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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 economic situation and policies of Italy were reviewed by the Committee on 21 November 2023. The draft report was then revised in light of the discussions and given final approval as the agreed report of the whole Committee on 21 December 2023.

The Secretariat's draft report was prepared for the Committee by Cyrille Schwellnus, Gabriele Ciminelli, Klaus Pedersen and Iris Chagnaud under the supervision of Sebastian Barnes. Editorial support was provided by Elodie Lormel and Jean-Rémi Bertrand.

The previous Survey of Italy was issued in September 2021.

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

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BASIC STATISTICS OF ITALY 2022

Numbers in parentheses refer to the OECD average[2]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	58.9		Population density per km²	199.0	(39.0)
Under 15 (%)	12.4	(17.2)	Life expectancy at birth (years, 2021)	82.8	(78.7)
Over 65 (%)	24.1	(18.0)	Men (2021)	80.6	(75.9)
International migrant stock (% of population, 2019)	10.4	(13.2)	Women (2021)	85.1	(81.7)
Latest 5-year average growth (%)	-0.6	(0.4)	Latest general election	September 2022	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	2 051.7		Agriculture, forestry and fishing	2.2	(2.8)
In current prices (billion EUR)	1 947.4		Industry including construction	25.7	(28.3)
Latest 5-year average real growth (%)	0.7	(1.7)	Services	72.2	(68.8)
Per capita (thousand USD PPP)	55.5	(59.0)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure	56.1	(42.5)	Gross financial debt (OECD: 2021)	148.5	(106.6)
Revenue	48.0	(39.3)	Net financial debt (OECD: 2021)	120.4	(68.2)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.95		Main exports (% of total merchandise exports, 2021)		
PPP exchange rate (USA = 1)	0.60		Machinery and transport equipment	32.6	
In per cent of GDP			Miscellaneous manufactured articles	18.3	
Exports of goods and services	36.7	(33.4)	Manufactured goods	18.0	
Imports of goods and services	38.2	(34.8)	Main imports (% of total merchandise imports, 2021)		
Current account balance	-1.5	(-1.0)	Machinery and transport equipment	26.6	
Net international investment position	4.7		Chemicals and related products, n.e.s.	16.9	
			Manufactured goods	16.2	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	45.1	(57.5)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	8.1	(5.0)
Men	54.0	(65.4)	Youth (aged 15-24, %)	23.8	(10.9)
Women	36.9	(50.1)	Long-term unemployed (1 year and over, %)	4.6	(1.2)
Participation rate (aged 15 and over, %)	49.1	(60.9)	Tertiary educational attainment (aged 25-64, %)	20.3	(40.7)
Average hours worked per year	1,694	(1,752)	Gross domestic expenditure on R&D (% of GDP, 2020)	1.5	(2.9)
ENVIRONMENT					
Total primary energy supply per capita (toe)	2.4	(3.8)	CO_2 emissions from fuel combustion per capita (tonnes)	5.0	(7.8)
Renewables (%)	17.6	(12.0)	Water abstractions per capita (1 000 m³, 1998)	0.7	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	91.4	(61.7)	Municipal waste per capita (tonnes, 2020)	0.5	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2021, OECD: latest available)	0.330	(0.316)	Education outcomes (PISA 2022 score)		
Relative poverty rate (%, 2021, OECD: 2020)	12.8	(11.8)	Reading	482	(476)
Median disposable household income (thousand USD PPP, 2021, OECD: 2020)	27.9	(26.6)	Mathematics	471	(472)
Public and private spending (% of GDP)			Science	477	(485)
Health care	9.0	(9.2)	Share of women in parliament (%)	32.3	(32.5)
Pensions (2021)	16.6	(9.4)	Net official development assistance (% of GNI, 2017)	0.3	(0.4)
Education (% of GNI, 2021)	3.9	(4.4)	Education outcomes (PISA 2022 score)		

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

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

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

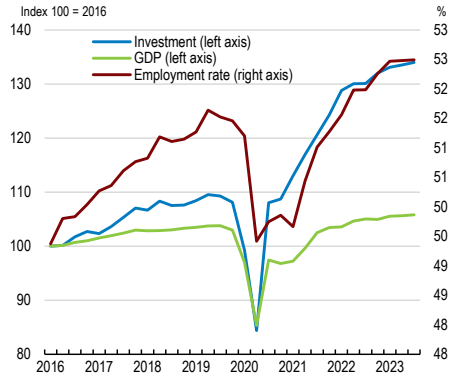
Executive summary

Growth has been resilient, but is slowing

The economy has weathered recent crises well, but growth is now slowing amid tightening financial conditions. Against the background of high public debt, the public finances need to be consolidated.

The energy crisis triggered a slowdown in activity. Large fiscal support and gains in competitiveness helped real GDP to rebound to its pre-pandemic level by mid-2021, with unemployment reaching historically low levels. However, high inflation in the wake of the energy crisis has eroded real household incomes and the tightening of euro area monetary policy has led to rapid increases in borrowing costs for households, businesses and the government.

Figure 1. Growth has been resilient



Source: OECD Economic Outlook database.

StatLink https://stat.link/jw3d2m

The tightening in financial conditions in the wake of euro area monetary policy tightening has been substantial. Lending rates to households and businesses have increased by around 3 percentage points since mid-2022. Credit growth has turned negative and the housing market has softened. The banking sector is well capitalised and better prepared to withstand shocks than in the past. But the banking and insurance sectors have substantial holdings of sovereign debt, requiring continued monitoring of balance sheet pressures that may arise from higher interest rates or the slowdown in growth.

Fiscal policy is now broadly neutral. Government support related to the energy crisis has partly been withdrawn and should end, but the National Recovery and Resilience Plan (NRRP) and targeted income tax cuts are supporting demand. If energy prices were to rise significantly again, only measures targeted to poor households should be re-introduced. With public debt high and on an upward trajectory under unchanged policy, the public finances will need to be consolidated.

OECD projections envisage subdued economic growth in 2024-25. Inflation is expected to decline gradually, as the energy price shock has led to wider price pressures that will take time to dissipate. Risks are tilted to the downside and tighter-than-expected financial conditions would further reduce domestic demand. On the upside, the faster spending of NRRP funds, including by re-focusing the Plan on large and centrally managed investment projects, as planned by the authorities and endorsed by the European Commission, could boost investment.

Table 1. Macroeconomic projections

Annual average growth, unless specified	2023	2024	2025
Gross domestic product (GDP)	0.7	0.7	1.2
Unemployment rate	7.6	7.8	7.6
Core inflation index	4.5	3.1	2.5
General government gross debt (% of GDP)	141.4	141.4	140.5

Source: OECD.

Putting public debt on a prudent path

Public debt is among the highest in the OECD as a share of GDP. With substantial fiscal pressures on the horizon, tax and spending reforms are needed to help put debt on a more prudent path.

The public debt to GDP ratio is on an upward trajectory under unchanged policies. Public expenditure on ageing-related costs and debt servicing costs are expected to increase by about 4½ percent of GDP between 2023 and 2040. Additional spending pressures are likely to arise from accelerating the climate transition and adapting to climate change. A sustained fiscal adjustment will be required over a number of years to put the debt ratio on a more prudent path, meet future costs and comply with proposed EU fiscal rules.

There is a need to make savings in government spending. Pensions account for a heavy share of overall spending. In the near term, this could be

contained by phasing out early retirement schemes. The partial de-indexation of high pensions should be maintained in the near term but replaced in the medium term with a tax on high pensions that are unrelated to past pension contributions. This solidarity contribution of current pensioners could be maintained until the relative income of pensioners becomes more closely aligned with the OECD average. The forthcoming spending reviews – which currently target annual fiscal savings of around 0.2% of GDP – need to become more ambitious.

The ongoing tax reform should help address fiscal pressures. Efforts to tackle tax evasion should be continued, including by continuing to promote digital payments and reversing the increase in the ceiling on cash transactions. There is also room to reduce the erosion of the income tax base, including by reducing tax expenditures and limiting the proliferation of special flat tax regimes. Shifting taxes from labour to inheritance and property would make the tax mix more growth-friendly, while allowing revenues to increase. This should include updating the property tax base calculations, while taking into account distributional impacts.

Raising growth and inclusiveness

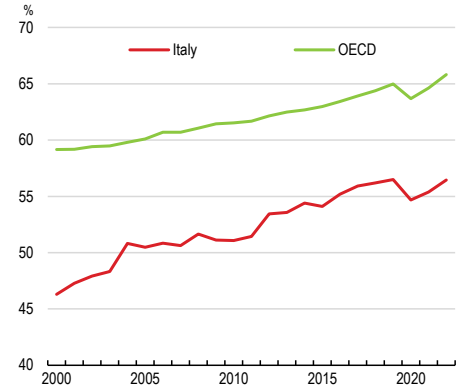
The economy faces challenges from low productivity growth, low labour market participation, especially of women, and relatively high poverty. Transitioning to innovation-led growth, while strengthening inclusiveness, will require a comprehensive package of reforms.

The ongoing civil justice and public administration reforms will be crucial to raise investment and productivity. The long duration of trials and excessive bureaucracy have held back private and public investment. The recent reforms to streamline legal and administrative procedures, raise capacity, and strengthen judges' and civil servants' performance incentives should be thoroughly implemented. Strengthening the mobility of public servants would reduce entrenchment in positions with excessive discretion over administrative procedures and thus the risk of corruption.

Remaining regulatory barriers to competition must be lifted, especially in professional services. "Fair compensation" rules for professional services risk being perceived as minimum tariffs, thereby reducing market entry and price competition. Their scope should be reduced. The competition reform legislated in 2022 should be fully implemented, including by submitting concessions to public tenders at expiry.

Labour market participation of young people and women is among the lowest in the OECD. Labour market prospects of young people could be improved by expanding technical tertiary schools (ITS Academy), and female labour market participation could be enhanced by significantly expanding early childhood education and further strengthening incentives for paternity leave.

Figure 2. Female labour market participation remains low



Source: OECD.

StatLink https://stat.link/8x50a4

The government has discontinued the Citizen's Income and introduced a new social assistance scheme (Adi) and an employment support scheme (Sfl). Work incentives of benefit recipients in the new scheme could be improved through a more gradual withdrawal of benefits in case of taking up employment. Expanding access to the social assistance benefit (Adi) to people with very weak labour market prospects at a reduced rate would ensure that limited funds for training are targeted to employable people, while ensuring that the most vulnerable remain covered by the social safety net.

Strengthening the training system would help bring vulnerable people into the labour market. Lack of skills is a key barrier to employment. The NRRP provides funding for a new lifelong-learning

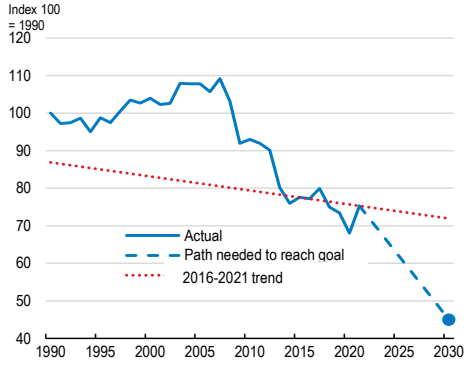
programme that should be complemented with rigorous quality control for training providers. This includes introducing a national-level certification scheme for training providers and the expansion of existing programmes that make payment to training providers conditional on recipients durably finding employment.

Accelerating emissions reductions

The authorities aim for net zero greenhouse gas emissions by 2050. The economy's low energy intensity and abundant solar resources make Italy well placed to achieve the climate transition. But a further strengthening of existing measures and additional policies are needed to accelerate the reduction of emissions and adapt to climate change.

Significant progress in emissions reduction was made in the wake of the global economic crisis of 2008-09. The pace of emissions reduction has slowed over the past decade as growth has recovered and new policy action has slowed. Reaching the intermediate target of a 55% emissions reduction by 2030 (relative to 1990) will require a significant increase in the pace of emissions reduction. Enshrining the 2050 net-zero target in law and setting up an independent climate council for policy evaluation and advice could help strengthen government accountability.

Figure 3. Large emission reductions are needed



Source: OECD Greenhouse Gas Emissions dataset.

StatLink https://stat.link/8yaiem

The expansion of renewable electricity continues to be hampered by complex permitting processes despite recent streamlining. Fully unlocking the potential of renewables will require defining the criteria for the identification of suitable areas for renewable power plants, raising the capacity ceiling for simplified permitting procedures, and swiftly implementing key investments to enhance the transmission grid.

Improving public transport and reducing the number of highly polluting cars would reduce emissions from the transport sector. Transport could be further decarbonised by investing in the railway network, reducing the favourable tax treatment of diesel over gasoline and introducing financial incentives for the scrapping of old cars, irrespective of new car purchases. Electric vehicle (EV) use could be promoted by ramping up the deployment of publicly available electric charging stations, phasing out purchase subsidies for internal combustion engine cars and refocusing support on entry-level EVs, as well as aligning taxes on car sales, registration and ownership to emissions.

Retrofitting Italy's old building stock is crucial to decarbonise. Cost inefficient and regressive schemes that promote investment in energy efficiency renovations have been reformed but may be insufficient to induce retrofitting by low-income households with low tax bills. The current schemes should be complemented with a mix of subsidised long-term loans and grants, while subsidies for the installation of gas-powered boilers should be phased out. Regulatory measures or higher taxes for the rental of energy-inefficient properties would encourage energy efficiency renovations.

Approving the National Climate Adaptation Plan would equip Italy with a coherent adaption framework. Necessary investments are underway and appropriate funding will be key to sustainably mitigate the risk of flooding and landslides.

MAIN FINDINGS	KEY RECOMMENDATIONS
Supporting growth while bringing debt on a more prudent path	
GDP growth will gradually pick up over 2024-25. Public debt is on an upward trajectory at 2024 policies, limiting fiscal policy space	Steadily consolidate the public finances starting in 2025 to put debt on a more prudent path.
Delays in the implementation of public investment projects under the National Recovery and Resilience Plan (NRRP) risk reducing growth. The authorities have taken action to speed up implementation.	Re-focus the NRRP on large and centrally managed investment projects that can be delivered as foreseen by the revised NRRP.
Fiscal consolidation will require measures to limit the growth of public spending and enhance its efficiency over the coming years.	Introduce a solidarity contribution for high pensions that are not due to high contributions. Make the fiscal savings targets of the forthcoming spending reviews more ambitious.
The share of labour taxes in total revenue is higher than in OECD peers, while VAT collected and inheritance taxes are lower. A significant share of revenues is lost to tax evasion. The income tax base is eroded by costly tax expenditures. A recent enabling law foresees a comprehensive tax reform.	Shift taxes from labour to property and inheritance, while ensuring that revenue is maintained or increases. Update the property tax base calculations, taking into account distributional impacts. Continue to tackle tax evasion, including by continuing to promote the use of digital payments and reversing the increase in the ceiling on cash transactions. Phase out costly tax expenditures that lack economic or distributional justification, including, for instance, by limiting the coverage of the dependent spouse deduction.
Lifting potential growth and making it more inclusive	
The efficiency of the judicial system is weak, contributing to low productivity growth by weakening private investment and firm growth.	Continue strengthening the links between judges' performance, career progression and pay, and ensure that performance evaluation is thoroughly implemented.
Productivity growth is particularly weak in services, partly reflecting regulations that stifle competition, especially in professional services.	Reduce the scope of "fair compensation" rules in professional services.
Low tertiary education enrolment and graduation rates hold back innovation and digitalisation.	Continue to expand technical tertiary schools (ITS Academy).
Employment rates are low, partly due to weak financial incentives for social benefit recipients, and poverty is above the OECD average.	Make the withdrawal of benefits under the Adi and Sfl programmes more gradual in case of taking up employment. Expand access to the new social assistance benefit (Adi), including for people with very weak labour market prospects.
Labour market participation of women is among the lowest in the OECD.	Significantly expand coverage of early childhood education. Incentivise paternity leave by introducing a "father quota" or increasing the number of "bonus months" for leave taken by fathers.
Perceived corruption has declined markedly since the creation of the independent anti-corruption agency in 2014 but remains an issue.	Mandate the mobility of public servants within their administration, including local administrations.
Decarbonising the economy	
Monitoring of progress in climate change mitigation policy action and outcomes is a priority.	Set up an independent climate council for policy evaluation and advice.
Effective carbon tax rates differ widely across sectors and types of fuels, leading to large differences in abatement costs across sectors.	Follow up on plans to gradually raise excise taxes on fossil fuels when they are low, including by removing exemptions and rebates.
The ongoing "suitable areas reform" for the construction of new renewable energy power plants could speed up permitting, which, despite some recent streamlining, is still slow and complex.	Increase the ceiling below which installations in suitable areas can be authorised through the 'simplified enabling procedure' and maintain the environmental impact assessment exemption for low-capacity installations in suitable areas beyond July 2024.
The per capita car ownership rate is the second highest in the EU and a large share of cars is old and highly polluting.	Offer financial incentives for the scrapping of old cars, irrespective of new car purchases. Continue strengthening public transport and regional train networks.
The penetration of electric vehicles (EVs) is low, and a large share of EV purchase subsidies is unused.	Refocus car purchase support towards entry-level EVs and phase out subsidies for cars with internal combustion engines.
The regressive and cost-inefficient tax incentive system for energy efficiency home improvements has been reformed but may be insufficient to induce retrofitting by households with low tax bills.	Complement tax incentives for building retrofitting with targeted subsidised long-term loans and grants.
Italy is highly exposed to the consequences of climate change, as highlighted by recent extreme weather events. Necessary investments are underway.	Ensure appropriate funding for measures to reduce the risk of flooding and landslides.

1. Key policy insights

Cyrille Schwellnus

The Italian economy has weathered recent crises well, but growth is now slowing amid tightening financial conditions. Public debt is among the highest in the OECD, limiting the space for continued fiscal policy support. With substantial fiscal pressures related to population ageing, debt servicing costs and the climate transition on the horizon, tax and spending reforms are needed to put public debt on a more prudent path. The ambitious package of structural reforms and public investment in the National Recovery and Resilience Plan is a major opportunity to reinvigorate growth and make fiscal pressures more manageable. This will require consolidating and expanding major recent reforms in the areas of civil justice, public administration and competition; equipping the workforce with the skills needed to succeed in the digital and green transitions; and raising labour market participation, especially of women.

1.1. Introduction

The Italian economy has proved resilient to recent crises, with relatively robust domestic demand, significant gains in competitiveness and unemployment at historically low levels. However, financial conditions have tightened and public debt remains among the highest in the OECD, limiting the space for continued fiscal policy support. The phase-out of energy crisis support measures will improve the fiscal balance 2024 but more fiscal consolidation will be needed to bring the public finances on a more prudent path. The revised National Recovery and Resilience Plan (NRRP) – which is largely financed by Next Generation EU (NGEU) funds and foresees an ambitious package of structural reforms as well as a major ramp-up in public investment – will support the economy over the coming years. Recently legislated reforms include major civil justice, public administration and competition reforms that will improve the framework conditions for private investment and growth, and public investment is increasing.

Looking ahead, Italy's main challenges are to reinvigorate economic growth and accelerate the climate transition. Potential output growth is around 1% and will decline further due to rapid population ageing unless productivity growth is lifted and labour market participation is enhanced. The transition to an innovation-led high-productivity growth model has been hindered by inefficiencies in the justice system and the public administration, weak competition in services, sub-par workforce skills and a rigid labour market. Italy's per capita carbon emissions are below the OECD average, but progress in emissions reduction has slowed over the past decade, partly due to the slow adoption of renewable energies.

Against this background, the main messages of the Survey are:

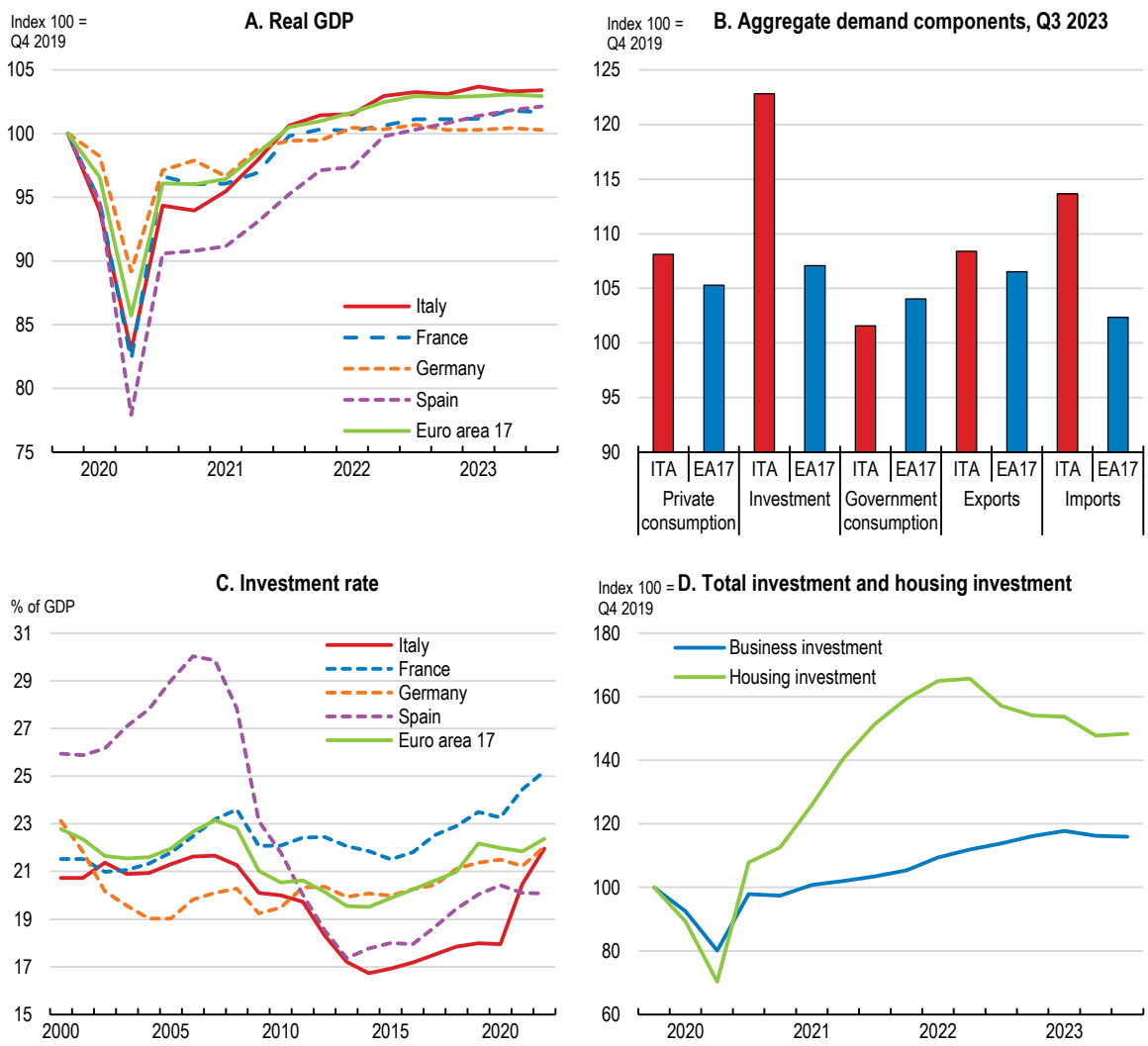
- Public debt is high and on an upward trajectory under existing tax and spending policies, accounting for planned changes over 2024-25, with rising ageing and debt servicing costs putting pressure on the public finances. Public debt should be put on a more prudent path by steadily consolidating the public finances over a number of years using a mix of revenue and spending measures. Decisively tackling tax evasion, while shifting the burden of taxation from labour to property and consumption, will be essential. Raising the ambition of spending reviews and reducing the generosity of pensions for higher-income households could limit spending growth while maintaining adequate public services and social protection.
- Economic growth is facing headwinds from poor productivity growth and rapid population ageing. Productivity growth, which has been stagnant over the past decade, could be reinvigorated by enhancing competition in services, continuing to improve tertiary education, and swiftly implementing the public investment projects in the NRRP. Bringing more women into the labour market and strengthening work incentives for social benefit recipients would support employment growth in the face of a shrinking working-age population.
- The climate transition is underway, but a strengthening of existing policy measures and additional policies are needed to meet emissions reduction targets. Excise taxes could be better aligned with the carbon content of consumption to strengthen incentives for emissions reductions, as foreseen by the ongoing tax reform. Authorisation procedures for renewable energy investments and the expansion of the electricity grid could be simplified to reduce the dependence on natural gas and accelerate the electrification of the economy. Continuing the strengthening of public transport and the regional train network, as well as updating the system of car purchase subsidies and scrapping policies, would help reduce vehicle emissions. Further reforming the system of tax incentives for energy efficiency building renovations would improve cost efficiency.

1.2. GDP growth is slowing

1.2.1. The recovery from the pandemic was robust but activity is weakening

Before the energy crisis, the economy was recovering strongly, with large fiscal support and gains in competitiveness helping real GDP to rebound to its pre-pandemic level by mid-2021. Despite the sharp slowdown in activity since the second half of 2022, the level of real GDP relative to the last quarter of 2019 is similar to the euro area average (Figure 1.1, Panel A), reflecting particularly strong performance of investment (Figure 1.1, Panel B). The investment rate is back to the euro area average after a decade well below it (Figure 1.1, Panel C) and exports have performed well.

Figure 1.1. Investment has driven growth but is slowing



Note: EA17 denotes OECD euro area countries.
Source: OECD Economic Outlook database.

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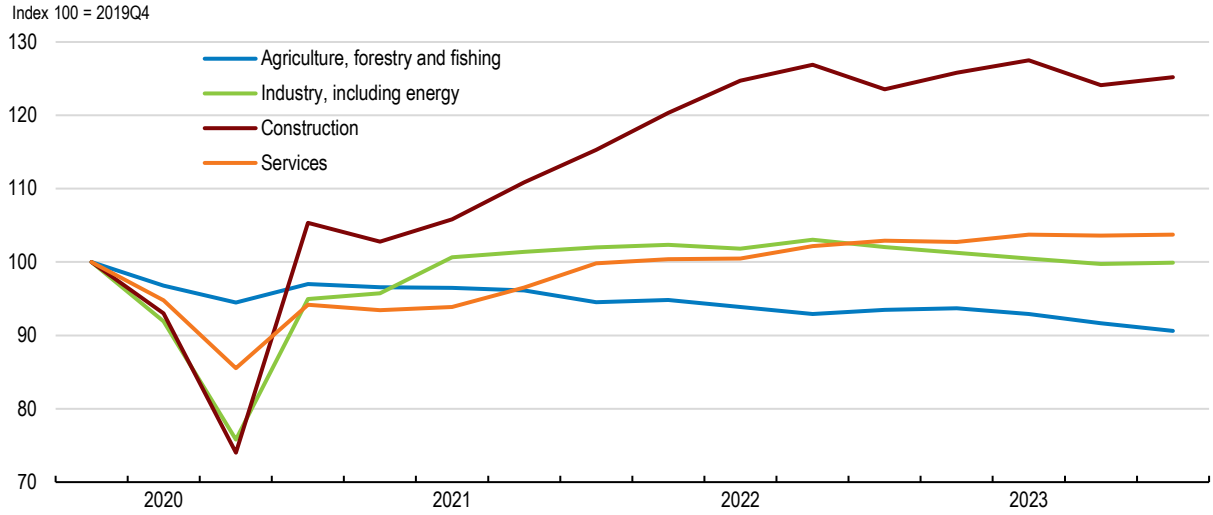
The recovery in investment has partly been driven by generous tax incentives for housing investment. The so-called *superbonus* tax credit for energy efficiency home improvements that was introduced in 2020 amounted to 110% of expenditure (subject to caps related to the nature of the renovation project) and was untargeted in terms of household income. Before the tightening of rules in early 2023, construction firms

could sell the tax credits on the secondary market – mainly to banks – as soon as the renovation contract was signed. This gave them instant access to liquidity and allowed them to offer 100% rebates, implying an overly generous tax incentive by making the renovation works cost-free for clients. However, the superbonus alone cannot explain the strong performance of investment. Assuming that around one-half of the investment directly financed by the superbonus would otherwise not have taken place as suggested by preliminary studies conducted by the Bank of Italy (2023c), the tax credit boosted cumulated post-pandemic investment growth by about 10 percentage points. Given that cumulated post-pandemic investment growth exceeded 20% (Figure 1.1, Panel B), this implies that, even without the tax credit, investment growth would have been well above the rest of the euro area, where investment growth over the period was negative. This suggests that investment may also have been supported by structural improvements in the business environment and tax incentives for capital equipment related to the digital and green transitions (*Transizione 4.0*; Bratta et al., 2022).

High inflation and the increase in borrowing costs in the wake of the energy crisis led to a slowdown in activity in the second half of 2022, but services activity has held up relatively well. Rapid increases in imported energy prices triggered wider price pressures, eroding real household income. Tightening of euro area monetary policy raised borrowing costs for households and businesses, further squeezing household income available for consumption and curtailing private investment. Manufacturing and construction were initially hit hard, but services continued to grow robustly despite these headwinds (Figure 1.2), as vigorous fiscal support to households and firms helped cushion the effect of the energy crisis. Activity in the services sector was also supported by the rebound in tourism after the pandemic and the resilience of private consumption, which was, in turn, partly explained by the robustness of household wealth. Excess household savings accumulated during the pandemic still amount to about 7½ percent of GDP and the softening of the housing market has been moderate despite higher interest rates.

Figure 1.2. Services growth has held up well

Real gross value added by industry



Source: OECD National Accounts Database.

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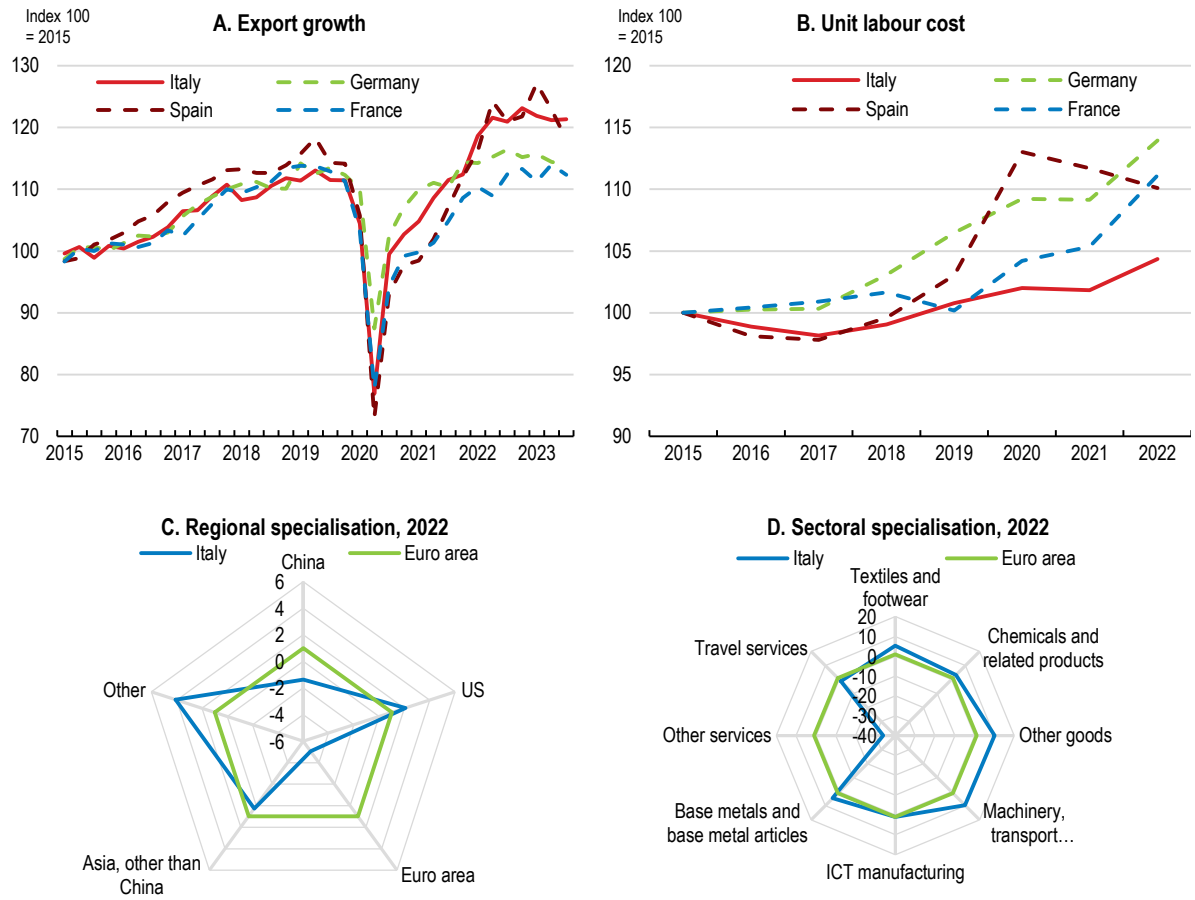
1.2.2. Competitiveness has improved

Exports have performed well compared with other large euro area countries, mainly reflecting gains in market shares on the back of low growth in unit labour costs (Figure 1.3). Italy's geographical and sectoral specialisation shielded it somewhat from global supply chain disruptions in the wake of the COVID-19 pandemic. Compared with other euro area countries, the geographical structure of Italy's exports is skewed towards Türkiye, United Kingdom, United States and Switzerland, which were more resilient to the COVID-

19 pandemic than China (Figure 1.3). Italy is also less specialised in energy-intensive industries and high-tech industries that were hit by the energy crisis and supply chain disruptions (Haramboure et al., 2023; Giglioli and Giordano, 2023). But good export performance is also explained by low growth in unit labour costs relative to its main competitors, which has allowed Italian exporters gain market shares. Low growth in unit labour costs, in turn, has resulted from subdued wage growth rather than high productivity growth. Going forward, boosting productivity, while keeping wage growth aligned with productivity growth, will be essential to further enhance export competitiveness and living standards.

Figure 1.3. Exports have been resilient as relative unit labour costs have declined



Note: Panel B: Unit labour cost in the non-agriculture business sector excluding real estate; Panel C: Percentage point deviation of export shares from the euro area average; Panel D: Percentage point deviation of export shares from the OECD average.
Source: OECD Economic Outlook database; OECD International Trade database.

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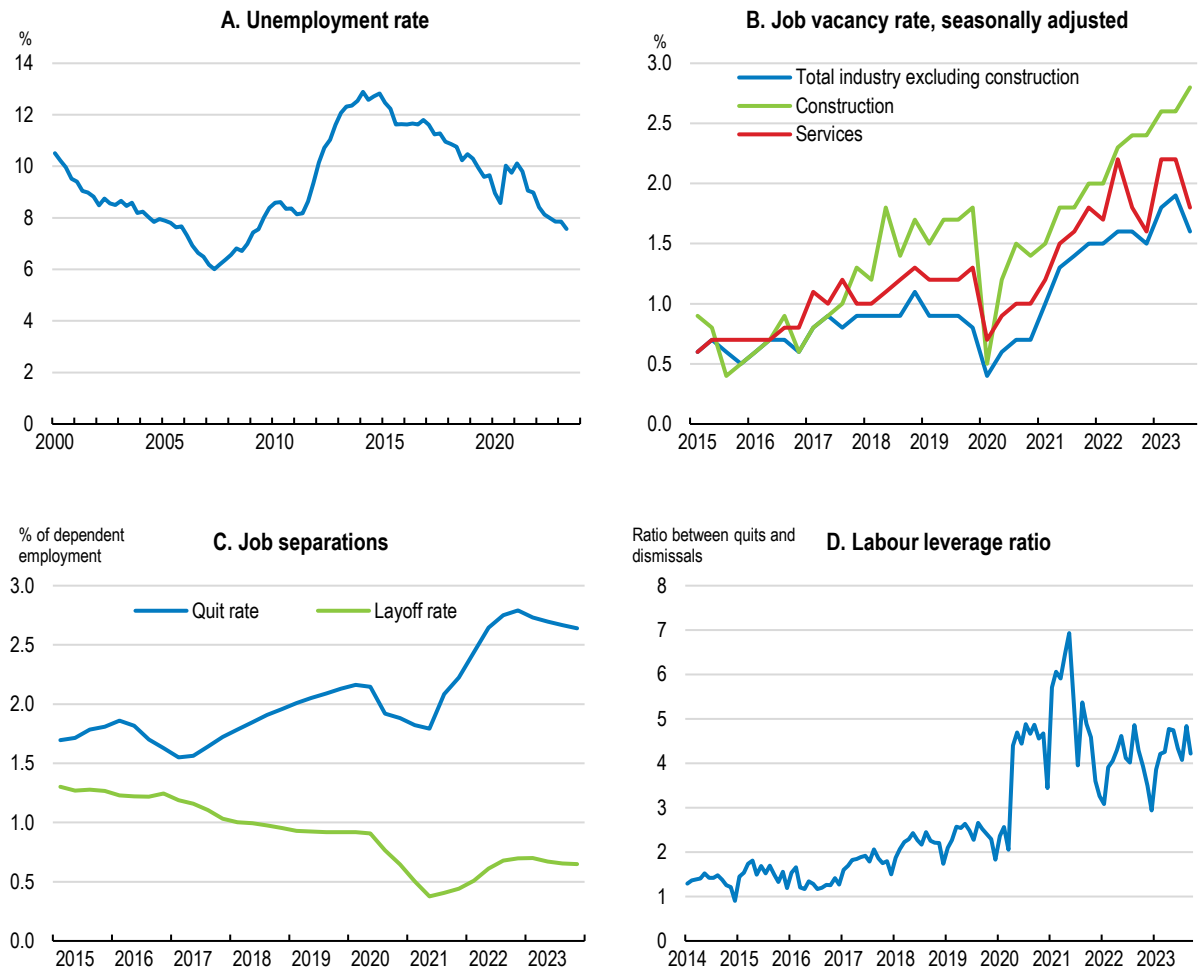
1.2.3. Unemployment is low by historical standards

Despite the slowdown in economic activity, the unemployment rate is close to its lowest level over the past 20 years (Figure 1.4). The job vacancy rate is above its pre-pandemic level and an increasing share of businesses has difficulties to find qualified staff. This partly reflects population ageing, with the working-age population having declined by about 2% over the past decade, but also occupational mismatches. Background analysis conducted for this Survey based on data from the global jobs site Indeed suggests that occupational mismatches are substantial. About one-quarter of labour supply, as measured by job seekers' clicks, would have to be re-allocated to perfectly match the distribution of labour demand, as

measured by businesses' job postings (Box 1.1) The level of occupational mismatch estimated from *Indeed* data may be somewhat over-estimated due to differences in representativeness of postings and clicks across occupations. However, the evidence for significant occupational mismatches is broadly consistent with past OECD analyses documenting large skill mismatches in the Italian labour market (Adalet McGowan and Andrews, 2015). Estimated changes in mismatch in the wake of the pandemic, which are less affected by representativeness issues, suggest that the Italian labour market has weathered substantial reallocation of jobs in the wake of the pandemic well, with current mismatches slightly below the pre-pandemic level.

Figure 1.4. The labour market has performed strongly



Note: Panel B: The job vacancy rate is calculated as the ratio of job vacancies to the sum total employment and job vacancies. Panel C: The quit and layoff rates are calculated as the ratios of quits and layoffs to total employment. Panel D: The labour leverage ratio is calculated as the ratio of quits to layoffs.
Source: OECD Economic Outlook database; Istat.

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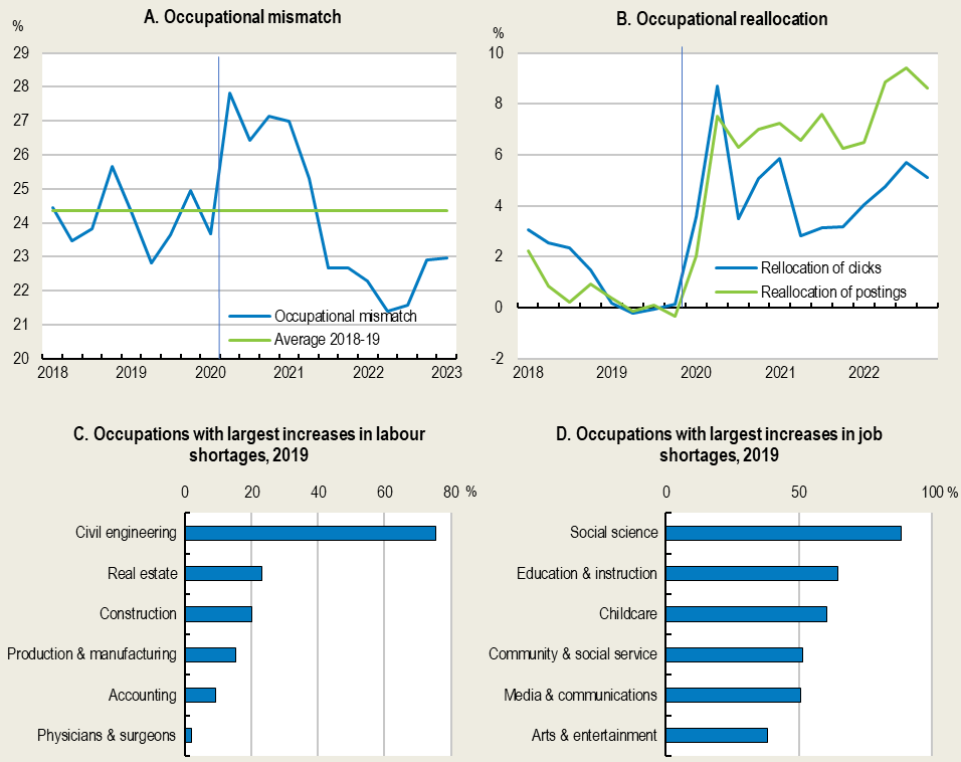
Box 1.1. Occupational mismatch based online job postings and clicks

A near-real time indicator of occupational mismatches between labour demand and labour supply can be constructed by using proprietary data on businesses' online job postings and job seekers' clicks from *Indeed*, the world's largest jobs site. The indicator is based on the methodology proposed by Lazear and Spletzer (2012) and measures the dissimilarity in the distribution of job postings and clicks across occupations. It can be interpreted as the share of clicks that would have to be reallocated to perfectly match the distribution of postings. Analogously, the dissimilarity between the distribution of clicks in a given period relative to a base period can be interpreted as the share of clicks that would have to be reallocated to perfectly match its initial distribution, that is a measure of reallocation of clicks.

Figure 1.5. Occupational mismatch is substantial and has increased in some sectors



Note: Mismatch in Panel A is defined as $mismatch_t = 1/2 \cdot \sum_i |c_{it}/C_t - p_{it}/P_t|$, where c_{it} is the number of clicks in occupation *i* at month *t*; C_t is the overall number of clicks in period *t*; p_{it} is the number of postings in occupation *i* at month *t*; and P_t is the overall number of postings in month *t*. The mismatch indicator measures the dissimilarity of clicks and postings. Analogous dissimilarity indicators can be constructed separately for clicks and postings by comparing the distribution of clicks in month *t* with the distribution of clicks before the pandemic. These indicators can be interpreted as measures of occupational reallocation (Panel B). Panel C shows growth rates of postings shares minus growth rates of clicks shares by occupation since the end of 2019, and Panel D shows growth rates of clicks shares minus growth rates of postings shares (Panel D).
Source: Indeed.

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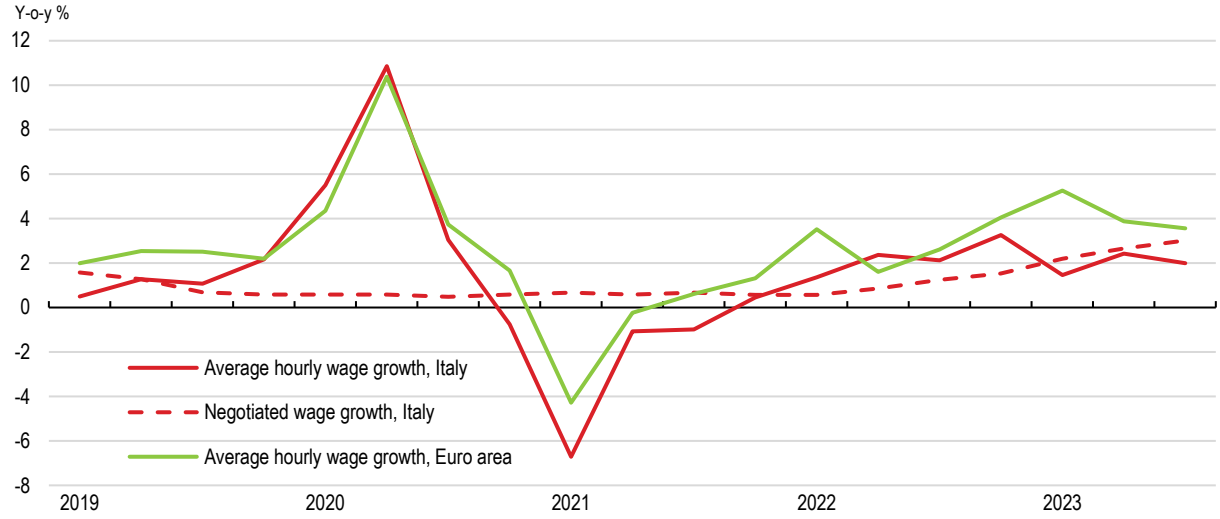
The analysis suggests that around one-quarter of clicks would have to be reallocated to perfectly match the distribution of job postings across occupations (Figure 1.5, Panel A). To some extent, the level of mismatch may be influenced by differences in representativeness of job postings and clicks across occupations on *Indeed*. Changes in mismatch should be less affected by representativeness issues and suggest that aggregate occupational mismatches are broadly back to pre-pandemic levels despite

significant and durable reallocation of clicks and postings in the wake of the COVID-19 pandemic (Figure 1.5, Panel B). Increased mismatch in some occupations was offset by decreased mismatch in others. This is consistent with evidence from online job postings in the United States (Sinclair, 2022) and labour force surveys in the United Kingdom and the United States (Pizinelli and Shibata, 2023). The sectors where postings growth significantly outstripped clicks growth since the start of the pandemic (increased labour shortages) include civil engineering, real estate, construction and manufacturing (Figure 1.5, Panel C). This is broadly in line with Italian business surveys suggesting that labour shortages are particularly pronounced for specialised ICT staff, health and social workers, as well as skilled construction workers (Unioncamere-Anpal, 2023). The sectors where clicks growth significantly outstripped postings growth (increased jobs shortages) include education, childcare and community and social services (Figure 1.5, Panel D).

