital security, based on risk management. Implementing digital security risk management in firms requires elevating digital security from being merely a technical issue to the top of business decision making. A revision of the Cybersecurity Strategy for Germany should lead to a stronger focus on firms in general and on digital security risk management in particular while strengthening cooperation of the involved ministries. Moreover, the heterogeneous interpretation of data protection regulation across the Laender leads to a fragmentation of markets and hampers digital adoption, innovation and market entry (see Chapter 2). The draft bill for the Research Data Act aims to facilitate the access, linkage and processing of sensitive data by both private and public institutions for research purposes, in line with the EU Data Protection Regulation, and should be implemented. When data projects involve collaborators from different Laender, the approval granted by the data protection officer in one Land should be accepted by the other Laender to reduce administrative burden for firms.

Accelerating the digitalisation of the public sector and upskilling civil servants could significantly raise spending efficiency and reduce the administrative burden, while also helping to develop innovative AI solutions. A solid computational capacity and a pool of highly qualified researchers has enabled robust contributions from German researchers in all AI sub-disciplines and supported the German AI ecosystem (OECD, 2024^[86]). A national AI strategy was issued in 2018, one of the first examples in the OECD. The strategy's human-centred regulatory approach has kept social acceptance among workers at a relatively high level. It also includes clear plans and legal provisions for regulatory sandboxes. However, limited administrative expertise, including at the Laender and municipality level hinders its implementation. Improving coordination, clarifying responsibilities, training civil servants, and updating the roadmap for public sector initiatives could speed up the transition to greater use of AI-based solutions. Thereby, accelerating the digitalisation of the public sector is key to improve data quality and availability to train AI applications for public service delivery (see Chapter 2). Better coordination between federal and state education ministries is also needed to include more AI programmes, especially in English, in universities to expand the AI talent pool and workforce.

4.5. Mitigating distributional consequences and supporting workers in times of structural change

Although incomes have converged across the Laender, income disparities between districts remain high, in particular between urban centres and commuting zones (Figure 4.19, Panel A). This is related to the concentration of economic activity in larger metropolitan areas and heterogeneity in labour productivity but also features of the tax and transfer system. For example, while labour income taxation is high and strongly progressive, capital income and property are taxed less than in the average OECD country (see Chapter 1). The strong rise in house prices in urban areas have also added to rising inequality across districts, especially considering the relatively low home ownership rates according to the OECD Affordable Housing Database (Figure 4.19, Panel B). Structural adjustments related to the decline in carbon-intensive industries, increasing trade exposure and automation as well as the German reunification have also affected employment biographies and incomes of workers in specific regions more than others. Moreover, wealth inequality is high due to low savings of East Germans during the socialist period, the nature of the privatisation process after the reunification and an effectively regressive inheritance tax (Box 4.2, see the previous OECD Economic Survey of Germany). Only about 2% of inheritance tax revenues is collected in eastern Laender (Jirmann, 2022^[87]).

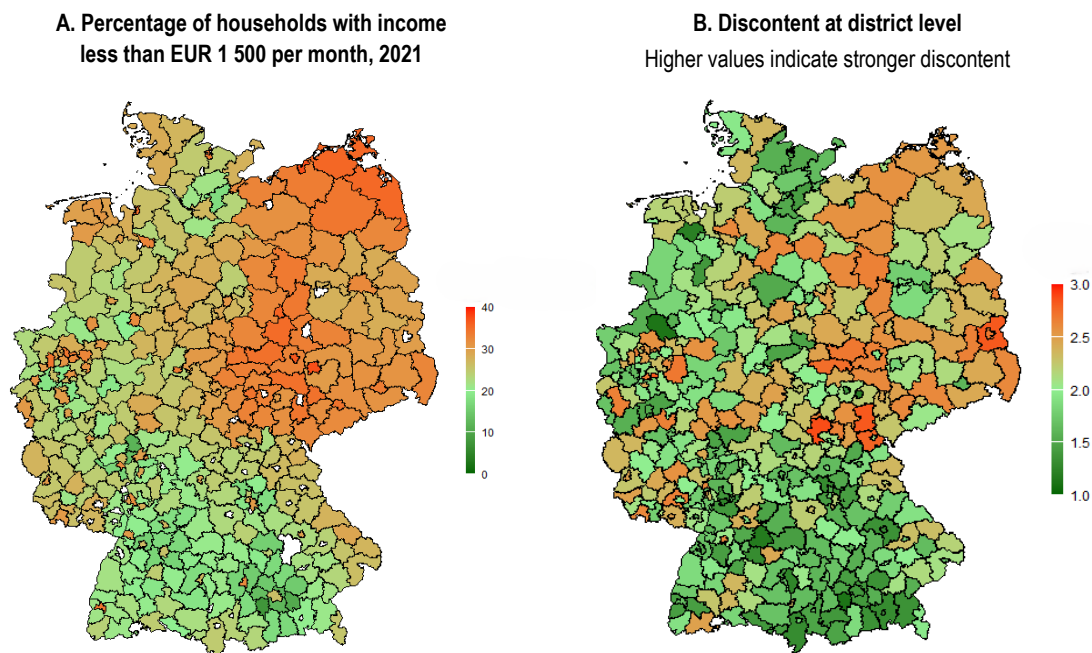
Figure 4.19. Income and wealth disparities between cities and commuting zones are high

