EUROPEAN
COMMISSION

Brussels, 23.5.2022
SWD(2022) 615 final

COMMISSION STAFF WORKING DOCUMENT

2022 Country Report - Ireland

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

on the 2022 National Reform Programme of Ireland and delivering a Council opinion on the 2022 Stability Programme of Ireland

{COM(2022) 615 final} - {SWD(2022) 640 final}

European Commission

Ireland

2022 Country Report

ECONOMIC AND EMPLOYMENT SNAPSHOT

The Irish economy has weathered the pandemic well

Ireland's economy performed very well prior to the COVID-19 crisis. The country recorded a strong recovery following the global financial crisis, with real GDP expanding by 9.8% per year on average from 2014 to 2019. In 2019, Ireland's per capita GDP was 231% of the EU average, the second highest in the EU. Its economic performance was therefore strong as it entered the pandemic.

Ireland was the only EU country to avoid a recession during the pandemic, as the strong performance of multinationals bolstered economic activity. Ireland hosts the headquarters of several very large multinationals, which saw considerable business growth during the pandemic. Their exports – in particular those for companies in the fields of information and telecommunication, and pharmaceuticals – were a driving force behind Ireland's economic expansion in 2020 and 2021. During that period, domestic companies did not match the performance of multinationals. To illustrate the dual nature of Ireland's economy, gross value added in sectors dominated by multinationals grew by 23.1% in 2020, while it declined by 8.7% in other sectors. This is also reflected in strong disparities between regions hosting multinationals (the areas in and around Dublin and Cork) and regions dominated by Irish-owned small and medium-sized companies ([1]). Overall, Ireland's real GDP grew by 5.9% in 2020 and again by a remarkable 13.5% in 2021. Excluding multinationals, which account for a significant share of Ireland's GDP and growth, Ireland's per capita modified gross national income (GNI*) ([2]) was still 140% of EU per capita GDP in 2020. The macroeconomic outlook remains positive, with real GDP growth projected at 5.4% in 2022 and 4.4% in 2023.

The labour market weathered the pandemic fairly well, but labour shortages are already re-emerging. While the total number of hours worked fell by more than 9% in 2020, the impact of reduced activity on employees ([3]) and companies was cushioned by government support schemes. In March 2022 the unemployment rate stood at 5.5%. People working in sectors requiring physical contact (e.g. construction, hospitality), and those with jobs requiring only low skills were most severely affected by job losses during the pandemic. However, the reopening of the economy in early 2022 ([4]) saw a rapid increase in employment and a sharp decline in reliance on employment-related support schemes. At the same time, the shift to remote work has increased the number of women working or looking for work, and their participation in the labour force reached a record level of 72% (see Graph 1.1). Job creation is set to continue in 2022 as the economy grows. Labour shortages related to both high-skilled professions and low-skilled jobs in services and construction have already emerged and wages for these workers have started increasing. At the same time, the minimum wage of EUR 10.50 per hour still

([1]) In the latest available figures, for 2019, the gross value added per person in Dublin was more than four times that in the Midlands.

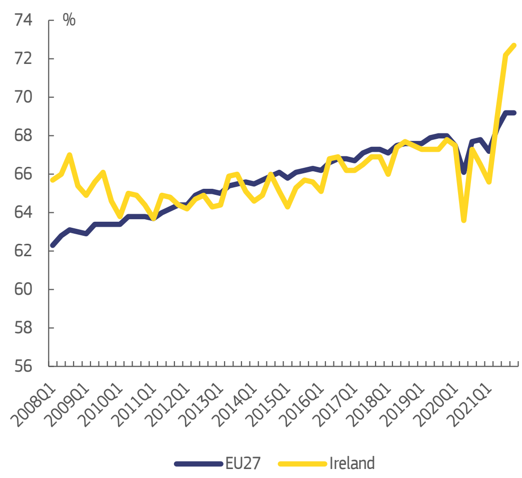
([2]) GNI* reflects the income standards of Irish residents more accurately than GDP.

([3]) European Commission (2021) Quarterly Report on the Euro Area (QREA), Vol. 20, No. 4, Chapter I.

([4]) After almost 2 years of severe restrictions to contain the COVID-19 pandemic, and with Ireland having had higher levels of pandemic restrictions than most other EU Member States, in January 2022 the government declared the pandemic emergency phase over and confirmed that most pandemic restriction measures would be lifted.

falls short of the minimum living wage [5] of EUR 12.90 per hour. Some vulnerable groups – especially lone parent households and persons with disabilities – are at a higher risk of poverty and social exclusion, often exacerbated by difficulties to participate in the labour market and find employment. It is particularly important to quickly integrate groups with lower employment rates into the workforce, especially inactive women, low-skilled people, lone parents and persons with disabilities (see also Annex 12 on the European Pillar of Social Rights).

Graph 1.1: **Female Participation Rate**



Source: Eurostat

Russia's invasion of Ukraine will have a mostly indirect macroeconomic impact

As the Irish economy has both very limited trade and limited direct financial links with Russia, any negative impact is primarily expected from second-round, indirect effects. Russia accounts for 0.4% of Irish goods exports and 0.6% of goods imports, concentrated in bio-pharma and fertilisers, respectively. Regarding multinationals headquartered in Ireland, the biggest impact from Russia's invasion of Ukraine is felt by companies leasing planes, as their planes in Russia have been appropriated. However, this affects no more than 5% of their collective fleet size. Regarding the energy sector, Ireland depends almost exclusively on energy imports from the United Kingdom. Despite these very limited direct links to Russia, Ireland is set to indirectly experience some slowdown in growth through other European economies, with which it trades extensively, as well as rising global energy prices and supply shortages for certain goods. The potential inflow of people fleeing Ukraine, broadly estimated by the Irish authorities at around 80 000-100 000, will require additional social spending but may also have a positive impact on the tight Irish labour market, given the right to work for displaced persons from Ukraine. The Irish financial sector has significant exposures to Russia, estimated at around EUR 49 billion. However, EUR 37 billion of this is held by special purpose entities operated by Russian companies or banks, which have very limited or no direct links to the Irish economy. Investment funds based in Ireland hold EUR 11.5 billion of Russian exposures – accounting for 0.3% of their total assets – of which EUR 5.1 billion are Russian government bonds. Irish domestic banks have no substantial direct ties with Russia, but could be affected more by the aforementioned second-round macroeconomic effects and through financial linkages.

As in other EU Member States, rising energy prices have fuelled inflation, which the invasion risks exacerbating. Higher oil and gas prices, as well as supply bottlenecks for goods or their components, led to increasing inflation in 2021. In February 2022, the harmonised index for consumer prices was 5.7% higher than a year before, in line with the euro area average of 5.8%. Inflation is set to continue increasing in 2022 amid persistently high energy prices and supply bottlenecks, while rising wages may start adding to price pressures. Given the large share of crops and other food products being produced by Ukraine and Russia, food prices in Europe have already increased. Higher inflation, driven primarily by rising energy costs, puts a heavier burden on disadvantaged groups (including lower-income, rural and older households), because their energy-related expenditure typically represents a

(5) As calculated by civil society using the Minimum Essential Standard of Living approach.

higher share of their overall expenditure. Inflation is projected to amount to 6.1% in 2022 and decline to 3.1% in 2023.

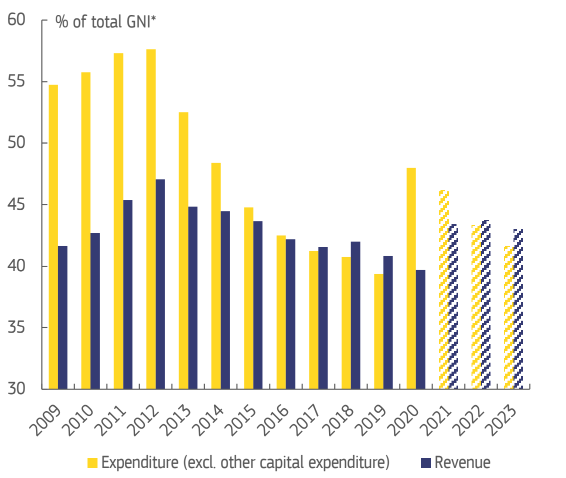
Public finances prove sustainable amid challenges

Ireland's public finances were in a good starting position to withstand the impact of the COVID-19 pandemic. In 2019, the government reached a surplus in its accounts, continuing a trend of fiscal consolidation that started in 2011. The deficit reduction over these 8 years was principally driven by strong economic activity. This dynamism produced large average annual increases in government revenues, which were matched only by modest expenditure growth. As a consequence, in 2019, the debt-to-GDP ratio fell to a 10-year low of 57.2%, reflecting also strong nominal GDP growth and a decrease of interest payments. Nonetheless, in that same year, debt-to-GNI*, a more suitable repayment indicator for Ireland, was as high as 95%.

The pandemic put the continued reduction in the debt ratio on hold, but avoided a sizeable increase. In 2020 and 2021, the Irish Government took timely measures to shore up the economy. On the expenditure side, these included wage subsidies, unemployment payments, as well as increased support to the health service, the education sector and public transport. Certain tax items were barely affected by the domestic recession (-3.5% in GNI* in 2020): taxes on income were stable, and corporation taxes increased by almost 10% year-on-year. In 2021, a robust performance in revenues on the back of strong GDP growth brought down the deficit to 1.9% of GDP. While the debt-to-GDP ratio increased modestly by the end of 2020, it dipped already below its pre-pandemic value in 2021. In terms of GNI*, however, the debt ratio's decline is slower.

Ireland's public finances show no short-term sustainability challenges. Strong economic growth is expected to help narrow the 2021 deficit of 1.9% to 0.5% in 2022 and the budget balance to turn again to a surplus of 0.4% in 2023 (see Graph 1.2 and Annex 19). Risks related to a potential increase in interest rates are low because only a small amount of Irish public debt has to be repaid in the short term. Moreover, the Irish Government has committed to capping overall core expenditure growth at a rate in line with the trend growth of the economy (estimated by the authorities at 5%). On the other hand, future potential rises in capital expenditure related to increasing the housing stock and transitioning to a climate neutral economy could test this commitment. Furthermore, future changes to the international corporate tax framework – e.g. the re-allocation of multinational companies' profits across different states, and the increase in the tax rate for very large companies from 12.5% to 15% – might affect corporate tax revenues as of 2023.

Graph 1.2: **Government Accounts**



Source: European Commission. GNI* projections from Central Bank of Ireland

Structural challenges resurface

Looking beyond the pandemic, health and long-term care would need structural reforms. Although significant investments were made to recruit healthcare staff during the COVID-19 pandemic, Ireland still faces a shortage of doctors and nurses. In addition, Ireland remains the only country in western Europe without universal coverage for a core set of health services, such as primary care (see Annex 14). Most of the population is not covered by a medical card and must pay the full cost of doctor visits and outpatient prescriptions up to a certain threshold. The ageing of the population will increasingly put the Irish long-term care system under considerable pressure.

House and rental prices continue to accelerate due to persistent shortfalls in housing supply. At the same time, Commission models based on a long-term average of house prices have yet to identify signs of overvaluation. In the short term, the gap between housing supply and demand is expected to remain wide (see Annex 17). Worsening housing affordability, rising rents in 2021 and pandemic-induced delays in construction activity have exacerbated the problem. Rent increases and insufficient social and affordable housing are still a concern, and have created the conditions for a high number of homeless people by historical standards.

While Ireland is an advanced economy, there are some factors holding back productivity in domestic sectors, such as low investment in research and development (R&D), skills shortages, and lagging digitalisation, including in the justice system. R&D investment is relatively low compared to other Member States and is not at the expected level for an economy at Ireland's stage of development (see Annex 9). Skills shortages have been identified in several sectors, including IT, science and engineering, and health ([6]). According to the 2022 Digital Economy and Society Index (DESI), 70% of the population have at least basic digital skills, which is above the EU average of 54% (see Annex 8). On digitalising its justice system, Ireland scores below the EU average in several dimensions (see Annex 11). Furthermore, Ireland's insolvency framework involves a comparatively slow process and yields relatively low recovery rates.

Ireland's internationally-oriented economy faces anti-money laundering and aggressive tax planning challenges. Significant inflows of foreign direct investment require effective supervision and enforcement of the anti-money laundering framework, particularly for professionals providing trust and company services. At the same time, significant outbound royalty and dividend payments over recent years indicate that companies may use Ireland's tax rules for aggressive tax planning purposes.

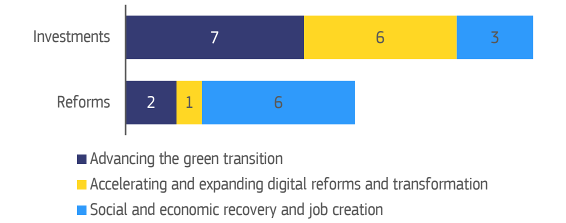
While Ireland performs well on most of the UN's Sustainable Development Goals (SDGs), weaknesses related to green goals remain (see also Annex 1). On almost all SDGs, Ireland performs above the EU average and continues to make progress (e.g. Ireland is both making progress and performing above the EU average on: (i) reduction of inequalities; (ii) education; (iii) peace, justice and institutions; and (iv) health). Ireland's performance has slowed down on a limited number of SDGs. The water and sanitation system and the promotion of sustainable use of terrestrial ecosystems are policy areas where Ireland is losing ground, despite remaining above the EU average. In addition, despite progress on climate objectives, waste management ('sustainable consumption and production patterns') and innovation policy, Ireland remains below the EU average in these areas. On climate action in particular, net greenhouse gas emissions per capita remain 80% above the EU average (2020), which will require significant action over this decade.

([6]) National Skills Bulletin (2021) Skills and Labour Market Research Unit in SOLAS on behalf of the National Skills Council; https://www.solas.ie/f/70398/x/fcee571661/solas_nsb_report.pdf

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

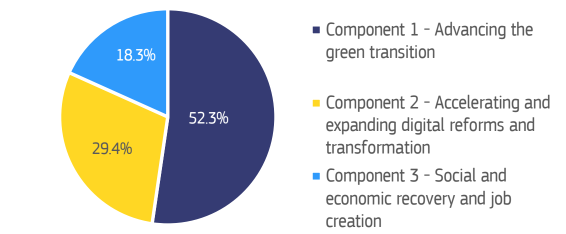
The Irish recovery and resilience plan (RRP) includes measures to support the green and digital transition, as well as the social and economic recovery. Ireland's RRP amounts to EUR 989 million, which is equivalent to 0.3% of 2019 GDP ([7]). The plan comprises 25 measures (16 investments and 9 reforms) structured around three components: (i) advancing the green transition; (ii) accelerating and expanding digital reforms and transformation; and (iii) social and economic recovery and job creation (see Graphs 2.1 and 2.2 and Annex 2). Measures in the plan have the potential to contribute to addressing a range of challenges ([8]) that are also relevant to all four dimensions of competitive sustainability. Nonetheless, given the modest financial contribution and the entrenched nature of some of the challenges, the Irish RRP cannot be expected to fully resolve all associated needs during its lifetime. During the implementation stage, it is important to ensure the involvement of all authorities and stakeholders concerned, including social partners.

Graph 2.1: **Number of reforms and investments in the RRP per component**



Source: European Commission

Graph 2.2: **Investment spending in the RRP per component**



Source: European Commission

The plan includes a component dedicated to helping Ireland decarbonise and address environmental challenges. Measures in this component directly help meet the EU's 2030 climate targets and 2050 climate neutrality objective. Reforms and investments in the plan are also expected to meet national and EU targets for environmental policy and biodiversity. With a significant focus on energy efficiency, sustainable transport, preserving biodiversity and ecosystems, and promoting green skills, the plan will help Ireland achieve its ambitious decarbonisation objectives.

Several RRP measures have the potential to address productivity-related challenges. The RRP's second component focuses on contributing to the digital transition of the economy and society. The measures included support businesses in their digitalisation efforts, address the risk of the digital divide (including in the education sector), strengthen digital skills, and help develop the digital infrastructure and deliver digital public services. In addition, the planned SME test aims to remove unnecessary regulatory obstacles that small and medium-sized enterprises (SMEs) are facing, by asking policy makers to consider the potential burden any proposed regulations or legislation places on SMEs.

([7]) The size of the RRP is slightly above the maximum financial contribution allocated to Ireland under the Recovery and Resilience Facility of EUR 988 966 534.

([8]) See also Commission staff working document: Analysis of the recovery and resilience plan of Ireland, Section 4.2, pp. 35-43.