Even though overall occupational mismatch has slightly declined in the wake of the pandemic, there are labour shortages in a number of sectors that will be essential for the implementation of the National Recovery and Resilience Plan (NRRP), including civil engineering and construction (Figure 1.5, Panel C). Consequently, many businesses are holding on to their existing staff, with the layoff rate well below the pre-pandemic level (Figure 1.4, Panel C). The ratio of quits to layoffs – which can be viewed as a measure of worker leverage (Sojourner and DiVito, 2022) – is now well above its pre-pandemic level. In this context, the authorities' decision to raise the number of work permits for non-EU workers from about 70,000 in 2022 to about 165,000 in 2025 is a welcome step and may ease labour shortages, including in construction, which will be critical to contain costs and limit delays in NRRP projects. However, in 2023, employers filed about four times as many pre-applications for work permits than the quota foreseen for 2024, suggesting that increased immigration quotas will only partially address labour shortages. Raising labour market participation, especially of young people and women, and strengthening active labour market policies to achieve a better matching of workers and jobs would further contribute to easing labour shortages (see section 0).

Despite the strong labour market and high inflation, the pick-up in wage growth has been modest. Average wage growth in the first quarter of 2023 was around 2%, but negotiated wage growth has picked up to 3% in the third quarter (Figure 1.6). Collective wage negotiations are anchored on expected inflation net of imported energy over the next year. The increase in inflation net of imported energy – which is estimated by the national statistical institute in June of each year – was not fully anticipated in 2022 but expected inflation net of imported energy estimated in June 2023 came in at 6.6% for 2023 and 2.9% for 2024. Even though negotiated wage growth may thus pick up substantially, it is unlikely that it will reach 6.6%. In case unions and employer associations cannot reach an agreement, the non-renewal of a collective agreement would imply zero nominal wage growth, giving employers significant bargaining power (Garnero, 2023).

Figure 1.6. Wage growth has so far been subdued



Source: OECD Analytical database, Istat.

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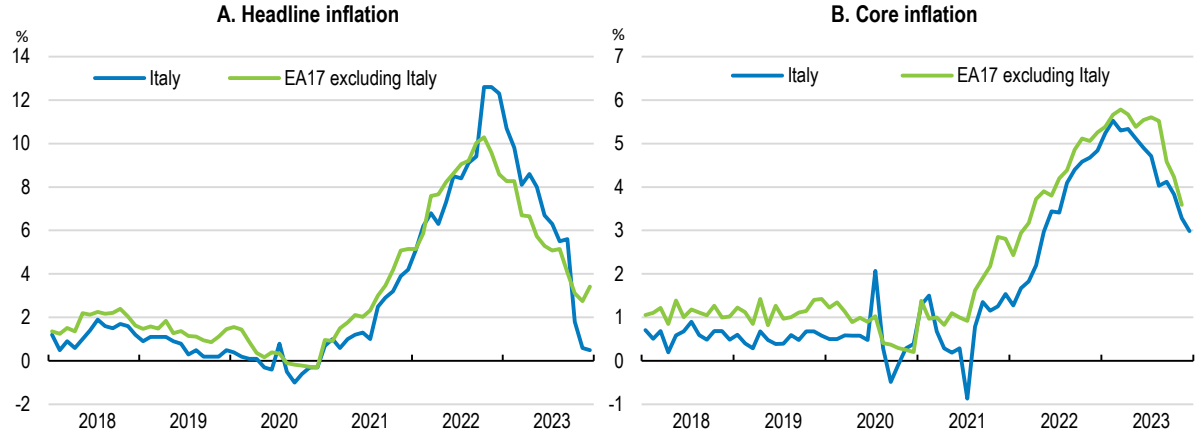
1.2.4. The decline in inflation has been quick

Headline inflation surged in late 2022 and gradually fed into the broader economy. The surge of headline inflation was initially largely driven by energy price inflation, which rose by significantly more than in the rest of the euro area, mainly due to Italy's high share of gas in the energy mix (Figure 1.7). Headline inflation has come down rapidly from 12½ percent in November 2022 to 0.5% in December 2023. Core inflation and services inflation – which can both be viewed as measures of underlying price pressures – were around 3-3½ percent. Manufacturing and services businesses gradually passed on increases in the costs of energy-intensive inputs to consumers, with the burst in core inflation in late 2022 and early 2023 mainly being explained by the transmission of higher energy input prices to higher output prices (Box 1.2).

Figure 1.7. Headline inflation has come down but core inflation remains elevated



Note: The aggregate for the euro area excludes Italy.
Source: OECD.

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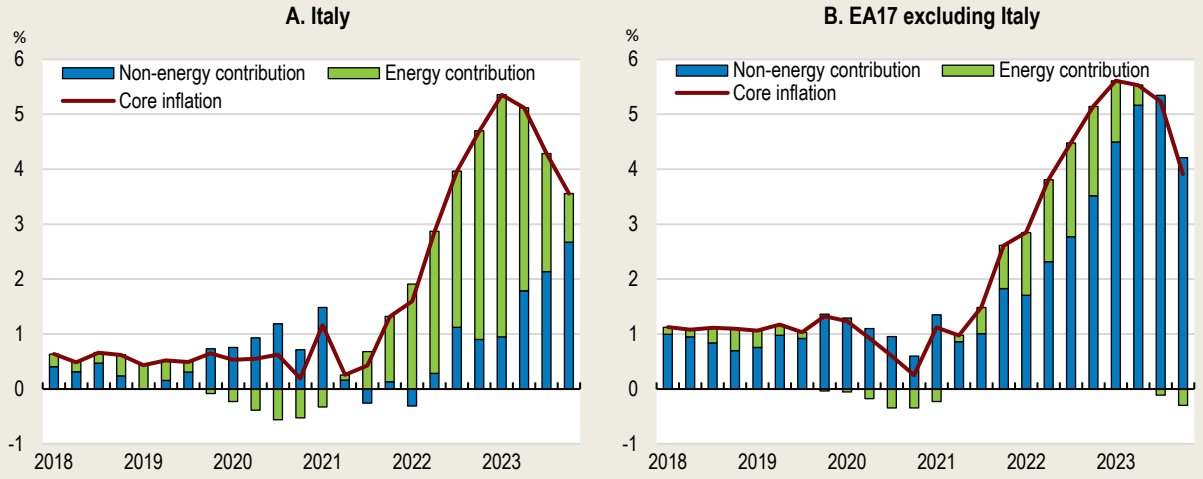
There is limited pressure from higher unit profits on core inflation, but unit labour cost inflation is picking up. While unit profit inflation increased sharply in 2022 and remained high in the first half of 2023, the increase mainly reflected developments in the energy ("mining & utilities"), financial and agricultural sectors, which are outside the scope of core inflation and thus have no direct bearing on it (Figure 1.9, Panel A). The energy sector comprises renewable energy producers that were not exposed to higher prices for imported energy, as well as oil, gas and electricity companies that had locked in low energy prices through long-term contracts. Across sectors, unit profit growth tended to be lower in Italy than in the rest of the euro area, except for the energy and financial sectors (Figure 1.9, Panel C). Average unit labour cost inflation remained muted at around 2% in 2022 but has picked up to close to 5% in the third quarter of 2023 (Figure 1.9, Panel B).

Box 1.2. Accounting for the transmission of higher energy prices to core inflation

Core inflation is determined by changes in intermediate input costs, including energy and energy-intensive inputs, wages, and profit margins. Background analysis conducted for this Survey uses information on the energy intensity of production across industries from input-output tables to statistically decompose core inflation into an energy component and a residual component attributable to wages and profit margins. Assuming full pass-through over a period of 6 months, the results suggest that the burst of core inflation in Italy was largely been driven by energy price inflation (Figure 1.8). Strikingly, the contribution of energy price inflation to core inflation is significantly larger in Italy than in the rest of the euro area, where energy price inflation was lower. These results are broadly in line with results from econometric approaches that estimate the response of core inflation to energy price shocks (Corsello and Tagliabracci, 2023).

Figure 1.8. The burst in core inflation mainly reflected higher costs of energy inputs



Note: The estimates account for higher direct energy costs (electricity, gas and fuels) and higher indirect energy costs embodied in energy-intensive intermediate inputs. The estimates assume energy inputs are non-substitutable in the short term and that higher energy costs are fully passed on to consumer prices over a period of 6 months. Alternative assumptions on the duration of pass-through do not fundamentally change the results. The figure refers to quarterly averages.
Source: OECD calculations.

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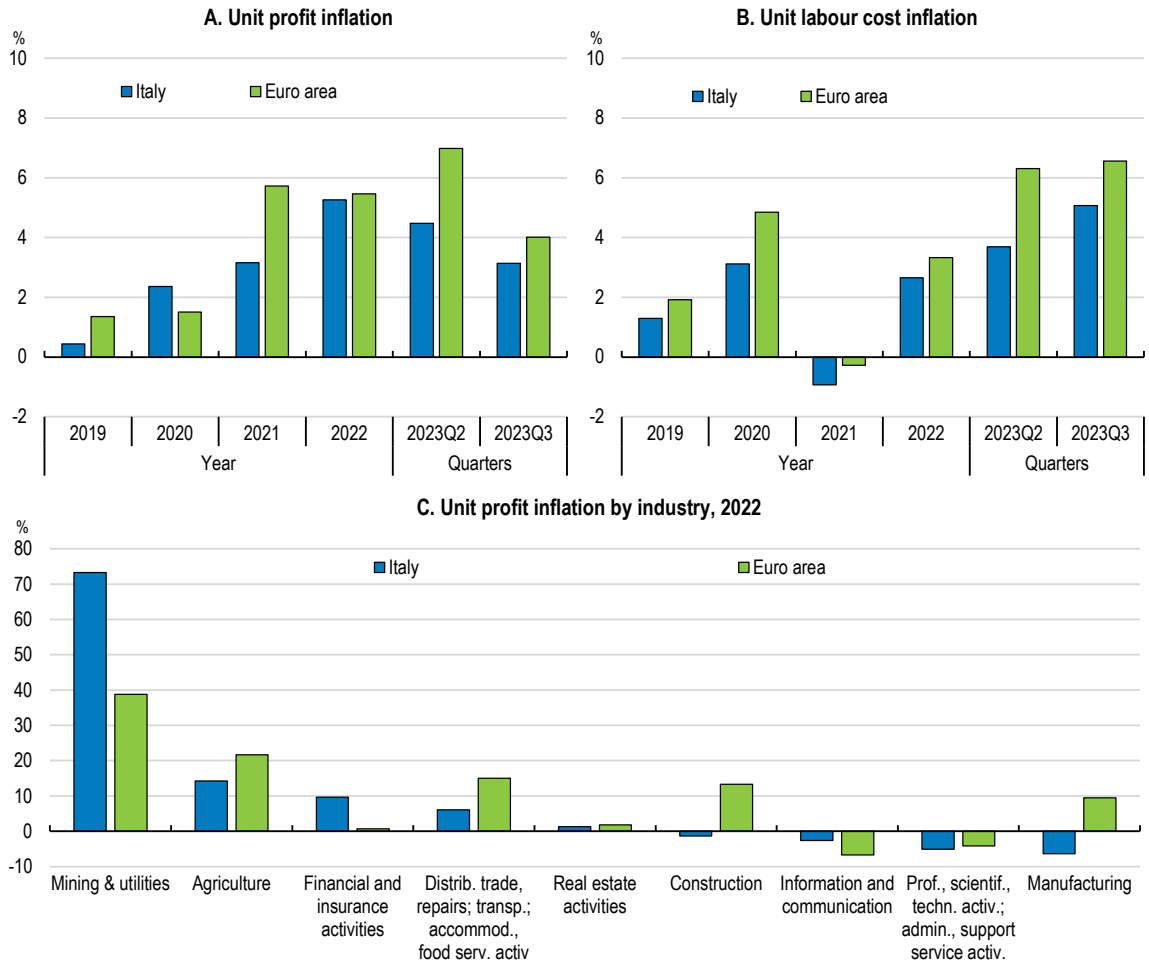
Figure 1.9. Unit profits are moderating, while unit labour costs are picking up



Note: Unit profits are defined as gross profits per unit of output and unit labour costs as labour compensation per unit of output.
Source: OECD National Accounts Database.

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1.2.5. The economy is facing several headwinds

Real GDP is expected to grow 0.7% in 2024, before picking up modestly to 1.2% in 2025 (Table 1.1). Low wage growth and high inflation have eroded real incomes, financial conditions have tightened, and most of the exceptional fiscal support related to the COVID-19 and energy crises has been withdrawn, weighing on private consumption and investment. The projected decline of inflation, targeted income tax cuts and the pick-up in public investment related to Next Generation EU (NGEU) funds will only partly offset these headwinds. Inflation is expected to come down gradually over 2024-25 on the back of fading base effects from the energy price shock of late 2022 and moderate nominal wage growth. Overall, tight financial conditions and a broadly neutral fiscal policy in 2024 should lead to a gradual easing of inflationary pressures, while growth will remain modest.

Risks to growth are tilted to the downside. The main downside risk is a larger-than-expected tightening of financial conditions, which could arise from tighter euro area monetary policy or a higher premium on Italian government securities. Moreover, Italy is exposed to a range of longer-term vulnerabilities that could lead to major changes in the outlook (Table 1.2). On the upside, a more rapid fall in interest rates as euro area inflation declines could boost domestic demand and growth in 2024 and 2025.

Table 1.1. Growth and inflation are projected to ease

	2020	2021	2022	2023	2024	2025
	Current prices EUR Billion	Percentage changes, volume (2015 prices)				
GDP at market prices	1 659.8	8.3	3.9	0.7	0.7	1.2
Private consumption	963.9	5.3	5.0	1.2	0.7	1.0
Government consumption	343.5	1.5	0.7	-0.2	-0.4	-0.2
Gross fixed capital formation	298.0	20.7	10.1	0.8	0.5	1.6
Final domestic demand	1 605.4	7.3	5.2	0.8	0.4	0.9
Stockbuilding[1]	-4.4	1.0	-0.6	0.1	0.1	0.0
Total domestic demand	1 601.0	8.4	4.5	0.9	0.5	0.9
Exports of goods and services	485.8	14.0	10.7	0.4	1.3	2.0
Imports of goods and services	427.0	15.2	13.1	1.0	0.9	1.2
Net exports [1]	58.9	0.2	-0.5	-0.3	0.2	0.4
Memorandum items						
GDP deflator	_	1.3	3.0	4.2	2.9	2.6
Harmonised index of consumer prices	_	1.9	8.7	5.9	2.6	2.3
Harmonised index of core inflation[2]	_	0.8	3.3	4.5	3.1	2.5
Unemployment rate (% of labour force)	_	9.5	8.1	7.6	7.8	7.6
Household saving ratio net (% of disposables income)	_	8.1	1.8	-0.7	1.9	280
General government financial balance (% of GDP)	_	-8.8	-8.0	-5.4	-4.2	-3.6
General government primary financial balance (% of GDP)		-5.5	-4.0	-1.8	-0.3	0.4
General government gross debt (% of potential GDP)		172.9	148.5	148.2	148.3	147.4
General government debt, Maastricht definition[3](% of GDP)	_	147.2	141.6	141.4	141.4	140.5
Current account balance (% of GDP)	_	2.4	-1.5	-0.2	0.3	0.8

1. Contributions to changes in real GDP, actual amount in the first column.
2. Harmonised index of consumer prices excluding food, energy, alcohol and tobacco.
3. The Maastricht definition of general government debt includes only loans, debt securities, and currency and deposits, with debt at face value rather than market value.
Source: OECD

Table 1.2. Events that could entail major changes to the outlook

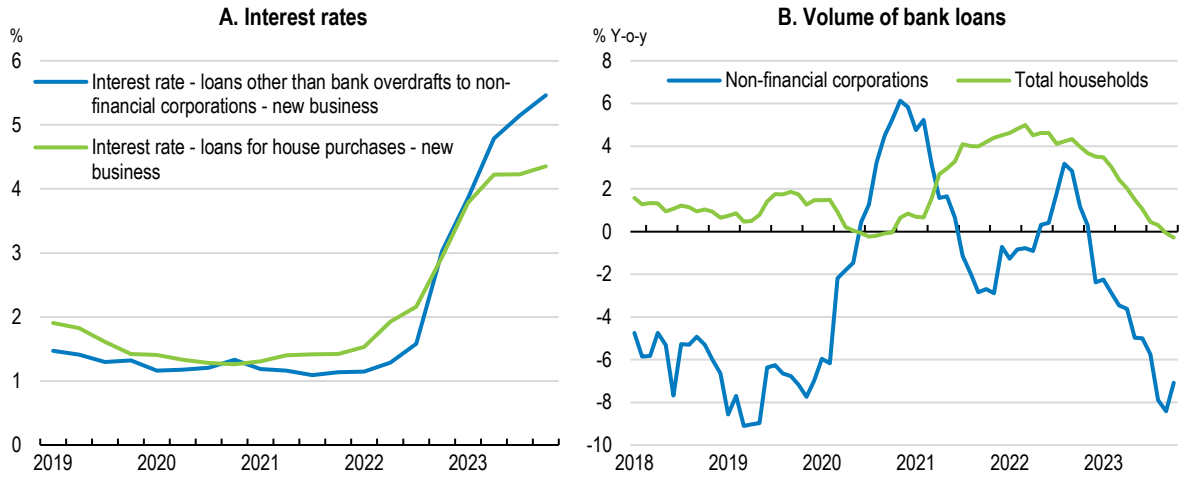
Shock	Likely impact	Policy response options
Delays in the implementation of public investment plans in the NRRP or implementation of projects with high cost-benefit ratios.	Partial implementation of growth-enhancing public investment projects would limit improvements in living standards and complicate the task of bringing the debt ratio on a more prudent path.	Implement the public investment plans in the NRRP by 2026 while conducting thorough cost-benefit analysis.
Higher risk aversion in capital markets	A durably wider interest rate spread between Italian and German government bonds would raise the government's debt servicing costs and could impact banks' balance sheets.	Gradually but sustainably consolidate the public finances from 2025 to maintain investors' trust and take a cautious approach to debt management.
Durably lower growth in the euro area due to higher energy prices and global trade tensions.	Lower euro area growth would reduce export growth, with knock-on effects on GDP growth, as the rest of the euro area remains the main destination of Italian exports.	Strengthen the competitiveness of Italian exports by fully implementing productivity-enhancing structural reforms and keeping real wage growth aligned with productivity growth.

1.3. The financial sector has held up well, but risks are rising

1.3.1. Borrowing costs for households and businesses are rising but appear manageable

As euro area monetary started to tighten in mid-2022, borrowing costs for households and businesses surged (Figure 1.10, Panel A). Bank lending growth slowed as lending standards tightened and credit demand declined, with annual loan growth to non-financial corporations starting to decline and loan growth to households moderating in the second half of 2022 (Figure 1.10, Panel B). Both corporate and household indebtedness are moderate compared with the OECD average, suggesting that the rise in borrowing costs should remain manageable. In particular, a major correction in the housing market is unlikely despite the rise in borrowing costs, as house price growth over the past decade has been among the lowest in the OECD and house prices relative to rental income are below their long-term averages.

Figure 1.10. Financial conditions are tightening



Note: Panel B shows annual growth rates.
Source: Bank of Italy Statistical Database, OECD Housing Prices.

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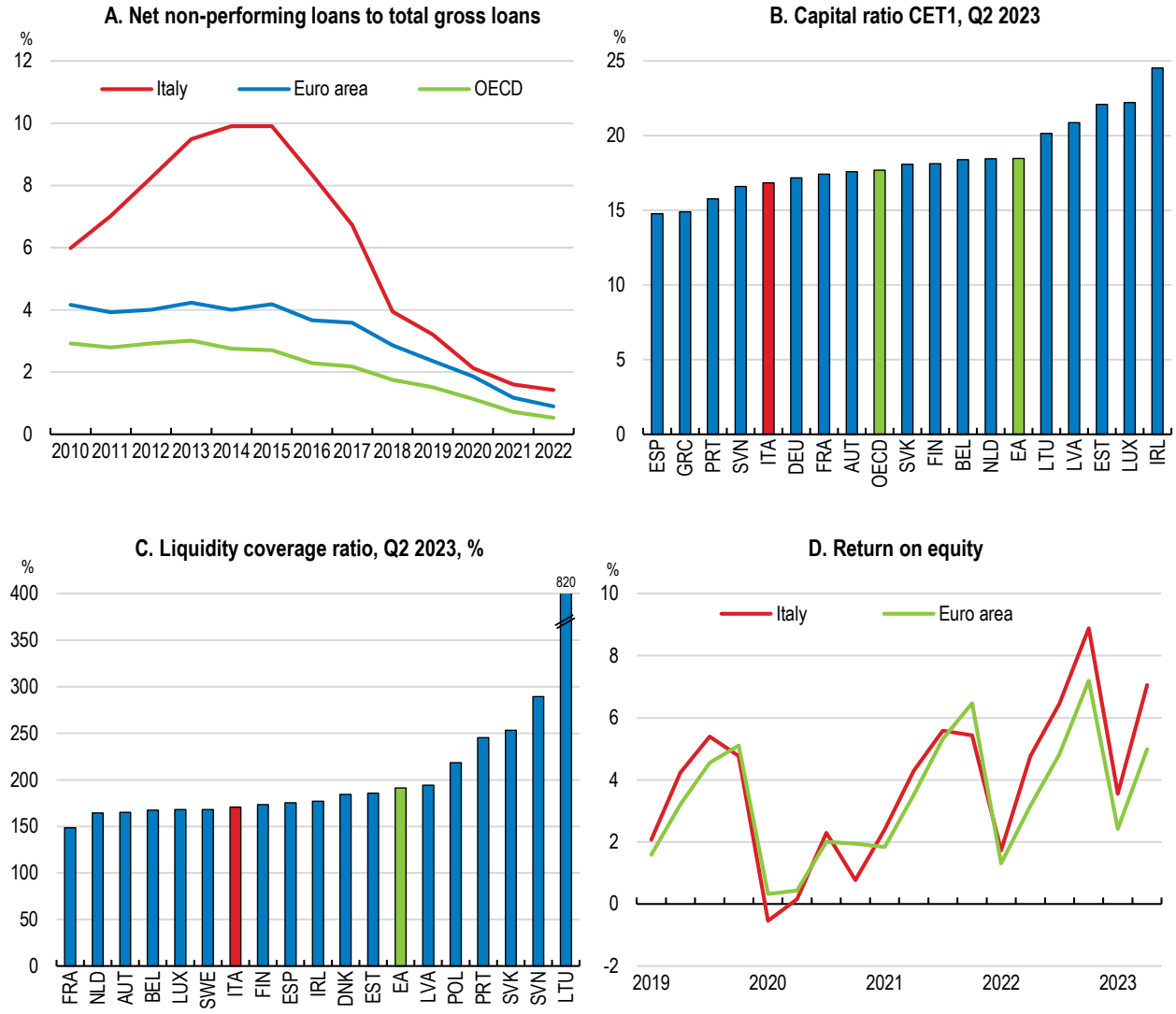
1.3.2. The strength of banks has improved, but funding costs are rising

The financial strength of banks has improved over the past decade. Non-performing loans (NPLs) have come down from more than 10% of total loans in 2015 to less than 2% in 2022 (Figure 1.11), partly due to large-scale securitisation of NPLs supported by government guarantees for senior loan tranches (OECD, 2021a). While the share of NPLs remains somewhat above the OECD average, it is now below the levels before the economic and financial crisis of 2008-09. More than half of the remaining NPL stock in Italy is made up of unlikely-to-pay (UTP) loans, a segment where sales and securitisation transactions tend to be more complex, since they relate to highly heterogeneous loans and may require further financial support to borrowers. Liquidity positions remain adequate and capital positions are close to the euro area average, partly reflecting prudential regulatory measures and robust profitability (Figure 1.11). Stress tests conducted by the European Banking Authority in 2023 suggest that most banks' capital positions under an adverse macroeconomic scenario would be similar to the euro area average, although some banks would be vulnerable to a prolonged downturn (European Banking Authority, 2023).

Figure 1.11. The financial strength of banks has improved



Note: Lithuania is excluded from the averages in Panel C.
Source: International Monetary Fund, European Central Bank.

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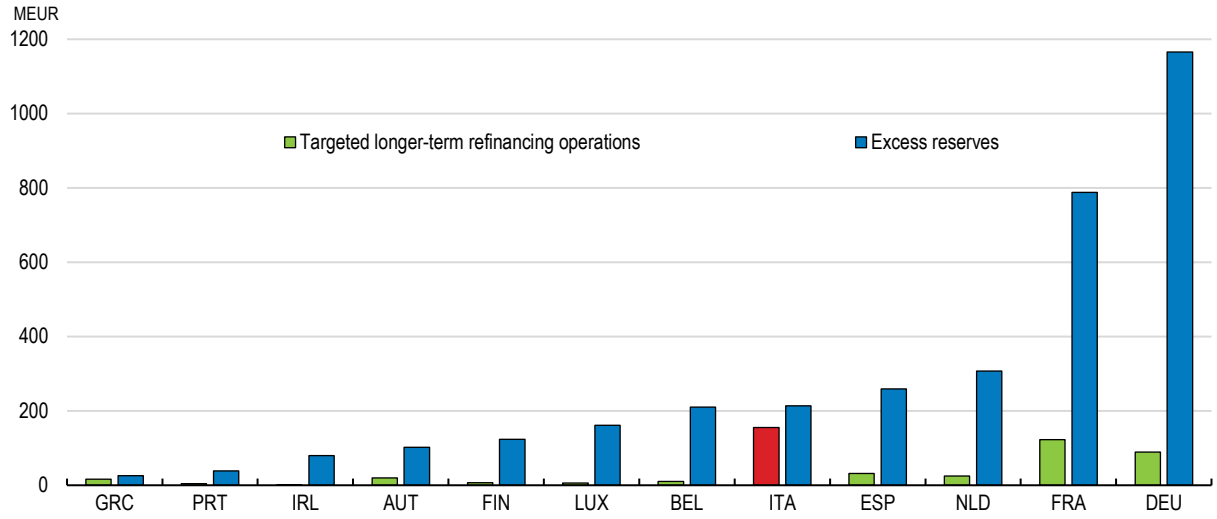
Bank profitability has been boosted by rising interest rates and widening net interest margins, but risks are rising. Going forward, the positive effect of rising interest rates on net interest margins and capital is likely to be offset by the tightening of financial conditions and the projected slowdown in economic activity, which will reduce lending growth. Despite strengthened capacities of Italian banks to select and manage credit risk, partly due to higher supervisory standards (Visco, 2023), credit risk could rise as some borrowers may find it more difficult to service their debts in a context or rising interest rates and slowing demand. This may particularly be the case in the construction sector, where the phasing out of the transferability of the superbonus tax credit to third parties in early 2023 will reduce liquidity and activity, although a pick-up in NRRP-related spending may limit the downturn. Developments in non-performing loans, including the unlikely-to-pay segment, should be closely monitored. The authorities should also continue to carefully monitor the performance of securitised non-performing loans. The performance of securitised non-performing loans has thus far been satisfactory (Bank of Italy, 2021), but pressures on borrowers are rising as financial conditions are tightening and the economy is slowing.

The phase-out of the ECB's Targeted Long-Term Refinancing Operations (TLTROs) over 2023-24 will require banks to tap costlier sources of funding, such as deposits or bonds. Some banks may be able to repay maturing TLTROs by reducing excess reserves, as in the banking sector as a whole excess reserves exceed TLTROs (Figure 1.12). But, according to estimates by the Bank of Italy (2023b), about half of Italian banks have insufficient reserves to repay TLTROs. This is unlikely to lead to liquidity issues since banks with high-quality collateral will be able to borrow from the ECB in the short term. A sizeable TLTRO repayment in June 2023 has not had any significant effect on banks' liquidity positions, mainly due to offsetting bond issuance. But over the medium term, banks will need to tap costlier sources of funding: this could reduce the return on equity by about 130 basis points on average (Bank of Italy, 2023b). Similar pressures on profitability may be experienced by banks that still have to issue instruments compliant with minimum requirements for own funds and eligible liabilities (MREL).

Figure 1.12. Excess reserves are lower than TLTRO funding



Note: Data refer to November 2023.
Source: European Central Bank.

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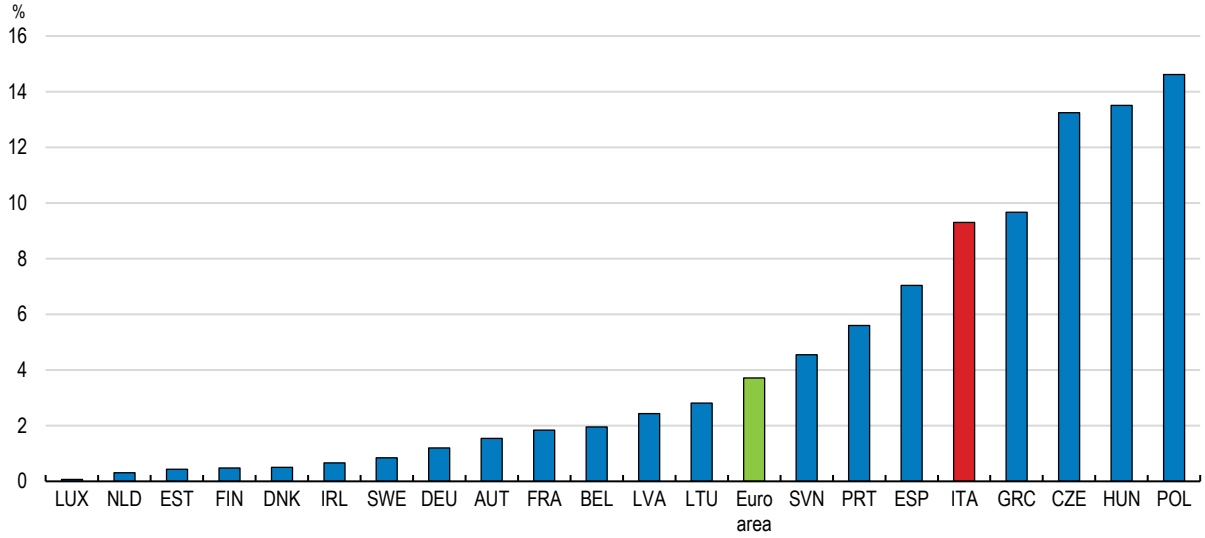
Against the background of rising risks due to the weakening economic outlook, rising funding costs, and continued large holdings of domestic sovereign debt (Figure 1.13), it appears appropriate to focus on capital preservation while profitability is elevated. Large holdings of domestic sovereign debt can make banks vulnerable to interest rate risk: further euro area monetary policy tightening or a widening interest spread between Italian and German government bonds would reduce the value of sovereign bonds on banks' balance sheets, thereby reducing capital positions. Interest rate risk appears manageable for Italian banks, given that only about 30% of government bonds on banks' balance sheets are priced at fair value and adequate liquidity positions make it unlikely that banks will have to sell government bonds at a loss. But it suggests that a continued focus on preserving capital positions while profitability remains elevated may be appropriate to prevent problems from materialising in the medium term, especially in weaker banks. The establishment of a macroprudential authority with a leading role for the Bank of Italy is near completion and constitutes a useful measure to strengthen the macroprudential policy framework.

Figure 1.13. Holding of domestic sovereign debt remains elevated

Share of domestic government bonds in total bank assets, Novembert 2023, in %



Source: European Central Bank.

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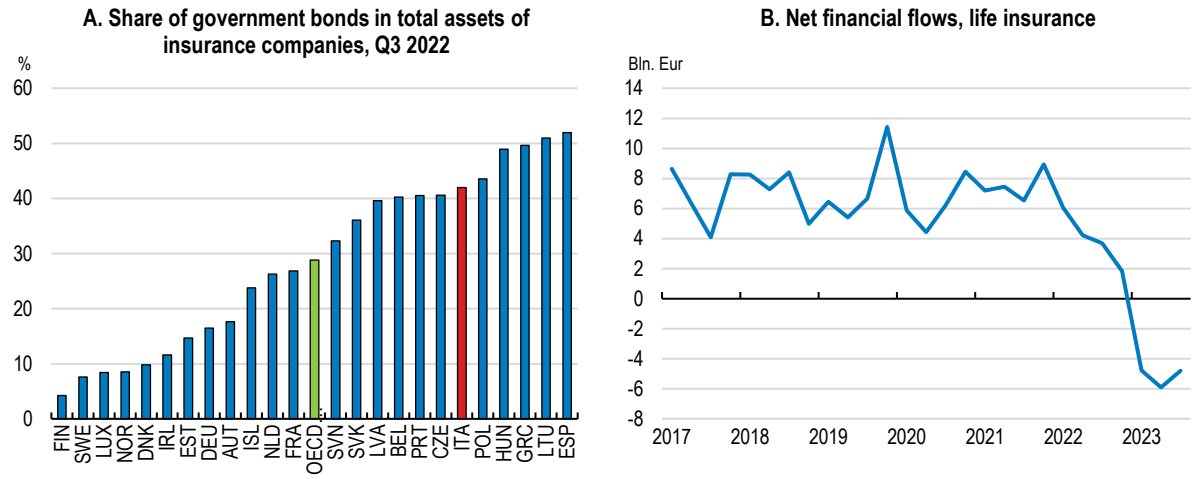
1.3.3. The insurance sector is well capitalised, but the life insurance segment is weakening

The insurance sector is well capitalised but exposed to domestic government bonds and to the early redemption of contracts in the life insurance sector. At the end of 2022, the solvency ratio was about 250%, similar to the European average (EIOPA, 2023). Risk from exposure to domestic government bonds is generally manageable, given the low duration mismatch between assets and liabilities, but it may be more pronounced in the life insurance sector. Investors purchase life insurance contracts as standard financial products, with some contracts allowing early redemption while guaranteeing the invested capital. Insurance companies, in turn, invest the proceeds from these contracts in government bonds of varying maturity. Given the increase in short-term interest rates over the past year, the attractiveness of existing life insurance contracts has declined relative to other financial products of comparable risk, such as savings accounts or certificates of deposit. The rate of redemptions of existing life insurance contracts has increased significantly over the past months, driving net financial outflows from life insurers (Figure 1.14), which may force some insurance companies to tap into their reserves or realise losses on their government bond portfolios that have thus far been notional. In the near term, capital preservation will be key to maintain the health of the insurance sector, with the recent recommendation by the insurance supervisor to limit the distribution of profits being an appropriate measure.

Figure 1.14. The life insurance sector is experiencing financial outflows



Source: European Insurance and Occupational Pensions Authority (Panel A); Ania (2023) (Panel B).

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1.4. Reforms are needed to put the public finances on a more sustainable path

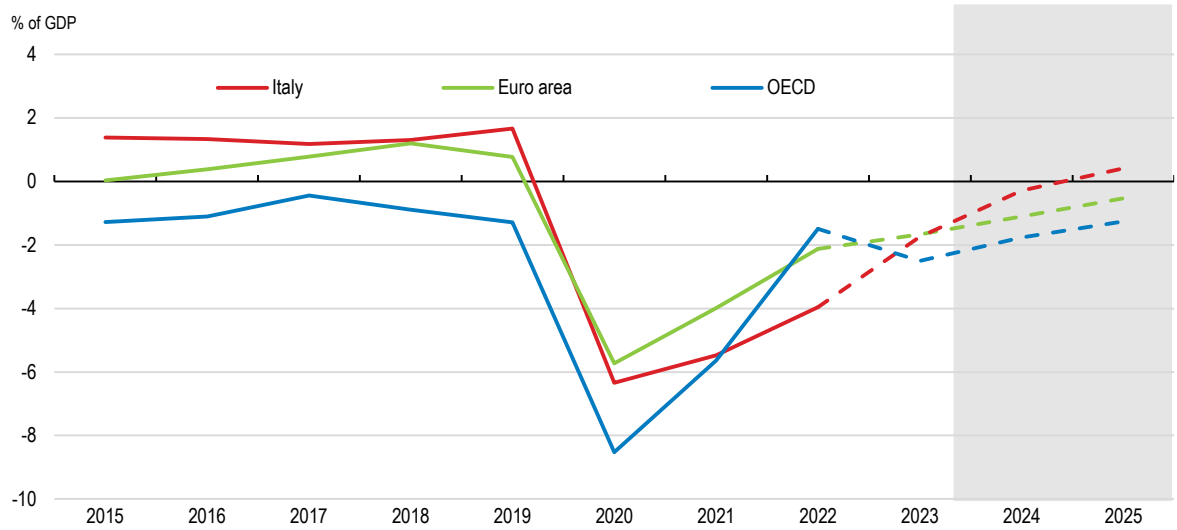
1.4.1. Fiscal policy has supported the economy

Italy provided generous fiscal support during the energy crisis, including through the reduction in excise taxes on fossil fuels, tax credits for businesses' electricity expenditure, reductions of fixed charges on gas and electricity, as well as targeted cuts in social security contributions and income support for low-income households. Overall, energy crisis support adopted in the wake of the Russian aggression against Ukraine in February 2022 was relatively well targeted in international comparison (OECD, 2023c). Cost-inefficient and untargeted price measures were limited and most of them were phased out at the beginning of 2023, including the reduction in excise duties on fossil fuels. Targeted income support for low-income households; the untargeted suspension of fixed charges on gas bills; as well as the untargeted reduction in value added taxes on gas used for combustion, district heating and thermal energy were extended to the end of 2023. The government plans to phase out these measures in 2024.

The stance of fiscal policy will be broadly neutral in 2024. The recent Eurostat-mandated change in the treatment of building renovation tax credits, including the superbonus, shifted fiscal expenditure from the date when the tax credit is claimed to the date when the renovation contract is signed. This means that the recent tightening of tax credits for home improvements will improve the 2024 accrual government budget balance but not the cash balance, which is largely determined by tax credits granted over 2021-23 that are claimed in later years. Energy crisis support has been scaled back in the course of 2023, but some measures were extended to the fourth quarter, including targeted income support for low-income households, the suspension of fixed charges on gas bills and the reduction in value added taxes on gas. The government plans to phase out these measures in the course of 2024, which should provide fiscal savings of around 1% of GDP. These savings will be broadly offset by targeted income tax cuts for low and middle-income households and the expected ramp-up of spending related to Next Generation EU (NGEU). In 2025, the targeted income tax cuts introduced in 2024 and the targeted social security contribution cuts introduced in 2023 are scheduled to expire under current legislation, implying a mild fiscal tightening and an improvement in the primary fiscal balance of about ½ percent of GDP (Figure 1.15).

Figure 1.15. The headline primary fiscal balance is projected to improve, driven largely by the treatment of building tax credits

Government primary balance, as a percentage of GDP



Source: OECD Economic Outlook database.

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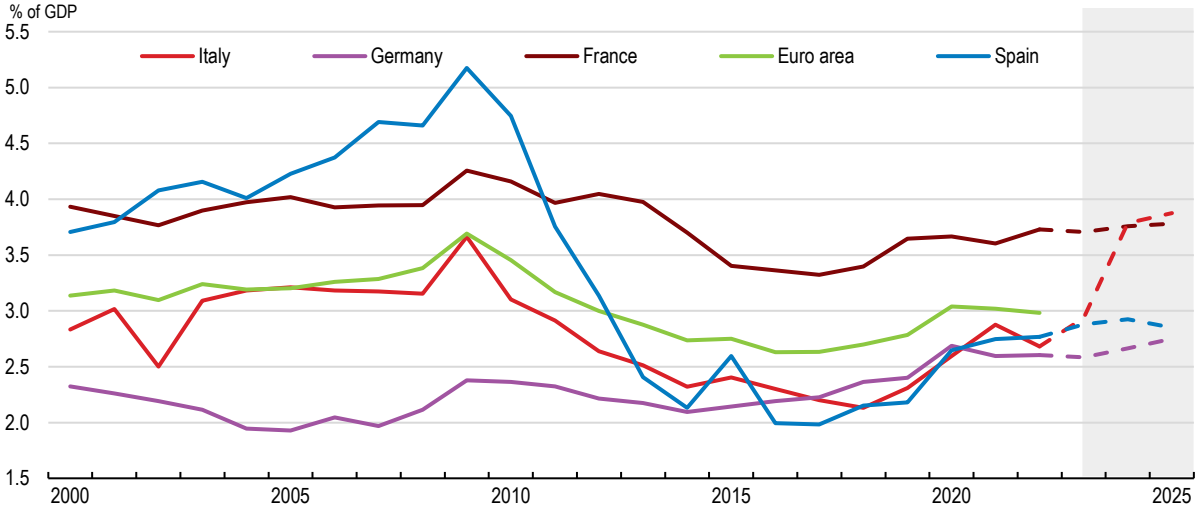
Public spending is being supported by the National Recovery and Resilience Plan (NRRP) that is financed through grants and low-interest loans from the European Union (Box 1.3). About one-third of the funding is budget balance-neutral grants and two-thirds are loans. The NRRP could give a major impulse to public investment, which was weak over the past two decades (Figure 1.16). Total funds allocated to the Plan over 2021-26 amount to a total of about 10% of annual GDP, with about 60% allocated to public investment. The additional spending could significantly boost real GDP growth, both by stimulating aggregate demand in the short term and raising labour productivity in the medium term. Recent model simulations from the Government suggest that full implementation of the planned additional public spending could boost the level of real GDP by 1.8-3.4% by 2026, largely due to demand effects and depending on the efficiency of public investment (Ministry of Finance, 2023b; Di Bartolomeo and D'Imperio, 2023).

Figure 1.16. Public investment was weak but is picking up, supported by the NRRP

Public investment, as a percentage of GDP



Source: OECD Economic Outlook database.

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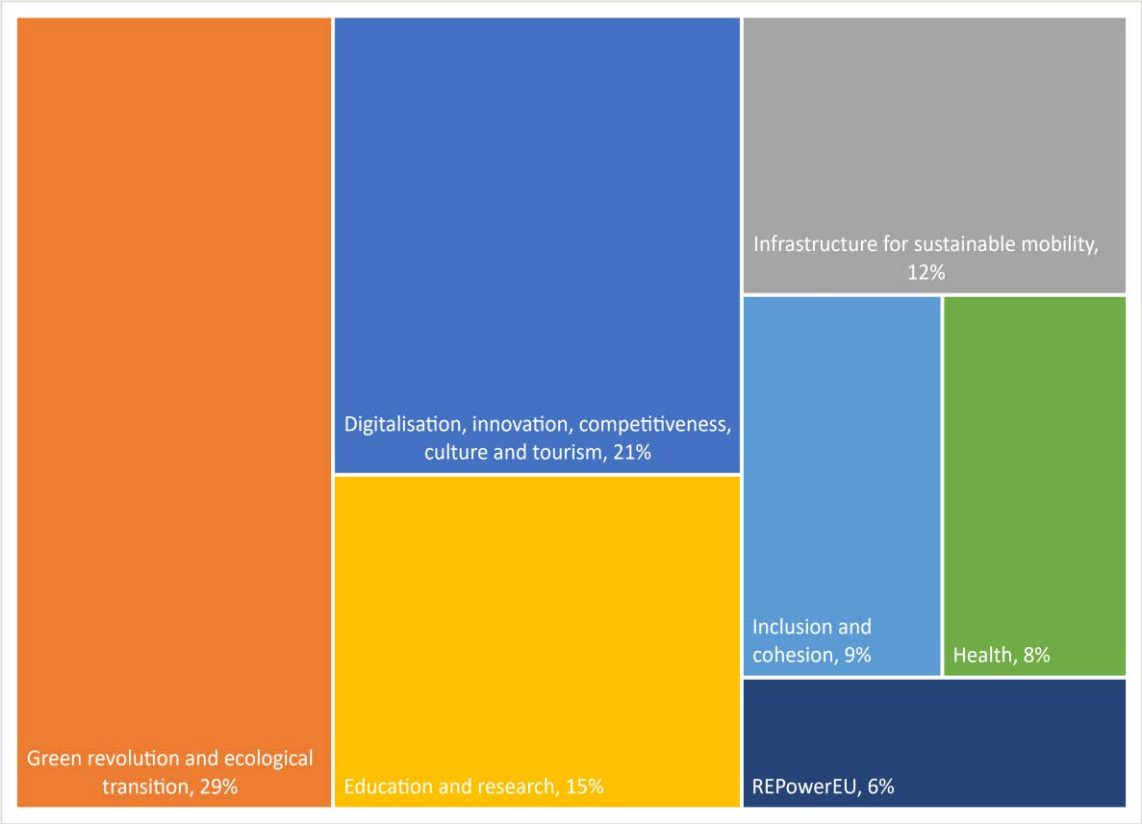
Box 1.3. The National Recovery and Resilience Plan

The Italian National Recovery and Resilience Plan (NRRP) was approved by the European Commission in July 2021 (Presidenza del Consiglio, 2021; European Parliament, 2022). It provides financial support from the EU from 2021 to 2026 subject to progress on implementation of agreed investment and structural reforms. Following a revision of the Plan that was endorsed by the European Commission in November 2023, Italy was allocated €194.4 billion (European Commission, 2023a), which amounts to about 10% of 2022 GDP and about one-quarter of the entire European Recovery and Resilience Facility. Italy topped up the resources allocated from the European Union with national funds amounting to €30.6 billion (about 1.5% of 2022 GDP).

The available resources provide an opportunity to address structural weaknesses of the Italian economy that have held back growth and social inclusion over the past two decades, and to support the digital and green transitions, including through public investment. In the revised Plan, policy measures are organised into seven main areas, with the digital and green transitions accounting for about 50% of the entire NRRP resources (Figure 1.17).

Figure 1.17. Policy areas and resources of the NRRP



Source: European Parliament (2022).

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The disbursement of European Union funds is conditional on meeting a pre-defined set of qualitative milestones (for example, judicial reform) and quantitative targets (for example, reduction in the duration of trials), with structural reforms being frontloaded in 2021-22, while most investments are scheduled for 2023-26. Disbursement of funds is organised in semi-annual tranches, with full disbursement of allocated funds requiring the Plan to be completed by mid-2026.

