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2023 Country Report - Italy

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

**on the 2023 National Reform Programme of Italy and delivering a Council opinion on
the 2023 Stability Programme of Italy**

{ COM(2023) 612 final }



European
Commission

Italy

2023 Country Report



ECONOMIC AND EMPLOYMENT SNAPSHOT

Russia's invasion of Ukraine has slowed the pace of Italy's economic recovery

Economic output has returned to its pre-pandemic level but was held back by trade disruptions and the surge in commodity prices. After the sharp recession caused by the COVID-19 pandemic, real GDP swiftly rebounded over 2021-22. The prospects for further robust growth were curtailed, however, by the fallout of Russia's war of aggression against Ukraine. The two main factors affecting growth were trade flows (both direct and indirect) and prices.

Demand for exports fell only moderately due to the war. The direct impact was limited as Russia and Ukraine account for only a small share of Italy's export markets (combined, around 1% of goods export value and of foreign tourist income in 2022). However, demand also slowed for goods produced elsewhere in the EU with Italian-made inputs and components. This, together with adverse international trade developments, led to a drop in net exports that dragged down GDP growth in 2022. Over 2023-24, annual GDP growth is forecast to slow down to just above 1%.

Italy has reduced its dependence on Russian gas but import prices have soared. Until 2021, Russia provided 43% of Italy's imported gas, which is widely used to produce electricity as well as for industrial and domestic uses. Italy rapidly diversified its energy sources by ramping up imports of gas from other suppliers, by increasing renewable electricity output and by using alternative fuels. It has reduced both industrial and domestic consumption, cutting demand for gas while containing the impact on energy bills. However, the sharp increase in international

prices of energy and other commodities had an impact on Italy's current account, which turned slightly negative in 2022.

Inflation has largely been driven by energy prices, and low-income households have been hardest hit. The price of energy products and industrial commodities started soaring already in 2021, on the back of post-pandemic supply bottlenecks and higher transport costs. They rose even faster in the first half of 2022, after Russia's invasion of Ukraine. Prices of imported unprocessed food quickly followed suit, while those of domestically produced goods and services rose more slowly. Thanks to the measures taken by the government, retail energy prices did not increase as much as wholesale prices. By end-2022, energy prices began to fall, particularly for gas, followed in early 2023 by other commodity prices. This is expected to gradually bring down the price of food and services, with the overall inflation rate expected to fall to 2.9% in 2024 (see Box 1). Low-income households have been hit the hardest by the increase in energy and food prices, as they spend a relatively high share of their income on food and energy for housing.

Financial conditions are tightening but remain favourable in real terms. Lending to corporates continued to grow in the first half of 2022 but contracted in Q4-2022. Tighter financial conditions resulting from the normalisation in monetary policy are quickly being channelled to the real economy. The cost of borrowing for new loans more than doubled over the course of a year to 3.7% for households and 3.8% for firms (Q1-2023). Nevertheless, business debt repayment capacity remained strong, thanks to higher profits and sounder balance sheet structures than in the past. The current low level of indebtedness and abundant liquidity enable firms to maintain their investment plans in the short term. However, protracted tighter

financing conditions could lead businesses to focus on projects offering the best risk and return prospects. The higher cost of lending coupled with the erosion of real disposable income due to higher inflation is also likely to reduce households' capacity to service their debts, particularly for more vulnerable borrowers.

The cost of government measures to support the economy in recent years has put public finances under pressure.

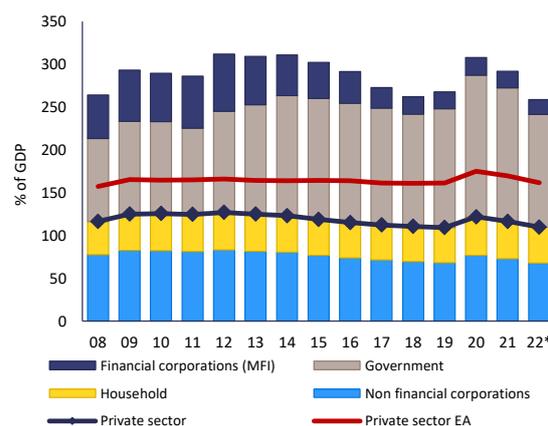
Several measures have caused the general government deficit to rise in recent years, including measures to support the economy in response to the COVID-19 pandemic and the increase in energy prices. The higher-than-expected uptake of tax credits supporting energy efficiency in residential buildings, together with the change in their statistical treatment⁽¹⁾, led to a significant upward revision to the general government deficit in recent years, which reached 8.0% of GDP in 2022. Nonetheless, the economic rebound has brought down the public debt-to-GDP ratio by about 10 percentage points over 2020-2022, to 144.4% of GDP in 2022.

Government finances are expected to improve as fiscal support measures are phased out, although debt is projected to remain high.

In the short term, the withdrawal of energy support measures is expected to support Italy's public finances. Nevertheless, the ratio of public expenditure to GDP is expected to remain above pre-pandemic levels, partly due to the permanent policy measures adopted in recent years. As a result, the deficit is projected to fall but remain above 3% of GDP in 2024. The public debt-to-GDP ratio is also falling but projected to remain high, reaching 140.3% by 2024.

⁽¹⁾ On 1 March, Eurostat published advice clarifying the statistical treatment of Italian tax credits for housing efficiency. This led to a revision of the deficit by +0.2 and +1.8 pps of GDP in 2020 and 2021 respectively.

Graph 1.1: **Decomposition of debt by sector**



Source: Eurostat (nasa_10_f_bs)

The labour market situation has improved, but significant slack remains

Labour demand increased in 2021-22 but weaknesses remain in the labour supply.

The unemployment rate fell for the eighth consecutive year to 8.1%. The unemployment rate of young people (15-24) is also falling, but at nearly 24% it remains one of the highest in the EU. The implementation of the European Pillar of Social Rights would require further progress on a number of aspects. The activity rate rose to 70.4%, i.e. back to 2019 levels, but still below Italy's EU peers. The employment rate is also 10 pps below the EU average, with even wider gaps for women and young people. The gender employment gap was 19.3 pps in 2022 (EU: 10.6). The share of young people (15-29) who are not in employment, education or training fell to 19% in 2022, still 7 pps above the EU average. There are also substantial differences between northern and southern regions in terms of employment and participation (see Annex 12). Overcoming these long-standing challenges and improving active labour market policies would help Italy achieve its national employment rate target by 2030 (see Annex 14).

Action is needed to better match labour supply to demand. The job vacancy rate in the private sector has steadily increased with

the post-pandemic recovery, reaching 2.3% at the end of 2022, more than double the pre-2020 level. Vacancies rose fastest in construction and in some service sectors, where there has been the strongest recovery in output. Employers signal increasing difficulties in finding available workers at the prevailing wages, which may add to the long-standing mismatch between demand and supply of more qualified workers. In fact, low-skilled individuals have high inactivity and unemployment rates. The main cause of the mismatch appears to be the insufficient or ineffective provision of education and training.

Educational outcomes in Italy remain low and there is scope to expand firm-level training. The education system is beset by long-standing structural problems, which the pandemic exacerbated. Social and regional gaps in achievement have also widened. Despite recent improvements, Italy's education system performs below the EU average on most indicators. The share of people with higher education qualifications remains very low, particularly in the scientific fields. In 2021, less than half of the adult population had at least basic digital skills and in 2019, the share of ICT graduates was among the lowest in the EU (see Annex 8). Participation in adult learning also remained below the EU average⁽²⁾ (see Annex 14). A national survey of firms with at least 10 employees⁽³⁾ reports that in 2020, around two-thirds of firms organised training, involving only 45% of employees. This share will have to increase if Italy is to reach its 2030 target of 60% of adults participating in training every year.

The risk of poverty and social exclusion remains high. Italy has had negative real

wage growth, on average, between 2005 and 2019 (-0.2% per year). While this boosted the competitiveness of Italian firms, it affected the living standards of lower income earners. In 2022, nominal wages rose by 4.5%. However, due to high inflation, real wages fell by 2.8% in 2022 and are not expected to increase again this year. In parallel, the share of people at risk of poverty or social exclusion rose slightly to 25.2% in 2021, from 24.9% in 2020, after falling steadily between 2015 and 2019.

Income inequality remained above the EU average in 2021. The share of households in absolute poverty has been rising since 2005 (see Annex 14). Social services are fragmented and do not always sufficiently meet the needs, especially in the south. More action is needed to reach the 2030 poverty reduction target. It remains unclear what will replace the citizens' income scheme, due to be suspended in 2024. With social spending concentrated on pensions⁽⁴⁾, the poverty risk for older people (over 65 years) is lower than for the average population. The risk of poverty and social exclusion is especially high for children, people with disabilities and people with a migrant background. Italy has among the highest shares in the EU of temporary workers and self-employed workers, who have less access to adequate social protection. This means the risk of in-work poverty is higher than the EU average.

The macroeconomic vulnerabilities identified in the *In-depth Review for Italy* are slowly improving.⁽⁵⁾ Italy's high public debt-to-GDP ratio constrains fiscal policy, particularly in a rising interest rate environment. Persistent low productivity growth has also been a key factor behind Italy's protracted weak economic growth (see Annex 12). Despite making some progress, Italy has persistently low participation rates, wide regional and gender disparities, and a high rate of youth unemployment.

⁽²⁾ The indicator on adult learning participation over the previous four weeks is used here, rather than the indicator on learning over the previous 12 months, as Adult Education Survey (AES) data for the 12-month indicator are only available for 2016, while the new Labour Force Survey (LFS) indicator agreed for use in the social scoreboard and as 2030 headline target on skills will only be available in 2023.

⁽³⁾ <https://www.istat.it/it/archivio/279433>
The share of companies offering training opportunities increases with firm size; the large majority of Italian firms employing less than 10 people were not part of the survey.

⁽⁴⁾ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Government_expenditure_on_social_protection

⁽⁵⁾ European Commission (2023), *In-Depth Review for Italy*, Commission staff working document (COM(2023) 634 final).

The banking sector has made significant progress in reducing legacy non-performing loans. However, contained risks remain as the energy crisis may have a delayed impact on asset quality. The corporate-sovereign-bank nexus intensified following the pandemic and the energy crisis. The reforms and investments planned under Italy's recovery and resilience plan are expected to mitigate these macroeconomic vulnerabilities, provided they are fully implemented (see Annex 22 and the 2023 In-Depth Review for Italy).

Barriers remain to inclusive and sustainable growth

Structural inefficiencies in the public sector discourage investment and slow down productivity growth. The public administration remains prone to ineffective management and excessive red tape. Local bodies, especially in the south, have difficulties in absorbing EU funds and in adapting to change due to limited administrative capacity. The justice system still records among the longest times in the EU to reach decisions. It has a large backlog of cases, which undermines the overall effectiveness of rules and curbs investment (see Annex 11). Government-to-business payment times are often long, despite recent progress, and this has negative effects especially on SMEs. Italy plans reforms under the recovery and resilience plan that have the potential to improve the situation. The above-EU-average level of restrictiveness of regulated professions is a drag on competitiveness (see Annex 12).

Italy's research and innovation system still has untapped potential. Italy is a moderate performer on innovation, according to the European Innovation Scoreboard. Both businesses and the public sector spend less than the EU average on research and innovation. The framework conditions are not fully conducive to innovation as Italy underperforms on human resources for

research and innovation and on business-science links, despite recent improvements.

The high public debt remains a major source of vulnerability for the Italian economy. Though it has started to fall, public debt remains above the pre-pandemic levels. Pressures related to an ageing population compounds the debt sustainability challenge. The guaranteed loans granted during the pandemic increase fiscal risks. As a result, Italy's risks related to fiscal sustainability are high in the medium term.

The tax system hinders economic efficiency and growth. Italy's tax system is prone to longstanding weaknesses. Shifting the current high tax burden on labour to other underused sources of revenue would be less detrimental to growth. The complexity of the system is exacerbated by widespread tax expenditures. Taxes on energy are not designed to support the transition to clean technologies. Tax evasion remains high, although the countermeasures taken in recent years are starting to bear fruit.

Achieving the green transition requires an increase in public and private investment. Though Italy performs well on some key sustainability parameters and private firms are increasingly taking actions promoting environmental sustainability⁽⁶⁾, it lags behind on energy efficiency, renewable energy roll-out, the quality of energy infrastructure (in particular internal electricity transmission) and on investment in green skills. Large-scale projects in the energy sector, a more agile national and subnational governance of energy policy, as well as a more innovative use of financing schemes (especially targeted to the most vulnerable stakeholders) can help reduce the country's environmental footprint and its dependency on energy imports.

Italy's southern regions still lag behind on institutional capacity and social outcomes. Regional disparities are significant in service quality and access, including in healthcare. The public administration is also

⁽⁶⁾ ISTAT 2023 - [Pratiche sostenibili delle imprese - Anno 2022 e 2023-2024 \(istat.it\)](https://www.istat.it/it/pratiche-sostenibili-delle-imprese-anno-2022-e-2023-2024)

weaker, both on locally provided services (e.g. transport, water, waste and risk prevention) and on services managed by the central government (e.g. education and justice). For instance, public procurement procedures take longer in the south. Undeclared work and the shadow economy affect the south in particular, as do low employment rates and education outcomes (see Annex 14). Depopulation in the south of the country, including through internal migration, continues to drain the south of human resources that could benefit business and social services. Along with narrow and temporary measures such as the cut in social security contributions for new hires, a more structural and strategic approach to boost territorial cohesion could, for example, target administrative capacity and the infrastructure gap. It could include developing the internal electricity transmission grid to support the roll-out of renewable generation capacity in the south (see Annexes 7, 12 and 17).

Despite progress on most UN Sustainable Development Goals (SDGs), structural challenges remain. Italy made progress on almost all indicators between 2016 and 2021. It performs better than the EU average on some sustainability dimensions and on health and wellbeing, but there is room for further improvement, notably on renewable energy and sustainable transport. On fairness and inclusion, Italy has not made enough progress to close the gaps with its EU peers. Inequalities by gender and for people with a migrant background have even widened. More action is needed to tackle structural challenges related to poverty, employment, education and productivity (see Annex 1). Significant regional differences persist in all policy areas. Civil society (notably the Italian Alliance for Sustainable Development - ASviS), the national statistics agency ISTAT, and the Ministry of Economy and Finance play a key role in Italy in disseminating data and analysis on the SDGs and on well-being indicators ⁽⁷⁾.

The recovery and resilience plan includes major reforms and investments to tackle Italy's long-standing challenges. The measures aim to overcome structural barriers and to boost investment and productivity growth, including in the public administration, education and skills, justice, competition and the business environment. These measures, combined with the EU Cohesion Funds, are expected to help reduce regional disparities and accelerate the green and digital transition.

⁽⁷⁾ For national analysis see ISTAT, 2022, *Rapporto SDGS 2022. Informazioni statistiche per l'agenda 2030 In Italia*, <https://www.istat.it/storage/rapporti-tematici/sdgs/2022/Rapporto-SDGs-2022.pdf>; ASviS, 2022, *L'Italia e gli obiettivi di sviluppo sostenibile*, Rapporto ASviS 2022, <https://asvis.it/rapporto-asvis-2022/>.

Box 1: Energy policy response in Italy

Italy adopted several support measures to cushion the impact of higher energy prices on households and businesses. The Commission's 2023 spring forecast projects their gross budgetary costs to amount to 1.2% of GDP in 2023 ⁽⁸⁾. Most measures in 2023 are targeted to the most vulnerable households or firms, although the majority of the energy support measures do not fully preserve the price signal to reduce energy demand and increase energy efficiency. Italy is expected to fully phase out the support measures by the end of 2023.

Notable measures include subsidies, in the form of a tax credit for the extra cost incurred, to energy and gas-intensive companies, measures to control general system charges in the electricity and gas sectors and a reduced VAT rate (5%) on the supply of methane gas. The government extended the eligibility criteria for the social tariff for electricity and gas, enabling a larger group of vulnerable households to benefit from lower electricity and gas prices. It increased the cut in social security contributions for workers below a certain income threshold in 2023, with a further 1 percentage point cut for workers with an annual income below EUR 25 000 in addition to the 2 percentage-point cut for workers with an annual income below EUR 35 000.

Italy adopted a national measure to apply Council Regulation (EU) 2022/1854 ⁽⁹⁾. This meant that, in 2023, a 50% contribution is levied on corporate profits made by energy companies in 2022 that are at least 10% higher than the average income reported in the 2018-2021 reference period ⁽¹⁰⁾. The measure applies to companies operating in the wholesale gas and electricity markets, including renewable electricity generators, to companies producing and distributing oil and gas and to importers of electricity, natural gas and petroleum products. The authorities estimate this measure to yield around EUR 2.5 billion.

Gas still plays a role in Italy's energy mix. The country has taken action to improve its overall security of energy supply in view of decreasing its reliance on fossil fuels. Specifically, Italy took measures to accelerate the roll-out of renewable energy, especially photovoltaic and wind installations. The Italian government also promoted energy efficiency programmes, e.g. setting a 25 degree Celsius floor on air conditioning during the summer and extending the *Superbonus* scheme until the end of 2025, albeit with diminishing incentives. To reduce demand, the Italian Transmission System Operator defined special measures to maximise the use of coal and oil power plants to reduce the share of gas used to generate thermoelectric power. Italy also updated its gas shedding plans by considering restrictions for civil consumption and introducing a legal obligation for retailers to deliver gas to protected customers. Lastly, Italy temporarily increased storage obligations for the Energy Services Managing Authority (GSE) in order to reach the 90% storage capacity target.

⁽⁸⁾ For 2022, the gross budgetary cost of measures amounted to 2.8% of GDP. All of the measures outlined in this box were already in place in 2022.

⁽⁹⁾ [EUR-Lex - 32022R1854 - EN - EUR-Lex \(europa.eu\)](#)

⁽¹⁰⁾ Member States can keep national measures that are equivalent to the solidarity contribution specified in Council Regulation (EU) 2022/1854 provided they are compatible with the objectives of the regulation and generate higher or comparable proceeds. These measures must also cover the extraordinary and unexpected profits of businesses active in the extraction of crude petroleum, natural gas, coal, and refinery sectors.

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

The Recovery and Resilience Facility (RRF) will finance EUR 191.6 billion of investment in Italy over the period 2022-2026 (10.7% of GDP). Italy's recovery and resilience plan (RRP) includes 190 measures, with 132 investments and 58 reforms. Italy is the largest beneficiary of the Recovery and Resilience Facility (RRF) in absolute terms and one of four Member States that have requested loans.

The implementation of Italy's recovery and resilience plan is underway, however with increasing risk of delays.

Italy submitted 3 payment requests, corresponding to 151 milestones and targets in the plan and resulting in an overall disbursement of EUR 42 billion (referring to the first two payment requests submitted). Proceeding swiftly with the implementation of the plan and the negotiation of its amendment is essential due to the temporary nature of the Recovery and Resilience Facility in place until 2026. The negotiation on the addendum and REPowerEU chapter is ongoing but Italy has not submitted any official proposal. Italy has formally expressed interest in requesting additional loans.

The following, more detailed review of measures being implemented under the RRP does not constitute a formal Commission approval or rejection of any payment requests.

Italy has achieved important milestones included in the RRP, and continuous effective implementation remains pivotal.

The RRP aims to address structural barriers holding back investment and productivity growth. Reforms have started, notably in public administration, justice, competition, education and labour policies. The authorities are running investment projects that are feeding through to final beneficiaries. However, numerous steps lie ahead to implement the reforms and investments and

they are key to achieve the ultimate policy objectives set out in the RRP, including in terms of territorial cohesion objectives. In early 2023, the government amended the governance framework for the coordination and monitoring of the RRP. An effective and fully operational framework remains key for a smooth and timely implementation of the plan. Moreover, it continues to be crucial to identify potential delays and implementation issues early on and to take timely action to address them.

The RRP seeks to boost administrative capacity, which is key to raising productivity and to implementing all RRP measures.

Following the recruitment of 1 000 experts and the roll-out of technical assistance, in 2022 Italy adopted a public employment reform. It updates job profiles, increases mobility between departments, improves hiring and appointment procedures, improves the gender balance, modernises performance evaluation and strengthens the link between lifelong learning and reward mechanisms. Full implementation will be key to ensure the reform has a positive and structural impact.

Measures under the RRP are expected to cut red tape and benefit the business environment in Italy, provided their timely and full implementation.

The public procurement reform aims to speed up tendering procedures, increase e-procurement and professionalise public buyers. These measures are also important to enable Italy to absorb the RRF and Cohesion Funds available. The RRP also seeks to simplify interactions with businesses and citizens (following the 'once-only' principle in the Single Digital Gateway) and to speed up the average payment time by the public administration to 30 days ⁽¹⁾ by end 2023.

The RRP aims to remove barriers to competition and private investment. The 2021 Annual Competition Law (adopted in late 2022) will remove barriers to competition in local public services, local public transport, gas distribution, hydropower, electric charging and waste. The package includes measures to accelerate the liberalisation of electricity and gas retail markets. It brings merger control in line with EU rules. Under the RRP and as part of the Annual Competition Law 2023, Italy aims to improve competition in the road transport on highways by making the tendering of concession contracts mandatory and by reducing in-house provision. These measures are expected to attract private investment, reduce fragmentation, achieve proper regulatory oversight and professionalise public-service management.

Italy has continued the reform of its civil justice system. Under the RRP, Italy committed to reduce by 40% the disposition time at three instances of civil justice by 2026. In 2022, the government complemented the civil justice reform initiated in 2021 with the delegated acts to reduce the length of proceedings by simplifying procedures and increasing the productivity of courts. Italy has also taken further steps to implement the insolvency reform by adding more detail to the 2021 legislative initiatives. Lastly, Italy has carried out a comprehensive tax justice reform by creating a new category for professional tax judges and by adopting new rules that aim to make the enforcement of tax law more effective and reduce the inflow of tax cases to the Court of Cassation.

Several reforms support efforts to fight fraud and corruption. Italy has committed to reducing by 25% the disposition time at three criminal instances by 2026. Italy has continued to pursue the 2021 criminal justice reform by adopting delegated acts. The aim of the reform is still to reduce the excessive disposition time, given the negative impact this has on prosecution and on the adjudication of corruption cases. It will require continued monitoring of its effectiveness, particularly at the appeals level. On waste management, Italy has adopted an action plan to support local authorities on waste

management, including assistance to run tender procedures, to ensure that concessions are granted in a transparent and non-discriminatory manner, thus reducing the risk of criminal activities and improving the quality of public service. The RRP also proposes measures to fight tax evasion and tackle undeclared work (see below).

A reform to combat undeclared work started in 2022. The government approved the national plan and roadmap at the end of 2022. With full implementation in 2025/2026, inspections are expected to increase by 20% and undeclared work to decrease by 2 percentage points.

RRP measures are expected to reduce tax evasion and improve the efficiency of public spending. The plan includes measures to counter tax evasion and encourage tax compliance, such as integrated databases and pseudonymised big data to better target audits and checks. In addition, it will reduce compliance costs and improve the fulfilment of obligations by bringing in prefilled VAT tax returns. On public spending, Italy sets savings targets to be achieved and yearly spending reviews over 2023-2025 under the reinforced spending review framework. It will reclassify the general State budget to better monitor environmental and gender-equality-related expenditure. Lastly, the RRP plans to complete the fiscal federalism, expected to increase transparency and encourage spending efficiency across all government levels.

Action under the RRP is supporting Italy's digital transition. The plan includes an ambitious programme to digitalise Italy's public administration worth EUR 6 billion. It also plans to invest EUR 6.7 billion to complete the national ultra-fast and 5G telecommunications network and EUR 13.4 billion to digitalise businesses.

Two reforms were adopted to foster the digitalisation of public administration. The aim of the reforms is to streamline public procurement of ICT services, support the migration to cloud solutions and improve data exchanges between public administrations.

Italy has awarded all contracts for the roll-out of ultra-fast internet connections to improve connectivity. This will focus on poorly connected households (*Italia a 1 Giga*), remote areas (*Italia 5G*), schools, healthcare facilities and smaller islands.

Italy is taking measures to support the digitalisation of firms, to diversify and to internationalise small and medium-sized enterprises. The Annual Competition Law adopted in 2022 will reduce the number of days it currently takes to start a business. The programme *Transizione 4.0* is set to accelerate the digital transition of firms by offering tax credits to invest in technologically advanced goods, research and development and training for an estimated cost of EUR 13.4 billion under the RRF. Italy has committed to supporting women-owned start-ups and research projects of national interest. Italy will also help small and medium firms expand internationally. Under the RRP, Italy plans to earmark additional resources to a fund to support Italian companies in contributing to important projects of common European interest (IPCEIs). To this end, Italy launched calls for expression of interest and allocated funding for national projects, notably in micro-electronics and cloud computing, to better integrate Italian firms in EU value chains and strengthen the country's position in advanced technologies.

Under the RRP, Italy adopted a comprehensive R&D reform in 2022 and major investments are underway. The reform promotes a more systematic approach to R&D by creating a simplified model for selecting research projects, in line with international best practice. The Ministry for University and Research will coordinate the selection process to reduce dispersion and fragmentation of research priorities. The reform simplifies researcher careers and creates incentives to promote mobility of high-profile figures between academia and business, strengthening business-science links. In 2022, contracts were awarded for major R&D investments, in particular in research and innovation infrastructures, national leaders on enabling technologies and innovation ecosystems. Italy expects to complete these investments in full within the RRP timeframe.

The RRP is boosting public and private investment to support Italy's green transition. Italy's RRP envisages significant investments in energy efficiency in residential and public buildings (EUR 15.3 billion), in sustainable mobility (EUR 34 billion) and renewable energy, in the circular economy and in improving waste and water management (EUR 11.2 billion).

Major investments have started to reduce the country's dependence from fossil fuels and to increase energy efficiency. The government has awarded contracts for the development of factories producing batteries, photovoltaics, and electrolysers. The aim is to expand the production of renewable energy and to change the energy mix, which is still highly dependent on fossil fuels (see Annex 1 and 7). Once the investments are fully implemented, the production capacity of photovoltaics is expected to increase from 200 MW to at least 2GW per year and the production of batteries to at least 11 GWh. The government has also awarded contracts for investing in green communities and for the green transition in a number of Italy's small islands. Schemes have started to expand the use of clean energies and to improve the logistics and energy efficiency of the agri-food sector. Investments underway include contracts to strengthen the electricity grid to expand the network capacity to handle the distribution of renewable energy. These contracts also aim to make the network more resilient to hydrogeological risks or adverse weather conditions.

Italy is rolling out investments and reforms to improve the sustainability of the transport sector. The government has awarded contracts for the deployment of at least 3 600 Km of the European Rail Traffic Management System (ERTMS), which will make Italy's rail network interoperable with Europe. Italy has adopted legislation reducing the time needed to authorise and implement rail projects. Port authorities have started investments and have assigned works to make ports more sustainable and energy efficient.

Italy has revised its water sector governance to reduce fragmentation and

make water management more efficient.

The government has adopted legal acts making a single operator responsible for providing an integrated water service (*Servizio Unico Integrato*) in every district, known as the *Ambito Territoriale Ottimale*. This reform reduces fragmentation in water management and is expected to improve efficiency. Other legal changes increased the penalties for illegal water extraction, better aligned fees with the polluter-pays principle and aim to curb the expansion of irrigation systems. The reform also shortened the deadlines for authorising and implementing projects related to water infrastructure and hydrogeological risks.

Italy has adopted reforms to accelerate the green transition.

The milestones and targets for the three first instalments of the RRP included the adoption of a national strategy for the circular economy, a national waste management programme and creating fiscal incentives to produce and consume renewable energies such as biomethane or green hydrogen. The national strategy for the circular economy includes a roadmap with deadlines to scrap environmentally harmful subsidies, to promote the circular economy, to set up a new system of waste traceability, to adopt fiscal incentives to recycle and re-use materials and to increase landfilling taxes. Italy has also adopted legislation to streamline projects to renovate buildings and other energy efficiency projects in general.

The investments and reforms underway are also expected to improve educational outcomes.

The comprehensive reforms of primary and secondary education adopted in 2022 include action to improve the academic guidance system in secondary schools, align the curricula of technical and professional institutes with local labour market needs and to foster students' skills in science, technology, engineering and maths. The teaching reform adopted in 2022 is expected to enhance the quality of teaching. The government plans to approve further implementing acts in 2023 (see Annex 15). The reforms will be complemented by investments to expand vocational education, to train teachers and school staff and to mentor young people who

have dropped out or are at risk of dropping out from education. Digital equipment and infrastructure will be upgraded under the *School 4.0 plan* and other investments envisaged by the RRP. Investments to expand and improve school infrastructure, notably in early childhood education and care facilities, are also included.

Improving young people's employment prospects and tertiary education qualifications remain priorities.

Italy adopted comprehensive reforms of tertiary and higher education. These include measures on PhD programmes, degree recognition to help students access the jobs market in regulated professions and to group university degrees. The reforms adopted in 2021 are complemented by investments in student housing. The 2022 reform to strengthen tertiary vocational training should also help reduce skills mismatches on the labour market. The RRP includes action to expand the universal civil service programme, which enables young people to participate in volunteering schemes to boost their skills and job prospects.

A new active labour market policy system and investment to boost the capacity of public employment services both promote up-skilling and re-skilling.

The effectiveness of public employment services and adult participation in training remain low in Italy (see Annex 14). The reform of active labour market policies brought in a national programme for the guaranteed employability of workers in 2021 and aims to combine job search and training services to provide tailored pathways to employment. The programme started to reach the first beneficiaries in 2022, including people facing poverty, receiving strengthened social services and young people neither in employment nor in education.

The RRP seeks to reduce the gender employment gap and to create more inclusive conditions in the private sector.

Italy has one of the highest gender employment gaps in the EU, especially in southern regions (see Annex 14) and the gap due to care responsibilities has widened (see Annex 1). To support women in joining the

labour market, the government set up the fund *Impresa-donna* in 2021 to support new or expanding businesses led by women. To meet the need for family care services, the plan includes investments to increase early childhood education and care services (for children between 0 and 6), long-term care and services for vulnerable families.

The RRP aims to improve social inclusion and prevent marginalisation. Italy has launched a reform and has begun investing in support for people with disabilities, along with investments in adequate housing and in revitalising urban areas. The plan includes measures to improve social services and their coverage across the country. The 2021 Framework Law on Disability brought in a more multidisciplinary disability assessment and promoted autonomy and non-institutionalised care. For 2023, the next steps are expected to be the implementing decrees of the reform of disability and a reform of the non-self-sufficiency condition. In 2021, the government approved an operational plan to invest in support measures for vulnerable families and children, elderly people and social workers. In 2021 and 2022, it approved official plans and agreements to start investing in public and social housing, temporary housing with services for homeless people and adequate housing solutions for workers in agriculture.

Action under the RRP is also boosting the resilience of Italy's health system and improving access to territorial healthcare across the country. The 2022 reform of territorial healthcare sets up new proximity healthcare structures (including community health houses, community hospitals and coordination centres) and brings in new standards. The reform and complementary investments are expected to improve proximity and access to healthcare services and alleviate pressure on hospital care. The investments needed to make the reform operational started in 2022 but major implementation steps remain pending as these structures are expected to become operational gradually by 2026. In 2022, Italy also began investing in telemedicine and technological and in digital equipment for hospitals.

The RRP is expected to help improve territorial cohesion across the country.

Italy aims to allocate an indicative share of 40% of RRP funding (including the national complementary plan) to the south. The planned investments in infrastructure are key. Italian authorities have committed to awarding contracts to upgrade 680 km of regional railway lines and to extend 5G coverage to 15 000 km² in 'market failure areas' by 2022. The south will also benefit from projects to boost administrative capacity and improve public services, including reforms of administrative procedures, waste and water management, and the justice system. By end 2023, the Italian government expects to start infrastructural projects of primary urbanisation work to foster competitiveness and economic development in special economic zones in the south. Lastly, in 2022, the government began investment programmes to improve social services and infrastructure in remote inland areas.

Key deliverables expected under the RRP in 2023/2024

- **Justice reform.** Italy has adopted the enabling and implementing legislation to underpin the civil and criminal justice reform. Follow-up action expected in 2023 will include the entry into force of the secondary acts needed to complete the reform process and the corresponding acts on digitalisation of the justice system. In 2024, Italy is expected to finalise the recruitment of temporary staff for civil, criminal and administrative courts to reduce the backlog of cases and the length of proceedings over the period 2024-2026.
- **Public administration reform.** Italy plans to roll out the reform of public employment, to streamline administrative procedures in a structural manner and roll out cloud services.
- **Business environment.** Italy plans to adopt the 2022 Annual Competition Law, complete the public procurement reform, reform the industrial property system, make progress on the *Transizione 4.0* plan and reduce late payments by the public sector.
- **Government finances and taxation.** Measures will improve and interlink datasets to better target tax audits and controls and will be coupled with an increase in the number of compliance letters sent. Pre-filled VAT tax returns are expected to result in lower compliance costs for taxpayers. Key deliverables also envisage improved operational capacity of the tax administration, the completion of two-yearly cycles of spending reviews, adoption of a classification of the State budget providing evidence of public expenditure to promote the green transition and gender equality.
- **Green transition.** Key deliverables in this area include adopting a national strategy for the circular economy, a national waste management programme, the new framework to integrate water services, hydrogen, tenders for key railway infrastructure investments, including high-speed rail services to the south, and action to simplify administrative procedures.
- **Digital transition.** Key deliverables expected in this area are investments in cybersecurity, the National Digital Data Platform, digitisation of central public administrations, contracts signed for cloud services for local public administration, for satellite investments and to boost the competitiveness and resilience of supply chains. It will include support to select firms to participate in important projects of common European interest (IPCEI), national 'R&D leaders' on key enabling technologies, to run tenders for the European Rail Traffic Management System, and lastly action to provide at least 18 small islands with ultra-broadband connectivity.
- **Jobs market, skills and social policies.** Key deliverables include a reform of services for non-self-sufficient elderly people, the adoption of implementing decrees to reform of the framework law on disability, and full implementation of the actions under the reform to combat undeclared work. They include investing in women-led businesses, in the universal civil service programme, and in infrastructure to boost territorial cohesion across southern and rural areas of the country.
- **Education.** Action under this part of the plan includes awarding contracts for investing in childcare facilities, in increasing university scholarships and in the provision of educational support to under-aged people living in the south of the country.
- **Health.** Lastly, action expected in this area includes starting operations of territorial coordination centres, providing large-scale health equipment and action to provide scholarships for GP training courses.

Source: CID Annex.

FURTHER PRIORITIES AHEAD

In addition to the challenges tackled by Italy's recovery and resilience plan, Italy faces other challenges that warrant close attention. They concern pension expenditure, taxation, the fiscal framework, demographic trends and energy-related challenges. Tackling these challenges in a coordinated way could contribute to sustainable, long-term and inclusive growth. It would also help drive progress to achieve the UN Sustainable Development Goals, not only the goals immediately related to macroeconomic stability and the green transition, but also the goals related to productivity and fairness.

Fiscal sustainability remains a source of concern

Italy's public finances still face risks in the medium and long term. The withdrawal of COVID-19 pandemic support measures and a strong recovery translated into large gains in revenue. This has brought down the deficit and debt ratios, despite significant expansionary measures and the exceptional increases in energy prices. The declining trend in deficit and debt levels is expected to continue for the following years, partly due to action to scale down the energy compensatory measures. As a result, Italy's fiscal sustainability challenges are deemed to be limited in the short term (see Annex 21). However, given the high level of government debt and projected costs related to the ageing population, Italy's fiscal sustainability risks are high in the medium term and medium in the long term. The higher cost of funding is a drag on expenditure, though the impact is gradual. Structural reforms, including setting up a tax system better geared to growth and improving the design of fiscal policies, are crucial to boost economic growth. Rationalising and reviewing current expenditure and improving tax compliance would help in achieving an

appropriate fiscal adjustment and ensuring growth-enhancing expenditure.

Ageing and the surge in inflation are expected to increase pension expenditure.