The RRP's third component includes significant social and skill-related measures ([9]). The SOLAS ([10]) recovery skills response programme seeks to equip workers with the skills to shift into growth sectors of the economy, such as IT, green construction and climate change mitigation. The work placement experience programme aims to provide those unemployed for 6 months or more with work experience, as well as training, to increase their employability. To help address the shortages in housing supply, the plan entrusts Ireland's Land Development Agency with developing and regenerating public land in order to provide housing. The Agency is also entrusted with developing and managing housing, including a quota for social housing. The plan also commits to launching several schemes to increase housing affordability for low and medium income households. In healthcare, the plan includes a set of reforms that may improve the healthcare system's cost-effectiveness, accessibility, and resilience.

Furthermore, this component also includes several reforms that have the potential to contribute to macroeconomic stability and improve the quality of public institutions. A set of reforms is expected to strengthen anti-money laundering supervision. To help tackle aggressive tax planning strategies, the plan also commits to introducing new legislation applying to outbound payments to prevent double non-taxation, which is due to take effect from January 2024 at the latest. In addition, the plan includes measures related to supplementary pensions included in Ireland's pensions roadmap.

Box 1: **Key deliverables under the RRP in 2022 and 2023**

- Entry into force of the Climate Action and Low Carbon Development (Amendment) Bill 2021, which provides for the achievement of emissions reduction targets for 2030 as well as the climate neutrality objective by 2050.
- Establishment of the financial agreement related to the residential retrofit loan scheme.
- Start of rehabilitation work for at least 19 peatland bogs.
- Connection of at least 990 primary schools to high-speed broadband networks.
- Raising the number of graduates with high-level ICT skills.
- Application of the SME test (which asks policy makers to consider the potential burden proposed regulations or legislation place on SMEs) by at least five government departments.
- Expansion of the Anti-Money Laundering Compliance Unit's enforcement toolkit with financial sanctions.

([9]) Also see the RRF scoreboard and social scoreboard accompanying the European Pillar of Social Rights.

([10]) SOLAS is the State agency that funds, coordinates, and monitors the provision of further education and training in Ireland.

FURTHER PRIORITIES AHEAD

Beyond the challenges addressed by the RRP, as outlined above, Ireland faces additional challenges not sufficiently covered in the plan. A number of entrenched challenges are unlikely to be fully resolvable through the RRP alone. Therefore, challenges remain in the areas of (i) climate action, (ii) waste prevention, (iii) the circular economy, (iv) waste water treatment, (v) pensions, (vi) tax base broadening, (vii) aggressive tax planning, (viii) anti-money laundering, (ix) housing, (x) health and long-term care, (xi) regional disparities, (xii) R&D, (xiii) digitalisation, (xiv) the insolvency framework, and (xv) skills. Addressing these will also help Ireland make further progress in achieving the SDGs related to such challenges, for example climate action (SDG 13), responsible consumption and production (SDG 12), clean water and sanitation (SDG 6) and industry, innovation, and infrastructure (SDG 9).

Accelerating the green transition, also in light of Russia's invasion of Ukraine

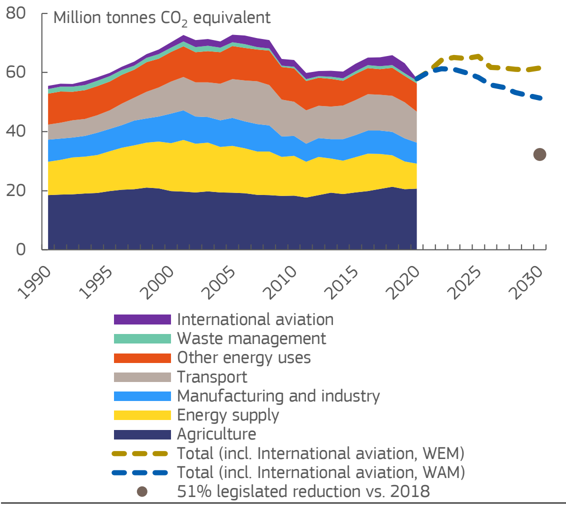
While Ireland has no exposure to Russian crude oil and gas imports, it depends significantly on these energy sources for its energy supply. In 2020, oil and gas covered almost 80% of Ireland's energy consumption, of which 45% for oil and 33% for gas. Less than a third of gas consumed was produced by Ireland, due to the depletion of the Corrib gas field. All gas imports come from the United Kingdom.

A double gas pipeline between Scotland and Ireland entered into service in 2002, while another gas pipeline connecting Ireland to Northern Ireland entered into service in 2007. In January 2021, the government indicated that the project for Port of Cork's liquefied natural gas (LNG) terminal would not go ahead. After several challenges by local and environmental groups, the Shannon LNG terminal had its planning approval rejected by the High Court in 2020, but announced in August 2021 that it would submit a new application. In April 2022, Ireland published the National Energy Security Framework. It aims at ensuring security of supply in the near term, reducing the country's dependency on imported fossil fuels and compensating households and businesses exposed to higher energy costs.

Due to the high share of fossil fuels in the energy mix, Ireland did not achieve some of its EU 2020 climate and energy targets. Ireland has fallen short of its 2020 energy efficiency target, while it met its renewable energy target via the purchase of statistical transfers [11]. As of 2019, Ireland had reduced its domestic effort-sharing sector emissions by only 4% compared to 2005, against the effort sharing target of 20% for 2020. Nevertheless, Ireland did comply with its 2019 target under the Effort Sharing Decision through the use of international project credits.

(11) Ireland's renewable energy share was below its binding national target of 16% in 2020. In order to comply with its EU obligations, it purchased statistical transfers from Denmark and Estonia (who overachieved their own target).

Graph 3.1: **Greenhouse gas emissions by sector and total projections (WEM and WAM*)**



WEM - With Existing Measures
WAM - With Additional Measures
*WAM projections based on measures from the Climate Action Plan 2019, which does not reflect the 51% target for 2030 as legislated in 2021.
Land use, land-use change, and forestry are excluded.
Source: Source: European Environment Agency

Ireland needs to make major progress this decade on meeting its climate objectives ([12]) **and reducing its dependence on oil and gas** (see Annex 5)**.** The trajectory required to reduce total greenhouse gas emissions in line with the nationally-set 2030 target is steep (see Graph 3.1). Challenges remain in terms of investments required, availability of skilled workers and removal of regulatory barriers. According to the 2021 climate action plan ([13]), achieving Ireland's ambitions to reduce total greenhouse gas emissions by 51% by 2030 compared to 2018 levels will require significant investments. The plan estimates that additional investment of EUR 45 billion is needed by 2030 compared to a 'no-climate-action' scenario, and that an extra EUR 80 billion would need to be reallocated from investments in 'incumbent and fossil fuel technologies' to renewable and flexible technologies.

Ireland's climate action plan is a promising step towards limiting its exposure to oil and gas, but its concrete impact hinges on planned measures and goals being implemented in good time. The entry into force of the Climate Action and Low Carbon Development (Amendment) Act 2021 in July 2021, which is part of the RRP, is a turning point for climate action in Ireland. It introduces sectoral targets and carbon budgets. While for instance the deep retrofitting of buildings is going through at an accelerated pace ([14]), the plan identifies broad objectives that are yet to be backed by precise measures that will enable their delivery. As an example, reducing the significant carbon footprint of the agricultural sector has yet to be sufficiently addressed, in spite the promising steps taken by the Food vision 2030 initiative ([15]). The plan also only partially identifies the mitigation potential of specific measures (e.g. the 20% of work in the public sector undertaken as remote work). Additional information is expected to be specified by the annual updates to the climate action plan, of which specific iterations in 2021 and 2025 are included in the Irish RRP.

Achieving Ireland's high ambitions for deploying renewable energy requires addressing its systemic issues. Ireland sets out a new, increased renewable electricity target of 80% by 2030, which roughly doubles the share within the next decade. This ambition is set in a context of structural vulnerabilities related to growing electricity demand, declining availability of existing generators, limited interconnections and still reduced storage capacities to absorb intermittent sources of energy. Aside from

([12]) European Commission green resilience dashboard https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en#heatmap

([13]) Department of the Environment, Climate and Communications (2021) climate action plan https://www.gov.ie/en/publication/6223e-climate-action-plan-2021/

([14]) Transition to a one-Stop-Shop-based retrofit delivery model, Energy Efficiency Obligation Scheme is expected to come into operation in 2022, residential retrofit loan guarantee developed under Ireland's National Recovery and Resilience Plan

([15]) For instance, the Food vision 2030 does not set target yet for biogenic methane. This target will be updated when specific sectoral targets are agreed under the framework of the Climate Action and Low Carbon Development (Amendment) Bill 2021 quickly accelerating renewables deployment, e.g. by frontloading auction schedules, Ireland would have to mobilise major investments for rapidly upgrading of the power grid, deploying a large amount of storage capacity, and prioritise the deep retrofitting of buildings. The transmission system also requires upgrades to cope with the expected development of electric vehicles and heat pumps. Quickly completing the Celtic Interconnector project, the electricity interconnection project between Ireland and France, for which construction is set to start in 2022, will also be key to ensuring the country's energy supply.

Removing bottlenecks to the above investments will be necessary for reducing Ireland's dependence on fossil fuels. Challenges remain with the planning and permitting system, particularly the long timeframe in granting planning permission, which is also linked to the appeal procedures for planning applications. Advancing reforms in these areas would foster greater roll-out of renewables, thus helping diversify the energy mix. The Irish government introduced a new Maritime Area Consent Regime in March 2022 that is expected to simplify, streamline and accelerate the permitting regime for offshore wind facilities through an early identification of the most viable projects. The entry into force of a new supervisory body, expected for 2023, will be an essential step in this reform.

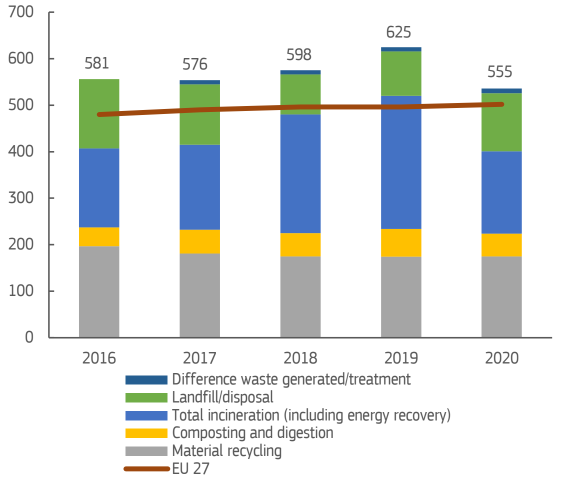
The planned investments in sustainable mobility included in the RRP will not be sufficient to decarbonise public transport. Oil accounts for more than 45% of the transport sector's energy mix, making Ireland the fifth worst performing Member Sate. In this context, the Climate Action Plan sets ambitious targets to decarbonise transport. This includes the provision of an additional 500 000 daily public transport and active travel journeys, an increase of the fleet of electric vehicles and low emitting vehicles on the road to 945 000 by 2030, and the expansion of the electrified rail network. The latter should in particular include connecting airports by rail to the TEN-T network and promoting country-wide intensified use of rail for both passengers and freight.

Effective and well-coordinated research and innovation instruments are critical for tapping new renewable energy sources. Beyond the uptake of existing technologies, energy efficient technologies and energy storage/flexibility solutions can contribute to the energy transition. Suitable financial resources, coupled with well-articulated research and innovation objectives and funding targets, are instrumental for reducing energy use and dependence on fossil fuels.

Ireland's performance in waste management could be improved (see Annex 7). In 2019, Ireland's municipal waste production was 598 kg/capita, significantly above the EU average of 502 kg/capita (see Graph 3.2). In addition, Ireland performs well below the EU average in terms of circular economy indicators. The average use of circular material is 1.8%, well below the EU average of 12.8%.

The waste action plan for a circular economy adopted in 2020 sets out Ireland's overall policy on the transition to a circular economy and waste prevention. The plan sets out increased ambitions for Ireland to become a front runner in the circular economy. The plan lays down a broad range of actions, from improving the regulatory environment to introducing a deposit and return scheme for plastic bottles, providing incentives to develop research and innovation, and creating value chains for polluting products. Fully implementing these actions as specified under the plan will be key to help prevent waste and promote a circular economy.

Graph 3.2: **Municipal Waste Treatment in Ireland, by type**



Source: Eurostat

Ireland has encountered difficulties in implementing the Urban Waste Water Treatment Directive. This is partly due to ageing or outdated infrastructure that has not been renewed because of limited investment in the water sector. While the RRP includes a measure on improving waste water system, significant investment is still required. The estimated investment to address reported non-compliance with the Urban Waste Water Treatment Directive is EUR 2 698 million ([16]). In 2018 only 42% of the collected waste water load was compliant with the requirements of the above Directive ([17]).

Addressing public finance challenges

The sustainability of Ireland's public finances is subject to challenges in the long run. Ireland's public finances weathered the COVID-19 pandemic well. Thanks to strong government revenue flows and prudent budgeting, financial risks appear to be contained for the coming years. However, population ageing could affect fiscal sustainability in the long run, in the absence of policy responses (see Annex 20). The old-age dependency ratio – the proportion of recipients to contributors in the pension system – is projected to more than double from 24% in 2019 to 53% by 2070. Population ageing will not only affect pension spending but also increase the cost of healthcare and long-term care, with total ageing costs projected to rise by 6.2 percentage points of GDP by 2070 ([18]).

The reform of the pension system is underway, as challenges related to fiscal sustainability persist. The Directive on the activities and supervision of institutions for occupational retirement provision (the IORP II Directive) was transposed in April 2021 and pension schemes are now working with the Pensions Authority to achieve compliance. The Irish Government recently decided on the final design of an Automatic Enrolment Supplementary Pension System. Public spending on pensions is expected to increase by 2.3 percentage points of GDP between 2019 and 2040. Any increase in pension spending will ultimately have to be financed by the taxpayer, via either higher rates of social insurance contributions or transfers from the Exchequer to the social insurance fund. The Irish Government repealed an increase in pensionable age from 66 to 67 that was expected to enter into force in January 2021. A report by the independent Pensions Commission suggests a gradual incremental increase in the state pension age by 3 months each year, beginning in 2028 and reaching 67 in 2031, with further increases of 3 months every two years, reaching 68 in 2039.

Ireland's tax base is relatively narrow and remains excessively reliant on corporate taxes (see Annex 18). The sensitivity of tax revenues to the income and profit developments of corporations has risen, as corporate tax revenues now account for 22.4% of total tax revenues. This important source of income is driven by a small number of firms. In 2020, the top 10 taxpayers accounted for around half of corporation tax revenues (see Graph 3.3). In addition, the

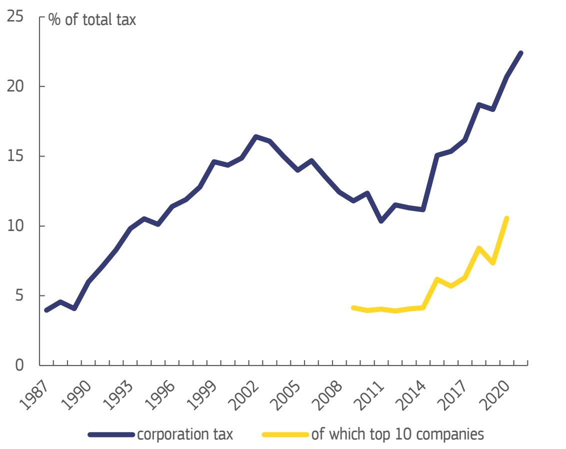
([16]) European Commission's ninth report on the implementation status and the programmes for implementation of the Urban Waste Water Treatment Directive.

([17]) Ibidem

([18]) European Commission (2021) Ageing Report.

structure of taxes on individual or household income is associated with a narrow tax base. In 2021, one in three income earners were exempt from taxes as their standard rate liability was covered by credits or age exemption limits.

Graph 3.3: **Corporation tax revenues**



Source: Revenue data

Ireland has committed to reforms that, if implemented effectively, could potentially help tackle aggressive tax planning strategies. The commitment in the RRP aims to prevent double non-taxation. However, it does not cover low-tax jurisdictions and the details of the reform have yet to be defined. In addition, in October 2021, Ireland announced that it would join the global OECD/G20 inclusive framework agreement – agreed by more than 130 countries – aimed at reforming international tax rules. This landmark reform would put limitations on a 'race to the bottom' in corporate tax frameworks ([19]). The European Commission has proposed a directive setting out how EU Member States, including Ireland, will apply the principles of the 15% effective tax rate in practice ([20]). The Commission will closely monitor how these announced measures are implemented. When implemented, they have the potential to help significantly tackle aggressive tax planning.