The structural reforms in the NRRP are classified along two main axes. The first axis consists of horizontal reforms aiming to improve performance across all policy areas of the Plan and facilitate its implementation. This includes judicial reform to reduce the duration of civil and criminal trials; measures to increase the efficiency of the public administration; as well as the annual adoption of a competition law. The second axis consists of sectoral reforms to improve the impact of public investment within each policy area, such as the digitalisation of the public administration and the justice system.

In terms of public spending, about 60% of spending is on public investment projects, including on high-speed internet, high-speed railways, early childhood education facilities, and schools; about 20% consists of tax incentives for businesses, including for investments in intangible assets through the Transition 4.0 plan for industry; and the remaining 20% is accounted for by current expenditure, transfers to households and reduced employer social security contributions (Presidenza del Consiglio, 2021). The revised NRRP reallocates about €21 billion to public investment, including the Transition 5.0 plan (the follow-up of Transition 4.0) and energy infrastructure projects. By December 2023, the European Commission had approved four payment requests, amounting to about 54% of the whole NRRP resources (about €102 billion).

Following changes in the governance structure of the Plan in early 2023, a high-level Steering Committee at the Prime Minister's Office provides strategic guidance; coordinates with line ministries and local administrations responsible for implementation; and is the single contact point for reporting to the European Commission. The Ministry of Economy and Finance is tasked with monitoring, reporting and control. Line ministries and local administrations manage the implementation of reforms and investment projects, with local administrations being responsible for about half of the investment projects under the Plan. The national development bank (*Cassa Depositi e Prestiti*, *CDP*) is tasked with directly managing a number of funds (including the new Green and Digital Transition Funds) and provide technical assistance to public administrations.

The full implementation of public investment projects is key to realise the expected benefits of the NRRP. Italy has made significant progress in implementing the NRRP, including by legislating ambitious structural reforms in the areas of public administration, civil justice and competition as discussed below. In December 2023, the European Commission approved the fourth payment tranche corresponding to the milestones and targets of the first half of 2023. However, a number of challenges have emerged with respect to the implementation of public investment projects, including the tight timeframe for project execution, price increases for energy and raw materials, and supply chain disruptions. At the end of 2022, cumulated NRRP spending was about 50% below the original schedule. Spending on energy efficiency and sustainable mobility was above the original spending plan, which mainly reflects the superbonus and other building renovation tax credits rather than public investment (Court of Auditors, 2023). By contrast, the implementation of public investment projects was behind schedule, with implemented public investment in 2022 amounting to less than one-quarter of the initially expected amount (0.2% of GDP as opposed to 0.9%; Ministry of Finance, 2022a; 2023a).

The authorities have taken measures to speed up the implementation of the public investment projects in the NRRP, including by allowing for streamlined public procurement procedures through the relaxation of rules on public tenders and the shift in civil servants' liability from acts taken to deliberate inaction. The authorities have also scaled up capacity building measures for local administrations. While being responsible for about 50% of NRRP spending, local administrations often lack the capacity to plan, monitor and execute the public investment projects in the NRRP. For instance, municipalities' funding requests were well below NRRP funds available for the construction of new early childhood education centres (Openpolis, 2023). The central government is providing technical assistance and leveraging the expertise of the national investment bank (*CDP*) and the national agency for inward investment and economic development (*Invitalia*). It is also hiring personnel specialised in the planning and management of public investment projects. These efforts should be focused on the south of the country, where capacity appears to be particularly weak (OECD, 2021a).

The revised NRRP endorsed by the European Commission in November 2023 may speed up the implementation of the public investment component of the NRRP. The revised plan re-focuses the NRRP on projects that are achievable by 2026, which implies a stronger focus on large and centrally-managed infrastructure projects and, in some cases, reduced funding for locally-managed projects that have little chance of being implemented before 2026 (European Commission, 2023a). The revision further reshapes and adjusts milestones and targets to account for the changed economic environment, including higher input costs. It further abandons some of the pre-existing investment projects that may not be eligible under the Recovery and Resilience Facility, as well as projects that may be better accomplished using the Cohesion Fund or national funding. This allows to free resources to include the new REPowerEU chapter in the NRRP, which focuses on large and centrally managed investment projects related to renewable energy, green skills, energy efficiency and electricity infrastructure. The focus of the revised NRRP on large and centrally-managed public investment projects and the re-allocation of projects that may be infeasible to execute by mid-2026 towards the Cohesion Fund or national funding improves the prospects of fully implementing the NRRP. This could be complemented with a more general re-allocation of projects to the most effective and highest-capacity administrations.

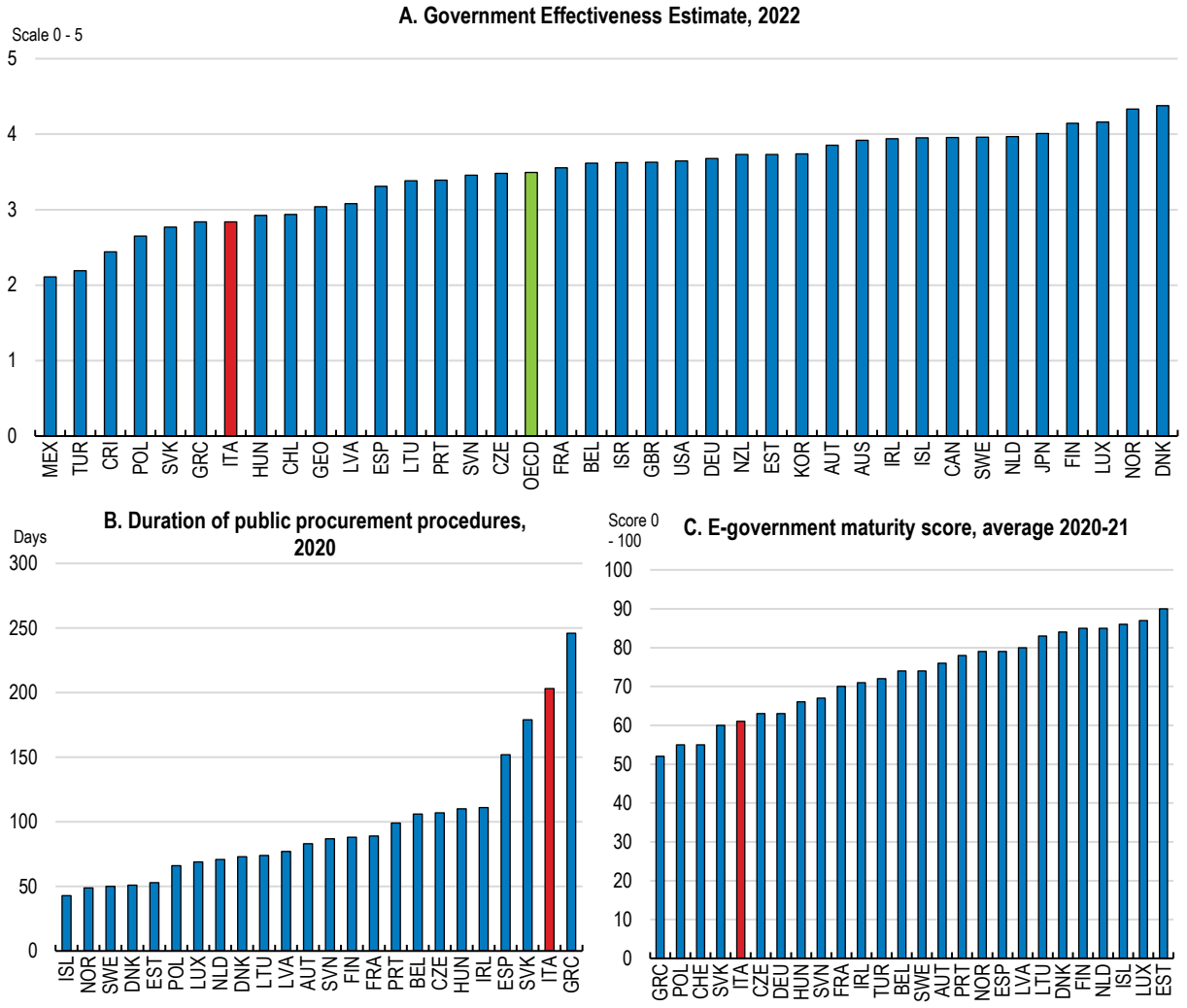
The ongoing public administration reform is key to make the implementation of the NRRP more effective

The public administration is perceived as less effective than in most other OECD countries despite past and ongoing reforms (Figure 1.18). A comprehensive strategy to tackle regulatory complexity and sub-par organisational practices would raise the capacity of the public administration to implement structural reforms and complex public investment projects, including the NRRP. A number of ongoing reforms aim to reduce regulatory complexity and improve human resource management. Promising initiatives include the simplification of 600 regulatory procedures in the areas of energy, labour, taxation, and social policy by 2026. This could be complemented by institutionalising the systematic assessment of existing and planned regulations, as done, for instance, by the Australian and New Zealand Productivity Commissions (OECD, 2020a). The launch of a single recruitment platform for civil servants and the recent introduction of a ceiling of 180 days for the duration of selection procedures is helping to identify competent candidates and reduce the duration of recruitment procedures, while the plan to provide training to 750,000 civil servants by 2026 as well as the revamp of the e-learning platform (*Syllabus 2.0*) should raise human capital. Ongoing reforms also aim to strengthen digital services provision and the digitalisation of internal public administration processes. Noteworthy projects include the roll-out of new tools that allow citizens to pay digitally for services and the establishment of the new digital platform (*PA digitale 2026*) that provides tools to local public administrations to apply for tenders and manage projects related to the NRRP.

Enhancing the efficiency of public procurement will be a crucial element of public administration reform. The ongoing reform of the public procurement code is based on three key pillars. The first pillar focuses on fully digitalising public procurement processes. The second pillar focuses on strengthening capacity of contracting administrations by establishing a certification procedure. Only certified administrations will be able to procure public works above €500,000 and goods and services above €140,000. The aim is to promote the consolidation of small, local public administrations that are often lacking capacity into larger procurement entities. Promoting information exchange and coordination between procurement entities, as done in Australia, would further help build capacity (OECD, 2021a). The third pillar allows for procurement procedures other than public auctions for public works of up to €5.3 million and goods and services up to €140,000. The impact on competition and corruption of the new thresholds should be monitored and should be adjusted if necessary. While the current focus on speeding up public procurement in the context of accelerating the implementation of the NRRP is relevant, it should also be taken into account that competitive auctions tend to lead to price rebates of 2-4% relative to non-competitive procurement (Bank of Italy, 2023d).

More progress is needed in the areas of performance pay and professional mobility of civil servants. The key priority should be to modernise performance assessment systems with the aim to better link civil servants' pay and career progression to performance. Over the past years, progress has been achieved in collective bargaining agreements, which allow for one-off performance bonuses and recognise grades on the individual performance assessment as significant factors in decisions over permanent pay increases. These initiatives should be strengthened and expanded, including by raising the share of pay that is linked to performance and sufficiently differentiating grades in the performance assessment. Costs to the public finances could be limited by reducing automatic pay increases linked to seniority, as already done for civil servants at the management level. Another priority is to promote mobility, which could raise human capital, facilitate the reallocation of staff to public administrations with high labour demand, and reduce the risk of civil servants becoming entrenched in positions with excessive discretion over administrative procedures. Significant progress has been achieved in this area over the past years, including by the creation of a single platform for all vacant positions across central and local public institutions and by the suppression of the obligation for civil servants to obtain a mobility authorisation from the public administration of origin. Further progress could be achieved by sharing the outcomes of performance assessments across administrations and limiting the duration that civil servants can remain in the same position (Gerson, 2020; OECD, 2019a; Cotarelli, 2018).

Figure 1.18. The efficiency of the public administration is lower than in most other OECD countries



Note: Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The estimate gives the country's score on the aggregate indicator and has been rescaled by adding the global minimum to all values, so that it ranges approximately from 0 to 5.

Source: World Bank Governance Indicators, EU Single Market Scoreboard, European Commission E-government benchmark report 2022.

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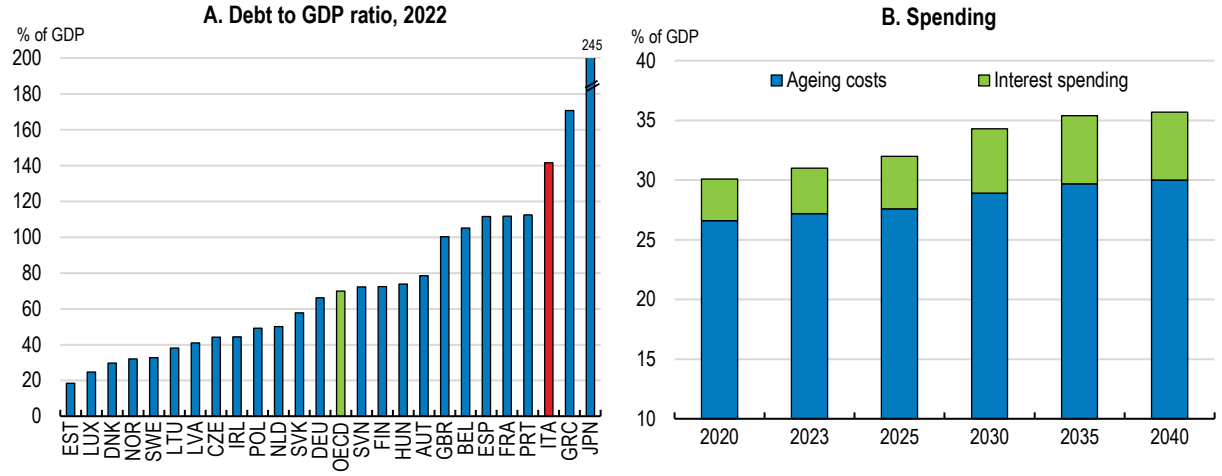
Table 1.3. Past OECD recommendations to enhance the efficiency of the public administration

Recommendation	Action taken
Undertake stocktake reviews of regulations, starting with sectors that will be priorities for the post-COVID crisis recovery.	The simplification of 600 regulatory procedures in the areas of energy, labour, taxation, and social policy by 2026 is ongoing.
Rejuvenate the public sector workforce, through more agile recruiting, training and career management, with a particular focus on filling skill needs such as those for the digitalisation of the public sector.	A single recruitment platform for civil servants has been launched. The authorities plan to provide training to 650,000 civil servants by 2026.
Clarify competencies of different levels of government, supported by bodies that identify, disseminate and support effective practices.	The NRRP foresees the simplification and streamlining of procedures to better define the role of the various levels of government.

1.4.2. Fiscal consolidation needs are substantial

In a context of rising age-related spending over the next two decades, increasing debt servicing costs and large public investment needs to achieve the green and digital transitions, reaching a more sustainable debt path should be the key medium-term priority for fiscal policy. Italy's debt-to-GDP ratio is among the highest in the OECD. It surged to just under 155% of GDP in 2020 due to high public spending and the fall in nominal GDP during the pandemic, but it has come down to around 140% of GDP in 2023, aided by the large negative differential between the effective interest rate on debt and nominal GDP growth. Even though public debt is expected to remain broadly constant over 2024-25, in the medium term it is on an upward trajectory under current legislation according to simulations conducted for this Survey (Figure 1.19, Panel A; Figure 1.20, Panel A). Gross ageing-related expenditure (pensions, health and long-term care) is expected to increase by about 2½ percent of GDP by 2040 due to rapid population ageing before the effects of past pension reforms fully kick in (European Commission, 2021), although lower education spending due to smaller birth cohorts may slightly mitigate this pressure. If the recent increase in euro area interest rates proves to be persistent, debt servicing costs as a share of GDP will eventually increase substantially given the high debt ratio. Overall, increased gross expenditure on ageing-related items and debt servicing will put upward pressure on public spending of around 4½ percent of GDP by 2040 (Figure 1.19, Panel B).

Figure 1.19. The debt to GDP ratio is high, with pension and interest spending set to rise



Note: Ageing costs in Panel B include old-age and survivors' pensions, health and long-term care.
Source: OECD Analytical database; European Commission (2021); OECD LTB database.

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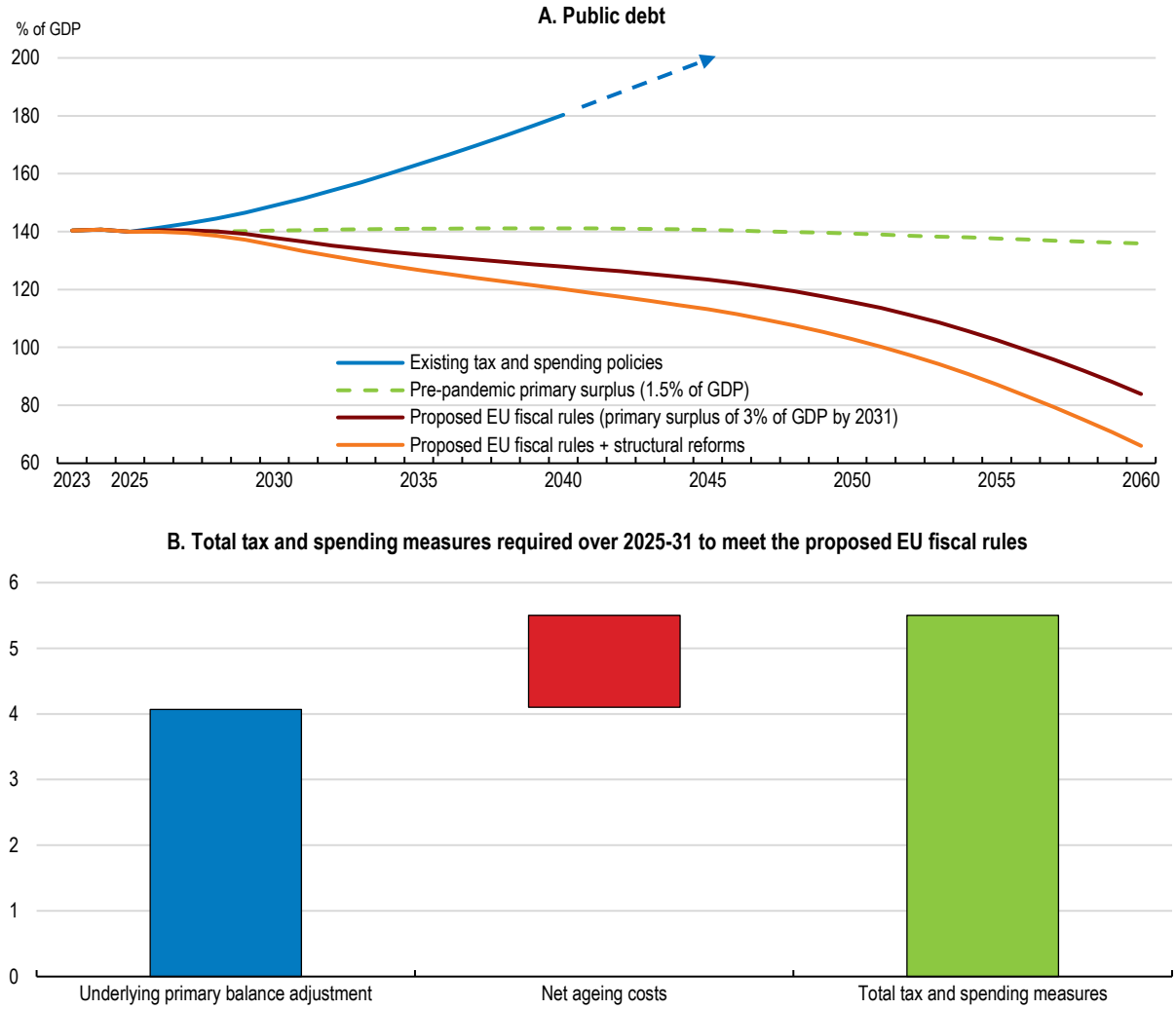
At unchanged tax and spending policies, the increase in pension, health and long-term care spending, as well as rising debt servicing costs, would lead public debt to reach around 180% of GDP by 2040 and continue to rapidly increase thereafter (Figure 1.20, Panel A). Such an increase would leave Italy increasingly vulnerable to fiscal shocks and would likely imply a further increase in the risk premium on government debt. Reverting to the average pre-pandemic primary budget balance of 2012-19 of 1.5% of GDP by 2026 – which would require a substantial improvement in the primary balance of about 2% of GDP relative to the projected balance in 2024 (Table 1.1) in a context of rising ageing costs – would not be sufficient to bring debt on a declining path in the medium term.

However, the debt-to-GDP ratio could be put on a declining path by 2031 and reach about 130% of GDP by 2040 (Figure 1.20, Panel A) if Italy undertakes a seven-year fiscal adjustment from 2025 that is consistent with a stylised implementation of the new EU fiscal rules for countries undertaking structural reforms (European Commission, 2023). This would require substantial fiscal consolidation in the years

ahead, especially when accounting for national financing needs to replace NGEU grants when they end in 2026, and running a large primary budget balance over the medium term.

Figure 1.20. Bringing debt on a more sustainable path will require substantial fiscal adjustment



Note: Panel A: The "Existing tax and spending policies" scenario assumes that the structural primary fiscal balance before accounting for net ageing-related costs remains constant at 2025 levels. Net ageing costs are defined as changes in expenditure on old-age pensions, health and long-term care minus changes in expenditure on education. The "Pre-pandemic primary surplus" scenario assumes that the primary budget surplus between 2012-19 (1.5% of GDP) is reached by 2026 and maintained until 2060, which requires tax and spending measures after 2026 to offset rising net ageing costs. The "Proposed EU fiscal rules" scenario is based on a stylised version of the European Commission's reform proposals of April 2023 (European Commission, 2023). It assumes that (a) the primary balance is raised by 0.5% GDP when the headline budget deficit exceeds 3% of GDP; (b) public debt as a share of GDP is lower in 2031 than in 2024; and (c) public debt as share of GDP is on a declining path in 2031. However, it does not account for any assessment of the debt path needed to ensure the debt ratio falls in various risk scenarios. This simulation requires a primary budget surplus of 3% of GDP by 2031. It is assumed that after 2031 tax and spending policies remain unchanged and changes in ageing costs are not offset, implying a deterioration in the primary budget balance when net ageing costs rise (until about 2040) and an improvement when net ageing costs decline (after about 2040). The "Proposed EU fiscal rules + structural reforms scenario" additionally assumes higher GDP growth from the implementation of the ambitious package of structural reforms reported in Table 1.6 below. Panel B: The underlying primary fiscal balance is defined as the primary balance minus NGEU grants (see OECD, 2023, Annex 1.A. for the treatment of the NGEU grants in the OECD projections). Due to uncertainties around the level of the output gap in the wake of the COVID pandemic, for the purposes of the simulations, the underlying primary fiscal balance is not adjusted for the economic cycle. Given that the projected output gap is around 1% of potential GDP in 2024, adjusting the underlying balance for the cycle would imply a slightly larger required adjustment over 2025-31. NGEU grants are expected to amount to 0.8% of GDP in 2024.
Source: OECD calculations based on OECD Economic Outlook database and OECD Long-Term Model.

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Under the proposed reforms to the European fiscal rules (European Commission, 2023b), the overall required improvement in the structural primary budget balance over 2025-31 could amount to about 4% of GDP over the period (Figure 1.20, Panel B). Additional fiscal pressures will arise from the fact that, in a context of rising ageing costs, even maintaining a constant primary structural balance will require additional tax and spending measures. By 2031, the underlying primary budget balance would need to reach a 3% of GDP surplus. After 2031, there would be no additional need to consolidate and the proposed new EU fiscal rules would not require offsetting rising ageing costs, so the primary surplus could modestly decline over 2032-40 but nonetheless remain high at 2½ percent of GDP.

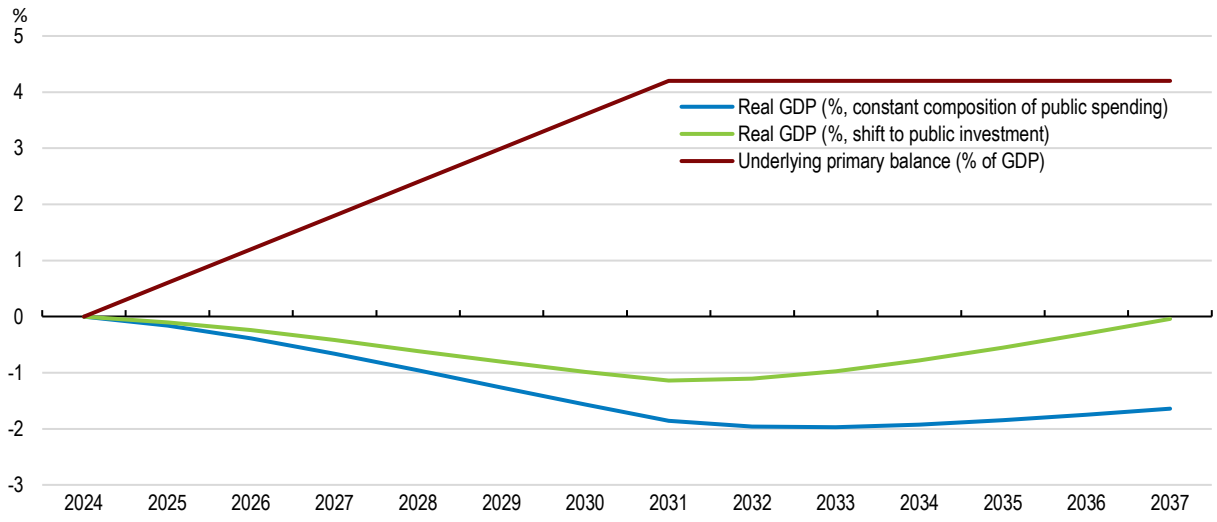
The scale of the required initial fiscal adjustment will be very challenging given its size, limited room to raise tax rates and the composition of government spending. Maintaining large primary budget surpluses after the initial adjustment, which would still need to exceed 2½ percent of GDP on average for the decade following the adjustment programme, would be particularly challenging. While an initial adjustment on this scale is not unprecedented for Italy, with similar adjustments achieved in the 1990s ahead of the adoption of the euro and in the early 2010s in the wake of the euro area crisis, only few OECD countries over the past 30 years have maintained primary surpluses above 1½ percent of GDP for sustained periods (OECD, 2023b; Eichengreen and Panizza, 2016). Achieving a surplus of this size requires sustained policy action to raise revenues, including by strengthening tax compliance, and to raise the efficiency of spending, as well as structural reforms to support growth.

Reforms that boost growth could play a key role in improving debt dynamics. The package of reforms recommended in this Survey (see Table 1.9) would reduce the debt-to-GDP ratio by 20 percentage points by 2060 by raising the level of GDP (Figure 1.20, Panel A), or would allow for lower primary budget surpluses to bring debt on a declining path. Raising net immigration by one-third relative to the baseline – which is consistent with recent population projections published by Eurostat (2023) – would reduce the debt-to-GDP ratio by an additional 10 percentage points by 2060. But policies to boost GDP growth need to be complemented with continued ambitious fiscal reforms to help improve the public finances, which will be essential to maintain credibility with investors.

The adverse effects of the required initial fiscal adjustment on aggregate demand would be dampened under the proposed EU rules by spreading the fiscal consolidation each year over 2025-31 and by Italian plans to shift the composition of public spending to public investment that tends to boost demand in the near term and raises potential output. The total required adjustment in the underlying primary budget balance would amount to about 4% of GDP over 2025-31). Background analysis conducted for this Survey based on the National Institute Global Econometric Model (NiGEM) suggests that a gradual fiscal adjustment of around 0.6% of GDP per year without change in the composition of public spending would reduce the level of real GDP by about 2% relative to a baseline without fiscal adjustment by the early 2030s (Figure 1.21). The baseline without fiscal adjustment implies rising debt levels, which could have adverse feedback effects on growth that are not fully accounted for in the simulations and would require an even larger fiscal adjustment in the future to stabilise debt. Furthermore, with the planned shift in composition of public spending towards public investment in line with NRRP plans, the negative impact on the level of real GDP by the early 2030s is limited to about 1% at its peak. The design of this gradual consolidation effort would need to ensure that there is no adverse impact when the NGEU grants end in 2026. Taken together, this suggests that a gradual fiscal adjustment that spreads the consolidation over several years and preserves public investment would subtract only about 0.15 percentage points from annual growth over 2025-31, while putting the public finances on a more sustainable path. This contrasts with consolidation efforts following the euro crisis that were much more frontloaded and undertaken by cutting investment, leading to a more dramatic impact on activity.

Figure 1.21. Limited adverse effects of the required fiscal adjustment on real GDP growth

Effects of an increase in the primary fiscal balance of 0.6% per year over 2025-31, deviations from NiGEM baseline



Note: Both scenarios assume an increase in the primary fiscal balance of 0.6% per year, with half of the required fiscal consolidation achieved by higher taxes and half by lower spending. The scenario "constant composition of public spending" assumes that the composition of public spending is unchanged relative to the NiGEM baseline. The scenario "shift to public investment" assumes that public spending is shifted from government consumption to public investment so that public investment increases by 0.5% of GDP in 2025 and 2026 and declines by 0.5% of GDP in 2027, implying that public investment is 0.5% of GDP higher than in the baseline from 2027 onwards. NiGEM simulations with model-consistent expectations (forward-looking mode).
Source: OECD.

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Table 1.4. Past recommendations to bring public debt on a more prudent path

Recommendation	Action taken
Improve the composition of public spending to promote growth and job creation. Improve coordination across agencies implementing public investment projects to raise disbursement levels. Consolidate smaller agencies' public procurement activities into higher capacity bodies.	Spending under the NRRP is expected to support growth and job creation. To solve coordination problems, the new governance of the NRRP includes a steering committee to gather central and local governments responsible for implementation. Certification requirements in the new public procurement code provide for incentives for consolidation of procuring entities.
Contain pension spending by allowing the early retirement scheme (Quota 100) and the so-called women's option to expire in December 2021, and immediately re-establish the link between life expectancy and retirement age.	Early retirement schemes have become stricter and less generous.
Improve the allocation of resources and the effectiveness of spending through strengthened expenditure reviews also taking into account a succinct set of policy performance indicators.	A unit overseeing expenditure reviews has been set up at the Ministry of Finance. Guidelines for line ministries on the formulation and monitoring of spending review plans have been published.
Implement a holistic tax reform that reduces complexity and permanently lowers taxes on labour, financed through improved compliance, lower tax expenditures and higher taxes on immovable property and inheritance.	The enabling law to reform the tax system contains elements to reduce the complexity of the system (e.g. the rationalisation of tax expenditures) and strengthen compliance (e.g. through the digitalisation of the tax administration).

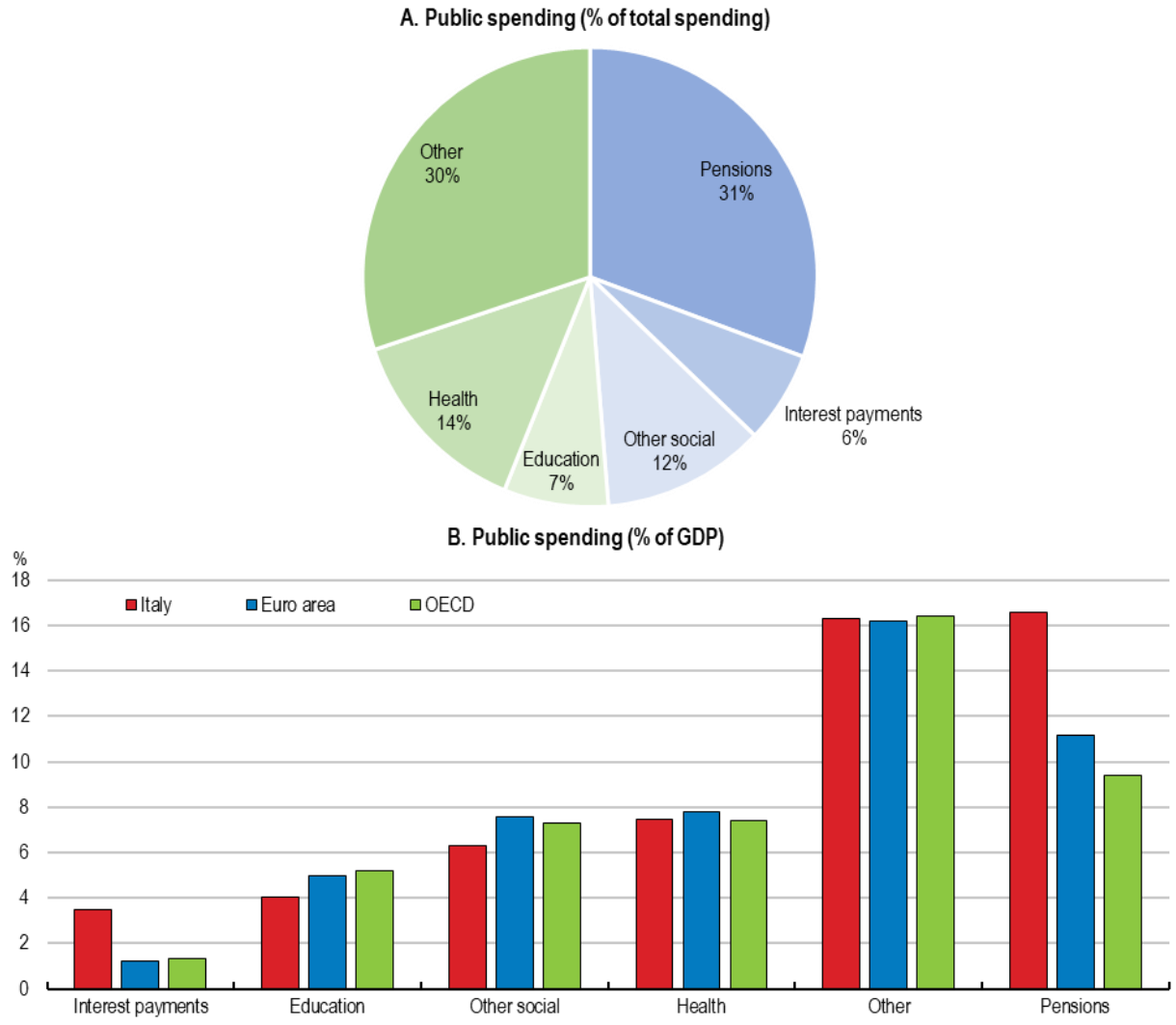
Implementing fiscal adjustment will require difficult choices to be made

Improving the underlying primary fiscal balance over 2025-31 by around 4% of GDP requires a major change to existing tax and spending policies, ambitious measures to reform the tax system, and improvements in the efficiency and prioritisation of spending beyond those already implemented or planned

by the authorities. If implemented entirely through spending measures, the required adjustment would be equivalent to freezing or modestly cutting primary spending in real terms or maintaining nominal primary spending growth around 2 percentage points below nominal GDP growth.

A key challenge is that about half of total public spending is currently committed to pensions, social assistance and debt servicing costs (Figure 1.22, Panel A). Debt servicing costs are not under direct control of the government and are set to increase over the coming years because of higher expected interest rates. If pensions and social assistance programmes are protected in any adjustment, the required real cuts in other areas could be very large and impactful. Health, education and other social spending are already low in international perspective (Figure 1.22, Panel B).

Figure 1.22. Pensions, social assistance and debt servicing account for 50% of public spending



Note: Figures refer to general government expenditure in the year 2021. “Pension” expenditure includes old-age and survivors’ pensions. "Other social" expenditure includes sickness and disability pensions, family, unemployment,, housing and other income maintenance and social assistance benefits.
Source: OECD National Accounts database; OECD Analytical Database.

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The focus on the public spending side should be on prioritisation and further increases in efficiency to create cost savings while improving public services. Italy has conducted multiple spending reviews since the global economic and financial crisis of 2008-09. The NRRP foresees the establishment of an annual spending review process, with a unit at the Ministry of Finance co-ordinating the process in close coordination with a scientific committee. Spending reviews have been integrated into the budget process, with upfront funding provided to line ministries to hire evaluation experts. This should help to achieve more targeted spending changes than the across-the-board spending cuts in the wake of the spending reviews of the early-2010s (European Commission, 2020), even though some cuts may need to be implemented in a more across-the-board way, so the impact is shared across a range of areas. The institutional framework of the new spending reviews is in line with best practice and the recommendations in the previous Survey (OECD, 2021a; Tryggvadottir, 2022).

However, the target of annual fiscal savings averaging around 0.4% of total public expenditure over 2023-25 (about 0.2% of GDP) appears unambitious given the required medium-term fiscal consolidation needs. The evidence suggests that efficiency and value-for-money focused spending reviews without ambitious reallocation or savings targets can lead to mixed results (Tryggvadottir, 2022). Ambitious spending reviews can contribute to successful fiscal consolidation, as suggested by the 2010 comprehensive spending review in the Netherlands that aimed at expenditure reductions across a broad range of policy areas and amounted to about 10% of overall public expenditure and 5% of GDP (Kabel, 2015). Gradually raising the efficiency of public spending (output per unit of expenditure) in Italy by 4% over the next years, including by further digitalising the public administration and public procurement, would yield fiscal savings of around 2% of GDP (Table 1.6).

Maintaining the high share of public spending on pensions, among the highest in the OECD at around 16½ percent of GDP (when accounting for old-age and survivors' pensions), would make it difficult to adjust overall spending without squeezing economically and socially important education spending and public investment. The defined benefit pension scheme was reformed in 1995 and replaced by a notional defined contributions scheme (Franco and Tommasino, 2022), which will lead to growing savings in the future compared to the old scheme. However, there is a long transition period, with workers who started working before 1995 being covered by the legacy defined benefit scheme on a pro-rata basis and only workers who started working after 1995 fully covered by the new notional defined contribution scheme. The legacy defined benefit scheme will only be fully phased out around 2040, when most people who started working before 1995 will have retired. Since 2012, the statutory pension age is linked to life expectancy to limit increases in pension spending in the legacy defined benefit regime. But, with rapid projected population ageing and generous pension levels in the legacy defined benefit scheme (OECD, 2021b), pension expenditure will nonetheless keep increasing until 2040 (European Commission, 2021).

The post-1995 notional defined contribution pension system is a substantial improvement with respect to the legacy defined benefit scheme and will ensure that future pensions are closely linked to contribution histories, but the full implementation of the 2012 pension reform has been postponed through the adoption of *ad hoc* early retirement schemes, most recently in the 2023 Budget Law. The temporary 2023 rules allow workers above age 62 with at least 41 years of pension contributions (*Quota 103*) to retire early and are expected to cost about 0.1% of GDP in 2023 (Ciotti et al., 2023). New early retirement schemes should not be introduced.

Given the need to consolidate public finances and reprioritise spending towards growth-friendly areas, the government should look again at options to limit spending on pensions in the current decades, focusing on the generous rules in the legacy defined benefit system. The legacy pension system is comparatively generous, with the average income of people above age 65 who benefited extensively from this system 3% above the population-wide level, whereas it is about 14% lower on average in the OECD (OECD, 2023d). The one-off reduction in the indexation of high pensions in the 2023 Budget Law is expected to reduce spending on current pensions by about 0.4% of GDP in both 2023 and 2024 (Ciotti et al., 2023). However, maintaining the reduced indexation for a protracted period of time may pose constitutional issues

as it would curtail acquired rights of some pensioners and would provide significantly smaller savings when inflation returns to more normal levels.

Options to contain spending on current pensions include a solidarity contribution from high pensions that are not linked to past contributions and introducing an age condition for eligibility to survivors' pensions. The solidarity contribution could take the form of a progressive tax on pensions that exempts pensions below a specific threshold and could be based on the difference between currently received pensions and pensions calculated using the defined contribution rules (Patriarca et al., 2014). Reducing the generosity of current pensions raises equity issues and low pensions should be protected, but given the need to contain overall spending growth, a contribution from current pensioners needs to be envisaged. This would help to manage the overall costs of the scheme, while targeting wealthier households who are likely to have more private savings. By reducing only the part of current pensions that is unrelated to past contributions, constitutional issues posed by the curtailment of acquired rights may be avoided. Spending on current pensions could also be reduced by tightening eligibility for survivors' pensions, which are the highest in the OECD, amounting to about 2½ percent of GDP in 2019. High spending partly reflects the absence of an age condition for eligibility. Introducing an age condition that would restrict pension eligibility to survivors' pensions to around the legal retirement age would contain costs and may limit adverse effects on recipients' labour market participation (OECD, 2019d).

The planned tax reform should focus on making the tax system more growth-friendly while preserving revenues

Protecting tax revenues will be crucial given fiscal pressures, and there is room to make the tax system more growth friendly. At about 43% of GDP, tax revenue as a share of GDP is among the highest in the OECD and well above the OECD average of about 34% of GDP, limiting the room to raise tax revenues without hurting growth. However, taxes are heavily skewed towards labour, with a strikingly low revenue share of indirect consumption taxes (Figure 1.23, Panel A), which are generally viewed as being less harmful to growth than labour taxes (Arnold et al. 2011). The enabling law for the reform of the tax system aims to reduce the tax burden on labour, while rationalising the system of tax expenditures and strengthening tax compliance, including through the increased use of digital tools (Table 1.5). Although detailed estimates of revenue effects are not yet available, these objectives are broadly in line with recommendations in previous Surveys to lower the tax burden on labour, reducing poorly targeted tax expenditures (for example, by limiting the coverage of the "dependent spouse" tax deduction that disincentives female labour market participation to people above the legal retirement age), and tackle tax evasion (OECD, 2021a).

However, the reforms aim to gradually move towards a flat personal income tax that could reduce progressivity and lead to significant revenue losses (OECD, 2006). International experience suggests that flat income tax systems are in place only in very few countries with relatively limited social welfare systems and, depending on design, put the burden on middle-income earners while low- and high-income earners tend to benefit (OECD, 2006; Bank of Italy, 2023). The income tax base has already been eroded by the proliferation of flat tax regimes, including a 15% flat tax on earnings of up to 85 000 euros of the self-employed. The introduction of a flat tax on bonuses and extraordinary earnings of dependent employees risks further eroding the personal income tax base and violating the principle of vertical equity (equity between high- and low-income individuals).

While the planned suppression of the regional tax on production (IRAP) will simplify the tax system by eliminating the calculation of an additional tax base, the planned introduction of a corporate income surtax to offset this change will amplify differences between debt financing relative to equity financing, which will also be widened by the introduction of an exemption threshold for interest expenses in the corporate tax. This is because the tax base of IRAP (gross profits) includes interest payments, whereas the tax base of the corporate income tax excludes them.

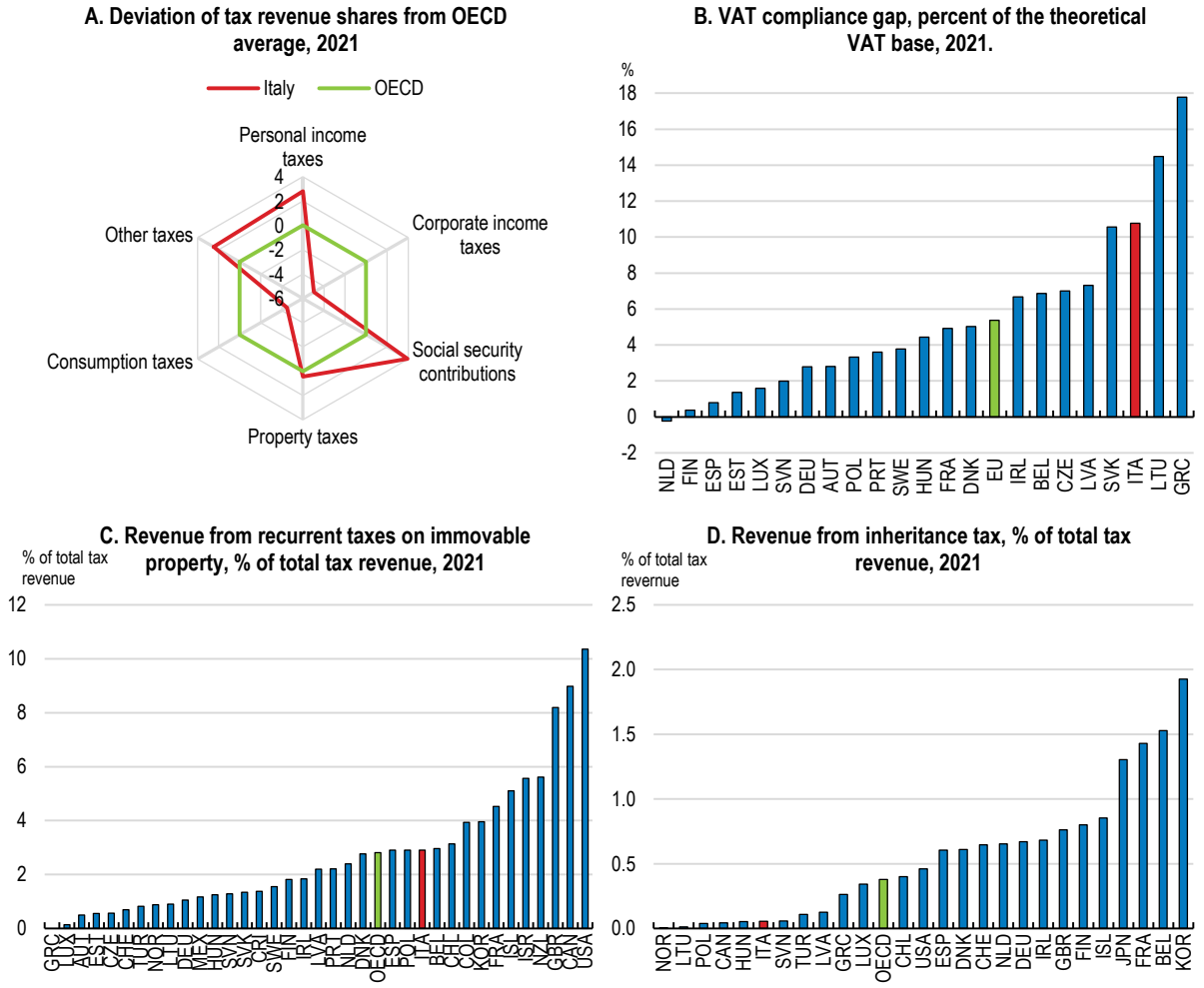
Table 1.5. Main measures in the enabling law for the reform of the tax system

Tax Policy area	Main measures
Personal income tax	Restructuring of tax brackets and modification of exemption threshold.
	Introduction of a flat tax for bonuses and extraordinary earnings of dependent employees.
	Rationalisation of tax expenditures.
Capital income tax	Unification of "capital income" and "other financial income" for tax purposes, including for profit-loss offsets.
Corporate income tax	Introduction of a preferential rate or other tax incentives for retained profits that are used for investment, hiring or establishment of stable profit sharing schemes in subsequent years.
	Introduction of a surtax related to the suppression of the regional tax on production (IRAP).
	Introduction of an exemption threshold for interest expenses.
Value added tax	Harmonisation with European rules and rationalisation of system of reduced rates.
Environmental taxes	Enhanced accounting for environmental impact of excise taxes and fossil fuel subsidies.
Tax compliance, administration, and collection	Reduction of compliance burden, including through extension of pre-filled tax declaration (including for VAT).
	Enhanced use of digital tools for risk profiling, including merging of databases.
	Expansion of the cooperative compliance programme.
	Establishment of a system of prior agreement between the taxpayer and the administration on tax liabilities ("concordato preventivo biennale") for small businesses.