Note: Number of functional urban areas (FUAs) in parentheses. Panel A uses small area units (SAU) in FUAs of 250 000 inhabitants or more. Only FUAs with more than 5 small areas units were selected. Housing prices in Panel B refer to the average price per square metre of residential dwellings, except for the United Kingdom and the United States, where prices consider other observable characteristics of the dwellings.
 Source: OECD (2024_[80]).

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Income inequality is strongly correlated with other socio-economic inequalities as well as trust in institutions (Rodríguez-Pose, Dijkstra and Poelman, 2024_[88]). A regional indicator constructed for this Survey, which measures discontent with economic and labour market prospects, the access to and quality of public services such as education, health, public transport and social services, quality of digital and transport infrastructure and environmental outcomes, is strongly correlated with the prevalence of low labour income and wealth (Figure 4.20). As the green and digital transitions will have heterogeneous effects across regions, income disparities risk to further increase (Figure 4.21). Regions with a high share of carbon-intensive industries will be more affected by emission abatement policies, while rising automation will have larger effects on regions with a higher share of occupations with tasks that are automatable. Workers will have to relocate to new jobs in expanding sectors and firms and adapt their skills to changing task content of jobs. Adjustment costs will be high due to large re-training and up-skilling needs, social costs of moving to other regions or longer periods of unemployment for displaced workers. As discussed in the previous OECD Economic Survey of Germany, workers displaced in carbon-intensive sectors face higher displacement costs than other displaced workers due to fewer outside options in their local labour markets, human capital specificity and higher wage premiums in their former jobs. Thus, policies should support incomes of affected workers and help them acquire new skills by improving and expanding training and adult learning opportunities (see Chapter 3). The transition also could reduce income inequalities as lower-income regions with greater potential for the expansion of renewables could benefit from the green transition, especially if additional incentives are created for energy-intensive industries to relocate in those regions (Figure 4.4).

Figure 4.20. Lower incomes are correlated with discontent with the economic situation and institutions