While Ireland has improved its anti-money laundering framework overall, progress is still needed in certain areas. Ireland faces certain risks due to its internationally-oriented economy, with significant inflows of foreign direct investment and the presence of complex legal structures involving foreign ownership. Ireland has made progress on introducing beneficial ownership registers, which help increase transparency by documenting who ultimately owns or controls a corporate vehicle. The anti-money laundering reforms included in Ireland's RRP cover supervision action of trust or company service providers supervised by the Anti-Money Laundering Compliance Unit. The recently published sectoral risk assessment for trust or company service providers will help inform follow-up actions in that respect. However, the RRP does not cover supervision of trust or company service providers for which supervision is delegated to self-regulatory bodies. For those service providers, further efforts seem necessary to prevent possible gaps or diverging supervision standards between the Anti-Money Laundering Compliance Unit and self-regulatory bodies.

Implementing plans for fairer housing and for health and long-term care

The government has announced the 'housing for all' plan to help tackle the housing crisis resulting from persistent shortfalls in housing supply. While 20 500 new housing units were completed in 2021, this falls short of the government's estimate ([21]) that an average of 33 000 new homes would be needed each year from 2021 to 2030 (see Graph 3.4). The new 'housing for all' plan aims to meet this need. Its financing

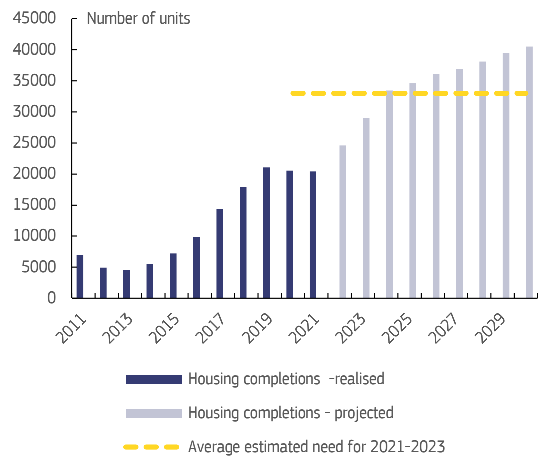
([19]) OECD, "International community strikes a ground-breaking tax deal for the digital age," 8 October 2021 (https://www.oecd.org/tax/international-community-strikes-a-ground-breaking-tax-deal-for-the-digital-age.htm).

([20]) European Commission "Fair Taxation: Commission proposes swift transposition of the international agreement on minimum taxation of multinationals," 22 December 2021 (https://ec.europa.eu/commission/presscorner/detail/en/ip_21_7028).

([21]) Government of Ireland (2021) Housing for All: A new Housing Plan for Ireland, p. 31.

will exceed EUR 20 billion over the next five years. Almost a third of the homes to be delivered under this plan would be new social homes. In addition, one in six homes to be delivered would be affordable purchase or cost rental homes ([22]). Some of these commitments are reflected in dedicated targets in the Irish RRP. However, the 'housing for all' plan is still at risk of not being implemented effectively, due in particular to labour workforce constraints (e.g. it is estimated that the workforce employed in housing construction needs to expand by over 50% by the middle of the decade) and the rising cost of materials ([23]).

Graph 3.4: **Housing completions**



Source: Central Statistics Office, Department of Housing, Local Government and Heritage

Ireland's comprehensive healthcare reform strategy ('*Sláintecare*') has experienced delays. This strategy aims to address challenges related to cost-effectiveness of the healthcare system and the lack of universal coverage. A shortage of doctors has exacerbated long waiting times for publicly funded services and has increased demand for private providers. The RRP encompasses the implementation of key parts of the *Sláintecare* reform, such as the consultant contract governing the employment conditions of medical consultants in the public health care system. However, the RRP does not address universal coverage for primary care. A fully fledged implementation of the *Sláintecare* reforms could create a system based on universal entitlement to all health services regardless of people's ability to pay. In turn, this may help address health problems earlier and more efficiently, thereby decreasing the demand for more complex and costly care services.

The ageing of the population puts Ireland's long-term care system under considerable pressure, in terms of both accessibility and sustainability. The share of 'potential dependants' in the population is projected to rise from 5.0% in 2019 to 5.6% by 2030 and 6.5% by 2050 ([24]). In 2020, the share of inactive population due to caring responsibilities stood at 32.5%, well above the EU average (18.7%). This suggests a high level of unmet needs, especially in home care. Such unmet needs are likely to result in more expensive institutionalised care. Reforms envisaged in the context of the *Sláintecare* strategy include creating a framework to sustain the gradual expansion of home care services.

Realising the full potential of Ireland's economy and society

The productivity of multinational and domestic companies differs significantly. The productivity of multinationals remains much higher, as a result of frontier innovation and economies of scale. At the same time,

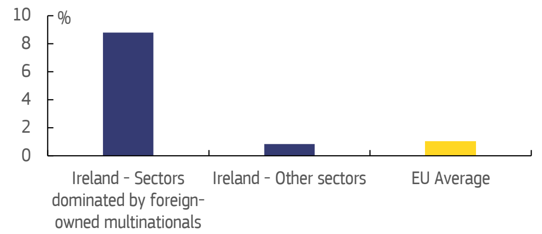
([22]) Cost rental is a new form of public housing in Ireland, aimed at people who are above the social housing income limits. Rents charged will only cover the cost of developing, financing, managing and maintaining the homes – with a target to achieve rents of at least 25% below market level.

([23]) European Commission (2022) In-Depth Review for Ireland, section 1.2.

([24]) 2021 Long-Term Care Report: Trends, challenges and opportunities in an ageing society, Joint Report prepared by the Social Protection Committee and the European Commission (DG EMPL). "Potential dependants" are defined on the basis of severe 'self-perceived longstanding limitation in activities because of health problems for at least the last 6 months' for people in private households, with the addition of national data on recipients of institutional long-term care. Projections are based on the Ageing Working Group reference scenario, assuming that half of the projected years gained in life expectancy are spent without disability (i.e. demanding care).

knowledge spill overs from multinational to domestic companies continue to be limited. The annual labour productivity of domestic companies increased on average by 0.8% between 2010 and 2019, well below that of multinationals, which increased by 8.8% (see Graph 3.5). According to Ireland's National Competitiveness and Productivity Council, productivity growth of domestic companies is held back by, among other things, high insurance costs, high legal costs and a high cost of credit [25]. The Council advocates policies to increase productivity growth, and notably: (i) growth in innovation and the development of knowledge-based capital within companies; (ii) knowledge diffusion; (iii) digitalisation, (iv) upskilling, (v) resource allocation among companies and infrastructure; and (vi) diversification across industries.

Graph 3.5: **Labour productivity – average annual growth 2010-2019**



Source: Central Statistics Office

The duality of the Irish economy also results in strong regional disparities (see Annex 15)**.** Multinationals are geographically concentrated in the areas in and around Dublin and Cork. These areas have strong regional innovation systems and significantly outperform the rest of the country in all relevant economic indicators, such as growth of regional GDP, productivity of the labour force, or disposable income. Other, predominantly rural and remote regions, in the north, the west or along the border with Northern Ireland, are lagging behind. This trend is likely to continue, as the Northern and Western region's innovation system is only considered 'moderate' – the second lowest ranking for European regions.

The Irish R&D system benefits from a strong public science base and dedicated foreign direct investments, but there is room for progress. Ireland's overall R&D intensity (gross domestic expenditure on R&D as a share of GDP) was 1.23% in 2020 compared to an EU average of 2.32% [26] and has been on a declining trend since 2010, while public R&D intensity, at 0.32%, is one of the lowest in the EU (ranking 24th). Reducing the dependence on tax incentives in the R&D policy mix and providing more direct support to SMEs, while fostering cooperation between R&D actors, would help develop a more comprehensive and integrated innovation ecosystem. New legislation to reform the governance of higher education and further development of technological universities are expected to improve the quality, efficiency and the innovation capacity of the higher education sector and to help regional innovation ecosystems that do not perform as well.

The justice system could be further digitalised. Ireland ranks between 21st and 23rd out of 27 Member States on (i) the use of digital technology by courts and prosecution services, (ii) electronic communication tools in courts, and (iii) procedural rules that allow digital technology in court cases [27]. Ongoing modernisation measures – as part of the Courts Service long-term strategy for 'supporting access to justice in a modern, digital Ireland' – include electronic filing, establishing a case management system, and putting in place courtroom technology. These should be implemented quickly to digitalise the Irish justice system effectively.

(25) National Competitiveness and Productivity Council (2021) Ireland's Competitiveness Challenge 2021 http://www.competitiveness.ie/publications/2021/ireland's%20competitiveness%20challenge%202021.pdf

(26) In 2020, Ireland was only in 19th place in the EU in terms of R&D intensity measured against GDP, although this is affected by issues relating to the composition and measurement of Ireland's GDP. In terms of modified GNI (GNI*), that excludes distortions from foreign-owned firms, Ireland has an R&D intensity of 2.20%.

(27) European Commission 2022 Rule of Law Report Country Chapter on the rule of law situation in Ireland (forthcoming). Also see 2022 EU Justice Scoreboard, (forthcoming).

The legacy of the financial crisis and features of Ireland's insolvency framework may be factors contributing to elevated interest rates on loans to households and SMEs. The global financial crisis particularly impacted the Irish economy and resulted in a substantial fall in real estate prices. Furthermore, in cases of borrowers' defaults, banks and other lenders recover on average a smaller share of their loans than in most other Member States, and it takes more time for this recovery to take place [28]. These factors may lead banks and other lenders to assess their loans as more risky and hence to charge a higher interest rate on them.

The comparatively low levels of employment for some groups may point to untapped labour market potential and contribute to risks of poverty and social exclusion. In 2021, the employment rates of low- and medium-skilled workers aged 20 to 65 were 51.3% and 69.5% respectively, compared to an overall employment rate of 74.9%. In 2020, the employment rate of lone parents stood at 64% – the lowest in the EU. In addition, the disability employment gap in Ireland was the largest in the EU, at 38.6%. These groups are also at an elevated risk of poverty and social exclusion. Tackling these challenges in line with the European Pillar of Social Rights is key for Ireland to contribute to reaching the 2030 EU headline targets on employment, skills and poverty reduction. In certain cases, the net income of low-income households may decrease after taking up work, due to the withdrawal of social assistance benefits. Targeted updates of the tax and benefits systems may support higher employment. As pandemic support is phased out, upskilling and reskilling initiatives, together with measures to create jobs/employment, will be key for the Irish labour market.

[28] European Banking Authority (2020) Report on the benchmarking of national loan enforcement frameworks https://www.eba.europa.eu/eba-publishes-report-benchmarking-national-insolvency-frameworks-across-eu

KEY FINDINGS

Ireland's RRP includes measures to address a series of its structural challenges through:

- promoting safer and cleaner waste water management systems;
- ensuring that the expected increase in pension costs is financed in a structural and transparent manner;
- tackling aggressive tax planning strategies;
- strengthening anti-money laundering supervision, in particular by complementing RRP measures with strengthening risk-based supervision carried out by self-regulatory bodies;
- increasing the supply of social and affordable housing, in particular through implementing the national 'Housing for All' plan effectively;
- implementing the *Sláintecare* reform, in particular those parts related to improving the cost-effectiveness of the healthcare system, workforce planning, and long-term care as well as ensuring universal access to health services;
- increasing the level of public R&D investment and reducing the dependence on tax credits, in favour of direct support;
- supporting employment and social inclusion, including through the labour market integration of vulnerable groups and by developing skills, particularly those to support the green transition.

At the same time, due to the modest size of the plan, further efforts on the above-mentioned challenges beyond the RRP are needed.

Beyond the reforms and investments in the RRP, Ireland would benefit from:

- fostering investment in electricity networks and renewable power generation and improving the planning and permit system;
- developing infrastructure and policies to increase the efficiency of the waste management system, reduce waste production, increase reused and recycled content, achieving lower incineration and separating more efficiently collection of recyclable waste;
- lowering the vulnerability of public finances to economic shocks.

ANNEXES

LIST OF ANNEXES

LIST OF TABLES

LIST OF GRAPHS

This Annex assesses Ireland'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, 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 SDGs in an EU context.

Ireland performs well or very well on most SDG indicators related to environmental sustainability (SDG 2, 6, 7, 11 and 15) and is improving on others (SDG 9, 12 and 13). Ireland scores above the EU average on a number of key indicators (SDG 6, 11 and 15), but progress towards achieving these SDG goals has slowed somewhat. Ireland has made further progress on several other SDGs (SDG 12, 13). On circular economy and waste prevention (SDG 12), while remaining below the EU average (2020: circular material use rate of 1.8% compared to 12.8% in the EU), the 2020 waste action plan for a circular economy sets out Ireland's overall policy on the transition to a circular economy and waste prevention. On climate action (SDG 13), introducing the climate action plan in 2019 and subsequent amendments to it, has significantly raised Ireland's ambitions in tackling climate challenges.

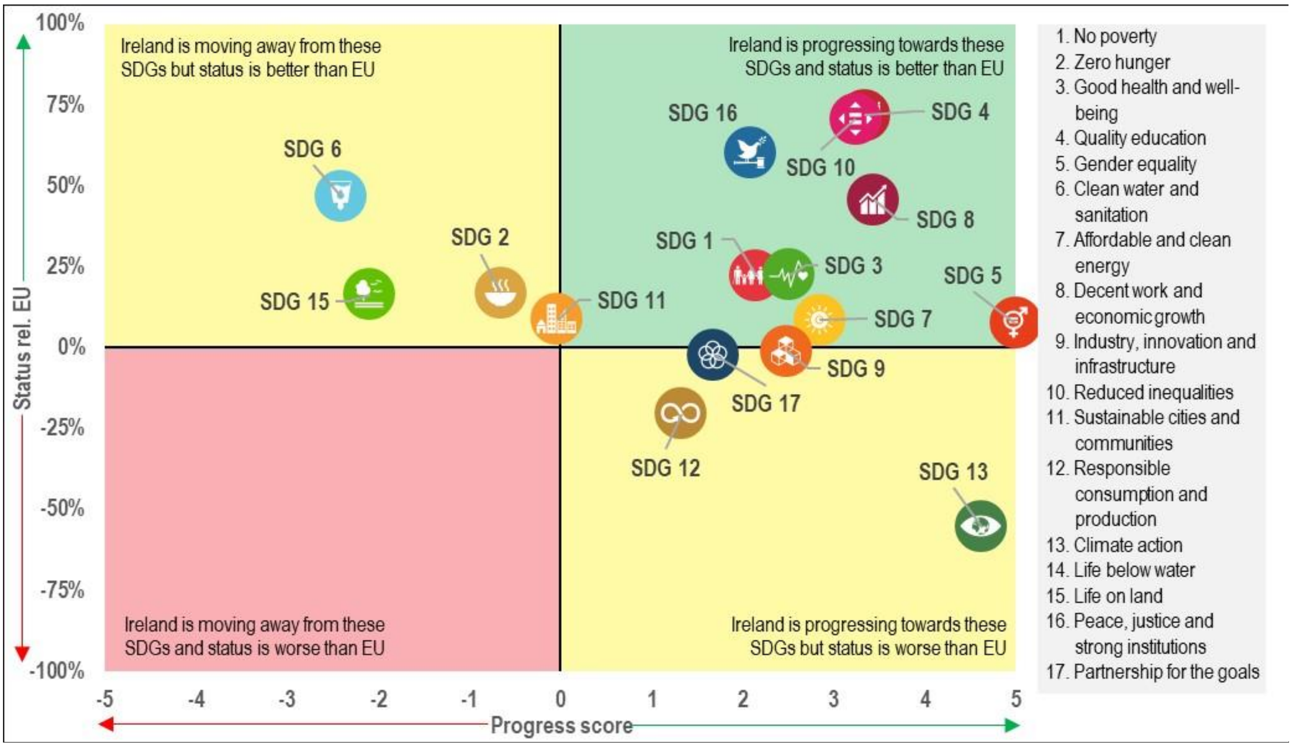
Ireland performs very well on SDG indicators related to fairness (SDG 1, 2, 3, 4, 5, 8 and 10). Ireland is outperforming the EU average and is making progress on several indicators related to inequality, poverty, inclusive growth, health and well-being, education and gender equality. For instance, Ireland shows higher rates of adult participation in learning ([29]) than the EU average (2020: 11.0% compared to 9.2%). In addition, Ireland has made excellent progress on a number of indicators, including on 'Gender equality' (SDG 5), where the share of women holding positions in senior management has increased from 15.3% (2015) to 28.8% (2020). The RRP includes measures that echo Ireland's emphasis on education and skills. For example the SOLAS recovery skills response programme seeks to equip workers with the skills to shift into growth sectors of the economy, such as IT, green construction and climate change mitigation.