Source: Ministry of Finance

A comprehensive reform to make the tax system more growth-friendly should consider re-introducing recurrent property taxes on first residences and updating the property tax base calculations; as well as raising inheritance taxes. From the perspective of horizontal equity, linking cadastral values more closely to current market values would be preferable to an across-the-board increase in the property tax base, but possible adverse impacts on low-income households would have to be addressed. Revenues from taxes on immovable property are around the OECD average (Figure 1.23), but this is explained by very high home ownership rates rather than high taxes. Inheritance taxes are among the lowest in the OECD (Figure 1.23). Raising them would raise revenues with limited adverse side-effects on economic growth and may help intergenerational income mobility. The evidence generally suggests that inheritance taxes have positive effects on labour supply of heirs (OECD, 2021d). Political opposition to these measures could partly be overcome by protecting low- to medium-income households, including by ensuring that modest levels of inheritances are not taxed, targeted income tax cuts and making the temporary reduction of social security contributions for low- and middle-wage workers in 2023-24 permanent.

Figure 1.23. There is room to shift taxes from labour income to consumption and property



Note: Panel A shows the deviation of tax revenue shares (in total tax revenue) from the OECD average.
Source: OECD Revenue Statistics; Centre for Social and Economic Research; European Commission.

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A significant boost to tax revenues and growth could come from tackling tax evasion, which is estimated to amount to about 5% of GDP (Ministry of Finance, 2022b). Revenues from value added taxes (VAT) are well below the OECD average (Figure 1.23, Panel A). This partly reflects the VAT compliance gap that remains among the highest in the European Union, despite a large decrease in 2021 (Figure 1.23, Panel B). The VAT compliance gap (the difference between the tax revenue that would be collected under full compliance and the actual revenue collected), in turn, reflects tax evasion, which reduces tax revenues at any given statutory rate and distorts competition between tax compliant and non-compliant businesses. In the light of empirical evidence indicating that lower ceilings for cash transactions reduce the size of the underground economy and tax evasion (Giammatteo et al., 2022; Russo, 2022; Bernardini and Renzi, 2022), the increase in the ceiling for cash payments from €1000 to €5000 legislated in the 2023 Budget Law appears counter-productive and should be reversed. Ex-ante cooperative compliance agreements can have positive effects on tax compliance and certainty (OECD, 2013; OECD, 2016b), but their planned extension should not come at the expense of ex-post controls that have contributed to the significant reduction in tax evasion over the past years, with the overall tax gap having declined by around 0.4% of GDP over 2016-19. Reducing excise tax rebates and subsidies on fossil fuels could also contribute to raising revenues (see Chapter 2). Overall, the ambitious package of tax and spending reforms recommended in this Survey could raise the fiscal balance by about 4.3% of GDP (Box 1.6).

Box 1.4. Budgetary impact of recommended fiscal and structural reforms

The following estimates are based on a variety of sources and OECD calculations. The total impact on the fiscal balance of the tax and spending measures in Table 1.6 matches the fiscal adjustment required by the simulation of a stylised version of the proposed new European fiscal rules (3½ percent improvement in the headline primary balance plus 0.8% of GDP related to the end of NGEU grants; Figure 1.20, Panel B).

Table 1.6. Illustrative fiscal impact of selected reforms

Recommendation	Scenario	Impact on fiscal balance (annual, % of GDP)
Revenue measures		
Strengthen tax compliance, especially for VAT	Reduce VAT compliance gap to EU average	+1.0
Raise property and inheritance taxes	Raise inheritance taxes to OECD average	+0.5
Phase out or re-design tax expenditures that lack economic or distributional justification, including by re-designing support for building retrofitting.	Reduce tax expenditures by 10%	+0.4
Reduce excise tax rebates on fossil fuels	Bring excise taxes in road and offroad transport to the standard rate on gasoline	+0.4
Reduce the tax wedge	Reduce income taxes and social security contributions for low-income workers	-1.2
Total revenue measures		+1.1
Spending measures		
Raise the ambition of spending reviews	Target gains in the efficiency of public spending of about 4%	+2.6
Introduce a solidarity contribution on high pensions and tighten eligibility for survivors' pensions	Progressive tax on high pensions not due to high contributions as in Patriarca et al. (2014) and introduction of age condition for survivors' pensions.	+0.5
Do not extend early retirement schemes	Based on Ciotti et al. (2022)	+0.2
Give people with very low employment prospects access to social assistance (Adi)	Based on Maitino et al. (2023)	-0.1
Total spending measures		+3.2
Total impact on fiscal balance		**+4.3**

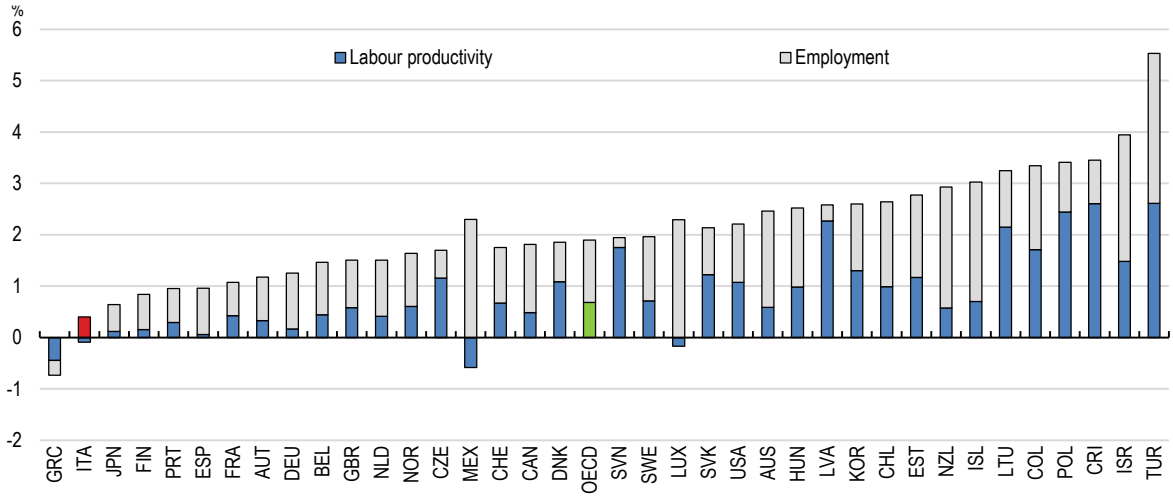
Source : Ciotti et al. (2022) ; Maitino et al. (2023) ; OECD calculations.

1.5. Structural reforms are needed to reinvigorate economic growth

Real GDP growth over the past decade has been poor, with labour productivity at the end of 2021 below the level of 2010 (Figure 1.24). Over the past decade, weak productivity growth has partly been explained by weak investment and low capital deepening, but multi-factor productivity growth has been stagnating for the past three decades (OECD, 2021a). The main issue appears to be the inability of the Italian economy to transition from catch-up growth through imported innovation over the 1950-1970s to endogenous innovation-led growth (Codogno and Galli, 2022), especially in southern regions where labour productivity remains around 20% lower than in the northern part of the country (Boeri et al., 2021).

Figure 1.24. Productivity growth has stagnated

Contributions to real GDP growth, 2010-23



Note: The GDP growth decomposition is based on a Cobb-Douglas production function.
Source: OECD Economic Outlook database.

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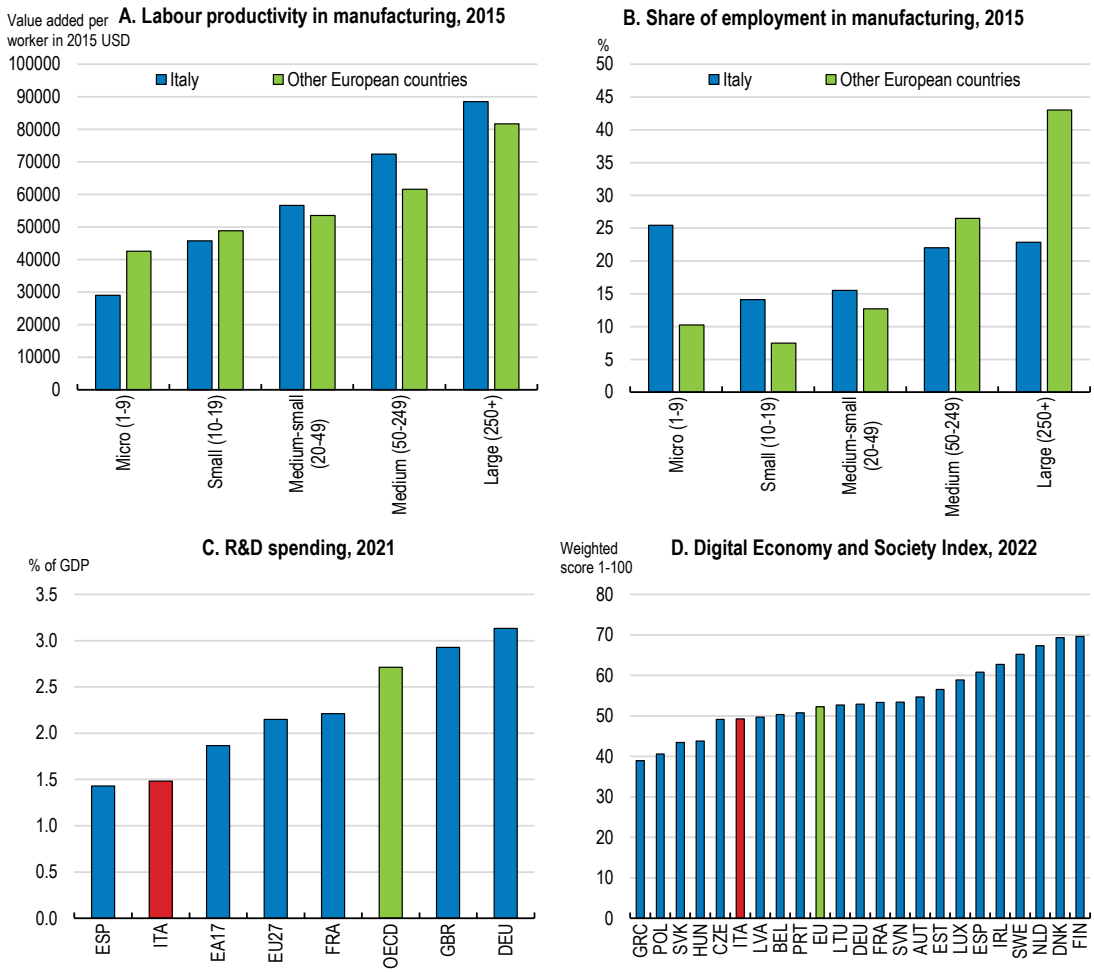
Weak innovation-led growth reflects an unusually high employment share of low-productivity micro businesses, low research and development (R&D) spending, and below-average digitalisation (Figure 1.25). While large Italian businesses are more productive on average than their counterparts in other European countries, Italian micro enterprises are about 30% less productive than their peers. At the same time, the employment share of micro businesses is about 15 percentage points larger than in other European countries while the employment share of highly-productive large businesses is about 20 percentage points lower. Small family-managed businesses often lack the scale for efficient R&D, as well as management skills and incentives for technology adoption (Pellegrino and Zingales, 2017). This contributes to low overall R&D spending in the economy and lagging digitalisation, implying foregone productivity gains from the ongoing digital revolution. Transitioning to innovation-led growth will require an ambitious package of structural reforms that encourages small firms to grow or exit the market. In this respect, the ongoing reform of capital markets is a first step to promote growth of small and medium-sized enterprises and encourage companies to get listed and access financing from capital markets, but the recent OECD Capital Market Review suggests that there is room for further initiatives in this direction (OECD, 2020c). The remainder of this section focuses on the need to further strengthen product market competition and improve incentives for technology adoption, including by enhancing legal certainty and worker skills.

Figure 1.25. The predominance of micro businesses hampers innovation-led growth



Note: Panels A and B show the productivity and employment distribution by firm size class in the manufacturing sector.
Source: OECD MultiProd database; OECD Main Science and Technology Indicators; European Commission Digital Economy and Society Index.
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Table 1.7. Past recommendations to enhance growth and inclusiveness

Recommendation	Action taken
Increase resources for courts to better manage backlogs and improve the speed and efficiency of civil justice court procedures.	A trial office to support judges with legal work has been created. The ongoing civil justice reform includes the strengthening of out-of-court settlement procedures.
Reduce regulatory barriers to entering professional services, including replacing licensing systems with less distortionary certification schemes. Introduce a national productivity board to identify and communicate the costs and benefits of reforms, and build a national consensus.	New regulations aim to simplify and speed up the access to some professions by waiving the requirement to pass a state exam on top of obtaining a university degree.
Increase access to adult skills attainment, with improved Training Fund application processes and better coordinated public employment services.	Additional resources have been allocated to the Training Fund over the 2021-2027 programming period of the European Cohesion Policy.
Lower the marginal effective tax rates for secondary earners. Improve access to quality childcare across all regions.	The introduction of the unified child benefit ("Assegno Unico") has reduced the marginal effective income tax rate for secondary earners.
Set a long-term plan to harmonise and gradually raise carbon prices, with policies and time to ease social and competitiveness transition costs.	Some exemptions and rebates on fossil fuel excise taxes have been eliminated. There are plans to eliminate others.

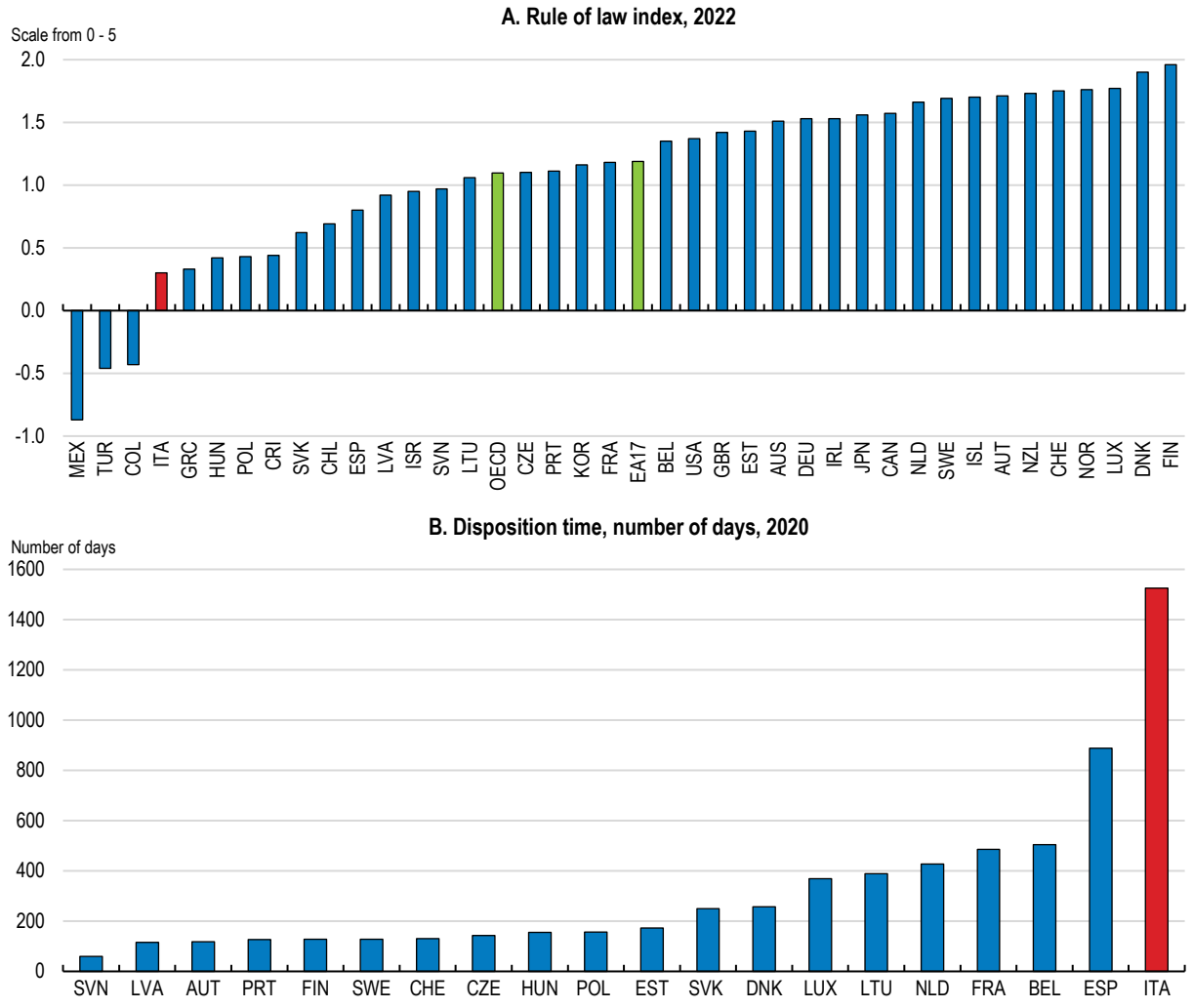
1.5.1. The justice system needs to become more efficient

The justice system is comparatively inefficient, which raises the cost of doing business and acts as a brake on investment. An efficient justice system with adequate contract enforcement and vigorous property rights protection supports investment, financial development, the efficient allocation of labour and capital, and ultimately aggregate productivity growth (Ciapanna et al., 2020). Evidence suggests that weak contract enforcement may also be one factor behind the large share of micro businesses in Italy (Giacomelli and Menon, 2017). Perception-based indicators of judicial efficiency generally indicate that Italy is among the countries with the lowest levels of rule of law among OECD countries (Figure 1.26). To a large extent, this reflects the comparatively long duration of trials. While past reforms have reduced the expected duration of trials and the backlog in court cases, the expected duration of civil trials remains the highest in the European Union (Figure 1.26).

The ongoing civil justice reform constitutes a major step towards a more efficient judicial system. It consists of three major elements. First, it strengthens the digitalisation of the court system by introducing remote trials, with completely digitalised case files and video hearings. Second, it streamlines procedures, including by simplifying procedures for manifestly ungrounded cases and speeding up the submission of evidence to the courts. Further streamlining will be achieved by incentivising pre- or out-of-court settlements; expanding the jurisdiction of Justices of the Peace; and creating new courts for juvenile and family cases to unburden ordinary civil courts and promote specialisation. Third, the reform creates new trial offices to assist judges with legal work, which should allow them to focus on complex tasks while leaving lower-complexity tasks to legal clerks. By January 2023, 8000 clerks had been hired, with the NRRP foreseeing the hiring of another 8000 before 2026. This should help clear the backlog of cases and allow for higher judicial efficiency even once NRRP are no longer available.

The civil justice reform will also strengthen performance incentives for judges and courts, which are currently weak. Currently, there are large differences in efficiency across judges and courts, even when accounting for the average complexity of cases (Cugno et al., 2022). Highly efficient judges resolve about 700 cases per year, whereas less efficient ones resolve only about 400 cases per year (Figure 1.27), with no evidence that shorter trials reduce the quality of sentences as measured by the rate of successful appeals (Cugno et al., 2022). The efficiency of judges and courts differs significantly across regions, with efficiency significantly lower in the south of the country than in the centre-north. While the experience of Portugal suggests that judicial reforms focusing on digitalisation and the streamlining of procedures can have large positive effects on judicial efficiency (OECD 2019c; OECD, 2020b), there may also be a need to tighten performance requirements for underperforming judges and courts by revamping current performance evaluation schemes and linking evaluation to pay and career advancement. Until recently, the performance evaluation scheme allowed for insufficient differentiation between high and low-performing judges, with more than 99% of judges receiving positive evaluations over the period 2017-21 (Cartabia, 2021). Pay and promotion of judges were mostly related to seniority rather than performance, with judges facing little incentives to raise performance (Cepej, 2022).

Figure 1.26. The justice system is less efficient than in most other OECD countries



Note: Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The original indicator is expressed in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5). To improve readability the indicator in the figure has been re-scaled by subtracting the global minimum (Venezuela) from all values, i.e. it ranges from approximately 0 to 5. Disposition Time (DT) is the calculated time necessary for a pending case to be resolved, considering the current pace of work. It is reached by dividing the number of pending cases at the end of a particular period by the number of resolved cases within that period, multiplied by 365. More pending than resolved cases will lead to a DT higher than 365 days (one year) and vice versa.

Source: World Bank Worldwide Governance Indicators; European Commission for the Efficiency of Justice.

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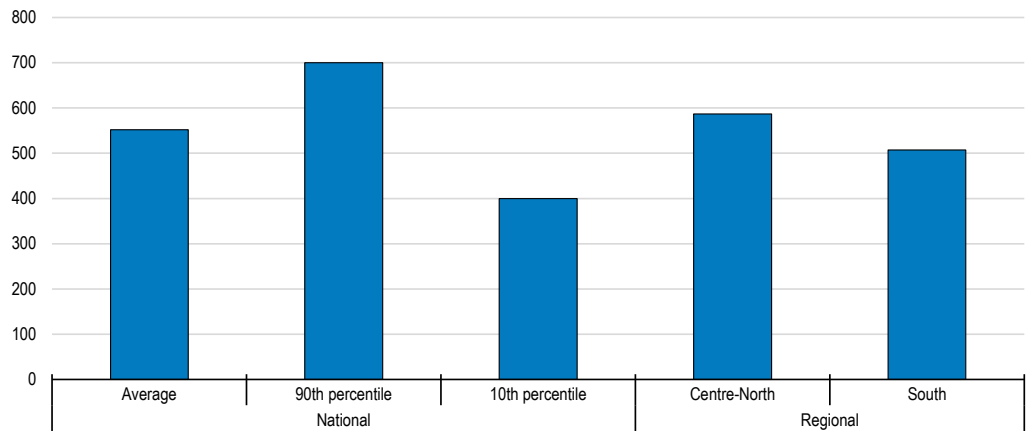
Figure 1.27. There are large differences in the productivity of judges

Annual resolved cases per judge, 2015-19



Source: Cugno et al. (2022)

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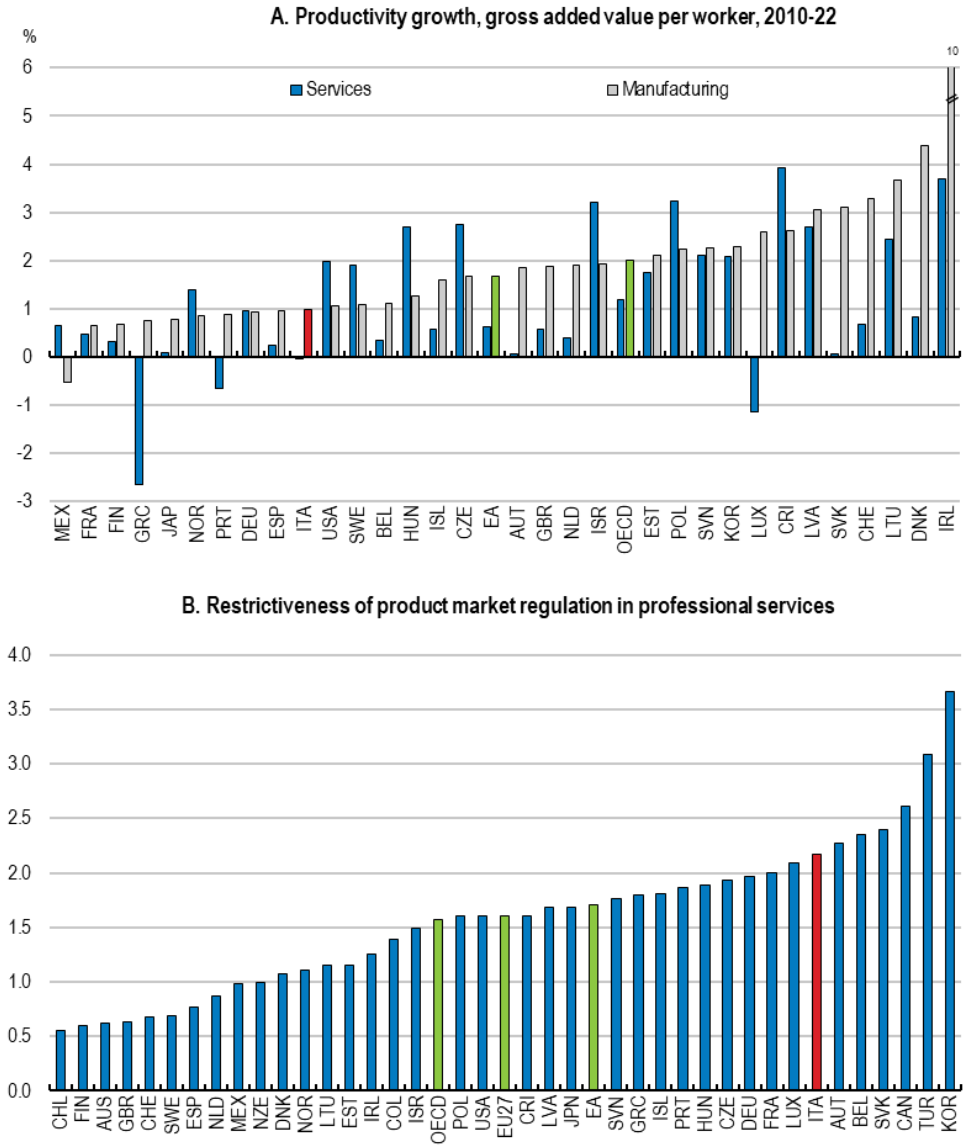
Key measures in the civil justice reform to strengthen performance incentives for judges and courts include a major redesign of the performance assessment scheme as well as the strengthening of the link between performance, remuneration and career progression. The criteria for assessing the performance of judges will become more stringent and account for judges' attainment of objectives in the annual case management programmes prepared by the heads of courts. Grades in the performance assessment scheme will be differentiated by allowing for three grades ("pass", "good" or "very good") that will specifically account for judges' organisational skills. The heads of courts will be required to constantly monitor the performance of the court and the individual judges. In case of large increases in pending cases or underperformance by individual judges, the head of the court will be required to draw up a plan to remedy the situation. Performance of individual judges will be linked to career progression and remuneration, with underperformance delaying career progression and related salary increases. Appointment decisions for heads of courts will explicitly account for the organisational skills of candidates. Moreover, failure of the heads of courts to comply with monitoring and intervention obligations and failure of individual judges to cooperate with the heads of courts may constitute disciplinary offences. Overall, these measures are significant steps to strengthen performance incentives for judges and courts. Successful implementation will require allowing for sufficient differentiation between high- and low-performing judges, including by ensuring that only a limited share of judges attains the highest grade in the performance assessment system. An exceedingly high share of judges attaining the highest grade would risk making promotions and related salary increases fixed elements of careers rather than performance incentives (European Commission, 2022).

1.5.2. Remaining barriers to competition in services should be lifted

Vigorous competition is a key driver of productivity growth, strengthening firms' incentives to adopt organisational and technological innovations, as well as improving the allocation of resources in the economy (OECD, 2015). In Italy, the main competition-related issues are barriers to competition in the services sector, where productivity growth has been particularly low (Figure 1.28). While this is partly explained by sectoral specialisation within the services sector, including the large weight of tourism, it also reflects remaining barriers to competition, especially professional services and local public services, such as water, transport and waste disposal. To the extent that services are used as inputs by businesses in other sectors, these barriers to competition hinder productivity growth more widely. For instance, high barriers to entry in legal services raise the cost of legal services used by businesses across the economy, thereby limiting the productivity benefits from the ongoing reform of the judicial system.

Figure 1.28. Pro-competition reforms are needed in the services sector



Note: The preliminary 2023 Product Market Regulation data suggest that regulation of professional services in Italy remains among the most restrictive in the OECD.
Source: OECD Productivity database, OECD 2018 PMR database.

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The competition reform legislated in 2022 goes some way towards reducing entry barriers in services, including by mandating competitive auctions for public goods. An annual law to strengthen competition is a key requirement of the NRRP, with the 2022 reform subjecting concessions for hydro-electric power generation, beaches, and street trading (such as markets and fairs) to competitive auctions at expiry rather than automatic renewal. These measures should be implemented swiftly, and any backtracking should be avoided.

“Fair compensation” rules in professional services risk limiting market entry and post-entry growth of high-productivity businesses. A recent reform has expanded the scope of “fair compensation” rules from lawyers to all professions (including accountants, architects, civil engineers, real estate agents, and notaries) and from contracts between professionals and the public administration or large businesses in the financial sector to all contracts with medium-sized and large businesses. These risk being perceived more widely

as minimum tariffs by market participants. “Fair compensation” rates will be set between professional associations and business associations representing medium-sized and large businesses. This risks limiting room for high-productivity businesses to set lower rates in order to gain market shares, while favouring incumbents that have an established client base (Competition Authority, 2017). The determination of services rates should be left to negotiations between the contracting parties.

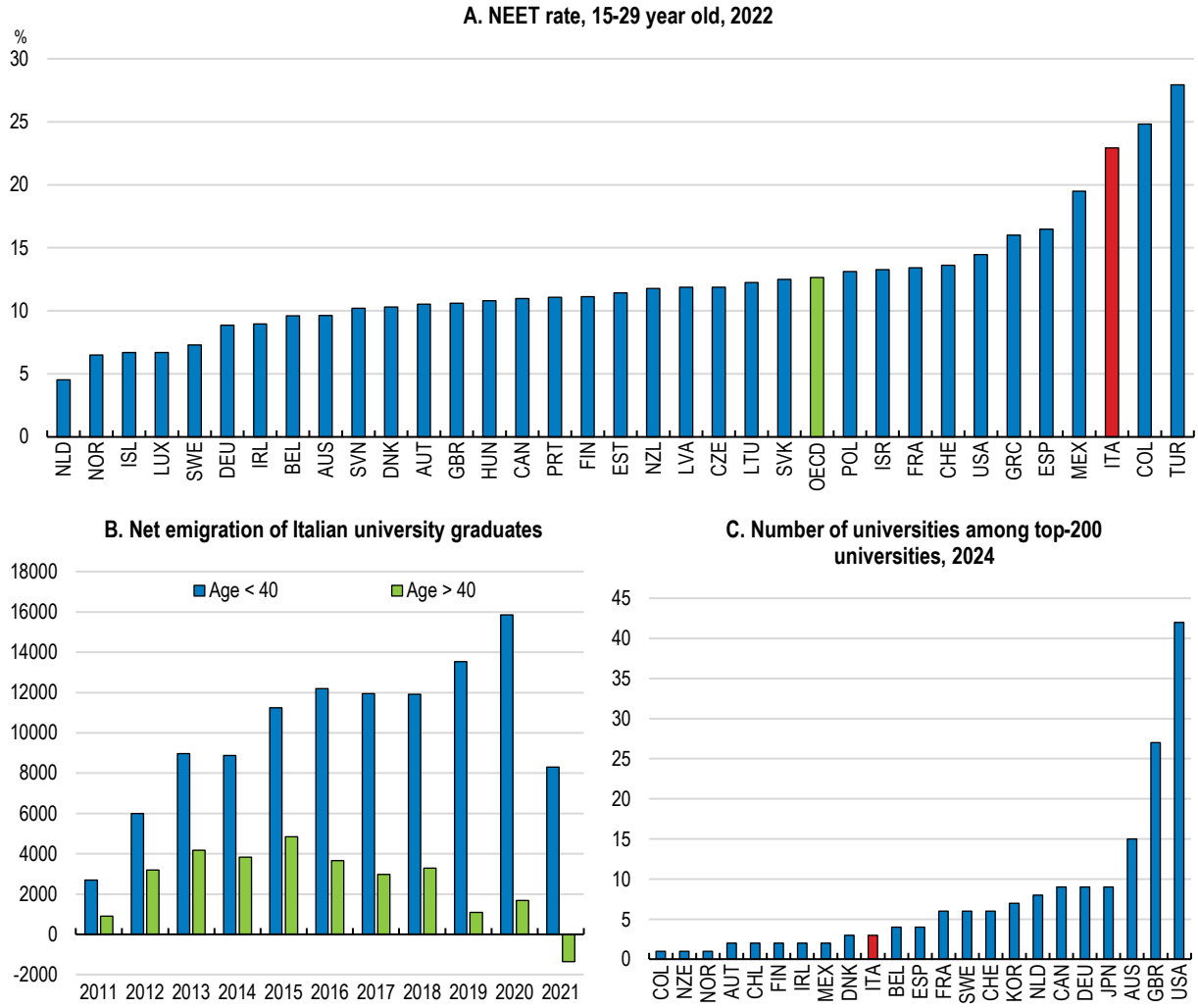
The market for local public services, such as transport, water and waste management, is highly fragmented, with small and cost-inefficient providers co-existing with larger ones that benefit from economies of scale (Refricerche, 2023). In many cases, local public entities award contracts for service provision in-house to firms they fully or partially own, favouring incumbents while excluding potentially more efficient external providers. This contributes to low efficiency and poor services, for instance in municipal waste collection or public bus services. Legislation adopted in 2023 tightens the rules on in-house provision, including by requiring local administrations to provide proof of the beneficial effects on investment, cost efficiency, and service quality after the contract has been awarded. The competition authority has been tasked with the monitoring of the new contracts and has been granted access to the anti-corruption agency’s database of all public procurement contracts. The new rules are a positive step to make the market for local public services more contestable, but the impact on in-house provision needs to be closely monitored. In case the new rules do not curb the prevalence of in-house provision, the rules may need to be tightened, including by requiring local administrations to provide proof of the beneficial effects before the contract is awarded rather than ex-post.

While there has been progress in reducing operational restrictions in the retail sector, restrictions on promotional sales of physical outlets and the opening of outlets remain comparatively high. Rules on opening hours have been completely liberalised at the national level, but rules on promotional sales and sales periods for physical retail outlets remain stringent relative to rules for online retailers. This may give an undue regulatory advantage to online retailers irrespective of their competitive position and thereby negatively impact productivity. Red tape regarding the opening of new businesses has been cut significantly through the digital “business in one day” platform, but the size threshold above which an administrative authorisation is needed to establish an outlet is relatively low compared to the OECD average.

1.5.3. Boosting the efficiency of the tertiary education system

Long-standing weaknesses in tertiary education and basic research prevent Italy from fully taking advantage of potential productivity gains from ongoing technological change. The share of young people who are neither in education, employment or training (NEET) is among the highest in the OECD, with adverse effects on labour-market relevant skills in the long run (Figure 1.29, Panel A). The share of university graduates in the population aged 25-34 years is the second-lowest in the OECD after Mexico, and many recent graduates emigrate. Between 2011-2021, cumulated net emigration of recent university graduates amounted to about 110,000 people, equivalent to around one-third of an annual graduate cohort. Temporary professional spells abroad can enhance skills and result in a net brain gain when temporary emigrants return. But in Italy emigration at younger ages does not appear to be reversed by net return migration at older ages (Figure 1.29, Panel B), suggesting that there is significant brain drain. Despite some progress over the past years, the quality of Italian universities, as measured – albeit imperfectly – by the number of universities among the global-200, lags behind other large European countries, most notably France, Germany, and the United Kingdom (Figure 1.29, Panel C). Poor outcomes from tertiary education partly reflect low levels of funding, with expenditure per student being about 30% lower than the OECD average (OECD, 2022), but there is also scope to make the system more efficient. For instance, Portugal achieves substantially better outcomes at broadly equivalent per-student funding rates.

Figure 1.29. Low skills are holding back innovation and digitalisation



Source: OECD (2022b); Istat; QS World University Rankings.

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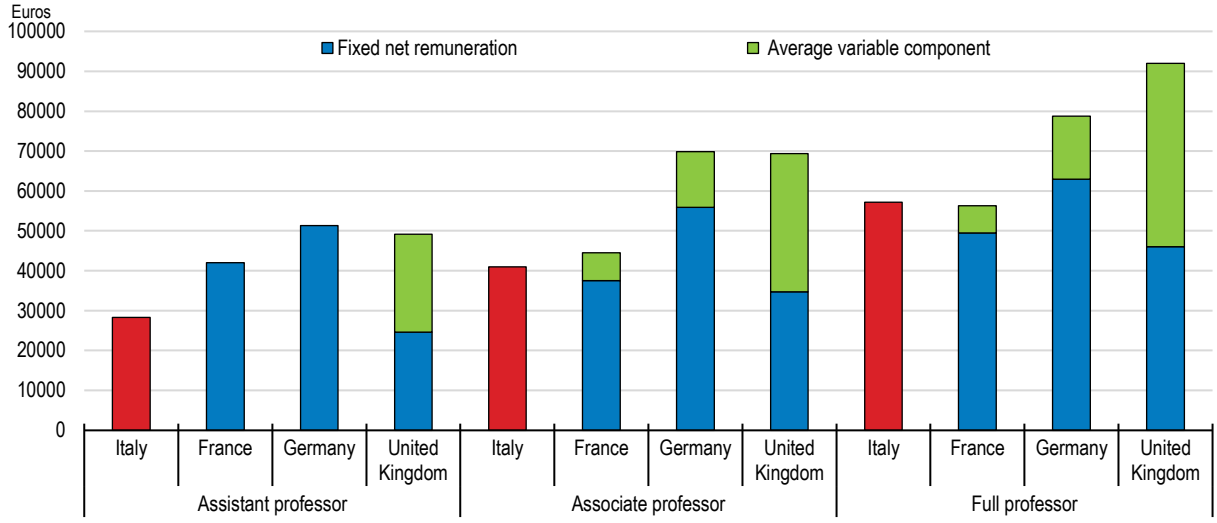
A renewed focus on developing high-quality post-secondary technical education, including dual education models, enhancing student orientation and increasing alignment of tertiary education curricula with labour market needs would increase the efficiency of tertiary education spending. This includes the expansion of advanced technical schools (*ITS Academy*) that provide 2 or 3-year professionally-oriented technical programmes in close cooperation with regional businesses. The *ITS Academy* schools, if well-resourced and run, have the potential to attract into education youth populations who are currently unable or not interested in attending university and may also be able to address issues around low technical skills and contribute to improving job prospects for tertiary graduates. Moreover, they allow students to enrol in universities after graduation, building a bridge between educational paths. The employment rate of graduates from the *ITS Academy* schools is about 90% one year after graduation. To increase enrolment from the currently low levels (around 20,000 registered students in 2022), available funding in the NRRP should be fully used.

While employment rates of tertiary graduates have continued to increase over the past years, ongoing measures to improve the job prospects of recent graduates should be continued and strengthened. This includes ongoing measures to improve students' orientation, initiatives to provide students with psychological support, and a reform of degrees aimed at introducing more flexibility and multidisciplinarity

in the academic path. The recent reform of doctoral programmes to respond to current innovation needs, promote researchers' recruitment by businesses and make educational paths increasingly oriented to labour market needs is a further positive step that should be continued. In the medium term, the authorities could also consider re-allocating funds from parts of the tertiary education system that lead to poor graduate labour market outcomes despite recent reforms to the *ITS Academy* to durably raise capacity.

Universities would also be improved by further strengthening evaluation mechanisms and expanding initiatives to attract more research talent from abroad, including Italian researchers working in foreign research institutions. Evaluation criteria for universities increasingly account for excellence and relevance of research, such as the size of awarded competitive international grants and technological transfers to universities. Since 2018, the Departments of Excellence programme awards dedicated funding to public universities to support the strategic development of their best departments. This will require more attractive working conditions and a substantially stronger link between performance and pay. Average pay of Italian researchers is low compared with France, Germany, and the United Kingdom, especially at the entry level (Figure 1.30). This discourages talented researchers from entering academic careers, depriving Italian universities of top research talent. Moreover, Italy's university system is unique among its peers in offering no variable pay component (Civera et al., 2023). Introducing a pay supplement linked to performance in research and other core activities would raise average pay and strengthen performance incentives at limited cost. Differentiating salaries to account for large cost-of-living differences across the Italian territory would raise the attractiveness of taking up research and academic positions in the country's north.

Figure 1.30. Performance incentives of university professors are weak



Note: Assistant professor: Ricercatore a tempo determinato B (Italy); attaché temporaire denseignement / recherche (France); Junior Professor (Germany); lecturer (United Kingdom); Associate professor: Professore Associato (Italy); maître de 55nclusion55s (France); W2 Professor (Germany); senior lecturer / associate professor (United Kingdom); Full professor: Professore Ordinario (Italy); professeur des universités (France); W3 Professor (Germany); professor (United Kingdom)
Source : Istat (2023) ; Civera et al. (2023)

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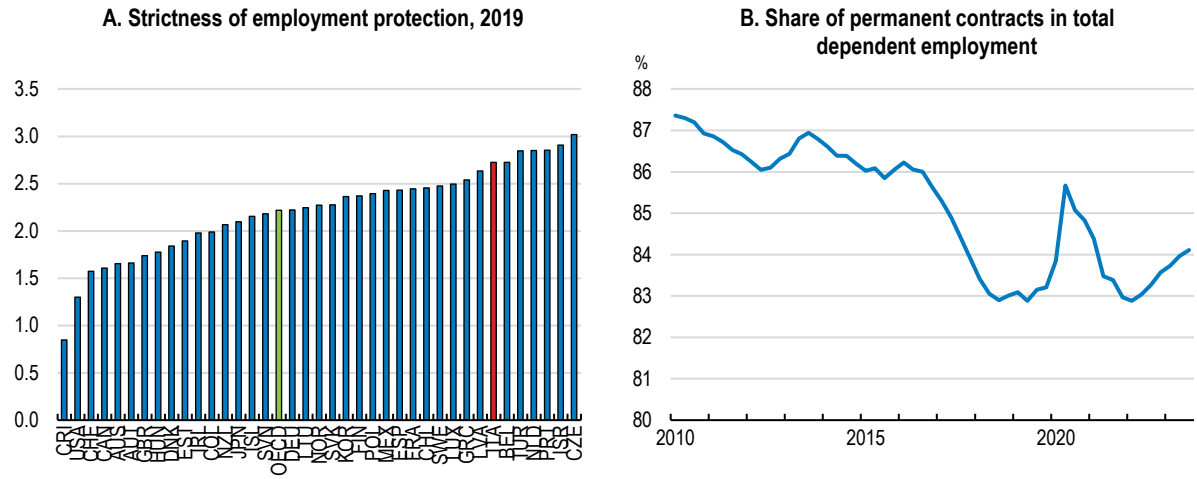
1.5.4. Re-deploying workers to high-productivity businesses

Improving the allocation of labour would raise productivity growth by allowing the most innovative businesses to expand and attract workers from low-productivity ones. In Italy, employment protection of regular workers remains strict, especially in businesses with more than 15 employees (Figure 1.31, Panel A). While the automatic re-instatement of workers in case of unfair dismissal was abolished by the Jobs Act of 2015, the Constitutional Court ruled against new rules establishing a linear link between years of

service and compensation for unfair dismissal (2 months of salary for each year of service). The ruling gives judges discretion over the amount of compensation within a range set by the law that is independent of length of service. For firms with more than 15 employees the range is set between 6 and 36 months, which re-introduces an element of legal uncertainty and reduces larger businesses' incentives to hire on permanent contracts while discouraging smaller firms from growing. Overall, the share of permanent contracts in early 2023 was lower than in 2015 (Figure 1.31, Panel B). Linking the range of compensation for unfair dismissal to length of service – the minimum and maximum amount of compensation should increase with length of service – would allow judges some discretion over the amount of compensation and may thus be in line with constitutional rules. Providing that the ranges are set sufficiently narrowly, this setup would allow for more legal certainty than the current one. By contrast, easing the rules on the extension of temporary contracts beyond a duration of 12 months, as recently legislated, may further aggravate the duality of the labour market, trapping some temporary workers in low-productivity and low-wage jobs (OECD, 2018a).

Figure 1.31 .The share of permanent contracts in total employment is below the level in 2015

Share of permanent contracts in total employment, %



Note: The OECD indicators of employment protection legislation evaluate the regulations on the dismissal of workers on regular contracts. Panel A shows the values for individual dismissals.
Source: OECD Employment Protection Legislation Database; Istat.