Pension expenditure in Italy is among the highest in the EU as a share of GDP, which limits the resources available for growth-enhancing expenditure (see Annex 21). Following the surge in inflation, pension expenditure started increasing in 2022. Despite the change to the pension indexation mechanism, spending on pensions is expected to accelerate over the coming years. It will continue to rise over the medium term as the population ages, despite earlier reforms to improve long-term sustainability. The policy measures taken in recent years increase pension expenditure over the short to medium term. According to recent estimates, the early retirement scheme introduced in 2019 (*Quota 100*), amended in 2022 and 2023 to make access gradually stricter, is expected to have increased pension expenditure by around EUR 25 billion from 2019-2022⁽¹⁾. Italy also adopted other temporary early retirement schemes for women and vulnerable workers. The average effective retirement age was 63.9 years at the end of 2021, well below the statutory age of 67. To ensure Italy's pension system is sustainable over the long term, it is essential to implement the 2011 reform in full.

Italy's tax system hinders economic efficiency and growth

Despite recent changes to the tax system, the tax burden on labour remains high.

The cut in personal income taxes introduced in

⁽¹⁾ MEF, Le tendenze di medio-lungo periodo del sistema pensionistico e socio-sanitario 2022, November 2022.

2022 marginally decreases the tax burden on labour, especially for middle income earners. The government also reduced tax on low-income earners as a temporary measure to counter the economic and social impact of the exceptional rise in energy prices. Nevertheless, tax on labour remains high compared to other EU Member States (see Annex 19).

Extended flat-rate tax schemes for the self-employed increase complexity and reduce fairness. The 2023 budget introduced two provisions that lower taxes on self-employed workers and other individual entrepreneurs. First, the government extended the scope of the simplified tax regime by increasing the income threshold from EUR 65 000 to EUR 85 000. Second, a one-off flat-rate tax in 2023 only of 15% is available for individual firms that do not apply the flat-rate regime. The design of this flat-rate tax is complex, as it only extends to income increases in 2023 over the highest income declared in the 2020-2022 period. These two measures are small in scope and affect a limited number of taxpayers, they raise concerns in terms of the equity and efficiency of the tax system since they reduce the wealth redistribution effect, imply different taxation levels across taxpayer categories and create a disincentive for businesses to grow. Furthermore, a rising share of self-employed workers (Italy already has a higher share than the EU average) could be eligible for relatively lower pension contributions, putting pressure on the sustainability of the welfare system.

Overall, the taxation system hinders economic efficiency and growth and does not sufficiently promote the green transition. Compared to other EU Member States, the tax burden in Italy is skewed more heavily to production, and therefore is not conducive to economic growth. The extended use of reduced rates partly explains the low level of revenue that Italy receives from value-added taxes compared with other EU Member States. Although data on real estate is collected in a single digital platform, Italy's long-awaited revision of cadastral values to properly reflect market values remains pending. In addition, tax expenditures, which create distortions and reduce revenue,

increased further in 2022. Although revenue from environmental taxes is above the EU average, largely driven by taxes on energy, the current structure of energy taxes does not sufficiently promote the transition to cleaner technologies. Lastly, frequent changes in tax policy increase uncertainty in the economy, making the tax system more complex and increasing the burden on compliant firms and households. Ongoing delays in implementing effective competitive procedures for awarding licences to run maritime, lakeside and riverside facilities for leisure and tourism (beach concessions) remain a source of concern and imply a significant loss of revenue. Although the government had made some progress in reforming the sector by adopting the 2021 Annual Competition Law (law 118/2022), subsequent legislative initiatives that granted further extensions were tabled, hampering progress on the reform of the sector.

The recent proposal for reforming the tax system increases risks related to equity. On 16 March, the government presented a new draft enabling law to reform the tax system. The draft law provides for the transition to a general flat-rate tax regime for personal income taxes in the medium term, including by reviewing tax rates and brackets and confirming the flat-rate tax on earning increases. It includes a redesign of corporate taxation to set lower tax rates on reinvested profits and on new hires. It provides for progressively phasing out the regional tax on productive activities (IRAP) and integrating it into corporate tax. It comprises changes to tax collection, recovery procedures and the system of penalties, as well as the introduction of a simplified tax settlement system. It also includes the mandate to streamline tax expenditure, including reduced VAT rates, and simplify certain VAT rules, including VAT on immovable property. Following the adoption of the draft law by Parliament, the government will need to adopt implementing decrees within 24 months. To implement the law, it will be crucial to maintain the progressive nature of the tax system, reduce complexity, increase the incentives to work and step up past efforts to combat tax evasion. In particular, reducing the number of personal income tax brackets risks hampering the progressivity of the tax system. It will also be important to ensure that

tax collection measures that aim to reorganise some categories of tax debits and sanctions do not weaken incentives to tax compliance. In addition, the draft delegated law does not mention the revision of cadastral values. Lastly, it is crucial that the reform is implemented in a budgetary neutral way also in light of fiscal sustainability challenges in the medium and long term.

A comprehensive tax reform could reduce the high tax wedge on labour. A budgetary neutral reform could shift taxation from labour to other sources deemed to be less detrimental to growth. Possible options include reviewing reduced VAT rates and their product scope, redesigning environmental taxation and subsidies to promote the green transition, redesigning inheritance and gift taxes, and reconsidering property taxes on owner-occupied properties⁽¹²⁾. As an example of a targeted reduction of labour taxes, EUROMOD simulations⁽¹³⁾ by the European Commission Joint Research Centre show that an increase in the personal income tax credit for the first income bracket from EUR 1 880 to EUR 2 280 and a similar tax credit increase for the second and third income brackets⁽¹⁴⁾ would reduce the labour tax wedge by 1 pp for single earners on an average wage and by 2.2 pps for single earners on 50% of the average wage. This would considerably narrow the gap above the EU average to about 1 pps. For earners on 66% of the average wage, the tax wedge would fall below the EU average by about 1 pp following a reduction by 1.5 pps. Without shifting taxation from labour to other sources, a simultaneous increase in the top

statutory personal income tax rate from 43% to 49% could finance this relief for low and middle wage earners. This would come, however, at the cost of increasing the already high tax wedge on higher incomes. Overall, the modelling shows that this reform of the personal income tax would reduce poverty by 1.0% and inequality by 1.2%.⁽¹⁵⁾ The reduction of the tax wedge on lower income earners is expected to increase labour market participation rates and hours worked by 0.7% and 0.6%, respectively, for single women and by 1.1% and 1.0% for single men.

Proposals to increase regional autonomy risk increasing the complexity of the fiscal framework

The government adopted a framework law on regional differentiated autonomy. In February 2023, it adopted a framework law with provisions to implement differentiated levels of autonomy of regions with ordinary statute at the request of the regions. This would both grant these regions wider competencies and enable them to retain more resources, which would no longer be managed or allocated at central level. Regions can only be granted this level of autonomy following the definition of essential level of services and their financing, which is a crucial and complex exercise, warranting detailed analysis and thorough consultation of all stakeholders. The law requires that this reform must be budget-neutral for the general government budget. However, without additional resources, it could prove difficult to provide the same essential levels of services in regions with low historical expenditure, also due to the lack of an equalisation mechanism. Overall, the reform envisaged under the new framework law risks jeopardising the government's ability to steer public spending. This could have a negative impact on the quality of Italy's public finances and on regional disparities.

⁽¹²⁾ For a EUROMOD-QUEST simulation on property taxes, see European Commission (2020), *Country Report Italy 2020*, Box 4.1.1, p. 31.

⁽¹³⁾ EUROMOD is the tax-benefit microsimulation model for the EU. For more details on EUROMOD, see Sutherland, H. and Figari, F., *EUROMOD: the European Union tax-benefit microsimulation model*, International Journal of Microsimulation, 2013, vol. 1, issue 6, 4-26.

⁽¹⁴⁾ The formula for the second income bracket (EUR 15,000 to EUR 28,000) would change from $1,910 + 1,190 * (28,000 - \text{taxable income}) / 13,000$ to $2,280 + 1,190 * (28,000 - \text{taxable income}) / 13,000$, and the formula for the third income bracket (EUR 28,000 to EUR 50,000) would change from $1,910 * (50,000 - \text{taxable income}) / 22,000$ to $2,280 * (50,000 - \text{taxable income}) / 22,000$.

⁽¹⁵⁾ Changes in poverty and inequality are measured against a poverty line at 60% of median equalised disposable income and a Gini indicator of equalised disposable income, respectively.

Demographic challenges keep worsening

With 2022 birth rate at a historic low, demographic trends indicate that the working-age population continues to fall and the brain drain is worsening. Italy has one of the EU's lowest birth rates, recording a negative natural demographic balance for the tenth consecutive year. According to ISTAT, Italy registered record low births in 2022 (393 000), the lowest level since Italy's unification, against a high level of deaths (713 000). This is coupled with an increasingly ageing population and a shrinking workforce (see Annex 14). With younger generations progressively smaller in number and life expectancy increasing over the last decades, the ratio of elderly people to people of working age is high and increasing. This poses serious challenges, including for the sustainability of public finances. International migration is also having an effect on the skills levels of the workforce as higher-skilled workers are emigrating compared to the skills level of immigrant workers (the brain drain phenomenon). At the same time, internal migration flows exacerbate regional disparities.

The migration balance is positive but it is no longer enough to offset the low birth rate and population ageing. Integrating people with a migrant background also remains a challenge. In 2021, based on official registers, some 361 000 people migrated to Italy (up 13.3% since 2021), and slightly fewer Italian residents left the country, down to 132 000 (17% less than in 2021). In 2021, 25% of emigrants had at least a degree. Based on the last available data (2018), around 19% of Italian PhD graduates (many with a STEM background) find jobs abroad due to the lack of job opportunities in Italy, even for tertiary graduates, and due to low salaries in Italy (see Annex 11). The average skills level of migrants attracted by current immigration policies is lower than that of Italian-born (54.7% of non-EU born migrants are low skilled and 13.4% are high-skilled (2020)). The immigrant population also

faces greater challenges in the education system (see Annex 15) and a much higher risk of poverty and social exclusion than the Italian-born population (44.4% vs 22.6%), even though their employment rate is comparable.

High-skilled people are relocating from the south of Italy to the north. Italy also faces the challenge of domestic migration, which leads to population decline and exacerbates the brain drain in southern regions, where the unemployment rate is higher and access to services is lower. Between 2011 and 2021, all southern regions recorded an average annual decline in population (see Annex 17). Between 2012 and 2021, southern regions lost around 130 000 tertiary graduates to northern and central regions⁽¹⁶⁾. This domestic migration is driven strongly by regional differences in the job market and the availability and quality of education and social services. These trends hinder the short and long-term economic development of southern regions and have an adverse effect on skill levels.

Several policy measures could be taken to tackle the negative demographic trend. The low birth rate is due to several factors, including the lack of access to quality and affordable services, late entry in the job market, unfavourable working and social conditions for young people, the high tax wedge on second earners, and insufficient work-life balance policies, in particular for mothers (e.g. flexible working arrangements, leave policies, childcare and long-term care). Policies to tackle the demographic challenges have traditionally been based on bonus transfers and tax credits. No comprehensive evaluation or impact assessments have been carried out or planned to our knowledge. The recent introduction of a universal child allowance might help increase the birth rate in the long term, but it should be complemented by investment in care services, which could further support birth rates and in enabling women to work. Similarly, Italy should step up measures to promote, equal opportunities and

⁽¹⁶⁾ Istat, Report Migrazioni Interne E Internazionali Della Popolazione Residente, 9 February 2023.

the work-life balance, such as healthcare and adoption policy measures to remove obstacles and facilitate parenthood. Lastly, demographic trends would benefit from policies improving labour market conditions and increasing its inclusiveness, particularly for young people. To this end, it will be key to fully and swiftly implement several measures included in the recovery and resilience plan (see Section 2).

Migration policies can also help tackle the unfavourable demographic dynamics in the short term. These include the swift transposition and implementation of the EU Directive on the Blue Card, reflecting the competences and skills needed by businesses. Past measures to attract Italian workers back to Italy, such as *rientro dei cervelli* ⁽¹⁷⁾ and the follow-up *agevolazione impatriati* ⁽¹⁸⁾, could be extended to non-Italian citizens and better targeted. For instance, the *agevolazione impatriati* scheme could target workers based on their skills, rather than simply providing fiscal benefits for workers who move their fiscal residence to Italy. Complementary policies could help attract and retain high-skilled workers. These could include easier recognition of skills for non-EU country nationals (for which Italy receives support under the Technical Support Instrument and under the EU Skills Profile tool), and measures to improve job market conditions, quality education and social services.

Infrastructure bottlenecks and governance restrictions may undermine the green transition and energy security

Italy has improved the security of its gas supply. In the wake of Russia's war of aggression in Ukraine, Italy diversified its gas supply to Libya, Algeria and Azerbaijan. It met its gas storage obligations and increased the capacity of liquefied natural gas facilities (see Annex 7). Discussions are ongoing to increase

⁽¹⁷⁾ *Decreto Crescita*, Decree No. 34/2019

⁽¹⁸⁾ Support for returning expats, Decree No. 124/2019.

the capacity of existing pipelines and gas interconnectors with North Africa, although existing infrastructures are still not used to their full capacity. However, Italy is still dependent on Russian fossil fuels and further efforts towards diversification are needed to ensure security of supply. There is limited capacity of the network to distribute any possible new gas intake from south to north. A higher level of ambition on electrolysers and more cooperation on the biomethane supply chain could help make these investments future-proof. Finally, while energy prices have decreased, uncertainty remains regarding next winter, which requires continued efforts to structurally reduce gas demand.

In addition to diversifying the supply of gas, Italy has the potential to expand the uptake of renewable energy. The share of renewable sources in the electricity production mix has stagnated at around 40% since 2013 (see Annex 6), but momentum is building, especially for photovoltaic and offshore wind farms (see Annex 7). Reducing Italy's reliance on fossil fuels is an essential part of ensuring security of supply. Moreover, hydropower remains the leading source of renewable energy (providing 15.9%) but, as climate change worsens and water becomes scarcer, shifting to solar and wind energy (which together provided 16.1% of electricity production in 2021) is pivotal to Italy's long-term renewable energy security.

Resolving the bottlenecks on the internal electricity transmission grid is a key priority for Italy to integrate further renewable generation capacity and ensure the efficiency of the energy system. Around 90% of installed renewable capacity is linked to low and medium voltage distribution networks, which are then more likely to generate excess energy as the production of renewable electricity increases. Since the grid was designed for one-way operation, any update of excess capacity to the higher voltage network risks undermining the security of the electricity system. Scaling up the measures in the recovery and resilience plan and the 2021 ten-year network development plan would help upgrade the grid.

So far, measures taken to simplify the process have not systematically resulted in a faster roll-out of renewables. In line with the recovery and resilience plan, Italy has simplified the permitting process (Annex 12), but often by amending numerous previous norms and blurring the overall legislative framework. Streamlining amendments into a unique legislative text (*Testo unico*) could help make the framework more transparent and accessible to investors and policymakers. The regional legislative frameworks are uneven and inconsistent and the national guidelines regions rely on to assess project proposals are outdated. Local energy plans lack strong mechanisms to monitor the achievement of targets. To attract investors, it would be helpful to have a fully digitalised procedure to obtain permits, especially for small-scale renewables, easier access to information on grid status and the availability of connection substations, and a central contracting authority (*stazione appaltante*). Despite some progress, obstacles remain to competition for hydropower concessions, especially at subnational level.

Italy has considerable energy efficiency potential (see Annex 7), but there are few policy tools available to tap the potential.

There is limited take-up of financial instruments like the National Energy Efficiency Fund, innovative financing schemes such as on-bill financing, energy performance contracting, and pay-for-performance schemes. However, these schemes could help mobilise private investments in energy efficiency and intercept an upward trend in venture capital invested in climate tech start-ups and scale-ups, which is slowly catching up but remains significantly below OECD peers (see Annex 7). Uptake of the 'white certificates' scheme⁽¹⁹⁾ remains low with no sign of an appetite to expand.

Tackling energy poverty remains critical to secure the energy transition. Italy has taken measures to reduce the energy bill for households and firms in the short term,

⁽¹⁹⁾ White certificates are tradeable assets, which certify that a reduction of end-use energy consumption has been attained as a result of measures and projects to increase energy efficiency.

including tax measures, but the surge in energy prices has put them at further risk (see Annexes 7 and 8). The complete phase out of regulated markets for gas and electricity can help bring down prices for households and microenterprises. Italy's national energy and climate plan includes other structural solutions but they are not yet priorities. Public incentives for residential renovations are limited and do not always target the worst-performing buildings or vulnerable households.

Italy would benefit from adopting sustainable soil management practices (e.g. regenerative agriculture, carbon farming).

Healthy soils are an integral part of enhancing land ecosystems. The main challenges are to maintain soil quality, including organic content and soil's water retention properties. Adopting sustainable soil management practices would contribute to increasing soil carbon content and soil productivity, to reducing inputs and energy consumption in agricultural processes, and to curbing the negative effects of climate change by rebalancing soil-water processes and counteracting the effects of increasingly frequent floods and droughts. Italy has the highest risk of water soil erosion in the EU⁽²⁰⁾. In terms of soil quality, the content of organic carbon in Italian soil is lower than it is in most EU countries⁽²¹⁾, with an estimated loss of 15ha/day due to soil sealing and erosion⁽²²⁾. The loss of the soil ecosystem has a projected cumulative cost between 2012 and 2030 ranging from EUR 78.4 to EUR 96.5 billion⁽²³⁾. Between 1980 and 2020, only around 6%⁽²⁴⁾ of disaster losses were insured in Italy. Italy appears to be particularly vulnerable to floods. The current protection gap for floods in

⁽²⁰⁾ *ESTAT Agri-environmental indicator - soil erosion - Statistics Explained*, European Commission/JRC *Soil Atlas of Europe*, pp 110-6.

⁽²¹⁾ European Commission/AGRI *Soil Quality*; European Commission/JRC *Top Soil Organic Carbon Content*.

⁽²²⁾ ISPRA, *Yearbook 2021 in figures* p. 120.

⁽²³⁾ ISPRA, *Consumo di suolo, dinamiche territoriali e servizi ecosistemici*, Edizione 2022.

⁽²⁴⁾ *Disaster Risk Financing: Limiting the Fiscal Cost of Climate-Related Disasters (Radu, 2022)*

Italy⁽²⁵⁾ suggests that the insurance coverage remains low compared to projected risk, and this could result in losses to be covered by the public sector, thereby potentially posing a risk to public finances.

Sustainable transport in Italy is struggling to gain momentum. The market for zero-emission vehicles is consolidating and would benefit from action to expand the infrastructure (for example, Italy has 6.7 charging outlets every 100 kilometres, compared to the EU average of 8.9). Italy continues to grant substantial environmentally harmful subsidies, including to road transport, which discourages the transition to more sustainable transport solutions (see Annex 6).

Labour shortages in key sectors have increased in recent years, also due to a lack of relevant skills. These shortages are creating bottlenecks in the transition to a net-zero economy. In 2022, labour shortages were reported in Italy for 105 occupations that required specific skills or knowledge for the green transition, including refuse sorters, waste and recycling collectors and environmental engineers⁽²⁶⁾. The job vacancy rate increased across key sectors, such as construction (from 0.9% in 2016 to 2.8% in 2021) and manufacturing (from 0.8%

in 2015 to 1.5% in 2021), with both sectors below the EU average of 3.6% and 1.9%, respectively, in 2021⁽²⁷⁾. In 2022, labour shortages were reported as a factor limiting industrial production (for 6.0% of firms) and construction (for 13.9% of firms)⁽²⁸⁾. The lack of environmental skills in the public sector, notably at local level, is also constraining green investments⁽²⁹⁾. Upskilling and reskilling workers to participate in the green transition, including in occupations and regions that are set to be the most affected⁽³⁰⁾, and promoting inclusive labour markets are essential policy measures to accelerate the transition to net zero and to ensure social fairness during the transition (see Annex 8).

Other bottlenecks are linked to excessive restrictions and barriers to competition in regulated professions and business services. Being key input for investment, it is crucial to ensure an appropriate level of competition in these sectors. However, for several important regulated professions Italy records a level of restrictiveness higher than the EU average. For instance, Italy is among the most restrictive Member States for civil engineers, while for accountants and tax advisers it ranks third in the EU. For several other important professions, including e.g. architects, patent/trademark agents and real estate agents, Italy's level of restrictiveness is also above EU average.⁽³¹⁾ Reducing the overall level of restrictiveness in regulation as well as decreasing barriers could ease the entry of new providers into the market, thereby spurring competition and generating positive spillovers, including on service prices.

⁽²⁵⁾ The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters. This indicator is based on the modelling of the current risk from floods, wildfires, and windstorms as well as earthquakes, and the estimation of the current insurance penetration. The indicator does not provide information on the split private/public cost of climate related disasters. A score of 0 means no protection gap, while a score of 4 corresponds to a very high gap. EIOPA considers that a score below 3 is not a relevant protection gap but that countries with a score of 2.5 need to be monitored ([EIOPA, 2022](#)).

⁽²⁶⁾ Data on shortages is based on European Labour Authority (2023), *EURES Report on labour shortages and surpluses 2022*. National authorities report through a questionnaire, based on administrative data and other sources as submitted by the EURES National Coordination Offices (definitions of shortages differ, thus data is not comparable across countries and covers a wide variety of sectors). Skills and knowledge requirements are based on the ESCO (European Skills Competences and Occupations) taxonomy on skills for the green transition (for occupations at ISCO 4-digit level, of which there are 436 in total). Examples are identified based on their ESCO "greenness" score and relevant sectors.

⁽²⁷⁾ Eurostat (JVS_A_RATE_R2).

⁽²⁸⁾ European Business and Consumer Survey.

⁽²⁹⁾ European Investment Bank (EIB), 2023, Investment Report 2022/2023: Resilience and renewal in Europe.

⁽³⁰⁾ Evidence indicates a lack of access to training for people most affected by the green transition in Italy with the risks that some Italian regions fall further behind than other regions in OECD countries. See OECD, 2023, *Job Creation and Local Economic Development 2023. Bridging the great green divide*.

⁽³¹⁾ European Commission, COM(2021) 385 final

KEY FINDINGS

Italy's recovery and resilience plan includes measures to tackle a series of its structural challenges through:

- Reforms and investments to boost the effectiveness, efficiency and resilience of the public sector. They focus on the justice system and the public administration, particularly administrative capacity and public procurement, and on improving the business environment and competition framework.
- Reforms and investments to accelerate the green transition, with measures promoting energy efficiency, in particular of buildings. This includes action to foster the development of and accelerate the roll-out of renewable energy, promote the shift to cleaner transport and improve the management of biodiversity and natural resources, including water and waste management.
- Support for the digital transition, including support to digitalise manufacturing, upgrade the digital skills of the workforce and improve Italy's digital infrastructure.
- Reforms and investments to improve active labour market policies, tackle undeclared work and promote social inclusion of vulnerable people, for instance of people with disabilities, vulnerable families, and elderly people. The reforms include investments in social housing and improving the resilience of the healthcare system.
- Improvements to and modernisation of the education system, from childcare to higher education and training, as well as systemic measures to boost research and innovation.
- Reforms and investments to reduce economic, social and infrastructural

disparities in different areas of the country, including investing in railways in regions that lag behind.

Italy should ensure an effective governance and strengthen the administrative capacity, particularly at subnational level, to allow for a continued swift and steady implementation of the recovery and resilience plan. Italy should swiftly finalise the REPowerEU chapter with a view to rapidly starting its implementation.

In addition to the reforms and investments planned in the recovery and resilience plan, Italy would benefit from:

- Reforms of the tax system to provide more incentives for growth, with a focus on reducing the tax wedge on labour.
- Reinforcing the sustainability of the pension system by avoiding temporary measures that ease early retirement and accelerating the phasing in of the Notional Defined Contribution regime.
- Measures to strengthen and simplify Italy's fiscal framework, including by fostering transparency, accountability and fairness and ensuring streamlined control of national public finances.
- Measures to mitigate the demographic challenges, including measures to attract and retain high-skilled workers, to integrate people with a migrant background, and a comprehensive strategy to support families and young people.
- Promoting training in the skills needed for the green transition.
- Measures to diversify energy imports and tackle energy poverty. Additional investments and measures to speed up the roll-out of renewable energies, to improve energy efficiency, to promote sustainable

transport and to promote sustainable soil management.

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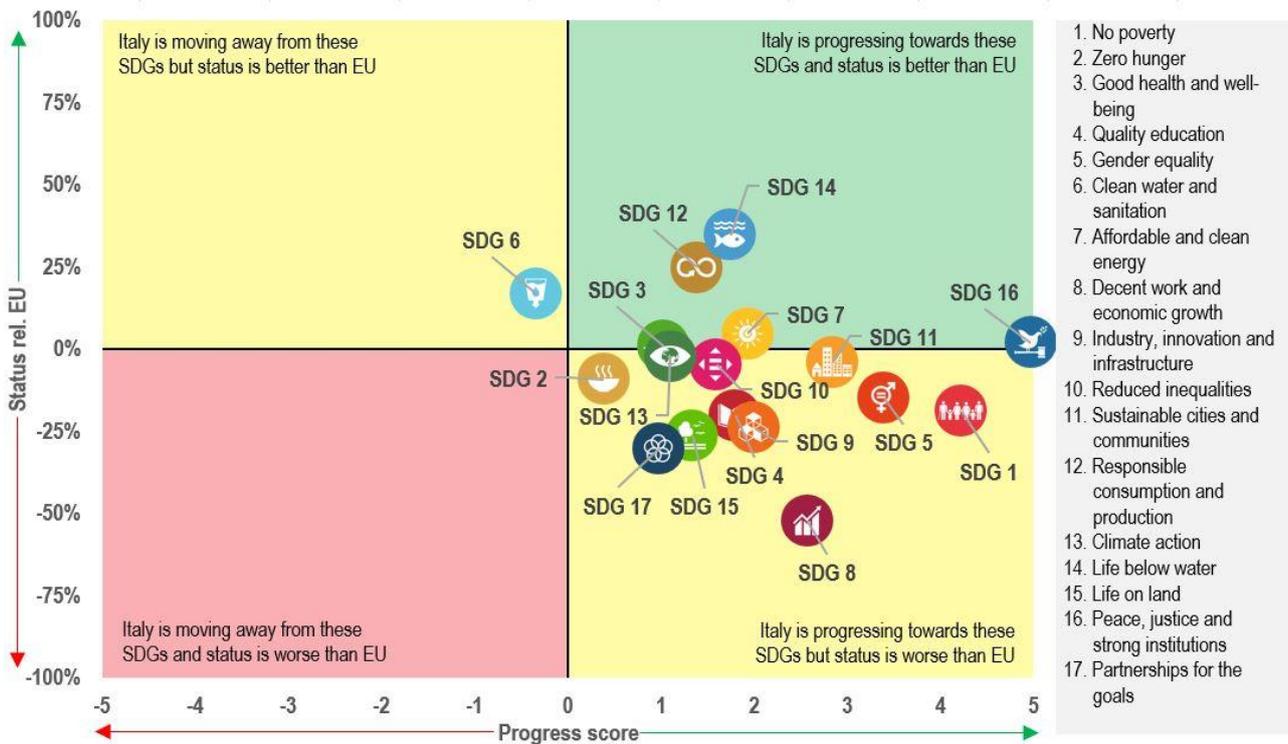


This Annex assesses Italy’s progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN’s 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in an EU context.

Italy is improving on most of the SDG indicators related to environmental sustainability. It performs well on clean energy, responsible consumption and production and life below water (SDGs 7, 12,

14), but needs to catch up with the EU average on zero hunger, industry and innovation, sustainable cities and communities, climate action and life on land (SDGs 2, 9, 11, 13, 15) and is moving away from the SDG on clean water and sanitation (SDG 6). In Italy, the circular material use increased (18% of material input for domestic use, vs. 12% in the EU in 2021; SDG 12), and marine eutrophication fell to negligible levels, further surpassing the EU average (SDG 14). Italy performs well on energy efficiency and consumption (SDG 7), but the share of renewable energy remains low (19% of gross final energy consumption vs. 22% in the EU in 2021; SDG 13). Italy also faces some of the highest and increasing climate-related economic losses (EUR 42/inhabitant vs. 34 in the EU in 2021; SDG 13). The use of railways for freight transport is far from the EU average (10 percentage points difference in % of inland freight tonne/km in 2021; SDG 9). The recycling rate at municipal level is

Graph A1.1: Progress towards the SDGs in Italy in the last 5 years



For detailed datasets on the various SDGs, see the annual Eurostat report ‘Sustainable development in the European Union’; for details on extensive country-specific data on the short-term progress of Member States: [Key findings – Sustainable development indicators – Eurostat \(europa.eu\)](#). The status of each SDG in a country is the aggregation of all indicators for the specific goal compared to the EU average. A high status does not mean that a country is close to reaching a specific SDG, but signals that it is doing better than the EU on average. The progress score is an absolute measure based on the indicator trends over the past 5 years. The calculation does not take into account any target values, as most EU policy targets are only valid for the aggregate EU level. Depending on data availability for each goal, not all 17 SDGs are shown for each country.

Source: Eurostat, latest update of early April 2023, except for the EU Labour Force Survey (LFS) indicators released on 27 April 2023. Data mainly refer to 2016-2021 or 2017-2022.

now above the EU average but the share of the population connected to secondary wastewater treatment lags behind (less than 60% of the population in 2015 vs. almost 80% in the EU; SDG 11 and SDG 6) and access to sanitation worsened (despite remaining low, the share of households not having sanitary facilities increased between 2015 and 2020; SDG 6). Soil sealing increased and soil erosion levels are well above the EU average: almost 25% in 2016 vs. 5.3% in the EU (% of non-artificial erodible area; SDGs 2 and 15). Moreover, average performance in each dimension of environmental sustainability masks large regional differences across the country. The recovery and resilience plan (RRP) includes important measures that are expected to support the green transition in the field of renewable energy, circular economy, natural resource management, hydrogeological risks, sustainable transport, and energy efficiency of buildings.

While Italy is improving in all SDG indicators related to *fairness* and performs well on health (SDG 3), it still needs to catch up with the EU average on most of them (SDGs 1, 4, 5, 8, 10). Labour market participation improved but wide gaps with the EU remain. The share of young people not in education, employment or training is declining but is still well above EU average (19% of the 15-29 population vs. 11.7% in the EU in 2022). Despite a relatively high share of women in senior management positions, the participation gender gap due to caring responsibilities only slightly decreased and remains twice as high as in the EU (2.6 pps vs. 1.2 in the EU in 2022 in the 20-64 population), similarly to the gender employment gap (19.7 pps vs. 10.7 pps in the EU in the 20-64 population in 2022) (SDGs 5 and 8). The share of working poor remained stable, while fatal accidents at work increased, against a decline in the EU (3.4/100 000 workers vs 1.8 in the EU in 2020; SDG 8). Italy progressed on almost all indicators on education, but the share of tertiary education graduates remains low (29% of the 25-34 population in 2022 vs. 42% in the EU; SDG 4). Preventing early leaving from education remains a challenge, especially for students with a migrant background (22.5 pps difference in % of the population aged 18-24 vs. 18 pps in the EU in 2022; SDG 10). Reading skills worsened but in line with a general EU trend (over 2015-2018, the % low achievers in reading among 15-year-olds increased of 2 pps, exceeding 20% in Italy and the EU; SDG 4). Access to housing (SDG 1), affordable

energy (SDG 7) and healthcare (SDG 3) improved and the share of people at risk of poverty or social exclusion declined sharply but remains higher than in the EU (25.2% of the total population in 2021 vs. 21.7% in the EU; SDG 1). The RRP measures related to education and training, active labour market policies, social and territorial cohesion, social services and inclusion and gender equality are expected to improve Italy's performance on the SDGs related to fairness.

Italy is improving on all SDGs on *productivity* (SDGs 4, 8, 9), but still needs to catch up with the EU average. Patent applications are increasing but gross domestic expenditure on R&D remains stable and is below the EU average (1.5% of GDP compared to 2.3% in the EU in 2021; SDG 9). The share of households with a high-speed internet connection in 2021 (44.2%) is well below the EU average (70.2%), despite progress since 2016 (19% in 2016). The RRP is expected to contribute significantly to the digital transition and productivity by investing in the digitalisation of public administration, the justice, education and research systems, and the tourism and cultural sector. Measures supporting the digitalisation and competitiveness of manufacturing and research and innovation are also expected to boost productivity.

Italy is improving on SDG indicators related to *macroeconomic stability*, but still needs to catch up compared to the EU (SDGs 8 and 17), while it performs well on SDG 16. Italy has made progress on peace, justice and the quality of its institutions, with a significant reduction in reported crime to below the EU average (from 19.4% in 2015 to 8.4% in 2020, EU: 11% of total population). Access to justice remains a challenge instead (SDG 16). Despite progress, economic growth and investment levels remain low (SDG 8). It progressed on global partnerships but faces challenges on public debt and taxation, including environmental taxation (SDG 17). Several structural reforms included in the RRP are expected to improve Italy's macroeconomic stability, notably the reforms of public administration and the justice system and the measures to fight tax evasion.

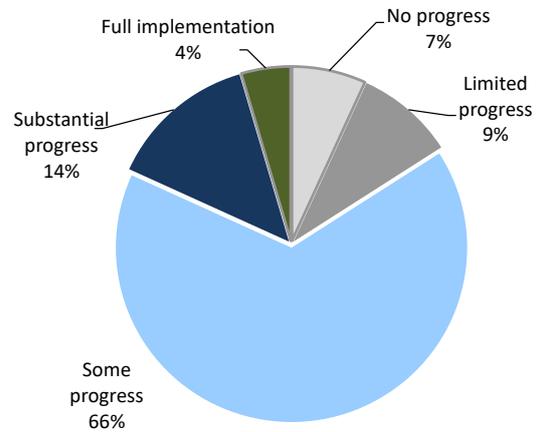
As the SDGs form an overarching framework, any links to relevant SDGs are either explained or depicted with icons in the other Annexes.



ANNEX 2: PROGRESS IN THE IMPLEMENTATION OF COUNTRY-SPECIFIC RECOMMENDATIONS

The Commission has assessed the 2019-2022 country-specific recommendations (CSRs) ⁽³²⁾ addressed to Italy as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 13 of the 17 Sustainable Development Goals (see Annexes 1 and 3). The assessment considers the policy action taken by Italy to date ⁽³³⁾ and the commitments in its recovery and resilience plan (RRP) ⁽³⁴⁾. At this stage of RRP implementation, 84% of the CSRs focusing on structural issues from 2019-2022 have recorded at least 'some progress', while 9% recorded 'limited progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the years to come.

Graph A2.1: Italy's progress on the 2019-2022 CSRs (2023 European Semester)



Source: European Commission.

⁽³²⁾ 2022 CSRs: [EUR-Lex - 32022H0901\(12\) - EN - EUR-Lex \(europa.eu\)](#)

2021 CSRs: [EUR-Lex - 32021H0729\(12\) - EN - EUR-Lex \(europa.eu\)](#)

2020 CSRs: [EUR-Lex - 32020H0826\(12\) - EN - EUR-Lex \(europa.eu\)](#)

2019 CSRs: [EUR-Lex - 32019H0905\(12\) - EN - EUR-Lex \(europa.eu\)](#)

⁽³³⁾ Including policy action reported in the national reform programme and in Recovery and Resilience Facility (RRF) reporting (twice a year reporting on progress in implementing milestones and targets and resulting from the payment requests assessment).

⁽³⁴⁾ Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRP. The CSR assessment presented here considers the degree of implementation of the measures included in the RRP and of those carried out outside of the RRP at the time of assessment. Measures laid down in the Annex of the adopted Council Implementing Decision on approving the assessment of the RRP, which are not yet adopted or implemented but considered credibly announced, in line with the CSR assessment methodology, warrant 'limited progress'. Once implemented, these measures can lead to 'some/substantial progress or full implementation', depending on their relevance.