Ireland performs very well on SDG indicators related to productivity (SDG 4, 8) and is improving on others (SDG 9). Ireland has been further improving on its already good performance on 'Decent work and economic growth' (SDG 8), which is reflected by a significantly higher level of investment share of GDP (2020: 39.7% against an EU average of 22.3%). 'Quality education' (SDG 4) contributes to the productivity of human capital, for which Ireland displays significant progress in tertiary education attainment (from 54.0% in 2015 to 58.4% in 2020, compared to an EU average of 40.5%). However, Ireland is still lagging behind the EU average in 'Industry, innovation and infrastructure' (SDG 9), where it has lower expenditure in R&D and a lower share of R&D personnel. The National Grand Challenge programme included in the RRP incentivises innovation in green, climate and digital solutions and encourages technology transfers and cooperation between businesses, with a focus on the low carbon economy and digital transformation.

Ireland performs very well on SDG indicators related to macroeconomic stability (8, 16). Ireland further improved its already good performance on the quality of institutions (SDG 16). Real GDP per capita in Ireland increased from EUR 49 620 in 2015 to EUR 62 980 in 2020 (EU: 26 380 in 2020). Ireland was the only EU Member State to avoid a recession in 2020.

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

Graph A1.1: **Progress towards SDGs in Ireland in the last five years**



For detailed datasets on the various SDGs see the annual ESTAT report 'Sustainable development in the European Union', https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-03-21-096; Extensive country specific data on the short-term progress of Member States can be found here: Key findings - Sustainable development indicators - Eurostat (europa.eu)
Source: Eurostat, latest update of 28 April 2022. Data mainly refer to 2015-2020 and 2016-2021.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU's efforts to support its recovery from the COVID-19 pandemic, fast forward the twin transition and strengthen resilience against future shocks. Ireland submitted its recovery and resilience plan (RRP) on 28 May 2021. The Commission's positive assessment on 16 July 2021 and Council's approval on 8 September 2021 paved the way for disbursing EUR 989 million in grants under the RRF over 2021-2026. The key elements of the Irish RRP are set out in Table A2.1.

Table A2.1:**Key elements of the Irish RRP**

Total allocation	EUR 989 million in grants (0.3% of 2019 GDP)
Investments and Reforms	16 investments and 9 reforms
Total number of Milestones and Targets	109
Estimated macroeconomic impact (1)	Raise GDP by 0.3%-0.5% by 2026 (0.4% in spillover effects)
Pre-financing disbursed	Ireland did not request pre-financing
First instalment	Ireland did not yet submit a first payment request

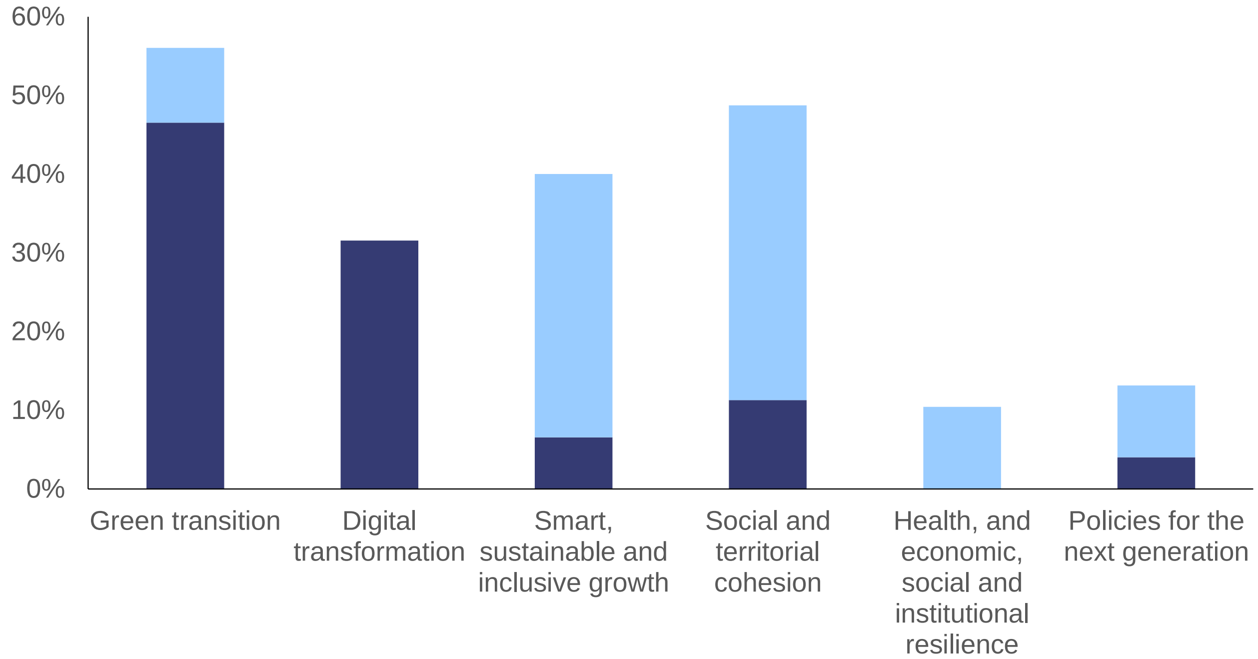
(1) See Pfeiffer P., Varga J. and in 't Veld J. (2021), "Quantifying Spillovers of NGEU investment", European Economy Discussion Papers, No. 144 and Afman et al. (2021), "An overview of the economics of the Recovery and Resilience Facility", Quarterly Report on the Euro Area (QREA), Vol. 20, No. 3 pp. 7-16.
Source: European Commission 2022

The share of funds contributing to each of the RRF's six policy pillars is outlined in the graph A2.1.

The progress made by Ireland in implementing its plan is published in the Recovery and Resilience Scoreboard. The Scoreboard also gives a clear overview of the progress made in implementing the RRF as a whole.

.

Graph A2.1: **Share of RRF funds contributing to each policy pillar**

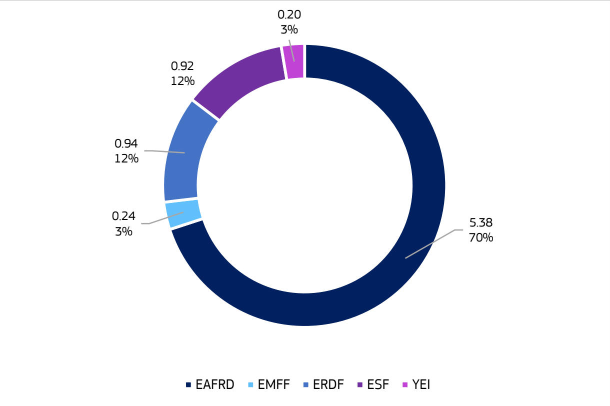


Each measure contributes towards two policy areas of the six pillars, therefore the total contribution to all pillars displayed on this chart amounts to 200% of the estimated cost of the RRPs. The bottom part represents the amount of the primary pillar, the top part the amount of the secondary pillar.
Source: RRF Scoreboard https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

The EU's budget of more than EUR 1.2 trillion for 2021-2027 is the investment lever to help implement EU priorities. Underpinned by an additional amount of about EUR 800 billion through NextGenerationEU and its largest instrument, the Recovery and Resilience Facility, it represents significant firepower to support the recovery and sustainable growth.

In 2021-2027, EU cohesion policy funds ([30]) will support long-term development objectives in Ireland by investing EUR 1.28 billion ([31]). This includes EUR 84.5 million from the Just Transition Fund directed to alleviate the socio-economic impacts of the green transition in the most vulnerable regions. Partnership agreements and programmes under the 2021-2027 Cohesion fund are designed in a way that takes into account the 2019-2020 CSRs and investment guidance provided within the context of the European Semester, ensuring synergies and complementarities with other EU funding. In addition, Ireland will benefit from EUR 7.5 billion support for the 2023-27 period from the Common Agricultural Policy, which supports social, environmental, and economic sustainability and innovation in agriculture and rural areas, contributing to the European Green Deal, and ensuring long-term food security.

Graph A3.1: **2014-2020 European Structural and Investment Funds - total budget by fund (EUR billion, %)**



The data for the EAFRD and REACT-EU refer to the period 2014-2022.
Source: European Commission

In 2014-2020, EUR 4.33 billion from the EU budget was intended to be invested in Ireland under the European Structural and Investment Funds (ESIF) ([32]). The total investment including national financing amounted to EUR 7.69 billion (Graph 3.1), representing around 0.37% of GDP for 2014-2020 and 15.06% of public investment ([33]). Among the 11 objectives, the most relevant for cohesion policy funding in Ireland are environment protection and resource efficiency, climate change adaptation and risk prevention, research & innovation, and low-carbon economy (in total: EUR 2.2 billion/EUR 3.6 billion including national financing). Promoting sustainable and quality employment, supporting labour mobility, social inclusion, combating poverty and any discrimination as well as skills development feature prominently among these objectives for cohesion policy funding. Cohesion policy has helped over 43 000 firms, improved the energy performance of over 20 000 households, and reduced CO2eq by almost 18 000 tonnes. By end of 2020, cohesion policy investments supported more than 350 000 participants, of which over 118 000 gained qualification. 67 000

([30]) European Regional Development Fund (ERDF), European Social Fund+ (ESF+), Cohesion Fund (CF), Just Transition Fund (JTF), Interreg.

([31]) Current prices, source: Cohesion Open Data

([32]) ESIF includes cohesion policy funds (ERDF, ESF+, CF, Interreg), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF). According to the 'N+3 rule', the funds committed for 2014-2020 must be spent by 2023 at the latest (by 2025 for the EAFRD). Data source: Cohesion Open data, cut-off date 31.12.2021 for ERDF, ESF+, CF, Interreg; cut-off date 31.12.2020 for EAFRD and EMFF

([33]) Public investment is gross fixed capital formation plus capital transfers, general government.

participants that were engaged in the labour market were from a disadvantaged background.

Cohesion policy funds are already substantially helping achieve the SDGs objectives. In Ireland, cohesion policy funds are supporting 7 of the 17 SDGs with up to 100% of the expenditure helping attain the goals.

In 2021, the REACT-EU programme under NextGenerationEU provided EUR 88.3 million of additional funding to 2014-2020 cohesion policy allocations for Ireland. This funding aimed to ensure a balanced recovery, foster convergence and provide vital support to regions so as to address the impact of the COVID-19 outbreak. In 2021, REACT-EU support to Ireland focused on ensuring a resilient recovery from COVID-19 through investing in inclusive education and training. Measures were taken to help reopen schools, and the extra funding helped other action to be taken, e.g. providing laptops to disadvantaged students.

The Coronavirus Response Investment Initiative ([34]) provided the first EU emergency assistance to Ireland in relation to the COVID-19 pandemic. It introduced extraordinary flexibility, enabling Ireland to reallocate resources for immediate public health needs (EUR 311 million). In fact, there was very significant reprogramming, and most resources were shifted to health investments in order to purchase personal protective equipment. Ireland also benefited from the temporary 100% EU financing of incurred measures in cohesion policy, with approximately EUR 485 million in 2021 through 100% co-financing.

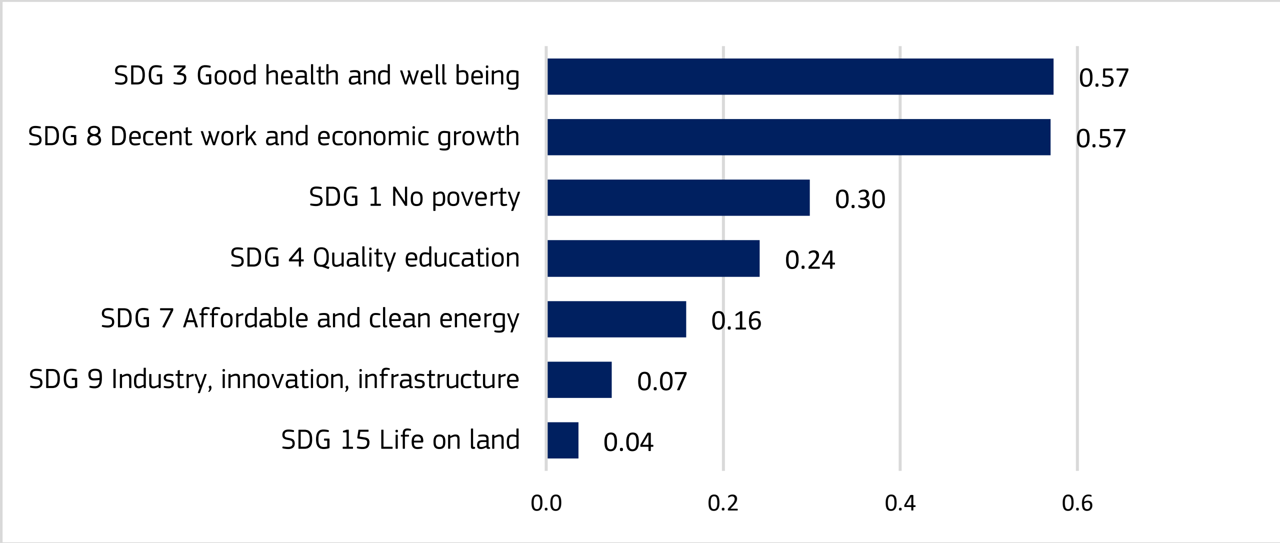
Ireland received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance short-time work schemes and similar measures. In December 2020, the Council granted financial assistance under SURE to Ireland for a maximum of EUR 2.473 billion, which was disbursed by 30 March 2021. SURE is estimated to have supported approximately 30% of workers and 50% of firms for at least one month in 2020, primarily in wholesale and retail trade, accommodation and food services and construction. Ireland is estimated to have saved a total of EUR 0.05 billion on interest payments as a result of SURE's lower interest rates.

The Commission is engaged in providing tailor-made expertise via the Technical Support Instrument to help Ireland design and implement growth-enhancing reforms, including support for implementing its RRP. Since 2018, Ireland has received assistance through 44 technical support projects. Projects delivered in 2021 aimed, for example, to formulate policy reform recommendations on an authorisation and supervision manual for the Central Securities Depository, as well as on establishing a modern regulatory authority for all gambling activities licensed in the country. In 2022, new projects will start to support, among other things, the development and deployment of the Barnahus model. Another project will involve providing expertise to develop a monitoring and reporting framework to help manage the verification aspects of the Irish RRP, and to reduce fraud and double funding.

Ireland also benefits from other EU programmes. These include the Connecting Europe Facility, which allocated EUR 116.2 million to specific projects on strategic transport networks, and Horizon 2020, which allocated EUR 1 190 million.

([34]) Re-allocating ESIF resources according to Regulation (EU) 2020/460 of the European Parliament and of the Council of 30 March 2020, and Regulation (EU) 2020/558 of the European Parliament and of the Council of 23 April 2020.

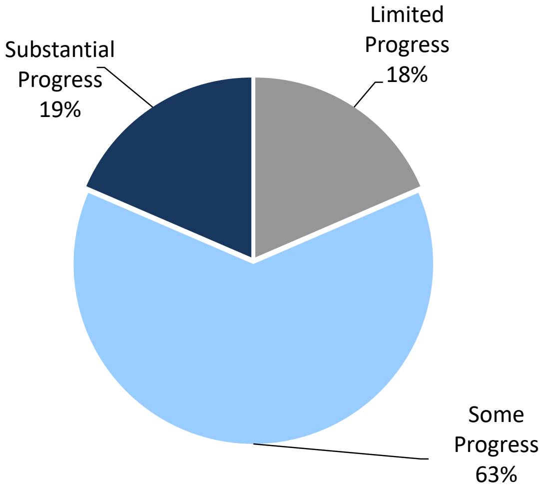
Graph A3.2: **Cohesion policy contribution to the SDGs (EUR billion)**



Source: European Commission

The Commission assessed the 2019-2021 country-specific recommendations (CSRs) ([35]) addressed to Ireland in the context of the European Semester. The assessment takes into account the policy action taken by Ireland to date ([36]), as well as the commitments in the RRP ([37]). At this early stage of the RRP implementation, overall 82% of the CSRs focusing on structural issues in 2019 and 2020 have recorded at least "some progress", while 18% recorded "limited" (see Graph A4.1). Considerable additional progress in addressing structural CSRs is expected in the years to come with the further implementation of the RRP.