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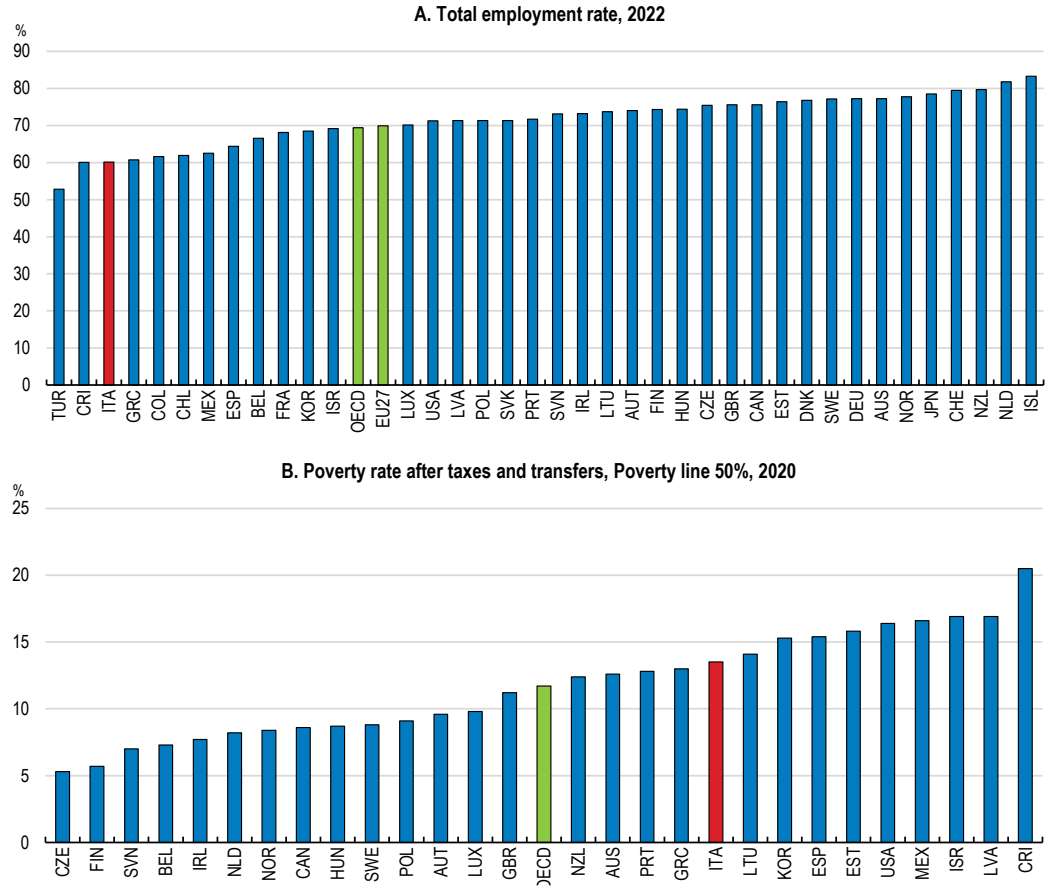
The use of non-compete clauses in employment contracts may prevent workers from moving to competing businesses. Italian legislation provides for clear limits on the use of non-compete clauses, with undue use being legally unenforceable. Despite this, recent evidence based on a small survey of 2000 workers suggests that about 16% of Italian workers are subject to non-compete clauses in employment contracts, most of which would be legally unenforceable (Boeri et al., 2023). This may nonetheless deter some workers with insufficient information about enforceability from moving to competing businesses. More comprehensive surveys will be needed to draw firm conclusions, but if this estimate proved accurate, it would represent a strikingly high proportion of workers. While non-compete clauses may be justified for highly specialised workers to prevent the leakage of trade secrets, it is highly implausible that they are needed for a significant proportion of the workforce, including low-qualified and low-wage workers. A range of OECD countries, including Portugal, the United Kingdom and the United States, have issued guidelines on non-compete clauses for employers in order limit their use to justified cases. The Italian competition authority could be tasked with issuing similar guidelines and strengthen advocacy in this area.

1.6. Raising labour market participation and making growth more inclusive

The poverty rate is above the OECD average, partly reflecting low employment rates, especially of young people and women, and the traditional weakness of the social safety net (Figure 1.32). The youth unemployment rate has come down to about 23% since the mid-2010s but remains among the highest in the OECD, while the female labour market participation rate (about 52%) remains well below the OECD average, despite the significant increases over the past two decades. The Citizen's Income (*Reddito di cittadinanza*), a minimum income programme that was rolled out in 2019, played a useful role in protecting vulnerable households from falling into extreme poverty during the COVID-19 pandemic (Istat, 2022). However, it lacked well-developed activation measures to encourage and support people to return to work, and the social benefits were insufficiently targeted to those who were most in need of support (Pacifico and Scarpetta, 2021; Hyee et al., 2020). Effective tax rates of taking up employment at low earnings levels were 100%, much higher than in other countries with large minimum income schemes, such as France and the United Kingdom, where the tax and benefit system provides better incentives for labour market participation. The recent replacement of the existing minimum income scheme (Citizen's Income) with a new scheme that aims to improve the targeting of the national social assistance programme and strengthen work incentives. The new scheme includes two new separate programmes: a social assistance scheme for households with specific care responsibilities (minors, seniors or disabled people) called *Adi* and a training allowance for adults aged 18-59 who actively participate in an active labour market programme, called *Sfl* (Box 1.5).

Figure 1.32. Employment is low and the poverty rate is above the OECD average



Source: OECD Income Distribution database, OECD Annual Labour Force Statistics database.

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Box 1.5. Recent reforms to social assistance

The new social assistance scheme (*Assegno di inclusione*, Adi) for those with specific care responsibilities will be similar to the previous Citizens' Income introduced in 2019 (Table 1.8). The benefit will amount to €500/month multiplied by an equivalence scale that accounts for household size plus a rent supplement of up to €280/month. As in the Citizen's Income, only the household member with "intense" care responsibilities will be exempted from activation and work availability requirements. The maximum duration of Adi will be 18 months, with illimited possibilities for renewal for periods of 12 months. According to simulations in Maitino et al. (2023), about 50% of current Citizen's Income recipients will be eligible for the new Adi.

For low-income households and adults without care responsibilities, the reform foresees the introduction of a training allowance (*Supporto per la formazione e il lavoro*, Sfl). The allowance is paid only while participating in an active labour market programme. It amounts to €350/month and can be claimed by several individuals within the same household. Additional labour income related to the take-up of employment during the year will be exempted from the calculation of benefit eligibility up to an annual ceiling of €3000. The benefit will be subject to strict conditionality, both in terms of participation in activation measures and availability for work. The maximum duration of the benefit will be 12 months with no possibility for renewal.

Table 1.8. Recent reforms to social assistance

		Previous Reddito di cittadinanza (RdC) scheme	New Assegno di inclusione (Adi) regime	New Supporto per la formazione e il lavoro (Sfl) regime
Eligibility	Demographic characteristics	None	At least one household member <18 years, >60 years, or disabled	Age 18-59, no disability, no specific care responsibilities
	Equivalised household income ceiling (ISEE)	<9360€	<9360€	<6000€
	Wealth ceiling[1]	Secondary residence<30000€, other wealth<10000€	Primary residence<150000€, other immovable property <30000€, other wealth<10000€	Primary residence<150000€, other immovable property <30000€, other wealth<10000€
	Residence requirements	>10 years	>5 years	>5 years
Conditionality	Work availability	Registration with the public employment service for employable household members and acceptance of suitable job offers	Same as RdC but stricter definition of suitable job offer: a/ wage>minimum collectively bargained wage; b/ distance<80km; c/ duration>1 month; hours>60% of full-time job	Same as RdC but stricter definition of suitable job offer: a/ wage>minimum collectively bargained wage; b/ distance<80km; c/ duration>1 month; hours>60% of full-time job
	Participation in ALMP	Yes, depending on the activation plan	Yes, depending on the activation plan	Yes
Benefit	Maximum benefit before multiplication with equivalence scale	500€/month + 280€/month rent supplement	500€/month + 280€/month rent supplement	350€/month
	Equivalence scale (adjustment for household structure, ES)	<2.2	<2.3	=1 (each household member between 18-60 years can receive the benefit)
	Effective monthly benefit	500€*ES + 280€ rent suppleme–t - household income	500€*ES + 280€ rent suppleme–t - household income	350€/month
	Treatment of additional labour income related to take-up of employment	Earnings disregard of up to 20% of additional income in calculation of effective benefit	Suspension of benefit in case of short-term contract (1-6 months); earnings disregard of 3000€ in calculation of effective benefit	Suspension of benefit in case of short-term contract (1-6 months); earnings disregard of 3000€ in calculation of benefit eligibility

1. The ceiling for "other wealth" refers to a 3-person household.
Source: OECD Tax-Benefit database.

The non-renewability of the Sfl benefit, regardless of the recipient's level of economic vulnerability, and the requirement to participate in an active labour market programme imply that, in contrast to the Citizen's Income, the Sfl is a training participation allowance rather than a standard minimum income benefit. Sfl recipients do not automatically become eligible for the Adi once the Sfl expires. According to simulations in Maitino et al. (2023), about 20% of current Citizen's Income recipients will be eligible for the Sfl for 12 months.

The introduction of the training allowance (Sfl) that will replace the Citizen's Income for employable people – people aged between 18-59 and without specific care responsibilities – may strengthen work incentives by reducing benefit generosity and duration, as well as by imposing strict conditionality. It could also result in fiscal savings of about 1% of GDP in the short term (Maitino et al., 2023). But the Sfl risks doing so at the cost of increased poverty of beneficiaries, especially those who cannot access suitable training or who have reached the maximum duration of the benefit. The unavailability of a rent supplement in the Sfl may also have adverse effects on poverty. In order to strengthen the reform's impact on labour market participation while mitigating the risk of higher poverty, the authorities should improve work incentives and activation policies while maintaining access to social protection for those unable to find employment.

Financial incentives to take up work should be strengthened. Lifting the suspension of both *Adi* and *Sfl* for recipients taking up short-term jobs and making the withdrawal of benefits in case of increased earnings more gradual, as for instance in the United Kingdom's Universal Credit system, would reduce the effective tax rate on taking up work. The fiscal cost of these measures would be modest, given benefit recipients' limited average earnings potential. Financial incentives for taking up work could further be improved by linking the size of the benefit to the local cost of living, which varies widely across Italian regions. According to data by the social security institute, in the south of the country the Citizen's Income benefit was higher than the net labour income of 45% of private sector employees (INPS, 2019). A first step would be to link the ceiling for the housing benefit to the local cost of living, as is for instance the case in Finland and Sweden.

A key issue for the success of the reform will be to strengthen active labour market policies to reduce barriers to employment for vulnerable people. This will require decisively boosting the training system (OECD, 2019b). The creation of a new digital platform (*Sistema Informativo per l'Inclusione Sociale e Lavorativa*, SIISL) is a positive step that may facilitate the matching of job seekers and employment service providers by consolidating databases, including by unifying regional databases on job and training offers and making them available to social benefit recipients. The funding of about 2½ percent of GDP available through the NRRP for a new programme (*Garanzia occupabilità dei lavoratori*, GoI) to strengthen lifelong learning is a positive step but needs to be complemented with rigorous quality control for training providers (OECD, 2021e). In particular, the authorities should consolidate the 21 regional-level accreditation frameworks for employment service providers in a single national-level one to ensure that providers active on the new SIISL platform meet minimum quality standards. Moreover, the existing *Assegno di ricollocamento* programme – that provides labour agencies with a voucher that increases with individuals' distance from the labour market and that can only be cashed if the individual finds a job for a minimum period of time – should be improved and expanded. More generally, the training requirements for Sfl recipients should be ambitious and account for both job seekers' skills and labour market needs. Currently, participation in any training course, irrespective of the number of monthly hours or labour market prospects, qualifies as satisfying the training requirements of the Sfl. Training courses that amount to few hours per month or that do not improve the employability of the recipient should not qualify as satisfying the training requirements of the Sfl.

Access to social protection could be improved by better accounting for benefit claimants' labour market prospects. The reform deems any person between ages 18-59 years without disabilities and without specific care responsibilities employable. But only about 20% of Citizen's Income recipients who were employable according to this definition had a job in 2022 and about 60% had not been employed over the

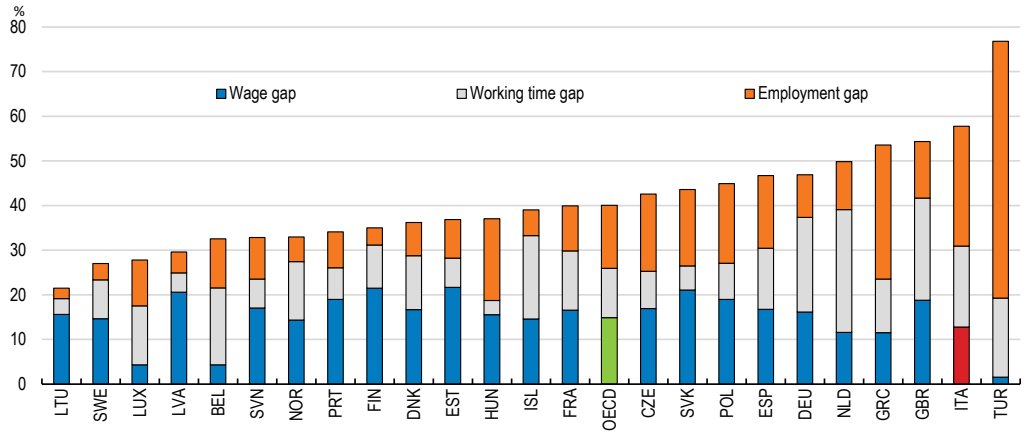
previous 3 years (Anpal, 2022). This suggests that a large share of Citizen's Income recipients who are deemed employable by the reform are actually very distant from the labour market. To address this issue, the authorities could use existing quantitative profiling tools (Anpal, 2023) to estimate individual-level employability scores and direct people with very low scores to the social services for an in-depth multidimensional assessment. If the social services confirm the profiling tool's estimate, claimants could be given access to the Adi, possibly at a lower benefit level, irrespective of whether they have specific care responsibilities. All other claimants could be directed to the employment services and apply for the Sfl. Beneficiaries of the Sfl who are unable to find employment after 12 months could be re-assessed by the social services and either granted access to Adi at a lower benefit level or directed to re-apply for the Sfl. This setup would ensure that limited funds available for training are targeted to employable people while ensuring that non-employable people are covered by the social safety net. Streamlining the application process for the Sfl that currently requires registration across a variety of agencies and websites would limit the risk that vulnerable people with low digital skills are inadvertently excluded from the benefit.

Specific measures will be needed to raise the labour market participation of women. Female labour market participation is among the lowest in the OECD, especially in the south of the country (OECD, 2019a), and many women work part-time and earn lower hourly wages than men with similar qualifications (Figure 1.33). To some extent this may reflect gender stereotypes that may influence educational and occupational choices (Bertrand, 2020), or employers' conscious or unconscious biases that may lead to the perception that the average woman is less productive than the average man. According to this explanation, gender gaps reflect "sticky floors", for example. persistent disadvantages over women's working lives from labour market entry to retirement (Ciminelli et al, 2021). In Italy, girls choose high school tracks and university majors with significantly worse labour market prospects than boys, even though they outperform boys in education (Carta et al., 2023). These choices largely reflect cultural norms and gender stereotypes and could be addressed by exposing students to positive role models (women working in STEM jobs or occupying high-level positions) and raising awareness of parents and teachers to stereotypes in the media and in the materials that parents and educators use to raise children. A number of European countries, including Belgium, Finland, France, Norway and the United Kingdom, have introduced legislation that aims to limit the use of gender stereotypes in advertising.

Family and labour policies also contribute to the prioritisation of unpaid home work over formal employment, especially where social norms and gender stereotypes still view women as the primary caregivers. In Italy, access to early childhood education is limited, with enrolment at around 26% well below the OECD average of 36% (OECD, 2023a), which makes it challenging for women to return to work after childbirth. Women are also over-represented in informal long-term care for the elderly, accounting for about two-thirds of informal caregivers (Brugiavini et al., 2023). Moreover, female career paths may not allow them to accumulate human capital at the same rate as men, e.g. because they interrupt their careers after childbirth, spend less time at the workplace than their male peers or forego promotions. While income taxes based on individual income rather than joint income of the household and the recent introduction of a cash benefit for parents with a supplement for second earners (*Assegno Unico Universale*) incentivise female labour market participation, the tax and benefit system as a whole remains favourable to single-earner households (Carta et al., 2023). This largely reflects social benefits that are conditional on household income and the dependent spouse tax credit, which should be phased out.

Figure 1.33. The labour income gap between men and women is among the highest in the OECD

Men – women, %, 2018



Note: The labour income gap is defined as the sum of differences in female hourly earnings, hours worked and employment rates relative to men.

Source: Eurostat Structure of Earnings Survey; OECD Labour Force Statistics.

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Box 1.6. Estimated GDP impact of selected structural reforms

The following estimates quantify the cumulative GDP impact of reform scenarios by 2050 and are illustrative.

Table 1.9. Illustrative GDP impact of selected recommendations

Structural reform	Scenario	Long-run effect on the level of GDP per capita (2050)
Improve the efficiency of civil justice	Close half of the gap with the OECD average by 2060.	+1.6%
Improve the efficiency of the public administration	Close half of the gap with the OECD average by 2060.	+1.3%
Strengthen product market competition, especially in services	Close half of the gap with the top-5 performers by 2031.	+1.6%
Strengthen enrolment and quality of tertiary education	Raise educational attainment by 0.5 years by 2060 relative to the baseline.	+1.5%
Improve the quality of active labour market policies	Spending per unemployed increases by 10% by 2031 relative to the baseline.	+1.0%
Raise female labour market participation	Female employment rate increases by 1.5 percentage points by 2050 relative to the baseline.	+1.0%
Total		**+8.0%**

Source: OECD Long-term Model.

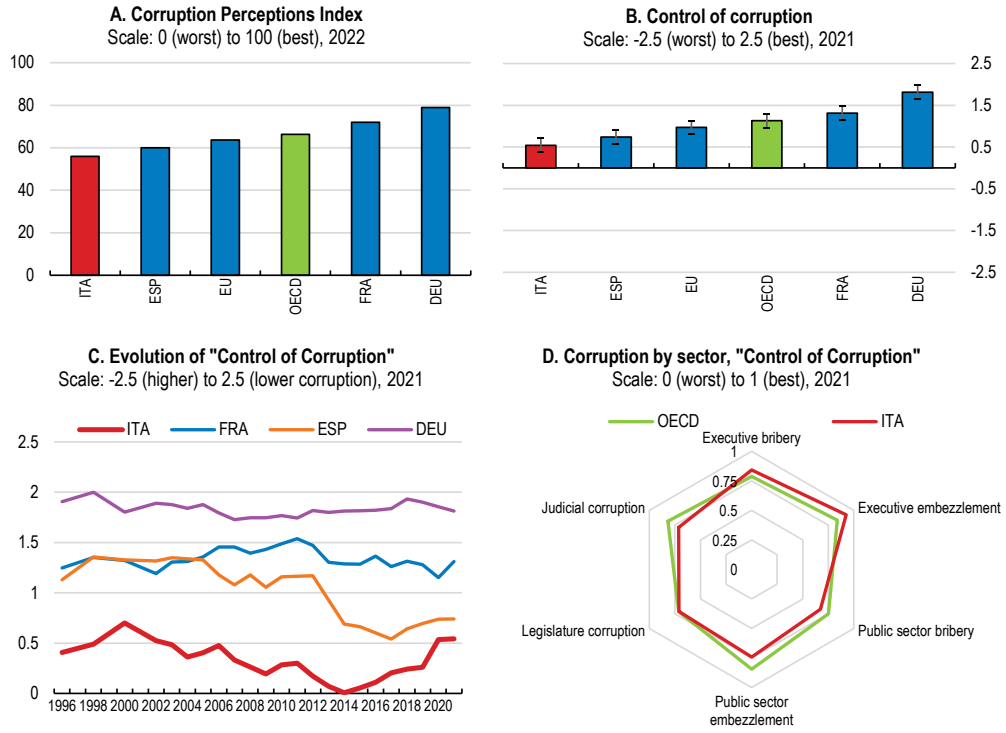
Narrowing gender gaps in the labour market is a priority of the NRRP. Plans in the revised NRRP to construct new early childhood education centres for 150,000 children should be swiftly and fully implemented. Reaching an early childhood education coverage of 45% by 2030 may require an additional expansion of early childhood education on top of that planned in the revised NRRP. Fiscal savings should be identified elsewhere to cover additional funding needs and the centres' operating costs in the medium term. There may also be a need to ramp up training to ensure that a sufficient number of teachers is available once the new childhood education centres become operational. Assuming class sizes of 7-10 children, between 15,000-21,000 new teachers may be needed to meet the objectives of the revised

NRRP. The authorities could also introduce measures to further incentivise paternity leave, including by introducing a "father quota" in the shared parental leave entitlement (currently 10 months) that can be used only by the father, or extending the number of "bonus months" if the father takes a minimum proportion of the family entitlement. The current Italian legislation already provides for 1 month of additional parental leave if the father takes at least three months of leave. This could help to share the burden of childcare, allowing both parents to work, as well as changing perceptions of the role of men and women. Public and private training providers could be required to provide training courses specifically targeted to women wishing to return to work after an extended maternity leave. Focusing on digital skills can be crucial in that respect, as barriers to access and low affordability of digital education as well as inherent biases and socio-cultural norms often limit girls' and women's scope to benefit from the opportunities offered by the digital transformation (OECD, 2018b). Expanding long-term care facilities for the elderly would further reduce informal caregiving responsibilities, which could reduce barriers to female labour market participation, although the impacts on the public finances would have to be taken into account.

1.7. Efforts to fight corruption need to be continued

Corruption reduces fiscal revenues and holds back productivity growth by distorting the allocation of resources. Recent evidence suggests that sales and employment growth in politically-connected Italian businesses is higher than in politically-unconnected ones, but productivity growth is not (Akcigit et al., 2023). While administrative measures to control corruption may lead to the re-allocation of resources to the most productive firms rather than politically connected ones, excessively stringent administrative measures for corruption control risk raising the cost of doing business, especially for small and medium-sized businesses that have limited capacity to navigate complex administrative systems.

Figure 1.34. Perceived corruption is above the OECD average



Note: Panel B shows the point estimate and the margin of error. Panel D shows sector-based subcomponents of the "Control of Corruption" indicator by the Varieties of Democracy Project.

Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Project, V-Dem Dataset v12.

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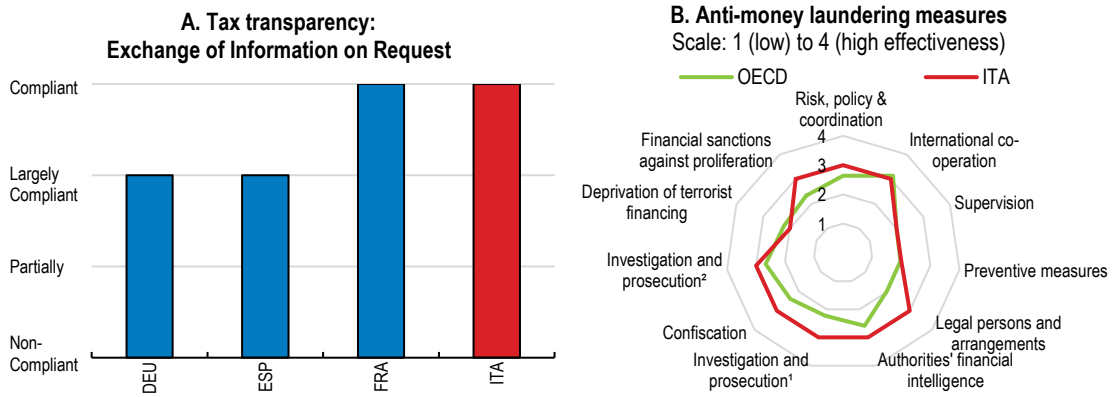
Perceived corruption in Italy is above the levels in other EU and OECD countries (Figure 1.34) While perceived corruption increased from the early 2000s to the mid-2010s, there has been a marked improvement thereafter that coincided with the creation of the independent anti-corruption agency (ANAC) in 2014. Perception-based indicators do not provide a comprehensive picture of corruption, since they can be influenced by cross-country differences in the interpretation of what constitutes corruption and are heavily influenced by media coverage of corruption around the date of the survey (Rizzica and Tonello, 2020). While there is thus some uncertainty around the precise country ranking of Italy in terms of corruption, the overall picture suggests that corruption is likely to be somewhat higher than in most western and northern European countries.

Figure 1.35. Tax transparency and anti-money laundering measures are effective



Note: Panel A summarises the overall assessment on the exchange of information in practice from peer reviews by the Global Forum on Transparency and Exchange of Information for Tax Purposes. Peer reviews assess member jurisdicti'ns' ability to ensure the transparency of their legal entities and arrangements and to co-operate with other tax administrations in accordance with the internationally agreed standard. The figure shows results from the ongoing second round when available, otherwise first round results are displayed. Panel B shows ratings from the FATF peer reviews of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a coun'ry's measures are effective against 11 immediate outcome". "Investigation and prosecuti"n¹" refers to money launderin". "Investigation and prosecuti"n²" refers to terrorist financing.

Source: OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes; and OECD, Financial Action Task Force (FATF).

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The authorities' two-pronged anti-corruption strategy combines a focus on prevention with repression. The prevention strategy builds on strengthening transparency on public accounts, including public procurement, and the appointment of civil servants. The independent anti-corruption agency (ANAC) is tasked with monitoring, sanctioning, and the definition of a national three-year anti-corruption plan. In terms of tax transparency, which reduces the scope for tax evasion, Italy is fully compliant, and anti-money laundering rules are effective (Figure 1.35). The prevention strategy is complemented with a repression strategy that provides for penalties for a broad range of corruption offences. While the overall framework is broadly in line with best practice, more could be done to mandate the disclosure of ultimate beneficiaries of public procurement contracts. On the repression side, recent legislation to strengthen whistle-blower protection is welcome and should be fully implemented. One useful approach to tackling the root causes of corruption would be to require mandating the mobility of public servants to reduce entrenchment in positions with excessive discretion over administrative procedures, including at local level where this not the norm. In addition, simplifying and digitalising administrative procedures as much as possible could help to reduce bureaucrats' discretionary room for manoeuvre. Re-assessing the public procurement thresholds above which public auctions become mandatory in the recent public procurement reform (Section 1.4.1) may reduce risks of corruption and collusion among bidders to which public procurement, including in the context of infrastructure projects, is vulnerable (OECD, 2016a).

1.8. Key Policy Insights recommendations

MAIN FINDINGS	RECOMMENDATIONS
Transition from fiscal policy support to fiscal prudence	
Public debt is on an upward trajectory at 2024 policies, limiting fiscal policy space.	**Steadily consolidate the public finances starting in 2025 to put debt on a more prudent path.**
Delays in the implementation of public investment projects under the NRRP risk reducing growth. Authorities have taken action to speed up implementation.	**Re-focus the NRRP on large and centrally managed investment projects that can be delivered, as foreseen by the revised NRRP.** Continue expanding technical assistance to local administrations and the hiring of specialised personnel.
The financial health of banks has improved over the past decade, but risks are rising. Banks and insurance companies remain exposed to domestic sovereign debt, with the life insurance segment of the insurance sector experiencing net financial outflows.	Continue to closely monitor rising interest and credit risk as financial conditions tighten and activity slows. Continue to monitor the evolution of securitised NPLs.
Bring debt on a more prudent path	
Fiscal consolidation will require measures to limit the growth of public spending and enhance its efficiency over the coming years. Public spending is heavily skewed towards pensions and interest payments, which are set to increase over the next two decades.	Phase out early retirement schemes. **Introduce a solidarity contribution for high pensions that are not due to high contributions.** **Make the fiscal savings targets of the forthcoming spending reviews more ambitious.**
The share of labour taxes in total revenue is higher than in OECD peers, while VAT collected and inheritance taxes are lower. A significant share of revenues is lost to tax evasion. The income tax base is eroded by costly tax expenditures. A recent enabling law foresees a comprehensive tax reform.	**Shift taxes from labour to property and inheritance, while ensuring that revenue is maintained or increases.** Update the property tax base calculations, taking into account distributional impacts. **Continue to tackle tax evasion, including by continuing to promote the use of digital payments and reversing the increase in the ceiling on cash transactions.** **Phase out costly tax expenditures that lack economic or distributional justification, including, for instance, by limiting the coverage of the dependent spouse deduction.**
The public administration is perceived as less effective than in most other OECD countries despite past and ongoing reforms. Ongoing reforms aim to improve human resources management and to reduce the administrative burden, including in the area of public procurement.	Continue strengthening the link between civil servants' performance, career progression and pay.
Raise potential GDP by enhancing productivity growth	
The efficiency of the judicial system is weak, contributing to low productivity growth. The ongoing comprehensive civil justice reform aims to promote digitalisation, streamline procedures, and unburden judges through the creation of trial offices.	**Continue strengthening the links between judges' performance, career progression and pay, and ensure that performance evaluation is thoroughly implemented.**
Productivity growth is particularly weak in services, partly reflecting regulations that stifle competition, especially in professional services.	Implement the competition reform legislated in 2022, including by submitting concessions to public tenders at expiry. **Reduce the scope of "fair compensation" rules in professional services.**
Low tertiary education enrolment and graduation rates hold back innovation and digitalisation.	**Continue to expand technical tertiary schools (ITS Academy).** Continue improving student orientation and aligning curricula with labour market needs.
The labour market does not sufficiently support the allocation of workers to high-productivity businesses, with micro businesses accounting for a large share of employment.	Reduce legal uncertainty for employers by linking the range of compensation for unfair dismissals to length of service.

MAIN FINDINGS	RECOMMENDATIONS
Raise labour market participation and make economic growth more inclusive	
Employment rates are low, partly due to weak financial incentives for social benefit recipients to take up employment. A reform of social assistance is underway.	**Make the withdrawal of benefits under the Adi and Sfl programmes more gradual in case of taking up employment.** Link the ceiling of the rent supplement to the local cost of living. Require beneficiaries of the training allowance (Sfl) to spend a minimum number of hours in training. **Expand access to the new social assistance benefit (Adi), including for people with very weak labour market prospects.**
Vulnerable people face barriers to employment, partly due to weaknesses in active labour market policies. The NRRP provides funding for a new lifelong learning programme.	Improve quality control for training providers by introducing a national-level certification scheme.
Labour market participation of women is among the lowest in the OECD, partly reflecting low availability of early childcare, parental leave policies and weaknesses in active labour market policies.	**Significantly expand coverage of early childhood education.** **Incentivise paternity leave by introducing a "father quota" or increasing the number of "bonus months" for leave taken by fathers.**
Continue to fight corruption	
Perceived corruption has declined markedly since the creation of the independent anti-corruption agency in 2014 but remains an issue.	Assess the impact on corruption of the new thresholds above which public procurement auctions become mandatory and reduce them if necessary. **Mandate the mobility of public servants within their administration, including local administrations.**

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2 Achieving the energy and climate transition

Gabriele Ciminelli

Cyrille Schwellnus

Italy is committed to reduce greenhouse gas emissions by 55% relative to 1990 by 2030 and reach net-zero by 2050. Achieving these goals requires a significant strengthening of decarbonisation policies. Fully implementing plans to make carbon tax rates more similar across sectors, including by aligning fossil fuel excise taxes more closely with emissions content, would promote carbon abatement where costs are lowest. Boosting green electricity generation requires further streamlining of permitting processes, notably by defining suitable areas for renewable power plants and raising capacity ceilings for simplified permitting. Continuing to strengthen public transport and regional train networks, reducing the number of highly polluting vehicles and aligning car-related taxes with emissions would contribute to the decarbonisation of transport. In the buildings sector, recently reformed tax credit schemes should be complemented with subsidised loans and grants to promote energy-efficient retrofitting, especially for low-income households. In parallel to strengthening decarbonisation policies, Italy needs to reinforce adaptation policies, notably by mitigating risks from flooding, landslides and extreme heat.

Italy is committed to decarbonising the economy, and its National Recovery, and Resilience Plan includes many large investments and structural reforms that are geared towards this objective. Nevertheless, achieving the energy and climate transition is a major challenge and requires substantial further policy action, as in many other countries. While Italy has reduced greenhouse gas emissions considerably over the past two decades, progress has slowed in recent years. The electrification of the economy and the shift towards renewable energy to generate electricity need to accelerate substantially. Major efforts to reduce emissions from the buildings and transport sectors, including by decreasing energy consumption, are also needed. Overall, the transition will have limited effects on long-run GDP but will require large investments and have a significant fiscal impact. There will be a large-scale shift in employment across sectors, which will require the government to put in place policies to facilitate this structural transformation and protect vulnerable households. At the same time, Italy will benefit from lower dependence on imported energy and better air quality. Italy is more exposed than many countries to extreme weather events and needs to strengthen its framework to adapt to climate change.

2.1. The current state of the transition in Italy

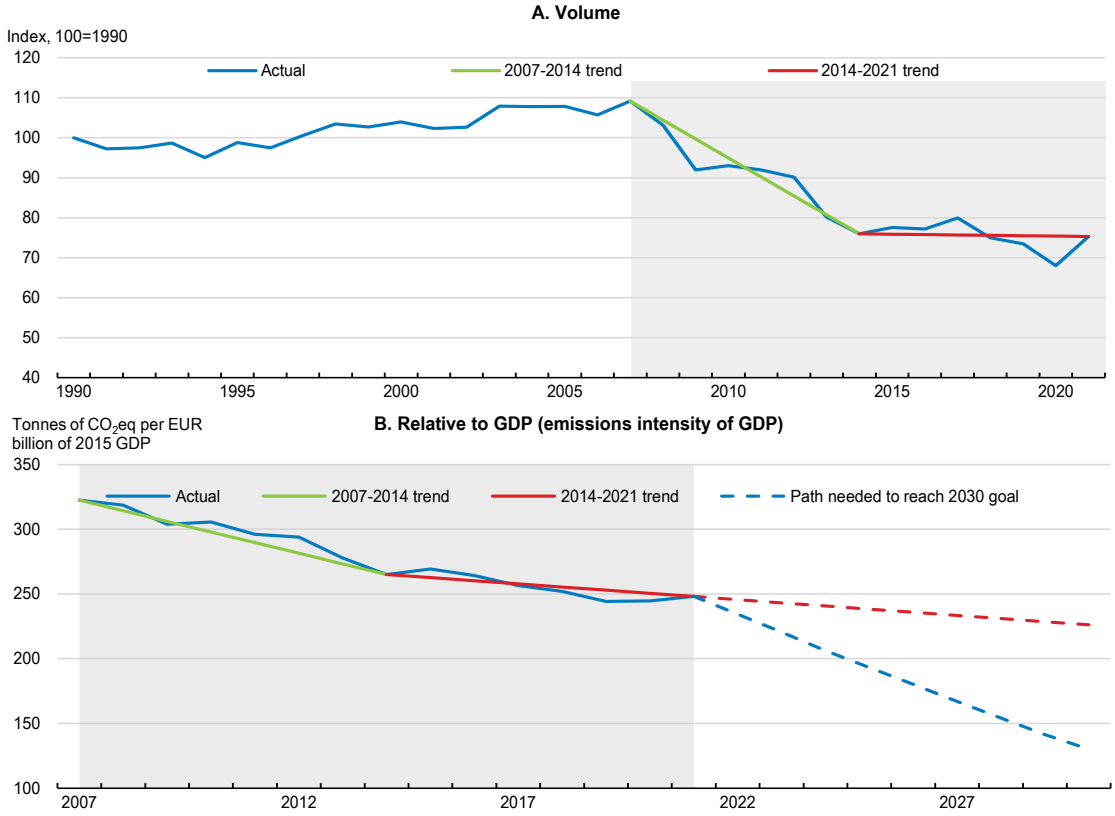
Italy has made significant inroads in reducing greenhouse gas emissions over the past two decades, but progress has slowed in recent years. Economy-wide emissions in 2021 were about 30% lower than their 2007 peak (Figure 2.1, Panel A). The decline in emissions was steep over 2007-14, thanks to an important reduction in the emissions intensity of GDP and aided by negative GDP growth. Progress in emissions reduction has slowed considerably since 2014, with emissions in 2021 being only marginally lower than in 2014. This slowdown in emissions reduction is partly explained by the economic recovery but also by slower progress in reducing the emissions intensity of GDP (Figure 2.1, Panel B). Electricity generation and manufacturing and construction industries experienced the largest declines of emissions among the biggest emitting sectors, while emissions declined the least in buildings and transport (Figure 2.2, Panel A). Transport, electricity generation, manufacturing and construction and buildings currently each account for about 20%-25% of emissions (Figure 2.2, Panel B).

Italy has a goal to reduce economy-wide emissions by 55% by 2030 relative to 1990 and reach net-zero emissions by 2050. Further, the EU Effort Sharing Regulation sets a legally binding target for Italy to reduce greenhouse gasses emitted from specific sectors – road transport, buildings, agriculture, waste management and non-energy-intensive industries – by 44% by 2030 relative to 2005. Emissions from energy-intensive industries, the power sector and aviation are not covered by the Effort Sharing Regulation, as they are regulated by the EU-wide Emission Trading System (ETS), which sets an EU-wide target but not country-specific ones. The EU Land Use, Land Use Change and Forestry Regulation sets a legally binding target for Italy to increase the removal of emissions through land use by 1% over 2005-30.

The distance between 2021 realised emissions reductions and 2030 targets is large, meaning that a strong acceleration in emissions reduction is needed (Energy & Strategy, 2023). Italy's economy-wide emissions declined by 25% over 1990-2021 against a 55% target over 1990-2030, while those from sectors covered by the EU Effort Sharing Regulation declined by 20% over 2005-21, against a 2005-30 target of 44%. Projecting Italy's GDP to 2030 using OECD long-term scenarios, it appears that, in the remaining years up to 2030, Italy would need to reduce the emissions intensity of GDP at a pace more than five times faster than the one observed over 2014-21 in order to meet its decarbonisation targets (Figure 2.1, Panel B).

Figure 2.1. Emissions reduction has decelerated in the mid-2010s

Economy-wide greenhouse gas emissions



Note: Path needed to reach 2030 is calculated assuming a given trajectory for real GDP over 2023-30.
Source: OECD calculations based on OECD Long-Term Model, OECD Emissions Database, OECD IPAC Climate Action Dashboard (Maes et al., 2022) and IMF World Economic Outlook.

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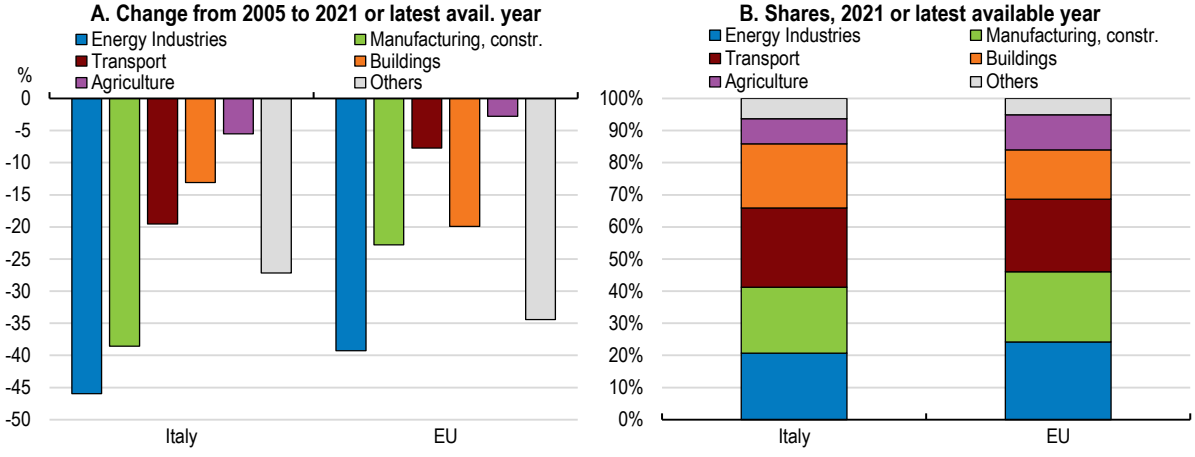
Figure 2.2. Transport, energy industries and buildings account for almost two thirds of emissions

Greenhouse gas emissions by sector



Note: Indirect CO2 emissions are excluded.
Source: OECD Emissions Database.

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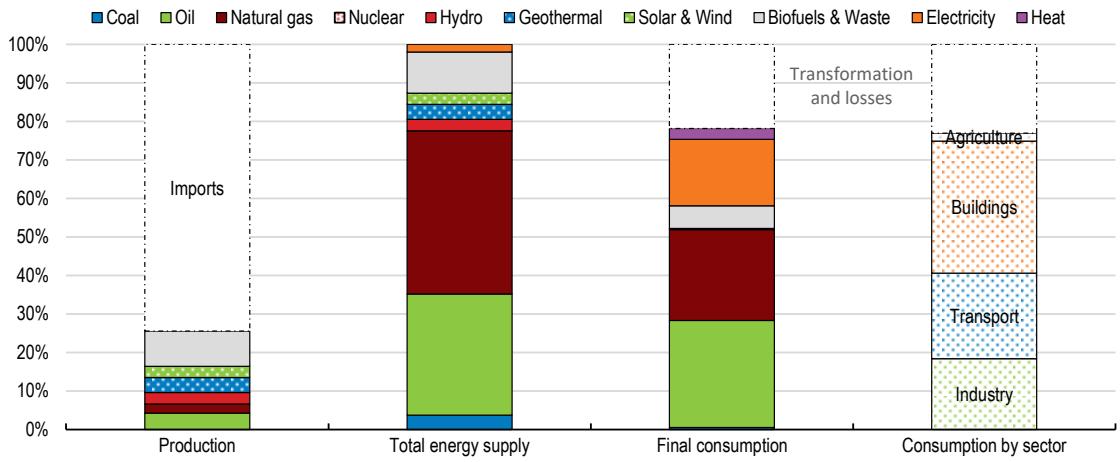
Fossil fuels account for almost three quarters of Italy's energy supply and almost all fossil fuels use is covered by imports (Figure 2.3). Natural gas is Italy's single largest energy source, providing more than 40% of total energy supply. While Russia was the largest natural gas import source before its war against Ukraine, Italy reduced Russian gas imports to about 15% of all gas imports by end-2022 and aimed to completely halt them by end-2023. Oil is the second largest energy source, while coal has a relatively low share. Renewable energy sources account for about 20% of total energy supply. Biofuels, including solid biomass, are Italy's main renewable energy sources, while solar and wind still account for a low share. Electricity imports make up 2% of total energy supply. Italy does not produce electricity from nuclear energy.

Figure 2.3. Fossil fuel imports account for almost three quarters of total energy supply

Overview of energy production, supply, and demand in Italy, 2021



Source: IEA World Energy Balances database.

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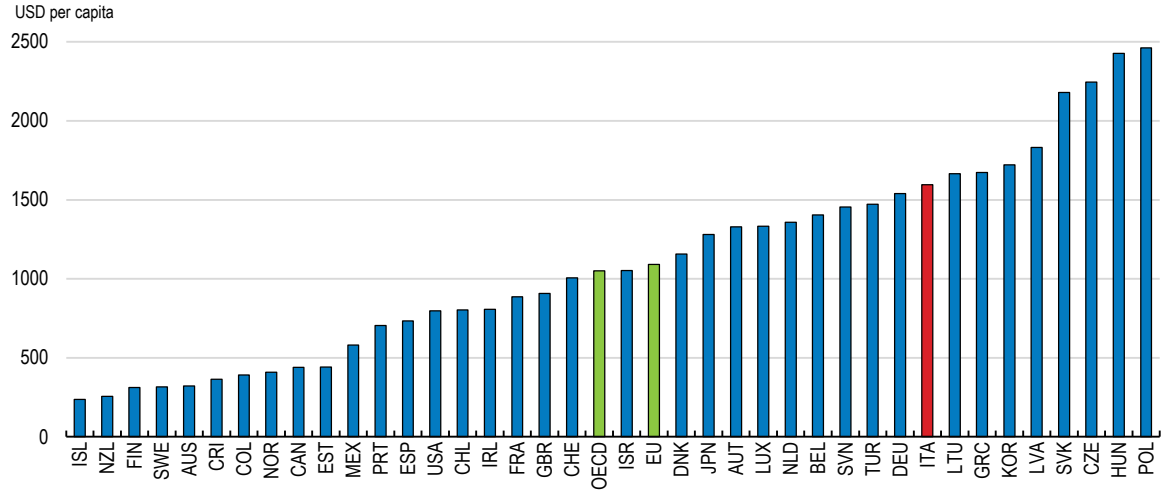
A smart mix of financial incentives, standards, regulations, and infrastructural upgrades is needed to decarbonise the economy. The rate at which greenhouse gas emissions from fossil fuels use is taxed in Italy is high on average, but the large heterogeneity across sectors leads to suboptimal emissions reduction efforts. Aligning effective carbon rates across sectors, as foreseen in the ongoing tax reform, would promote emissions reduction where it is less costly. Electrifying the economy, while ensuring that electricity is produced from green energy sources, will be key to reduce fossil fuels use. For this, it will be important to continue streamlining Italy's complex permitting process for renewable energy projects, which has slowed the uptake of solar and wind electricity in recent years, modernise the electricity transmission grid and develop an electricity storage infrastructure. In transport, deepening infrastructural upgrades would contribute to providing alternatives to road and air transport, while reforming taxes and purchase subsidies would incentivise the penetration of zero-emissions vehicles, which is currently low. In the buildings sector, where the most energy-inefficient third of Italy's buildings stock would be required to undergo deep retrofitting by 2033 if a proposed reform of the EU Energy Performance of Buildings Directive was approved, it will be important to devise complementary policies to encourage retrofitting in a way that is sustainable for public finances and equitable across households. In industry, the scheduled tightening of the EU Emissions Trading System (ETS) is expected to keep providing strong decarbonisation incentives.

Achieving the transition will have important co-benefits in terms of reduced energy dependence and improved wellbeing. Italy's dependence on fossil fuel imports exposes it to external shocks and instability. By doubling the share of renewable energy produced domestically in overall energy supply, in line with its 2030 target, Italy could reduce its dependency on fossil fuel imports from more than 70% of energy supply in 2021 to less than 60% in 2030 (MASE, 2023). This will strengthen energy security and improve the

current account balance, which in 2021 featured a deficit of about 2½ per cent of GDP in energy products. Italy is exposed to high degrees of air pollution from burning fossil fuels, particularly in northern regions, where specific climatic and atmospheric conditions hinder the dispersion of pollutants. This results in a high share of premature deaths and many hospital admissions (Figure 2.4), with the total annual cost from exposure to fine particulate matter ($PM_{2.5}$) alone, including of healthcare, estimated at 5% of GDP in 2019 (World Bank, 2022). Decreasing fossil fuels use will significantly contribute to higher wellbeing and reducing healthcare costs.