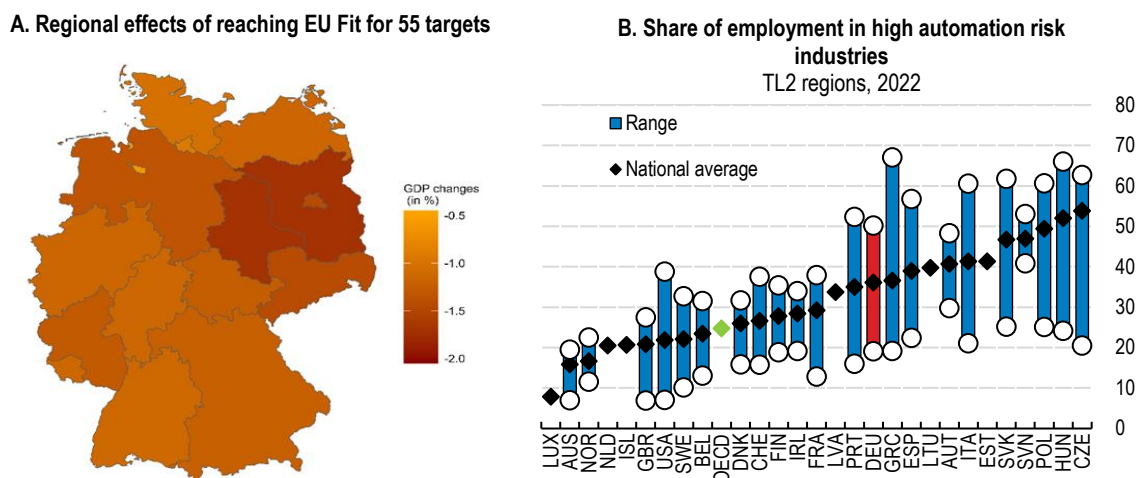


Note: Panel B shows the unweighted average of quantified responses collected in a range from 1 to 3 (low to high discontent) to questions on prospects that reflect perceptions of the current regional economic situation and regional growth and employment prospects, firm creation and social cohesion, access to public transport, high-speed internet, schools, childcare facilities, and local retail outlets, the state of environment in the region, air quality and the quality of regional recreational areas, access to health care services and safety, regional life satisfaction from a comparative perspective, overall life satisfaction, and confidence in the region's prospects.

Source: BBSR Bonn (2024^[6]); Federal Government Equivalence Report (2024^[5]); and OECD calculations.

StatLink  <https://stat.link/ma0cig>

Figure 4.21. The green and digital transitions will have heterogenous effects on regions



Note: The ranges shown in Panel B indicate the regional variation at the level of the Laender. A job is considered at high risk of automation if more than 25% of a job's tasks are highly automatable through recent advances in robotics and AI. The extent to which a job's tasks can be automated is estimated based on an expert survey, indicating the degree to which each skill can be automated, and using job-level task information. The share of jobs at high risk of automation is then computed for regions using regional employment data.

Source: 2023 OECD Economic Survey of Germany; OECD Twin Transition Tracker database.