Graph A4.1: **Ireland's progress on the 2019-2020 CSRs (2022 European Semester cycle)**



Source: European Commission

([35]) 2021 CSRs: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H0729%2807%29&qid=1627675454457

2020 CSRs: https://eur-lex.europa.eu/search.html?textScope0=ti&lang=en&scope=EURLEX&qid=1526385017799&type=quick&AU_CODED=CONSIL&DD_YEAR=2020&andText0=recommendation&DD_MONTH=07

2019 CSRs: https://eur-lex.europa.eu/search.html?textScope0=ti&lang=en&scope=EURLEX&qid=1526385017799&type=quick&AU_CODED=CONSIL&DD_YEAR=2019&andText0=recommendation&DD_MONTH=07

([36]) Incl. policy action reported in the National Reform Programme, as well as in the RRF reporting (bi-annual reporting on the progress with implementation of milestones and targets and resulting from the payment request assessment).

([37]) 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 RRPs. The CSR assessment presented here takes into account the degree of implementation of the measures included in the RRP and of those done outside of the RRP at the time of assessment. Measures foreseen in the annex of the adopted Council Implementing Decision on the approval of the assessment of the RRP which are not yet adopted nor implemented but considered as 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 A4.1:**Summary table on 2019,2020 and 2021 CSRs**

Ireland	Assessment in May 2022*	RRP coverage of CSRs until 2026
2019 CSR1	**Limited Progress**	
Achieve the medium-term budgetary objective in 2020. Use windfall gains to accelerate the reduction of the general government debt ratio.	Not relevant anymore	Not applicable
Limit the scope and number of tax expenditures, and broaden the tax base.	Limited Progress	
Continue to address features of the tax system that may facilitate aggressive tax planning, and focus in particular on outbound payments.	Limited Progress	Relevant RRP measures planned as of 2020
Address the expected increase in age-related expenditure by making the healthcare system more cost-effective and by fully implementing pension reform plans.	Limited Progress	Relevant RRP measures planned as of 2020, 2021
2019 CSR 2	**Some Progress**	
Provide personalised active integration support and facilitate upskilling, in particular for vulnerable groups and people living in households with low work intensity.	Some Progress	Relevant RRP measures planned as of 2021
Increase access to affordable and quality childcare.	Substantial Progress	
2019 CSR 3	**Some Progress**	
Focus investment-related economic policy on low carbon and energy transition, the reduction of greenhouse gas emissions,	Substantial Progress	Relevant RRP measures planned as of 2020, 2021, 2022
sustainable transport,	Some Progress	Relevant RRP measures planned as of 2022
water,	Some Progress	Relevant RRP measures planned as of 2021, 2022
digital infrastructure	Some Progress	Relevant RRP measures planned as of 2021, 2022, 2023
and affordable and social housing, taking into account regional disparities.	Some Progress	Relevant RRP measures planned as of 2021
Implement measures, including those in the Future Jobs strategy, to diversify the economy and improve the productivity of Irish firms – small and medium enterprises in particular - by using more direct funding instruments to stimulate research and innovation	Some Progress	Relevant RRP measures planned as of 2025
and by reducing regulatory barriers to entrepreneurship.	Some Progress	Relevant RRP measures planned as of 2022
2020 CSR1	**Some Progress**	
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 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.	Not relevant anymore	Not applicable
Improve accessibility of the health system and strengthen its resilience, including by responding to the health workforce's needs and ensuring universal coverage for primary care.	Some Progress	Relevant RRP measures planned as of 2021

(Continued on the next page)

Table (continued)

2020 CSR2	**Some Progress**	
Support employment through developing skills.	Some Progress	Relevant RRP measures planned as of 2021
Address the risk of digital divide, including in the education sector.	Substantial Progress	Relevant RRP measures planned as of 2021
Increase the provision of social and affordable housing.	Some Progress	Relevant RRP measures planned as of 2021
2020 CSR 3	**Some Progress**	
Continue to provide support to companies, in particular SMEs, especially through measures ensuring their liquidity.	Substantial Progress	
Front-load mature public investment projects	Some Progress	Relevant RRP measures planned as of 2021, 2022
and promote private investment to foster the economic recovery.	Some Progress	Relevant RRP measures planned as of 2021, 2022
Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy,	Substantial Progress	Relevant RRP measures planned as of 2020, 2021, 2022
sustainable public transport,	Some Progress	Relevant RRP measures planned as of 2022
water supply and treatment,	Some Progress	Relevant RRP measures planned as of 2021, 2022
research and innovation	Some Progress	Relevant RRP measures planned as of 2025
and digital infrastructure.	Some Progress	Relevant RRP measures planned as of 2021, 2022, 2023
2020 CSR 4	**Limited Progress**	
Broaden the tax base.	Limited Progress	
Step up action to address features of the tax system that facilitate aggressive tax planning, including on outbound payments.	Limited Progress	Relevant RRP measures planned as of 2020
Ensure effective supervision and enforcement of the anti-money-laundering framework as regards professionals providing trust and company services.	Some Progress	Relevant RRP measures planned as of 2021
2021 CSR1	**Substantial Progress**	
In 2022, pursue a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.	Full Implementation	Not applicable
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Substantial Progress	Not applicable
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 national 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.	Some Progress	Not applicable
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

* See footnote 37

Source: European Commission

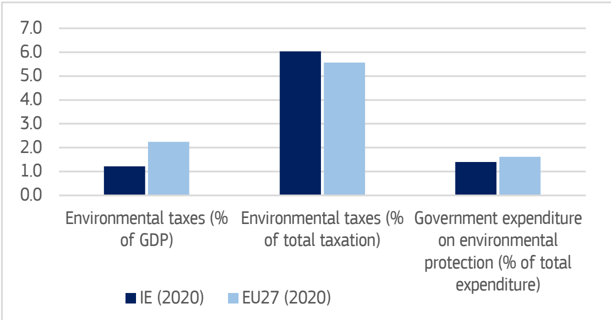
The European Green Deal intends to transform the EU into a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. This annex offers a snapshot of the most significant and economically relevant developments in Ireland in the respective building blocks of the European Green Deal. It is complemented by Annex 6 on the employment and social impact of the green transition and Annex 7 for circular economy aspects of the Green Deal.

Much-needed reforms to tackle greenhouse gas emissions are finally being adopted. Total greenhouse gas emissions excluding land use, land use change and forestry in 2019 were 14% above 1990 level. Ireland's domestic emissions exceeded its reduction target of 20% for non-ETS sectors for 2020 by a very large margin, and even if all additional measures are implemented, as per WAM projections, Ireland would not reach its 2030 target for these sectors. However, these projections do not yet account for the adopted climate action plan in 2021 that sets a national climate neutrality target by 2050 with an intermediate objective of reducing total GHG emissions by 51% by 2030 compared to 2018 levels. The legislation establishes a strong framework for climate policy, which includes drawing up economy-wide and sector-specific 5-year carbon budgets on a rolling 15-year basis. It also sets out an obligation to revise the climate action plan on an annual basis and makes government departments responsible for delivering their carbon budgets and achieving their mitigation targets. Further, Ireland sets out a schedule of annual increases in its carbon tax to EUR 100 per tonne by 2030. The 2021 climate action plan was adopted at the end of 2021. It is meant to be aligned with the 51% national target by 2030. It should serve as the basis for a revised national energy and climate plan.

Implementing planned objectives and measures has become a top priority. There has been progress on several important measures, including those that support the deployment of renewable power generation and the retrofitting of buildings. However, as the Climate Change Advisory Council highlighted at the end of 2021, however, there continues to be a significant gap between definition of objectives or planning of measures and their implementation. Therefore, a genuine inflection point in greenhouse gas emissions still needs to be observed and there are major challenges ahead. In its RRP, Ireland allocates 42% of funding under the RRP is allocated to climate objectives and outlines crucial reforms and investments to further the transition to a more sustainable, low-carbon and climate-resilient economy ([38]).

Ireland's performance with respect to fiscal indicators supporting the EU Green Deal is mixed. While its environmental tax revenues in terms of GNI are lower than the EU average, they are higher when expressing them as percentage of total tax revenues. Compared to the EU, Ireland is collecting larger share of transport tax revenues. However, all environmental tax revenues are decreasing over time, both in terms of percentages and levels (see Annex 18). The share of expenditure on environmental protection in total government expenditure is lower than the EU average and decreasing.

Graph A5.1: **Taxation and government expenditure on environmental protection**



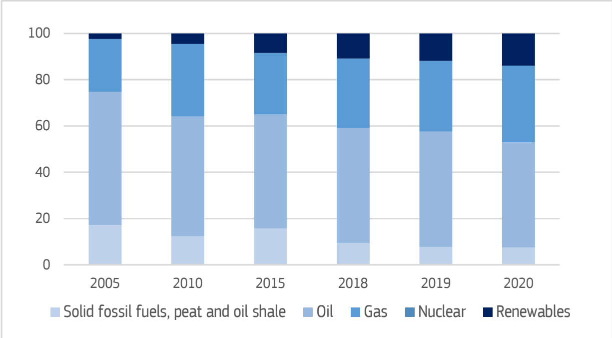
Source: Eurostat

Ireland is lagging behind in using renewable energy and 86% of its energy mix still relies on natural gas, oil and petroleum. While in 2020, the share of renewables in its gross inland energy consumption increased considerably, Ireland still needs to make considerable efforts to get back on track as regards its trajectory towards meeting 2030 renewable and energy efficiency objectives. 2020 saw the first notable interruption in an almost continuous trend of increased energy

([38]) The share of financial allocation contributing to climate objectives has been calculated using Annex VI of the RRF Regulation.

use over the previous ten years. While oil consumption fell considerably due to the COVID-19 crisis (from 50% down to 45% of energy use), gas use increased in absolute and relative terms reaching 33% of energy use. Ireland required statistical transfers to meet its 2020 renewable energy target, and still requires significant investment to reach its renewable energy contribution to the EU 2030 target of 34% of gross final energy consumption and the new, increased target of 80% renewable electricity.

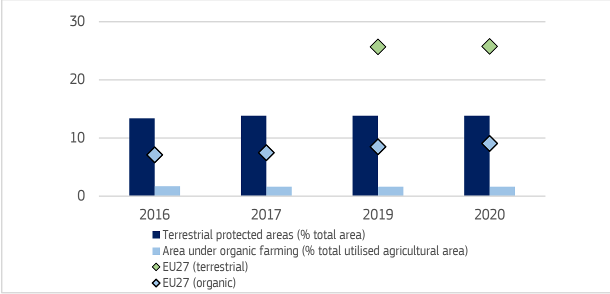
Graph A5.2: **Thematic – Energy**
Share in energy mix (solids, oil, gas, renewables)



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

In terms of biodiversity and ecosystem health, Ireland presents a mixed picture. By 2021, 13.2% of the national land area of Ireland was covered by Natura 2000 (EU average 18.1%), with Special Protection Areas (SPAs) classified under Birds Directive covering 6.2% (EU average 12.8%) and sites of community importance (SCIs) under the Habitats Directive covering 10.2% (EU average 4.2%) of the Irish territory. On the basis of the latest update, Ireland's terrestrial Natura 2000 network under the Birds and Habitats Directive is now considered complete. There are significant knowledge and designation gaps in Ireland's marine Natura 2000 network, especially under the Birds Directive. Delays in finalising the list of SCIs, including for the habitat reefs, as well as poor progress in identifying, selecting and designating SPAs under the Birds Directive are particularly concerning, given the very ambitious plans for developing renewables in offshore waters. The percentage of land covered by forests was 19% in 2018, well below EU average of 43.5%. The share of organic farming is the second lowest among the EU-27, with 1.7% in 2020, significantly below the EU average of 9.1%.

Graph A5.3: **Thematic – Biodiversity**
Terrestrial protected areas and organic farming



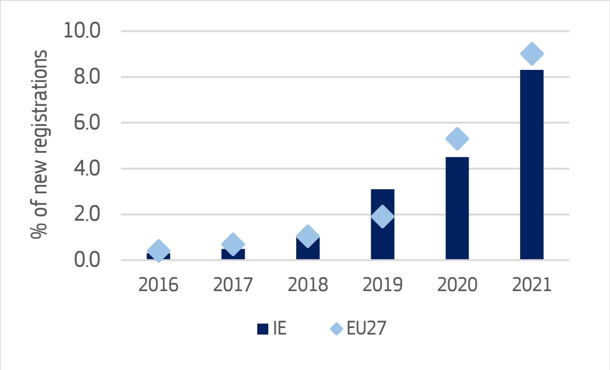
For terrestrial protected areas data for 2018, and data for the EU average (2016, 2017) is lacking.
Source: EEA (terrestrial protected areas) and Eurostat (organic farming)

Air quality in Ireland continues to give cause for serious concern. The latest available annual estimates by the European Environment Agency point to about 1,300 premature deaths attributable to fine particulate matter concentrations, 50 to ozone concentration and 30 to nitrogen dioxide concentrations ([39]).

The number of zero-emission passenger cars in the Irish fleet is growing dynamically, but the density of public charging points struggles to keep pace. Just over 100 kilometres of railroads are electrified in Ireland, making it the EU country with the lowest share of electrification. The average number of hours spent in road congestion per year by a representative commuting driver in Ireland is high and has been increasing in recent years.

([39]) Please note that these figures refer to the impacts of individual pollutants, and to avoid double-counting cannot be added up to derive a sum.

Graph A5.4: **Share of zero emission vehicles (% of new registrations)**



Zero emission vehicles (passenger cars) include battery and fuel cell electric vehicles (BEV, FCEV).
Source: European Alternative Fuels Observatory

Table A5.1:**Indicators underpinning the progress on EU Green Deal from macroeconomic perspective**