Table A2.1: Summary table on 2019-2022 CSRs

| Italy | Assessment in May 2023* | RRP coverage of CSRs until 2026** | Relevant SDGs |
|--|-----------------------------|---|----------------------|
| 2019 CSR 1 | Limited progress | | |
| <i>Ensure a nominal reduction of net primary government expenditure of 0.1% in 2020, corresponding to an annual structural adjustment of 0.6% of GDP. Use windfall gains to accelerate the reduction of the general government debt ratio.</i> | Not relevant anymore | Not applicable | SDG 8, 16 |
| <i>Shift taxation away from labour, including by reducing tax expenditure and reforming the outdated cadastral values.</i> | Limited progress | | SDG 8, 10, 12 |
| <i>Fight tax evasion, especially in the form of omitted invoicing, including by strengthening the compulsory use of e-payments including through lower legal thresholds for cash payments.</i> | Substantial progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 8, 16 |
| <i>Implement fully past pension reforms to reduce the share of old-age pensions in public spending and create space for other social and growth-enhancing spending.</i> | No progress | | SDG 8 |
| 2019 CSR 2 | Some progress | | |
| <i>Step up efforts to tackle undeclared work.</i> | Some progress | Relevant RRP measures planned as of 2022 | SDG 8 |
| <i>Ensure that active labour market and social policies are effectively integrated and reach out notably to young people and vulnerable groups.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2023 | SDG 1, 2, 8, 10 |
| <i>Support women's participation in the labour market through a comprehensive strategy, including through access to quality childcare and long-term care.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023 | SDG 8, 10 |
| <i>Improve educational outcomes, also through adequate and targeted investment, and foster upskilling, including by strengthening digital skills.</i> | Some progress | Relevant RRP measures being implemented as of 2021 as of 2022 and planned as of 2022 and 2023 | SDG 4 |
| 2019 CSR 3 | Some progress | | |
| <i>Focus investment-related economic policy on research and innovation, and the quality of infrastructure, taking into account regional disparities.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 7, 9, 10, 11, 13 |
| <i>Improve the effectiveness of public administration, including by investing in the skills of public employees, by accelerating digitalisation, and by increasing the efficiency and quality of local public services.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023 | SDG 4, 9, 16 |
| <i>Address restrictions to competition, particularly in the retail sector and in business services, also through a new annual competition law.</i> | Limited progress | Relevant RRP measures planned as of 2022 | SDG 9 |
| 2019 CSR 4 | Substantial progress | | |
| <i>Reduce the length of civil trials at all instances by enforcing and streamlining procedural rules, including those under consideration by the legislator and with a special focus on insolvency regimes.</i> | Substantial progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 16 |
| <i>Improve the effectiveness of the fight against corruption by reforming procedural rules to reduce the length of criminal trials.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and as of 2022 and planned as of 2022 and 2023 | SDG 16 |
| 2019 CSR 5 | Some progress | | |
| <i>Foster bank balance sheet restructuring, in particular for small and medium-sized banks, by improving efficiency and asset quality, continuing the reduction of non-performing loans, and diversifying funding.</i> | Some progress | | SDG 8 |
| <i>Improve non-bank financing for smaller and innovative firms.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and planned as of 2024 | SDG 8, 9 |
| 2020 CSR 1 | Some progress | | |
| <i>In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.</i> | Not relevant anymore | Not applicable | SDG 8, 16 |
| <i>Strengthen the resilience and capacity of the health system, in the areas of health workers, critical medical products and infrastructure.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 | SDG 3 |
| <i>Enhance coordination between national and regional authorities.</i> | Some progress | Relevant RRP measures being implemented as of 2022 | SDG 3, 16 |
| 2020 CSR 2 | Some progress | | |
| <i>Provide adequate income replacement and access to social protection, notably for atypical workers.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 | SDG 1, 2, 8, 10 |
| <i>Mitigate the employment impact of the crisis, including through flexible working arrangements and</i> | Some progress | Not applicable | SDG 8 |
| <i>active support to employment.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and planned as of 2022 | SDG 8 |
| <i>Strengthen distance learning and skills, including digital ones.</i> | Some progress | Relevant RRP measures being implemented as of 2021 and planned as of 2022 and 2023 | SDG 4 |
| 2020 CSR 3 | Some progress | | |
| <i>Ensure effective implementation of measures to provide liquidity to the real economy, including to small and medium-sized enterprises, innovative firms and the self-employed, and avoid late payments.</i> | Substantial progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 8, 9 |
| <i>Front-load mature public investment projects</i> | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 planned as of 2022, 2023, 2025 and 2026 | SDG 8, 16 |

(Continued on the next page)

Table (continued)

| | | | |
|--|--|---|---------------|
| and promote private investment to foster the economic recovery. | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 | SDG 8, 9 |
| Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy, | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 7, 9, 13 |
| research and innovation, | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 9 |
| sustainable public transport, | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 11 |
| waste and water management | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023, 2024 and 2025 | SDG 6, 12, 15 |
| as well as reinforced digital infrastructure to ensure the provision of essential services. | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 | SDG 9 |
| 2020 CSR 4 | Some progress | | |
| Improve the efficiency of the judicial system and | Substantial progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 and 2023 | SDG 16 |
| the effectiveness of public administration. | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022 | SDG 16 |
| 2021 CSR 1 | Substantial progress | | |
| In 2022, use the Recovery and Resilience Facility to finance additional investment in support of the recovery while pursuing a prudent fiscal policy. Preserve nationally financed investment. Limit the growth of nationally financed current expenditure. | Full implementation | Not applicable | SDG 8, 16 |
| When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term. | Some progress | Not applicable | SDG 8, 16 |
| At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition. | Substantial progress | Not applicable | SDG 8, 16 |
| Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all. | Some progress | Not applicable | SDG 8, 16 |
| 2022 CSR 1 | Some progress | | |
| In 2023, ensure prudent fiscal policy, in particular by limiting the growth of nationally financed primary current expenditure below medium-term potential output growth, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation. | Full implementation | Not applicable | SDG 8, 16 |
| Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds. | Substantial progress | Not applicable | SDG 8, 16 |
| For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring credible and gradual debt reduction and fiscal sustainability in the medium term through gradual consolidation, investment and reforms. | Some progress | Not applicable | SDG 8, 16 |
| In order to further reduce taxes on labour and increase the efficiency of the system, adopt and appropriately implement the enabling law on the tax reform, particularly by reviewing effective marginal tax rates, aligning the cadastral values to current market values, streamlining and reducing tax expenditures, also for VAT, and environmentally harmful subsidies while ensuring fairness, and by reducing the complexity of the tax code. | No progress | | SDG 8, 10, 12 |
| 2022 CSR 2 | Limited progress | | |
| Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 13 July 2021. | RRP implementation is monitored by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports. | | |
| Swiftly finalise the negotiations with the Commission of the 2021-2027 cohesion policy programming documents with a view to starting their implementation. | Progress on the cohesion policy programming documents is monitored under the EU cohesion policy. | | |
| 2022 CSR 3 | | | |
| Reduce the reliance on fossil fuels and diversify energy import. | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 7, 9, 13 |
| Overcome bottlenecks to increase the capacity of internal gas transmission. | No progress | | SDG 7, 9, 13 |
| develop electricity interconnections, | Some progress | | SDG 7, 9, 13 |
| accelerate the deployment of additional renewable energy capacities | Some progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 7, 9, 13 |
| and adopt measures to increase energy efficiency | Limited progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 7 |
| and to promote sustainable mobility. | Limited progress | Relevant RRP measures being implemented as of 2021 and 2022 and planned as of 2022, 2023 and 2024 | SDG 11 |

Note:* See footnote ⁽³³⁾.

** RRP measures included in this table contribute to the implementation of CSRs. Nevertheless, additional measures outside the RRP are necessary to fully implement CSRs and address their underlying challenges. Measures indicated as 'being implemented' are only those included in the RRF payment requests submitted and positively assessed by the European Commission. Measures included in the third payment request under assessment are classified as planned as of 2022.

Source: European Commission



The Recovery and Resilience Facility (RRF) is the centrepiece of the EU’s efforts to help it recover from the COVID-19 pandemic, speed up the twin transition and strengthen resilience against future shocks. The RRF also contributes to implementation of the SDGs and helps to address the Country Specific Recommendations (see Annex 4). Italy submitted its initial recovery and resilience plan (RRP) on 30 April 2021. The Commission’s positive assessment on 22 June 2021 and Council’s approval on 13 July 2021 paved the way for disbursing EUR 68.9 billion in grants and EUR 122.6 billion in loans under the RRF over the 2021-2026 period.

Since the entry into force of the RRF Regulation and the assessment of the national recovery and resilience plans, geopolitical and economic developments have caused major disruptions across the EU. In order to effectively address these disruptions, the (adjusted) RRF Regulation allows Member States to amend their recovery and resilience plan for a variety of reasons. In line with article 11(2) of the RRF, the maximum financial contribution for Italy was moreover updated on 30 June 2022 to an amount of EUR 69 billion in grants.

Table A3.1: Key elements of the Italian RRP(s)

| | Current RRP |
|--|--|
| Scope | Initial plan |
| CID adoption date | 13 July 2021 |
| Total allocation | EUR 68.9 billion in grants and EUR 122.6 billion in loans (10.79% of 2021 GDP) |
| Investments and reforms | 133 investments and 59 reforms |
| Total number of milestones and targets | 527 |

Source: European Commission

Italy’s progress in implementing its plan is published in the Recovery and Resilience Scoreboard (35). The Scoreboard also gives an overview of the progress made in implementing the RRF as a whole, in a transparent manner. The

(35) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

graphs in this Annex show the current state of play of the milestones and targets to be reached by and subsequently assessed as satisfactorily fulfilled by the Commission. No revision was submitted at the time of publication of this country report yet.

EUR 66.89 billion has so far been disbursed to Italy under the RRF. The Commission disbursed EUR 24.89 billion to Italy in pre-financing on 13 August 2021, equivalent to 13% of the financial allocation.

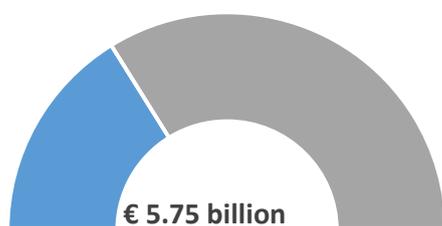
Italy’s first payment request was positively assessed by the Commission, taking into account the opinion of the Economic and Financial Committee, leading to EUR 21 billion being disbursed in financial support (net of pre-financing) on 13 April 2022. The related 51 milestones and targets cover reforms in the areas of public administration, public procurement, justice, the spending review framework, tertiary education, active labour market policies and the framework law to strengthen the autonomy of people with disabilities, as well as Italy’s audit and control system for the implementation of the RRF. They also concern major investments in the field of digitalisation of businesses, energy efficiency and renovation of residential buildings.

Italy’s second payment request was positively assessed by the Commission, taking into account the opinion of the Economic and Financial Committee, leading to EUR 21 billion being disbursed in financial support (net of pre-financing) on 8 November 2022. The related 45 milestones and targets cover reforms in the areas of public employment, public procurement, teaching, tax administration and healthcare, as well as investments in areas such as ultra-broadband and 5G networks, research and innovation, tourism and culture, production and consumption of clean hydrogen, urban regeneration and digitalisation of schools.

On 30 December 2022, Italy submitted its third payment request, for which the Commission’s assessment is ongoing. Overall, Italy reports a timely implementation of the milestones and targets covered by the third payment request, which does not however prejudice the timing of the submission of subsequent payment requests or the Commission’s

formal assessment of the fulfilment of the relevant milestones and targets.

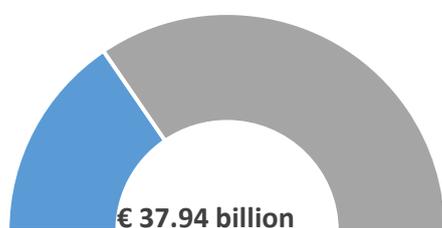
Graph A3.1: **Total grants disbursed under the RRF**



Note: This graph displays the amount of grants disbursed so far under the RRF. Grants are non-repayable financial contributions. The total amount of grants given to each Member State is determined by an allocation key and the total estimated cost of the respective RRP.

Source: Recovery and Resilience Scoreboard

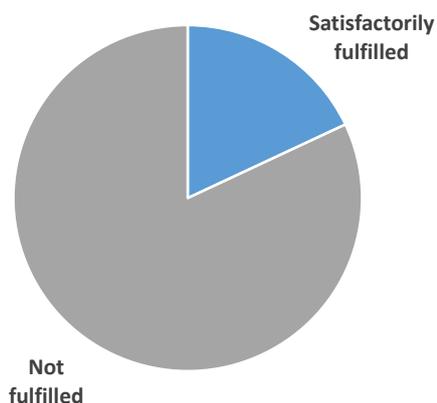
Graph A3.2: **Total loans disbursed under the RRF**



Note: This graph displays the amount of loans disbursed so far under the RRF. Loans are repayable financial contributions. The total amount of loans given to each Member State is determined by the assessment of its loan request and cannot exceed 6.8% of its 2019 GNI.

Source: Recovery and Resilience Scoreboard

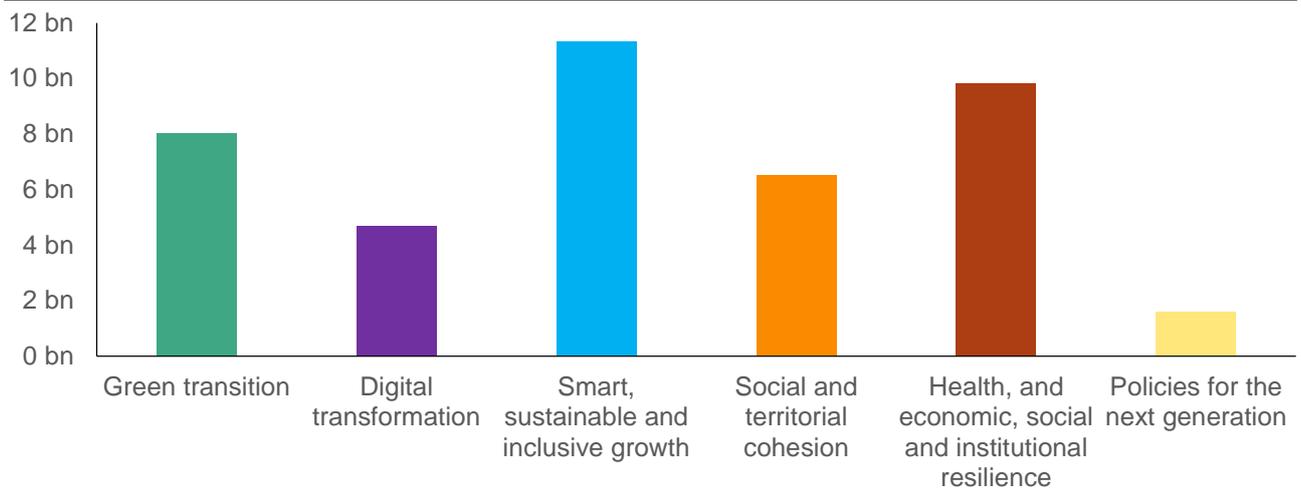
Graph A3.3: **Fulfilment status of milestones and targets**



Note: This graph displays the share of satisfactorily fulfilled milestones and targets. A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.

Source: Recovery and Resilience Scoreboard

Graph A3.4: **Disbursements per pillar**



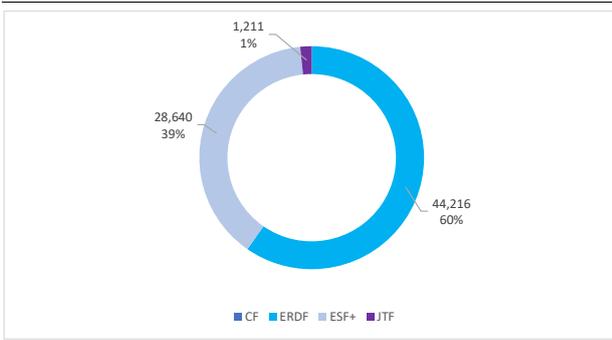
Note: Each disbursement reflects progress in the implementation of the RRF, across the six policy pillars. This graph displays how disbursements under the RRF (excluding pre-financing) relate to the pillars. The amounts were calculated by linking the milestones and targets covered by a given disbursement to the pillar tagging (primary and secondary) of their respective measures.

Source: Recovery and Resilience Scoreboard



The EU budget of over EUR 1.2 trillion for 2021-2027 is geared towards implementing the EU’s main priorities. Cohesion policy investment amounts to EUR 392 billion across the EU and represents almost a third of the overall EU budget, including around EUR 48 billion invested in line with REPowerEU objectives.

Graph A4.1: Cohesion policy funds 2021-2027 in Italy: budget by fund



(1) million EUR in current prices, % of total; (total amount including EU and national co-financing)

Source: European Commission, Cohesion Open Data

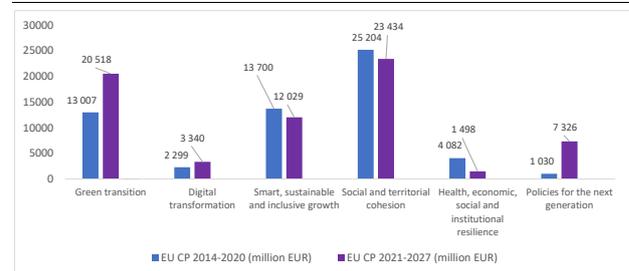
In 2021-2027, in Italy, cohesion policy funds⁽³⁶⁾ will invest EUR 20.5 billion in the green transition and EUR 3.3 billion in the digital transformation as part of the country’s total allocation of EUR 74 billion. In particular, the European Regional Development Fund (ERDF) will improve the competitiveness and productivity of Italian industry. 148 783 firms will receive support to strengthen innovation, up-skilling, speeding up the country’s digital and green transitions. The ERDF will also support energy efficiency in public buildings, covering almost 3 million square meters, as well as the deployment of renewables to help sustain over 852 renewable energy communities. Public goods and services will also be improved, particularly water, urban waste and transport in the South of Italy. Italy will be allocated an additional EUR 1 billion under the Just Transition Fund (JTF), to support territories facing socio-economic challenges arising from the transition to climate neutrality. The JTF will target Sulcis Iglesiente in Sardinia, and Taranto in Puglia, helping to get 15 775 people into jobs and supporting 2 900 businesses. Administrative capacity is key to the successful implementation

⁽³⁶⁾ European Regional Development Fund (ERDF), Cohesion Fund (CF), European Social Fund+ (ESF+), Just Transition Fund (JTF) excluding Interreg programmes. Total amount includes national and EU contributions. Data source: [Cohesion Open Data](#).

of projects benefiting companies and citizens, in particular in the South of Italy. Attention should therefore be paid to on the synergy with the public administration reforms to be carried out under the Italian recovery and resilience plan. The European Social Fund Plus (ESF+) allocates EUR 4 billion to education and skills and, overall, EUR 2.17 billion to digital skills (partially in other thematic areas). This investment will strengthen green and digital skills by supporting the extension of vocational education and training (VET) and its link with labour market needs, as well as through training to low-skilled adults and promoting life-long learning.

Of the investments mentioned above, EUR 5.1 billion will be invested in line with REPowerEU objectives. This is on top of the EUR 2.5 billion dedicated to REPowerEU under the 2014-2020 budget. EUR 2.6 billion (2021-2027) and EUR 432 million (2014-2020) is for improving energy efficiency; EUR 1.5 billion (2021-2027) and EUR 2.1 billion (2014-2020) is for renewable energy and low-carbon R&I; and EUR 1 billion (2021-2027) is for smart energy systems.

Graph A4.2: Synergies between cohesion policy funds and the RRF with its six pillars in Italy



(1) million EUR in current prices (total amount, including EU and national co-financing)

Source: European Commission

In 2014-2020, cohesion policy funds made EUR 47.9 billion available to Italy⁽³⁷⁾ with an absorption of 64%⁽³⁸⁾. Including national financing, the total investment amounts to EUR 64.9 billion - around 0.5% of GDP for 2014-2020.

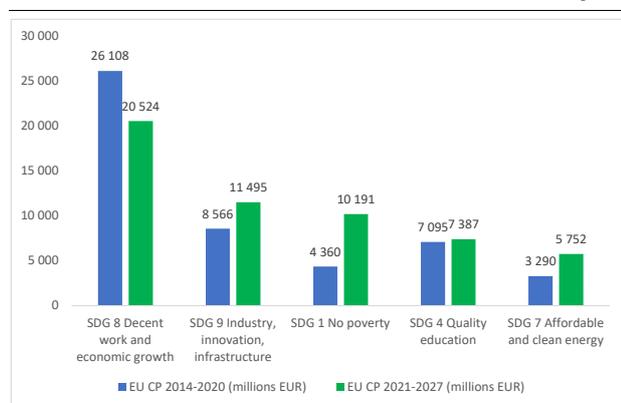
⁽³⁷⁾ Cohesion policy funds include the ERDF, CF, ESF and the Youth Employment Initiative (YEI). ETC programmes are excluded here. According to the ‘N+3 rule’, the funds committed for 2014-2020 must be spent by 2023. REACT-EU is included in all figures. The total amount includes EU and national co-financing. Data source: [Cohesion Open Data](#).

⁽³⁸⁾ 2014-2020 Cohesion policy EU payments by MS is updated daily on [Cohesion Open Data](#).

Italy continues to benefit from cohesion policy flexibility to support recovery, step up convergence and provide vital support to regions following the COVID-19 pandemic.

The Recovery Assistance for Cohesion and the Territories of Europe instrument (REACT-EU)⁽³⁹⁾ under NextGenerationEU provides EUR 14.4 billion to Italy. This includes support for SMEs, accelerating the green transition and investing in human capital. With SAFE (Supporting Affordable Energy), the 2014-2020 cohesion policy funds may also be mobilised by Italy to support vulnerable households, jobs and companies particularly affected by high energy prices.

Graph A4.3: Cohesion policy funds contribution to the SDGs in 2014-2020 and 2021-2027 in Italy



(1) 5 largest contributions to SDGs in million (EUR) current prices

Source: European Commission

In both 2014-2020 and 2021-2027, cohesion policy funds have contributed substantially to the Sustainable Development Goals (SDGs). These funds support 11 of the 17 SDGs, notably SDG 8 ‘decent Work and economic growth’ and SDG 9 ‘industry, innovation and infrastructure’⁽⁴⁰⁾.

Other EU funds make significant resources available to Italy. The common agricultural policy (CAP) made EUR 50.5 billion available in 2014-2022. It will keep supporting Italy with EUR 28.1 billion in 2023-2027. The two CAP Funds (European Agricultural Guarantee Fund and European Agricultural Fund for Rural Development), contribute to the European Green

Deal while ensuring long-term food security. They promote social, environmental and economic sustainability and innovation in agriculture and rural areas, in coordination with other EU funds. The European Maritime and Fisheries Fund made EUR 537 million available to Italy in 2014-2020 and the European Maritime, Fisheries and Aquaculture Fund allocates EUR 518 million in 2021-2027.

Italy also benefits from other EU programmes, notably the Connecting Europe Facility, which under CEF 2 (2021-2027) has so far allocated EU funding of EUR 426 million to 27 specific projects on strategic transport networks. Similarly, Horizon Europe has so far allocated more than EUR 958 million for Italian R&I actors, while, Horizon 2020 earmarked EUR 5.7 billion. The Public Sector Loan Facility established under the Just Transition Mechanism makes EUR 78.1 million of grant support available in 2021-2027, which will be combined with loans from the EIB to support investments by public sector entities in just transition regions.

Italy received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance short-time work schemes similar measures and as an ancillary health-related measures, to mitigate the impact of COVID-19. The Council granted financial assistance to Italy in September 2020 for EUR 27.438 billion in loans, which supported around 57% of workers and 50% of firms in 2020, and around 28% of workers and 25% of firms in 2021.

The Technical Support Instrument (TSI) supports Italy in designing and implementing growth-enhancing reforms, including the implementation of its recovery and resilience plan (RRP). Italy has received significant support since 2017. Examples include combating disparities in access to inclusive education and enhancing the quality and cooperation of public administrations. The TSI is also helping Italy implement specific reforms and investments included in its RRP, e.g. the digitalisation of Italy’s national and local healthcare systems⁽⁴¹⁾.

⁽³⁹⁾ REACT-EU allocation on [Cohesion Open Data](#).

⁽⁴⁰⁾ Other EU funds contribute to the implementation of the SDGs. In 2014-2022, this includes both the European Agricultural Fund for Rural Development (EARDF) and the European Maritime and Fisheries Fund (EMFF).

⁽⁴¹⁾ Country factsheets on reform support are available [here](#).



This Annex illustrates Italy’s relative resilience capacities and vulnerabilities using the Commission’s resilience dashboards (RDB) (42). Comprising a set of 124 quantitative indicators, the RDB provide broad indications of Member States’ ability to make progress across four interrelated dimensions: social and economic, green, digital, and geopolitical. The indicators show vulnerabilities (43) and capacities (44) that can become increasingly relevant, both to navigate ongoing transitions and to cope with potential future shocks. To this end, the RDB help to identify areas that need further efforts to build stronger and more resilient economies and societies. They are summarised in Table A5.1 as synthetic resilience indices, which illustrate the overall relative situation for each of the four dimensions and their underlying areas for Italy and the EU-27 (45).

According to the set of resilience indicators under the RDB, Italy generally displays a similar level of vulnerabilities compared to the EU average. Italy shows medium-high vulnerabilities in the social and economic and green dimensions of the RDB, medium vulnerabilities in the digital dimension and medium-low vulnerabilities in the geopolitical dimension. It has higher vulnerabilities than the EU average in all areas of the social and economic dimension as well as in ‘sustainable use of resources’ and ‘ecosystems, biodiversity, sustainable agriculture’. Italy has relatively low vulnerabilities in relation to ‘climate change mitigation and adaptation’, ‘digital for industry’, ‘cybersecurity’ and ‘raw material and energy supply’.

Compared to the EU average, Italy shows an overall lower level of capacities across all RDB indicators. Italy has medium-low resilience

capacities in the digital and geopolitical dimensions, and medium-high capacities in the social and economic and the green dimensions. Italy shows stronger capacities than the EU average in the area of ‘sustainable use of resources’. There is room for improving capacities compared to the EU in relation to ‘health, education and work’, ‘digitalisation for industry and personal space’ and ‘financial globalisation’, among others.

Table A5.1: Resilience indices summarising the situation across RDB dimensions and areas

| Dimension/Area | Vulnerabilities | | Capacities | |
|---|-----------------|---------------|------------|--------|
| | IT | EU-27 | IT | EU-27 |
| Social and economic | High | Medium-high | Medium-low | Medium |
| Inequalities and social impact of the transitions | High | Medium-high | Medium-low | Medium |
| Health, education and work | High | Medium-high | Medium-low | Medium |
| Economic & financial stability and sustainability | High | Medium-high | Medium-low | Medium |
| Green | High | Medium-high | Medium-low | Medium |
| Climate change mitigation & adaptation | Medium-low | Medium-high | Medium-low | Medium |
| Sustainable use of resources | High | Medium-high | High | Medium |
| Ecosystems, biodiversity, sustainable agriculture | High | Medium-high | High | Medium |
| Digital | Medium | Medium-high | Medium-low | Medium |
| Digital for personal space | Medium | Medium-high | Medium-low | Medium |
| Digital for industry | Medium-low | Medium-high | Medium-low | Medium |
| Digital for public space | Medium | Medium-high | Medium-low | Medium |
| Cybersecurity | Medium-low | Medium-high | Medium-low | Medium |
| Geopolitical | Medium-low | Medium-high | Medium-low | Medium |
| Raw material and energy supply | Medium-low | Medium-high | Medium-low | Medium |
| Value chains and trade | Medium-low | Not available | Medium-low | Medium |
| Financial globalisation | Medium-low | Medium-high | Medium-low | Medium |
| Security and demography | Medium-low | Medium-high | Medium-low | Medium |

Vulnerabilities Index

- High
- Medium-high
- Medium
- Medium-low
- Low
- Not available

Capacities Index

- High
- Medium-high
- Medium
- Medium-low
- Low
- Not available

Data are for 2021, and EU-27 refers to the value for the EU as a whole. Data underlying EU-27 vulnerabilities in the area ‘value chains and trade’ are not available as they comprise partner concentration measures that are not comparable with Member States’ level values.

Source: JRC Resilience Dashboards - European Commission

(42) For details see https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en; see also 2020 Strategic Foresight Report (COM(2020) 493).

(43) Vulnerabilities describe features that can exacerbate the negative impact of crises and transitions, or obstacles that may hinder the achievement of long-term strategic goals.

(44) Capacities refer to enablers or abilities to cope with crises and structural changes and to manage the transitions.

(45) This Annex is linked to Annex 1 on SDGs, Annex 6 on the green deal, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource productivity, efficiency and circularity, Annex 10 on the digital transition and Annex 14 on the European pillar of social rights.

Italy's green transition requires action on several aspects, including renewable energy and on climate adaptation, in particular concerning soil and water. Implementation of the European Green Deal is underway in Italy with some weaknesses as those quoted above. This Annex provides a snapshot of the key areas involved ⁽⁴⁶⁾.

Italy has not yet defined all the climate policy measures it needs to reach its 2030 climate target for the effort sharing sectors ⁽⁴⁷⁾. Data for 2021 on Italy's greenhouse gas emissions in these sectors are expected to show the country generated slightly more than its annual emission allocations ⁽⁴⁸⁾. Current policies in Italy are projected to reduce these emissions by 29% relative to 2005 levels in 2030, not sufficient to reach the effort sharing target even before it was raised to meet the EU's 55% objective. Additional measures tabled but not adopted would bring the emission reductions to 40%, exceeding the current target but not reaching the updated

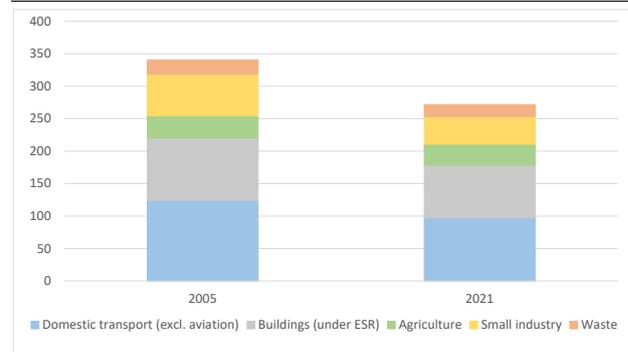
⁽⁴⁶⁾ The overview in this Annex is complemented by the information provided in Annex 7 on energy security and affordability, Annex 8 on the fair transition to climate neutrality and environmental sustainability, Annex 9 on resource productivity, efficiency and circularity, Annex 11 on innovation, and Annex 19 on taxation.

⁽⁴⁷⁾ Member States' greenhouse gas emission targets for 2030 ('effort sharing targets') were increased by Regulation (EU) 2023/857 (the Effort Sharing Regulation) amending Regulation (EU) 2018/842, aligning the action in the concerned sectors with the objective to reach EU-level, economy-wide greenhouse gas emission reductions of at least 55% relative to 1990 levels. The Regulation sets national targets for sectors outside the current EU Emissions Trading System, notably: buildings (heating and cooling), road transport, agriculture, waste, and small industry. Emissions covered by the EU ETS and the Effort Sharing Regulation are complemented by net removals in the land use sector, regulated by Regulation (EU) 2018/841 (the Land Use, Land Use Change and Forestry (LULUCF) Regulation) amended by Regulation (EU) 2023/839.

⁽⁴⁸⁾ Italy's annual emission allocations for 2021 were some 266.6 Mt CO₂eq, and its approximated 2021 emissions were 271.7 Mt (see European Commission, *Accelerating the transition to climate neutrality for Europe's security and prosperity: EU Climate Action Progress Report 2022*, SWD(2022)343). Greenhouse gas emissions in the effort sharing sectors above the annual emission allocations do not imply non-compliance with the Effort Sharing Regulation, as the latter provides for specific flexibility instruments that may be used for compliance.

one, 44%⁽⁴⁹⁾. In its recovery and resilience plan (RRP), Italy has attributed 37.5% of its Recovery and Resilience Facility allocations to key reforms and investments to attain climate objectives ⁽⁵⁰⁾.

Graph A6.1: **Thematic – greenhouse gas emissions from the effort sharing sectors in Mt CO₂eq, 2005-2021**



Source: European Environmental Agency.

Italy's net carbon removals from the land use sector have been declining, with a growing distance to the 2030 target ⁽⁵¹⁾.

Italy's forests achieve the majority of carbon removals through land use, land use change and forestry (LULUCF). For 2030, Italy's target for the sector implies to remove 35 758 kt CO₂eq (see Table A6.1). Net removals have increased in 2018 but they kept on decreasing from 2019. The Italian RRP includes investment for the protection of the territory and to safeguard the quality of the air, including the planting of over 6 million trees.

Imported fossil fuels made up the bulk of Italy's energy mix, although the share of renewable energy is very slowly increasing.

In 2021, natural gas provided 41% of Italy's energy, followed by oil (35%) and coal (4%), while renewable energy provided 20%. Italy's electricity production mix comprised a share of 42% from renewable sources in 2021, with hydropower being the leading source, and the remaining part coming from gas (50%), solid fossil fuels (5%) and oil

⁽⁴⁹⁾ See the information on the distance to the 2030 climate policy target in Table A6.1. Current and additional measures as of 15 March 2021.

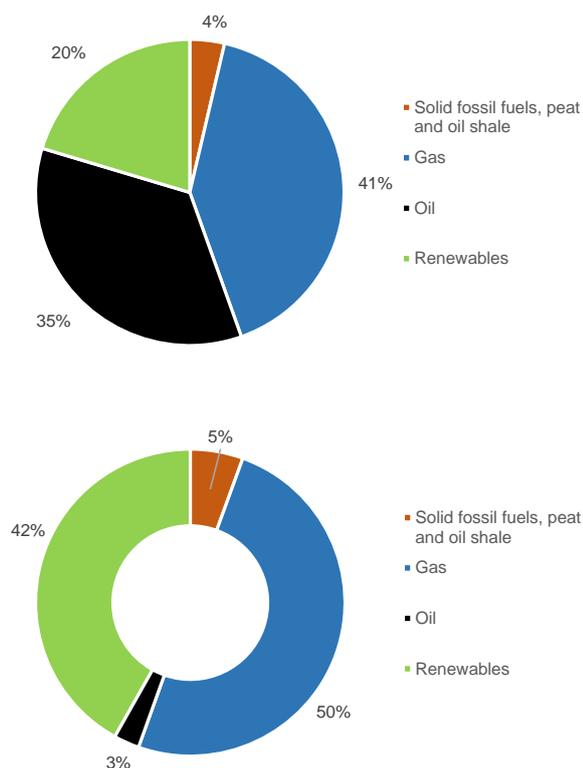
⁽⁵⁰⁾ For example, investments in zero-emission mobility, energy efficiency of buildings and near-zero emission buildings for the education system.

⁽⁵¹⁾ This value is indicative and will be updated in 2025 (as mandated by Regulation (EU) 2023/839).



(3%)⁽⁵²⁾. Further investment in renewable power generation, renewable heat and heat pumps and grid infrastructure would accelerate the decarbonisation of Italy's economy. Italy envisages phasing out coal for electricity production and decommissioning coal power plants by 2025.

Graph A6.2: **Energy mix (top) and electricity mix (bottom), 2021**



The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste.

Source: Eurostat.

Renewable energy plays a central role in decarbonising Italy's energy system. Italy's target of 30% of share of energy from renewable sources in gross final energy consumption by 2030 included in the NECP was considered sufficiently ambitious. Italy will need to increase its renewable energy target in the updated NECP to reflect the more ambitious EU climate and energy targets in line with the Fit for 55 Package

⁽⁵²⁾ According to Terna, in 2022, the demand for electricity was met at 55.3% by production from non-renewable sources, for 31.1% from renewable energy and 13.6% from energy imports. Source: [Rapporto Mensile sul Sistema Elettrico – Dicembre 2022](#).

and in the REPowerEU Plan. Although Italy met the 2020 target (17%) already in 2014, the share of renewable energy in Italy has essentially stagnated over the past few years (at 18.3% in 2017). Italy's RRP envisages several measures promoting renewable energy such as a reform the process of awarding hydropower concessions, or investments to support the development of offshore multi-power systems, combining wind, floating photovoltaics, and wave motion power, or for example the experimental use of hydrogen in hard-to-abate industries.