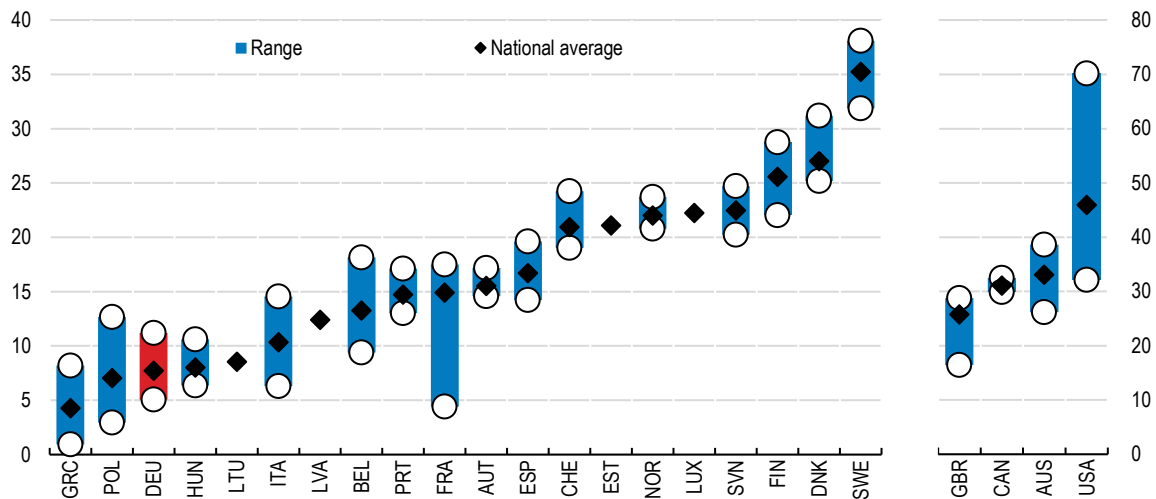
StatLink  <https://stat.link/56l1da>

One option to compensate workers for the negative consequences of the green transition is to rebate part of the carbon price revenues to households. As discussed in the previous OECD Economic Survey of Germany, rising carbon prices would disproportionately affect poorer households as they consume a larger share of their income for carbon-intensive heating fuels and electricity, and because their wage income declines. However, if carbon pricing revenues are recycled as an equal lump-sum transfer to each household, rising carbon prices would become progressive and the poorest households could even face an improved purchasing power. Currently, carbon pricing revenues are transferred to the Climate and Transformation Fund (KTF), which is a special fund to support the green transformation. About a third of the KTF's spending was used to subsidise energy efficiency improvements in buildings in 2024 and a large part of the remaining funds is used to provide subsidies to supporting the decarbonisation of energy-intensive industries. However, transfers to compensate vulnerable households for higher carbon prices still do not exist. The previous federal government has introduced the legal basis and technical infrastructure for lump-sum transfers to households' bank accounts in 2025. Using this technical infrastructure to establish transfers to households through the KTF and allocating a larger share of KTF spending to financing of incentives for energy efficiency improvements in low-income housing would help compensate vulnerable households for the negative consequences of the green transition.

As budget resources are scarce, the transfer to households could even be targeted at poorer and more affected households or regions more negatively affected by the green transition. For example, a previous eco-social tax reform in Austria combined carbon pricing in non-ETS sectors with the introduction of a tax-exempt lump-sum climate bonus, which is differentiated according to place of residence and access to public transport. Results from an OECD survey show that the public acceptance of carbon pricing is higher if revenues are used for transfers to more vulnerable households instead of an equal transfer to all households (Dechezleprêtre et al., 2022^[89]). Ensuring that transfers to households are income-dependent to make the redistribution of carbon pricing revenues in Germany more progressive requires linking administrative datasets across the Laender and harmonising the definition of income (see Chapter 2). Solving this issue should be a key policy priority, as the lack of compensation for rising carbon prices is likely hampering public acceptance of the green transition (see the previous OECD Economic Survey of Germany).

Improving active labour market policies is a key policy lever to reduce adjustment costs for workers in the regions. Only a small proportion of working-age adults participate in training (Figure 4.22). Older workers in particular are less likely to participate in training (see Chapter 3). This risks exacerbating regional disparities, as regions with faster demographic decline due to ageing, such as the eastern Laender, are left further behind (Figure 4.5). Training rates for workers at high risk of job loss due to decarbonisation of industries are also lower than for other workers, raising adjustment costs during the transition (OECD, 2023^[90]). Although some room to increase spending on training measures exists, it is particularly the quality of training that needs to improve. The lack of harmonised quality standards and certification for non-formal training courses leads to large information asymmetries, low quality of many courses and weak targeting of training to skill needs in local labour markets (Gontek and Sutera, 2024^[91]). Introducing harmonised quality standards and certification for training and adult learning courses should be a priority to improve the quality of training (see Chapter 3). The recent reform of the basic income support has abolished the prioritisation of job-uptake over training and facilitated the completion of three-year continuing vocational education and training (CVET) programmes while receiving basic income support. This is a significant step forward as formal VET courses are subject to stringent quality standards and certification, and many workers will need to change jobs during the green and digital transition. Moreover, the VET system is based on a close cooperation between firms, unions and VET institutes at the regional level which facilitates the adjustment of training content and capacity to skill needs in local labour markets. Facilitating such a coordination also in non-formal training, including through the establishment of harmonised quality standards and certifications, and further fostering the cooperation between local employers and the public employment services agency is key to increase the effectiveness of training measures for the unemployed.

Figure 4.22. Participation in adult learning is very low in many regions



Note: The adult learning ratio is the share of population aged 25-64 that participated in job-related training in the past month (EU), 3 months (the UK), or 12 months (Australia, Canada, and the United States). Different time horizons are due to geographical differences in survey questions.

Source: OECD Twin Transition Tracker database.