									'Fit for 55'		
						Target	Distance		Target	Distance	
			2005	2019	2020	2030	WEM	WAM	2030	WEM	WAM
Progress to policy targets	Non-ETS GHG emission reduction target [1]	MTCO2 eq; %; pp [2]	46.8	-3%	-6%	-30%	-25	-8	-42%	-37	-20
			2005	2016	2017	2018	2019	2020	National contribution to 2030 EU target		
Progress to policy targets	Share of energy from renewable sources in gross final consumption of energy [1]	%	3%	9%	11%	11%	12%	16%	34%		
Progress to policy targets	Energy efficiency: primary energy consumption [1]	Mtoe	14.9	14.7	14.4	14.6	14.7	13.4	13.7		
Progress to policy targets	Energy efficiency: final energy consumption [1]	Mtoe	12.6	11.8	11.8	12.4	12.4	11.2	11.2		
			IRELAND						EU		
			2015	2016	2017	2018	2019	2020	2018	2019	2020
Fiscal and financial indicators	Environmental taxes (% of GNI* for IE, % of GDP for EU)	% of GNI*	3.1	2.9	2.8	2.6	2.3	2.2	2.4	2.4	2.2
Fiscal and financial indicators	Environmental taxes (% of total taxation)	% of taxation [3]	8.2	8.0	7.8	7.0	6.4	6.0	6.0	5.9	5.6
Fiscal and financial indicators	Government expenditure on environmental protection	% of total exp.	1.56	1.62	1.57	1.56	1.56	1.39	1.66	1.70	1.61
Fiscal and financial indicators	Investment in environmental protection	% of GDP [4]	0.21	0.19	0.18	0.19	-	-	0.42	0.38	0.41
Fiscal and financial indicators	Fossil fuel subsidies	EUR2020bn	2.05	2.01	1.79	1.80	1.54	-	56.87	55.70	-
Fiscal and financial indicators	Climate protection gap [5]	score 1-4	0.7 out of 4 (slight increase from historical level of 0.8). This is a low risk category (4 being a high risk).								
Climate	Net GHG emissions	1990 = 100	107	111	117	119	114	106	79	76	69
Climate	GHG emissions intensity of the economy	kg/EUR'10	0.30	0.32	0.30	0.28	0.26	0.21	0.32	0.31	0.30
Climate	Energy intensity of the economy	kgoe/EUR'10	0.06	0.06	0.06	0.05	0.05	0.04	0.12	0.11	0.11
Energy	Final energy consumption (FEC)	2015=100	100.0	103.8	104.6	109.4	109.3	98.7	103.5	102.9	94.6
Energy	FEC in residential building sector	2015=100	100.0	102.7	99.5	106.2	103.2	112.0	101.9	101.3	101.3
Energy	FEC in services building sector	2015=100	100.0	102.4	102.2	109.7	113.1	113.7	102.4	100.1	94.4
Pollution	Smog-precursor emission intensity (to GDP) [4]	tonne/EUR'10 [6]	0.74	0.75	0.71	0.66	0.58	-	0.99	0.93	-
Pollution	Years of life lost caused due to air pollution by PM2.5	per 100.000 inh.	259	254	249	335	322	-	863	762	-
Pollution	Years of life lost due to air pollution by NO2	per 100.000 inh.	7	12	6	12	8	-	120	99	-
Pollution	Nitrate in ground water	mg NO3/litre	14.2	12.7	12.8	12.8	14.4	-	21.7	20.7	-
Biodiversity	Terrestrial protected areas	% of total	-	13.4	13.8	-	13.8	13.8	-	25.7	25.7
Biodiversity	Marine protected areas	% of total	-	2.3	-	-	2.3	-	-	10.7	-
Biodiversity	Organic farming	% of total utilised agricultural area	1.7	1.7	1.7	1.7	1.6	1.7	8.0	8.5	9.1
			2000-2006		2006-2012		2012-2018		00-06	06-12	12-18
Biodiversity	Net land take	per 10,000 km2	27.6		3.0		3.6		13.0	11.0	5.0
			2015	2016	2017	2018	2019	2020	2018	2019	2020
Mobility	GHG emissions intensity of transport (to GVA) [7]	kg/EUR'10	2.04	2.39	2.63	2.68	2.63	2.25	0.89	0.87	0.83
Mobility	Share of zero emission vehicles [8]	% in new registrations	0.4	0.3	0.5	1.0	3.1	4.5	1.0	1.9	5.4
Mobility	Number of plug-in electric vehicles per charging point		1	2	3	5	10	17	8	8	12
Mobility	Share of electrified railways	%	5.7	5.7	5.7	5.3	5.3	-	55.6	56.0	-
Mobility	Congestion (average number of hours spent in road congestion per year by a representative commuting driver)		32.1	34.0	35.0	35.3	36.0	-	28.9	28.8	-
			Year	IE	EU						
Digital	Share of smart meters in total metering points [9] - electricity	% of total	2018	0.0	35.8						
Digital	Share of smart meters in total metering points [9] - gas	% of total	2018	0.0	13.1						
Digital	ICT used for environmental sustainability [10]	%	2021	67.2	65.9						

(1) The 2030 non-ETS GHG target is set in the Effort Sharing Regulation. The Fit for 55 targets are those in the Commission's proposal to increase EU's climate ambition by 2030. Renewables and Energy Efficiency targets and national contributions under the Governance Regulation (Regulation (EU) 2018/1999). (2) Distance to target is the gap between Member States' 2030 target under the Effort Sharing Regulation and projected emissions, with existing measures (WEM) and with additional measures (WAM) respectively, as a percentage of 2005 base year emissions. (3) Percentage of total revenues from taxes and social contributions (excluding imputed social contributions). Revenues from the ETS are included in environmental tax revenues (in 2017 they amounted to 1.5% of total environmental tax revenues at the EU level). (4) Covers expenditure on gross fixed capital formation to be used for the production of environmental protection services (i.e. abatement and prevention of pollution) covering all sectors, i.e. government, industry and specialised providers. (5) The climate protection gap indicator is part of the European adaptation strategy (February 2021), and is defined as the share of non-insured economic losses caused by climate-related disasters.
(6) Sulphur oxides (SO2 equivalent), Ammonia, Particulates < 10µm, Nitrogen oxides in total economy (divided by GDP).
(7) Transportation and storage (NACE Section H). (8) Zero emission vehicles include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV). (9) European Commission Report (2019) 'Benchmarking smart metering deployment in the EU-28'.
(10) European Commission (2021). Each year the DESI is re-calculated for all countries for previous years to reflect any possible change in the choice of indicators and corrections to the underlying data. Country scores and rankings may thus differ compared with previous publications.
Source: Eurostat, JRC, European Commission, EEA, EAFO

The green transition not only encompasses improvements to environmental sustainability, but also includes a significant social dimension. While measures in this regard include the opportunity for sustainable growth and job creation, it must also be ensured that no one is left behind and all groups in society benefit from the transition. Ireland's green economy is still limited and its development, supported by investments and reforms included in the RRP, can foster sustainable growth and quality job creation. At the same time, the green transition is expected to affect low- to middle-income groups to a larger extent.

Ireland's green transition can pose challenges, which call for reskilling and upskilling the workforce. Progress has been made on the social dimension of the green transition, notably in the reduction of energy poverty measured in terms of the ability to keep houses warm.

The Irish RRP includes a measure to equip workers with green skills, aiming to improve their employability. The SOLAS recovery skills response programme included in the plan provides training courses, among other things, on skills for green construction and climate change mitigation. The scheme focuses on people who have been unemployed for more than 6 months. In synergy with the RRF, the European Social Fund Plus (ESF+) and the Just Transition Fund are expected to help mitigate the social impact of the transition. The negotiations between Ireland and the Commission on how to best use the ESF+ and JTF resources are planned to conclude by the end of 2022. Ireland's 2020 national energy and climate plan (NECP) includes references to a fair transition, including the set-up of a working group to identify transition needs among different cohorts of workers, businesses and communities. While the social, employment and skills impacts of the policies presented are not taken into account explicitly, the plan commits to addressing the impact of the transition on people living in carbon-intensive regions, and to alleviating the burden of energy poverty on the most vulnerable in society. However, the NECP does not include a specific target for reducing energy poverty and refers to the overall at-risk-of-poverty figures, stating that energy poverty is not a distinct type of deprivation in Ireland.

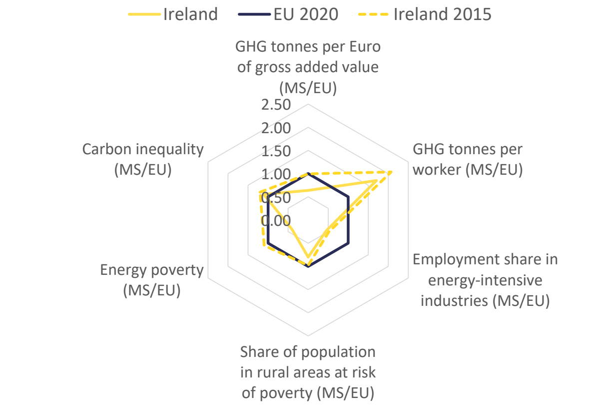
The economy has reduced its carbon footprint, although the transition from carbon-intensive energy sources will pose challenges. The greenhouse gas (GHG) emissions intensity of the Irish economy decreased between 2015 and 2020 (in terms of gross value added) and stands at around 35% below the EU average, but the average carbon footprint per worker, at 23.19 tonnes of GHG emissions, is still relatively high (13.61 in the EU) (see Graph A6.1). Declining sectors characterising the Irish economy include peat- and fossil fuel-based energy production [40]. Despite a relatively low share of workers in energy intensive industries (1.39% versus 3.06% in the EU), Ireland's transition away from carbon-intensive sources of energy towards more sustainable, renewable energy sources is expected to affect jobs in the Midlands region and its electricity-generating industry, with up- and reskilling of the workforce there being particularly important [41]. Employment in the environmental goods and services sector is still relatively low (1.7% versus 2.2% in the EU) [42] and wind and solar energy potential, as well as energy efficiency improvements, offer further opportunities for green jobs. Ireland's green transition can pose challenges, which call for reskilling and upskilling the workforce. Labour shortages in sectors linked to the green transition are reported in the construction and energy sector (Eurofound, 2021).

(40) SWD(2021) 275 final.

(41) 2020 European Semester: Overview of Investment Guidance on the Just Transition Fund 2021-2027 per Member State (Annex D).

(42) There is currently no common EU-wide definition of green jobs. The environmental goods and services sector (EGSS) accounts only report on an economic sector that generates environmental products, i.e. goods and services produced for environmental protection or resource management.

Graph A6.1: **Fair green transition challenges**

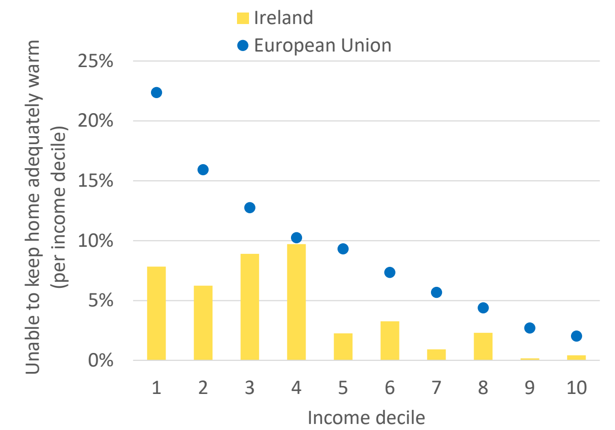


Numbers are the normalised indicator performance, signifying factors relative to the EU27 average.
Carbon inequality: average emissions per capita top 10% vs bottom 50% (2019)
Source: Eurostat, World Inequality Database

As for the social dimension of the green transition, including ensuring access to essential transport and energy services, Ireland has been progressing significantly in the recent years. The share of the population at risk of poverty living in rural areas is relatively low (15% versus 18.7% in the EU) and decreasing (from 18.3% in 2015) ([43]). The share of the population unable to keep their homes adequately warm declined significantly from 9% in 2015 to 3.3% in 2020, which is below the EU average (8.2%). Middle-income groups are affected most (see Graph A6.2). Consumption patterns vary across the population; the average carbon footprint of the top 10% of emitters is about 6 times that of the bottom 50% of the population (5.3 times in the EU).

Tax systems are key to ensuring a fair transition towards climate neutrality ([44]). Ireland's revenues from total environmental taxes fell from 3.1% of GNI* in 2015 to 2.2%% of GNI* in 2020 (against the EU average of 2.24% of GDP in 2020). The tax wedge for low-income earners ([45]) slightly increased from 20.5% in 2015 to 21.4% in 2021, compared to 31.9% in the EU in 2021 (see Annex 18). Redistributive measures accompanying environmental taxation have the potential to foster progressivity and to have a positive impact on the disposable income of households in the lowest segments of the income distribution ([46]).

Graph A6.2: **Energy poverty by income decile**



Source: Eurostat

([43]) As a proxy for potential transport challenges in the context of the green transition (see COM(2021) 568 final).

([44]) COM(2021) 801 final.

([45]) Tax wedge for a single earner at 50% of the national average wage (Tax and benefits database, European Commission/OECD).

([46]) SWD(2021) 641 final PART 3/3, on distributional effects of energy taxation revision, based on the European Commission Joint Research Centre GEM-E3 and EUROMOD models.

The efficient use of resources is key to ensuring competitiveness and open strategic autonomy, while minimising the environmental impact. The green transition presents a major opportunity for European industry by creating markets for clean technologies and products. It will have an impact across the entire value chains in sectors such as energy and transport, construction and renovation, food and electronics, helping create sustainable, local and well-paid jobs across Europe.

With its circular material use rate not reaching 2% in any recent years, standing at just 1.8% in 2020 (compared with the EU average of 12.8%), Ireland displays the second-worst performance in the EU. While the domestic economy's structure and the country's location as an island at the EU's geographic periphery are among the factors that explain this scenario, a dedicated government policy was also lacking until recently. The 2021 Whole of Government Circular Economy Strategy aims to significantly improve Ireland's circular material use rate so that it can rise above the EU average by the end of the decade.

Ireland has considerably improved its resource productivity over the last decade, on account of very dynamic GDP growth, while domestic material consumption remained basically flat. Its performance is far superior to the EU average (2.82 pps generated per kg of material consumed, versus the EU average of 2.23 pps per kg in 2020), but caution should be exercised in this regard: the very strong presence of multinationals in the Irish economy renders as misleading the representation of the complexity of economic activity by a single headline indicator such as GDP. An alternative indicator devised by the national statistics office (the 'modified Gross National Income') revolves around 60% of the headline GDP figure, in which case Ireland's performance is close to the EU average.

The generation of waste per capita in Ireland has decreased since 2016. In the meantime, the increase of both GDP and population indicates a decoupling trend between Ireland's economic growth and the generation of waste. The stringent implementation and repeated update of the national Waste Prevention Programme might partly explain this positive trend. However, the recycling rate remains significantly below the EU average. In light of this, in November 2021, Ireland published a climate action plan, which includes specific targets, e.g. reductions in household waste, landfill use, plastics and food waste, and sets recycling targets for municipal, plastic and packaging waste.

A successful transition to a circular economy requires social and technological innovation as Ireland's full potential regarding the circular economy can only be reached if implemented across all value chains. Therefore, eco-Innovation is an important enabling factor for the circular economy. Product design approaches and new business models can help to produce systemic circularity innovations, creating new business opportunities. The country ranked 14th in the EU, scoring 109 in the 2021 Eco-Innovation Scoreboard, hence an average eco-innovation performance status. In two out of five components of the Eco-innovation index of 2021, Ireland performs above the EU average, namely the eco-innovation activities and resource efficiency outcomes. However, its performance is below the EU average regarding eco-innovation inputs, eco-innovation outputs and socio-economic outputs.

Table A7.1: **Selected resource efficiency indicators**

SUB-POLICY AREA	2015	2016	2017	2018	2019	2020	EU27	Latest year EU 27
Circularity								
Resource Productivity (Purchasing power standard (PPS) per kilogram)	2.4	2.3	2.3	2.4	2.4	2.8	2.2	2020
Material Intensity (kg/EUR)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	2020
Circular Material Use Rate (%)	1.9	1.7	1.7	1.6	1.6	1.8	12.8	2020
Material footprint (Tones/capita)	16.0	18.0	18.4	20.2	24.1	-	14.6	2019
Waste								
Waste generation (kg/capita, total waste)	-	3207	-	2874	-	-	5234	2018
Landfilling (% of total waste treated)	-	24.9	-	17.1	-	-	38.5	2018
Recycling rate (% of municipal waste)	-	40.7	40.4	37.6	37.4	40.4	47.8	2020
Hazardous waste (% of municipal waste)	-	3.5	-	4.5	-	-	4.3	2018
Competitiveness								
Gross value added in environmental goods and services sector (% of GDP)	0.7	0.8	0.9	0.9	0.9	-	2.3	2019
Private investment in circular economy (% of GDP)	-	-	-	-	-	-	0.1	2018

Source: Eurostat

The Digital Economy and Society Index (DESI) monitors EU Member States' digital progress. The areas of human capital, digital connectivity, the integration of digital technologies by businesses and digital public services reflect the Digital Decade's four cardinal points ([47]). This Annex describes Ireland's DESI performance.

Ireland's RRP, despite a relatively modest financial envelope (EUR 989 million), includes measures to support the digital transformation. These measures represent 32% of the plan's financial allocation and concern all DESI dimensions, with a special focus on digitalising public services and businesses, and improving digital skills ([48]).

Ireland scores high concerning all indicators in the DESI dimension on human capital. In Ireland the share of the population that has at least basic digital skills and the percentage of ICT specialists and female ICT specialists is above the EU average.

Ireland performs well in the area of connectivity. For instance, Ireland scores above the EU average both in fixed (optical fibre) and wireless (5G) broadband coverage, but assignment of 5G spectrum is low (29% compared to the EU average of 56%) ([49]).

Ireland has integrated digital technology well. The share of SMEs with at least a basic level of digital intensity is above the EU average. Businesses in Ireland are good at taking advantage of available digital technologies. For example, the use of big data and cloud are above the EU average and Ireland uses artificial intelligence as much as other EU countries on average.

The public services in Ireland are highly digitalised. This is true for the services provided to businesses as well as to the general public.

([47]) 2030 Digital Compass: the European Way for the Digital Decade Communication, COM (2021) 118 final

([48]) The share of financial allocation contributing to digital objectives has been calculated using Annex VII of the RRF Regulation.

([49]) Source: Communications Committee (COCOM) based on iDATE.