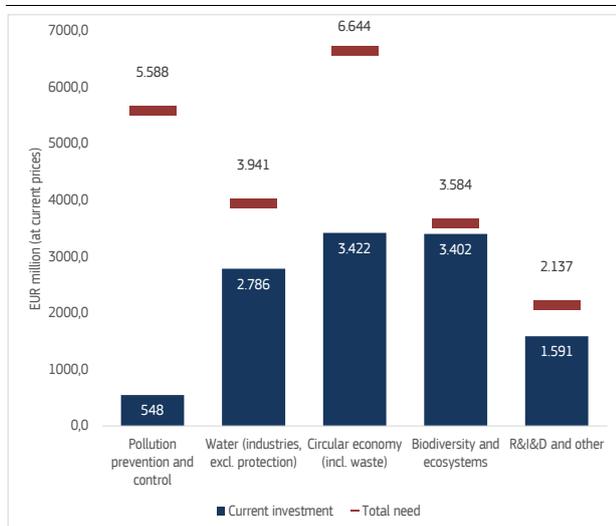
The planned energy efficiency actions if fully implemented would allow Italy to meet its energy efficiency goals and the 2030 targets. Italy's NECP targets for final and primary energy consumption were considered of sufficient ambition in the 2020 Commission assessment. Based on the energy consumption trajectory for 2018-2021, Italy is expected to be on track to meet its 2030 target for primary and final energy consumptions notified in the current NECP⁽⁵³⁾. Overall, Italy aims to reduce its primary energy consumption by 13.7% and its final energy consumption by 8.8% by 2030, compared to energy consumption in 2021. Italy has multiple measures in place that have a substantial energy saving potential, such as the white certificates scheme and the tax deduction schemes for building renovations. Italy's RRP supports important measures in energy efficiency, addressing in particular residential renovations with the "Superbonus" scheme, as well as energy efficiency in public buildings and district heating networks. Italy has repeatedly amended the key features of its main programme for residential renovation "Superbonus", increasing uncertainty on the building renovation sector. A more stable and comprehensive environment is needed to support investments in renovation and the decarbonisation of the Italian building stock and to achieve the medium- and long-term goals.

Road transport is the dominant form of transport in Italy. Freight haulage has increased, in turn increasing greenhouse gas emissions from transport. The share of zero-emission vehicles in Italy's car fleet is well below the EU average. The government has recently provided incentives for

⁽⁵³⁾ After the conclusion of the negotiations for a recast EED, the ambition of both the EU and national targets as well as of the national measures for energy efficiency to meet these targets is expected to increase.

zero-emission vehicles, but they have not been fully used, partly due to competing incentives for conventional cars. Italy's share of electrified railroads is among the highest in the EU, but the rail network needs more investment. Italy's RRP allocates funding for rail corridors, mass transit systems in local public transport, the purchase of 3 000 zero-emission buses and 150 zero-emission trains, the installation of 21 000 charging points for electric vehicles, and hydrogen re-fuelling stations. Air quality remains a serious concern: in terms of number of deaths from air pollution, Italy's results are among the worst in the EU (see Table A6.5).

Graph A6.3: **Thematic – environmental investment needs and current investment, p.a. 2014-2020**



Source: European Commission.

Italy would benefit from investing more in environmental protection and better protecting biodiversity, tackling pollution and promoting the circular economy, including waste management. Between 2014 and 2020, the environmental investment needs⁽⁵⁴⁾ were estimated to be at least EUR 21.9 billion while investment was about EUR 11.7 billion, leaving a gap of at least EUR 10.1 billion per year (see Graph A6.3)⁽⁵⁵⁾. Key sectors for investment are waste and urban wastewater treatment. Italy's Natura 2000 land network and national protected

⁽⁵⁴⁾ Environmental objectives include pollution prevention and control, water management and industries, circular economy and waste, biodiversity and ecosystems (European Commission, 2022, Environmental Implementation Review, [country report Italy](#)).

⁽⁵⁵⁾ When also accounting for needs estimated at EU level only (e.g., water protection, higher circularity, biodiversity strategy).

areas together cover 21.4% of Italy's land⁽⁵⁶⁾. It has yet to allocate sufficient resources to the priority action frameworks⁽⁵⁷⁾, and the designation of marine protected areas is not yet completed.

Climate change is affecting many sectors in Italy, with adaptation challenges concerning soil and water management in particular⁽⁵⁸⁾.

The problem of water scarcity has expanded to cover northern Italy⁽⁵⁹⁾, with decreasing moisture and increased sealing and degradation of soils. This affects hydropower generation, water for human consumption, agriculture, and the flow of water bodies⁽⁶⁰⁾. Local communities are exposed to flash floods and extreme heat, with the risk of heat-related death and morbidity projected to rise significantly. Italy's governance of water management is fragmented with significant leakages⁽⁶¹⁾ (Annex 17). High water use in agriculture is a concern in the south. Investing in flood control, re-naturalising water bodies, improving land use planning, reducing the sealing of soils, and regenerating them would help mitigate some adverse effects of climate change. The recovery and resilience plan contains some measures to restore biodiversity and regenerate soils (Annex 9).

Italy provides fossil fuel and other environmentally harmful subsidies that could be considered for reform, while ensuring food and energy security and mitigating social effects.

Italy has a catalogue of environmentally harmful subsidies, estimated at EUR 20.4 billion in 2020⁽⁶²⁾, which it intends to

⁽⁵⁶⁾ In 2021, Italy had 21.4% terrestrial protected areas (Natura 2000 and nationally designated areas), against the EU average of 26.4% (European Environment Agency, 2023, [Natura 2000 Barometer](#)).

⁽⁵⁷⁾ [Environmental Implementation Review 2022 – country report Italy](#), p. 36; [Quinto rapporto sullo stato del capitale naturale in Italia](#), Ministry of Environment and Energy Security, 2023, p.9.

⁽⁵⁸⁾ European Environmental Agency, *Advancing towards climate resilience in Europe*, forthcoming.

⁽⁵⁹⁾ [JRC Global Drought Observatory \(GDO\) of the Copernicus Emergency; Drought in northern Italy](#), March 2022.

⁽⁶⁰⁾ According to the [6th IPCC climate adaptation report](#), in southern Europe, more than a third of the population will be exposed to water scarcity if global warming reaches 2 °C.

⁽⁶¹⁾ ISTAT, [i divari territoriali nel PNRR: dieci obiettivi per il Mezzogiorno](#), 25.1.2023.

⁽⁶²⁾ Ministry of Environment and Energy Security, [Economia Ambientale](#).

reduce. Environmentally harmful subsidies have been identified, via an initial assessment, in the agriculture, forestry and fishing, electricity, gas, steam and air conditioning, transportation and storage, mining and quarrying, manufacturing, water supply and sewerage, accommodation, food services and other services sectors. Italy has increased fossil fuel subsidies slightly since 2016 (see Table A6.1). Examples of environmentally harmful subsidies include the flat rate taxation of privately used company cars, the reduced VAT rate for fertilisers and pesticides, the excise tax refund for diesel fuel used in agriculture, the reimbursement of excise duty on diesel used in freight and other categories of passenger transport or the refund scheme for energy-intensive industry under conditions ⁽⁶³⁾.

Italy has the potential to use taxation to tackle resource use and pollution, despite having above-average environmental tax revenues compared with other EU countries ⁽⁶⁴⁾ (see Annex 19). Low water charges discourage investment in water infrastructure and contribute to high water consumption rates. Italy planned to increase the floor rate for the regional landfill tax under the 2022 circular economy action plan (addendum), but it has not yet done so ⁽⁶⁵⁾. It also has scope to bring in pesticide taxes ⁽⁶⁶⁾ and use congestion taxes to reduce air pollution, as the city of Milan does ⁽⁶⁷⁾.

By earmarking a higher share of Emission Trading System revenue for climate action, Italy could reduce its exposure to the cost of

carbon. In 2021, Italy's revenue from the EU Emissions Trading System amounted to some EUR 2.5 billion. In the past years, Italy has allocated only 50% to climate and energy-related measures, the minimum allowed under the Emissions Trading System Directive.

⁽⁶³⁾ Fossil fuel figures in EUR of 2021 from the 2022 State of the Energy Union report. Initial assessment of environmentally harmful subsidies done by the Commission in [the 2022 toolbox for reforming environmentally harmful subsidies in Europe](#), using OECD definitions, and based on the following datasets: OECD Agriculture Policy Monitoring and Evaluations; OECD Policy Instruments for the Environment (PINE) Database; OECD Statistical Database for Fossil Fuels Support; IMF country-level energy subsidy estimates. [Annex 4](#) of the toolbox contains detailed examples of subsidies on the candidates for reform.

⁽⁶⁴⁾ European Commission, 2021, [Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay](#).

⁽⁶⁵⁾ Ministry of Environment and Energy Security, [Riforma 1.1 - Strategia nazionale per l'economia circolare](#).

⁽⁶⁶⁾ European Commission, [Study on assessing the environmental fiscal reform potential for the EU 28](#), 2016.

⁽⁶⁷⁾ European Commission, 2021, [Green taxation and other economic instruments – Internalising environmental costs to make the polluter pay](#).

Table A6.1: Indicators tracking progress on the European Green Deal from a macroeconomic perspective

| | | | 2005 | 2017 | 2018 | 2019 | 2020 | 2021 | 'Fit for 55' | | |
|--|--|---------------------------------------|---------|---------|---------|---------|---------|---------|-------------------|---|--------|
| | | | | | | | | | 2030 target/value | Distance WEM | WAM |
| Progress to policy targets | Greenhouse gas emission reductions in effort sharing sectors ⁽¹⁾ | Mt CO ₂ eq, %; pp | 334,5 | -19% | -17% | -18% | -24% | - | -43,7% | -14,7 | -3,7 |
| | Net carbon removals from LULUCF ⁽²⁾ | kt CO ₂ eq | -35.557 | -23.298 | -45.171 | -41.837 | -32.545 | -27.473 | -35758 | n/a | n/a |
| | | | | 2005 | 2017 | 2018 | 2019 | 2020 | 2021 | National contribution to 2030 EU target | |
| | Share of energy from renewable sources in gross final consumption of energy ⁽³⁾ | % | 8% | 18% | 18% | 18% | 20% | 19% | 30% | | |
| Energy efficiency: primary energy consumption ⁽³⁾ | Mtoe | 180,8 | 148,9 | 147,2 | 145,9 | 132,3 | 145,3 | 125,1 | | | |
| Energy efficiency: final energy consumption ⁽³⁾ | Mtoe | 137,2 | 115,2 | 116,3 | 115,4 | 102,7 | 113,3 | 103,8 | | | |
| | | | Italy | | | | | | EU | | |
| | | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2019 | 2020 | 2021 |
| Fiscal and financial indicators | Environmental taxes (% of GDP) | % of GDP | 3,5 | 3,3 | 3,3 | 3,2 | 3,0 | 3,0 | 2,4 | 2,2 | 2,2 |
| | Environmental taxes (% of total taxation) ⁽⁴⁾ | % of taxation | 8,3 | 8,0 | 7,9 | 7,7 | 7,1 | 6,9 | 5,9 | 5,6 | 5,5 |
| | Government expenditure on environmental protection | % of total exp. | 1,8 | 1,8 | 1,8 | 1,9 | 1,7 | 1,7 | 1,70 | 1,61 | 1,6 |
| | Investment in environmental protection ⁽⁵⁾ | % of GDP | 0,3 | 0,3 | 0,3 | 0,3 | - | - | 0,4 | 0,4 | 0,4 |
| | Fossil fuel subsidies ⁽⁶⁾ | EUR2021bn | 5,9 | 6,0 | 5,6 | 5,7 | 5,1 | - | 53,0 | 50,0 | - |
| | Climate protection gap ⁽⁷⁾ | score 1-4 | | | | | 2,4 | 2,4 | | | 1,5 |
| Climate | Net greenhouse gas emissions | 1990 = 100 | 83,0 | 85,0 | 84,0 | 84,0 | 82,0 | 78,0 | 76,0 | 69,0 | 72,0 |
| | Greenhouse gas emission intensity of the economy | kg/EUR10 | 0,29 | 0,28 | 0,27 | 0,27 | 0,27 | - | 0,31 | 0,30 | 0,26 |
| | Energy intensity of the economy | kgoe/EUR10 | 0,10 | 0,10 | 0,10 | 0,09 | 0,09 | - | 0,11 | 0,11 | - |
| Energy | Final energy consumption (FEC) | 2015=100 | 99,7 | 99,1 | 100,1 | 99,3 | 88,4 | 97,5 | 102,9 | 94,6 | - |
| | FEC in residential building sector | 2015=100 | 99,0 | 101,2 | 98,2 | 95,8 | 94,3 | 98,6 | 101,3 | 101,3 | 106,8 |
| | FEC in services building sector | 2015=100 | 100,3 | 118,5 | 123,5 | 118,2 | 107,6 | 112,8 | 100,1 | 94,4 | 100,7 |
| Pollution | Smog-precursor emission intensity (to GDP) ⁽⁸⁾ | tonne/EUR10 | 0,70 | 0,74 | 0,69 | 0,71 | 0,67 | - | 0,93 | 0,86 | - |
| | Years of life lost due to air pollution by PM _{2.5} | per 100.000 inh. | 854,5 | 884,6 | 782,5 | 711,6 | 775,0 | - | 581,6 | 544,5 | - |
| | Years of life lost due to air pollution by NO ₂ | per 100.000 inh. | 242,7 | 241,6 | 205,4 | 204,0 | 165,4 | - | 309,6 | 218,8 | - |
| | Nitrates in ground water | mg NO ₃ /litre | - | - | - | - | - | - | 21,0 | 20,8 | - |
| Biodiversity | Land protected areas | % of total | 20,2 | 21,4 | - | 21,3 | 21,3 | 21,4 | 26,2 | 26,4 | 26,4 |
| | Marine protected areas | % of total | 5,2 | - | - | 5,4 | - | 6,9 | 10,7 | - | 12,1 |
| | Organic farming | % of total utilised agricultural area | 14,0 | 14,7 | 15,2 | 15,2 | 16,0 | 16,8 | 8,5 | 9,1 | - |
| | | | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2020 | 2021 | 2022 |
| Mobility | Share of zero-emission vehicles ⁽⁹⁾ | % in new registrations | 0,1 | 0,3 | 0,6 | 2,4 | 4,6 | 3,6 | 5,4 | 8,9 | 10,7 |
| | Number of AC/DC recharging points (AFIR categorisation) | | - | - | - | 13379 | 24122 | 32936 | 188626 | 330028 | 432518 |
| | Share of electrified railways | % | 71,4 | 71,6 | 71,6 | - | 71,6 | 70,2 | 56,6 | n/a | 56,6 |
| | Hours of congestion per commuting driver per year | | 37,4 | 37,3 | 37,2 | - | n/a | n/a | 28,7 | n/a | n/a |

Sources: (1) Historical and projected emissions, as well as Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Decision (for 2020) are measured in global warming potential (GWP) values from the 4th Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Regulation (for 2030) are in GWP values from the 5th Assessment Report (AR5). The table above shows the base year emissions 2005 under the Effort Sharing Decision, using AR4 GWP values. Emissions for 2017-2021 are expressed in percentage change from 2005 base year emissions, with AR4 GWP values. 2021 data are preliminary. The table shows the 2030 target under Regulation (EU) 2023/857 that aligns it with the EU's 55% objective, in percentage change from 2005 base year emissions (AR5 GWP). Distance to target is the gap between Member States' 2030 target (with AR5 GWP values) and projected emissions with existing measures (WEM) and with additional measures (WAM) (with AR4 GWP values), in percentage change from the 2005 base year emissions. Due to the difference in global warming potential values, the distance to target is only illustrative. The measures included reflect the state of play as of 15 March 2021.

(2) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2023 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 amending Regulation (EU) 2018/841 (LULUCF Regulation) – Annex IIa, kilotons of CO₂ equivalent, based on 2020 submissions.

(3) Renewable energy and energy efficiency targets and national contributions are in line with the methodology established under Regulation (EU) 2018/1999 (Governance Regulation).

(4) Percentage of total revenue from taxes and social contributions (excluding imputed social contributions). Revenue from the EU Emissions Trading System is included in environmental tax revenue.

(5) Expenditure on gross fixed capital formation for the production of environmental protection services (abatement and prevention of pollution) covering government, industry, and specialised providers.

(6) European Commission, Study on energy subsidies and other government interventions in the European Union, 2022 edition.

(7) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters. This indicator is based on modelling of the current risk from floods, wildfires and windstorms as well as earthquakes, and an estimation of the current insurance penetration rate. The indicator does not provide information on the split between the private/public costs of climate-related disasters. A score of 0 means no protection gap, while a score of 4 corresponds to a very high gap (EIOPA, 2022).

(8) Sulphur oxides (SO₂ equivalent), ammonia, particulates < 10 µm, nitrogen oxides in total economy (divided by GDP).

(9) Battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV).

Italy is progressing with its efforts to reduce dependency on Russian fossil fuels, but important challenges on the electricity transmission and distribution system, on the increase of renewable capacity and the reduction of the energy demand still need to be addressed. Imported fossil fuels represent the bulk of Italy's energy mix. This makes its economy particularly sensitive to global price developments, requiring it to step up efforts on the energy transition. This Annex⁽⁶⁸⁾ sets out actions carried out by Italy to achieve the REPowerEU objectives, including through the implementation of its recovery and resilience plan, in order to improve energy security and affordability while accelerating the clean energy transition, and contributing to enhancing the EU's competitiveness in the clean energy sector⁽⁶⁹⁾.

Despite its high dependence on Russian gas and the 'Early Warning'⁽⁷⁰⁾ issued in February 2022, Italy showed a good level of gas supply security in light of challenging circumstances. Considering its strategic geographical location, Italy's natural gas infrastructure can contribute to the overall security of supply in Europe. Italy fulfilled its gas storage obligations last winter, reaching 95.45% by 1 November 2022 (well above the 80% EU legal obligation), and ended the heating season with a filling gas storage at 60.65% by 15 April 2023⁽⁷¹⁾.

⁽⁶⁸⁾ It is complemented by Annex 6 as the European Green Deal focuses on the clean energy transition, by Annex 8 on the actions taken to mitigate energy poverty and protect the most vulnerable ones, by Annex 9 as the transition to a circular economy will unlock significant energy and resource savings, further strengthening energy security and affordability, and by Annex 12 on industry and single market complementing ongoing efforts under the European Green Deal and REPowerEU.

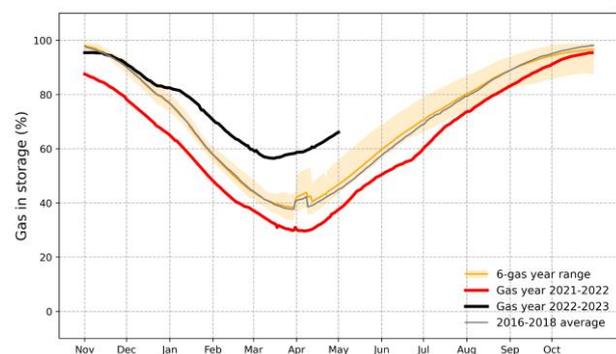
⁽⁶⁹⁾ In line with the Green Deal Industrial Plan COM(2023) 62 final, and the proposed Net-Zero Industry Act COM(2023) 161 final.

⁽⁷⁰⁾ According to Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010.

⁽⁷¹⁾ Regulation of the European Parliament and of the Council amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage and Implementing Regulation (EU) 2022/2301 of 23 November 2022 setting the filling trajectory with intermediary targets for 2023 for each Member State with underground gas storage facilities on its territory and directly interconnected to its market area.

Italy operates nine storage fields⁽⁷²⁾ with a total capacity of around 19.8 billion cubic metres (bcm), representing 26% of its total yearly demand. Gazprom halved the amount of gas sent to Italy in June 2022. Since then, Italy put in place determined energy diplomacy and diversified gas supplies coming through the pipeline from Libya, Algeria and Azerbaijan. Extra volumes are expected to come from Qatar, Egypt and the US. Following a legal issue, Gazprom resumed gas deliveries to Italy via Austria on 5 October 2022. Moreover, Italy received 1.36 bcm of Russian gas via liquefied natural gas (LNG) in 2022.

Graph A7.1: Gas storage levels in Italy



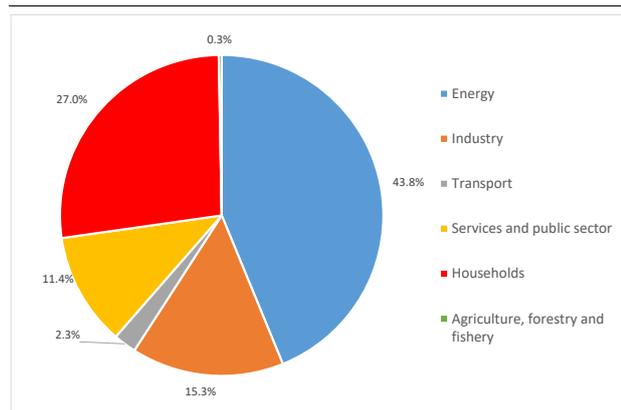
Source: JRC calculation based on AGSI+ Transparency Platform, 2022 (Last update 2 May 2023)

The security of supply of the gas system and electricity system are closely interlinked, and Italy has adopted a comprehensive plan with demand response measures. Electricity security in Italy had a share of 42% coming from renewable sources in 2021, with hydropower as the leading source, and 59% coming from thermal power plants (49.9% natural gas, 5% coal and 1.5% petroleum) (Annex 6). To address the risk of supply disruption and high energy prices, Italy launched national campaigns on energy efficiency, approved mandatory energy saving measures in public and residential buildings, adopted heating and cooling measures, and provided direct support to customers. Voluntary and mandatory energy saving measures are expected to deliver 6.2 bcm

⁽⁷²⁾ Through its subsidiary company Stogit, Snam is the largest storage operator in Italy and one of the largest in Europe. It manages nine storage facilities: 5 in Lombardy (Brugherio, Bordolano, Ripalta, Sergnano and Settala), 3 in Emilia-Romagna (Cortemaggiore, Minerbio, Sabbioncello), and 1 in Abruzzo (Fiume Treste). It operates in synergy with the company's transport and regasification infrastructure, ensuring energy security for the country.

of natural gas savings in 2023 ⁽⁷³⁾. Recent measures and the high energy prices led to a gas demand reduction of about 19% over the period August 2022 – March 2023 when compared to the previous 5-years average. However, no direct interlinkages were established between the short-term emergency energy saving measures and medium-term structural energy efficiency improvements.

Graph A7.2: **Share of gas consumption per sector, 2021**



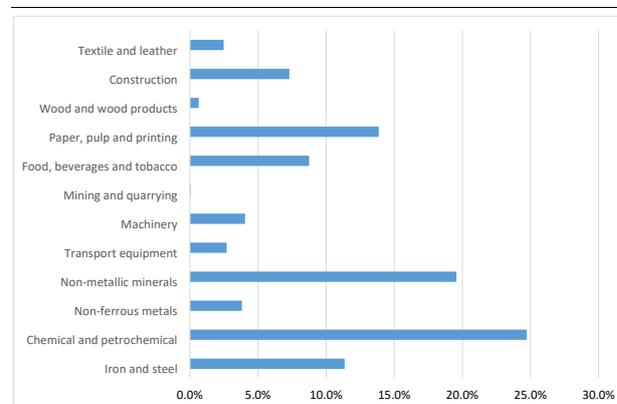
Source: Eurostat

On natural gas infrastructure, Italy has interconnectors with Switzerland, Austria, Slovenia and Albania via the Trans Adriatic Pipeline as well as 3 LNG terminals. Moreover, the Italian government mandated its transmission system operator Snam to purchase and set up two additional floating storage and regasification units near the cities of Piombino (Tuscany) and Ravenna (Emilia Romagna) with an annual regasification capacity of 5 bcm. They benefit from an exemption from the environmental impact assessment to speed up implementation. One of the terminals has been commissioned in 2023 and the second one in 2024. To increase its import transmission, the Italian transmission system operator is considering improving its internal transmission network, upgrading the interconnection point with Austria, and potentially also building an offshore pipeline with Spain. If the Southern Gas Corridor is enhanced, the capacity of the Trans Adriatic Pipeline would need to be increased. In parallel, the internal bottlenecks in the Italian network would need to be removed by realising the Projects of Common Interest Adriatica Line and the Matagiola-Massafra pipeline.

⁽⁷³⁾ Italian national plan to contain national gas consumption (*Piano nazionale di contenimento dei consumi di gas naturale*) 2022.

Italy is further upgrading its grid infrastructure, but further infrastructure investments would be needed to accommodate a higher share of renewable electricity. Italy will carry out investments to strengthen the grid in order to facilitate the integration of renewable energy sources. Its cross-border electricity interconnection level is approximately 5% in 2023, still significantly below the interconnection target of 10% for 2020 and 15% for 2030. Electricity interconnections currently in the pipeline with Austria and Slovenia would help progress towards the target. Besides the cross-border interconnections, Italy also needs to make progress with the internal bottlenecks in the energy grids, in particular the limited electricity transmission capacity to connect areas with high renewable generation capacity and the high energy consumption centres. The 2021 Ten Year Network Development Plan envisages over EUR 18 billion in investments in the national electricity transmission grid until 2030 to enable the energy transition and integrate the growing amount of variable renewable production capacity from the south and the islands.

Graph A7.3: **Gas consumption per industrial sector, 2021 (% of total gas consumption in industry)**



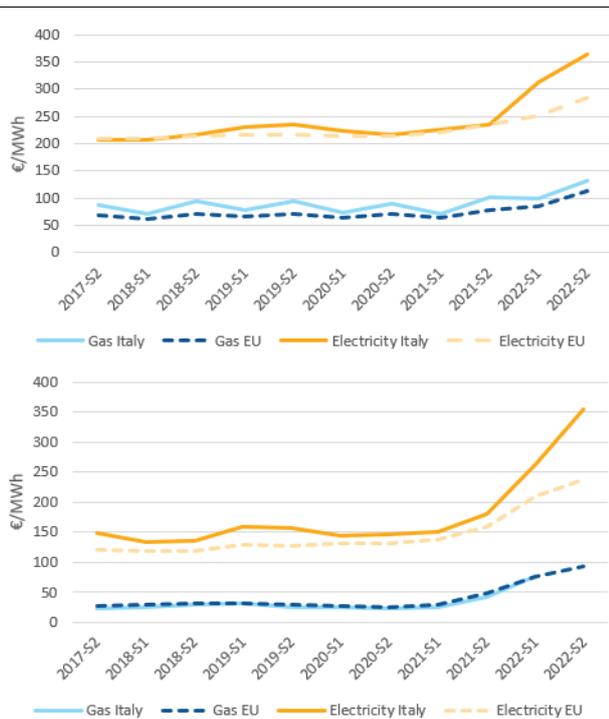
Source: Eurostat

Despite the measures taken by Italy to mitigate the soaring energy prices, households, in particular low-income families, and industries are being severely impacted. Based on Eurostat 2021 data, Italy uses mainly gas for power generation (32.5 bcm) and household consumption (20 bcm). This puts households at risk and their ability to cover basic needs such as heating or transport ⁽⁷⁴⁾. Similarly,

⁽⁷⁴⁾ Annex 8 looks at the impact of soaring energy prices on the most vulnerable households.

the surge in energy prices has had a considerable impact on the Italian industry, which consumes around 12 bcm of gas. Industrial sectors such as non-metallic minerals, chemicals, paper, iron and steel are heavily exposed to energy shocks and are experiencing growing pressure to either raise their prices to safeguard margins or reduce production due to the high share of energy consumption.

Graph A7.4: Italy's retail energy prices for industry (top) and households (bottom)



(1) On electricity, the band consumption is DC for households and ID for industry
(2) On gas, the band consumption is D2 for households and I4 for industry

Source: Eurostat

Italy has high ambitions to transform its energy system, and further policy support could steer its potential for decarbonising the economy. Renewable capacity grew very slowly in the last period. From 2016 to 2021, Italy added only around 5.8 GW (slightly more than 1 GW per year) to its renewable energy capacity, reaching a total of 58 GW. In 2021, the installed solar PV capacity increased by 4.4% compared to the year before (22.6 GW total capacity), while wind grew by 3.5% (11.3 GW total capacity). Data from 2022 show an accelerating trend, with around 3 GW of additional capacity installed⁽⁷⁵⁾.

⁽⁷⁵⁾ Terna, renewable installed capacity, <https://www.terna.it/it/sistema-elettrico/dispacciamento/fonti-rinnovabili>

This was mostly due to the growth in solar PV (2.5 GW of new capacity added), especially decentralised installations, whose growth was driven by simplified permitting procedures and support schemes. Nevertheless, progress is still too slow regarding permitting for larger renewable generation facilities. The permitting timeline for solar PV and wind is 1.5 and 5 years respectively. This is mostly due to the fragmentation of competencies and the involvement of many stakeholders. Slow procedures are the main reason for the low participation rate in auctions for renewable energy deployment. A contribution to renewables development could come from innovative forms of deployment such as agri-PV, which will be supported under the recovery and resilience plan. Offshore wind energy represents an important potential in Italy to reduce dependence on fossil fuels. In 2022, Italy completed the construction of its first offshore wind farm in Taranto after a lengthy permitting process. The development of innovative floating offshore renewables is supported by the RRP Mission 2 to trigger innovation in the sector. Wind power, including offshore wind power, can boost the recovery, but some structural revisions hindering the development of the sector need to be addressed.

There is still potential to further explore key sectors to meet the country's renewables penetration and decarbonisation targets. The national association of biogas/biomethane producers has estimated Italy's potential for biomethane production in 2030 to be approximately 8 bcm/year. Italy has put in place large investments in biomethane, including as part of its RRP. It adapted its legislative framework to incentivise the use of biomethane, but further implementation measures are required, in particular to set specific tariffs. Another example is provided by geothermal energy, where Italy has been a historical frontrunner, but the sector has seen limited development in recent years. A specific plan to develop geothermal potential, notably to reduce dependency on imported fossil gas, has not been developed yet.

Improving efficiency potential in key sectors could contribute to Italy's energy independence, affordability and decarbonisation objectives. Energy efficiency of buildings will remain a key priority for Italy, in particular with regard to the worst performing buildings. Its building stock has considerable

energy efficiency potential, considering in particular the large share of old and low energy buildings. For instance, in the residential sector, 65% of buildings are over 45 years old, i.e. before the first law on energy savings was passed. At the moment, Italian public budget financing schemes do not target worst performing buildings, low-income households and deep renovations. Most of the schemes to support energy renovations in residential buildings are grant-based such as the successful *Conto Termico* for energy efficiency measures and on-site renewables, and/or the well-known 110% Superbonus tax credit, and the use of financial instruments is rather limited. A stable targeted support framework could ensure that the goals envisaged in Italy's Long-term Renovation Strategy are achieved. Italy is not carrying out checks on products covered by ecodesign and energy labelling. This generates serious concerns with respect to the level playing field among economic operators and uncertainty as to the compliance levels of the concerned products, and therefore possible missed energy and CO₂ savings⁽⁷⁶⁾.

Increased energy efficiency in industry and tertiary sectors remains key to help boost EU energy independence, competitiveness and decarbonisation. The key enabling measures to increase energy efficiency in businesses are the Italian white certificate scheme and the positive coverage in terms of the energy audit obligation. However, the public budget support available to increase energy efficiency uptake in businesses, and in particular in micro, Small and Medium Enterprises, is limited by the small capacity of the National Energy Efficiency Fund⁽⁷⁷⁾ and the absence of dedicated technical support. This limits the possibility to access low-interest finance and implement energy audit recommendations.

Italy has a traditionally strong manufacturing base of low-carbon technologies and components (wind⁽⁷⁸⁾, solar

thermal and solar PV), which it aims to strengthen in order to achieve the decarbonisation objectives. According to EurObserv'ER indicative estimate, the deployment of clean energy technologies had the biggest impact on conventional energy sector employment in Italy, among other countries⁽⁷⁹⁾. In 2021, the renewable energy direct and indirect employment (all technologies) in Italy totalled 68.173 jobs⁽⁸⁰⁾. Public investment in research and innovation (R&I) in the energy field⁽⁸¹⁾ decreased from 0.036% in 2014 to 0.024% in 2019 (as a share of GDP), while no absolute change (as a share of GDP) was recorded over the same period for private investment in R&I⁽⁸²⁾ (83). There was an upward trend in venture capital invested⁽⁸⁴⁾ in climate

⁽⁷⁹⁾ EurObserv'ER. 2022. The State of Renewable Energies in Europe. Edition 2021 – 20th EurObserv'ER Report.

⁽⁸⁰⁾ Source IRENA and ILO (2022), Renewable energy and jobs: Annual review 2022, International Renewable Energy Agency, Abu Dhabi and International Labour Organization, Geneva. Data are principally for 2021, with some dates for 2020 and a few instances in which only earlier information is available. The data for hydropower include direct employment only and for other technologies include both direct and indirect employment wherever possible. 'Other Technologies' include jobs not broken down by individual renewable energy technologies.

⁽⁸¹⁾ Renewables, smart systems, efficient systems, sustainable transport, carbon capture, utilisation and storage, and nuclear safety, COM(2015) 80 Final (Energy Union Package).

⁽⁸²⁾ Private R&D spending on Energy Union topics was 0.041% in 2014 and 0.041% in 2019 as a share of GDP (EUR 668.6 million and EUR 731.2 million respectively). Source: JRC SETIS (2022) https://setis.ec.europa.eu/publications/setis-research-and-innovation-data_en Mountraki, A., Georgakaki, A., Shtjefni, D., Ince, E. and Charleston, G., Randl data for SETIS and the State of the Energy Union Report, European Commission, 2022, JRC130405. <http://data.europa.eu/89h/jrc-10115-10001>

⁽⁸³⁾ Italy is among the 5 EU countries with the highest public investment in solar energy technologies (peaking at 0.0034 of GDP in 2014). Also among the 5 countries with the highest level of private investments in PV for the period 2010-2018. Source: JRC analysis based on (Fiorini et al., 2017; Pasimeni, Fiorini and Georgakaki, 2019) in Clean Energy Technology Observatory: Photovoltaics in the European Union 2022 Status Report on Technology Development, Trends, Value Chains and Markets.

⁽⁸⁴⁾ Venture capital investment includes venture capital deals (all stages) and private equity growth/expansion deals (for companies that have previously been part of the portfolio of a venture capital investment firm). Venture capital deals are defined as early-stage deals (including pre-seed, accelerator/incubator, angel, seed, series A and B occurring within 5 years of the company's founding date) and later-stage deals (usually series B to series Z+ rounds and/or occurring more than 5 years after the company's founding date, undisclosed series and private equity growth/expansion).

⁽⁷⁶⁾ The internet-supported information and communication system for the pan-European market surveillance

⁽⁷⁷⁾ The Italian National Energy Efficiency Fund has a capacity of EUR 310 million to support the financing of energy efficiency measures in businesses and public authorities.

⁽⁷⁸⁾ Italy is one of the leading markets in the EU with a substantial number of manufacturers. The WindEurope/WoodMackenzie (2020) data set covers Tier1 and Tier2 component manufacturers of the following components: Nacelle, Bearings, Blades, Converters, Gearboxes, Generators, Castings, Forgings, Towers.

tech start-ups and scale-ups, which are at the forefront of innovation (1.1% in 2021 compared to 0.1% in 2019 as a percentage of total venture capital invested in Italy) ⁽⁸⁵⁾, which follows the EU growing trend in 2021. More public and private investment in clean energy R&I, like the TANGO (iTaliAN pv Giga factOry) ⁽⁸⁶⁾ in Catania (Sicily) are pivotal in bridging the gap between R&I and market uptake and boosting EU competitiveness.

⁽⁸⁵⁾ The analysis presented in this section is based on the JRC calculation of Pitchbook data. PitchBook currently identifies more than 2 750 venture capital companies in its climate tech vertical.

⁽⁸⁶⁾ The project was selected as part of EU's first Innovation Fund call for large-scale projects. ENEL had already set up a 200 MW heterojunction pilot production line in its production plant in Catania (Sicily) back in 2017. With the TANGO project, the capacity of ENEL's cell production plant will increase to 400 MW in September 2023 and 3,000 MW by July 2024. The total investment in the new module factory will reach EUR 600 million, with the European Union and the Italian government contributing up to EUR 188 million. Enel Green Power will initially target the European market, where it is required to sell up to 60% of its products, due to conditions related to the aforementioned EU funding. This will generate a total of 1,000 indirect jobs, including current ones, by 2024, according to the company.