Figure 2.4. The costs of air pollution are high in Italy

Welfare costs of premature deaths caused by ambient particulate matter, USD per capita, 2019



Note: The health cost of PM2.5 is calculated by estimating the cost of mortality and morbidity. The cost of mortality is estimated using the Value of Statistical Life (VSL) approach, which is the average willingness to pay per individual for a mortality-risk reduction of magnitude R. The cost of morbidity is estimated by multiplying the number of cases of illness by the cost per case.
Source: OECD Green Growth Indicators.

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Achieving the transition also requires adapting to climate change. Italy is more exposed than other countries to the increased frequency of extreme weather events due to climate change. Extreme weather events damage the economy and can cause the loss of human lives. Concrete adaptation measures will need to prioritise interventions to manage hydrogeological risks and improve resilience to heatwaves, including boosting water retention and drainage systems.

2.2. Meeting Italy's ambitious energy and emissions targets will be challenging

Currently planned policies underscore the government's commitment to accelerate the energy and climate transition but may be insufficient to meet some of Italy's ambitious emissions reduction targets (Table 2.1). Italy's National Energy and Climate Plan (NECP) defines the short-term strategy to abate emissions and has been recently updated (Box 2.1). The NECP projects an emissions reduction of around 47% economy-wide and of 35-37% in sectors covered by the EU Effort Sharing Regulation over 2005-30 under planned policies. Achieving these emissions reductions implies a significant acceleration relative to what has been achieved in recent years and what can be achieved under current policies. Italy could in principle buy emissions allocations from other EU Member States with excess emissions abatements if it failed to reach its targets, but this would be fiscally costly and should be seen as a last-resort option. An even more ambitious policy effort than currently envisaged is therefore needed, including to boost the penetration of renewable energy, improve energy efficiency, and further electrify the economy.

Box 2.1. Italy's climate change institutions

The National Energy and Climate Plan (NECP) is the main strategic document guiding Italy's transition. It was first adopted in 2019 to guide policy up to 2030 and is now being updated following the adoption of the EU Climate Law in 2021. In June 2023, the government sent a first draft of the updated NECP to the European Commission. The final version is expected by June 2024.

In addition to the NECP, Italy has two other strategic climate change mitigation documents. The Ecological Transition Plan states that Italy aims to reduce emissions by 55% by 2030 relative to 1990 and reach carbon neutrality by 2050, while the Long-Term National Strategy on Reducing Greenhouse Gas Emissions outlines possible pathways to reach carbon neutrality by 2050. Only the NECP is legally binding.

The National Adaptation Strategy to climate change sets out the broad vision to deal with the impacts of climate change. A more concrete framework is outlined in the National Climate Change Adaptation Plan, which has been recently finalised but not yet approved.

Climate policy is a shared responsibility among several institutions

The Ministry of the Environment and Energy Security oversees energy, climate, and other environmental policies, setting the main principles and directions. Several other ministries have climate-related competencies, while regions have concurrent legislative powers along with the central government on matters such as energy, transport, and land use ('governo del territorio'). Municipalities also have relevant implementing functions.

The Italian energy information system includes several institutions that are coordinated by the Ministry of the Environment and Energy Security, while the Italian Institute for Environmental Protection and Research (ISPRA) is an administrative body with technical capacity in charge of emissions inventory and projection. It is also responsible for monitoring climate change and hydrogeological risk.

Table 2.1. Planned policies are unlikely to be enough to meet Italy's emissions reduction targets

Changes in greenhouse gas emissions, 2005-21 actual data and 2005-30 targets

	2005-21 change	2005-30 change		
		at 2021 policies	planned NECP policies	target[1]
Economy-wide	-30%	-40%	-47%	-55%
ESR sectors	-17%	-29%	-35%/-37%	-44%
ETS sectors	-47%	-55%	-62%	-62%
LULUCF removal	-23%	-2%	-2%	+1%

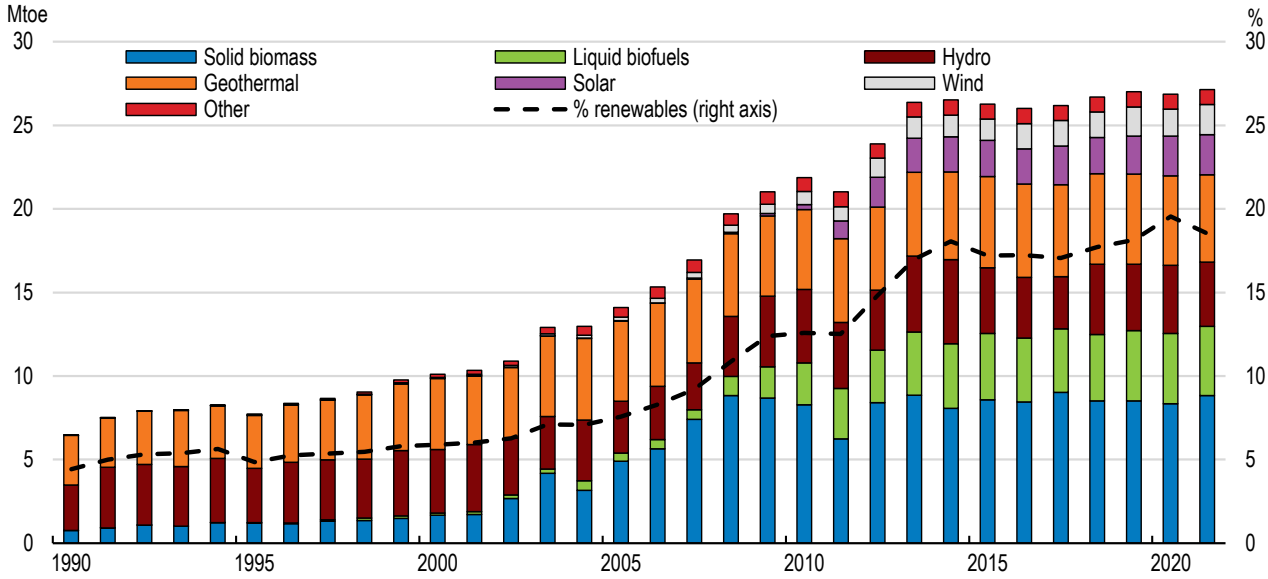
Note: [1] The economy-wide target is for the 1990-30 period and is not legally binding; the ETS sectors target is EU-wide; the ESR sectors and the LULUCF removal targets are EU-mandated legally binding targets; ESR indicates the EU Effort Sharing Regulation; ETS indicates the EU Emission Trading System; LULUCF indicates land use, land use change and forestry.
Source: MASE (2023) and OECD calculations.

The penetration of renewable energy was broadly flat over 2013-21 (Figure 2.5) but has picked up somewhat over the last two years and is expected to further accelerate under plans in the NECP. The NECP foresees the consumption of renewables to increase by 70% by 2030 relative to 2021. Together with a reduction in overall energy consumption, this would double the share of renewable energy in total energy supply, allowing Italy to meet its renewable energy targets (Table 2.2). A big share of the increase in renewable energy is expected to come from renewable electricity. Biomethane and biofuels are also expected to provide an important contribution, especially in the thermal and transport sectors. Although

these fuels meet renewable energy criteria, they require feedstock to be produced and emit local air pollutants.

Figure 2.5. Progress in renewables penetration has stalled in the second half of the 2010s

Renewable energy sources in total energy supply



Source: IEA World Energy Balances 2022.

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Table 2.2. Renewables penetration is expected to pick up significantly under current plans

Renewable energy share in gross final energy consumption, 2021 status and 2030 targets

	2021 status	2030		
		at 2021 policies	planned NECP policies	target[1]
Overall economy	19%	27%	40%	39%
Electricity generation	36%	49%	65%	/
Heating and cooling	20%	27%	37%	30%-39%
Transport	8%	13%	31%	29%

Note: [1] Targets for heating and cooling and transport are legally binding. Shares are calculated using Eurostat's accounting rules.
Source: MASE (2023).

Planned policies in the NECP imply more than doubling the pace of energy savings achieved in recent years (Table 2.3). Total energy supply is projected to decrease by more than a quarter over 2005-30, relative to about a fifth under current policies. This is very ambitious but still less than the EU's binding target of a reduction of almost a third, underscoring that more efforts are needed. The consumption of fossil fuels is projected to almost halve over 2021-30. Despite this, natural gas would still account for a third of primary energy consumption in 2030.

Table 2.3. Although ambitious, planned policies fall short of achieving energy efficiency targets

Energy consumption changes, 2005-21 actual data and 2005-30 targets

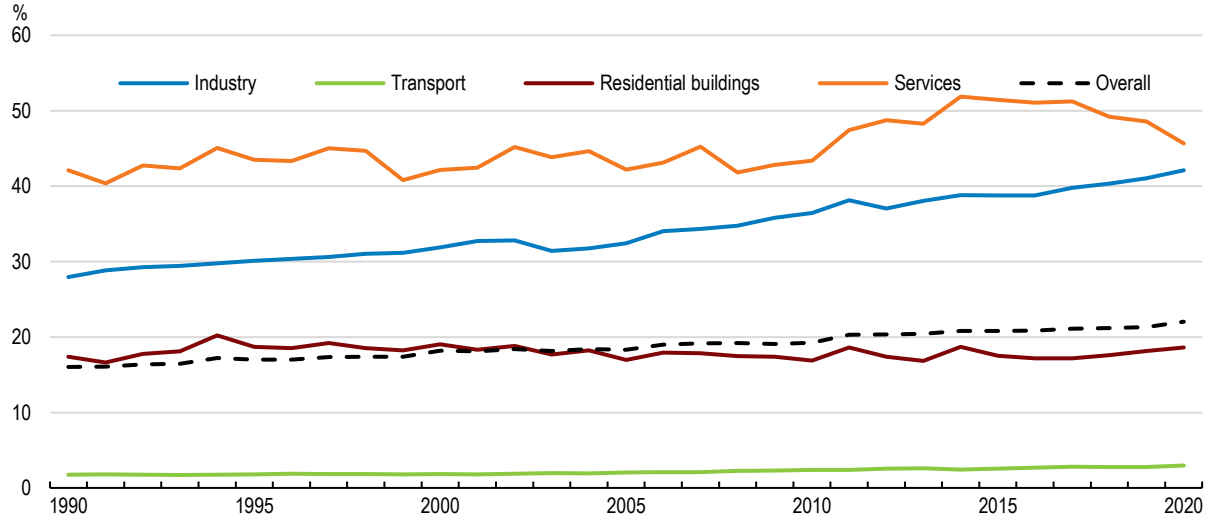
	2005-21 change	2005-30 change		
		at 2021 policies	planned NECP policies	target[1]
Primary energy consumption	-13%	-28%	-33%	-36%
Final consumption	-12%	-21%	-27%	-31%

Note: [1] Legally binding targets, calculated according to formulas in Annex I of the EU Energy Efficiency Directive III.
Source: MASE (2023) and OECD calculations.

By electrifying end uses while increasing the share of electricity generated from renewable sources, Italy can make significant progress in decarbonising the economy. The NECP projects electricity consumption to increase somewhat and its share in final energy consumption to rise by about 5 percentage points over 2021-30. Albeit achieving this would require an acceleration in the electrification of the economy relative to the last decade, it is less than the 7 percentage points increase that Terna, Italy's transmission grid operator, estimates to be required for Italy to meet its 2030 decarbonisation targets (Terna; Snam, 2022). Electricity penetration in industry, which increased significantly over 2005-21 (Figure 2.6), is expected to increase further. Some progress is also foreseen in buildings, while electricity penetration in transport is expected to stay relatively low. The NECP foresees the share of renewable energy in electricity generation to almost double from its 2021 level to reach 65% by 2030. This implies a significant pick up in renewables penetration, which has essentially stalled over 2013-21 due to complex permitting processes that are now being streamlined, and is fully in line with EU requirements. Yet, the planned share of renewables in electricity generation in 2030 is below plans in similar EU countries, including Spain, which aims at a share of 80% (Ministerio de la Transición Ecológica y el Reto Démógrafico, 2023).

Figure 2.6. The electrification of the economy is proceeding slowly

Share of electricity in final energy use, by sector



Source: IEA World Energy Balances and OECD IPAC Climate Action Dashboard (Maes et al., 2022).

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The NECP estimates total public and private investments needs of almost 5% of GDP per year from now until 2030 to achieve Italy's 2030 energy and emissions targets (MASE, 2023), and efforts will need to continue in later years. About 65% of these investments are for the replacement of the car fleet, about 20% for buildings retrofitting and about 10% for renewable electricity generation.

Italy's National Recovery and Resilience Plan (NRRP) features public expenditure worth around 85 billion EUR, or almost 5% of annual GDP, for the energy and climate transition in total over 2021-26. Investments in renewable energy production, the development of hydrogen, zero-emissions vehicles and electric charging stations constitute the largest share of the programme. Tax credits and grants to finance investments in energy efficiency in public and private buildings make up another important part. Together, these two pillars may reduce yearly economy-wide emissions by about 1% (Accetturo and Alpino, 2023) and are likely to also boost growth. The NRRP also plans substantial investments to further develop the railway network, with an expected emissions reduction worth about ½ per cent of Italy's yearly emissions (Accetturo and Alpino, 2023). Other investments aim to strengthen the electric and water infrastructures, encourage sustainable agriculture and the circular economy, and adapt to climate change.

The European Commission recently endorsedJ a proposal by the Italian government to restructure its NRRP and equip it with a new REPowerEU Chapter. The Chapter, which may be further expanded, encompasses reforms and public expenditure worth more than 1% of GDP. The reforms aim to further simplify the permitting of renewable energy production, reduce environmentally harmful subsidies, and enhance employees' green skills in both the private and public sectors. Public expenditure under the Chapter will largely be financed by shifting some existing NRRP investments to the European Structural and Investment Funds and is made up of projects to improve network infrastructure, such as the electricity and gas transmission, bolster renewable energy production, and boost critical raw materials value chains, especially in the agri-food and net-zero-technology sectors. The Chapter also finances tax credits to improve the energy efficiency of buildings and incentivise firms' green investments.

To achieve carbon neutrality by 2050, Italy's Long-Term National Strategy on Reducing Greenhouse Gas Emissions prioritises further reducing energy consumption and electrifying the economy. However, while there is potential to fully eliminate emissions from electricity generation and largely electrify light industry, alternative fuels, including hydrogen and e-fuels produced through renewable energy, will be needed in transport and some industrial sectors in which full electrification is not viable. According to government guidelines, hydrogen could account for 20% of final energy consumption by 2050 (MIMIT, 2020), and Italy's NRRP finances hydrogen-specific projects worth 0.2% of GDP. Carbon capture and storage will be necessary to offset emissions deriving from industrial processes (IEA, 2023a), as in other countries.

Italy should consider enshrining its 2050 economy-wide carbon-neutrality target in law, following the example of other major EU countries. Currently, Italy's emissions reduction targets lack legal binding, and EU-wide targets, although legally binding, are directed to the emissions in the EU as a whole and not specifically to those of Italy. By enshrining its carbon-neutrality goal in national law, Italy can enhance the clarity of its policy objectives, reinforce its commitment to climate action, promote accountability, and increase the domestic ownership of EU climate policies. Although causality is hard to establish empirically, OECD research suggests that countries that legally codify economy-wide emissions reduction targets tend to achieve more substantial emissions reductions due to robust implementation of climate mitigation policies (Box 2.2). Italy could also establish additional intermediate targets to be reached between the 2030 goal to reduce emissions by 55% relative to 1990 and the 2050 net-zero target. This would enable regular assessments of progress toward carbon neutrality and facilitate policy adjustments as necessary (D'Arcangelo et al., 2022).

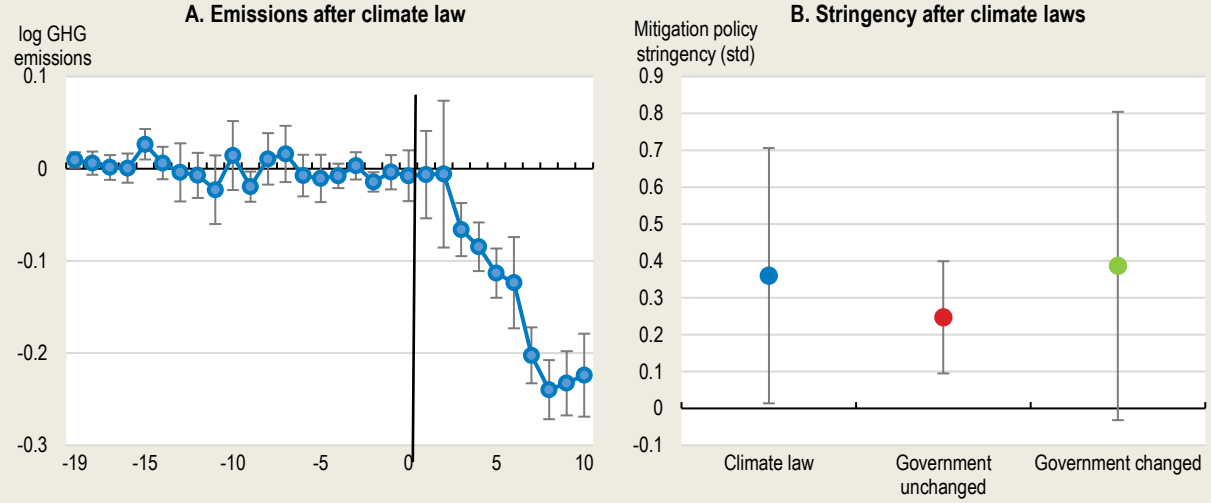
Box 2.2. Climate laws, mitigation policy and greenhouse gas emissions

Setting an economy-wide emissions reduction target and enshrining it in law (adopting a climate law) allows governments to communicate their intention to strengthen climate action, thus reducing policy uncertainty. It also serves as a legislative means to commit future governments to action. For instance, the current UK government needed to adopt a more detailed implementation plan of its mitigation strategy after three NGOs filed and won a case against it for not having complied with the 2008's Climate Change Act (Higham, Setzer and Bradeen, 2022).

Ciminelli and D'Arcangelo (forthcoming) estimate the relationship between the presence of climate laws, GHG emissions and mitigation policy in a difference-in-differences setting. Countries that adopt climate laws experience significantly larger emissions reductions in subsequent years than those that do not, whereas there is no difference in the years before (Figure 2.7, Panel A). This difference is statistically and economically significant (-6% on average) and increases progressively over time.

Furthermore, countries with climate laws increase the ambition of mitigation policies. Policy ambition increases on average by 0.35 standard deviations after a climate law is passed (Figure 2.7, Panel B, blue dot). Mitigation policies become progressively more stringent when governments promoting climate laws take office and this trend persists in the years following the adoption of a climate law (red dot). The increases in policy stringency persist even after a change in government (green dot). This finding is consistent with climate laws having long-lasting effects even after political changes and supports the view that enshrining emissions targets into law is an effective commitment device.

Figure 2.7. Emissions fall steeply and mitigation policy becomes tighter after climate laws



Note: The two graphs show the differences between countries that adopt a climate law and those that do not with respect to their difference before the introduction of the climate law. Panel A: average yearly log GHG emissions. Panel B: differences in average mitigation policy stringency since (i) a climate law is adopted (blue dot); (ii) a climate law is adopted in countries that later experience a change in government (orange dot); (iii) a climate law is adopted in countries that later do not experience a change in government (yellow dot). Bars are 90% confidence intervals. Estimates from a panel of OECD countries in the years 2000-20 using the method of Callaway and Sant'Anna (2021). Data is from Gütschow et al (2016) and Nachtigall et al. (2022).
Source: Ciminelli and D'Arcangelo (forthcoming).

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Reinforcing the governance of climate change mitigation policy would help Italy to achieve the transition. Italy should include actionable measures in the NECP and clearly identify financing needs and sources for each measure (ECCO, 2023). Further, it can expand the role of the Interministerial Committee for the Ecological Transition, which was established in early 2021 but has been dormant over the past two years, and make it responsible for steering the implementation of the climate policy agenda.

Having an independent climate council monitoring the advancement of the energy and climate transition, as in the United Kingdom and Sweden among others, would be more effective than setting up a NECP Observatory within the Ministry of the Environment and Energy Security, as in current plans. This independent climate council can also be tasked to monitor and advise regarding the implementation of climate change adaptation policies and be allowed to leverage on the Italian Institute for Environmental Protection and Research (ISPRA) to conduct technical background research. The government also plans to set up a monitoring platform for the diffusion of data regarding the achievement of targets and the effectiveness of the different policies. This would introduce a monitoring system with automated data collection and reporting, which is now lacking, and reduce the current fragmentation of the energy information system, which adds to transaction costs (IEA, 2023a). Access to this platform should be made readily available on the websites of the Italian National Institute of Statistics (ISTAT) and Italy's Energy Service Manager (GSE).

2.3. Policies to achieve the transition

After accounting for both the burning of fossil fuels and by-product emissions from industrial processes, energy industries (mainly electricity generation), transport, buildings and manufacturing and construction industries each contribute 20%-25% to Italy's overall emissions (Figure 2.2, Panel B). Emissions from agriculture and the management of waste account for the remaining 10%. A big part of emissions from electricity generation and manufacturing and construction industries are covered by the EU Emissions Trading System (ETS). The ETS contributed to a sharp fall of emissions from these sectors over 2005-21 and a recent reform should ensure that it will keep providing the right financial incentives to decarbonise. Emissions from transport and buildings declined little over 2005-21 (Figure 2.2, Panel A). The share of buildings in total emissions stands out as being substantially higher in Italy than in the rest of the EU and OECD.

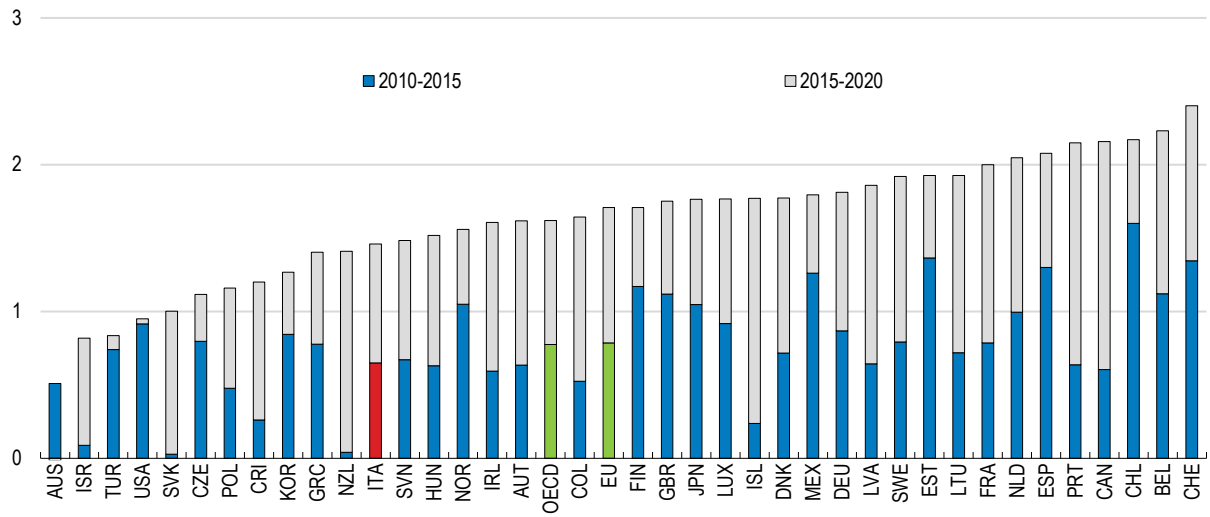
A policy mix tailored to each large emitting sector is required to abate emissions. This includes (i) market-based policies, such as, for instance, carbon pricing, feed-in schemes and congestion charges, (ii) standards and regulations, such as, for instance, bans on polluting activities, energy certificates on buildings and car speeding limits, and (iii) complementary policies to facilitate the reallocation of capital, labour and R&D towards low-carbon activities (D'Arcangelo et al., 2022). Pricing emissions is used fairly widely in OECD countries to abate emissions, as it makes low-carbon technologies relatively more competitive, thereby incentivising shifts in production and consumption towards lower-carbon options (Arlinghaus, 2015; Martin, Muûls and Wagner, 2016). If the price of emissions is the same across sectors, marginal abatement costs are equalised, and emissions abatement is pursued where it is less costly. Additionally, pricing emissions has the advantage of generating fiscal revenues, and might thus positively contribute to public finances.

However, pricing emissions at the same rate across the economy can be technically and politically difficult. Moreover, while emissions pricing works relatively well in industry, it may not be enough to decarbonise other parts of the economy due to the presence of market failure. Households, especially if credit-constrained, are less responsive to price signals. Hence, other market-based policies, including subsidies and tax incentives, standards, and regulations, as well as complementary policies are attractive options to decarbonise buildings and transport, where household activity accounts for most of the emissions.

Action on climate change mitigation should be significantly strengthened. OECD synthetic indicators measuring the stringency of mitigation policy increased less in Italy than in the rest of the EU and OECD over 2010-20 (Figure 2.8). These synthetic indicators consider policy action in different domains, broadly divided in market-based policies, standards and regulations and others relating to climate targets, governance, and institutions, with higher values indicating more stringent policies (Nachtigall et al., 2022). Among OECD EU countries, only the Slovak Republic, Czech Republic, Poland, and Greece increased policy stringency less than Italy over 2010-20. The modest increase in climate change mitigation policy stringency over 2010-20 in Italy was particularly evident in the transport sector and for public green R&D spending. Several studies show that policy stringency has important effects on emissions (Nachtigall et al., 2023; Frohm et al., forthcoming; Le Quéré et al., 2019).

Figure 2.8. Italy lagged in the tightening of climate change mitigation policy in the 2010s

Change in the index measuring the stringency of climate change mitigation policy



Note: Index units (0 to 10). The latest available data point is used when 2020 data is not available. OECD and EU are simple averages. EU average excludes non-OECD countries.
Source: Nachtigall et al. (2022).

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2.3.1. Aligning effective carbon rates across fuels and sectors

The EU Emission Trading System (ETS), which currently covers large power plants, energy-intensive manufacturing industries and intra-EU aviation, has proved successful in bringing emissions down in the covered sectors (Bayer and Aklin, 2020; Dechezleprêtre, Nachtigall and Venmans, 2018). The system is currently being expanded to maritime transport and the cap on emissions is being tightened. Further, a new EU-wide ETS covering emissions from buildings, road transport, small power plants and non-energy-intensive industries will enter into force in 2027. Of the big sectors, only agriculture will be left out, mostly due to technical difficulties in measuring agricultural emissions. The new system targets an EU-wide emissions reduction of 42% by 2030 relative to 2005. While the two schemes will initially run separately, they may be merged in one in 2030, potentially leading to the same ETS price across most of the economy. The reform of the EU ETS is complemented by the introduction of an EU-wide carbon border adjustment mechanism starting in 2026. This will reduce the risk of carbon leakage – that is, the replacement of goods covered by the ETS by imports from other countries with a lower carbon tax (OECD, forthcoming).

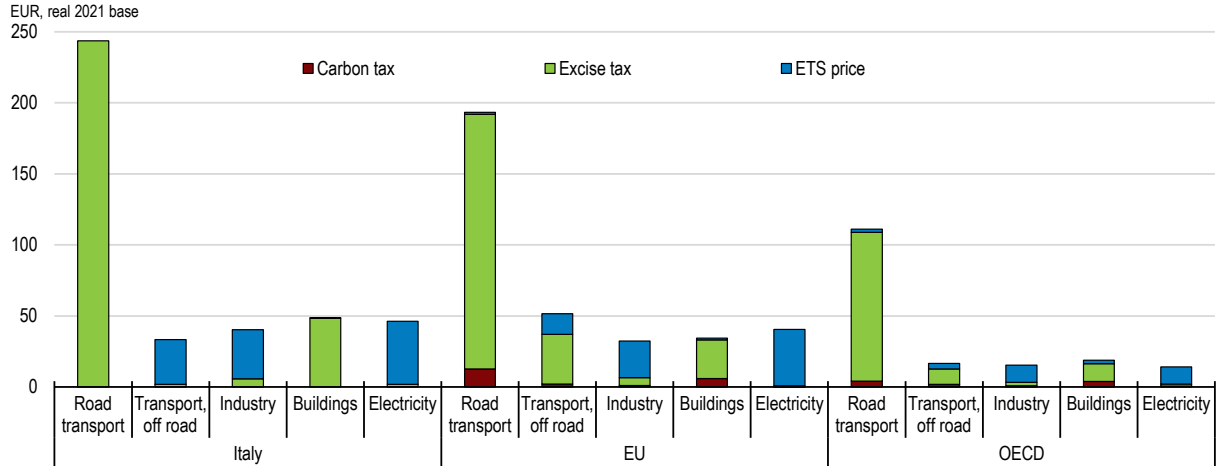
The demand for emissions depends on cyclical conditions and developments in individual EU countries, while the supply of ETS emissions certificates is predetermined, which may lead to some volatility in the

evolution of the ETS price. In 2019, the EU introduced the market stability reserves to manage surplus emissions and reduce downward price swings, which might hamper investment in low-carbon technologies. Italy may consider introducing an ETS price floor, in the form of an explicit carbon tax in ETS sectors to be levied whenever the EU ETS carbon price falls under a predetermined level. Emitters would pay the difference to the Italian government, thus setting a floor under the carbon price. Setting a gradually raising trajectory for this price floor would further give room to businesses to prepare for higher carbon prices in the future to avoid competitiveness losses. At the same time, the price floor should not be too high as that would increase the risk of carbon leakage. The United Kingdom and the Netherlands have devised an ETS price floor in 2013 and 2021 respectively (D'Arcangelo et al., 2022), and Denmark plans to introduce one in 2025. Canada introduced a carbon price floor in 2019 (Parry and Mylonas, 2017). Having a carbon price floor would also generate fiscal revenues.

In Italy, effective carbon rates – the total tax that applies to carbon dioxide emissions from energy use – are high in some cases (Figure 2.9). The effective carbon rate depends both on the ETS price and the level of country-specific taxes that are levied on fossil fuels, while also considering rebates and exemptions (OECD, 2021a; D'Arcangelo et al., 2022). Italy has steep excise taxes on certain fossil fuels, which result in higher effective carbon rates on energy-related emissions than in the rest of the EU in all sectors except off-road transport. Compared to the rest of the OECD, Italy has higher effective carbon rates in all sectors.

Figure 2.9. Effective carbon pricing in Italy is high but differs greatly across sectors

Rates at which the average emission from fossil fuels use is taxed across sectors, EUR per tonne of CO_2



Note: The ETS effective ETS price is not the same across countries as not all emitters within sectors participate to the EU ETS.
Source: OECD Effective Carbon Rates Database.

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However, fossil fuels excise taxes relative to fossil fuels emissions content are highly heterogenous across sectors and fuels (Table 2.4). While this is also the case in other countries, it leads to suboptimal emissions reduction efforts. On average across fuels, excise taxes in Italy are highest on gasoline and diesel – but significantly lower on diesel than on gasoline – while they are relatively low on natural gas. Considering both the ETS price and excise taxes, in Italy as in other countries, road transport has by far the highest effective carbon rate (Figure 2.9). Buildings, industry, and electricity generation have effective carbon rates that are about five times smaller than road transport. However, Italy stands out for having a particularly high effective carbon rate in buildings compared to other countries, largely due to high excise duties (Figure 2.9).

Italy should fully implement recent plans to align fossil fuel excise taxes more closely with fossil fuel emissions content, by raising them where possible. Differences in sector-specific effective carbon rates

result in dispersion of marginal abatement costs and inefficient emissions reductions. From 2030 differences in effective carbon rates across large emitting sectors might be driven solely by national taxes, following the potential merging of the two ETS systems. The government recently approved a tax reform to be carried out within the next two years. In line with the general principles of the proposed revision of the EU Energy Taxation Directive, the reform states that excises on energy products and electricity should be set with the goal of reducing emissions. Bearing in mind social implications and possible impacts on firm competitiveness, Italy should implement the reform by gradually increasing excises on fossil fuels where they are low compared to the fuel emissions content, prioritising cases in which the overall effective carbon rate is below the social cost of carbon, which was estimated at 60 EUR per tonne of CO_2 in 2018 (OECD, 2021a). Setting excise taxes based on fuels' emissions content would also contribute to aligning effective carbon rates across fuels within the same sector. This would end the favourable treatment of diesel, which has more negative health effects than gasoline.

Table 2.4. Excise taxes are heterogenous across sectors and fuels

Excise taxes (EUR per tCO_2eq)

	Road transport	Offroad transport	Agriculture	Buildings	Industry	Electricity generation
Gasoline	322	0	158	322	312	/
Diesel	232	9	47	151	68	5
Kerosene	/	0	/	137	42	/
Fuel oil	/	0	/	/	17	5
LPG	92	/	6	49	5	0
Natural gas	2	2	7	67	4	0
Coal and other solid fossil fuels	/	/	/	/	2	5
Biofuels	302	/	0	0	0	0

Note: Offroad transport includes maritime transport, railway, and aviation. LPG indicates liquefied petroleum gas.
Source: OECD Effective Carbon Rates Database.

Heterogeneity in effective carbon rates can be further reduced by removing implicit fossil fuel subsidies, as in government plans. Italy's Ministry of the Environment and Energy Security estimates that implicit fossil fuel subsidies were worth about 0.4% of GDP in 2021 (MASE, 2022). Reducing implicit fossil fuel subsidies, for instance the rebate on part of the diesel excise duty paid by freight and road passenger transport operators, would free important fiscal resources that could partly be used to incentivise low-carbon technologies or be redistributed to lower-income households that suffer disproportionally from the climate transition. The tax reform mandates that excise tax concessions on energy products, and particularly those that constitute environmentally harmful subsidies, should be reviewed and reorganised. The NECP further identifies 18 fossil fuel subsidies that need to be phased out, and authorities plan to draw up a roadmap outlining plans to remove all implicit subsidies. In drawing up this roadmap, it will be important to consider the level of energy prices and ensure that subsidies are phased out in a gradual way.

2.3.2. Boosting green electricity generation

The abundance of sunlight, especially in southern regions, and wind, off some parts of its long coastline, put Italy in a favourable position to generate the large volumes of renewable electricity that are needed to electrify and decarbonise the economy. Emissions from electricity generation are largely covered by the EU ETS. Additionally, medium- and large-scale renewable electricity producers benefit from a two-way contract-for-difference system to reduce revenue volatility, while generation by smaller-scale producers is partly subsidised by the Italian government. This means that the financial incentives to scale up green electricity generation are already in place. However, the take up of renewable electricity has been hampered by long and complex permitting procedures and local opposition to big renewable power plants in recent years, with large-scale projects authorised between 2017 and 2020 having had to wait 7½ years

on average before receiving the administrative authorisation (Althesys, 2021). The government has taken some steps to streamline permitting, but the backlog of projects waiting to receive authorisation is still large. Switching to renewable electricity also requires significant investment in transmission and storage capacity.

Emissions from electricity generation have been on a steadily decreasing trend since 2008, despite a broadly stable output, and are targeted to drop by a further 40% over 2021-30 (MASE, 2023). The emissions reduction over 2008-21 was achieved thanks to the gradual phasing out of coal- and an increasing reliance on natural gas and renewables. In October 2017, the government pledged to close all remaining coal-fired power plants by 2025 (IEA, 2023a). The updated NECP broadly confirms this objective, except for coal plants in Sardinia, which will be phased out only once the island will be connected to the rest of the country through the Tyrrhenian link, which is envisaged to start operating in 2028. Around 15% of electricity consumption is covered by imports from neighbouring countries.

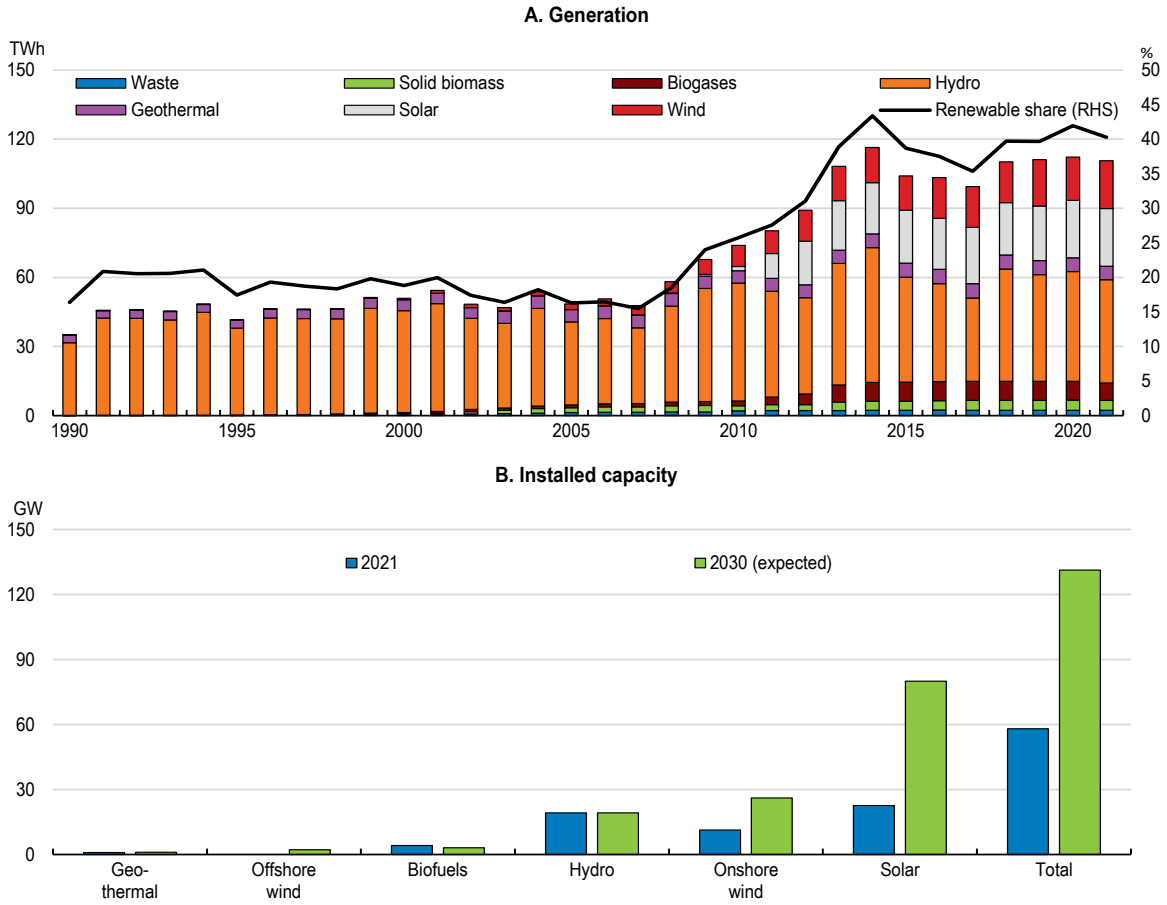
The share of renewables in Italy's gross electricity generation almost doubled between 2008 and 2014 but has stalled in recent years, hovering around 40% (Figure 2.10, Panel A), in line with other EU countries. Hydro accounts for most of renewable electricity, generating about 15% of overall electricity. Solar photovoltaic and wind are the next two most important renewables, together generating about 15% of overall electricity. Their strong growth over 2008-14 was achieved thanks to the installation of utility-scale (industrial) solar plants and individual solar panels on buildings as well as onshore wind plants, aided by generous incentives that were later phased out. Over 2014-21, the installation of larger plants slowed down significantly, and the expansion of solar and wind capacity was barely enough to compensate for the decrease of electricity production from hydro sources due to persistent droughts and below average water levels in lakes. The NECP foresees renewable generation to reach 65% of electricity generation by 2030 (MASE, 2023). Solar is expected to account for most of the growth in renewable generation capacity, with onshore wind accounting for most of the rest (Figure 2.10, Panel B). The potential for offshore wind and other renewables is expected to be left largely untapped in the short term compared to scenarios developed by independent institutions (Terna; Snam, 2022; Althesys, 2021).

Italy provides a guaranteed fixed income over a 20-year period to renewable producers through a two-way contract-for-difference system to incentivise the installation of new renewable generation capacity. Specific targets for additional capacity are decided each year and contract prices are set through a reverse auction, with the lowest bid being awarded the contract. When the wholesale electricity market price is below the contract price, producers receive a premium, while they pay the difference if it is above (IEA, 2023a). Thanks to reverse auctioning, the contract price is the lowest possible to meet the participation constraint of renewable producers. The current system targets mature technologies such as photovoltaic solar, onshore wind and hydropower, while a proposal for a separate system to incentivise offshore wind, biofuels, thermodynamic solar and geothermal was submitted to the European Commission for review in early 2023. The updated NECP also foresees the promotion of power purchase agreements between producers and consumers as another way to promote renewable penetration. The diffusion of power purchase agreements will also be supported by the proposed reform of the EU electricity market design.

A large backlog of renewable energy projects awaits administrative authorisation in Italy. As of September 2023, overall pending grid connection requests submitted by renewable producers to Terna, the transmission system operator, were worth about four times what is needed to meet the target of new installed renewable capacity by 2030, which highlights the potential for renewable electricity production in Italy (Figure 2.11). Out of these pending requests, requests for projects with capacity worth about 40% of what is needed to meet the 2030's target had already received the green light from Terna but were awaiting administrative authorisation (see Box 2.3 for details on permitting), with southern regions having the largest backlogs.

Figure 2.10. Renewables electricity generation capacity is planned to double over 2022-30

Renewable electricity generation and installed capacity



Source: IEA World Energy Balances database (Panel A), Mase (2023) and OECD calculations (Panel B).

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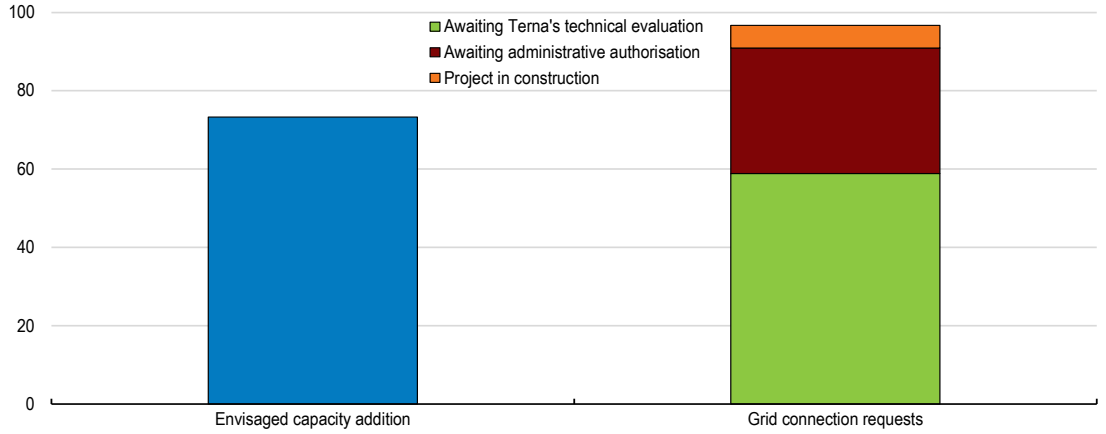
Figure 2.11. Projects worth 40% of planned additional renewable capacity await authorisation

Envisaged 2022-30 capacity additions and status of pending grid connection requests to Terna, as of October 2023



Note: Envisaged capacity addition are as in NECP plans.
Source: OECD calculations based on MASE (2023) and Terna Econnextion.

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The backlog of projects awaiting administrative authorisation is partly due to the time-consuming process of obtaining a positive environmental impact assessment, which often is a necessary but not sufficient condition for administrative authorisation. In principle, the environmental impact assessment should be completed within 330 days. However, as of end-2022, approximately 70% of projects that had initiated the environmental impact assessment between 2019 and 2021 were still awaiting a decision according to independent institutions (Figure 2.12, Panel A). Additionally, projects with a positive environmental impact assessment are often not authorised. Landscape considerations are often used by local governments as reasons to block a project, despite the positive environmental impact assessment. A list defining valid reasons to oppose a project is lacking, leaving room to the decision-maker for subjective decisions. Local communities often oppose renewables projects, leading local governments to block the projects (Bartolamai, 2022). These issues are particularly relevant for wind projects (Figure 2.12, Panel B).

Box 2.3. Italy's complex permitting of renewable power plants

The permitting process starts with the renewable electricity producer submitting a request to Terna, Italy's transmission system operator, to prepare an estimate of the time and cost for grid connection. If the producer decides to move forward after receiving the cost estimate from Terna, it presents a project that needs to get Terna's approval. Getting an estimate of the time and cost for grid connection and the project approved by Terna may take up to 240 days. Following Terna's approval, the project needs to obtain administrative authorisation. This is granted by the concerned region at the end of a single procedure ('single authorisation') in which all concerned administrations participate. This procedure should not take more than 90 days, excluding the time provided for the environmental impact assessment, if needed.

Projects with capacity above a certain threshold (30 MW for wind and 10 MW for solar farms) need to receive a positive environmental impact assessment from the central administration before being authorised. Projects with capacity below the threshold undergo a screening to determine whether the environmental impact assessment is necessary. The screening, the assessment (if needed) and final authorisation for these smaller projects are all responsibility of the regions. Very small-scale projects (below 60 kW for wind and 50 kW for solar) only require a written communication to the municipality ('simplified enabling procedure'). In absence of a negative response by the municipality within 30 days from the communication, the project is authorised.