StatLink  <https://stat.link/7aof0b>

Targeted hiring subsidies should complement improved training and education opportunities to strengthen the employability of individuals, who are at risk of long-term unemployment due to the green and digital transitions. The Participation Opportunities Act, which has been in force since 2019, provides targeted wage subsidies as well as coaching and training and helps long-term unemployed persons to find a stable job, but these services are exclusively available for individuals who have been unemployed for at least two years. This programme could be expanded to vulnerable groups already in early stages of their unemployment spell to improve their re-employment chances. Profiling tools based on statistical models to predict jobseekers' likelihood of becoming long-term unemployed should be used to better identify such vulnerable individuals. This would also prevent the exclusive targeting of individuals with very high chances of re-employment to maximise the performance outcomes of public employment agencies. Well-known examples are the *Work Profiler* in the Netherlands, the *Job Seeker Classification Instrument* in Australia and the *Worker Profiling and Reemployment Services* (WPRS) initiative in the United States (Desiere, Langenbucher and Struyven, 2019^[92]).

Repurposing existing assets through infrastructure investments while retraining the labour force is a key policy lever to preserve agglomeration economies in transforming regions. This helps mitigating strong outmigration of workers from struggling regions and avoid negative feedback effects. A recent programme supports regions affected by the phase-out of coal power plants and lignite production with EUR 41 billion until 2038, including for infrastructure investments, innovation and training support, and investment subsidies. Subsidies are available for investments in the production of renewable energy equipment such as solar panels, battery cells, wind turbines, heat pumps, and electrolyzers as well as for expenditure on innovation-related knowledge transfer and networking activities, start-up financing, and the recruitment of skilled workers. For the estimated 20 000 lignite and coal workers directly affected, this means an annual average cost of EUR 100 000 per job over the programme period (Suedekum, 2023^[17]). The EUR 5 billion allocated to early-retirement schemes for older workers, in addition to the EUR 41 billion of subsidies for coal phase-out regions, could be better targeted, as welfare losses are particularly high for mid-age workers and early-retirement generates additional costs due to higher pension spending (Haywood, Janser and Koch, 2024^[93]). Using the funds to finance wage subsidies instead would increase total welfare and reduce fiscal costs by facilitating re-employment of affected workers in other industries.

Table 4.2. Past recommendations and actions taken

Past recommendation	Action taken
Review co-funding of regional projects by the federal government.	In 2019, several place-based policies were merged under the Federal Funding System for Structural Development regions (GFS). A 2022 reform of the Joint Task “Improving the Regional Economic Structure” (GRW) under the GFS, links wage subsidies to high-skilled employment and removes the eligibility condition of a minimum distance for trade in goods. It also relaxed eligibility conditions for investment subsidies for climate-friendly and research-intensive investments.
Use the ongoing update of property values to better link property taxation to asset values and raise revenue.	A recent reform of the land tax (Grundsteuer) introduces a regular update of land and property values with market values, while in many Laender the implementation of the reform aims at keeping total revenues constant.
Bolster local planning capacity through inter-municipal cooperation, training and expanding staffing in key technical roles.	A Federal-Laender pact has been introduced to harmonise fragmented standards and administrative procedures across all levels of government and further accelerate planning and approval procedures for infrastructure investments, with 30% of the agreed objectives already achieved. Some Laender have established a central contact point to advise municipalities in the early stages of cooperation, to communicate the potential added value of increased synergies, and encouraged informal networks to facilitate the exchange of knowledge and experience in urban development, local economic development and transport.
Gradually shift support from renewable energy subsidies towards more targeted subsidies for green R&D and the deployment of near-zero emission industrial technologies to reduce future abatement costs.	No action taken.
Gradually phase out fossil fuel subsidies and tax expenditures, replacing them with abatement subsidies or direct transfers to households if needed.	The federal government has introduced the legal basis and technical infrastructure for lump-sum transfers of carbon pricing revenues to households’ bank accounts by 2025. Linking administrative datasets across the Laender remains a challenge for ensuring that transfers are income-dependent.
Increase minimum efficiency standards and apply energy performance certification to all existing buildings.	The amended Building Energy Act has raised the energy efficiency standards for new buildings in newly developed areas as of January 2024. Newly installed heating systems are required to generate at least 65% of their heat from renewables. For existing buildings and new buildings outside newly developed areas, standards will apply from 2026 or 2028.
Expand the deployment of charging capacity, while enhancing competition in and access to the market by targeting support at small players, standardising pricing, and setting performance requirements.	A 2024 market investigation by the Competition Agency finds that competition in local charging markets is weak, including because private providers are often discriminated in concession decisions, favouring local SOEs.
Improve conditions for firms to invest in knowledge-based capital, including by reviewing the cap for R&D tax incentives to make them more applicable to mid-range companies.	After the latest amendments in 2024, the refundable R&D tax credit (Forschungszulage) subsidises 25% and 35%, respectively, of up to EUR 10 million of business expenditure on R&D per year for large firms and SMEs, respectively.
Accelerate SMEs’ digital transformation by swiftly implementing existing SME support, increasing it if needed, and ensuring that investment incentives for physical capital do not discourage expenditures on digital services.	Recent reforms have partly simplified the time-consuming and complex application procedures of the Central Innovation Programme for SMEs (ZIM) under the GFS. ZIM crowded in additional expenditure on R&D and research-related employment in recipient SMEs and fosters collaboration between firms and research institutions, helping to close the innovation capacity gap in SMEs.
Expand public information and education campaigns to explain how policies reduce emissions and clarify their distributional effects.	No action taken.
Expand the scope of Active Labour Market Programmes, focusing on re-training and basic skills acquisition, while improving adult education by introducing nationwide quality standards and better coordination and marketing of training supply across regions.	A recent reform of the basic income support has abolished the prioritisation of job-uptake over training and facilitated the completion of three-year continuing vocational education and training (CVET) as well as adult education programmes while receiving basic income support.