Table A7.1: Key Energy Indicators

| | ITALY | | | | EU | | | | |
|--|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| | 2018 | 2019 | 2020 | 2021 | 2018 | 2019 | 2020 | 2021 | |
| ENERGY DEPENDENCE | Import Dependency [%] | 76% | 77% | 73% | 74% | 58% | 61% | 57% | 56% |
| | of Solid fossil fuels | 101% | 99% | 93% | 97% | 44% | 44% | 36% | 37% |
| | of Oil and petroleum products | 90% | 93% | 89% | 84% | 95% | 97% | 97% | 92% |
| | of Natural Gas | 93% | 95% | 93% | 94% | 83% | 90% | 84% | 83% |
| | Dependency from Russian Fossil Fuels [%] | | | | | | | | |
| | of Hard Coal | 36% | 43% | 56% | 62% | 40% | 44% | 49% | 47% |
| | of Crude Oil | 9% | 14% | 11% | 10% | 30% | 27% | 26% | 25% |
| | of Natural Gas | 48% | 47% | 43% | 40% | 40% | 40% | 38% | 41% |
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | |
| ELECTRICITY | Gross Electricity Production (GWh) | 282,993 | 289,768 | 295,830 | 289,708 | 293,853 | 280,531 | 289,070 | - |
| | Combustible Fuels | 191,458 | 198,693 | 208,824 | 192,129 | 195,084 | 180,805 | 189,132 | - |
| | Nuclear | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - |
| | Hydro | 46,969 | 44,257 | 38,025 | 50,503 | 48,154 | 49,495 | 47,478 | - |
| | Wind | 14,844 | 17,689 | 17,742 | 17,716 | 20,202 | 18,762 | 20,927 | - |
| | Solar | 22,942 | 22,104 | 24,378 | 22,654 | 23,689 | 24,942 | 25,039 | - |
| | Geothermal | 6,185 | 6,289 | 6,201 | 6,105 | 6,075 | 6,026 | 5,914 | - |
| | Other Sources | 595 | 736 | 661 | 601 | 650 | 501 | 579 | - |
| | Net Imports of Electricity (GWh) | 46,378 | 37,027 | 37,761 | 43,899 | 38,141 | 32,200 | 42,790 | - |
| | As a % of electricity available for final consumption | 16% | 13% | 13% | 14% | 13% | 11% | 14% | - |
| Electricity Interconnection (%) | - | - | - | - | 8.7% | 8.8% | 3.8% | 4.0% | |
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | |
| DIVERSIFICATION OF GAS SUPPLIES | Gas Consumption (in bcm) | 67.5 | 70.9 | 75.2 | 72.7 | 74.3 | 70.9 | 76.1 | 68.5 |
| | Gas Imports - by type (in bcm) | 67.1 | 71.5 | 77.5 | 76.6 | 84.9 | 78.7 | 82.9 | - |
| | Gas imports - pipeline | 61.3 | 65.3 | 69.7 | 67.9 | 71.1 | 66.4 | 73.0 | - |
| | Gas imports - LNG | 5.8 | 6.2 | 7.9 | 8.7 | 13.8 | 12.3 | 9.9 | - |
| | Gas Imports - by main source supplier (in bcm) (1) | | | | | | | | |
| | Russia | 27.7 | 26.8 | 33.1 | 32.9 | 33.4 | 28.7 | 29.2 | - |
| | Algeria | 7.7 | 19.6 | 20.2 | 18.8 | 16.5 | 18.4 | 23.8 | - |
| | Qatar | 11.5 | 11.0 | 13.5 | 13.1 | 13.1 | 13.9 | 13.7 | - |
| | Azerbaijan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.2 | - |
| | Others | 20.2 | 14.0 | 10.7 | 11.8 | 21.8 | 17.7 | 9.0 | - |
| | 2019 | 2020 | 2021 | 2022 | | | | | |
| DIVERSIFICATION OF GAS SUPPLIES | LNG Terminals | | | | | | | | |
| | Number of LNG Terminals (2) | 3 | 3 | 3 | 3 | | | | |
| | LNG Storage capacity (m3 LNG) | 487,500 | 487,500 | 487,500 | 487,500 | | | | |
| | Underground Storage | | | | | | | | |
| Number of storage facilities | 14 | 14 | 14 | 14 | | | | | |
| Operational Storage Capacity (bcm) | 20.1 | 20.2 | 20.2 | 19.8 | | | | | |
| | 2019 | 2020 | 2021 | 2022 | | | | | |
| CLEAN ENERGY | VC investments in climate tech start-ups and scale-ups (EUR Mln) (3) | 1.0 | 0.1 | 15.9 | n.a. | | | | |
| | as a % of total VC investments in Italy | 0.1% | 0.0% | 1.1% | n.a. | | | | |
| | Research & Innovation spending in Energy Union R&I priorities | | | | | | | | |
| | Public R&I (EUR mln) | 417.3 | n.a. | n.a. | n.a. | | | | |
| | Public R&I (% GDP) | 0.023% | n.a. | n.a. | n.a. | | | | |
| | Private R&I (EUR mln) | 731.2 | n.a. | n.a. | n.a. | | | | |
| Private R&I (% GDP) | 0.04% | n.a. | n.a. | n.a. | | | | | |

(1) The ranking of the main suppliers is based on the latest available figures (for 2021)

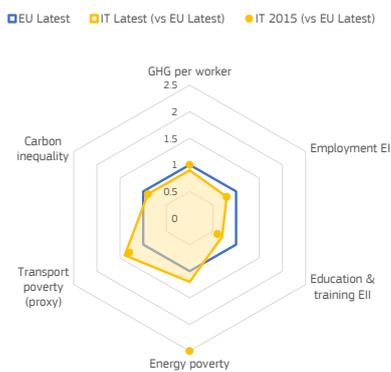
(2) FSRU included

(3) Venture Capital investments include Venture Capital deals (all stages) and Private Equity Growth/Expansion deals (for companies that have previously been part of the portfolio of a VC investment firm).

Source: Eurostat, Gas Infrastructure Europe (Storage and LNG Transparency Platform), JRC SETIS (2022), JRC elaboration based on PitchBook data (06/2022)

This Annex monitors Italy's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, notably for workers and households in vulnerable situations. The number of jobs in the green economy has quickly risen. To ensure a fair green transition in line with the Council Recommendation ⁽⁸⁷⁾, upskilling and reskilling measures will promote smooth labour market transitions and the implementation of REPowerEU. Italy's recovery and resilience plan (RRP) outlines crucial reforms and investment for a fair green transition ⁽⁸⁸⁾, such as significant investment in energy efficiency in residential and public buildings, sustainable transport and renewable energy, complementing the territorial just transition plans and action supported by the European Social Fund Plus (ESF+).

Graph A8.1: Fair transition challenges in Italy



Source: Eurostat, EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (see Table A8.1).

Employment in Italy's most affected sectors remains stable while the green economy is expanding, but workers in declining activities need active support. The greenhouse gas (GHG) emissions intensity of Italy's workforce declined from 13.8 to 12.4 tonnes per worker between 2015 and 2021, and is now below the EU average of 13.7 tonnes in 2021 (see Graph A8.1 and Table A8.1). Employment in Italy's energy-intensive industries (EII) represented a share of 2.4% of total employment in 2020 (EU average: 3.0%). Employment in mining and quarrying decreased by 9.8% since 2015 (to around 21 000

workers) along with the decline of coal and lignite mining. Total jobs in the environmental goods and services sector grew by 10.5% (to 435 677) during 2015-19 (EU: 8.3%), reaching 1.7% of total employment, close to the EU average (see Annex 9 for circular jobs specifically). The job vacancy rate in construction, a key sector for the green transition, is 3.3% vs 4.0% in the EU (2022) ⁽⁸⁹⁾. Since 2016, through the Green&Blue Economy project, local authorities in Sardinia, in cooperation with business communities, offer various training courses related to roles within the green economy.

Upskilling and reskilling in declining and transforming sectors has slightly increased. Skills are key for smooth labour market transitions and preserving jobs in transforming sectors. In energy-intensive industries, workers' participation in education and training has increased from 6.3% in 2015 to 7.7% in 2022, remaining below the EU average (10.4%). In 2020, green skills were considered important for around 38% of vacancies ⁽⁹⁰⁾, while in 2022 43% of citizens believed they did not have the necessary skills to contribute to the green transition (EU: 38 %) ⁽⁹¹⁾ (cf. Annex 15).

To address this challenge, the Just Transition Mechanism assists workers and jobseekers through up- and reskilling, as well as support for job creation on green subjects. Support focuses particularly on two territories: Sulcis Iglesiente, headquarter of Italy's last coal mine, and Taranto, which hosts one of Europe's largest steel mills (ILVA). Furthermore, through funding under its RRP and REACT-EU, a broader training offer is financed at national level, including innovative doctorate-level studies relevant to green skills as well as training for both employed workers and those looking for a job (Fondo e Piano Nuove Competenze). In Italy, around 14% of ESF+ funding contributes to green skills and jobs.

Significant progress has been made on people's ability to keep homes adequately warm, but the spike in energy prices is expected to worsen the situation. The share of

⁽⁸⁷⁾ Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

⁽⁸⁸⁾ See 2022 Country Report (Annex 6 and Annex 3) for an overview.

⁽⁸⁹⁾ Eurostat (JVS_A_RATE_R2)

⁽⁹⁰⁾ European Commission, European Centre for Expertise (ECE) article on skills shortages and structural changes in the labour market (forthcoming).

⁽⁹¹⁾ Special Eurobarometer 527. Fairness perceptions of the green transition (May – June 2022).



Table A8.1: Key indicators for a fair transition in Italy

| Indicator | Description | IT 2015 | IT Latest | EU Latest |
|---------------------------|---|---------|-------------|-------------|
| GHG per worker | Greenhouse gas emissions per worker - CO2 equivalent tonnes | 13.8 | 12.4 (2021) | 13.7 (2021) |
| Employment EII | Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24), automotive (C29) - % | 2.5 | 2.4 (2020) | 3 (2020) |
| Education & training EII | Adult participation in education and training (last 4 weeks) in energy-intensive industries - % | 6.3 | 7.7 (2022) | 10.4 (2022) |
| Energy poverty | Share of the total population living in a household unable to keep its home adequately warm - % | 17 | 8.1 (2021) | 6.9 (2021) |
| Transport poverty (proxy) | Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport - % | 47.8 | 52.3 (2023) | 37.1 (2023) |
| Carbon inequality | Average emissions per capita of top 10% of emitters vs bottom 50% of emitters | 4.7 | 4.7 (2020) | 5 (2020) |

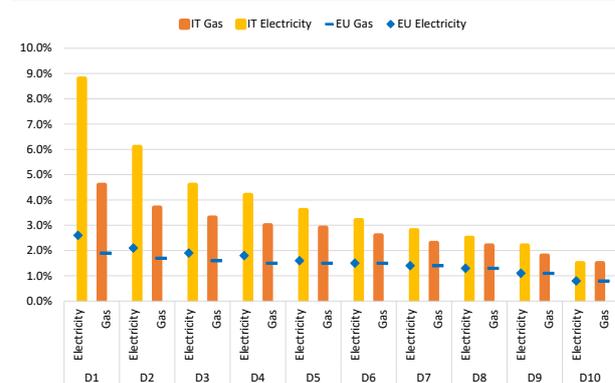
Source: Eurostat (env_ac_ainah_r2, nama_10_a64_e, ilc_mdcs01), EU Labour Force Survey (break in time series in 2021), EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (WID).

those unable to keep their homes adequately warm declined to 8.1% in 2021 (2015: 17%)⁽⁹²⁾. In 2021, 17% of the population at risk of poverty (EU: 16.4%) and 8.3% of lower middle-income households (in deciles 4-5) were affected (EU: 8.2%). Energy poverty is higher in the South and on the islands (around 14% in both), and lower in urban and suburban areas.⁽⁹³⁾ Before the energy price hikes, an estimated 20.8% of the total population and 49.1% of the (expenditure-based) at-risk-of-poverty (AROP) population had residential expenditure budget shares on electricity, gas, and other fuels⁽⁹⁴⁾ above 10% of their household budget (EU: 26.9% and 48.2%, respectively). The RRP includes measures stimulating the construction of efficient district heating networks in urban areas.

The increased energy prices in 2021-2023 negatively affect household budgets, in particular for low-income groups. As a result of energy price changes during the August 2021 to January 2023 period relative to the 18 months prior (cf. Annex 7), in the absence of policy support and behavioural responses, the share of individuals living in households which spend more than 10% of their budget on energy would have increased by 30.0 percentage points (pps) for the whole population and by 35.3 pps among the (expenditure-based) AROP population, much more than for the EU (16.4 pps and 19.1 pps, respectively).⁽⁹⁵⁾ Expenditure shares of low and lower-middle income groups would have increased the most, particularly for electricity, and to a lower extent for gas, as shown in Graph A8.2. By contrast, transport fuel price increases in Italy

would affect the middle class in particular. Among the (expenditure-based) AROP population, the share of individuals living in households with budget shares for private transport fuels⁽⁹⁶⁾ above 6% would have increased less than the EU average (4.5 pps vs 5.3 pps), reaching 52.3% in January 2023 (EU: 37.1%) due to the increase in transport fuel prices.

Graph A8.2: Distributional impacts of energy prices due to rising energy expenditure (2021-2023)



Mean change of energy expenditure as a percentage (%) of total expenditure per income decile (D) due to observed price changes (August 2021 - January 2023) relative to the 18 months prior, excl. policy support and behavioural responses. **Source:** EMPL-JRC GD-AMEDI/AMEDI+ projects, based on Household Budget Survey 2015 and Eurostat inflation data for CPO451 and CPO452.

Access to public transport displays an urban-rural divide. Around half the population perceive public transport to be available (48% vs 55% in the EU), affordable (52% vs 54%) and of good quality (50% vs 60%). As regards these perceptions, rural areas in Italy perform worse than urban areas, yet are still better when compared to rural areas in the EU overall⁽⁹⁷⁾. The average carbon footprint of the top 10% of emitters among the population in Italy is about 4.8 times higher than that of the bottom 50% (see Graph A8.1), i.e. slightly less pronounced than the

⁽⁹²⁾ Energy poverty is a multi-dimensional concept. The indicator used focuses on an outcome of energy poverty. Further indicators are available at the [Energy Poverty Advisory Hub](#).

⁽⁹³⁾ Osservatorio Italiano sulla Povertà Energetica, [link](#).

⁽⁹⁴⁾ Products defined according to the European Classification of Individual Consumption according to Purpose (ECOICOP): CPO45.

⁽⁹⁵⁾ [EMPL-JRC GD-AMEDI/AMEDI+](#); see details in the related technical brief.

⁽⁹⁶⁾ ECOICOP: CPO722.

⁽⁹⁷⁾ Special Eurobarometer 527.

EU average (5.0 times). In Italy, the average levels of air pollution in 2020 stood above the EU average (15 vs 11.2 $\mu\text{g}/\text{m}^3$ PM2.5), with 94% of the population living in regions exposed to critical levels of air pollution⁽⁹⁸⁾, leading to significant health impacts, in particular on vulnerable groups, and 52 300 premature deaths annually⁽⁹⁹⁾.

⁽⁹⁸⁾ Two times higher than the recommendations in the WHO Air Quality Guidelines (annual exposure of $5\mu\text{g}/\text{m}^3$)

⁽⁹⁹⁾ [EEA- Air Quality Health Risk Assessment](#)

The circular economy transition is key to delivering on the EU’s climate and environmental goals and provides large socio-economic benefits. It spurs job growth, innovation and competitiveness and fosters resilience and resource security. The circularity transition of industry, the built environment and agri-food can generate significant environmental improvements (see Annex 6), as they rank among the most resource-intensive systems.

Italy is on track to meet the EU’s circular economy goals, although there remain areas in which improvement is needed. The EU’s 2020 circular economy action plan (CEAP) aims at doubling circular material use by 2030 vs 2020. Italy’s circular use of material increased from 17.8% in 2016 to 18.4% in 2021, well above the EU 2020 average of 11.7%. The CEAP also aims to significantly decrease the EU’s material footprint. Italy’s material footprint at 9.8 tonnes/head was well below the EU average of 13.7 tonnes/head in 2020. Despite limited data availability, the labour market benefits of the circular transition are materialising, with an increase in direct circular jobs since 2016 (see Annex 8). As regards health and safety in circular jobs, fatal accidents in waste management and materials recovery are above the average of all economic sectors in Italy but below the EU average⁽¹⁰⁰⁾.

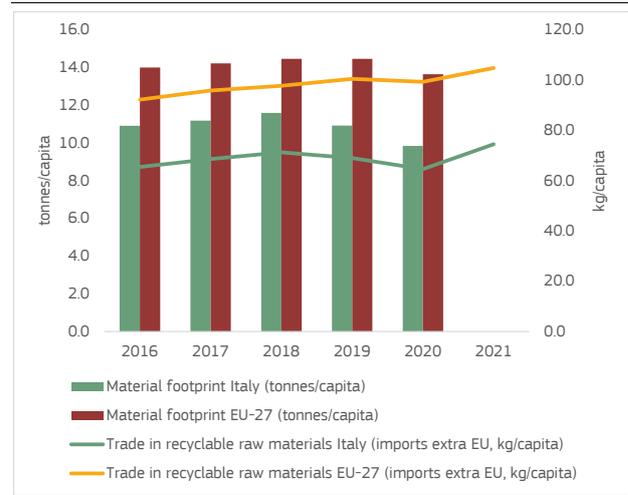
Italy adopted a national strategy for the circular economy in June 2022. Italy also has a national circular economy network and platform. Furthermore, Italy adopted a national programme for waste management⁽¹⁰¹⁾. Italy had a recovery and resilience plan milestone in 2022 for setting selection criteria for flagship circular economy projects. Since 2021 the Commission’s technical support instrument has been supporting a project on measuring circular economy processes, and in 2023 a project is starting up on industrial ecosystems for sustainable tourism. Regions in Italy are at different stages of development in terms of circular economy policies, with those in the centre-north more advanced⁽¹⁰²⁾.

⁽¹⁰⁰⁾Eurostat [HSW_N2_02] for NACE Rev. 2 sector E38; 5.70 fatal accidents p.100 000 employed in 2018-2020 vs 2.58 for all sectors in IT; 6.33 in the EU-27 for sector E38.

⁽¹⁰¹⁾Ministry of Environment and Energy Security

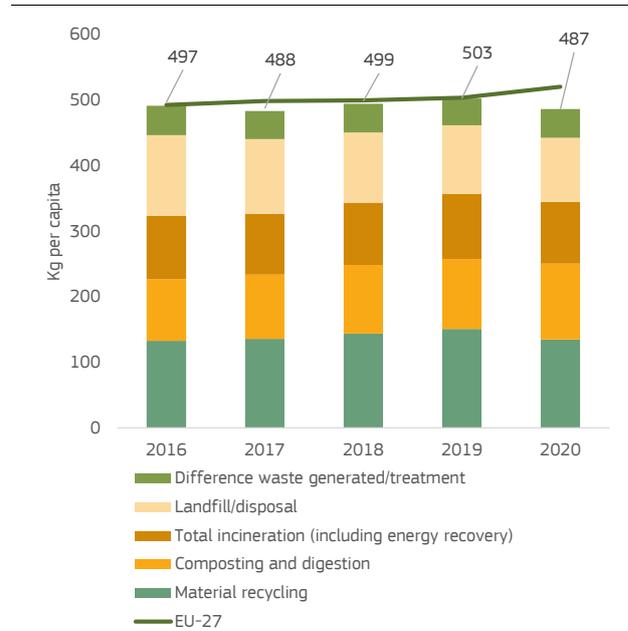
⁽¹⁰²⁾Politecnico di Milano, 2022.

Graph A9.1: Trend in material use



Source: Eurostat

Graph A9.2: Treatment of municipal waste



Source: Eurostat

Italy demonstrates steady improvements in waste management performance despite regional differences. There has been a consistent increase in recycling (51.4% in 2020 vs the EU average of 48.5% in 2021⁽¹⁰³⁾) and a decrease in landfilling (with a 20% share in 2020). The centre and south of the country perform less well than the north⁽¹⁰⁴⁾, with a lower separate collection rate and recycling performance and the

⁽¹⁰³⁾N.B. no data available for Italy for 2021

⁽¹⁰⁴⁾ISPRA, [Rapporto Rifiuti Urbani 2022](#), (e.g. p. 40 on separate collection by region & p. 239 on quantity-based pricing).



Table A9.1: Overall and systemic indicators on circularity

| AREA | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | EU-27 | Latest year EU-27 |
|---|-------|------|-------|-------|-------|------|-------|-------------------|
| Overall state of the circular economy | | | | | | | | |
| Material footprint (tonnes/capita) | 10.9 | 11.2 | 11.6 | 10.9 | 9.8 | - | 13.7 | 2020 |
| YoY growth in persons employed in the circular economy (%) ¹ | 0.0 | 0.5 | - | 3.4 | - | - | 2.9 | 2019 |
| Water exploitation index plus (WEI+) (%) | 9.8 | 14.1 | 7.3 | 7.3 | - | - | 3.6 | 2019 |
| Industry | | | | | | | | |
| Resource productivity (purchasing power standard (PPS) per kilogram) | 3.5 | 3.6 | 3.6 | 3.6 | 3.7 | 3.5 | 2.3 | 2021 |
| Circular material use rate (%) ² | 17.8 | 18.4 | 18.8 | 19.5 | 20.6 | 18.4 | 11.7 | 2021 |
| Recycling rate (% of municipal waste) | 45.9 | 47.8 | 49.8 | 51.4 | 51.4 | - | 49.6 | 2021 |
| Built environment | | | | | | | | |
| Recovery rate from construction and demolition waste (%) ³ | 98.0 | - | 98.0 | - | 98.0 | - | 89.0 | 2020 |
| Soil sealing index (base year = 2006) ⁴ | 103.1 | - | 106.4 | - | - | - | 108.3 | 2018 |
| Agri-food | | | | | | | | |
| Food waste (kg per capita) ⁵ | - | - | - | - | 146.0 | - | 131.0 | 2020 |
| Composting and digestion (kg per capita) | 94.0 | 98.0 | 105.0 | 107.0 | 116.0 | - | 100.0 | 2021 |

(1) Persons employed in the circular economy only tracks direct jobs in selected sub-sectors of NACE codes E, C, G and S; (2) the circular material use rate measures the share of material recovered and fed back into the economy in overall material use; (3) the recovery rate of construction and demolition waste includes waste which is prepared for reuse, recycled or subject to material recovery, including through backfilling operations; (4) soil sealing: 2016 column refers to 2015 data; (5) food waste includes primary production, processing and manufacturing, retail and distribution, restaurants and food services, and households.

Source: Eurostat, European Environment Agency

use of quantity-based pricing almost exclusively in the north. In June 2022, there were still 23 irregular landfills for which Italy is paying fines. Campania is continuing to pay fines for poor waste management, after it was sanctioned by the Court of Justice of the EU for its previous waste-management policies. Italy is not considered at risk of missing the EU's 2025 targets for recycling of municipal and packaging waste, but efforts are necessary to comply with later-date EU targets.

The industrial system in Italy is increasingly circular. The economy, particularly industry, is more efficient at using materials than the EU average, with a resource productivity of 3.4 PPS per kg in 2021 vs 2.3 for the EU (see Annex 5). Italy's consumption footprint is above the EU average and its material input dependency is almost double the EU average, which can threaten competitive sustainability. Italy performs better than the EU average for SMEs green performance and is a frontrunner on green public procurement.

The built environment system provides an opportunity to increase resource efficiency. The recovery rate of construction and demolition waste has remained steady since 2016 (98% in 2020) and above the EU average (89% in 2020). Soil sealing has increased between 2015 and 2018 at a faster rate than the EU average; ISPRA

estimated 15 ha/day are lost to soil sealing and erosion. A law on containing the loss of land and soil reuse is pending in the Italian parliament. The 2023 budget law sets up a soil protection fund. The restoration of land sites without an owner was also a 2022 RRP milestone. Furthermore, links between land use, water abstraction and circularity underpin the national circular economy strategy.

The agri-food system has yet to design out food waste and efficiently manage water resources. Italy's composting and anaerobic digestion per head has increased and is above the EU average. Increasing anaerobic digestion enhances Italy's autonomy in generating biomethane and/or organic fertilisers. Scope remains for using more efficient techniques to promote water reuse and reduce leakages.

There remains a financing gap in the circular economy, including waste management requiring additional investments. The financing gap was estimated at EUR 3.2 billion per year between 2014 and 2020. Over this period, investment needs were estimated to be at least EUR 6.6 billion per year, while investment baselines were EUR 3.4 billion per year (see Annex 6). Italy is using funds from the ERDF and RRF for

recycling. The capacity gap is estimated at 5.2 million tonnes by 2035 ⁽¹⁰⁵⁾.

⁽¹⁰⁵⁾Cassa Depositi e Presiti, [Brief](#), 2023

(eID), provided via two schemes notified under the eIDAS regulation, continues to increase: The Italian eID card (Carta di Identità elettronica) is notified at level of assurance 'high'. The second scheme, SPID – Public System of Digital Identity, offers eID means offered at levels of assurance 'low', 'substantial', and 'high'.

Table A10.1: Key Digital Decade targets monitored by DESI indicators

| | Italy | | | EU | Digital Decade target by 2030 (EU) |
|--|-------------|-------------|-------------|-------------|------------------------------------|
| | DESI 2021 | DESI 2022 | DESI 2023 | DESI 2023 | |
| Digital skills | | | | | |
| At least basic digital skills | NA | 46% | 46% | 54% | 80% |
| % individuals | | 2021 | 2021 | 2021 | 2030 |
| ICT specialists ⁽¹⁾ | 3.6% | 3.8% | 3.8% | 4.5% | 20 million |
| % individuals in employment aged 15-74 | 2020 | 2021 | 2021 | 2021 | 2030 |
| Digital infrastructure/connectivity | | | | | |
| Fixed Very High Capacity Network (VHCN) coverage | 34% | 44% | 54% | 73% | 100% |
| % households | 2020 | 2021 | 2022 | 2022 | 2030 |
| Fibre to the Premises (FTTP) coverage ⁽²⁾ | 34% | 44% | 54% | 56% | - |
| % households | 2020 | 2021 | 2022 | 2022 | 2030 |
| Overall 5G coverage | 8% | 100% | 100% | 81% | 100% |
| % populated areas | 2020 | 2021 | 2022 | 2022 | 2030 |
| 5G coverage on the 3.4-3.8 GHz spectrum band | NA | NA | 80% | 41% | - |
| % populated areas | | | 2022 | 2022 | 2030 |
| Digitalisation of businesses | | | | | |
| SMEs with at least a basic level of digital intensity | NA | NA | 70% | 69% | 90% |
| % SMEs | | | 2022 | 2022 | 2030 |
| Big data ⁽³⁾ | 9% | 9% | 9% | 14% | 75% |
| % enterprises | 2020 | 2020 | 2020 | 2020 | 2030 |
| Cloud ⁽³⁾ | NA | 52% | 52% | 34% | 75% |
| % enterprises | | 2021 | 2021 | 2021 | 2030 |
| Artificial Intelligence ⁽³⁾ | NA | 6% | 6% | 8% | 75% |
| % enterprises | | 2021 | 2021 | 2021 | 2030 |
| Digitalisation of public services | | | | | |
| Digital public services for citizens | NA | 67 | 68 | 77 | 100 |
| Score (0 to 100) | | 2021 | 2022 | 2022 | 2030 |
| Digital public services for businesses | NA | 79 | 75 | 84 | 100 |
| Score (0 to 100) | | 2021 | 2022 | 2022 | 2030 |
| Access to e-health records | NA | NA | 71 | 71 | 100 |
| Score (0 to 100) | | | 2023 | 2023 | 2030 |

(1) The 20 million target represents about 10% of total employment.

(2) The Fibre to the Premises coverage indicator is included separately as its evaluation will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.

(3) At least 75 % of Union enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

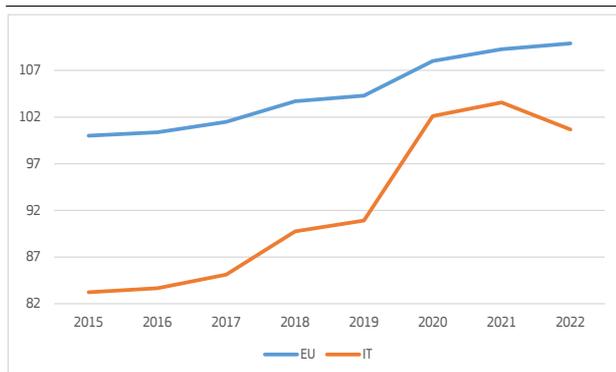
Source: Digital Economy and Society Index



This Annex provides a general overview of the performance of Italy's research and innovation system, which is essential for delivering the twin green and digital transition.

Italy is a 'moderate innovation performer'. The gap between its performance and the overall performance of the EU has widened in 2022. According to the 2022 edition of the European Innovation Scoreboard (EIS)⁽¹¹⁰⁾, the country's innovation performance was 91.6% of the EU average, falling from its peak of the previous year (Graph A11.1). Improvements in business-science linkages, business innovation and government support for business R&D contributed to improving the country's performance between 2015 and 2021. However, these same sub-indicators worsened in 2022, as part of Italy's overall decline in innovation performance.

Graph A11.1: **Innovation performance 2015-2022**



Source: European Innovation Scoreboard, 2022

Rather stagnant public R&D investment and subdued private R&D expenditure result in low overall R&D investment. R&D intensity (defined as gross domestic expenditure on R&D as a percentage of GDP) was 1.48% of GDP in 2021, falling from 2020's peak⁽¹¹¹⁾ and still far below the European average⁽¹¹²⁾. Private R&D investment remains low and below EU levels, while slightly shrinking in 2021 compared to 2020⁽¹¹³⁾. Public expenditure on R&D was 0.55% of GDP in

⁽¹¹⁰⁾2022 European Innovation Scoreboard, Country profile: Italy https://ec.europa.eu/assets/rtd/eis/2022/ec_rtd_eis-country-profile-it.pdf. The EIS provides a comparative analysis of innovation performance in the EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

⁽¹¹¹⁾1.51% in 2020 (source: Eurostat).

⁽¹¹²⁾2.26% in 2021 (source: Eurostat).

⁽¹¹³⁾IT: 0.91% / EU: 1.49% (source: Eurostat, 2021).

2021, recording little improvement since 2015 (0.52%) and remaining well below the European average⁽¹¹⁴⁾. Government support for business R&D has considerably increased since 2015⁽¹¹⁵⁾, mainly due to the extension of R&D tax relief: the number of recipients increased by a factor of 12 between 2014 and 2019⁽¹¹⁶⁾.

The Italian recovery and resilience plan (RRP) is mobilising major investment in research and innovation (R&I), estimated at more than EUR 14 billion for the 2021-2026 period, partially and temporarily helping address underinvestment. The RRP measures, and initiatives such as the tax credit for R&I and the Fund to finance the priorities set out in the National Research Programme, will translate into an annual average increase of around 24% in publicly funded R&D investment⁽¹¹⁷⁾. This increase is an important step forward, although it is unclear if higher public investment will be maintained in the aftermath of the RRP timeframe.

Italy underperforms in human resources for research and innovation, which impacts the performance of the R&I system as a whole. In 2021, the country had one of the lowest tertiary education completion rates in the EU⁽¹¹⁸⁾. According to Eurostat, the number of new graduates in science, technology, engineering and mathematics (STEM subjects) increased between 2010 and 2020, but it is still below the EU average, while data on new STEM doctoral graduates remained stagnant between 2013 and 2020. In addition, average salaries for PhD graduates have been higher abroad than in Italy, with those graduating in STEM PhDs tending to work abroad more frequently⁽¹¹⁹⁾. Such a situation risks further exacerbating the brain drain.

⁽¹¹⁴⁾Source: Eurostat. Eu average in 2021: 0.76%.

⁽¹¹⁵⁾Source: EIS 2022.

⁽¹¹⁶⁾OECD (2021). 'R&D Tax Incentives: Italy, 2021', www.oecd.org/sti/rd-tax-stats-italy.pdf.

⁽¹¹⁷⁾Source: elaboration on Eurostat (2021) and RRP data. The value refers to the annual growth average and not to entire stock of investment for the whole duration of the Italian RRP (2021-2026).

⁽¹¹⁸⁾Share of population aged 25-34 who have successfully completed tertiary education: 28.3% in IT; 41.2% in the EU.

⁽¹¹⁹⁾Source: elaboration on data of the 'Relazione sulla Ricerca e l'innovazione in Italia' – Third edition (2021) by the Italian National Research Council. Data refers to PhD graduates in 2018, 6 years after their graduation (2012).

Table A11.1: **Key innovation indicators**

| Italy | 2010 | 2015 | 2019 | 2020 | 2021 | EU average (1) |
|---|-------|-------|-------|-------|-------|----------------|
| Key indicators | | | | | | |
| R&D intensity (GERD as % of GDP) | 1.22 | 1.34 | 1.46 | 1.51 | 1.48 | 2.26 |
| Public expenditure on R&D as % of GDP | 0.52 | 0.52 | 0.51 | 0.55 | 0.55 | 0.76 |
| Business enterprise expenditure on R&D (BERD) as % of GDP | 0.66 | 0.78 | 0.92 | 0.93 | 0.91 | 1.49 |
| Quality of the R&I system | | | | | | |
| Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country | 10.0 | 10.6 | 10.8 | : | : | 9.8 |
| Patent Cooperation Treaty patent applications per billion GDP (in PPS) | 2.0 | 2.3 | 2.1 | : | : | 3.3 |
| Academia-business cooperation | | | | | | |
| Public-private scientific co-publications as % of total publications | 6.5 | 7.6 | 8.0 | 7.9 | 8.1 | 7.1 |
| Human capital and skills availability | | | | | | |
| New graduates in science & engineering per thousand pop. aged 25-34 | 6.5 | 10.8 | 14.8 | 15.1 | : | 16.0 |
| New doctorate graduates in science & engineering per thousand pop. aged 25-34 | : | 0.7 | 0.6 | 0.6 | : | 0.7 |
| Public support for business enterprise expenditure on R&D (BERD) | | | | | | |
| Total public sector support for BERD as % of GDP | 0.051 | 0.106 | 0.218 | : | : | 0.194 |
| R&D tax incentives: foregone revenues as % of GDP | 0.004 | 0.051 | 0.162 | : | : | 0.100 |
| Green innovation | | | | | | |
| Share of environment-related patents in total patent applications filed under the Patent Cooperation Treaty (%) | 12.3 | 10.8 | 10.4 | : | : | 13.3 |
| Finance for innovation and economic renewal | | | | | | |
| Venture capital (market statistics) as % of GDP | 0.007 | 0.004 | 0.010 | 0.015 | 0.018 | 0.074 |
| Employment in fast-growing enterprises in 50% most innovative sectors | 2.9 | 3.1 | 3.7 | : | : | 5.5 |

(1) EU average for the latest available year or the year with the highest number of country data.

Source: Eurostat, OECD, DG JRC, Science-Metrix (Scopus database and EPO's Patent Statistical database), Invest Europe

The RRP includes reforms and investments to improve career opportunities for researchers and PhD graduates. These initiatives not only streamline researchers' career paths, but also focus on innovative PhD scholarships⁽¹²⁰⁾. Additional measures include support for projects presented by young researchers and incentives for companies to employ them temporarily. These initiatives could reduce the R&I human resource gap, but their impact in the long term is unclear.

Business-science linkages in Italy remain weak and higher education institutions could play a more effective role in knowledge valorisation. Although public-private co-publications are above the EU average, HRST job-to-job mobility⁽¹²¹⁾ is low, with negative effects on knowledge creation. The Italian higher education system's approach to knowledge exchange is still

not strategic. Initiatives in this field are often poorly institutionalised⁽¹²²⁾.

The Italian RRP includes partial reforms and adequate investment to facilitate knowledge exchange. Approved reforms aim to simplify the management of research funds and support the intersectoral mobility of high-profile individuals. Proceeding with the planned reform of intellectual property management could help create a more conducive environment to innovation. Planned investments will support industrial property-related projects and will strengthen technology transfer offices.