Table A8.1:**Key Digital Economy and Society Index Indicators**

Human capital	Ireland DESI 2020	Ireland DESI 2021	Ireland DESI 2022	EU DESI 2022	EU top-performance DESI 2022
At least basic digital skills	**NA**	**NA**	**70%**	**54%**	**79%**
% individuals			2021	2021	2021
ICT specialists	**4.9%**	**5.7%**	**6.3%**	**4.5%**	**8.0%**
% individuals in employment aged 15-74	2019	2020	2021	2021	2021
Female ICT specialists	**21%**	**21%**	**20%**	**19%**	**28%**
% ICT specialists	2019	2020	2021	2021	2021
Connectivity					
Fixed Very High Capacity Network (VHCN) coverage	**35%**	**83%**	**89%**	**70%**	**100%**
% households	2019	2020	2021	2021	2021
5G coverage (*)	**NA**	**30%**	**72%**	**66%**	**99.7%**
% populated areas		2020	2021	2021	2021
Integration of digital technology					
SMEs with at least a basic level of digital intensity	**NA**	**NA**	**64%**	**55%**	**86%**
% SMEs			2021	2021	2021
Big data	**20%**	**23%**	**23%**	**14%**	**31%**
% enterprises	2018	2020	2020	2020	2020
Cloud	**NA**	**NA**	**47%**	**34%**	**69%**
% enterprises			2021	2021	2021
Artificial Intelligence	**NA**	**NA**	**8%**	**8%**	**24%**
% enterprises			2021	2021	2021
Digital public services					
Digital public services for citizens	**NA**	**NA**	**80**	**75**	**100**
Score (0 to 100)			2021	2021	2021
Digital public services for businesses	**NA**	**NA**	**100**	**82**	**100**
Score (0 to 100)			2021	2021	2021

(*) The 5G coverage indicator does not measure users' experience, which may be affected by a variety of factors such as the type of device used, environmental conditions, number of concurrent users and network capacity. 5G coverage refers to the percentage of populated areas as reported by operators and national regulatory authorities.
Source: Digital Economy and Society Index

This Annex provides a general overview of the performance of the Irish research and innovation system.

In the 2021 edition of the European Innovation Scoreboard ([50]), Ireland still belongs to the group of strong innovation performers, although it's ranking has fallen in recent years. Despite a relatively well-developed R&I system, Ireland still suffers from low R&D intensity ([51]). A strong public science base is reflected in the level of high-quality publications, new graduates in science and engineering, and employment in fast-growing companies. However, weaknesses persist in the financing of R&D, which is not at the expected level for an economy at Ireland's stage of development. R&D intensity has been on a declining trend since 2010, while public R&D intensity, at 0.32%, is one the lowest in the EU. While the tax credit provides valuable support to business expenditure on R&D and changes have made it more attractive for SMEs, more priority for direct funding instruments could help to stimulate research and innovation and improve the productivity of Irish firms, especially SMEs.

The reforms and investments underpinning Ireland's RRP can be expected to help increase the overall R&D intensity. The National Grand Challenge measure uses a challenge-based funding model to support research and innovation projects and incentivises researchers to focus on projects that have the potential to contribute to the climate, healthcare, digital and agriculture sectors, and facilitate the green and digital transition.

([50]) 2021 European Innovation Scoreboard, Country profile: Ireland

https://ec.europa.eu/docsroom/documents/45919

([51]) Ireland came only 19th in the EU in 2020 in terms of R&D intensity measured against GDP, although this is affected by issues relating to the composition and measurement of Ireland's GDP. In terms of modified GNI (GNI*), which excludes distortions from foreign-owned firms, Ireland has a R&D intensity of 2.20%.

Table A9.1:**Key research, development and innovation indicators**

Ireland	**2010**	**2015**	**2018**	**2019**	**2020**	**Compound annual growth 2010-20**	**EU average**
Key indicators							
R&D Intensity (GERD as % of GDP)	1.60	1.18	1.17	1.23	*1.23*	-2.5	*2.32*
Public expenditure on R&D as % of GDP	0.50	0.33	0.32	0.31	*0.32*	-4.3	*0.78*
Business enterprise expenditure on R&D (BERD) as % of GDP	1.10	0.85	0.85	0.91	*0.91*	-1.8	*1.53*
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	11.5	12.4	11.4	:	:	-0.2	9.9
PCT patent applications per billion GDP (in PPS)	2.6	1.8	:	:	:	-6.3	3.5
Academia-business cooperation							
Public-private scientific co-publications as % of total publications	7.9	10.4	10.6	9.5	9.1	1.5	9.05
Human capital and skills availability							
New graduates in science & engineering per thousand pop. aged 25-34	17.8	18.2	21.6	24.1	:	9.8	16.3
Public support for business enterprise expenditure on R&D (BERD)							
Total public sector support for BERD as % of GDP	0.18	0.316	0.149	0.213	:	1.9	0.196
R&D tax incentives: foregone revenues as % of GDP	0.134	0.269	0.109	0.177	:	3.2	0.100
Green innovation							
Share of environment-related patents in total patent applications filed under PCT (%)	9.1	9.0	8.1	:	:	-1.6	12.8
Finance for innovation and Economic renewal							
Venture Capital (market statistics) as % of GDP	0.042	0.044	0.072	0.060	0.076	6.2	0.054
Employment in fast-growing enterprises in 50% most innovative sectors	6.6	7.1	10.8	10.8	:	5.7	5.5

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

Productivity growth is a critical driver of economic prosperity, well-being and convergence over the long run. A major source of productivity for the EU economy is a well-functioning single market, where fair and effective competition and a business-friendly environment are ensured, in which small and medium enterprises (SMEs) can operate and innovate without difficulty. Businesses and industry rely heavily on robust supply chains and are facing bottlenecks that bear a negative impact on firms' productivity levels, employment, and turnover and entry/exit rates. This may impact the Member States' capacity to deliver on Europe's green and digital transformation.

Ireland displays the best labour productivity performance in the EU in terms of GDP per hour worked. This is partly due to the methodology underlying these statistics, particularly the impact of a very strong presence of multinationals. Ireland's performance remains above the EU average, but below that of certain Member States, if the statistical influence of multinationals is corrected. The structure of Ireland's economy, largely focused on services, also contributes to its good labour productivity performance (see Annex 19). This should not deflect attention from the challenges facing the manufacturing sector, which is significantly more concentrated than the services sector and therefore exposed to a higher volatility of total factor productivity. Therefore, a more balanced and diversified company base is critical for the country's sustained competitiveness in the future.

While the Irish economy is relatively prone to suffering externally-driven shocks, it showed remarkable resilience in the face of the double challenge of the pandemic crisis and Brexit. Ireland's reliance on extra-EU sources of value added is considerably higher than the EU average. Nonetheless, its resilience can be explained by its national industrial structure (where sectors, e.g. automotive, affected by international supply chain disruptions are under-represented) and the swift reorientation of traditional trade flows with Britain towards Northern Ireland. However, the Irish business community at large remains wary of potential supply chain problems in the near future ([52]).

Compared to the EU, SMEs in Ireland are less affected by the burden of regulation, administrative procedures and changing legislation. In addition, in its RRP Ireland has committed to introducing the SME test, which is expected to help limit regulatory obstacles faced by SMEs. Nevertheless, Irish SMEs have been seriously affected by the COVID-19 crisis: value added dropped by 11.5%, employment fell by 2.3%, and losses were incurred in over 30% of SMEs, with a further 30% barely breaking even ([53]). The significant disruptions observed are mainly due to the over-reliance on a small customer base, but also to a relative lack of financial support, thus rendering additional and targeted financial support to the SME sector necessary. Ireland's RRP includes a measure to support the digitalisation of companies, particularly SMEs, (including the establishment of Irish European digital innovation hubs), that is expected to accelerate their innovation, expand market presence, boost productivity and ultimately increase competitiveness.

([52]) Institute of Directors in Ireland (2021) Inflation and Supply Chain Issues Seen as Significant Concern for Majority of Business Leaders https://www.iodireland.ie/resources-media/media-hub/news/inflation-and-supply-chain-issues-seen-as-significant-concern-for-majority-of-business-leaders

([53]) ESRI (2021) New survey evidence on COVID-19 and Irish SMEs: Measuring the impact and policy response https://www.esri.ie/publications/new-survey-evidence-on-covid-19-and-irish-smes-measuring-the-impact-and-policy-0

Table A10.1:**Key single market and industry indicators**

SUB-POLICY AREA	INDICATOR NAME	DESCRIPTION	2021	2020	2019	2018	2017	Growth rates	EU27 average*
		HEADLINE INDICATORS							
Economic structure	Value added by source (domestic)	VA that depends on domestic intermediate inputs, % [source: OECD (TiVA), 2018]				41,59			**62,6%**
	Value added by source (EU)	VA imported from the rest of the EU, % [source: OECD (TiVA), 2018]				21,4			**19,7%**
	Value added by source (extra-EU)	% VA imported from the rest of the world, % [source: OECD (TiVA), 2018]				37			**17,6%**
Cost competitiveness	Producer energy price (industry)	Index (2015=100) [source: Eurostat, sts_inppd_a]	n.a.	n.a.	n.a.	n.a.	n.a.	**n.a.**	**127,3**
		RESILIENCE							
Shortages/supply chain disruptions	Material Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	36	9	9	11	9	**300%**	**26%**
	Labour Shortage using survey data	Average (across sectors) of firms facing constraints, % [source: ECFIN CBS]	23	9	17	16	11	**109%**	**14%**
	Sectoral producer prices	Average (across sectors), 2021 compared to 2020 and 2019, index [source:Eurostat]						**n.a.**	**5,4%**
Strategic dependencies	Concentration in selected raw materials	Import concentration a basket of critical raw materials, index [source: COMEXT]	0,15	0,14	0,15	0,16	0,17	**-12%**	**17%**
	Installed renewables electricity capacity	Share of renewable electricity to total capacity, % [source:Eurostat, nrg_inf_epc]		44,70	43,30	39,50	37,40	**20%**	
Investment dynamics	Net Private investments	Change in private capital stock, net of depreciation, % GDP [source: Ameco]		11,5	27,9	2,4	7,8	**47,4%**	**2,6%**
	Net Public investments	Change in public capital stock, net of depreciation, % GDP [source: Ameco]		1	1	0,8	0,5	**100%**	**0,4%**

(Continued on the next page)

Table (continued)

SINGLE MARKET									
Single Market integration	Intra-EU trade	Ratio of Intra-EU trade to Extra-EU trade, index [source: Ameco]	0,73	0,65	0,60	0,62	0,62	**19%**	**1,59**
Professional services restrictiveness	Regulatory restrictiveness indicator	Restrictiveness of access to and exercise of regulated professions (professions with above median restrictiveness, out of the 7 professions analysed in SWD (2021)185 [source: SWD (2021)185; SWD(2016)436 final])	2				2	**0%**	**3,37**
Professional qualifications recognition	Recognition decisions w/o compensation	Professionals qualified in another EU MS applying to host MS, % over total decisions taken by host MS [source: Regulated professions database]	44,1						**45%**
Compliance - cooperation EC and MS	Transposition - overall	5 sub-indicators, sum of scores [source: Single Market Scoreboard]		Below average	On average	On average	Below average		
	Infringements - overall	4 sub-indicators, sum of scores [source: Single Market Scoreboard]		On average	Below average	On average	Below average		
Investment protection	Confidence in investment protection	Companies confident that their investment is protected by the law and courts of MS if something goes wrong, % of all firms surveyed [source: Flash Eurobarometer 504]	78						**56%**
BUSINESS ENVIRONMENT - SMEs									
Business demography	Bankruptcies	Index (2015=100) [source: Eurostat, sts_rb_a]	n.a.	n.a.	n.a.	n.a.	n.a.	**n.a.**	**70.1 (2020)**
	Business registrations	Index (2015=100) [source: Eurostat, sts_rb_a]		93,1	118,7	117	112,4	**-17.2%**	**105,6**
Access to finance	Late payments	Share of SMEs experiencing late payments in past 6 months, % [source: SAFE]	34,9	39,3	43,2	n.a.	n.a.	**-19%**	**45%**
	EIF Access to finance index - Loan	Composite: SME external financing over last 6 months, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0,42	0,39	0,24	0,19	**116,8%**	**0.56 (2020)**
	EIF Access to finance index - Equity	Composite: VC/GDP, IPO/GDP, SMEs using equity, index from 0 to 1 (the higher the better) [source: EIF SME Access to Finance Index]		0,13	0,2	0,19	0,43	**-70,6%**	**0.18 (2020)**
	% of rejected or refused loans	SMEs whose bank loans' applications were refused or rejected, % [source: SAFE]	10,2	13,3	11,3	10,4	13,1	**-22.0%**	**12,4%**
Public procurement	SME contractors	Contractors which are SMEs, % of total [source: Single Market Scoreboard]		73	64	72	64	**14,1%**	**63%**
	SME bids	Bids from SMEs, % of total [source: Single Market Scoreboard]		77	76	79	70	**10%**	**70,8%**

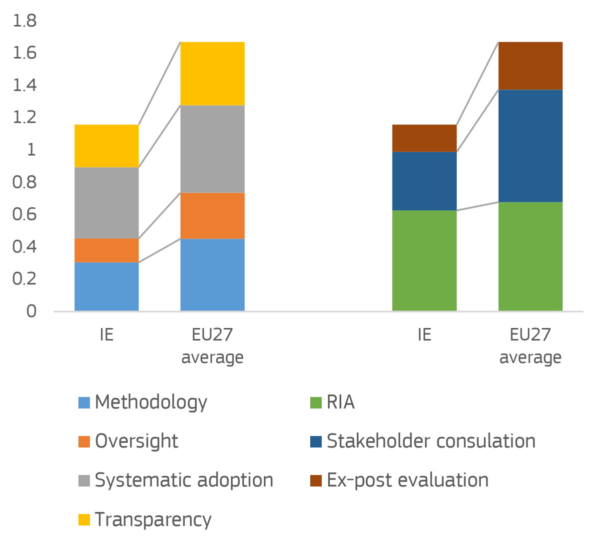
(*) latest available

Source: See above in the table the respective source for each indicator in the column "Description"

Good administrative capacity enables economic prosperity, social progress and fairness. Public administrations at all government levels deliver crisis response, ensure the provision of public services and contribute to building resilience for the sustainable development of the EU economy.

Public administration effectiveness in Ireland is ranked high in the EU-27 ([54]). A newly adopted long-term strategy ([55]) will steer the continuous improvement of the civil service's capability (i.e. that of government departments and certain state agencies) to support the public service's sectors (e.g. health, education, social services, and utilities) to achieve their objectives, step up reforms and deliver quality outcomes. The strategy outlines three priority areas: (i) delivering evidence-informed policy and services, (ii) harnessing digital technology and embedding innovation, and (iii) building the civil service workforce, workplace, and organisation of the future.

Graph A11.1: **Performance on evidence-based policy making indicators**



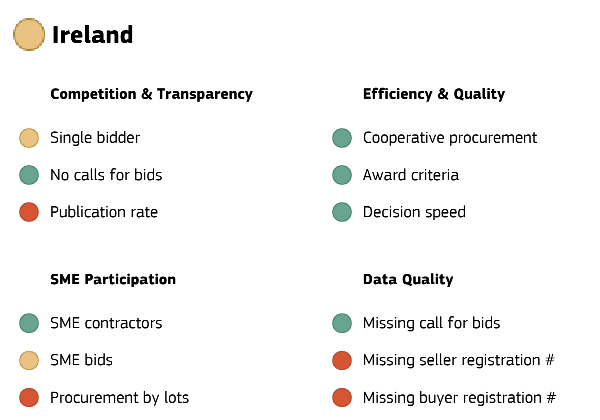
RIA: regulatory impact assessment
Source: OECD (iREG indicators)

There is room for strengthening evidence-based policymaking. This applies in particular to stakeholder consultation and *ex post* evaluation of legislation (Graph A11.1). Despite the well-defined rules, the regulatory system scores low due to the lack of central coordination of the impact assessments and policy evaluations, relatively low oversight of the systemic use of the regulatory tools and limited transparency of the public consultations. Ireland intends to further boost policy quality by developing foresight capabilities. The RRP contains a measure to improve the efficiency of data collection and analysis by digitalising the census process, which also has a reuse potential for any large-scale data collection by public authorities.

Performance on the e-government indices is mixed. Ireland scores above the EU average regarding the following key dimensions: user centricity, transparency and cross-border services. However, the availability of key enablers in the country to provide digital public services is low ([56]).