The suitable areas reform has the potential to speed up permitting

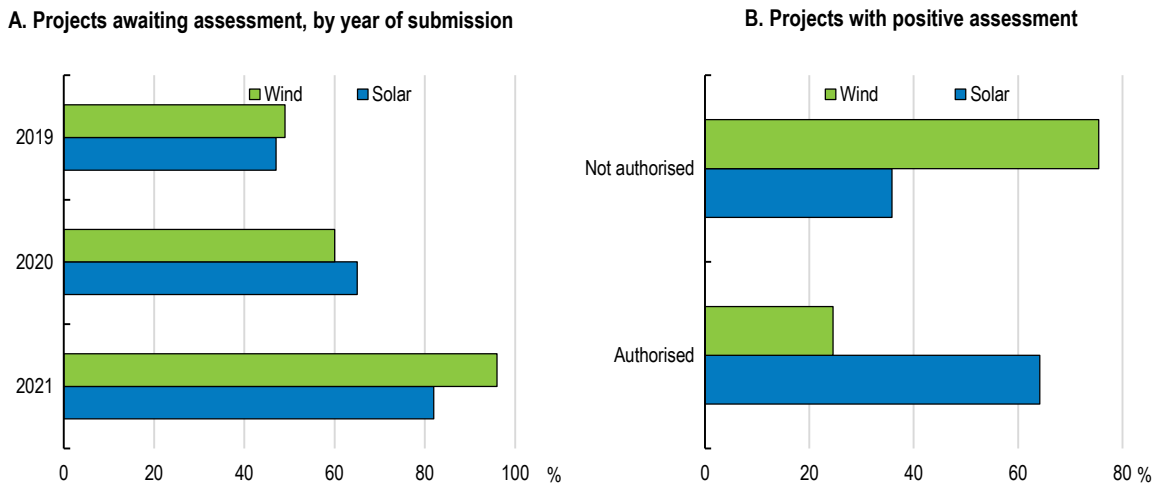
The suitable areas reform ('riforma aree idonee' in Italian), adopted in 2021 but only partially implemented, establishes that renewable power plants with capacity below 10 MW to be built in suitable areas can be authorised with the tacit consent principle through the 'simplified enabling procedure'. Projects with capacity between 10 MW and 30 MW submitted before July 2024 need to be authorised through the standard authorisation procedures but are exempted from the environmental impact assessment. The legal time limit to carry out the environmental impact assessment and for granting authorisation is reduced by a third and the authority dealing with landscape considerations is withheld veto powers. Further, offshore wind projects with capacity below 50 MW in areas identified by the new marine spatial plans do not need to undergo the environmental impact assessment.

The government has taken some actions to speed up permitting. It approved the so-called suitable areas reform ('riforma aree idonee'). This reform (i) requires regions to identify suitable and unsuitable areas for renewables capacity installations based on uniform criteria to be issued by the central government and provides for lighter authorisation procedures for projects in suitable areas, (ii) defines some areas as already suitable pending the issuance of implementing decrees (for instance, former mining sites), and (iii) sets a burden-sharing principle through which each region has to meet a target for the installation of new

renewables capacity by 2030, which should increase regional ownership of renewables projects (Viganò et al., 2021). The government also established a special commission within the Ministry of the Environment and Energy Security to conduct the environmental impact assessment and another one to deal with cultural and landscape considerations for NRRP and NECP projects. Additionally, it set up a single contact point for the submission of authorisation requests and removed the need for authorisation for the installation of small-scale solar panels on buildings, which is less opposed by local communities (REF, 2022).

Figure 2.12. Wind projects with positive environmental impact assessment are often not authorised

Status of projects submitted for environmental impact assessment over 2019-21, as of end-2022



Note: Shares are computed in terms of capacity rather than number of projects.
Source: OECD calculations based on Legambiente (2023).

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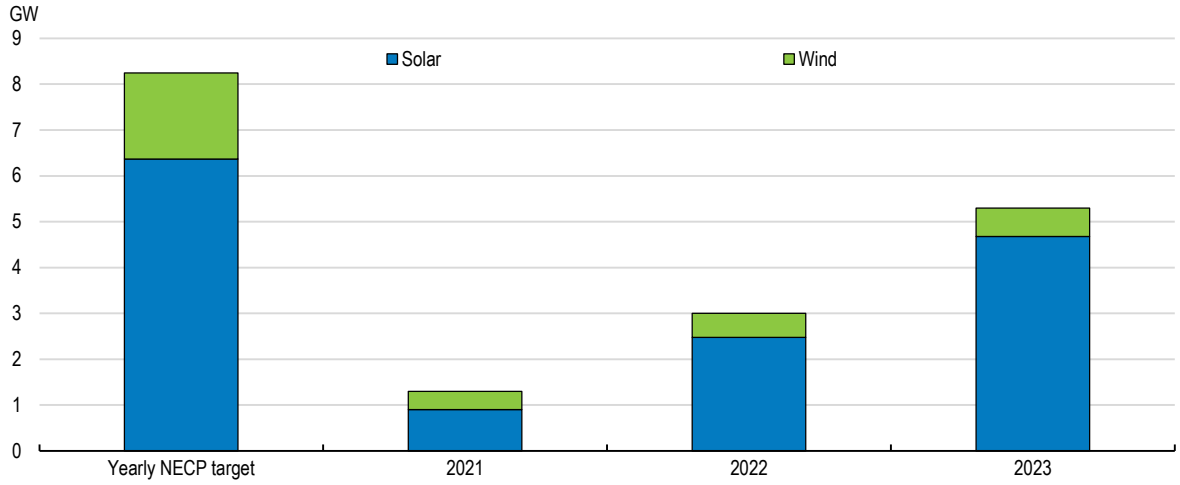
The recent reforms to speed up permitting contributed to accelerate the installation of new renewable generation capacity, but more efforts are needed. Yearly additions of renewable generation capacity almost quadrupled over 2021-23 but are still considerably less than plans in the NECP, and most of the increase in the pace of installations was driven by solar, while wind has been lagging behind (Figure 2.13). The suitable areas reform has the potential to further streamline permitting, and Terna estimates that about a quarter of Italy's territory could qualify as suitable area (Terna; Snam, 2022). The government should quickly issue the decrees establishing the criteria for the identification of suitable areas and defining the burden-sharing system across regions.

The government can take further actions to fully unlock Italy's renewable energy potential. The suitable areas reform would have deeper effects if the capacity ceiling below which projects in suitable areas can be authorised through the 'simplified enabling procedure' (see Box 2.3 for details) was higher, given that the median capacity of solar projects with pending grid connection request is about two times the current threshold. Further, the exemption from the environmental impact assessment for projects in suitable areas with capacity up to 30 MW, currently set to expire in July 2024 (Box 2.3), should be made permanent. Finally, to ensure that the environmental impact assessment is not delayed, each of its phases should be subjected to the tacit consent principle. The same principle should apply to the preliminary screening, if required, as well as for the 'single authorisation', which often takes longer than the statutory 90-day limit (Box 2.3).

Figure 2.13. Renewable energy installations picked up in 2022-23 but are still below plans

Installation of renewable energy generation capacity, 2021-23 and yearly target implied in NECP plans



Note: 2023 numbers are extrapolations based on real data up to August 2023.
Source: OECD calculations based on Terna (2023b), Terna (2023c) and MASE (2023).

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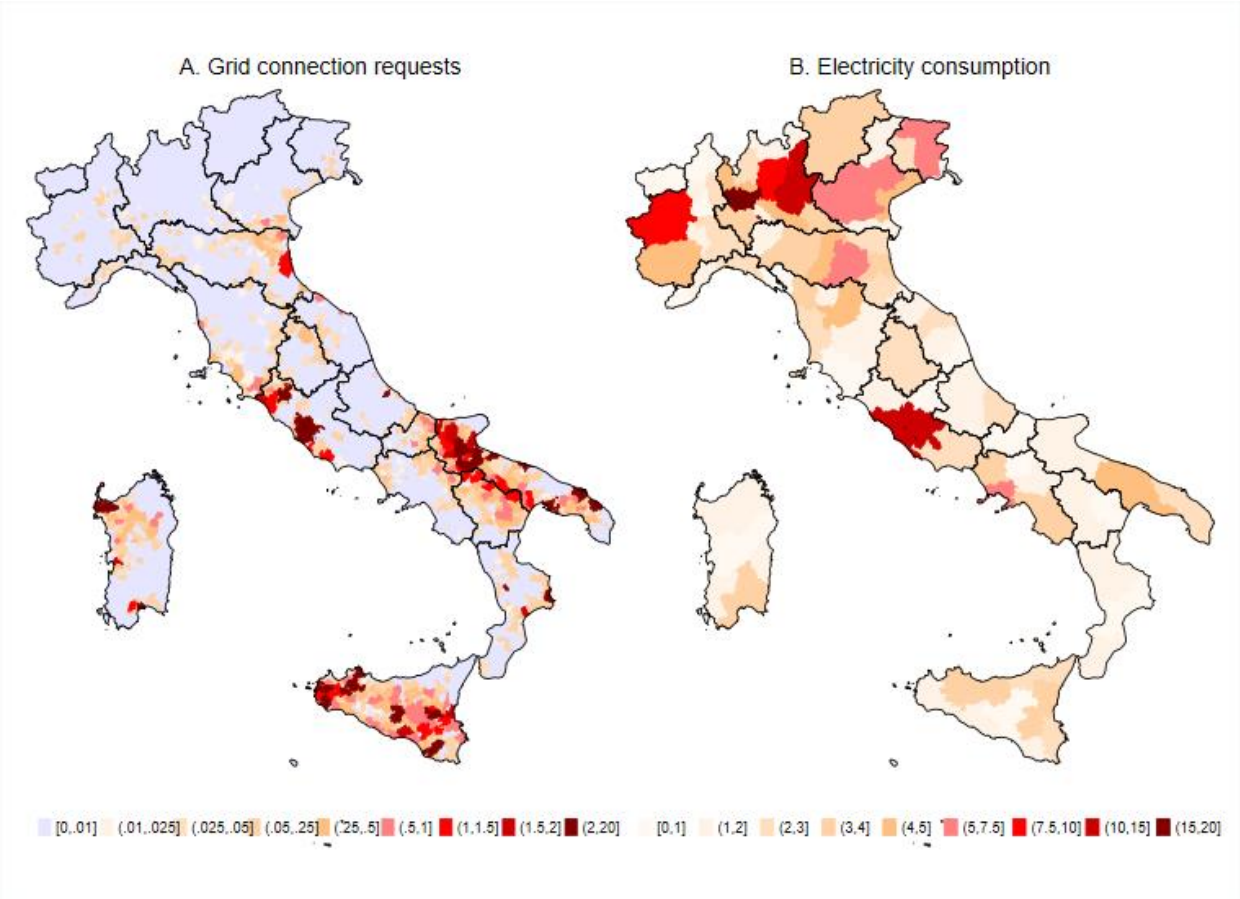
The identification of special areas for the development of offshore wind farms through maritime spatial plans would help planning and coordination between Terna and energy producers. It is important that these plans are approved swiftly. Having a clear procedure for the authorisation of offshore wind farms and having the central government responsible for it would also help (IEA, 2023a; Legambiente, 2023). Further, the ceiling below which the environmental impact assessment is waived in areas identified in the marine spatial plans can be increased, as its current level of 50 MW is very low for offshore wind farms, for which the median size of grid connection requests to Terna is about 3000 MW.

The backing of local communities is key to ensure that renewable energy projects are authorised. Communities should be engaged early on through information campaigns and can be given a financial stake in renewable energy installations, for instance through revenue participation or lower electricity prices for municipalities hosting the installations, to ensure their buy-in. Energy communities, enabling citizens to participate in the electricity market either by generating, consuming, sharing, and selling electricity, or by providing flexibility services through demand-response and storage, can build support for renewables installations. Their prioritisation in the NRRP through the granting of zero-interest rate loans in small communities is a welcome step, but energy communities in Italy are still significantly underdeveloped relative to countries such as Germany. To try filling this gap, Italy has recently submitted to the European Commission the draft decree establishing a premium tariff for energy communities and prosumers for approval.

Expanding renewable electricity requires investing in transmission and storage capacity. Renewable electricity will need to be transmitted from the South of the country, where generation potential is concentrated, to the North, where consumption is higher (Figure 2.14). Terna projects that transmission capacity needs to more than double over 2021-30 (Terna; Snam, 2022). In its latest development plan, it outlines investments worth more than 1% of Italy's GDP in total over a 10-year period (Terna, 2023a). The plan includes the introduction of a new network technology ('Hypergrid') that will double the exchange capacity between market zones, thus reducing land consumption and environmental impact. Other key elements are the construction of five new electrical backbones, incorporating submarine connections and upgrading existing power lines to strengthen connections between regions. The NRRP additionally provides investments in smart grids and the climate resilience of networks worth about 0.2% of GDP.

Figure 2.14. Renewables potential is higher in the South, while consumption is higher in the North

Geographical distribution of grid connection requests to Terna and electricity consumption



Note: Data is in GW (Panel A) and TWh (Panel B). Connection requests for offshore wind farms are assigned to the municipality where the requestor is registered.
Source: OECD calculations based on Terna Econnextion and Terna Pubblicazioni Statistiche.

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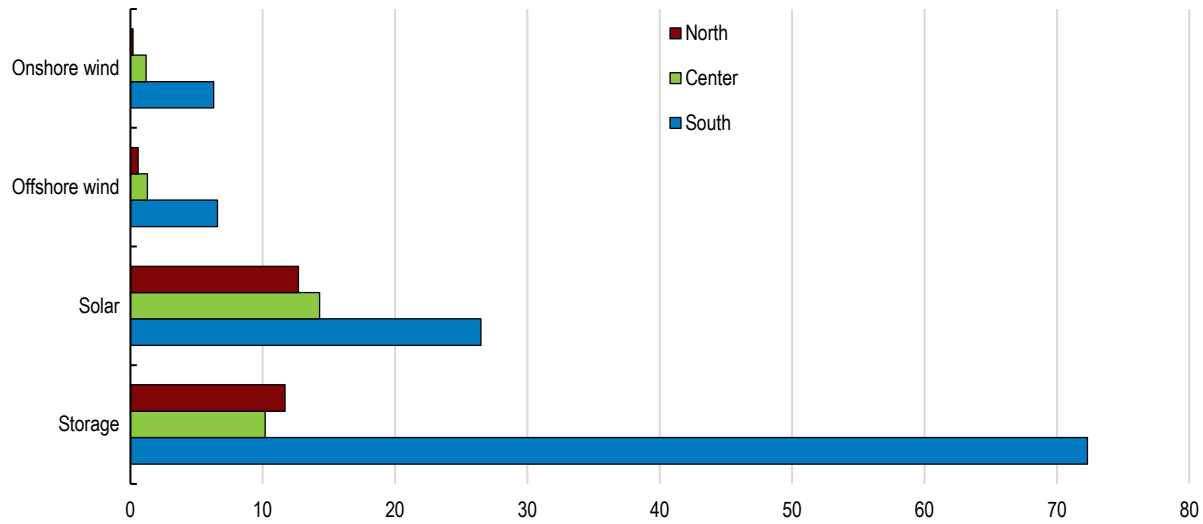
Grid development has been held back by long and complex permitting procedures, but recent reforms should ensure faster approvals for key projects. Terna's investment plan needs to be approved by the Ministry of the Environment and Energy Security after undergoing a strategic environmental assessment involving several institutions (IEA, 2023a). After Terna's plan gets approval, each grid development project still needs to undergo an environmental impact assessment and obtain administrative authorisation. Together, the strategic environmental assessment and the permitting procedure of each project last seven to eight years (IEA, 2023a). These lags create a problem because the lack of enough storage and transmission capacity might hold back investments in generation, and vice versa. Recent reforms have the potential to speed up the process. The draft 2023 competition law contains a provision requiring the Ministry of the Environment and Energy Security to approve the plan within 18 months. Projects deemed of strategic importance for decarbonisation can be authorised even pending the authorisation of the plan.

The intermittent nature of solar and wind energy also requires large investment in storage capacity, to allow electricity to be stored when it is produced and released when it is consumed. According to Terna, most of the investments in electrochemical storage capacity will be concentrated in southern regions (Figure 2.15). Long-term scenarios developed by independent institutions underscore that storage capacity will need to be higher the lower is the share in the electricity mix of wind, which is complementary to solar, and biomethane, which is dispatchable (REF, 2023). Italy should strengthen incentives for the

installation of storage capacity and simplify its permitting procedures. Strengthening the capacity market and long-term contracts between energy producers and storage capacity owners will be important to spur investment in large-scale storage facilities, which has so far been weak. The recent waiving of the environmental impact assessment and authorisation for storage facilities under a certain capacity to be built in areas with existing renewable energy power generation plants is a welcome step to simplify permitting.

Figure 2.15. Investment in generation and storage capacity will be concentrated in the South

Expected generation and storage capacity investments by geographical area, 2022-30



Note: Data for onshore wind, offshore wind and solar is in GW; data for storage is in GWh.
Source: Terna, Snam (2022).

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The NECP also foresees the production through electrolysis of hydrogen, which can be stored and transported to other areas, as another way to manage the overgeneration of renewable electricity. To develop the infrastructure to store and transport hydrogen, Italy may repurpose parts of its extended natural gas pipeline network, as it is currently envisaged by SNAM (Italy's main gas transport and dispatch operator). Hydrogen and other e-fuels could be used to decarbonise sectors that are hard to electrify, including heavy industry, freight transport and aviation.

Dynamic pricing may help to manage periods of renewable electricity overgeneration. The recent completion of the liberalisation of the electricity market should lead to lower average electricity prices for consumers due to increased competition. As a next step, electricity distributors could offer variable prices based on the supply of electricity in the grid. By checking the electricity price in real time through mobile apps, consumers may adjust their consumption, thus reducing transmission requirements by adjusting demand (Davis, Hausman and Rose, 2023). Similar systems are already in place in other EU countries, such as, for instance, the Netherlands.

Potentially long periods of renewable electricity underproduction require strengthening connections to other countries and maintaining some degree of baseload generation capacity from other sources. Nuclear energy could in principle provide this baseload capacity, but Italy decided to phase out nuclear electricity through a referendum in 1987. The government is open to reconsider this decision, but reversing the outcome of the 1987 referendum may be politically challenging, even for small and technologically advanced reactors. Italy's NECP projects natural gas to be the main source of baseload capacity and targets a significant increase of biomethane, which is also dispatchable. Net electricity imports from other countries are projected to increase up to 2030 and stay broadly constant thereafter (REF, 2022). The

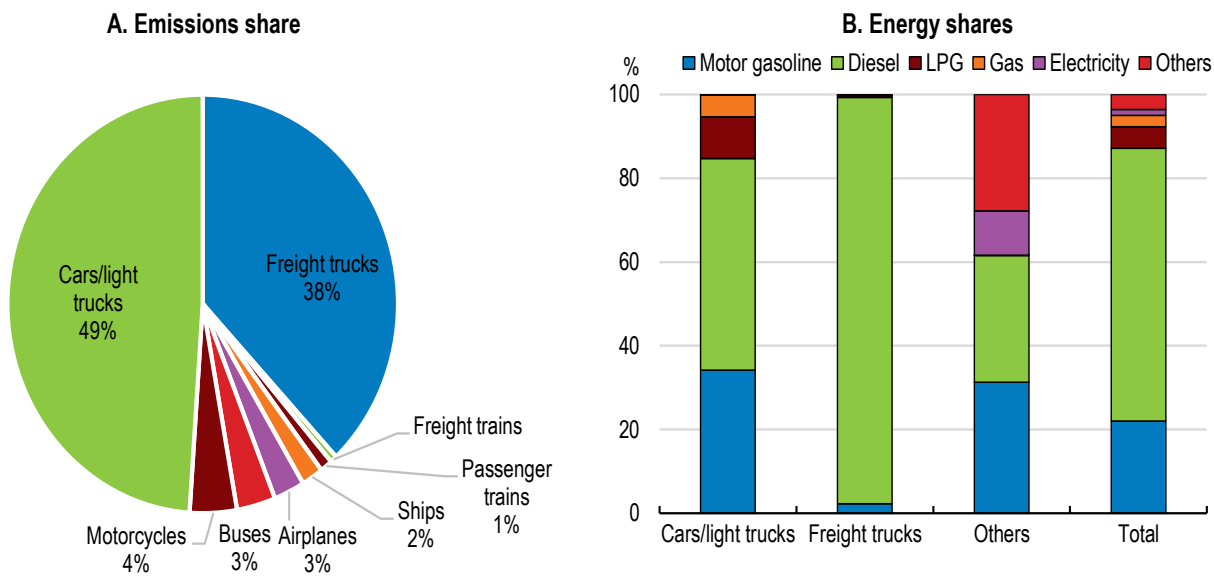
NECP sets the strengthening of grid connections to neighbouring countries, including in North Africa, where solar electricity potential is high also in the winter months, as priorities. But connecting Italy to North Africa should not be a reason to underexploit Italy's renewable potential.

2.3.3. Decarbonising transport

Italy's updated NECP targets a reduction of greenhouse gases by about 40% over 2005-30 for the transport sector, which is Italy's largest emitting sector. Transport emissions decreased only by about 20% over 2005-21. Most of this reduction took place following the Global Financial Crisis, when energy use decreased by 15%, aided by a reduction in mobility on the backdrop of weak growth. The subsequent pick up in mobility was compensated by a marked decline in energy intensity so that overall energy use stayed broadly constant up to the Covid-19 pandemic. Cars and trucks account for most of domestic transport emissions (Figure 2.16, Panel A). The share of motorcycles is significant by international standards. Emissions from domestic air travel are low but have increased fast in recent years.

Figure 2.16. Diesel accounts for almost two thirds of energy consumption in the transport sector

Sources of emissions and energy use in domestic transport, shares, 2021



Note: Diesel includes biodiesels and motor gasoline includes bio gasolines.
Source: IEA Energy End-uses and Efficiency Indicators.

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The NECP foresees a combination of lower energy consumption and increased renewables penetration to reduce transport emissions in the short term. Energy consumption is targeted to decrease by more than 10% over 2021-30, while the penetration of renewables is expected to increase from about 5% in 2021 to more than 15% in 2030 (from 8% to 31% using Eurostat accounting rules, which give higher weights to certain types of renewables). Only one quarter of renewables consumption in the transport sector in 2030 is expected to come from renewable electricity, with the remaining three quarters expected to come from biofuels, of which Italy is a global leader, and biomethane.

The EU decided to ban the sale of most cars powered by internal combustion engines as of 2035. The ban will apply to engines powered by biofuels and biomethane, with those powered by carbon-neutral fuels ('e-fuels') as the only exception. Still, biofuels and biomethane, along with hydrogen, can be important in areas where electrification is hard, such as aviation and shipping. The production of e-fuels, using renewable electricity to convert carbon dioxide and water into hydrocarbon-based fuels, is highly energy intensive, meaning that the generation of renewable electricity would need to be further scaled up, and costly, which can be a barrier to their widespread adoption. This suggests that direct electrification of vehicles may be a more efficient and cost-effective way to reduce emissions compared to e-fuels.

While per capita emissions from cars are low by international standards (Figure 2.17, Panel A), thanks to the low size and energy intensity of the average passenger car, freight trucks display high emissions and energy intensities (Panel B). As in other countries, diesel benefits from a much lower excise tax rate per unit of CO_2 emissions than gasoline (Table 2.4). Given that diesel is by far the most used technology for freight trucks, this reduces incentives to buy more energy efficient trucks and has particularly adverse effects on human health as diesel exhausts are carcinogenic to humans (IARC, 2012). Moreover, the diesel excise tax paid by transport operators is partly rebated. Although the rebate only applies to trucks belonging to the European Emission Standard Category 5 or higher, it still covers all trucks registered after 2008.

Bearing in mind social implications and possible impacts on firm competitiveness, the government should increase excise taxes on diesel and gradually phase out the excise rebate for truck operators, as this favourable tax treatment blurs price signals and results in lower revenues for the government. The tax rebate alone costs taxpayers about 0.1% of GDP in lost revenues per year (IEA, 2023a). Recovering these revenues could help subsidising the installation of superfast charging stations or the purchase of low-carbon, electric and hydrogen, trucks, whose market is still in its infancy. Hydrogen may provide an important option to decarbonise road freight transport and the remaining diesel railways in the long term, but government plans in this respect are not yet definitive.

Italy has the second highest per capita car ownership rate in the EU and the NECP envisages a reduction of the total car fleet of almost 10% over 2021-30. This ambitious goal is in line with the approach of inducing behavioural changes to decarbonise transport (ITF, 2021; OECD, 2021c; MIT, 2022) and should be supported by introducing financial incentives for the scrapping of old and high-carbon intensive cars, independently of the purchase of a new car. Some municipalities have set up schemes in which households receive public transport vouchers for each old car that they scrap. The government should encourage such initiatives in other municipalities, and further set up a national scheme in which households are paid a lump-sum for each old car that they scrap. The lump-sum can be set at a level in line with the price of old cars in the secondary market, with fiscal costs limited by capping the overall funds allocated to the programme and targeting it to the most polluting vehicles. This would help reducing the stock of 4 million very polluting cars and is in line with recent proposals to ban such vehicles in urban centres. Coupled with targeted and more generous subsides for zero-emissions cars, this measure would provide strong incentives to reduce and renew the car fleet.

The taxation of car fringe benefits should be further tightened, as these benefits incentivise higher car use (OECD, 2014). In Italy company cars make up more than a third of new car registrations every year (Transport & Environment, 2022), although this proportion has decreased in 2021. The share of the benefit accrued from having a company car that is considered as taxable income, which accounts for the private use of the car, was recently increased and partly linked to the emission intensity of the car. This share can be increased further, as it appears to still be relatively low in Italy compared to other countries (Transport & Environment, 2022). The final goal should be to reduce the size of the car fleet by making employees indifferent between receiving compensation in cash or in-kind through a company car. In increasing the taxation of car fringe benefits, the government should consider introducing a wedge, which currently does not exist, in the share of the in-kind benefit considered as taxable income between zero- and low- (emitting up to 60g/km of CO_2) emissions cars and increase the one between low- and mid- (emitting between 60g/km and 160g/km of CO_2) emissions ones, which is currently limited to 5 percentage points. This would

incentivise a higher take up of zero-emissions cars and contribute to the creation of a second-hand zero-emissions cars market.

The experience of Milan further suggests that introducing congestion charges can reduce car use and contribute to abate car-related CO_2 emissions (see Box 2.4 and OECD, 2019). Revenues generated through congestion charge systems can be used to strengthen sustainable urban mobility, while exempting zero-emissions cars from such schemes through plate recognition systems can increase the attractiveness of these cars relative to traditional internal combustion engine ones.

Box 2.4. Charging car use in Milan has reduced CO_2 emissions by a third

In 2012, the city of Milan introduced a congestion charge in a central area accounting for about 5% of the municipality's territory, the 'Area C', to reduce congestion and air pollution. After an 18-month pilot period, the system was approved by referendum and became permanent (Comune di Milano, 2022). The scheme bans the most polluting and longest vehicles and puts a fee on other vehicles powered by gasoline and diesel (EUR 2-5 for residents and EUR 3-6 for non-residents) from 7.30 am to 7.30 pm on working days. Electric and hybrid vehicles, as well as motorcycles can access the zone freely. Revenues are used for road management encouraging active mobility, such as bicycle lanes, pedestrian zones, and special speed zones (Comune di Milano, 2022). In 2019, the city introduced a Low Emission Zone covering 75% of the city territory, the 'Area B', in which the most polluting vehicles and the biggest trucks are banned. In 2023, the ban covered most diesel and the most polluting gasoline vehicles. Its scope will be gradually broadened until 2030 (Comune di Milano, 2022).

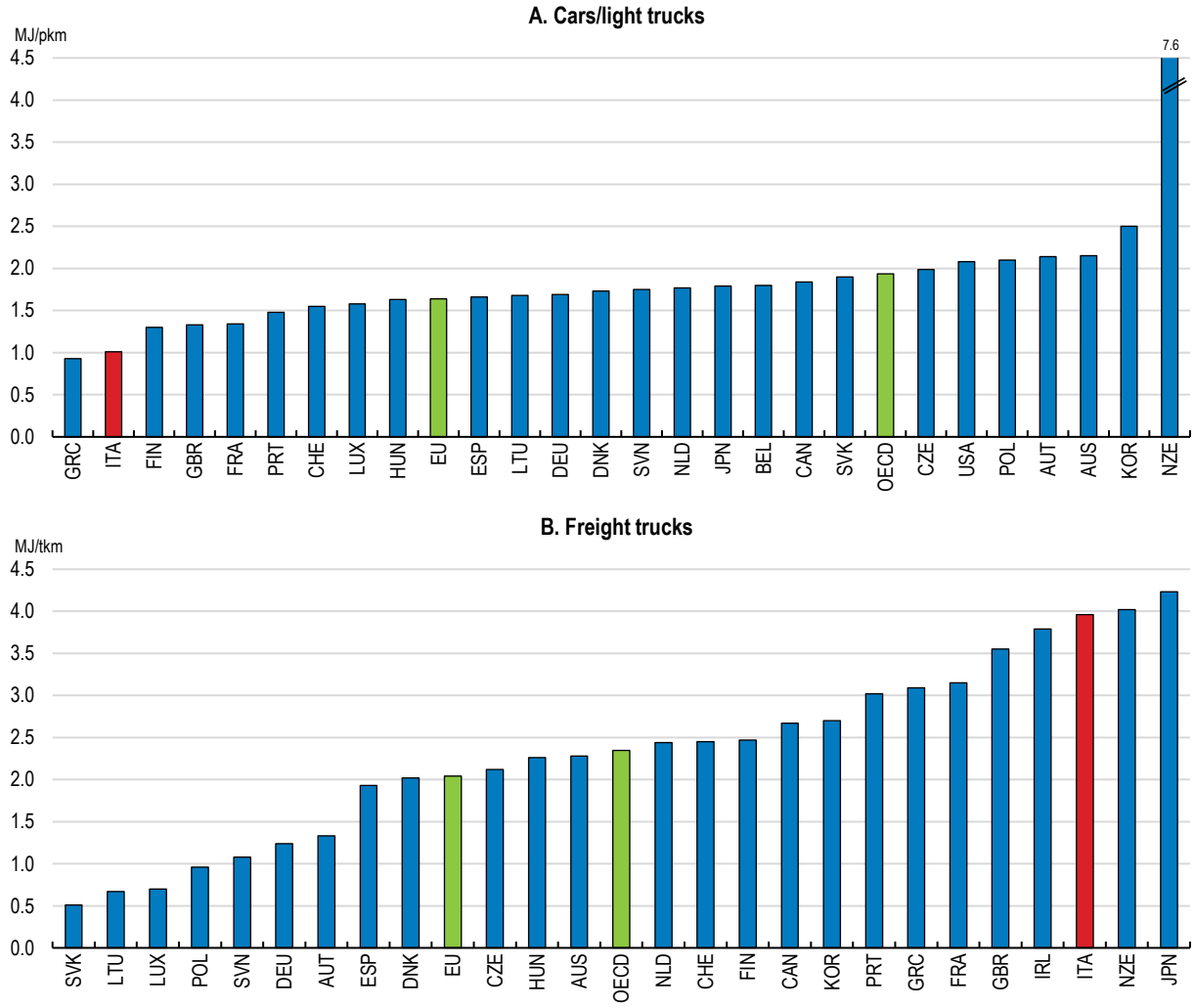
The system appears effective in reducing car use and emissions, including CO_2. Congestion in 'Area C' dropped by 28% and CO_2 emissions fell by 35%, while evidence on emissions outside the area affected by the congestion charge system is not available. Other air pollutants such as particulate matters (PM10) (-18%), nitrogen oxides or ammonia were also significantly reduced. There is evidence that the scheme also boosted the uptake of bicycle-sharing (Cornago, Dimitropoulos and Oueslati, 2019).

Italy must significantly accelerate the adoption of electric and other zero-emissions vehicles to align with its decarbonisation objectives in the transportation sector and meet the 2030 EU target for the average emissions intensity of newly registered cars, which is less than half of Italy's present level. In 2022, the EV share in new car registrations stood at less than 10%, falling well below the EU average and trailing behind France and Germany by two to three times (Figure 2.18).

The NECP sets forth ambitious goals, anticipating that new EV registrations will surpass those of cars powered by liquefied petroleum gas and methane, for which Italy is the EU's largest market, by 2026. Moreover, the NECP envisions an EV fleet of 6.6 million vehicles by 2030 (MASE, 2023). Achieving this target implies that annual new EV registrations over the 2024-30 period must be seven times as large as the 2021 level. Augmenting the penetration of EVs can also play a pivotal role in enhancing the stability of the electric grid. EV batteries possess the capability to supply stored energy to the grid, thereby mitigating demand spikes through bidirectional charging systems. A fully charged EV can provide sufficient power to sustain an average household for several days (IEA, 2023b).

Figure 2.17. Freight trucks in Italy are highly energy intensive

Cars/light trucks and freight trucks energy intensities, 2019



Note: MJ/pkm is megajoules per passenger-kilometre (Panel A); MJ/tkm is megajoules per tonne-kilometre (Panel B).
Source: IEA Energy End-uses and Efficiency Indicators.

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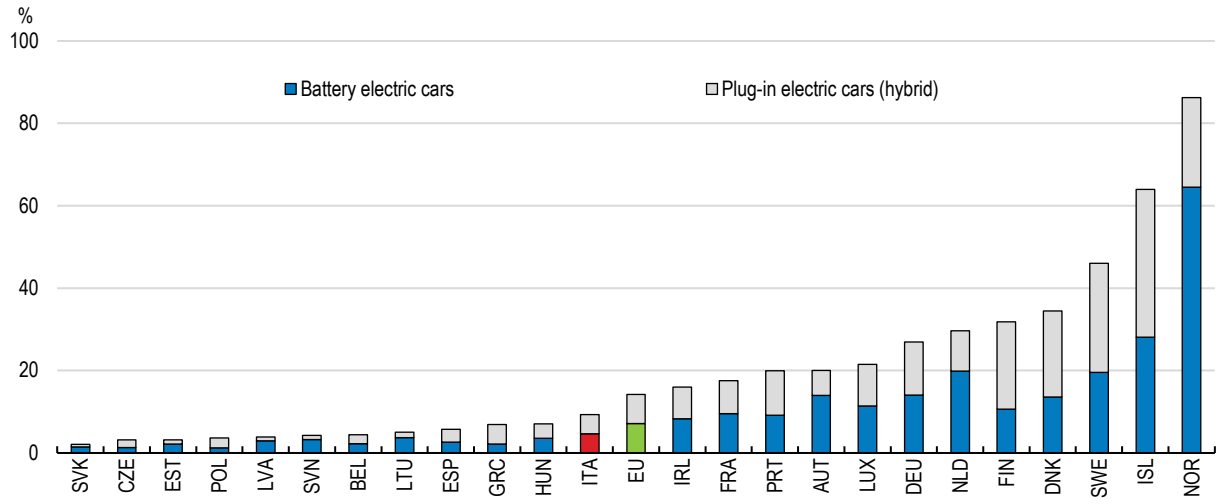
Italy relies on car purchase subsidies to increase the penetration of EVs but the system needs to be reformed to increase uptake. The amount of the subsidy might be too low to incentivise the purchase of entry-level models by lower-income households. In 2022 a large share of EV subsidies ended up unutilised and, as of mid-2023, subsidy uptake was less than 20% of the amounts allocated for the full 2023 calendar year (Table 2.5). This low uptake is not due to lack of interest in EVs. In 2022, about 50% of EV purchases did not benefit from subsidies, which are only available for cars below a certain price ceiling (Table 2.5), underscoring interest in EVs by high-income households that do not need subsidies. Subsidies for the purchase of internal combustion engine cars, which also have a price cap and therefore cannot be used to buy expensive models, were exhausted in a few weeks, suggesting that lower-income households opted for cheaper combustion engine cars. The difference in the price before subsidies between the least expensive EVs and combustion engine cars in Europe is about 10 000 EUR (IEA, n.d). While the subsidy to purchase an EV in Italy currently amounts to up to 5 000 EUR, that to purchase an internal combustion engine car is 2 000 EUR, meaning that the net difference is just 3 000 EUR. The subsidy to purchase an EV in Germany amounted to up to 9 000 EUR in 2022.

Figure 2.18. Electric vehicles made up less than 10% of newly registered cars in 2022

Electric vehicles share in new car registrations, 2022



Note: EU is EU simple average excluding non-OECD countries.
Source: European Environment Agency (EEA), European Commission - Directorate-General for Climate Action (DG CLIMA)

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Italy should focus on narrowing the price gap between entry-level EVs and internal combustion engine cars. The initial step should involve discontinuing subsidies for combustion engine car purchases, which are only available in France and Romania alongside Italy within the EU (Transport & Environment, 2022). Additionally, subsidies for electric vehicle purchases should be increased. To target entry-level EVs, the subsidy system should be tiered, offering more substantial incentives for cheaper cars and gradually reducing subsidies for more expensive models. Eligibility for the subsidy should be contingent upon scrapping an old and highly polluting car, except for household which do not already own a car. This condition would ensure that the programme does not contribute to increase the overall vehicle fleet and that public funds are used efficiently. The program's yearly allocation, currently worth less than 0.05% of GDP, should be expanded in the short term to create a critical mass in the domestic EV market and scaled down in the medium term as the market matures, following the model adopted by the United Kingdom and Germany. With an average subsidy of 5 000 EUR, the existing allocation can support the purchase of approximately 100 000 EVs each year, against a target of nearly 900 000 EV registrations annually from 2024 to 2030.

Italy has a relatively low ratio of circulating EVs for each publicly available charging point, but, when measured in per capita terms, there are almost three times fewer public charging points in Italy than in the EU average and significantly fewer than in Germany and France (Figure 2.19). Although the penetration of private charging points is higher, these cannot be a substitute for public charging stations, which are particularly needed in city centres, highways and inter-city roads. The scarcity of public charging points available per capita might hold back households from purchasing EVs due to charging anxiety. The NRRP objective of subsidising the installation of an additional 20 000 public charging stations over 2023-25 appears small compared to the EU recommendation of having 1 public charging station for each 10 circulating EVs, as this would imply the installation of about 600 000 additional charging points by 2030, and the first call for tenders for the subsidised installation of charging points on freeways has attracted little interest by operators. Italy should further ramp up the roll out of publicly available EV charging stations and promote the installation of private ones. Information campaigns explaining the financial and environmental benefits of EVs can further help to increase uptake. The government recently decided the creation of a national platform for the localisation of all publicly available charging stations and related information, including charging prices and the share of renewable electricity used.

Table 2.5. The uptake of subsidies for the purchase of electric vehicles is low

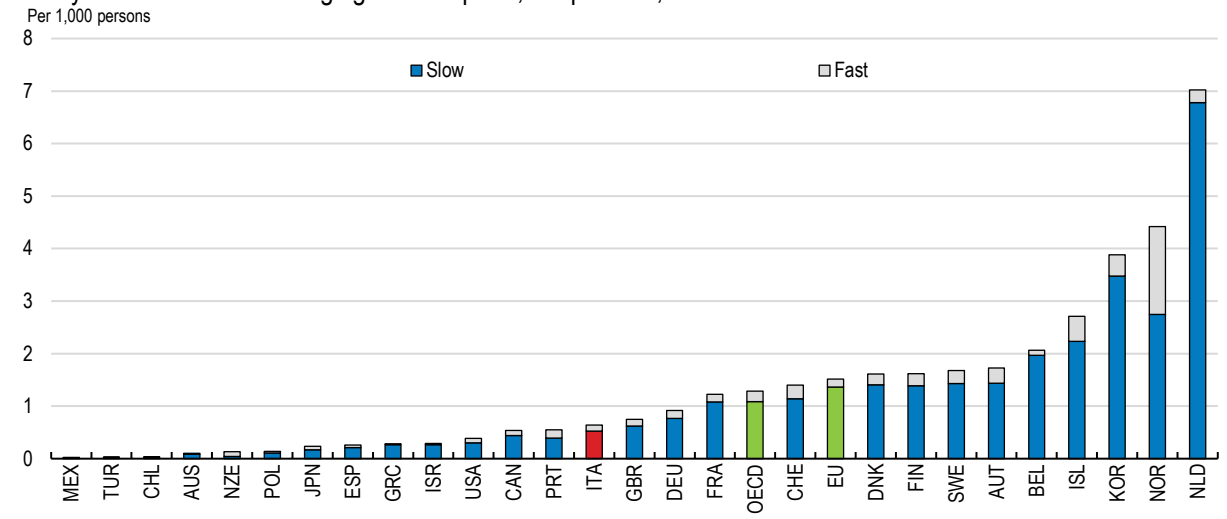
Subsidies for the purchase of motor vehicles in Italy, 2023, thousands of EUR

	Individual subsidy				Car price limit	Overall allocation	
	Standard		Low-income household				
	With scrapping	without	With scrapping	without		Full year	Mid-year uptake
BEV electric cars	5	3	7.5	4.5	35	190 000	21%
PHEV electric cars	4	2	6	3	45	225 000	4%
ICE cars	2	/	2	/	35	150 000	100%
Electric motorcycles	4	3	4	3	/	35 000	39%
ICE motorcycles	2.5	/	2.5	/	/	5 000	100%
Electric trucks	9	/	/	/	/	15 000	5%

Note: BEV (battery electric vehicle): 0-20 gCO_2/km; PHEV (plug-in hybrid electric vehicle): 21-60 gCO_2/km; ICE (internal combustion engine) cars: 61-135 gCO_2/km; Electric trucks: 0-12 t. Low-income households: ISEE < 30 000 EUR. Price limit applies to the net price before VAT. Numbers are thousands of EUR.
Source: OECD calculations based on Ministero delle Imprese e del Made in Italy, Ecobous (https://ecobonus.mise.gov.it/).

Figure 2.19. Electric charging stations per capita are few in Italy

Publicly available electric charging stations per 1,000 persons, 2021



Note: EU and OECD averages are simple averages calculated based on countries for which data is displayed.
Source: IEA Global EV Outlook 2022, OECD National Accounts database and OECD calculations.

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Reforming car sale, registration and ownership taxes can further increase the attractiveness of zero-emissions vehicles. In 2019-21, Italy levied a high sale tax (the so-called 'ecotassa') on the purchase of high-emissions cars (from a minimum of 1 100 EUR to a maximum 2 500 EUR). The government can reintroduce this tax and apply it to all vehicles based on their emissions, rather than only to the most polluting cars. Alternatively, it could increase the one-off provincial registration tax, which is currently low, and make it conditional on emissions intensity. Some provinces have exempted EVs from paying this registration tax. This exemption could be extended nation-wide. Italy levies a special yearly car ownership tax surcharge on cars with powerful engines (the so-called 'superbollo'). The government should consider making this tax dependent on emissions rather than on engine power and remove exemptions for old cars. EVs are exempted from car ownership taxes for the first five years and benefit from a generous reduction thereafter (OECD, 2020). The same exemption applies to cars powered by liquefied petroleum gas and methane, which, although in smaller quantities than gasoline and diesel cars, do emit CO_2 emissions (EEA, n.d.). The taxation of these cars should be gradually reformed so that these cars are treated like other emitting vehicles in the medium term.

Italy should continue strengthening alternatives to road transport. Only seven cities have a subway and only eleven a tram system, and the quality of public transport in big cities is poor (IEA, 2023a). NextGen EU funds, EU Structural Funds and funds mobilised in the 2022 budget law are expected to finance investments worth almost 1% of GDP over the next few years in sustainable mobility, such as new rapid mass transit infrastructures, zero-emissions buses, regional trains and cycling paths. These investments are complemented with measures to simplify the authorisation procedures for clean urban mobility. Their effects would be further magnified by initiatives to induce municipalities to strengthen preferential bus lanes, which is a low-cost option to make public transport more appealing than cars.

Investments worth about 2.5% of GDP are also planned for railways. These investments are mainly directed at improving the high-speed train infrastructure, boosting regional train networks, and electrifying railways in the south of Italy. Railway investments in the NRRP are expected to reduce yearly transport emissions by almost 2% (Alpino, Citino and Zeni, 2023). Italy's NECP also targets behavioural changes to reduce the need for mobility altogether, for instance by promoting remote working.

Further efforts are needed to improve the interconnections of trains with airports, which would allow reducing the number of short connecting flights taken between smaller cities and major hubs. Railway connections with neighbouring countries, which in many cases do not run on high-speed lines, should also be strengthened. These investments, which would also help in moving passengers and freight away from roads, should prioritise cases in which cost-benefit ratios are lowest.

Domestic aviation falls under the EU Emissions Trading System, but it currently benefits from nearly zero excise taxes on fossil fuels. A proposed revision of the EU Energy Taxation Directive aims to introduce minimum excise tax rates on aviation fuels over a 10-year period. To limit the increasing share of aviation emissions, Italy could consider going beyond the minimum and bring excise taxes on aviation fuels closer to those applying to other fossil fuels. Additionally, Italy could rationalise its multiple non-fuel aviation taxes and introduce a single tax taking into account the availability of alternative train connections and the fare paid by each passenger. This tax could decrease in the time it takes for the train to cover the same route and increase in the price of the ticket paid by each passenger. This fare-based approach would promote equity in flight taxation and additionally address the fact that more expensive tickets contribute more to airlines' profitability and their decision to operate (van Ewijk, Chaudhary and Berrill, 2023).

2.3.4. Decarbonising buildings

Buildings are expected to contribute significantly to meeting Italy's emissions reduction target in sectors covered by the EU Effort Sharing Regulation. At around 20%, their share in economy-wide emissions is significantly higher in Italy than on average in the EU (Figure 2.2). Italy's updated NECP targets an emissions reduction amounting to more than 40% over 2005-30, but emissions have decreased by less than 15% over 2005-21. The reduction over 2005-21 was considerably less than in the rest of the EU and implies that the pace of decarbonisation needs to accelerate significantly.

Since the great majority of the existing buildings stock will still be standing in 2050, retrofitting it (e.g., by improving insulation, electrifying heating, and cooling, and incorporating on-site renewable energy) is a crucial priority to achieve the decarbonisation targets. While Italy's historical and cultural heritage means that some of its buildings are protected and might not be retrofitted, the number of such buildings is around 75 000 (MIC, n.d), or less than 1% of the total buildings stock, meaning that the great majority can in principle retrofitted. The proposed reform of the EU Energy Performance of Buildings Directive sets a clear timeline: except for historical buildings, places of worship and defence buildings, Italy would need to renovate the 15% least energy efficient buildings by 2030 and another 15-20% by 2033 if the reform was approved. To achieve total decarbonisation by 2050, Italy needs to retrofit 2½ per cent of the buildings stock annually from 2020 to 2050 (MASE, 2021). Renovations approved with the 'superbonus' (a government-funded retrofitting scheme) enabled to retrofit less than 3% of the buildings stock over 2021-

22. But with an overall fiscal cost of around 4% of yearly GDP, its cost effectiveness was very low (Alpino, Citino and Zeni, 2023), highlighting that more cost-effective policies are needed.