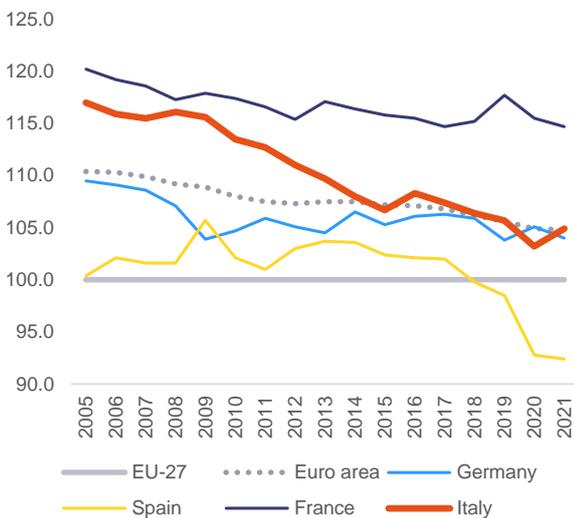
⁽¹²⁰⁾They are centred around industry and the twin transitions.

⁽¹²¹⁾Human Resources in Science&Technology. Source: EIS 2022.

⁽¹²²⁾OECD/EU (2019), Supporting Entrepreneurship and Innovation in Higher Education in Italy, OECD Skills Studies.

Italy’s labour productivity vigorously rebounded after the sharp fall experienced in 2020, but the country’s long-term productivity growth remains subdued. After the dramatic drop experienced in 2020, largely due to temporary job-protection schemes, in 2021 Italy’s labour productivity per person employed rebounded by 6.3% (aggregate level), compared to an EU average of 3.9%. Over the longer run, however, Italy’s productivity performance remains unsatisfactory. As shown in Graph A12.1, given the stagnation of productivity growth over the past two decades, levels of productivity in Italy have been consistently declining over time vis-à-vis the EU average, decreasing from 117% of the EU average in 2005 to 105.1% in 2021.

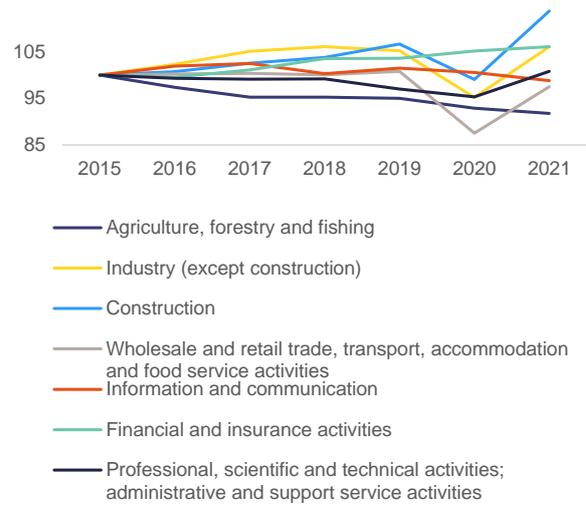
Graph A12.1: Labour productivity per person [% of EU-27]



Source: Eurostat.

Nevertheless, as shown in Graph A12.2, productivity performance is not uniform across economic sectors. Segments such as financial and insurance activities, for instance, experienced steady productivity growth in recent years, including during the pandemic. Industry, construction and the retail, transport and accommodation sector, instead, are catching up after being strongly affected by restrictions in 2020 (e.g. productivity in industry fell by 9.5% in 2020 before rebounding by 12.9% in 2021), whereas agriculture has been suffering from structurally weaker productivity dynamics.

Graph A12.2: Labour productivity by sector [2015=100]



Source: Eurostat.

In 2022, the Italian industrial sector was significantly impacted by the consequences of Russia’s invasion of Ukraine, in particular the energy crisis. The skyrocketing price of gas, exceeding 230 EUR/MWh on the Italian wholesale market in August 2022 ⁽¹²³⁾, had a severe impact on the energy and electricity prices faced by both businesses and consumers, particularly given the high share of natural gas in Italy’s energy mix, as well as the country’s significant dependence on Russian gas imports (see Annex 7). While the incidence of energy costs over total production costs increased in most sectors, energy-intensive industries were hit the hardest. For instance, metallurgy saw the incidence of energy costs increase by 15 percentage points compared to pre-crisis levels, while the non-metallic minerals and paper sectors faced increases of 11 and 6 percentage points respectively ⁽¹²⁴⁾. In order to cope with the energy crisis and reduce reliance on imports from Russia, after the outbreak of hostilities in Ukraine, the Italian government enacted an ambitious strategy to diversify gas sources, which led to a substantial reduction in the country’s dependence on Russian gas (see Annex 7).

⁽¹²³⁾European Commission, Quarterly report on European gas markets, volume 15 issue 2, 2022.

⁽¹²⁴⁾Centro Studi Confindustria, Rapporto di Previsione, Economia italiana ancora resiliente a incertezza e shock? 2022.

For what concerns raw materials other than fuels, Italy's strategic dependence on the belligerent countries is overall in line with the EU average. While Italy imports several types of non-food materials from Russia and Ukraine, its dependence on such imports is in line with or below the EU average for most product categories – with the exception of metals, which Italy imports from Ukraine more than the EU average (7.5% of Italy's extra-EU imports of metals come from Ukraine, vs. EU average of 2.8%)⁽¹²⁵⁾. Italy's overall import concentration index is also in line with the EU average, while the share of firms reporting materials shortages in 2022 is still well below the EU average (18% vs. 47%).

The business environment in Italy remains challenging, despite some improvements. The percentage of firms reporting business regulation as a major obstacle is significantly above the EU average (36.4% vs. 29.6%). When companies are asked to identify the areas that cause them the biggest problems, the top concerns reported are regulatory obstacles and administrative burden, as well as payment delays. The permitting framework for renewable energy sources (RES), instead, has been simplified, including in the context of the recovery and resilience plan, although room for improvement remains ample, e.g. for what concerns staffing levels and skills.

The situation of payment delays, which affects both government-to-business (G2B) and business-to-business (B2B) relations, remains a source of concern for Italian firms and particularly SMEs, despite improvements over time. Concerning G2B transactions, while there have been improvements, payment times often remain long. The gap between the time requested by the creditor firm for payment and the actual execution of the payment by the public administration was 22 days in 2022, according to Intrum, compared to an EU average of 15 days. A similar gap can be observed in B2B relations, where the gap is 4 days longer for Italian firms than for their EU peers (Intrum). Consistently, 52.4% of Italian SMEs report having experienced late payments in the 6 months prior to the survey (SAFE), which is almost 10 percentage points more than the EU average and 20 percentage points

more than peer countries such as Germany or Spain. Problems of payment delays are unevenly distributed across levels of government and types of public administration, with large variations across regions, municipalities and even central government ministries. The Italian recovery and resilience plan (RRP) contains an ambitious initiative for reducing payment arrears, which aims to bring payment times within the limits set by EU law. Achieving RRP targets, as well as maintaining such performance in future years, will be key to overcoming this structural challenge of the Italian business environment, which hampers firms' liquidity management and constitutes a disproportionate drag for smaller firms, which have more limited resources to cope with cash flow disruptions.

Access to finance is instead perceived more positively, although the relative underdevelopment of non-traditional forms of finance persists. The share of firms that consider access to finance a major challenge is lower in Italy than in the EU (12% vs. an EU average of 21%)⁽¹²⁶⁾. Indeed, Italy performs slightly better than the EU average on the 2021 EIF Access to Finance subindex for loans, which summarises the performance of loan finance in Member States. The country also records a low share of rejected or refused loans (SAFE survey) and an average performance in the Credit and Leasing EIF subindex. Nonetheless, alternative forms of finance remain underdeveloped, as reflected for instance in a lower-than-average penetration of venture capital.

For what concerns public procurement, a new Code of Public Contracts is being introduced. The reform is part of the RRP and aims, inter alia, at enhancing digitalisation, streamlining procedures and professionalising public buyers. Fully achieving RRP targets as well as ensuring adequate levels of competition and transparency will be key to address the long-standing challenges of Italy's public procurement system, including the comparatively high, and increasing, share of single bids (37% of contracts awarded in 2022, up from 35% in 2021 and 31% in 2020)⁽¹²⁷⁾.

⁽¹²⁵⁾European Commission, JRC Technical Report - Russian trade in non-food raw materials (2022), and European Commission, JRC Technical Report – Ukraine's trade in non-food raw materials (2022).

⁽¹²⁶⁾Flash Eurobarometer 486.

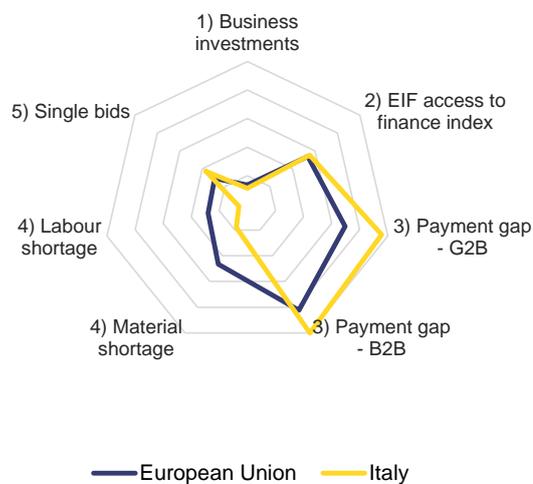
⁽¹²⁷⁾European Commission, Single Market Scoreboard, 2022.

Italy is well integrated into the single market, although barriers remain.

Italy is well integrated into the Single Market, with the shares of intra-EU imports and exports of goods reaching 51% and 52.7% respectively in 2022. Nevertheless, some long-standing challenges persist, notably in the area of services. For instance, in the area of regulated professions the level of restrictiveness remains above the EU average for several professions, including e.g. architects, civil engineers, accountants, patent/trademark agents and real estate agents⁽¹²⁸⁾, while restrictions are comparatively high also in retail – especially when it comes to establishment rules, where Italy is one of the most restrictive Member States⁽¹²⁹⁾. Similarly, the delays in implementing effective competitive procedures for the award of maritime, lakeside and riverside concessions for leisure and touristic activities ('beach concessions'), as well as the limited profitability of such concession contracts for public authorities, remain sources of concern: indeed, although the 2021 Annual Competition Law⁽¹³⁰⁾ provided the preconditions for a reform of the sector, subsequent legislative initiatives granting further extensions of existing contracts were introduced, thereby hindering progress towards such reform.

In terms of compliance with single market rules, Italy's transposition deficit is slightly below the EU average, although above the 1% target, while the number of pending infringement proceedings is in line with peer countries. Italy is also equipped with a well-functioning SOLVIT network for addressing problems related to the application of single market legislation, even though centres across the country could benefit from additional staff.

Graph A12.3: **Business environment and productivity drivers**



Source: 1) % of GDP, 2021 Eurostat; 2) composite indicator, 2021 European Investment Fund access to finance index; 3) average payment delay in number of days, 2022 Intrum; 4) % of firms in manufacturing facing constraints, 2022 European Commission business consumer survey; 5) proportion of contracts awarded with a single bidder, 2022 Single Market Scoreboard.

⁽¹²⁸⁾European Commission, COM(2021) 385 final.

⁽¹²⁹⁾European Commission, [Retail Restrictiveness Indicator](#) (2022 update), forthcoming.

⁽¹³⁰⁾Legge 5 agosto 2022, n. 118.

Table A12.1: Industry and the single market

| POLICY AREA | | INDICATOR NAME | 2018 | 2019 | 2020 | 2021 | 2022 | EU27 average (*) |
|---|---------------------------|--|------|------|------|------|------|------------------|
| HEADLINE INDICATORS | Economic Structure | Net private investment, level of private capital stock, net of depreciation, % GDP ⁽¹⁾ | 0.9 | 0.8 | -0.8 | 1.9 | 3.7 | 3.7 |
| | | Net public investment, level of public capital stock, net of depreciation, % GDP ⁽¹⁾ | -0.6 | -0.4 | -0.4 | 0 | -0.2 | 0.4 |
| | Cost competitiveness | Real labour productivity per person in industry (% yoy) ⁽²⁾ | 0.9 | -0.8 | -9.5 | 12.9 | -1.6 | 1.4 |
| | | Nominal unit labour cost in industry (% yoy) ⁽²⁾ | 0.5 | 2.1 | 3.1 | -3.3 | 5 | 2.9 |
| RESILIENCE | Shortages | Material shortage (industry), firms facing constraints, % ⁽³⁾ | 2 | 1 | 1 | 10 | 18 | 47 |
| | | Labour shortage using survey data (industry), firms facing constraints, % ⁽³⁾ | 2 | 2 | 1 | 3 | 6 | 28 |
| | | Vacancy rate (business economy) ⁽⁴⁾ | 1.3 | 1.4 | 0.8 | 1.8 | 2.2 | 3.1 |
| | Strategic dependencies | Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials ⁽⁵⁾ | 0.18 | 0.16 | 0.15 | 0.16 | 0.17 | 0.18 |
| | | Installed renewables electricity capacity, % of total electricity produced ⁽⁶⁾ | 48.8 | 49.3 | 50.3 | 43.8 | n.a. | 50.9 |
| SINGLE MARKET | Single Market integration | EU trade integration, % ⁽⁷⁾ | 16.1 | 16.1 | 15.3 | 17.7 | 20.2 | 45.8 |
| | Restrictions | EEA Services Trade Restrictiveness Index ⁽⁸⁾ | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 |
| | Public procurement | Single bids, % of total contractors ⁽⁹⁾ | 30 | 32 | 31 | 35 | 37 | 29 |
| BUSINESS ENVIRONMENT - SMEs | Investment obstacles | Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle ⁽¹⁰⁾ | 36.5 | 40.0 | 34.9 | 34.3 | 36.4 | 29.6 |
| | Business demography | Bankruptcies, Index (2015=100) ⁽¹¹⁾ | 75.8 | 75.5 | 51.5 | 61 | 48.6 | 86.8 |
| | | Business registrations, Index (2015=100) ⁽¹¹⁾ | 90.8 | 94.7 | 77.7 | 89 | 84 | 121.2 |
| | Late payments | Payment gap - corporates B2B, difference in days between offered and actual payment ⁽¹²⁾ | 6 | 4 | 0 | 11 | 17 | 13 |
| | | Payment gap - public sector, difference in days between offered and actual payment ⁽¹²⁾ | 31 | 11 | 3 | 12 | 22 | 15 |
| | | Share of SMEs experiencing late payments in past 6 months, % ⁽¹³⁾ | n.a. | 56.9 | 58.2 | 46.6 | 52.4 | 43 |
| | Access to finance | EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1 ⁽¹⁴⁾ | 0.79 | 0.73 | 0.8 | 0.6 | n.a. | 0.46 |
| EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1 ⁽¹⁴⁾ | | 0.1 | 0.12 | 0.09 | 0.12 | n.a. | 0.23 | |

(*) last available year

Source: (1) AMECO, (2) Eurostat, (3) ECFIN BCS, (4) Eurostat, (5) COMEXT and Commission calculations, (6) Eurostat, (7) Eurostat, (8) OECD, (9) Single Market Scoreboard, (10) EIB survey, (11) Eurostat: (12) Intrum, (13) SAFE Survey, (14) EIF SME Access to Finance Index.

This Annex outlines the performance of Italy’s public administration, which is essential for providing services and carrying out reforms. Italy ranks below the EU average for government effectiveness¹, hindered by significant gaps in strategic management, an ageing, understaffed and low-skilled public workforce, and regional disparities in the administrations’ performance. The government reform agenda for public administration, enshrined in the recovery and resilience plan (RRP), focuses on improving the recruitment and management of public employees, strengthening administrative capacity, fostering digitalisation and ensuring administrative simplification.

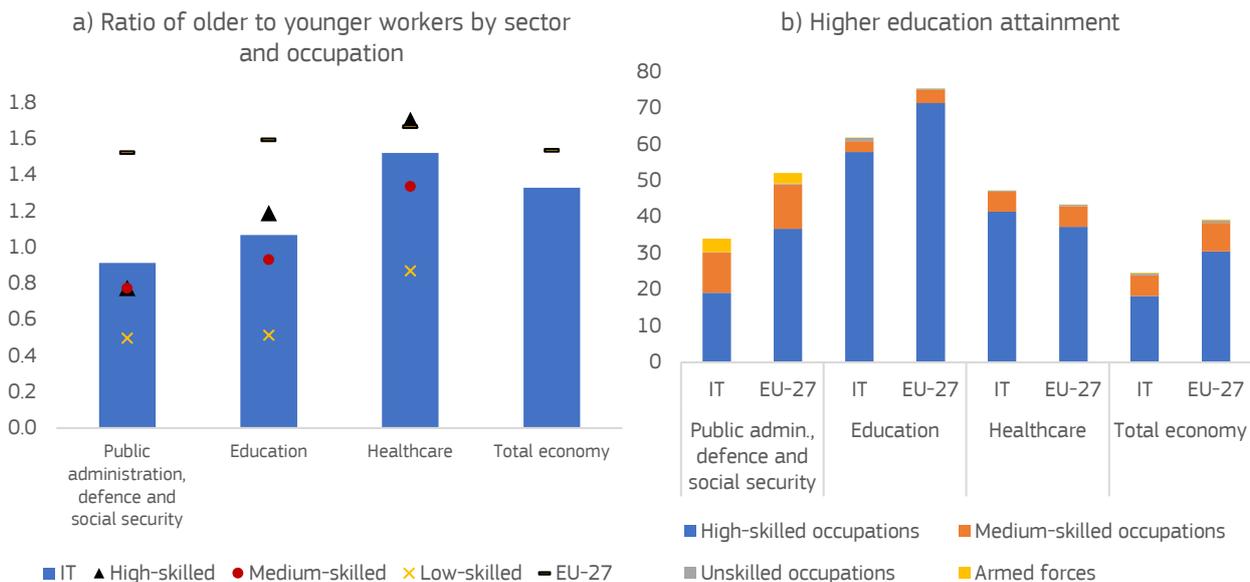
Progress has been registered, particularly in human resource management and digitalisation. This has led to the attainment of several of the milestones set out in the RRP. A key issue is the persistently high political instability, which in the past has hindered the implementation and continuity of public administration reforms. Also, the regional divide is widening, with southern Italy showing, on average, weaker performance in public administration.

Italy’s performance in selected human capital indicators and digitalisation is weaker than the EU average. It has among the oldest public workforce in the EU, driven in part by

a decade-long hiring freeze (Graph A13.1a). The share of public sector workers with higher education is well below the EU average (Graph A13.1b). Public employment is set to be renewed by one-third and further professionalised, with the target of one million better skilled new employees entering the public sector throughout the RRP implementation. The simplified, digitalised recruitment procedures and the significant investments in the upskilling and reskilling of public employees are expected to help achieve this objective. Italy ranks in the bottom third of Member States on the provision of digital public services and the share of e-government users is well below the EU average (Table A13.1 and Annex 10). Consequently, the Italian RRP includes investment to improve the supply of digital public services, which should be implemented by the end of 2023.

The indicators mask, however, a deep geographical divide. Public sector performance is persistently lower in southern Italy, with an older population of civil servants and lower levels of education and digitalisation. Since June 2022, the internet portal Capacity Italy has assisted subnational governments by connecting them to experts. The planned recruitment of 2,400 experts in Southern administrations did not yield the expected results due to the relatively low attractiveness of the posts (temporary nature of

Graph A13.1: Italy: a) ratio of 25-49 to 50-64 year-olds by sector and occupation and b) higher education attainment level (in percent) of 25-64 year-olds by sector and occupation. 2021 data



2022 data.
Graph A13.1a): a lower ratio denotes a more aged civil service.
Source: European Commission, based on the Labour Force Survey

Table A13.1: **Public administration indicators**

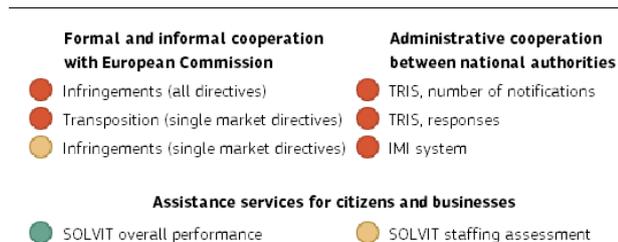
| IT Indicator ⁽¹⁾ | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | EU-27 ⁽²⁾ |
|---|------|------|------|------|----------|------|----------------------|
| E-government and open government data | | | | | | | |
| 1 Share of individuals who used the internet within the last year to interact with public authorities (%) | 33.5 | 31.7 | 29.9 | 36.4 | 40.4 | n/a | 64.8 |
| 2 E-government benchmark overall score ⁽³⁾ | n/a | n/a | n/a | 64.4 | 60.9 | 61.3 | 72.9 |
| 3 Open data and portal maturity index | n/a | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 |
| Educational attainment level, adult learning, gender parity and ageing | | | | | | | |
| 4 Share of public administration employees with tertiary education (levels 5-8, %) | 26.8 | 28.4 | 29.3 | 30.2 | 32.1 (b) | 34.1 | 52.0 |
| 5 Participation rate of public administration employees in adult learning (%) | 9.7 | 10.3 | 9.7 | 8.6 | 14.5 (b) | 13.7 | 16.9 |
| 6 Gender parity in senior civil service positions ⁽⁴⁾ | 38.4 | 27.6 | 24.2 | 24.2 | 35.8 | 29.0 | 11.0 |
| 7 Ratio of 25-49 to 50-64 year olds in NACE sector O | 0.9 | 0.8 | 0.8 | 0.8 | 0.9 (b) | 0.9 | 1.5 |
| Public financial management | | | | | | | |
| 8 Medium term budgetary framework index | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | n/a | 0.7 |
| 9 Strength of fiscal rules index | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | n/a | 1.5 |
| Evidence-based policy making | | | | | | | |
| 10 Regulatory governance | 2.45 | n/a | n/a | n/a | 2.55 | n/a | 1.7 |

⁽¹⁾ High values denote a good performance, except for indicator # 6. ⁽²⁾ 2022 value. If not available, the 2021 value is shown.

⁽³⁾ Measures the user centricity and transparency of digital public services as well as the existence of key enablers for the provision of those services. ⁽⁴⁾ Defined as the absolute value of the difference between the percentage of men and women in senior civil service positions. Flags: (b) break in time series; (d) definition differs; (u) low reliability.

Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Labour Force Survey, Eurostat (# 4, 5, 7), European Institute for Gender Equality (# 6); Fiscal Governance Database (# 8, 9); OECD Indicators of Regulatory Policy and Governance (# 10).

contracts and salaries attached).

Graph A13.2: **Italy. Performance in the single market scoreboard governance tools**

(1) Red denotes a poor performance; green, a good performance. TRIS: Technical Regulation Information System; IMI: Internal Market Information System.

Source: Single Market Scoreboard

Once adopted, the new code of public procurement is expected to strengthen competition in Italy's public procurement system. The increasing share of single bids points to issues with competition (see Annex 12). Italy also lags in most indicators that measure performance on the single market governance tools (Graph A13.2).

The justice system is still facing efficiency challenges. Despite recent improvements, the length of proceedings remains excessive. At 560 days in 2021, the time to hand down a decision in litigious civil and commercial cases at first instance is well above the EU average. The RRP includes reforms that aim to simplify procedures, establish timeframes for cases and improve the use of mediation to reduce the length of proceedings and backlogs. The overall quality of the justice system is good, despite a few shortcomings, especially in the criminal courts and prosecution services. New measures that introduce specific arrangements for child-friendly proceedings have been implemented. The level of digitalisation is advanced. No systemic deficiencies in judicial independence have been reported ⁽¹³¹⁾.

⁽¹³¹⁾For a more detailed analysis of the performance of the justice system in Italy, see the 2023 [EU Justice Scoreboard](#) (forthcoming) and the country chapter for Italy in the 2023 [Rule of Law Report](#) (forthcoming).

ANNEX 14: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights is the compass for upward convergence towards better working and living conditions in the EU. This Annex provides an overview of Italy’s progress in implementing the Pillar’s 20 principles and EU headline and national targets for 2030 on employment, skills and poverty reduction.

Table A14.1: **Social Scoreboard for Italy**

| Policy area | Headline indicator | |
|--|--|-------|
| Equal opportunities and access to the labour market | Early leavers from education and training (% of population aged 18-24, 2022) | 11.5 |
| | Share of individuals who have basic or above basic overall digital skills (% of population aged 16-74, 2021) | 45.6 |
| | Youth NEET rate (% of population aged 15-29, 2022) | 19 |
| | Gender employment gap (percentage points, 2022) | 19.7 |
| | Income quintile ratio (S80/S20, 2021) | 5.86 |
| Dynamic labour markets and fair working conditions | Employment rate (% of population aged 20-64, 2022) | 64.8 |
| | Unemployment rate (% of active population aged 15-74, 2022) | 8.1 |
| | Long term unemployment (% of active population aged 15-74, 2022) | 4.6 |
| | GDHI per capita growth (2008=100, 2021) | 94.57 |
| Social protection and inclusion | At risk of poverty or social exclusion rate (% of total population, 2021) | 25.2 |
| | At risk of poverty or social exclusion rate for children (% of population aged 0-17, 2021) | 29.7 |
| | Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2021) | 29.47 |
| | Disability employment gap (percentage points, 2021) | 14.9 |
| | Housing cost overburden (% of total population, 2021) | 7.2 |
| | Children aged less than 3 years in formal childcare (% of population under 3-years-old, 2021) | 33.4 |
| | Self-reported unmet need for medical care (% of population 16+, 2021) | 1.8 |
| Critical situation To watch Weak but improving Good but to monitor On average Better than average Best performers | | |

(1) Update of 27 April 2023. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2023. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.

Source: Eurostat

The Italian labour market has made a robust recovery in 2022, but major challenges persist. On the back of a strong recovery from the COVID-19 crisis, the employment rate reached a record high of 64.8% in 2022, but still remained significantly below the EU average of 74.6%. Despite reaching its lowest level since 2010 in 2022 at 8.1%, the unemployment rate in Italy

remained one of the highest in the EU. Similarly, in 2022, the activity rate in the 20–64 age group (70.4%) is one of the lowest (EU: 79.4%). In 2022, the share of long-term unemployed (4.6%) in the active population is also significantly above the EU average (2.4%). Real wages in Italy have stagnated or fallen in recent decades. After decreasing steeply in 2020 (-4.5%) and rebounding in 2021 (4.6%), real wages fell again in 2022 (-2.9%).⁽¹³²⁾ The high shares of non-standard employment and undeclared work continue to be challenges. In 2022, as many as 8.6% of employees state that they have a temporary job due to their inability to find a permanent contract. The high prevalence of non-standard forms of work, especially among young people, creates persisting gaps in access to social protection. Addressing these challenges would support progress towards the 2030 national employment target of 73%. As part of its recovery and resilience plan (RRP), Italy introduced a reform of active labour market policies (GOL) and capacity-building investments in employment centres (PES) aimed at providing personalised services to jobseekers countrywide. The European Social Fund Plus (ESF+) will contribute by financing active inclusion policies, expanding the services offered by job centres and integrating their activities with social services to target the most vulnerable.

Adverse demographic developments and low participation of women, young people and non-EU nationals are key challenges for the Italian labour market. The workforce (20–64 age group) decreased by 1.8% in the last 20 years and its composition has changed significantly. The total population within the 20–39 age group fell by 25.3% while the 40–64 age group grew by 19.5% which will further accelerate the adverse demographic development in the future. Moreover, the gender employment gap in Italy (19.7 pps) is among the highest in the EU (10.8%). The employment rate of women with children aged less than 6 years (55.5%) is considerably lower than that of women without children (76.6%)⁽¹³³⁾. Moreover, with less than 38% in employment, women with children under 6 years in the south of

⁽¹³²⁾AMECO database and DG EMPL computations on Eurostat data.

⁽¹³³⁾'Benessere equo e sostenibile in Italia (BES) 2022', ISTAT.



the country are much less likely to be employed than those in the centre at 63.4% or the north at almost 66%. One of the reasons is that childcare responsibilities affect mothers disproportionately. At 33.4%, the share of children aged less than 3 years in formal childcare in 2021 was below the EU average (36.6%), with significant regional differences in the availability of childcare places. In addition, compulsory paternity leave (10 days) is still considerably lower than maternity leave (5 months). Italy has committed to increase childcare services under its RRP and through cohesion funding. Finally, the rate of young people not in employment, education or training (NEET) (15-29) (19%) is among the highest in the EU (11.7%). While in the 15-24 age group, the female (15.4%) and male (16.3%) NEET rates are similar, in the 25-29 age group, the female NEET rate (30.2%) significantly exceeds that of males (20.4%). The higher rates of the older groups reflect the challenges that young people face in entering the labour market (accompanied by a prevalence of temporary contracts compared to older groups). Although the employment rate of non-EU nationals (63.5%) almost matches that of Italian nationals (65.5%) in 2022, they face much higher poverty or social exclusion risks (47.6% vs 24.7%) and in-work poverty (31.2% vs 9.7%).

Table A14.2: **Situation of Italy on 2030 employment, skills and poverty reduction targets**

| Indicators | Latest data | Trend (2015-2022) | National target by 2030 | EU target by 2030 |
|--|-------------|---|-------------------------|-------------------|
| Employment (%) | 64.8 (2022) |  | 73 | 78 |
| Adult learning ¹ (%) | 33.9 (2016) | | 60 | 60 |
| Poverty reduction ² (thousands) | +31 (2021) |  | -3 200 | -15 000 |

(1) Adult Education Survey, adults in learning in the past 12 months.

(2) Number of persons at risk of poverty or social exclusion (AROPE), reference year 2019.

Source: Eurostat, DG EMPL.

Italy faces challenges in relation to the low proportion of young adults with a tertiary educational qualification (29.2% vs 42% in the EU), and further efforts on adult learning are needed. In 2021, only 45.6% of Italian adults had at least basic digital skills, significantly fewer than in the EU (53.9%), and in 2022, only 11.9% participated in training over the past 4 weeks. In 2021, the share of ICT graduates at 1.4% also stood well below the EU average (3.9%). Labour shortages are reported in sectors such as

construction, industry, manufacturing and services to businesses. In response, Italy is developing its non-academic tertiary sector by reforming the *istituti tecnici superiori* (ITS) to make them an integral part of the tertiary vocational education system. Up- and re-skilling is funded by REACT-EU and the ESF+ to support the green and digital transitions and contribute to the target of at least 60% of adults participating in training every year by 2030 (41.5% in 2016).

Although it stayed broadly stable during the pandemic, the risk of poverty and social exclusion remains high. While swift policy action mitigated the social consequences of the pandemic, the rate of people at risk of poverty or social exclusion (AROPE) slightly increased from 24.9% in 2020 to 25.2% in 2021. This remains above pre-pandemic levels (24.6% in 2019) and the EU average (21.7% in 2021). At 29.7%, the AROPE rate among children significantly exceeds the EU average (24.4%). The introduction of the universal family allowance in 2022 is estimated to have reduced the risk of poverty (¹³⁴). According to national data, the share of persons in absolute poverty, which doubled between 2010 and 2018, continued rising to 9.4% in 2021; it is particularly high in the south (¹³⁵). Access to affordable and suitable housing is still a challenge, with many households not having a sufficient number of rooms (28% vs EU: 17%), in particular for tenants renting at market prices and young people.

A well-functioning minimum income scheme is key to reduce social inequalities and disparities, but its implementation in Italy needs to be monitored. The minimum income scheme (so-called citizens' income) introduced in 2019, along with the active inclusion approach, helps to prevent and mitigate poverty. While the total number of households benefiting from the scheme increased during the pandemic (1.11 million in 2019 vs 1.77 million in 2021), that number fell to 1.66 million in 2022. The 2023 budget law reduced the length of time during which people can receive benefits, added conditions on education and training, and included the possibility to combine benefits with income from seasonal work. From 2024, the scheme will be suspended and replaced by a recently introduced measure. A lower coverage and

(¹³⁴) 'La redistribuzione del reddito in Italia', ISTAT.

(¹³⁵) 'Nel 2021 stabile la povertà assoluta', ISTAT.

adequacy could further limit the poverty reduction potential of the future scheme for vulnerable groups. Weak active labour market policies should be strengthened to support the job integration part of the scheme. Overall, there is scope for greater efforts to achieve the national target of 3.2 million fewer people at risk of poverty or social exclusion by 2030 (compared to 2019).

This Annex outlines the main challenges for Italy's education and training system in light of the EU-level targets and other contextual indicators under the European Education Area strategic framework, based on the 2022 Education and Training Monitor.

The Italian education and training system struggles with some long-standing structural challenges that hinder the formation of human capital with the relevant skills for labour market developments. Italy faces key challenges linked to the quality, equity and labour market relevance of education and training as well as wide territorial disparities. These translate into skills shortages and mismatches, and high rates for youth unemployment and those not in education, employment or training (NEET), particularly in the south of the country (see Annex 14). Wide-ranging reforms implemented under the Recovery and Resilience Facility (RRF) are expected to address some of these challenges.

School education in Italy produces mixed results in terms of basic skills proficiency, with significant differences between regions and types of schools. After the learning loss recorded in 2021, the results of the 2022 round of standardised national testing remained largely stable for Italian and maths and improved for English. The results confirmed wide geographical disparities, which tend to widen with school level. The gaps in student performance between schools and between classes are more pronounced in the southern regions. This indicates that primary education in the south is not able to ensure equal opportunities for all pupils, with clear negative repercussions on subsequent school grades. More generally, the strong influence of family background on learning achievement throughout the country is an indication that school education does not adapt sufficiently to different learning needs and is not able to compensate for socio-economic disadvantage. The government has allocated EUR 1.5 billion in RRF support for initiatives to reduce territorial disparities in learning outcomes. The investment shall promote mentoring activities for young people at risk of early school leaving or that have already dropped out.

Early school leaving is on a declining trend but remains well above the EU average. The proportion of early leavers from education and training (ELET) in the 18-24 age group was 11.5%

in 2022, down from 12.7% the previous year, confirming the downward trend seen over the past decade. While below the national target of 16%, the ELET rate remains above the EU average of 9.6% and some way off the new EU-level target of below 9% by 2030. The ELET rate varies widely across regions: from 9.6% in the north-east to 15.3% in the south, with a peak of 21.2% in Sicily. Boys are more likely than girls to leave school early (13.6% vs 9.1%), with a wider than average gender gap (4.5 pps vs 3.1 pps for the EU). At 28.7% the ELET rate among foreign born 18-24-year-olds is three times as high as that of Italian-born people (9.7%), and considerably higher than the EU average of 21.6%.

Italy is reforming the initial training and recruitment of teachers. The new system strengthens the specific teaching qualification that needs to be acquired by those wishing to access national competitions for the recruitment of teachers. Once fully implemented, the new system is expected to have positive effects on educational outcomes and on the overall teaching quality. The reform also introduces performance-related salary increases following the completion of three-year training cycles. However, it is still to be seen whether it will be enough to attract the best graduates to the teaching profession, particularly those with degrees in science, technology, engineering and mathematics (STEM).

The government is promoting digital education. Coding and digital teaching were included in teacher training programmes as priorities starting from the 2022/23 school year. The new legislation brings in computer programming (as a subject and integrated into other subjects) and specifies the further development of digital skills in primary and secondary education. The plan 'School 4.0 - innovative schools, new classrooms and laboratories' allocates over EUR 2 billion in RRF funding to transform 100 000 classrooms into innovative learning environments and to build laboratories for the digital professions of the future in all upper secondary schools.