Table 4.3. Findings and recommendations (key recommendations in bold)

Main findings	Recommendations
Strengthening place-based policies	
Conditional federal grants or industrial policies are not coordinated with place-based policies. While objectives may differ, target areas often overlap.	Better coordinate conditional federal grants and industrial policies with place-based policies to improve spending efficiency and the effectiveness of regional development policies.
The eligibility conditions for place-based investment grants may have encouraged firms to remain small and hire lower-skilled employees, limiting productivity growth in beneficiary regions. Requiring firms to disclose identifiers for GRW funding has improved impact evaluation of investment grants.	Make place-based subsidies independent of the size of the applicant firms and set higher wage subsidy rates for the hiring of high-skilled and appropriately trained workers. Require firms to disclose firm identifiers as a condition for funding eligibility for all place-based investment grants and other funding programmes to further improve impact evaluation.
Place-based funding programmes focus on equalising regional living conditions, but currently unassisted regions face high future costs of climate mitigation and adaptation.	Modify the allocation mechanism of place-based funds to include projected climate mitigation and adaptation costs.
Improving the financial and administrative capacity of local governments	
Federal legislation on tax reliefs and social benefits may strongly affect municipal finances and reduce resources available for investments.	Compensate municipalities for future federal legislative changes affecting municipal budgets by increasing the share of joint taxes allocated to municipalities while ensuring that grants from Laender through the municipal equalisation systems are not reduced in exchange.
Municipal revenue from recurrent taxes on immovable property is low, although house and land prices have strongly risen and municipal finances suffer from strong cyclicality of revenues.	Use the recent update of property values to better link property taxation to market values and raise revenue, while providing tax deferrals to cash-poor homeowners.
A strong equalisation of revenue differences in the federal equalisation system reduces incentives for the Laender to rely on their own efforts to improve the financial situation of their municipalities.	Raise the weight of municipal tax capacity in the federal equalisation formula and increase the rate at which excess revenue growth is deducted from fiscal capacity.
A lack of transparency and standardisation in municipal accounting practices hampers comparability and the early detection of fiscal problems.	Make accrual-based accounting mandatory for all municipalities and strengthen early warning mechanisms for fiscal risks.
The large number of small municipalities implies high unit costs of public service delivery, which risk to further increase due to population ageing and decline. Potential gains from deeper cooperation are large.	Encourage more cooperation across municipalities in public service delivery, including through financial incentives and capacity building initiatives, and consider mandating cooperation or conducting a territorial reform.
Administrative services such as the issuance of driver licences or passports are decentralised, although production of the documents is centralised. Skilled labour shortages reduce the capacity of local administrations.	Bundle administrative tasks that require less counselling and are more compatible with digitalisation or transfer them to other levels of government to free staff resources for other local administrative procedures.
Designing horizontal policies to facilitate the green and digital transition in the regions	
New clean production sites in remote areas will have to reach a critical mass to finance private investments in the hydrogen core network. Uncertainty about the uptake of the hydrogen technology could lead to fiscal risks.	Coordinate the planning and implementation of the hydrogen core network infrastructure with place-based policies to ensure the effectiveness of regional development policies and raise spending efficiency.
Waiting times to connect storage facilities and large energy-intensive plants to the electricity grid remain high, hampering investments in the green transition of the industry and regional economic development.	Accelerate permit procedures for network expansion investments by continuing to digitalise procedures and simplify the capital adequacy assessment of grid operators.
Grid charges are higher in areas with high renewable energy supply, reducing public acceptance of renewables and incentives for firms to relocate to where green electricity is produced.	Ensure that recent reductions on network charges are passed on to users and consider further improving grid charge incentives for firms to relocate to areas with renewable electricity supply.
Electricity generation from renewables is less stable over time. Price signals on the consumer side are weak due to static levies, taxes, and grid charges.	Introduce time-variable grid charges and gradually phase out network charge reductions that incentivise stable electricity demand.
Investments in rail infrastructure are not sufficient to improve the network capacity. Weak digitalisation and rising skilled labour shortages risk to reduce the supply of rail services.	Increase public investment in rail, subject to cost-benefit analysis, and accelerate the digitalisation of the control and signalling systems.
Private R&D expenditure is concentrated in large firms, driving strong heterogeneity in innovation outcomes across regions. Administrative burden for innovation funding is high and start-up funding is weak.	Improve cooperation between research institutions and smaller firms, reduce administrative burden for innovation funding and allow cooperation with financing institutions to facilitate the commercialisation of new ideas.
Low average download speeds in many regions hamper investment in knowledge-based capital and the adoption of digital technologies.	Facilitate infrastructure sharing, accelerate planning and approval procedures and foster the use of low-cost technologies for fibre roll-out.
Data protection and security concerns are hampering the adoption of digital technologies by firms. Heterogeneous interpretation of data protection regulation hampers digital adoption and innovation.	Promote digital security risk management by firms through a revised national cybersecurity strategy and harmonise the interpretation of data protection regulation across the Laender.