Box 2.5. The reform of the EU Energy Performance of Buildings Directive

Buildings emissions would need to decrease by 60% by 2030 compared to their 2015 level

If approved, the proposed reform of the EU Energy Performance of Buildings Directive would have far-reaching consequences. It targets (i) a reduction of emissions from the buildings sector of at least 60% by 2030 in comparison to 2015, (ii) the achievement of climate neutrality by 2050, and (iii) the increase in renewable energy penetration in buildings up to 50% by 2030.

A third of Italy's buildings would need to be retrofitted by 2033

The EU energy performance certificates of buildings would be reformed so that the 15% least energy efficient buildings in each country would be assigned to the category G, zero-emissions buildings would be assigned to the category A and all others would be distributed proportionally to the categories B to F. Public and non-residential buildings would need to achieve at least class F energy performance by 2027, and at least class E by 2030. Similarly, residential buildings would need to reach at least class F by 2030 and at least class E by 2033. Member States would then need to establish specific timelines for achieving a zero-emissions buildings stock by 2050 through new National Building Renovation Plans. The Commission plans to mobilise up to €150 billion from the EU budget until 2030 to finance upfront investment costs, with priority for households living in the worst-performing buildings (European Commission, 2021).

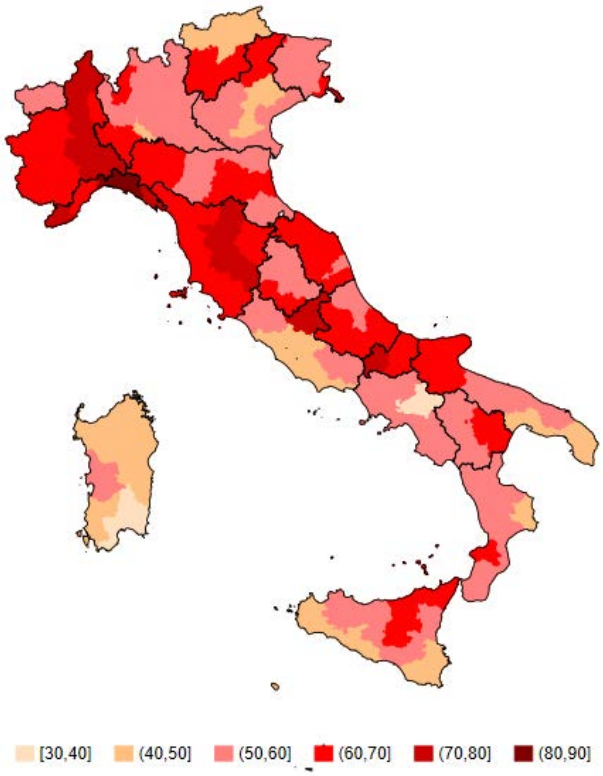
All new buildings should be zero-emissions buildings starting from 2030 (2027 for public buildings). 3% of the total floor area of all public buildings should be renovated annually, while energy use in the public sector should be reduced by almost 2% every year. Renewable energy use in heating and cooling should increase by more than 1 percentage point per year. The phase-out of fossil fuels should be completed by 2040.

Italy's buildings are relatively energy-intensive and electricity penetration is low. Although their energy use has started to decrease since the mid-2010s, buildings still account for about 30% of Italy's energy consumption (Figure 2.3). Residential buildings in Italy tend to be energy inefficient as most of them were already built when the first energy efficiency standards were introduced (Figure 2.20) and are responsible for most of the sector's emissions (Figure 2.21, Panel A). Their energy and carbon intensities are significantly higher than in Spain, which has a similar climate (Figure 2.21, Panel B).

Most of Italy's residential buildings' greenhouse gas emissions stem from space heating (Figure 2.21, Panel A). By contrast, Norway emits almost zero emissions from buildings notwithstanding harsh climatic conditions. More generally, the correlation between energy use and CO_2 emissions across countries is low (Hoeller et al., 2023). This suggests that it is possible to reduce buildings emissions intensities through buildings electrification, which is currently low in Italy (Figure 2.22), the decarbonisation of the power sector and better buildings insulation. Decarbonising the power sector and better insulating buildings would also help to limit the potential increase in emissions stemming from the expected higher need for space cooling. Space cooling currently still accounts for a small share of emissions (Figure 2.21, Panel A), but its share may increase as summer temperatures rise.

Figure 2.20. Over half of Italy's buildings was built before the first energy efficiency standards

Share of residential buildings built before 1971, by province



Note: Data is as of 2011.
Source: ISTAT Censimento Popolazione e Abitazioni 2011 and OECD calculations.

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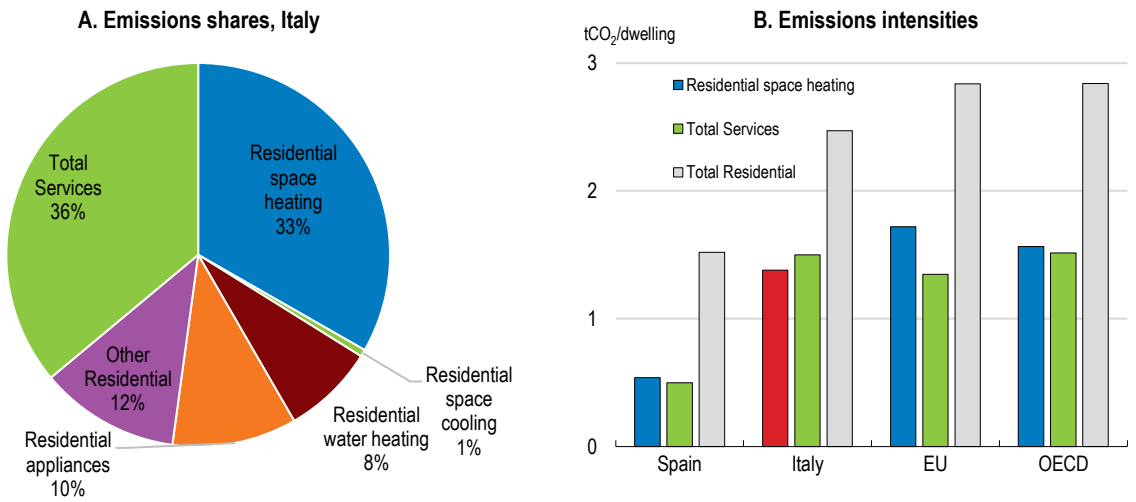
The buildings sector may not be as responsive to price signals to reduce greenhouse gas emissions as other sectors (Hoeller et al., 2023; D'Arcangelo et al., 2022). Italy's effective carbon rate in the buildings sector is substantially higher than that of the EU average (Figure 2.15), and technologies to improve buildings emissions are increasingly available. Despite that, buildings emissions have decreased much less in Italy than in the rest of the EU (Figure 2.2). This suggests that the introduction of the EU Emissions Trading System in the buildings sector in 2027 might not, by itself, induce a drastic acceleration of carbon abatement.

The low responsiveness to price signals in the buildings sector can be related to a number of factors, including the long length of renovation cycles, the fact that many households rent rather than own property and therefore have limited options to react to higher energy prices (Fowlie, Greenstone and Wolfram, 2015), the prevalence of credit constraints, the limited understanding of the financial gains of living in an energy-efficient home (Hoeller et al., 2023) and the presence of a coordination issue in buildings with several apartments. However, although important, these issues do not appear to be sufficient to explain the slower progress in decarbonising buildings despite higher carbon prices in Italy than in the rest of the EU, suggesting that carbon abatement costs in buildings might be higher in Italy than elsewhere.

Figure 2.21. Italy has higher buildings emissions intensities than Spain, which has a similar climate

Emissions shares and emissions intensities by end use, 2021



Note: Emissions intensities in Panel B are in tonnes of CO2 per dwelling for residential space heating and total residential and in kg of CO2 per 50 units of value added in USD PPP 2015 for total Services.
Source: IEA Energy End-uses and Efficiency Indicators.

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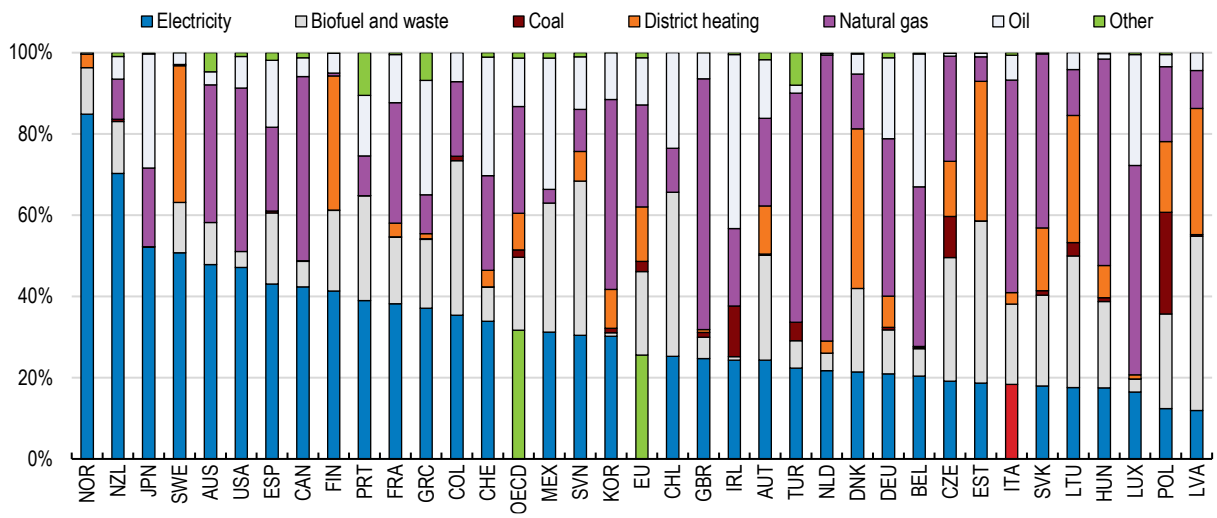
Figure 2.22. Italy has room to electrify residential buildings

Composition of residential energy consumption by source, 2020 or latest available year



Source: IEA Energy End-uses and Efficiency Indicators and OECD calculations.

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Subsidies and tax rebates can speed up the deployment of new technologies by overcoming credit constraints but can have high fiscal costs and need to be designed carefully. Policy design needs to consider that some investments, for instance the triple glazing of windows, have limited effects (Gerarden, Newell and Stavins, 2017) and that, when untargeted, subsidies and tax rebates risk funding renovations that would have been undertaken anyway (Risch, 2020).

Italy mainly relies on tax rebates and direct subsidies to support the renovation of private and public buildings, but cost-effectiveness is low. Under the 'Ecobonus' scheme, individuals and businesses may

deduct from their income tax a percentage of the expenditure incurred for certain types of energy upgrading works on existing buildings. From 2014 to 2020, the 'Ecobonus' mobilised investments worth about 1.5% of Italy's GDP in total for interventions on about 20% of Italy's buildings stock but estimated energy savings were less than 1% of residential buildings' yearly energy consumption (ENEA, 2021).

The 'Ecobonus' appears to be regressive, as households with higher housing wealth and upfront capital can benefit from higher tax credits. More than half of the interventions financed benefitted households in the tenth decile of the income distribution (UPB, 2023). Recent interventions should make the 'Ecobonus' less regressive, as the government has introduced a parallel scheme in the context of the RePowerEU chapter of the NRRP targeted towards young families and those at risk of energy poverty.

The very generous 'Superbonus' scheme, introduced in 2020 and reformed several times, initially granted tax rebates worth 110% of renovation costs for projects leading to an important energy efficiency upgrade of at least two energy classes. To facilitate uptake, the government disposed that the tax credit could be transferred to a third party, thus allowing households without a sufficient tax bill and/or upfront capital to access the scheme. This resulted in a more moderate correlation between household income and take-up than the 'Ecobonus' scheme (UPB, 2023). As of February 2023, interventions on slightly more than 3% of Italy's buildings stock were approved, for a total fiscal cost of about 4% of GDP (UPB, 2023), underlining the low cost-effectiveness of the scheme.

The government recently tightened the 'Superbonus' by decreasing the percentage of the costs that can be rebated, ending the transferability of the tax credit to third parties, and targeting the programme to low-income households, which is likely to significantly diminish uptake. The programme is due to be entirely phased out by 2026. Two other programmes (the Thermal Account and the Programme for the Renovation of Buildings of the Central Administration) aim at, mostly, buildings of the public administration. However, given their limited budgets and uptake, they might not be sufficient to lead to meaningful investments.

Italy should reform the tax rebate system to target it to the least efficient buildings and complement it with a system based on a mix of highly subsidised long-term loans and grants for low-income households who lack a sufficiently high tax bill to claim the tax credits. The incidence of grants should be made inversely proportional to households' income, as in France (OECD, 2022a), but a minimum part of the cost should always be financed through loans in order to leave households with a financial stake in the project. The system should (i) prioritise the retrofitting of the least-energy-efficient housing units that are used as primary homes, (ii) be based on an ex-ante assessment of the emissions-reduction potential of each project and limited to high-potential interventions, and (iii) exclude technologies that are based on fossil fuels if renewables- or electricity-based alternatives are available. Although it might currently be low, the appetite to take up subsidised long-term loans for energy efficiency renovations should gradually increase with rising energy prices in buildings due to the phase in of the new EU Emission Trading System for buildings in 2027 and increasing awareness across the population.

Banning dirty technologies or setting standards for rentals are other options to help homeowners making greener choices. Italy, which still incentives the installation of boilers powered by fossil fuels, should stop this policy immediately, as recently done by the Czech Republic and Slovakia (see Box 2.6). It should also consider banning the installation of fossil fuel-powered boilers altogether in the medium term. To encourage owners to make energy efficiency renovations, Italy could further consider setting higher rental income taxes for owners that rent energy-inefficient homes. Landlords who decide to retrofit their houses because of this policy may pass on the cost of energy efficiency renovations to tenants, but tenants would save money from lower energy bills. Landlords who do not retrofit their properties and decide to increase the asked rent to compensate for the higher taxes would find it more difficult to find tenants. An even more stringent policy option would be to set minimum energy efficiency requirements for rental properties, as done in France and Scotland (Box 2.6).

Setting standards for new construction and renovation can ensure that greener technologies are chosen whenever they are available. Since the beginning of 2021, all new buildings and buildings undergoing major renovation in Italy need to align with nearly zero emissions buildings (nZEB) standards. Italy could consider strengthening this by requiring all new buildings to be zero-emissions buildings (ZEB). Improving renovation process efficiency, as attempted in Estonia, Latvia, and the Netherlands (Box 2.6), can accelerate renovations and raise the ability of construction companies to meet the expected surge in demand. Fast renovations also diminish discomfort associated with living in a house under renovation.

Energy performance certificates, which are currently mandatory for new constructions and major renovations or when renting or selling a property, can be strengthened as they help households realise how energy efficient their homes are. Favourable energy ratings are also reflected in higher property prices (Taruttis and Weber, 2022), thus reinforcing price incentives for energy efficiency renovations. Currently, energy certificates cover about 10% of the national buildings stock. Although current plans for the reform of the EU Energy Performance of Buildings Directive would make energy certificates mandatory, Italy can make them mandatory immediately, as is already the case in the Netherlands, for instance. Their criteria should be reviewed regularly, which would also address the problem that the quality of many older certificates is weak.

Box 2.6. Measures to promote and facilitate deep retrofitting in OECD countries

Policies from other OECD countries can be replicated in Italy to decarbonise its buildings stock. France has made the rental of extremely energy-inefficient housing outlawed starting in 2023 and plans to tighten this regulation even further in the future. In Scotland, a minimum level of energy performance is required for rented homes from 2022, when a tenancy contract changes, and for all properties from 2025.

The Czech Republic and Slovakia recently phased out public subsidies for the installation of boilers powered by natural gas (Hoeller et al., 2023), in line with the proposed reform of the EU Energy Performance of Buildings Directive. Latvia and Estonia are testing the use of prefabricated multifunctional renovation elements to expedite renovations and minimise disruption for occupants. The Netherlands has implemented a programme enhancing coordination among various renovation steps, reducing the total time for net-zero renovations of social housing to just 10 days (OECD, 2023a).

Latvia's "Let's live warmer!" (Dzīvo siltāk!) campaign contributed to the quadrupling of the number of applications for the improvement of heat insulation of multi-apartment residential buildings in just two years (OECD, 2023b).

Further enhancing public awareness about the benefits of energy efficiency upgrades would help accelerating the pace of deep retrofitting, as suggested by the example of Latvia (Box 2.6). Italy's National Agency for Energy Efficiency is implementing an information and training programme aimed at promoting and facilitating the efficient use of energy. As one of the first initiatives, it has developed a dedicated website which allows consumers to calculate energy savings and evaluate energy efficiency.

Promoting behavioural changes can induce important reductions in energy use at no fiscal cost. Reducing the heating temperature from 20°C to 19°C would cut gas use for residential heating by nearly 10%. If, in addition, heating times were reduced by one hour per day and the heating season by 15 days, Italy could save about 15% of current consumption, with large savings in households energy bills (ENEA, 2022). Temporary measures mandating energy savings in public buildings and multi-apartment buildings during the 2022-23 energy crisis should become permanent.

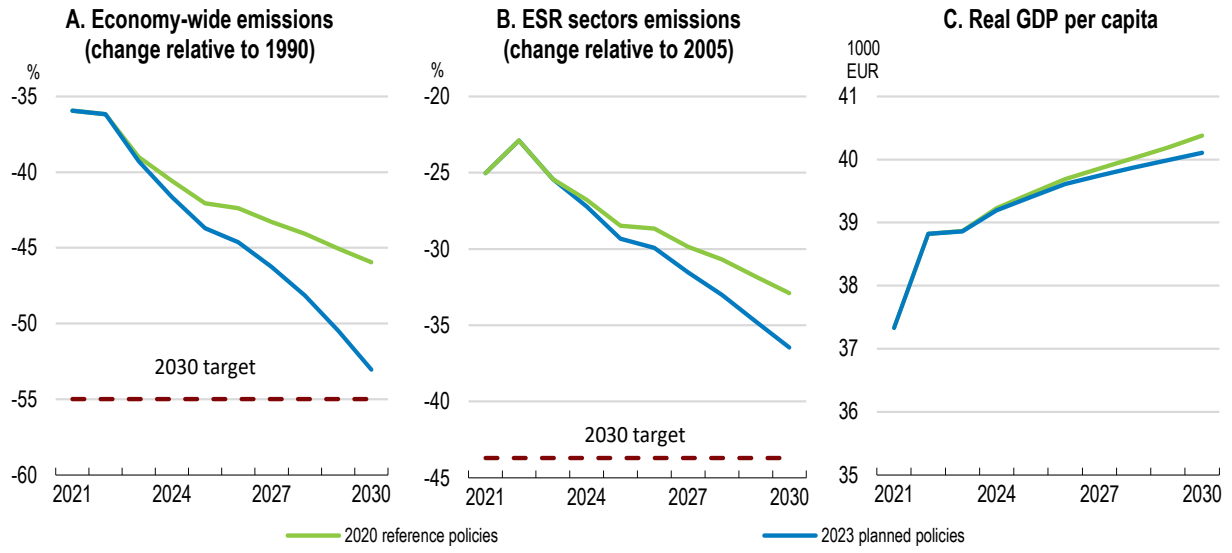
2.4. Managing the transition and adapting to climate change

2.4.1. The economic and social consequences of the transition

Reducing emissions is key to mitigating climate change but will require profound changes in the Italian economy. Stylised simulations from the OECD ENV-Linkages model (Box 2.7) confirm that planned policies, such as those envisaged in the NECP and the tightening of EU climate legislation, may not be enough for Italy to meet its 2030 emissions reduction targets (Figure 2.23, Panels A and B). The planned increase in policy stringency will have some, limited, macroeconomic costs, with GDP per capita being about 0.7% lower in 2030 relative to a reference scenario before the adoption of the EU Climate Law (Panel C).

Figure 2.23. Planned climate change mitigation policies are expected to result in a limited GDP loss

Effect of tightening climate change mitigation policy on greenhouse gas emissions and GDP per capita



Notes: The 2023 planned policies scenario include policies envisaged in Italy's NECP and account for the tightening of the EU climate legislation; ESR denotes Effort Sharing Regulation.
Source: OECD calculations based on Château, Dellink and Lanzi (2014), OECD (2022) and IMF (2022).

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Box 2.7. The OECD ENV-Linkages model

The OECD ENV-Linkages model is a global, dynamic, and sectoral Computable General Equilibrium (CGE) model that allows to simulate the effects of climate mitigation policies on emissions, macroeconomic variables, sectoral outcomes, and trade (Château, Dellink and Lanzi, 2014). The model is based on a neo-classical economic framework with close to perfect capital and goods markets and vintage capital.

The model also has a detailed sectoral and trade representation, making it well suited to study the effects of climate policy on trade and commodity markets, and closely matches greenhouse gas emissions to economic activities. Given its short time horizon (until 2030), the study does not incorporate the feedback effects of climate change on economic variables. The economic benefits of a reduction of air pollutants on health expenditures and labour productivity are also discarded.

Data sources and calibration

Calibration is done referring to the macroeconomic scenario of the OECD Long-Term model, with projections from the 2022 November OECD Economic Outlook (OECD, 2022b), and complemented using the October 2022 IMF World Economic Projections (IMF, 2022) for countries not covered by the OECD Long-Term model. Two scenarios are considered: a 2020 reference scenario, and an increased ambition scenario, using information on the policies adopted as part of the EU climate policy reform and national policies of EU member states, as described in national energy and climate plans. EU-wide emissions reduction goals by 2030 relative to 1990 in the reference and increased ambitions scenario are respectively 42.5% and 55%.

The transition will reinforce the structural shift away from manufacturing and towards services sectors (Table 2.6). Manufacturing will suffer employment losses, reflecting the impact of higher carbon prices on the production costs of emissions-intensive industrial goods, which will decrease Italy's competitiveness in energy-intensive sectors (the OECD ENV-Linkages model assumes no policy change in non-EU countries). Given that the incidence of brown jobs is higher in the regions of southern Italy (Box 2.8), there is a risk that local unemployment may rise significantly in some areas. In contrast, less emissions-intensive service sectors will see higher employment growth.

Table 2.6. The transition will lead to significant reallocation of employment and output

Differences between 2020 reference scenario and 2023 updated policies scenario on 2030 outcomes

	Output (per cent)	Employment[1]
Agriculture	-0.9	-131.2
Manufacturing	-1.7	-838.3
Construction	-0.1	19.0
Services	-0.3	422.5
Power	1.8	183.0
Oil powered electricity	-54.2	-9.7
Gas Powered electricity	-39.4	-167.4
Hydro power	58.4	176.0
Wind power	56.9	67.5
Solar power	57.1	142.0
Transmission and distribution	-3.2	-25.4
Total	-0.6	-0.1

Note: [1] Employment changes are in thousands of employed persons, normalised by the sector wage.
Source: OECD calculations based on Château, Dellink and Lanzi (2011), OECD (2022a) and IMF (2022).

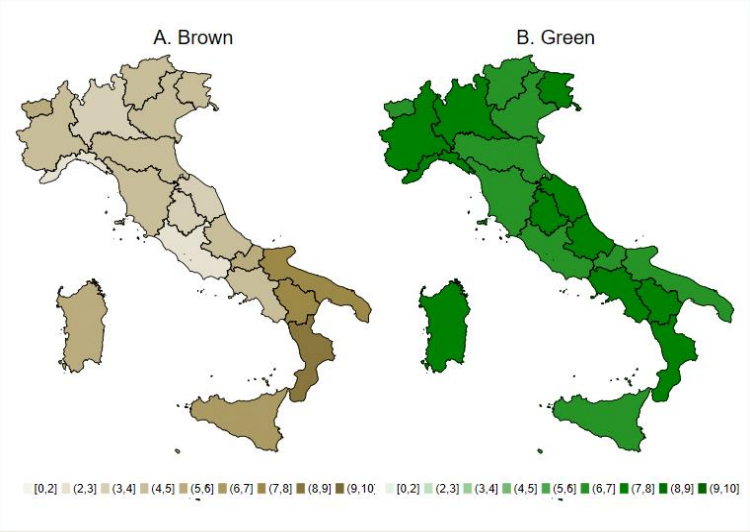
Employment in the construction and power sectors will expand because of the need to retrofit a large part of Italy's buildings stock, ramping up green infrastructures and boosting renewable electricity generation, potentially leading to labour shortages in these sectors. Addressing shortages requires raising productivity, including by reducing entry barriers for businesses from other EU countries; raising labour supply, including reducing occupational entry regulations and facilitating skilled immigration (OECD, 2023a); and increasing funding for training and upskilling schemes and career guidance initiatives. Additionally, given that the increase in green electricity generation is expected to be clustered in some areas of southern Italy, policies to promote workers' geographical mobility would help enabling the reallocation of the workers needed for the operation and maintenance of green power plants, allowing them to contribute to the local economy (Cai et al., 2017).

Box 2.8. Brown and green occupations in Italy

In 2019, almost 5% of workers in Italy worked in a polluting occupation, slightly above the EU average (Causa and Soldani, forthcoming). High-polluting jobs, identified following a methodology similar to Vona et al. (2018), are mostly concentrated in Italy's South and less prevalent in the Centre and the North (Figure 2.24). The share of workers in green occupations, identified by Causa and Soldani (forthcoming) through an adaptation to European data of the O*NET classification of green work content involved (Dierdorff et al., 2009; Dierdoff et al., 2011), is more homogenous across regions.

Figure 2.24. A higher share of workers works in brown occupations in southern Italy

Share of workers in brown and green occupations, by region, 2019



Source: OECD calculations based on EU-LFS 2019 data and Causa and Soldani (forthcoming) methodology.

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Workers in high-polluting occupations tend to be male and foreign-born, have a lower educational attainment and live in non-urban areas (Table 2.7). Workers in green occupations are also more likely to be men but tend to be born in Italy, have a higher educational attainment (see also Basso et al., 2023) and live in urban areas.

Table 2.7. Workers in brown occupations tend to be less educated

Characteristics of workers in brown and green occupations

	Brown	Non-brown	Difference		Green	Non-green	Difference
% Women	0.17	0.44	-0.27*		0.23	0.50	-0.27*
Age	45.40	45.75	-0.35		45.81	45.64	0.16
Number of children	0.80	0.75	0.04		0.80	0.75	0.05*
% Temporary contracts	0.27	0.17	0.10		0.13	0.18	-0.05*
% College educated	0.09	0.24	-0.15*		0.29	0.20	0.09*
% Urban area	0.18	0.30	-0.13*		0.31	0.28	0.03*
% Foreign born	0.18	0.11	0.07*		0.11	0.12	-0.01*

Note: Averages based on 2018-19 data; * indicates statistical significance at the 99% confidence interval using region-clustered s.e.
Source: EU-LFS data and OECD calculations.

The transition will expand some existing markets and create new ones, including, for instance, that of electric vehicles (EVs) and green energy components, while shrinking others. This may create opportunities but also new challenges for Italy's large manufacturing sector. Many of the government policies needed to achieve the transition may stimulate innovation by Italian firms, thereby helping them to take some shares in the new green markets. For instance, the government is planning a simplification of the legislation regulating the extraction and processing of critical raw materials. This and other initiatives should be complemented by higher public and private green R&D spending and growth-friendly labour market policies.

Rising carbon prices may have important distributional effects and cause job displacement. The problem of energy poverty is particularly acute in Italy, where the share of income spent on energy by the bottom quintile of households is about 50% higher than the EU average (due in particular to high expenditures on housing-related energy use), whereas that spent by the highest quintile is about the same as the EU average (Menyhert, 2022). Poorer households are more likely to live in a rented property and may find it harder to renovate the spaces where they live to lower energy use, even if financial aid was provided, due to the split incentive problem between landlords and tenants. They are also more likely to own older and less energy-efficient cars and might lack the financing to replace them. Brown jobs are more likely to be performed by workers with lower educational attainment and in more rural areas (Box 2.8), so that their potential disappearance might exacerbate social tensions.

The design of climate mitigation policies should consider distributional aspects (OECD, 2021b). Investment in sustainable mobility alternatives and targeted EVs purchase subsidies can help low-income households deal with the impact of rising car fuel prices by facilitating the purchase of low-carbon cars and reducing the need to own a car. Direct public investment to build and renovate energy-efficient social housing according to high environmental standards, as envisaged in Italy's NRRP and its REPowerEU chapter, would reduce the risk of energy poverty and directly contribute to housing decarbonisation. Targeted cash transfers may need to be reinforced to deal with the redistributive effects of the transition. To finance these policies, Italy will be able to use funds worth around 0.3%-0.4% of its GDP over 2026-2032 coming from the new EU Social Climate Fund, to be financed with the proceeds of the new EU Emission Trading System for buildings and transport.

Achieving the transition will have a negative impact on Italian public finances. Investment needs to achieve the transition are estimated to be worth over 5% of GDP annually over 2023-30 (MASE, 2023) and some will need to be shouldered by the public sector. Given its limited fiscal space, the government needs to select public investment projects carefully, prioritising those with low cost-benefit ratios, and must prioritise taxes over subsidies to incentivise investments by the private sector. However, higher carbon taxes cannot be expected to be a boon for public finances as they tend to be regressive and most of their proceeds might need to be redistributed to lower-income households as direct transfers.

Although climate change mitigation will be fiscally costly, counterfactual analyses done for other countries suggest that the public-debt-to-GDP ratio may be far higher under inaction over the longer term, as governments will need to bear most of the costs of uncontrolled extreme weather events (Office for budget responsibility, 2021; The Network of EU IFIs, 2022). The Italian government should carry out a comprehensive assessment of the combined impact of the climate transition and climate change on fiscal sustainability. This would help designing fiscally responsible mitigation policies. It can also strengthen the use of green bonds to mobilise public funds to finance green investments, as this facilitates green accounting.

Excise taxes on fossil fuels currently generate almost 1.5% of GDP in revenues every year. The government will need to devise other taxes to make up for the expected shortfall in fossil fuel excise tax revenues as fossil fuels use will gradually decrease. Italy also taxes the consumption of electricity. This decreases price incentives to electrify end uses but may provide a backstop for public finances. One strategy to avoid conflicts between environmental and fiscal objectives can be to temporarily reduce

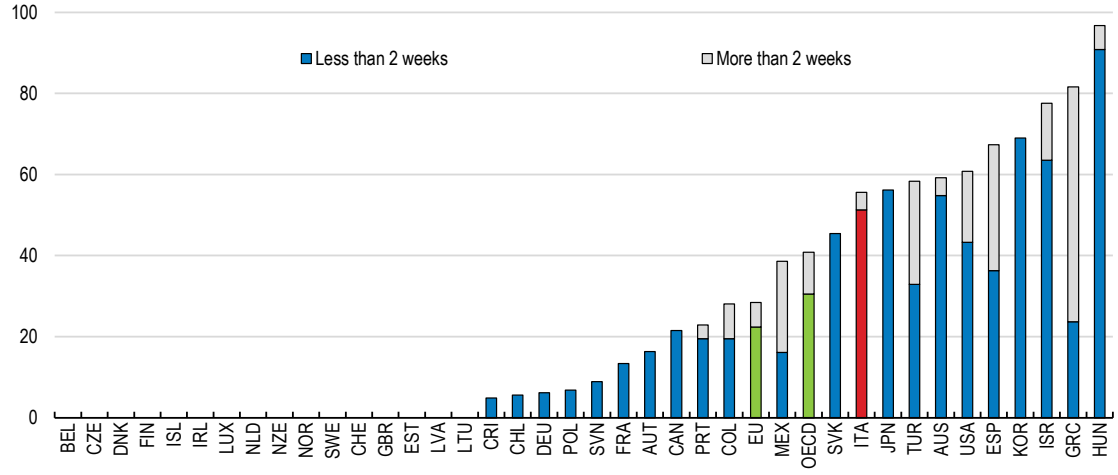
existing electricity taxes and increase carbon taxes in a revenue-neutral way. Eventually, as the energy system approaches full decarbonisation, electricity taxes can be increased (OECD, 2019b). Alternatively, in transport, another option to make up for the loss of fossil fuel taxes might be to gradually shift from taxes on fuel to taxes on distances driven (OECD/ITF, 2019).

2.4.2. Adapting to climate change

Climate change is increasing the frequency of climate-related hazards, such as extreme precipitations, droughts, and heatwaves, to which Italy is heavily exposed (Figure 2.25). Given Italy's geographical structure and high artificial soil coverage (the highest in the EU), extreme precipitations have a high probability of causing flooding and landslides, as confirmed by recent events. Climate-related hazards can damage critical infrastructure, disrupt supply chains, and harm directly exposed sectors such as agriculture and tourism (Mariani and Scalise, 2022; Accetturo and Alpino, 2023), as well as manufacturing and service activities (Cascarano, Natoli and Petrella, 2022). Extreme weather events are projected to cause cumulated infrastructural damages of about 10% of GDP over 2021-30 (MIT, 2022). Further, long periods of very high temperatures, which have increased significantly over the past decades, can increase heat stress and reduce labour productivity (Heal and Park, 2015; Zander et al., 2015). Rising temperatures alone might decrease Italy's long-run GDP growth potential by about a tenth (Brunetti et al., 2022). Italy's short-time work scheme ('Cassa integrazione') was recently amended to cover instances of suspension of work due to temperatures above 35 degrees Celsius.

Figure 2.25. Italy is highly exposed to extreme heat

Share of population exposed to extreme heat



Note: Hot summer days are those with maximum temperature above 35 degrees Celsius.
Source: OECD IPAC Climate Action Dashboard (Maes et al., 2022).

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To adapt to climate change, the Italian government has developed, but not yet approved, its first National Climate Change Adaptation Plan (NAP, Box 2.9). One of the key goals of the NAP is to set up a national governance mechanism for climate adaptation through the development of a National Observatory on climate. The observatory will lead the approval and prioritisation of interventions, allocate resources, and monitor and evaluate adaptation progress and effectiveness. The NAP also foresees other practical measures to facilitate coordination and knowledge exchange across levels of government, including the establishment of a permanent forum and of a dedicated research programme. A key element of Italy's NAP is that it includes a climate risk review, which provides an overview of observed and projected climate hazards in the country under three climate scenarios. The approval of the NAP is set to be followed by the planning and implementation of adaptation actions in specific areas and sectors, which will converge in sectoral and inter-sectoral plans outlining the specific interventions to be implemented.

While the NAP contributes to map existing EU, national and regional funding sources that can potentially finance adaptation actions, it does neither assess existing levels or sources of funding nor total funding needs for its envisaged actions. Italy's NRRP initially allocated funds worth about 0.5% of GDP in total for adaptation investments, but a part of these funds was cut with the recent NRRP reform. A complementary funding strategy would increase the likelihood of successful implementation of the NAP and contribute to effective adaptation.

Box 2.9. Italy's National Adaptation Plan

Building resilience to the impacts of climate change

Recognising the growing impacts from climate change and the need to enhance adaptive capacity, Italy has recently developed its first National Climate Change Adaptation Plan (NAP), to be released in the course of 2023. Spearheaded by the Ministry of the Environment and Energy Security, the NAP aims to strengthen the enabling environment for climate change adaptation and provides a framework to assess climate risks, with a view to supporting the planning and implementation of climate adaptation actions at national, local, and sectoral level.

The NAP is to be followed by a set of sectoral and inter-sectoral plans that will outline the specific interventions to be implemented. For these plans to effectively contribute to build climate resilience, it will be critical to develop a comprehensive climate risk assessment, including downscaled risk projections under different warming scenarios. The NAP's review of existing climate hazards provides a starting point that needs to be further integrated with spatially bound information on projected exposure and vulnerabilities of people, assets, and sectoral activities. All these elements are critical to effectively identify adaptation objectives and targets and to prioritise actions at local and sectoral level. For example, the Slovak Republic has assessed the vulnerability of its population at the municipal level with a view to better targeting adaptation interventions.

Implementation relies on the engagement of all stakeholders and on specific measures and targets

While the Ministry of the Environment and Energy Security plays a key coordinating role, the implementation of adaptation actions relies on the engagement of all sectoral and subnational stakeholders. Therefore, a clear allocation of roles and responsibilities is needed. Italy's NAP does not provide this element, though it foresees the definition of roles and responsibilities as part of the steps following its publication.

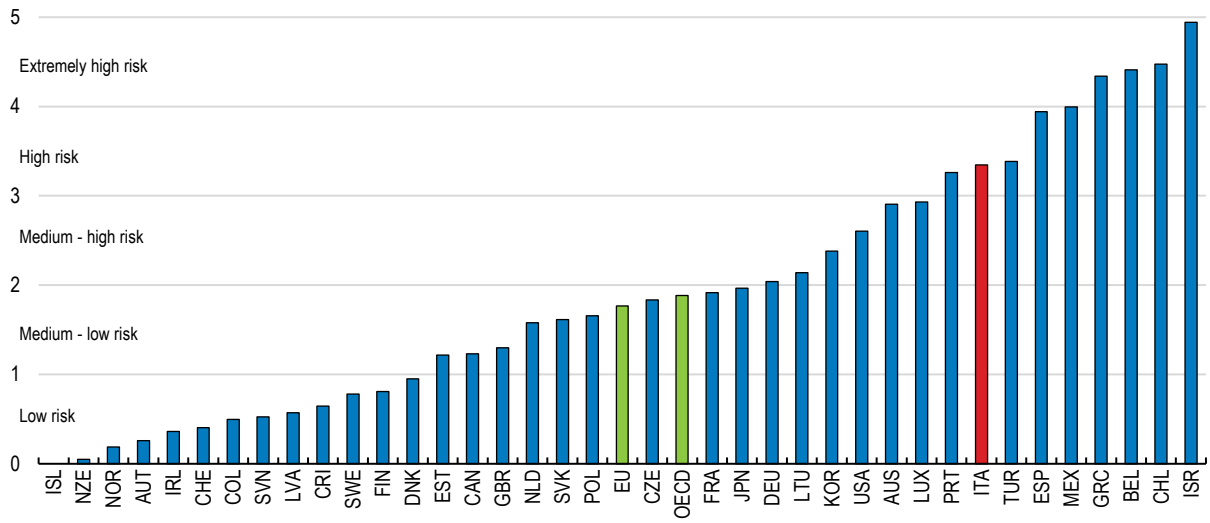
Clear and specific measures, targets and timelines for climate adaptation are pivotal to orientate policy and project implementation across geographies and sectors. The NAP provides a set of more than 350 suggested actions that could be taken to strengthen climate resilience, ranging from soft (i.e., measures focusing on information and governance, about 75%) to green (i.e., ecosystem-based, about 15%) and grey (i.e., infrastructure and technology, about 10%) measures. While this list of measures can provide a good base to inform and inspire regional and sectoral stakeholders, their inclusion in sectoral plans needs to go hand in hand with a clear definition of priorities, costs, and funding streams. For example, in the United Kingdom, the Climate Change Risk Assessment identifies adaptation objectives, linked to identified risks and completed with timelines and progress indicators, to be achieved under the subsequent five years.

One of the key goals of the NAP is the establishment of a national governance mechanism for climate adaptation starting with the development of a dedicated National Observatory. The observatory has the potential to accompany sectors and subnational governments in the definition of roles and responsibilities, adaptation priorities and targets as well as to facilitate cross-agency coordination and capacity building at all levels of government.

Concrete adaptation actions in Italy should encompass a range of measures. Investments in river embankments would decrease the risk of flooding in high-risk areas. Planting trees, devising green roofs, and replicating natural drainage systems in cities would contribute to limit stormwater runoff, thus reducing the risk of flooding, and decrease urban heat. Increasing the penetration of cooling systems and improving buildings isolation would increase resilience to heatwaves. Reducing the leakage rate in water pipes, which is currently among the highest in the EU, would increase water storage levels. Engaging in rainwater harvesting (the collection and storage of rain) and other natural water retention measures would reduce stress on freshwater resources, which is among the OECD highest (Figure 2.26), increase resilience to droughts, reduce the risk of flooding and lead to water bills savings. Regulations preventing the construction of new buildings and the extension of existing ones in areas at high risk of hydrogeological disasters should be implemented strictly.

Figure 2.26. The risk of water stress is high in Italy

Ratio of total water demand to available renewable surface and groundwater supplies (water stress risk)



Note: Water demand include domestic, industrial, irrigation, and livestock uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability.
Source: Kuzma et al. (2023).

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The use of private insurance mechanisms among households and firms should be promoted. This would ensure the financial coverage of climate-related disasters. It may also incentivise individual risk prevention behaviour if policyholders engaging in adaptation measures were offered reduced premiums. The Italian government might also consider making climate-related private insurances mandatory in the long term so as to limit the increase in public debt expected due to climate change.

2.5. Recommendations

MAIN FINDINGS	RECOMMENDATIONS
Strengthening institutions and governance	
Although ambitious, planned policies in the National Energy and Climate Plan (NECP) are not enough to meet Italy's emissions reduction targets.	Reinforce existing measures and introduce additional policies in the NECP to allow Italy meeting its emissions reduction targets.
EU-wide emissions reduction targets only bind the EU as whole, and Italy's economy-wide net-zero emissions target is not legally binding.	Enshrine the 2050 economy-wide net-zero target in law and set legally binding intermediate targets to be reached between 2030 and 2050.
There is no executive body responsible for steering the NECP. Monitoring of progress in climate change mitigation policy action and outcomes is a priority.	Expand the mandate of the existing Interministerial Committee for the Ecological Transition to make it responsible for steering the climate policy agenda. **Set up an independent climate council for policy evaluation and advice.**
Refocusing fossil fuels taxes to their carbon content	
Effective carbon tax rates differ widely across sectors and types of fuels, leading to large differences in abatement costs across sectors.	**Follow up on plans to gradually raise excise taxes on fossil fuels when they are low, including by removing exemptions and rebates.**
Boosting green electricity generation	
The ongoing 'suitable areas reform' for the construction of new renewable energy power plants could speed up permitting, which, despite some recent streamlining, is still slow and complex.	Issue the implementing decrees of the 'suitable areas reform'. **Increase the ceiling below which installations in suitable areas can be authorised through the 'simplified enabling procedure' and maintain the environmental impact assessment exemption for low-capacity installations in suitable areas beyond July 2024.** Quickly approve the maritime spatial plans.
The environmental impact assessment and the 'single authorisation' often take longer than their statutory time limits, particularly for large projects.	Subject each phase of the environmental impact assessment and the 'single authorisation' to the tacit consent principle.
The approval of new investment in the electricity grid has been slow, which slows down the connection of renewable producers to the grid.	Continue efforts to streamline key investments identified in the National Energy and Climate Plan.
Decarbonising transport	
The per capita car ownership rate is the second highest in the EU and a large share of cars are old and highly polluting.	**Offer financial incentives for the scrapping of old cars, irrespective of new car purchases.** Keep raising the taxation of car fringe benefits, particularly for polluting cars. Encourage the establishment of city-level congestion charges. **Continue strengthening public transport and regional train networks.**
Car sales, registration and ownership taxes do not fully reflect cars' greenhouse gas emissions, thus blurring incentives for the penetration of low-carbon cars.	Reintroduce the emissions-based car sale tax ('ecotassa') and apply it to all vehicles based on emissions intensity. Gradually phase out ownership tax exemptions for LPG- and natural gas-powered cars over the medium term; base the car ownership tax surcharge on big vehicles ('superbollo') on emissions-intensity rather than engine power and phase out exemptions for older cars.
The penetration of electric vehicles (EVs) is low, and a large share of EV purchase subsidies is unused.	**Refocus car purchase support towards entry-level EVs and phase out subsidies for the purchase of cars with internal combustion engines.** Ramp up the roll out of electric charging stations.
Aviation accounts for an increasing share of emissions.	Connect airports to railways; continue strengthening the high-speed rail network, especially in southern regions; improve and expand train connections, both internationally and domestically.
Decarbonising buildings	
The regressive and cost-inefficient tax incentive system for energy efficiency home improvements has been reformed but may be insufficient to elicit retrofitting by households with low tax bills.	**Complement tax incentives for buildings retrofitting with targeted subsidised long-term loans and grants.** Phase out tax credits for the installation of gas-powered boilers.
Owners have little incentives to renovate rental properties.	Consider measures to induce owners to retrofit energy-inefficient rental properties, including through regulatory measures or higher rental taxes.
Often households do not know how energy-efficient their homes are or have a poor understanding of the benefits of living in an energy-efficient home.	Strengthen requirements for energy efficiency certificates and keep promoting information and financial literacy campaigns to deepen the understanding of the financial benefits of energy efficiency renovations.
Managing the transition and adapting to climate change	
The transition will lead to job displacement in carbon-intensive sectors and may cause labour shortages in the construction sector.	Strengthen training and reskilling policies and promote career guidance initiatives.
Lower-income households spend a relatively larger share of their incomes on energy and will be more negatively affected by higher fossil fuel taxes and rising carbon prices.	Keep investing in low-carbon social housing and mass transit mobility. Compensate low-income households by recycling parts of carbon pricing revenues to boost targeted cash transfers.
Italy is highly exposed to the consequences of climate change, as highlighted by recent extreme weather events. Necessary investments are underway.	Swiftly adopt and implement the National Climate Adaptation Plan. **Ensure appropriate funding for measures to reduce the risk of floodings and landslides.**

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ITALY

Italy has weathered recent crises well. A strong fiscal policy response, enhanced competitiveness and improved banking sector health have supported growth in recent years. But public debt is high and spending pressures are rising from population ageing, higher interest rates, and the green and digital transitions. A steady fiscal consolidation is needed over several years to put debt on a more prudent path. Growth in spending needs to be contained, but public investment in the National Recovery and Resilience Plan should be protected to minimise adverse effects on growth. The ongoing civil justice and public administration reforms will support growth by raising business investment and facilitating the implementation of public investment plans. Regulatory barriers to competition in services should be reduced. Raising employment, including by expanding access to early childhood education to reduce barriers to female labour market participation, would make growth more inclusive. Additional policy efforts are needed to accelerate the reduction of greenhouse gas emissions and adapt to climate change. Renewable power generation has advanced, but complex permitting procedures that hold back the installation of renewable energy capacity need to be simplified.

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