The proportion of young adults with a tertiary educational qualification is low. In 2022, 29.2% of 25-34-year-olds had a tertiary educational qualification, well below both the EU average of 42% and the EU-level target of 45% by 2030. Women are more likely to hold a tertiary qualification than men (35.5% vs 23.1%), in line

Table A15.1: **EU-level targets and other contextual indicators under the European Education Area strategic framework**

| Indicator | Target | 2015 | | 2022 | | |
|---|--|--------------|-------|-----------------------|-----------------------|-------|
| | | Italy | EU27 | Italy | EU27 | |
| ¹ Participation in early childhood education (age 3+) | 96% | 94.9% | 91.9% | 94.6% ²⁰²⁰ | 93.0% ²⁰²⁰ | |
| ² Low achieving 15-year-olds in: | Reading < 15% | 21.0% | 20.0% | 23.3% ²⁰¹⁸ | 22.5% ²⁰¹⁸ | |
| | Mathematics < 15% | 23.3% | 22.3% | 23.8% ²⁰¹⁸ | 22.9% ²⁰¹⁸ | |
| | Science < 15% | 23.2% | 21.1% | 25.9% ²⁰¹⁸ | 22.3% ²⁰¹⁸ | |
| ³ Total | < 9% | 14.7% | 11.0% | 11.5% | 9.6% | |
| ³ By gender | Men | 17.5% | 12.5% | 13.6% | 11.1% | |
| | Women | 11.8% | 9.4% | 9.1% | 8.0% | |
| Early leavers from education and training (age 18-24) | ⁴ By degree of urbanisation | Cities | 14.8% | 9.6% | 12.5% | 8.6% |
| | Rural areas | 15.2% | 12.2% | 10.2% | 10.0% | |
| | Native | 12.7% | 10.0% | 9.7% | 8.3% | |
| ⁵ By country of birth | EU-born | 26.4% | 20.7% | 22.9% | 20.3% | |
| | Non EU-born | 33.0% | 23.4% | 30.6% | 22.1% | |
| ⁶ Equity indicator (percentage points) | | : | : | 18.4 ²⁰¹⁸ | 19.3 ²⁰¹⁸ | |
| ⁷ Exposure of VET graduates to work based learning | Total | ≥ 60% (2025) | : | : | 25.9% | 60.1% |
| Tertiary educational attainment (age 25-34) | ⁸ Total | 45% | 25.2% | 36.5% | 29.2% | 42.0% |
| | ⁸ By gender | Men | 19.4% | 31.2% | 23.1% | 36.5% |
| | | Women | 31.0% | 41.8% | 35.5% | 47.6% |
| | ⁹ By degree of urbanisation | Cities | 30.0% | 46.2% | 35.2% | 52.2% |
| | | Rural areas | 21.3% | 26.9% | 24.7% | 30.2% |
| | | Native | 28.0% | 37.7% | 32.5% | 43.0% |
| | ¹⁰ By country of birth | EU-born | 13.0% | 32.7% | 14.5% | 39.5% |
| Non EU-born | | 12.7% | 27.0% | 12.6% | 35.7% | |
| ¹¹ Share of school teachers (ISCED 1-3) who are 50 years or over | | 57.2% | 38.3% | 53.0% ²⁰²⁰ | 39.2% ²⁰²⁰ | |

Source: (1,3,4,5,7,8,9,10,11) = Eurostat; 2 = OECD (PISA); 6 = European Commission (Joint Research Centre). Notes: Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills and participation of adults in learning. The equity indicator shows the gap in the share of underachievement in reading, mathematics and science (combined) among 15-year-olds between the lowest and highest quarters of socio-economic status.

with the rest of the EU but with a slightly wider gender gap (12.4 pps vs 11.1 pps). The tertiary educational attainment rate is particularly low among the foreign population, whether born in the EU (13.2%) or outside (12.6%), reflecting a substantial difficulty in attracting highly qualified people.

The share of STEM graduates remains comparatively low. In 2020, 22.7% of all graduates had a STEM qualification, fewer than in 2019 (24.5%) and below the EU average (24.9%). The share of graduates in information and communication technologies is particularly low, at just 1.4% compared with the EU average of 3.9%.

While a tertiary educational degree constitutes an advantage on the labour market, transition into employment remains difficult. The employment rate of recent tertiary graduates has risen steadily over recent years, reaching 67.5% in 2021. But while it is considerably higher than the employment rates for vocational education and training and general upper school graduates, it remains well below the

EU average of 84.5%. Low demand from a productive sector characterised by small- and medium-sized firms contributes to the poor employment prospects of graduates.

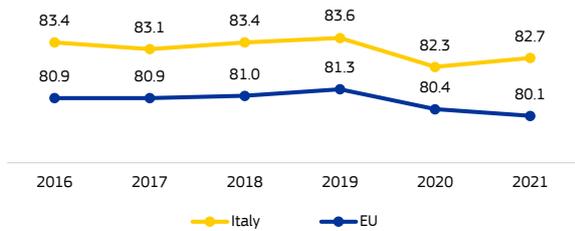
Recent reforms are expected to increase flexibility and make tertiary education curricula more innovative. In 2021, the government adopted a reform of university degree groups, encouraging the creation of cross-disciplinary paths and the development of innovative professional profiles. It also adopted a reform of PhD programmes, promoting the involvement of businesses in university research programmes and applied research through industrial PhDs.

A healthy population and an effective, accessible, and resilient health system are prerequisites for a sustainable economy and society. This Annex provides a snapshot of population health and the health system in Italy.

Italy has one of the highest life expectancies at birth in the EU. After a significant drop in 2020, life expectancy significantly rebounded in 2021, reflecting the decrease in COVID-19 mortality in 2021 ⁽¹³⁶⁾. Italy has one of the lowest rates in the EU for treatable and preventable mortality. In 2020 leading causes of death are diseases of the circulatory systems (“cardiovascular diseases” notably ischaemic heart diseases) followed by neoplasms and COVID-19. Overall, large regional differences are observed.

Health spending relative to GDP in Italy is below the EU average, despite an increase in 2020 (by almost one percentage point). This is in line with the upward trend in all Member States. For 2020 in Italy, the increase of the share of healthcare spending relative to GDP was largely explained by the significant GDP contraction observed (by 9%, compared to 5.7% in the EU overall). Spending per capita in purchasing power standards (at EUR 2 608) is well below the EU average (EUR 3 269).

Graph A16.1: Life expectancy at birth, years



Source: Eurostat

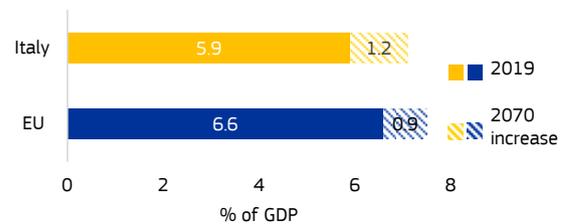
The public share of health expenditure in Italy is below the EU average and slightly increased in 2020 (to 76.1%, from 73.7% in 2019). Italy’s hospital bed density is below the EU average. Nevertheless, the overall breakdown of total healthcare spending by outpatient and inpatient services is broadly similar to that of the rest of the EU. At 21.3%, the share of household out-of-pocket spending is almost 1.5 times higher than in

⁽¹³⁶⁾“Based on data provided directly by Member States to ECDC under the European Surveillance System (data current as of 13 April 2023)”

the EU overall (14.4%). Spending on preventive care, one of the highest in EU ((5.5% of total healthcare expenditure), increased by 19% between 2020 and 2019 (compared to a 26% increase for the EU overall), driven mainly by spending on public health COVID-19 pandemic response programmes.

Based on the age profile of the Italian population, public expenditure on health is projected to increase by 1.2 percentage points (pps) of GDP by 2070 (compared to 0.9 pps for the EU overall). This underscore concerns about the long-term fiscal sustainability of the Italian health system.

Graph A16.2: Projected increase in public expenditure on healthcare over 2019-2070



AWG reference scenario

Source: European Commission / EPC (2021)

Italy has an above-average number of practising doctors per 1 000 inhabitants, but the overall availability and territorial distribution of the health workforce raise concerns. The high share of active physicians over the age of 55 (56% in Italy vs an EU average of 35.9%) and the significant shortage of nurses (the provision level per 1 000 population is well below the EU average) underline challenges as regards staff availability in the longer term. This is coupled with a consolidated trend of population ageing (with an increase of 26,7 million people in the cohort “old-age dependency ratio 20-64”) which will be in growing need of health care assistance (in 2019 around 30% of the population aged above 65 years is reporting unmet medical needs).In recent years, the number of medicine graduates have slightly increased, fact that can partially mitigate the projected shortages, although the challenge of ensuring long term accessibility to health services. Another reason for concern is the territorial distribution of doctors (especially in primary care, with variations of up to 50% between regions). Shortages of qualified

Table A16.1: Key health indicators

| | 2017 | 2018 | 2019 | 2020 | 2021 | EU average (latest year) |
|--|-------|-------|-------|-------|------|--------------------------|
| Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare) | 66.5 | 64.9 | 63.7 | 66.5 | NA | 91.7 (2020) |
| Cancer mortality per 100 000 population | 237.9 | 234.7 | 230.9 | 227.0 | NA | 242.2 (2020) |
| Current expenditure on health, % GDP | 8.7 | 8.7 | 8.7 | 9.6 | NA | 10.9 (2020) |
| Public share of health expenditure, % of current health expenditure | 73.7 | 73.9 | 73.7 | 76.1 | NA | 81.2 (2020) |
| Spending on prevention, % of current health expenditure | 4.4 | 4.7 | 4.7 | 5.5 | NA | 3.4 (2020) |
| Acute care beds per 100 000 population | 262 | 259 | 260 | 266 | NA | 387.4 (2019) |
| Doctors per 1 000 population * | 4.0 | 4.0 | 4.1 | 4.0 | 4.1 | 3.9 (2020) |
| Nurses per 1 000 population * | 5.8 | 5.8 | 6.2 | 6.3 | 6.3 | 8.3 (2020) |
| Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day (total consumption for CY and CZ) ** | 19.0 | 19.5 | 19.8 | 16.5 | 16.0 | 14.5 (2021) |

Note: The EU average is weighted for all indicators, except for (*) and (**), for which the EU simple average is used. The simple average for (*) uses data for 2020 or most recent year if former not available. Doctors' density data refer to practising doctors in all countries except EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries except FR, PT, SK (professionally active) and EL (nurses working in hospitals only).

Source: Eurostat; except: ** ECDC

staff were exacerbated during the COVID-19 pandemic, especially in intensive care and emergency care, but also in primary care and long-term care. A mix of measures and allocation of extra funding has alleviated acute pressures on healthcare facilities. In the long term, appropriate staffing policies can be expected to mitigate territorial health inequalities in access to care, and migration of patients across regions. This is particularly important in regions with higher-than-average rates of comorbidities and non-communicable diseases.

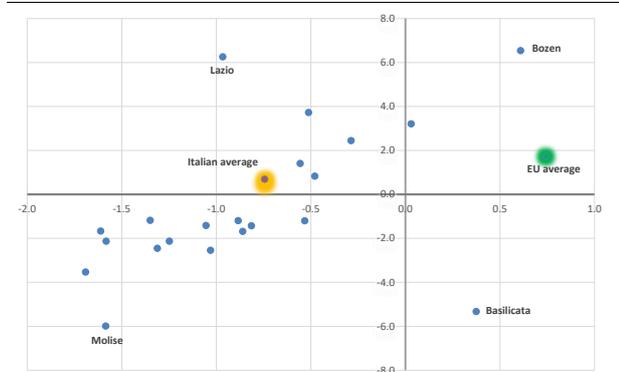
Italy's recovery and resilience plan (RRP) contains both healthcare reforms and healthcare investments (representing around 8.5% of the RRP's total value). As part of the ongoing reform of the organisational model of the territorial healthcare assistance network, a regulatory framework was developed. This framework identifies structural, technological and organisational standards for specialised care structures (such as community houses, community hospitals, and territorial coordination centres). The ambitious reform of the healthcare network is supported by a significant set of investments. The Ministry of Health has entered into contracts with regions for major investments in the identified specialised structures. These contracts are expected to create the administrative framework for investments (with operational plans laying down the scope, objectives, operational indications, time schedule, and evaluation and monitoring criteria of individual investments). The RRP also includes reforms and investments to improve the health system's cost-effectiveness and fiscal sustainability.

Italy is carrying out an ambitious plan for investing in the effective digital transition of health systems. The plan aims to update the medical equipment stock of health and care facilities. There are three main strands to the investment: modernising large healthcare equipment, digitising the processes of emergency rooms, and increasing the number of beds in intensive and semi-intensive care units. Approving telemedicine guidelines is the first step in the large-scale adoption of telemedicine solutions (to increase their uptake in home care), supported by investments in setting up territorial coordination centres. These centres aim to ensure the coordination of various territorial, social-health and hospital services, and the emergency network.

This Annex showcases the economic and social regional dynamics in Italy, providing an update on economic, social and territorial cohesion in Italy and the main economic recovery challenges for the regions.

There are two main divergences affecting the Italian economy: an emerging EU-Italy gap and a persistent North-South divide. Italy's GDP per capita (in purchasing power standard (PPS)) was 93.6% of the EU average in 2020, following a steady decline (it was 109 in 2007), which affected all regions except the autonomous province of Bolzano/Bozen. Also thanks to the measures to mitigate the effect of the COVID pandemic, Italy's GDP per capita moved up to 95% of the EU average in 2021. However, the structural or temporary nature of the rebound should be duly assessed once the relief measures will be completely phase out and new data will be available. In 2021, 6 out of 21 regions had a GDP per capita below 75% of the EU average (Table A17.1): Calabria and Sicilia were the least developed regions, with GDP per capita below 60% of the EU average, closely followed by Campania and Puglia (only just above 60%).

Graph A17.1: **GDP growth (x-axis) and population growth (y-axis) (2011-2020) – Italy**



Source: Eurostat, DG REGIO elaboration

GDP and population growth offer insights into increasing regional inequalities following the financial crises of the past decade. Both the GDP and the population of Lombardia, Emilia Romagna, Veneto, Trento, Bolzano/Bozen and Toscana grew faster than the national average in 2011-20, while southern and insular regions, Marche and Umbria lost population and their GDP growth was below the national average (Graph A17.1 and table A17.1). Lazio is an outlier since its GDP grew more slowly than the national average but its population grew

significantly (+6.3%). Basilicata was characterised by a GDP growth of +0.4% and a population decline of 5.3% over the period 2011-2020.

Labour productivity decreased in real terms nearly everywhere in Italy. The fall in labour productivity (103% of the EU-27 average in 2020, down from 133% in 2000 and 116% in 2010) concerned all the Italian regions except Basilicata (Table A17.1). Productivity per worker declined despite the fall in the number of employed persons in the southern regions, including the two islands, and in Umbria, Marche, Piemonte, Valle d'Aosta and Liguria. However, the number of employed persons increased in Lombardia, Lazio, Emilia Romagna, Trento and Bolzano/Bozen.

In the southern regions and the two islands, the fall in employment levels was a direct result of weak business activity, characterised by a very high number of micro-enterprises, irregular work, a limited share of permanent contracts and poor innovation dynamics.

The employment rate mirrors fundamental regional gaps (Table A17.1). The employment rate rose from 66% in 2002 to 73.1% in 2021 in the EU27 and from 59.2% to 62.7% in Italy, but it was stationary in the south, from 48.6% to 48.9%, and the islands, from 47.5% to 47.7%. In 2021 the employment rate in the north was only slightly below the EU-27 (73.1%) while it was around 25 percentage points lower in the southern and insular regions. Campania, Calabria, Sicilia and Puglia were among the 15 worst performing regions in the EU, with employment rates below 50%.

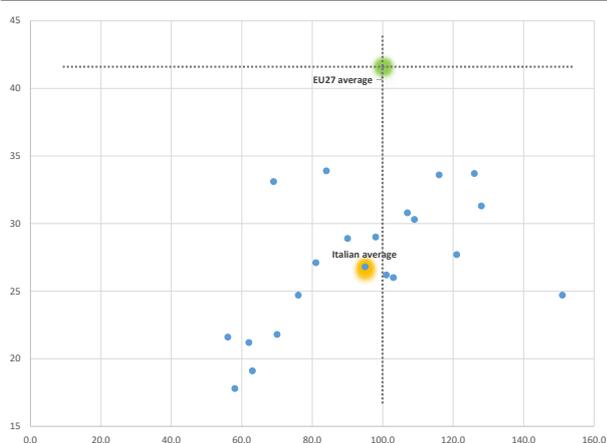


Table A17.1: Selected indicators at regional level in Italy

| Region | GDP per head (PPS) | GDP growth | Population growth | Productivity (GVA (PPS) per person employed) | Real productivity growth | Employment rate, ages 20-65 | Population aged 30-34 with high educational attainment | Early school leavers | R&D expenditure in the business enterprise sector (BERD) | Employment in high-technology sectors | Quality of Government Index (QoG) |
|---------------------------|-------------------------|--------------------------------|--------------------------------|--|--------------------------------|----------------------------------|--|----------------------------------|--|---------------------------------------|--|
| | Index, EU27 = 100; 2021 | Average annuale growth 2011-20 | Average annuale growth 2011-20 | Index, EU27 = 100; 2021 | Average annuale growth 2011-20 | % of population aged 20-64; 2021 | % of population aged 30-34; 2021 | % of population aged 18-24; 2021 | % of GDP; 2019 | % of total employment; 2021 | Index - values range between 0 and 100; 2021 |
| European Union | 100 | 0,7 | 1,7 | 100 | 0,2 | 73,1 | 41,6 | 9,7 | 1,5 | 4,8 | 48,6 |
| Italia | 95,0 | -0,7 | 0,7 | 104,3 | -0,8 | 62,7 | 26,8 | 12,7 | 0,9 | 4,0 | |
| Nord-Ovest | 118,0 | -0,7 | 1,7 | 117,5 | -0,8 | 70,8 | 29,8 | 11,5 | 1,2 | 4,9 | |
| Nord-Est | 113,0 | -0,3 | 1,6 | 109,6 | -0,7 | 72,3 | 31,3 | 9,6 | 1,2 | 3,2 | |
| Centro | 101,0 | -0,9 | 3,0 | 102,6 | -1,1 | 67,2 | 30,0 | 9,8 | 0,8 | 5,7 | |
| Sud | 64,0 | -1,0 | -2,0 | 86,3 | -0,8 | 48,9 | 21,6 | 15,3 | 0,5 | 2,4 | |
| Isole | 61,0 | -1,5 | -1,8 | 86,8 | -0,9 | 47,7 | 18,7 | 19,5 | 0,3 | 2,2 | |
| Piemonte | 101,0 | -0,8 | -1,4 | 107,1 | -0,7 | 69,8 | 27,4 | 11,4 | 1,8 | 3,9 | 37,0 |
| Valle d'Aosta | 121,0 | -1,6 | -2,1 | 115,3 | -1,1 | 71,6 | 27,7 | | 0,3 | | 36,9 |
| Liguria | 101,0 | -1,3 | -2,5 | 107,0 | -1,2 | 68,0 | 26,2 | 12,9 | 0,9 | 3,1 | 34,5 |
| Lombardia | 128,0 | -0,5 | 3,7 | 123,0 | -0,9 | 71,6 | 31,3 | 11,3 | 1,0 | 5,5 | 30,4 |
| Abruzzo | 81,0 | -0,9 | -1,2 | 93,9 | -0,6 | 62,1 | 27,1 | 8,0 | 0,5 | 3,0 | 23,7 |
| Molise | 69,0 | -1,6 | -6,0 | 89,5 | -1,0 | 55,9 | 33,1 | 7,6 | 0,8 | 2,0 | 21,2 |
| Campania | 62,0 | -1,1 | -1,4 | 87,1 | -0,9 | 45,0 | 21,2 | 16,4 | 0,7 | 2,8 | 5,2 |
| Puglia | 63,0 | -0,9 | -1,7 | 83,4 | -1,0 | 50,5 | 19,1 | 17,6 | 0,4 | 2,1 | 18,3 |
| Basilicata | 76,0 | 0,4 | -5,3 | 94,4 | 0,3 | 56,7 | 24,7 | 8,7 | 0,2 | 2,1 | 16,3 |
| Calabria | 56,0 | -1,7 | -3,5 | 80,7 | -0,7 | 45,5 | 21,6 | 14,0 | 0,2 | 1,6 | 1,7 |
| Sicilia | 58,0 | -1,6 | -1,7 | 86,9 | -0,9 | 44,5 | 17,8 | 21,2 | 0,3 | 2,2 | 18,0 |
| Sardegna | 70,0 | -1,2 | -2,1 | 86,4 | -0,9 | 57,0 | 21,8 | 13,2 | 0,1 | 2,0 | 20,1 |
| Provincia Autonoma Bozen | 151,0 | 0,6 | 6,5 | 124,4 | -0,2 | 75,8 | 24,7 | 12,9 | 0,5 | 1,7 | 43,0 |
| Provincia Autonoma Trento | 126,0 | 0,0 | 3,2 | 118,8 | -0,4 | 72,5 | 33,7 | 8,8 | 0,6 | 3,7 | 48,9 |
| Veneto | 107,0 | -0,5 | 0,8 | 105,5 | -0,9 | 70,8 | 30,8 | 9,3 | 1,0 | 3,1 | 45,3 |
| Friuli-Venezia Giulia | 103,0 | -0,5 | -1,2 | 105,7 | -0,6 | 72,3 | 26,0 | 8,6 | 0,9 | 3,0 | 47,3 |
| Emilia-Romagna | 116,0 | -0,3 | 2,5 | 111,8 | -0,6 | 73,5 | 33,6 | 9,9 | 1,6 | 3,5 | 40,0 |
| Toscana | 98,0 | -0,6 | 1,4 | 100,4 | -0,7 | 70,5 | 29,0 | 11,1 | 1,0 | 3,7 | 40,5 |
| Umbria | 84,0 | -1,4 | -1,2 | 91,4 | -1,2 | 69,3 | 33,9 | 12,0 | 0,5 | 3,0 | 32,1 |
| Marche | 90,0 | -1,0 | -2,5 | 94,6 | -0,8 | 68,9 | 28,9 | 7,9 | 0,7 | 2,8 | 31,9 |
| Lazio | 109,0 | -1,0 | 6,3 | 107,5 | -1,3 | 64,4 | 30,3 | 9,2 | 0,8 | 8,2 | 21,5 |

Source: EUROSTAT

Graph A17.2: GDP per capita (PPS) in 2021 and population with high level of education



Source: Eurostat, DG REGIO elaboration. GDP per capita (PPS) (EU-27 = 100; 2021) (x-axis) and percentage of the population aged 30-34 with a high level of educational attainment (EU-27 average = 41.6%; in 2021) (y-axis)

Sectoral specialisation and human capital are important causes of the regional gaps in productivity and employment. In 2020, the proportion of the workforce employed in high technology sectors in the northern and central regions was broadly aligned to the EU-27 average, while in southern and insular regions it was less than half. The high number of early school leavers also contributes to constraining the economic and social potential of the south, with a peak in Sicilia that records a rate twice as high as the EU-27 average (21.2% against 9.7%). In 2022, the share of the population aged 25-34 with higher education attainment in Italy as a whole (29.2%)

was significantly lower than the EU-27 average of 42.0% and the gap was wider with the southern regions, where the share was below 25%. Lower levels of educational attainment go hand in hand with lower levels of GDP per capita (Graph A17.2).

Boosting innovation systems remains a major challenge for Italy and for the southern regions in particular. The Italian business sector's expenditure on R&D (0.9% of GDP) remained significantly below the EU-27 average of 1.5%, but in the southern and insular regions it was less than a third of the EU-27 average (Table A17.1). Huge regional disparities are also reflected in the 2022 edition of the regional competitiveness index. Compared to the EU average (score 100), all the Italian regions performed significantly worse, with southern and insular regions (scores lower than 70) lagging behind compared to the rest of Italy (scores between 70 and 100). Lombardia is the only exception (103.2). During the 2021-27 programming period, Italy has the opportunity to frame industrial policy interventions by combining research and development activities with a major involvement of businesses in innovation and enhanced skills for the industrial transition.

Italy's demographic dynamics are a cause for major concern regarding its economic growth, social cohesion and territorial disparities. Between 2011 and 2020, population growth was limited to just seven regions in the north and centre (Lombardia, Veneto, Emilia-

Romagna, Toscana, Lazio, and the autonomous provinces of Trento and Bolzano/Bozen). On the other hand, the population has fallen in all the southern and insular regions over the past decade. This limits the economic potential, particularly in the light of the limited number of applications to study at universities in the southern regions, and the more limited human resources available to private undertakings and the public sector. This demographic trend also threatens social cohesion because it makes it harder to meet the needs of an ageing population (as shown by the current staff shortages in the public health and care services).

The quality of institutions varies dramatically between the north and the south. In 2021, the quality of government index for Italy as a whole was 29 points out of 100 (the EU-27 average was 49). The northern and central regions scored on average around 37 – more than twice the average score for the southern and insular regions, which is 15.

The quality of public services is generally lower in the southern regions. This concerns not only services managed at the regional and local levels (e.g. transport, water, waste and risk prevention) but also services managed by ministries at the national level (e.g. education and justice).

Regional gaps in the provision of water services are particularly significant. Wastewater services are absent in 296 municipalities with a combined population of 1.3 million inhabitants and 68% of these municipalities are located in the southern regions (particularly Sicilia, Campania and Calabria). At the national level, 42.2% of distributed water was lost in 2020 (42% in 2018) and the loss was higher than the national average in the hydrographic districts of the central Apennine territories and in the southern and insular regions⁽¹³⁷⁾. The reorganisation of the water service has begun in the worst affected southern regions but is still only in the initial phase.

Varying levels of administrative and technical capacities mean that public works take longer in the southern regions. In 2012–2020, the first project phase of public works (i.e. the preparatory phases for projects' preparation

and selection) took 246 days in the southern and insular regions – compared with 189 days in the northern and central regions. The next phase (i.e. the awarding of public works contracts) took 88 days on average in the southern and insular regions – compared with 66 days in the northern and central regions. Finally, the actual execution of public works took on average 492 days in the southern and insular regions – compared with 408 days in the northern and central regions⁽¹³⁸⁾. This, in turn, explains the gap in terms of both the number of awards of public works (21 602 in the southern and insular regions compared with 72 928 in the northern and central regions) and their monetary value (EUR 15 608 million in the southern and insular regions compared with EUR 47 194 million in the northern and central regions).

The COVID-19 pandemic affected all regions, but to different degrees. The average excess mortality in 2020–2021 was higher than in 2015–2019 in all regions, but it varied considerably between regions. It was highest in the north-western regions at an average of 21% (with a peak of 25% in Lombardia), followed by the north-eastern regions at 15%, while it averaged around 10% in the central, southern and insular regions.

⁽¹³⁷⁾<https://www.istat.it/it/archivio/279363>

⁽¹³⁸⁾Source: Banca d'Italia, *Rapporti annuali regionali sul 2021*, BDAP e Open ANAC



Italy has a predominantly bank-based financial sector, with banks being the most important providers of financial services to households and companies. The banking sector is primarily domestically owned (domestically owned banks account for roughly 92% of total banking-sector assets), with the five largest banking groups accounting for 52% of banking-sector assets. The largest banking groups (Intesa Sanpaolo and UniCredit) have substantial international operations, in particular in central, eastern and south-eastern Europe. Following reforms implemented in the cooperative sector since 2015, the fragmentation of the banking sector has gradually reduced. These reforms have also led to a steady decline in the number of branches and employees, which has increased efficiency. Despite efforts to diversify non-bank financing and facilitate the access of companies to capital markets, the market-funding ratio stood slightly below 38% in 2021, the highest level since 2017, but lower than the EU average of 51%. Sustainable financing expanded markedly in 2021, helped by an increase in the issuance of green, social and sustainable bonds. The volume of green-bond issuance increased by almost four times compared to 2020 and reached EUR 22.2 billion in 2021. The issuance of the first green bond by the Italian treasury (EUR 8.5 billion) in September 2021 contributed substantially to the increase in green-bond issuance in 2021.

Despite the challenges posed by the COVID-19 pandemic and, more recently, by the

slowdown in economic growth, banking-sector resilience has been safeguarded. The capital adequacy ratio for Italian banking sector stood at 18.4% in Q3-2022, marginally lower than in 2021 and below the EU average. This was due to the gradual phasing in of IFRS9, the payment of dividends, and the share buy-back programmes of some banks. Asset quality has improved further, due to: (i) banks' efforts to dispose of non-performing loans (NPLs); and (ii) the support provided by the State-guarantee schemes and loan moratorium, which was in place until the end of 2021. The gross NPL ratio declined to 3.0% in Q3-2022, albeit still above the EU average of 1.8%. (Table 18-1) Banking-sector profitability rebounded, with return on equity reaching 5.7% in 2021 and improved further to 8.6% in the third quarter of 2022 (above the EU average of 6.1%). Banks have continued their efforts to increase efficiency and rationalise their branch network, which led to a decrease in the cost-to-income ratio to 59.8% at the end of Q2-2022, below the EU average of 60.6%. The liquidity position has remained comfortable, with the liquidity coverage ratio (LCR) increasing to roughly 204%. However, Italian banks have made extensive use of the ECB refinancing operations, and central bank liquidity amounted to 10.8% of total bank liabilities at the end of Q3-2022.

In spite of the resilience of the banking sector, several vulnerabilities warrant closer oversight. The Italian banking sector has the second largest exposure to Russia of all EU Member States. The bulk of this exposure is

Table A18.1: Financial Soundness Indicators

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | EU | Median |
|---|-------|-------|-------|-------|-------|-------|-------|--------|
| Total assets of the banking sector (% of GDP) | 214.0 | 207.1 | 207.2 | 231.7 | 223.5 | 207.9 | 276.8 | 207.9 |
| Share (total assets) of the five largest banks (%) | 43.4 | 45.6 | 47.9 | 49.3 | 51.6 | - | - | 68.7 |
| Share (total assets) of domestic credit institutions (%) ¹ | 92.0 | 91.8 | 93.1 | 92.5 | 91.6 | 91.7 | - | 60.2 |
| NFC credit growth (year-on-year % change) | 0.4 | 1.5 | -1.8 | 8.3 | 1.8 | 0.5 | - | 9.1 |
| HH credit growth (year-on-year % change) | 2.8 | 2.8 | 2.6 | 2.4 | 3.7 | 3.4 | - | 5.4 |
| Financial soundness indicators:¹ | | | | | | | | |
| - non-performing loans (% of total loans) | 11.2 | 8.4 | 6.7 | 4.5 | 3.5 | 3.0 | 1.8 | 1.8 |
| - capital adequacy ratio (%) | 16.8 | 16.1 | 17.2 | 19.3 | 18.8 | 18.4 | 18.6 | 19.8 |
| - return on equity (%) ² | 7.1 | 5.8 | 4.9 | 1.0 | 5.7 | 8.6 | 6.1 | 6.6 |
| Cost-to-income ratio (%)¹ | 65.1 | 65.9 | 65.5 | 68.3 | 63.2 | 59.8 | 60.6 | 51.8 |
| Loan-to-deposit ratio (%)¹ | 102.1 | 97.1 | 94.4 | 77.0 | 73.3 | 74.1 | 88.6 | 78.0 |
| Central bank liquidity as % of liabilities | 8.4 | 8.1 | 7.2 | 11.7 | 13.4 | 10.8 | - | 2.9 |
| Private sector debt (% of GDP) | 109.4 | 107.7 | 106.0 | 118.4 | 113.8 | - | - | 120.7 |
| Long-term interest rate spread versus Bund (basis points) | 179.4 | 221.3 | 220.3 | 167.8 | 118.5 | 201.5 | - | 93.3 |
| Market funding ratio (%) | 31.7 | 33.9 | 34.6 | 35.5 | 37.8 | - | 50.8 | 40.0 |
| Green bonds issued to all bonds (%) | 0.1 | 0.1 | 0.3 | 0.4 | 1.1 | 1.6 | 3.9 | 2.3 |

Colours indicate performance ranking among 27 EU Member States.

(1) Last data: Q3 2022.

(2) Data is annualised.

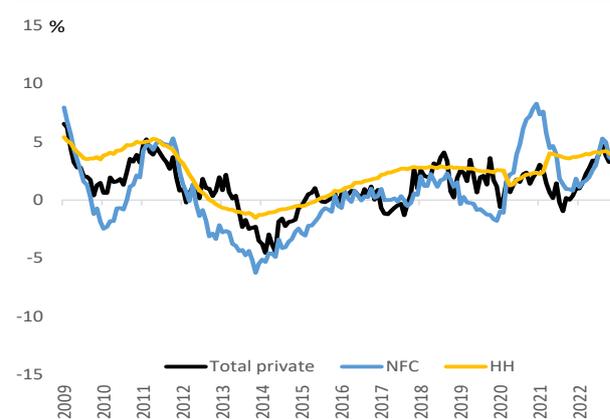
Source: ECB, Eurostat, S&P Global Capital IQ Pro.

concentrated in the two largest Italian banking groups. The exposure of Italian banks to Russian counterparts amounted to EUR 22.8 billion (European Banking Authority data) or 30.3% of the EU's total EU exposure to Russian counterparts by end-March 2022. This exposure has been manageable from a capital perspective, but further second-round effects and reputational risks cannot be excluded. Meanwhile, high energy prices have put strain on the more energy-intensive sectors of the economy and are likely to impact banks' asset quality and business more broadly. Although Italian banks have continued the process of NPL disposal, loans that are unlikely to be repaid have remained a matter of concern. More than half of the NPL stock in Italy is made up of unlikely-to-pay (UTP) loans, which may become defaulted as the increase in interest rates and the erosion of disposable income could negatively affect the debt-servicing capacity of borrowers. The extensive guarantee schemes to support corporate lending put in place after the onset of the COVID-19 pandemic by authorities have further deepened the already strong nexus between banks and the Italian sovereign. The exposure of Italian banks to sovereign debt amounted to roughly 11.5% of total assets at the end of December 2022. To shield their capital base from adverse market developments, banks have reshuffled their sovereign bond portfolios and booked an increasing part of these portfolios (roughly 72%) in the amortised cost portfolio (i.e. HTC - held to collect), which does not impact bank capital. The pricing of future minimum requirement for own funds and eligible liabilities (MREL) issuances and the gradual phasing out of the ECB's targeted longer-term refinancing operations may impact banks' cost of funding.

Lending to households and corporates remained robust in 2022. Partly supported by the State-guaranteed loans granted through the SME Guarantee Fund, lending to corporates remained strong in the first half of 2022 and accelerated further during the summer months of 2022, on the back of higher demand for credit by larger firms. Loans to households have also continued to grow despite the tightening in credit standards. The erosion of disposable income coupled with a further tightening of credit standards led to a slowdown in lending to households – in particular mortgage lending – in the last quarter of 2022. The normalisation of monetary policy has also led to an increase in the cost of lending to households and companies, with

the average lending rate reaching 2.96% in November 2022, up from 2.17% in November 2021. According to data from the Italian Banking Association, the lending rate increased the most for new loans granted to non-financial corporations. This rate stood at 3.11% at the end of November 2022, roughly 2 percentage points higher than in November 2021. Private sector debt decreased by roughly 5 percentage points in 2021 compared with 2020 and stood at 113.5% of GDP, still markedly higher than in 2019.

Graph A18.1: **Evolution of credit activity**



Adjusted loans for sales and securitisations.

Source: ECB.

Real-estate prices continued to increase in the first half of 2022, and at a faster pace than in the second half of 2021. In spite of increasing real-estate prices, developments in Italy's real-estate market have been less worrying than in other EU Member States. Demand remained high in the first half of 2022 and during the summer of 2022, as inflation did not weigh significantly on the disposable income of households. This favourable backdrop led to increases in sales of residential real estate. Meanwhile, the decline in prices of commercial real estate continued, albeit at a slower pace than in 2021. While oversight of the real-estate market in Italy remains warranted, market developments do not suggest an overvaluation of real-estate prices, which would require a tightening of the current macro-prudential policy stance. The Bank of Italy, Italy's central bank, has maintained the countercyclical capital buffer at zero.

This Annex provides an indicator-based overview of Italy's tax system. It includes information on Italy's tax structure (the types of tax that Italy derives most revenue from), the tax burden on workers, as well as the progressivity and redistributive effects of the tax system. It also provides information on tax collection and compliance.

Italy's tax revenues in relation to GDP are relatively high, with the largest contribution coming from labour taxation. Table A19.1 shows that Italy's tax revenues as a percentage of GDP were above the EU aggregate in 2021 and have been on an increasing trend in recent years. The shares of labour and environmental taxes as a share of GDP were above the EU aggregate. Revenues from consumption taxes are close to the EU aggregate, both as a share of GDP and of total taxation (see Graph A19.1), despite relatively low VAT revenues due to a wide use of reduced VAT rates. Revenues from recurrent taxes on property, which are among the taxes least detrimental to growth, were above the EU aggregate as a percentage of GDP. However, first residences are exempt for almost all property classes, and the values used for property taxation are outdated. A revision of outdated cadastral values to bring them closer to market values has not taken place. More broadly, the enabling law tabled in October 2021, which provided for a general tax reform

addressing several longstanding weaknesses of Italy's tax system, has not been approved by the Parliament.