Mitigating distributional consequences and supporting workers in times of structural change	
The lack of redistribution of carbon price revenues to households hinders public acceptance of the green transition, while progressive transfers have a higher public acceptance than lump-sum transfers.	Use carbon pricing revenues to finance progressive transfers to households and incentives for energy efficiency improvements in low-income housing.
Many workers will need to change jobs during the green and digital transitions. Formal vocational education and training courses (VET) are of high quality.	Expand opportunities for the unemployed to complete formal VET degrees and further improve coordination between public employment services and local employers.
Early-retirement schemes targeted at older workers in coal regions are costly. Mid-age workers are more strongly affected by the coal phase out, while wage subsidies are effective in fostering re-employment.	Reallocate funds within the coal-exit programme from early-retirement schemes to wage subsidies.

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After a decade of strong export-led growth, the COVID-19 pandemic, Russia's war of aggression against Ukraine and rising trade tensions have hit the German economy and emphasised the need to accelerate structural reforms. The recent reform of fiscal rules will allow to raise spending to improve defence capacity and address a large infrastructure backlog. To ensure medium-term fiscal sustainability, this should be combined with raising spending efficiency, reallocating spending and broadening the tax base. Addressing rising spending pressures due to population ageing will require reforming the pension, health and long-term care systems. Simplifying and harmonising public procurement and infrastructure planning and approval procedures should be complemented with improving the capacity of the public administration to ensure a timely and efficient implementation of public investment projects. To ensure that increasing domestic demand is matched by supply, it is key to address skilled labour shortages and reduce high administrative burdens and regulatory barriers to competition, which have weighed on business dynamism, innovation and productivity growth. Fostering regional development requires better coordination of place-based with industrial, infrastructure and innovation policies as well as improving the financial and administrative capacity of municipalities.

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