Italy's labour tax burden is relatively progressive also thanks to the current structure of tax brackets. Graph A19.2 shows that the labour tax wedge for Italy in 2022 was higher than the EU average for single persons at different wage levels (50%, 67%, 100% and 167% of the average wage). Second earners at a wage level of 67% of the average wage, whose spouses earn the average wage, also faced a tax wedge higher than the EU average. While the changes to personal income taxation introduced in 2022 may have reduced the tax burden for low and medium income earners, the tax wedge remained above the EU average. A lower labour tax wedge could markedly support labour participation, as EUROMOD simulations suggest (see Chapter 3). Regarding corporate taxation, the average forward-looking effective corporate income tax rates were considerably above the EU-27 average in 2021.

Several measures have been enacted in recent years to encourage tax compliance, but tax evasion remains very high. Recent measures included the compulsory use of electronic invoicing and government incentives to encourage the use of electronic payments. As a

Table A19.1: **Taxation indicators**

| | | Italy | | | | | EU-27 | | | | |
|--|---|-------|-------|-------|------|------|-------|------|------|------|------|
| | | 2010 | 2019 | 2020 | 2021 | 2022 | 2010 | 2019 | 2020 | 2021 | 2022 |
| Tax structure | Total taxes (including compulsory actual social contributions) (% of GDP) | 41.2 | 42.2 | 42.5 | 43.3 | | 37.9 | 39.9 | 40.0 | 40.6 | |
| | Labour taxes (as % of GDP) | 21.5 | 21.5 | 22.3 | 22.0 | | 20.0 | 20.7 | 21.3 | 20.9 | |
| | Consumption taxes (as % of GDP) | 10.6 | 11.2 | 10.6 | 11.3 | | 10.8 | 11.1 | 10.7 | 11.2 | |
| | Capital taxes (as % of GDP) | 9.2 | 9.5 | 9.7 | 9.9 | | 7.1 | 8.1 | 8.0 | 8.5 | |
| | Total property taxes (as % of GDP) | 1.8 | 2.4 | 2.4 | 2.5 | | 1.9 | 2.2 | 2.2 | 2.2 | |
| | Recurrent taxes on immovable property (as % of GDP) | 0.6 | 1.4 | 1.5 | 1.4 | | 1.1 | 1.2 | 1.2 | 1.1 | |
| | Environmental taxes as % of GDP | 2.8 | 3.2 | 3.0 | 3.0 | | 2.4 | 2.4 | 2.2 | 2.2 | |
| Progressivity & fairness | Tax wedge at 50% of average wage (Single person) (*) | 40.7 | 36.4 | 36.3 | 35.6 | 34.7 | 33.9 | 32.3 | 31.9 | 32.1 | 31.7 |
| | Tax wedge at 100% of average wage (Single person) (*) | 47.2 | 47.9 | 46.9 | 45.4 | 45.9 | 41.0 | 40.1 | 39.9 | 39.6 | 39.7 |
| | Corporate income tax - effective average tax rates (1) (*) | | 20.9 | 21.3 | 21.3 | | | 19.5 | 19.4 | 19.1 | |
| | Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*) | 5.9 | 6.5 | 6.6 | 8.0 | | 8.6 | 7.7 | 8.1 | 7.8 | |
| Tax administration & compliance | Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*) | | 200.7 | 213.6 | | | | 31.6 | 40.7 | | |
| | VAT Gap (% of VAT total tax liability, VTTL) | | 21.8 | 20.8 | | | | 11.0 | 9.1 | | |

(1) Forward-looking effective tax rate (OECD)

(2) A higher value indicates stronger redistributive impact of taxation

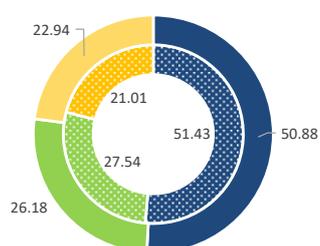
(*) EU-27 simple average

For more data on tax revenues as well as the methodology applied, see European Commission, Directorate-General for Taxation and Customs Union, Taxation trends in the European Union: data for the EU Member States, Iceland, Norway and United Kingdom: 2021 edition, Publications Office, 2021, <https://data.europa.eu/doi/10.2778/843047> and the 'Data on Taxation' webpage (https://ec.europa.eu/taxation_customs/taxation-1/economic-analysis-taxation/data-taxation_en). For more details on the VAT gap, see European Commission, Directorate-General for Taxation and Customs Union, 'VAT gap in the EU: report 2022', Publications Office, 2022, <https://data.europa.eu/doi/10.2778/109823>

Source: European Commission, OECD.

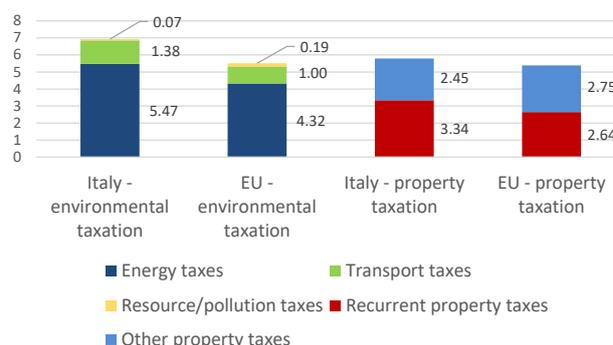
Graph A19.1: Tax revenues from different tax types as % of total taxation

Tax revenue shares in 2021, Italy (outer ring) and the EU (inner ring)



■ Taxes on labour ■ Taxes on consumption ■ Taxes on capital

Environmental and property taxation as % of total tax revenue, Italy and the EU

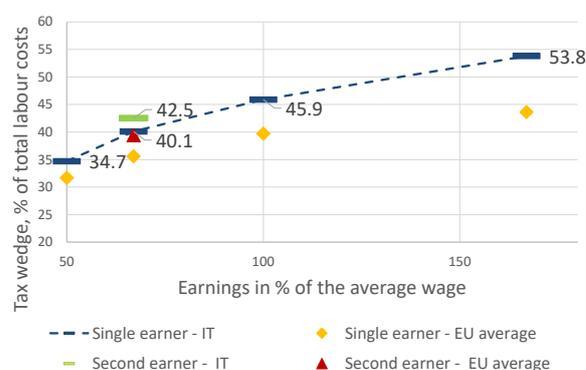


Note: Values for EU are GDP-weighted EU averages (EU aggregates)

Source: European Commission

result, the VAT gap (the gap between revenues actually collected and the theoretical tax liability) continued to decrease and reached 20.8% in 2020, although it remains well above the EU-wide gap of 9.1%. Important additional measures against tax evasion have been implemented in 2022 as part of the RRP, and are expected to further improve tax compliance and support government revenues. They include better targeting of audits and controls, the extension of electronic invoicing to self-employed workers in simplified regimes and sanctions for the refusal of electronic payments. At the same time, measures equivalent to tax amnesties that were introduced with the 2023 budget, together with the increase of the legal threshold for cash payments from EUR 2 000 to EUR 5 000, risk having a negative impact on tax compliance. Outstanding tax arrears have increased slightly by 12.9 pps. to 213.6% of total net revenue for 2021 and remained significantly above the EU-27 average. However, the high amount of tax arrears is mostly related to national accounting rules which prevent writing-off arrears considered not collectable, while the share of 'collectable arrears' is very low in Italy.⁽¹³⁹⁾ The RRP also includes measures to further develop the digitalisation of the tax administration, such as the launch of pre-filled VAT tax returns, which is expected to further reduce compliance costs and tax arrears.

Graph A19.2: Tax wedge for single and second earners as a % of total labour costs, 2022



Note: Second earner tax wedge assumes first earner at 100% of the average wage and no children. For the methodology of the tax wedge for second earners see OECD (2016) "Taxing Wages 2014-2015".

Source: European Commission

⁽¹³⁹⁾See OECD (2023) "Tax Administration 2022, Comparative Information on OECD and other Advanced and Emerging Economies" ([1e797131-en.pdf \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/taxation/tax-administration-2022-comparative-information-on-oecd-and-other-advanced-and-emerging-economies))



ANNEX 20: TABLE WITH ECONOMIC AND FINANCIAL INDICATORS

Table A20.1: Key economic and financial indicators

| | 2004-07 | 2008-12 | 2013-19 | 2020 | 2021 | 2022 | forecast | |
|--|---------|---------|---------|-------|-------|-------|----------|-------|
| | | | | | | | 2023 | 2024 |
| Real GDP (y-o-y) | 1.4 | -1.4 | 0.5 | -9.0 | 7.0 | 3.7 | 1.2 | 1.1 |
| Potential growth (y-o-y) | 0.7 | -0.2 | 0.0 | -0.1 | 0.1 | 0.9 | 0.8 | 0.9 |
| Private consumption (y-o-y) | 1.2 | -1.1 | 0.5 | -10.4 | 4.7 | 4.6 | 0.1 | 1.2 |
| Public consumption (y-o-y) | 0.3 | -0.4 | -0.3 | 0.0 | 1.5 | 0.0 | 0.4 | -1.3 |
| Gross fixed capital formation (y-o-y) | 1.8 | -4.9 | 0.6 | -7.9 | 18.6 | 9.4 | 2.6 | 1.4 |
| Exports of goods and services (y-o-y) | 5.9 | -0.9 | 2.6 | -13.5 | 14.0 | 9.4 | 2.3 | 3.1 |
| Imports of goods and services (y-o-y) | 5.3 | -2.9 | 2.8 | -12.1 | 15.2 | 11.8 | 0.8 | 2.3 |
| Contribution to GDP growth: | | | | | | | | |
| Domestic demand (y-o-y) | 1.2 | -1.7 | 0.3 | -7.6 | 6.4 | 4.6 | 0.7 | 0.8 |
| Inventories (y-o-y) | 0.1 | -0.2 | 0.1 | -0.5 | 0.4 | -0.4 | 0.0 | 0.0 |
| Net exports (y-o-y) | 0.1 | 0.6 | 0.0 | -0.8 | 0.2 | -0.5 | 0.6 | 0.3 |
| Contribution to potential GDP growth: | | | | | | | | |
| Total Labour (hours) (y-o-y) | 0.3 | -0.3 | 0.0 | -0.4 | -0.5 | 0.3 | 0.1 | 0.1 |
| Capital accumulation (y-o-y) | 0.6 | 0.3 | -0.1 | -0.1 | 0.2 | 0.4 | 0.4 | 0.4 |
| Total factor productivity (y-o-y) | -0.2 | -0.1 | 0.1 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 |
| Output gap | 2.2 | -1.1 | -2.1 | -8.3 | -2.0 | 0.7 | 1.1 | 1.3 |
| Unemployment rate | 7.3 | 8.5 | 11.5 | 9.3 | 9.5 | 8.1 | 7.8 | 7.7 |
| GDP deflator (y-o-y) | 2.3 | 1.5 | 1.0 | 1.6 | 0.6 | 3.0 | 5.9 | 2.7 |
| Harmonised index of consumer prices (HICP, y-o-y) | 2.2 | 2.4 | 0.7 | -0.1 | 1.9 | 8.7 | 6.1 | 2.9 |
| HICP excluding energy and unprocessed food (y-o-y) | 2.0 | 2.1 | 0.8 | 0.5 | 0.8 | 4.0 | 5.8 | 3.1 |
| Nominal compensation per employee (y-o-y) | 2.6 | 1.1 | 0.8 | -4.1 | 5.9 | 4.8 | 3.9 | 4.1 |
| Labour productivity (real, hours worked, y-o-y) | 0.2 | 0.0 | 0.3 | 3.1 | -1.0 | -0.3 | 0.2 | 0.7 |
| Unit labour costs (ULC, whole economy, y-o-y) | 2.3 | 2.1 | 0.8 | 3.1 | -0.4 | 2.8 | 3.1 | 3.1 |
| Real unit labour costs (y-o-y) | 0.0 | 0.5 | -0.2 | 1.5 | -1.0 | -0.2 | -2.6 | 0.4 |
| Real effective exchange rate (ULC, y-o-y) | 0.9 | 0.3 | -0.5 | -2.2 | 0.3 | -0.8 | -2.7 | -0.5 |
| Real effective exchange rate (HICP, y-o-y) | 0.6 | -0.4 | -0.1 | 0.3 | -0.2 | -1.4 | . | . |
| Net savings rate of households (net saving as percentage of net disposable income) | 8.6 | 4.6 | 2.9 | 10.2 | 7.6 | 2.1 | . | . |
| Private credit flow, consolidated (% of GDP) | 9.9 | 2.9 | -0.1 | 4.0 | 3.5 | . | . | . |
| Private sector debt, consolidated (% of GDP) | 99.7 | 121.3 | 113.3 | 118.4 | 113.5 | . | . | . |
| of which household debt, consolidated (% of GDP) | 34.1 | 42.4 | 41.6 | 44.9 | 43.3 | . | . | . |
| of which non-financial corporate debt, consolidated (% of GDP) | 65.5 | 78.9 | 71.7 | 73.5 | 70.2 | . | . | . |
| Gross non-performing debt (% of total debt instruments and total loans and advances) (1) | 4.4 | 8.3 | 10.6 | 3.5 | 2.7 | . | . | . |
| Corporations, net lending (+) or net borrowing (-) (% of GDP) | -0.2 | 0.6 | 3.0 | 6.2 | 6.2 | 5.1 | 5.4 | 5.5 |
| Corporations, gross operating surplus (% of GDP) | 23.0 | 21.3 | 21.4 | 21.2 | 21.2 | 22.2 | 22.7 | 22.6 |
| Households, net lending (+) or net borrowing (-) (% of GDP) | 2.4 | 0.9 | 1.7 | 7.4 | 6.0 | 2.1 | -0.9 | -0.6 |
| Deflated house price index (y-o-y) | 3.7 | -1.6 | -3.0 | 1.8 | 1.0 | -3.4 | . | . |
| Residential investment (% of GDP) | 5.5 | 5.4 | 4.2 | 4.0 | 5.3 | 5.8 | . | . |
| Current account balance (% of GDP), balance of payments | -1.1 | -2.2 | 2.2 | 3.9 | 3.1 | -1.3 | 0.0 | 1.3 |
| Trade balance (% of GDP), balance of payments | -0.2 | -0.7 | 2.9 | 3.6 | 2.3 | -1.5 | . | . |
| Terms of trade of goods and services (y-o-y) | -1.4 | -1.0 | 1.2 | 3.6 | -4.7 | -8.7 | 3.6 | 1.8 |
| Capital account balance (% of GDP) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.5 | . | . |
| Net international investment position (% of GDP) | -17.9 | -21.0 | -12.9 | 1.5 | 8.3 | 3.9 | . | . |
| NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2) | -9.4 | -22.4 | -12.4 | 1.0 | 6.2 | 1.7 | . | . |
| IIP liabilities excluding non-defaultable instruments (% of GDP) (2) | 94.5 | 113.9 | 122.5 | 139.3 | 137.0 | 128.6 | . | . |
| Export performance vs. advanced countries (% change over 5 years) | -0.5 | -12.4 | -6.5 | -2.3 | -1.6 | . | . | . |
| Export market share, goods and services (y-o-y) | -2.6 | -5.8 | -0.2 | -2.8 | -0.4 | 5.3 | -0.3 | -0.7 |
| Net FDI flows (% of GDP) | 0.8 | 1.0 | -0.1 | 1.1 | 1.7 | -1.1 | . | . |
| General government balance (% of GDP) | -3.1 | -3.7 | -2.4 | -9.7 | -9.0 | -8.0 | -4.5 | -3.7 |
| Structural budget balance (% of GDP) | -4.7 | -3.4 | -1.4 | -5.2 | -8.4 | -8.6 | -5.3 | -4.5 |
| General government gross debt (% of GDP) | 105.6 | 117.6 | 134.4 | 154.9 | 149.9 | 144.4 | 140.4 | 140.3 |

(1) Domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.

(2) Net international investment position (NIIP) excluding direct investment and portfolio equity shares.

Source: Eurostat and ECB as of 2 May 2023, where available; European Commission for forecast figures (Spring forecast 2023).

This Annex assesses fiscal sustainability risks for Italy over the short, medium and long term. It follows the same multi-dimensional approach as the European Commission's 2022 Debt Sustainability Monitor, updated based on the Commission's 2023 spring forecast.

1 - Short-term risks to fiscal sustainability are low overall. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A21.2).⁽¹⁴⁰⁾ Gross financing needs are expected to remain large at around 24% of GDP in the short term (i.e. over 2023-2024), although declining compared with the recent peak in 2020 (Table A21.1). Financial markets' perceptions of sovereign risk are positive, as confirmed by the ratings of the main agencies.

2 - Medium-term risks to fiscal sustainability are high overall.

The DSA for Italy shows that, under the baseline, the government debt ratio is projected to remain at a high level over the medium term (at 156.5% of GDP in 2033) (Graph 1).⁽¹⁴¹⁾⁽¹⁴²⁾ The assumed structural primary balance (a deficit of 0.3% of GDP) contributes to these developments. It appears plausible compared with past fiscal performance, indicating that the country has room for corrective action. At the same time, the baseline projections

until 2033 are overall affected by an unfavourable snowball effect, driven by the tightening of financing conditions, though the impact of Next Generation EU is expected to support real GDP growth at around 0.5% over 2025-2033. Government gross financing needs are expected to remain large over the projection period, reaching around 28% of GDP in 2033, above the level forecast for 2024 (Table A21.1).

The baseline projections are stress tested against four alternative scenarios to assess the impact of changes in key assumptions (Graph 1).

For Italy, reverting to historical fiscal trajectories under the 'historical structural primary balance (SPB)' scenario would lead to a significantly lower government debt ratio. If the SPB gradually converged to a surplus of 1.4% of GDP (its historical 15-year average), the projected debt-to-GDP ratio would be around 12 pps. lower compared to the baseline in 2033. A permanent worsening of the macro-financial conditions, as reflected under the 'adverse interest-growth rate differential' scenario (i.e. 1 pp. higher than the baseline) would result in a persistently higher government debt-to-GDP ratio, by around 13.5 pps. of GDP by 2033, as compared with the baseline. A temporary worsening of financial conditions, as reflected in the 'financial stress' scenario (i.e. temporary increase of interest rates by 3.2 pps.), would lead to a higher public debt-to-GDP ratio by 2033 (about +5 pps. of GDP) compared with the baseline. The 'lower structural primary balance (SPB)' scenario (i.e. SPB level permanently reduced by half of the cumulated forecast change), would also lead to a significantly higher government debt-to-GDP ratio by 2033 (around +21.5 pps. of GDP) compared with the baseline.

Additionally, stochastic debt projections indicate high risk (Graph 2).⁽¹⁴³⁾

These stochastic simulations point to 47% probability of the debt ratio in 2027 being greater than in 2022, entailing high risk given the initial high level of debt. In addition, such shocks point to high uncertainty (i.e., the difference between the 10th and 90th debt distribution percentiles) surrounding the government debt baseline projections.

⁽¹⁴⁰⁾The S0 is a composite indicator of short-term risk of fiscal stress. It is based on a wide range of macro-financial and fiscal variables that have proven to perform well in the past in detecting situations of upcoming fiscal stress.

⁽¹⁴¹⁾The assumptions underlying the Commission's 'no-fiscal policy change' baseline notably comprise: (i) a structural primary deficit, before ageing costs, of 0.3% of GDP as of 2024; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years from now); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10 (as for all Member States); (iv) real GDP growth rates from the Commission 2023 spring forecast until 2024, followed by EPC/OGWG 'T+10 methodology projections between T+3 and T+10, i.e. for 2025-2033 (on average 0.5%); (v) ageing costs in line with the 2021 Ageing Report (European Commission, Institutional Paper 148, May 2021). For information on the methodology, see the 2022 Debt Sustainability Monitor (European Commission, Institutional Paper 199, April 2023).

⁽¹⁴²⁾Table 1 shows the baseline debt projections and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment.

⁽¹⁴³⁾These projections show the impact on debt of 2000 different shocks affecting the government's primary balance, economic growth, interest rates and exchange rates. The cone covers 80% of all simulated debt paths, therefore excluding tail events

3 - Long-term risks to fiscal sustainability are medium overall. ⁽¹⁴⁴⁾

The S2 sustainability gap indicator (at 0.5 pp. of GDP) points to low risk, suggesting that Italy would only need a limited improvement in its structural primary balance to ensure debt stabilisation over the long term. This result is mostly underpinned by the projected decrease of pension spending (-1.7 pps. of GDP) over the long term, which is offset by an unfavourable initial budgetary position (+0.9 pp. of GDP) and the projected increase of health care and long-term care spending (+0.8 pp. of GDP respectively; Table A21.1). A number of investments and reforms in the RRP contribute to supporting the efficiency of the Italian health care system, and it will be important to carefully monitor their implementation.

Yet, combined with debt vulnerabilities, as highlighted by the S1 indicator, overall long-term risks are assessed as medium. Indeed, the S1 sustainability gap indicator signals that a consolidation effort of 3.5 pps. of GDP would be needed to reduce debt to 60% of GDP by 2070. This result is mainly driven by the high level of the Italian government debt ratio (contribution of 1.6 pps. of GDP), the contribution of ageing costs (1 pp. of GDP) and an unfavourable initial budgetary position (contribution by 0.8 pp. of GDP) (Table A21.1).

Finally, several additional risk factors need to be considered in the assessment. On the one hand, risk-increasing factors are related to the recent increase of interest rates, the share of short-term government debt and to contingent liability risks stemming from the private sector, including via the possible materialisation of

COVID-19 crisis related state guarantees. On the other-hand, risk-mitigating factors include the lengthening of debt maturity in recent years, relatively stable financing sources (with a diversified and large investor base) and the positive net international investment position. In addition, the structural reforms under the NGEU/RRF, if fully implemented, could have a further positive impact on GDP growth in the coming years, and therefore help to mitigate debt sustainability risks.

⁽¹⁴⁴⁾The S2 fiscal sustainability gap indicator measures the permanent fiscal effort (SPB adjustment) in 2024 that would be required to stabilise public debt over the long term. It is complemented by the S1 fiscal sustainability gap indicator, which measures the permanent fiscal effort required in 2024 to bring the debt-to-GDP ratio to 60% in the long term (by 2070). For both the S1 and S2 indicators, the risk assessment depends on the amount of fiscal consolidation needed: 'high risk' if the required effort exceeds 6 pps. of GDP, 'medium risk' if it lies between 2 pps. and 6 pps. of GDP, and 'low risk' if the effort is negative or below 2 pps. of GDP. The overall long-term risk classification brings together the risk categories derived from S1 and S2. S1 may notch up the risk category derived from S2 when it signals a higher risk than S2. See the 2022 Debt Sustainability Monitor for further details.

Table A21.1: **Debt sustainability analysis - Italy**

| Table 1. Baseline debt projections | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Gross debt ratio (% of GDP) | 154.9 | 149.9 | 144.4 | 140.4 | 140.3 | 140.2 | 140.8 | 142.1 | 143.3 | 145.0 | 147.3 | 150.0 | 153.2 | 156.5 |
| Changes in the ratio | 20.8 | -5.0 | -5.5 | -4.0 | -0.1 | -0.1 | 0.6 | 1.3 | 1.2 | 1.7 | 2.3 | 2.7 | 3.2 | 3.2 |
| of which | | | | | | | | | | | | | | |
| Primary deficit | 6.2 | 5.5 | 3.6 | 0.5 | -0.5 | 0.0 | 0.4 | 0.8 | 1.0 | 1.2 | 1.5 | 1.7 | 1.9 | 2.0 |
| Snowball effect | 14.4 | -7.4 | -5.2 | -5.7 | -1.0 | 0.0 | 0.2 | 0.5 | 0.2 | 0.5 | 0.8 | 1.1 | 1.3 | 1.2 |
| Stock-flow adjustments | 0.2 | -3.1 | -3.9 | 1.2 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Gross financing needs (% of GDP) | 29.9 | 25.5 | 23.0 | 23.9 | 23.4 | 22.7 | 23.4 | 24.1 | 24.6 | 25.2 | 25.9 | 26.7 | 27.5 | 28.3 |

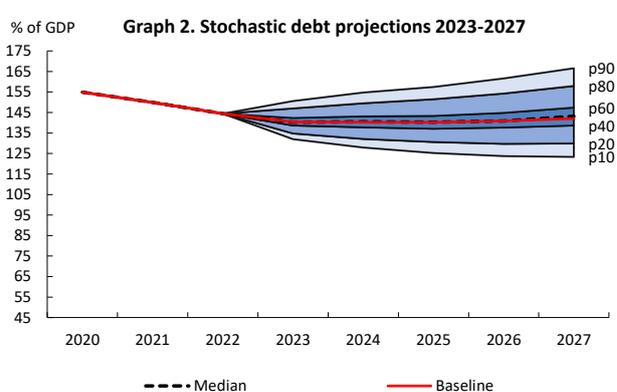
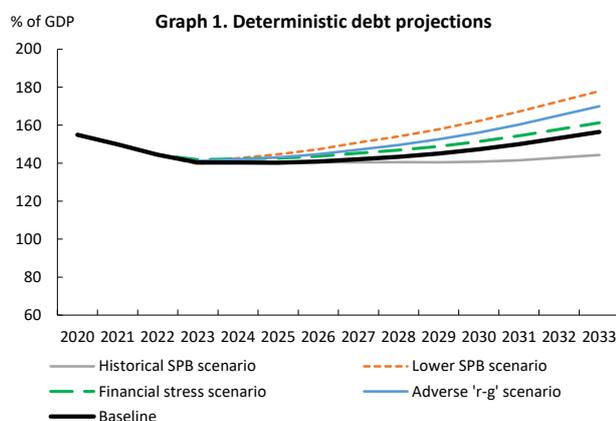


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

| | S1 | S2 |
|-----------------------------|------|------|
| Overall index (pps. of GDP) | 3.5 | 0.5 |
| of which | | |
| Initial budgetary position | 0.8 | 0.9 |
| Debt requirement | 1.6 | |
| Ageing costs | 1.0 | -0.3 |
| of which | | |
| Pensions | 0.0 | -1.7 |
| Health care | 0.7 | 0.8 |
| Long-term care | 0.6 | 0.8 |
| Others | -0.2 | -0.3 |

Source: Commission services.

Table A21.2: **Heat map of fiscal sustainability risks - Italy**

| Short term | Medium term - Debt sustainability analysis (DSA) | | | | | | | Long term | | | |
|------------|--|--|-------------------------|----------------|-----------|---------------|------------------|------------------------|-----|--------|-------------------|
| | Overall (S0) | Overall | Deterministic scenarios | | | | | Stochastic projections | S2 | S1 | Overall (S1 + S2) |
| | | | Baseline | Historical SPB | Lower SPB | Adverse 'r-g' | Financial stress | | | | |
| | | Overall | HIGH | HIGH | HIGH | HIGH | HIGH | | | | |
| LOW | HIGH | Debt level (2033), % GDP | 156.5 | 144.3 | 178.0 | 169.9 | 161.3 | | LOW | MEDIUM | MEDIUM |
| | | Debt peak year | 2033 | 2022 | 2033 | 2033 | 2033 | | | | |
| | | Fiscal consolidation space | 63% | 46% | 74% | 63% | 63% | | | | |
| | | Probability of debt ratio exceeding in 2027 its 2022 level | | | | | | 47% | | | |
| | | Difference between 90th and 10th percentiles (pps. GDP) | | | | | 43.2 | | | | |

(1) Debt level in 2033. Green: below 60% of GDP. Yellow: between 60% and 90%. Red: above 90%. (2) The debt peak year indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early. Yellow: peak towards the middle of the projection period. Red: late peak. (3) Fiscal consolidation space measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed. Yellow: intermediate. Red: low. (4) Probability of debt ratio exceeding in 2027 its 2022 level. Green: low probability. Yellow: intermediate. Red: high (also reflecting the initial debt level). (5) The difference between the 90th and 10th percentiles measures uncertainty, based on the debt distribution under 2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.

Source: Commission services.



The Macroeconomic Imbalance Procedure matrix presents the main elements of the in-depth review undertaken for Italy ⁽¹⁴⁵⁾. Italy was selected for an in-depth review in the 2023 Alert Mechanism Report. This in-depth review on the prevention and correction of macroeconomic imbalances presents the main findings on the gravity and evolution of the challenges identified, as well as policy responses and potential policy needs. Findings cover all areas of vulnerability assessed in the in-depth review.

While there have been some improvements, Italy continues to face vulnerabilities with cross-border relevance, relating to the high government debt and weak productivity growth, in a context of labour market fragilities and some weaknesses in the financial sector. Italy's public debt ratio further declined in 2022 along with the economic recovery, but it remains high, above pre-pandemic levels and constitutes a risk for fiscal sustainability and financial sector stability. Since the COVID-19 pandemic, volatile productivity growth has masked structural shortcomings that led to a virtual stagnation of GDP per hour worked over almost two decades. While employment rates are still low, youth unemployment still high, and regional as well as gender disparities persist, there have been improvements recently. Visible improvements have also been made in reducing NPLs, while the corporate-sovereign-bank nexus remains a challenge in a macroeconomic environment with increasing interest rates.

Going forward, Italy's long-standing vulnerabilities are not expected to unwind quickly. While the public debt ratio is forecast to further decline by next year, it is set to remain high. Rising funding costs dampen capital deepening. Productivity is nonetheless expected to gradually improve, as a result of implemented reforms and investment included in Italy's RRP. The labour market proved to be resilient during the pandemic crisis, including due to the public policies support, however, structural challenges remain. Banks' asset quality may be negatively impacted by the energy crisis and increasing financing costs. The banking system is in relatively good shape,

and increasing interest rates may further strengthen bank profitability. The corporate-sovereign-bank nexus has been intensified by the wide use of public guarantee schemes.

Some recent reforms may reduce macroeconomic imbalances, contingent on full implementation, while policy needs remain. The government has started to implement yearly spending reviews and is progressing with actions to improve tax collection. Reforms and investments are set to gradually boost productivity and growth. The major steps in 2021 were followed by efforts in 2022, including the implementation of the reforms in the judicial and education systems, as well as the reform to improve the management of public employment, coupled with major investments, such as to support digitalisation of firms. In 2022, measures were also taken to improve the business environment, including public procurement and the annual competition law. The government also enhanced and extended active labour market policies. The new insolvency framework entered into force in July 2022 and is expected to prevent the accumulation of new non-performing loans. Challenges in the areas of pension expenditure, taxation, fiscal framework, demographic trends, and energy call for further policy measures that are not or only partially envisaged in the RRP.

Based on this assessment, the Commission considered in its communication European Semester – 2023 Spring Package (COM(2023) 600 final) that Italy continues to experience excessive imbalances.

⁽¹⁴⁵⁾ European Commission (2023), In-Depth Review for Italy, Commission staff working document (COM(2023) 634 final), in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances.

Table A22.1: Assessment of macroeconomic imbalances matrix

| | Gravity of the challenge | Evolution and prospects | Policy response |
|---|--|--|--|
| | Unsustainable trends, vulnerabilities and associated risks | | |
| Public debt | Italy's public debt ratio remains high in a euro area comparison, at 144.4% of GDP in 2022. The high public debt is a major source of vulnerability for the economy. High debt servicing costs crowd out productive public expenditure. High rollover needs entail refinancing risks. Prolonged increases in sovereign yields may have adverse economic effects also through the exposure of domestic financial institutions to public debt, which hamper their lending activity. | After the public debt ratio reached its peak of 154.9% in 2020, on the back of policies tackling the Covid crisis and the drop in economic activity, it declined markedly in 2021 and 2022, also in part due to the economic recovery. It is projected to further decline to 140.3% by 2024 thanks to improving primary balances. The withdrawal of energy support measures is also expected to reduce the budget deficit, albeit it is projected to remain above 3% of GDP in 2024. Sovereign yields increased in 2021 and further in 2022, amid tighter financing conditions. Debt sustainability analysis suggests that fiscal sustainability risks are low in the short term, but high in the medium term and medium in the long term. | Recent policy measures help reduce the public debt ratio, but more actions are needed. New measures of around 1% of GDP weigh on the 2023 deficit, including temporary ones to counter the social and economic impact of high energy prices. Temporary early retirement schemes since 2019, partly extended to 2023, increase pension expenditure in the medium term and worsen the public spending bias towards them. Policies against tax evasion started to bear fruit and RRP measures in 2022 may underpin it. The Finance Ministry's reinforced role following the RRP is expected to raise the effectiveness of spending reviews, for which the 2023 budget set savings targets. A revenue-neutral tax shift from labour to less growth detrimental sources would help closing remaining policy gaps. |
| Productivity and competitiveness | Weak productivity growth is a long-standing challenge. Growth in real labour productivity (per hour worked) averaged 0.4% during 2009-2019 after stagnating in the decade before (EU: 1.2% in both decades). Weak productivity growth is largely due to low investment and innovation, barriers to competition, weaknesses in the public administration paired with a non-supportive business environment and skill gaps in the labour force. Productivity growth is critical to sustain competitiveness and GDP growth, which is crucial to substantially reduce the public debt ratio. | From 2019 to 2022, labour productivity grew by 0.6% per year, slightly above the weak trend growth of the past decade. This average annual growth masks strong annual fluctuations since 2020. Productivity grew sizeably by 3.1% in 2020, as the drop in hours worked largely exceeded the fall in economic output. With rising hours worked, productivity dropped by 1% in 2021, followed by a 0.3% decline in 2022. Going forward, rising capital costs dampen investments, while the green transition, supply chain reorganisations and reforms that improve the business environment might lift productivity in the medium term. | Recent RRP measures to improve the business environment, including those on public procurement and the 2022 annual competition law, may simplify and speed up bureaucratic procedures as well as improve sectoral regulations. The government further implemented the judicial system reforms launched in 2021 to increase the efficiency of courts. In 2022, measures were also adopted to improve administrative capacity and the management of public employment. Productivity would benefit from additional policy efforts beyond the RRP, notably in the areas of demography, labour market |
| Labour market participation and unemployment | The labour market continues to face low participation rates, particularly for women, young people and in the South. The youth unemployment rate and the share of young people not in employment, education or training are among the highest in the EU. The supply of tertiary and vocational graduates is well below the level of peer countries and falls short of available job vacancies. | The unemployment rate averaged 8.1% in 2022, down from 9.5% in 2021. On the back of renewed dynamism in recruitment of permanent employees, the labour demand outlook stays positive despite slowing output growth. Both long-term and youth unemployment dropped significantly in 2022, to well below pre-crisis levels. RRP measures are expected to address some of the labour market's structural challenges in the medium term. | Some policies addressed labour market vulnerabilities. The 2021 labour market reform and the RRP's strengthening of work-based skill formation facilitate job matching and transitions. The RRP supports vocational training, notably at tertiary level, adult learning and the dual system. Their balanced sectoral and geographical distribution may reduce territorial divides. Expanded child care facilities may encourage female labour market participation. Implementation of RRP measures to reduce undeclared work, improve labour activation and enhance workers' skills is pending. |
| Financial Sector | Substantial progress was made in the reduction of NPLs. The gross NPL ratio declined from 16.5% in 2014 to 2.9% in Q3-2022. However, risks are concentrated in less significant institutions and in southern regions where NPL ratios and borrowing costs are higher. The policy response to the pandemic intensified the corporate-sovereign-bank nexus, which remains a challenge for the banking sector. Italian banks remain highly capitalized with a CET1 ratio of 14.7% in Q3-2022 and a rising trend in profitability driven by the increase of net interest income (+9% yoy). | A dynamic market for securitizations and asset disposal allowed considerable improvements in the reduction of NPLs. However, the slowdown of economic activity, inflation and increasing financing and refinancing costs weigh on borrowers' ability to repay loans and may negatively affect asset quality. This is also relevant for public guaranteed loans which account for more than 35% of loans to non-financial corporations. As regards to funding, banks are expected to be able to cope with the challenges posed by the phasing out of the TLTRO loans. | Important policies tackled financial sector imbalances. The insolvency reform entered into force in 2022. The new out-of-court settlement is now operational and may facilitate an earlier restructuring of distressed companies. Liquidity schemes were extended for energy intensive sectors and prudent capital endowment has been built up for potential losses on public guaranteed exposure. The budget law 2023 offered the option for low-income households to switch from a variable to fixed interest rate mortgage. The GACS scheme expired in 2022 but a revised version is under consideration. To lower risks from the corporate-sovereign-bank nexus, further public debt reduction would be supportive. |

Source: European Commission