Ireland ranks above the average in the Single Market Scoreboard public procurement indicator. However, there is room for improvement given the relatively low share of procurement advertised on the European public procurement journal 'tenders electronic daily' and low scores in indicators measuring and quality of information in procurement (Table A11.1).

Table A11.1:**Performance on the single market public procurement indicator**



The competition and transparency indicators are triple-weighted, whereas the efficiency and quality indicators have unitary weights. All others receive a 1/3 weighting in the SMS composite indicator.
Source: Single Market Scoreboard 2020 data

Participation of civil servants in adult learning is below EU-27 average. There is also relatively low gender parity in senior civil service positions. Ireland is taking measures to ensure the

([54]) Worldwide Governance Indicators, 2020.

([55]) Civil Service Renewal 2030.

([56]) eGovernment benchmark 2021 | Shaping Europe's digital future (europa.eu).

Table A11.2:**Public administration indicators**

IE	Indicator (1)	2017	2018	2019	2020	2021	EU27
E-government							
1	Share of individuals who used internet within the last year to interact with public authorities (2)	67.0	64.0	67.0	67.0	92.0	70.8
2	2021 e-government benchmark´s overall score (3)	na	na	na	na	70.7	70.9
Open government and independent fiscal institutions							
3	2021 open data maturity index	na	na	na	na	95.2	81.1
4	Scope Index of Fiscal Institutions	68.2	68.2	68.2	68.2	na	56.8
Educational attainment level, adult learning, gender parity and ageing							
5	Share of public administration employees with tertiary education, levels 5-8 (4)	61.1	61.0	62.3	65.9	67.9	55.3
6	Participation rate of public administration employees in adult learning (4)	10.7	15.7	15.5	11.8	15.9	18.6
7	Gender parity in senior civil service positions (5)	40.0	37.4	35.4	33.8	33.4	21.8
8	Share of public sector workers between 55 and 74 years (4)	21.6	21.7	23.7	22.2	21.2	21.3
Public Financial Management							
9	Medium term budgetary framework index	0.67	0.67	0.67	0.67	na	0.72
10	Strength of fiscal rules index	1.1	1.1	1.1	1.1	na	1.5
11	Public procurement composite indicator	2.7	2.7	2.7	2.7	na	-0.7
Evidence-based policy making							
12	Index of regulatory policy and governance practices in the areas of stakeholder engagement, Regulatory Impact Assessment (RIA) and ex post evaluation of legislation	1.25	na	na	1.16	na	1.7

(1) High values stand for good performance barring indicators # 7 and 8.
(2) Break in the series in 2018 and 2021.
(3) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services.
(4) Break in the series in 2021.
(5) Defined as the absolute value of the difference between the share of men and women in senior civil service positions.
Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Fiscal Governance Database (# 4, 9, 10); Labour Force Survey, Eurostat (# 5, 6, 8), European Institute for Gender Equality (# 7), Single Market Scoreboard public procurement composite indicator (# 11); OECD Indicators of Regulatory Policy and Governance (# 12).

civil service has adequate skills and to address ageing. It has been piloting the use of strategic planning of the civil service workforce, and developing plans for advancing specialised skills for managing investments, innovation, foresight, etc.

The lack of comparative data does not allow the efficiency of the Irish judicial system to be assessed. Based on the 2020 Annual report of the Courts Service, the average length of proceedings in the High Court in 2020 was 660 days, a decrease of 125 days from 2019. The overall quality of the justice system is good. However, the number of judges remains low, the resources available for training judges appear limited and the justice system could be further digitalised. As regards judicial independence, no systemic deficiencies have been reported. ([57]).

([57]) For more detailed analysis of the performance of the justice system in Ireland, see the 2022 EU Justice Scoreboard (forthcoming) and the country chapter for Ireland in the Commission's 2022 Rule of Law Report (forthcoming).

ANNEX 12: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights provides the compass for upward convergence towards better working and living conditions in the EU. The implementation of its 20 principles on equal opportunities and access to the labour market, fair working conditions, social protection and inclusion, supported by the 2030 EU headline targets on employment, skills and poverty reduction, will strengthen the EU's drive towards a digital, green and fair transition. This Annex provides an overview of Ireland's progress in achieving the goals under the European Pillar of Social Rights**.**

Table A12.1:**Social scoreboard for Ireland**

Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24) (2021)	3.3
	Individuals' level of digital skills (% of population 16-74) (2021)	70
	Youth NEET (% of total population aged 15-29) (2021)	9.8
	Gender employment gap (percentage points) (2021)	10.0
	Income quintile ratio (S80/S20) (2020)	4.1
Dynamic labour markets and fair working conditions	Employment rate (% population aged 20-64) (2021)	74.9
	Unemployment rate (% population aged 15-74) (2021)	6.2
	Long term unemployment (% population aged 15-74) (2021)	1.8
	GDHI per capita growth (2008=100) (2020)	110.3
Social protection and inclusion	At risk of poverty or social exclusion (in %) (2020)	20.0
	At risk of poverty or social exclusion for children (in %) (2020)	23.6
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP) (2020)	53.9
	Disability employment gap (ratio) (2020)	38.6
	Housing cost overburden (% of population) (2020)	4.5
	Children aged less than 3 years in formal childcare (% of under 3-years-olds) (2020)	22.9
	Self-reported unmet need for medical care (% of population 16+) (2020)	2.0

Critical situation | To watch | Weak but improving | Good but to monitor | On average | Better than average | Best performers

Update of 29 April 2022. Member 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 2022. 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: European Commission

While employment is already above pre-pandemic levels, it remains important to help under-represented groups, e.g. women, people with low skills, single parents and people with disabilities, integrate into the labour market. Ireland's employment rate bounced back strongly since the outbreak of the COVID-19 pandemic, and was above the EU average, at 78% in Q4-2021. Similarly, the share of young people not in employment nor in education or training (NEETs) decreased to a record low of 9.8% in 2021. The gender employment gap (20-64 year olds) stood at 10% in 2021, slightly below the EU average. However, continued reforms and investments in early childhood education and care policies, and targeted activation measures (with women currently being overrepresented among the inactive) will be needed to improve equal opportunities. The country continues to have one of the EU's highest cost levels for early childhood education and care. The participation in formal childcare among children less than 3 years old is limited, with few children attending childcare for more than 30 hours a week (11.8% versus 19.5% in the EU). While the rate of people living in very low work intensity households decreased in previous years, in 2020 their share was still at 11.5%, among the highest in the EU. Furthermore, less than a third of people with disabilities were employed in 2019, with a disability employment gap of 38.6 pps recorded for 2020, which is also one of the highest in the EU. Irish single parent households have the lowest employment rates (64%) in the EU (74.2%), as well as compared to other household types in Ireland. This is further reflected in their high poverty rates (see below). The ESF+ programme will focus on supporting unemployed people, in particular people who are long-term unemployed and unemployed young people, and helping those economically inactive to return to the labour market. The SOLAS recovery skills response programme and the work placement experience programme, both part of the RRP, should help improve the employability of all those who lost their job due to the health crisis.

Ireland is performing well in preventing early school leaving and on educational outcomes. The early school leaving rate stood at around 3.3% in 2021, one of the lowest in the EU. Ireland has taken extensive measures to mitigate the negative impact of COVID-19 at all levels of education. The share of adults aged 25-64 participating in learning (over the past 4 weeks) is above the EU average (11% versus 9.2% in 2020). Ireland performs well on digital skills, in particular the share of people with at least basic digital skills stood at 70% in 2021, above the EU average of 54%. The 10-year Adult Literacy, Numeracy and Digital Literacy Strategy aims to increase this to 80% and to help the country achieve the 2030 EU headline target on skills.

The share of people at risk of poverty or social exclusion decreased over the previous decade. Concerns remain in relation to the availability of social services for disadvantaged groups, and the situation for homeless people, people with disabilities, single parent and low work intensity households. In 2020, people with disabilities had an almost 14 pps higher chance of being at risk of poverty or social exclusion than the general population (33.9% versus 20%). In addition, 56.9% of single parent households were at risk of poverty or social exclusion, nearly three times higher than the general population. Even though poverty among children decreased over the recent years to 23.6% in 2020, Ireland is required to earmark 5% of its total ESF+ allocation to combat child poverty, as the at-risk-of-poverty or social-exclusion rate for children was consistently higher than the EU average in 2017-2019. The lack of social housing (61 880 households were on the waiting list in 2020), together with surging rental prices added to the ongoing structural housing crisis in Ireland. The *Housing for All* and *Housing First* plans are expected to help mitigate the problem, but the pandemic and the scarcity of labour in the construction sector are slowing down the implementation of these plans. Improving the provision of, and access to, social services for disadvantaged groups will be key for Ireland to achieve the 2030 EU headline target on poverty reduction.

This Annex outlines the main challenges for Ireland's education and training system in light of the EU-level targets of the European Education Area strategic framework and other contextual indicators, based on the analysis from the 2021 Education and Training Monitor. While Ireland overall performs well in equipping students with basic skills, equity can be at risk due to COVID-19. Challenges regarding the affordability and quality of early childhood education and care (ECEC) are being addressed. Concerns over the continued decreased investment in higher education persist while the financing reforms are being prepared**.**

Participation in ECEC remains high but limited in terms of time spent. Although the participation rate for children aged 3 and over continues to be estimated at 100% ([58]), Irish children spend less time in formal ECEC than those in other EU countries. The average number of weekly hours spent in formal ECEC for children over 3 is 25.5 hours, while the EU average is 29.5 hours. For children under 3, it is 22.6 hours, while the EU average is 27.4 hours ([59]).

While relevant reforms are ongoing, the affordability and quality of ECEC may still be improved. Analysis ([60]) showed that the market-driven nature of the sector and the low level of public funding have resulted in low wages, poor working conditions for staff and high fees for parents. While the ECEC sector for children aged 3-5 is supported by a national programme, the home-based childcare sector for children under 3 remains largely unregulated. *First 5* (2019-2028) is the key strategy for improving the ECEC quality, accessibility and affordability. The national childcare scheme provides financial support towards the cost of ECEC and school-age childcare. However, issues arose around parent participation and uptake, with a gap affecting parents lacking literacy or fluency in English or holding refugee or immigrant status ([61]). The National Action Plan for Childminding (2021-2028) sets out the reform of home-based childcare. Two recently published reports, on the funding model ([62]) and the workforce ([63]), outline the key reforms that aim to transform the relationship between the State, the services and the workers, shifting away from a predominantly private model to a new hybrid model that increasingly will be publicly funded and publicly managed. For 2022, Ireland has committed to introducing a package of measures, which, among other things, aim to improve pay and conditions in the sector, improve quality of provision, and reduce costs for parents. Furthermore, pre-existing ECEC staff retention issues were aggravated by the pandemic.

While Ireland performs well in basic skills, there are emerging concerns over equity, due to, among other things, COVID-19. Evidence suggests that the pandemic had a disproportionate impact on socio-economically disadvantaged families, translating into poorer student engagement in schools supported by the national programme for supporting equality of opportunity in schools (DEIS) than in non-DEIS schools has widened ([64]). Measures were put in place to mitigate against the negative effects of the pandemic on teaching and learning, including the provision of extra teaching hours for schools through a COVID Learning and Support Scheme in the 2021/22 school year. Funding was also provided for summer programmes in 2020 and 2021. Analysis ([65]) showed that there has been a slight decline in the total number of students with special educational needs in schools, although the number of children in special classes within

([58]) For Ireland, the ECE rate includes participation in ECEC centres, and also in primary schools, which are attended by many 4-5 year olds.

([59]) European Commission/EACEA/Eurydice (2019) Key Data on Early Childhood Education and Care in Europe – 2019 Edition. Eurydice Report.

([60]) OECD (2021), Strengthening Early Childhood Education and Care in Ireland: Review on Sector Quality, OECD Publishing, Paris, https://doi.org/10.1787/72fab7d1-en ; European Commission/EACEA/Eurydice, 2019. Key Data on Early Childhood Education and Care in Europe – 2019 Edition. Eurydice Report.

([61]) Frontier Economics (2021), 12-month review of the National Childcare Scheme.

([62]) Department of Children, Equality, Disability, Integration and Youth (2021) Partnership for the Public Good: A new Funding Model for Early Learning and Care.

([63]) Department of Children, Equality, Disability, Integration and Youth (2021) The Workforce Plan for Early Learning and Care and School-Age Childcare 2022-2028.

([64]) Mohan, G. et al. (2021) Magnifying Inequality? Home learning environments and social reproduction during school closures in Ireland, *Irish Educational Studies*, 40(2): 265-274. https://www.tandfonline.com/doi/full/10.1080/03323315.2021.1915841

([65]) European Commission (2021), European Semester 2020-2021 country fiche on disability equality. Ireland https://op.europa.eu/en/publication-detail/-/publication/16883c15-a719-11eb-9585-01aa75ed71a1

Table A13.1:**EU-level targets and other contextual indicators under the European Education Area strategic framework**

Indicator			Target	2015 Ireland	2015 EU27	2021 Ireland	2021 EU27
Participation in early childhood education (age 3+)			**96%**	**78.7%**	**91.9%**	**100.0% [2019, e]**	**92.8% [2019]**
Low achieving 15-year-olds in:		**Reading**	**< 15%**	**10.2%**	**20.4%**	**11.8% [2018]**	**22.5% [2018]**
		Mathematics	**< 15%**	**15.0%**	**22.2%**	**15.7% [2018]**	**22.9% [2018]**
		Science	**< 15%**	**15.3%**	**21.1%**	**17.0% [2018]**	**22.3% [2018]**
Early leavers from education and training (age 18-24)	**Total**		**< 9 %**	**6.8%**	**11.0%**	**3.3%**	**9.7%**
	By gender	*Men*		8.6%	12.5%	4.4%	11.4%
		Women		4.9%	9.4%	: [u]	7.9%
	By degree of urbanisation	*Cities*		5.2%	9.6%	: [u]	8.7%
		Rural areas		7.2%	12.2%	3.3% [u]	10.0%
	By country of birth	*Native*		6.9%	10.0%	3.4%	8.5%
		EU-born		: [u]	20.7%	: [u]	21.4%
		Non EU-born		6.5% [u]	23.4%	: [u]	21.6%
Tertiary educational attainment (age 25-34)	**Total**		**45%**	**54.0%**	**36.5%**	**61.7%**	**41.2%**
	By gender	*Men*		47.1%	31.2%	57.4%	35.7%
		Women		60.3%	41.8%	66.1%	46.8%
	By degree of urbanisation	*Cities*		63.2%	46.2%	70.8%	51.4%
		Rural areas		46.6%	26.9%	52.6%	29.6%
	By country of birth	*Native*		53.2%	37.7%	58.7%	42.1%
		EU-born		48.0% [u]	32.7%	57.5%	40.7%
		Non EU-born		66.3%	27.0%	74.1%	34.7%
Share of school teachers (ISCED 1-3) who are 50 years or over				25.2%	38.3%	20.8% [2019]	38.9% [2019]

Notes: The 2018 EU average on PISA reading performance does not include ES; e = estimated, u = low reliability, : = not available; Data are not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills, exposure of vocational educational training graduates to work based learning and participation of adults in learning.
Source: Eurostat (UOE, LFS); OECD (PISA).

mainstream schools or attending special schools is steadily increasing. This may indicate a trend towards more segregated settings. New investments in special educational needs supports in ECEC and school education have been made, and the School Inclusion Model aims to provide a comprehensive range of supports to enable all students to attend mainstream settings. The proportion of young people aged 16-19 having basic or above basic digital skills has increased since 2015, but remains slightly below the EU average (77% v EU 82%). In 2019, public expenditure on education was 5.52% of the GNI* specifically adapted to Ireland. However, as a share of GDP it was 3.1%, far below the EU average (EU 4.7%). In response to the COVID-19 pandemic, large-scale emergency funding was provided for all levels of education.

The tertiary educational attainment rate continues to grow in the context of longstanding concern as regards funding. In 2021, the tertiary attainment rate grew sharply by 3.3 pps compared to 2020 to reach 61.7% among the population aged 25-34, the second highest rate in the EU. However, between 2011 and 2019, general government expenditure on higher education dropped by 14% in real terms. Students' fees are high, which also creates accessibility issues. To address the challenge, a landmark policy on funding the sector and reducing the costs for students and families has been published ([66]), and implementation process will be established in 2022 ([67]). The RRP supports the development of technological universities.

The inflow of people fleeing Ukraine requires efforts from the education and training system. Once they are granted Temporary Protection, they are entitled to seek vocational training education activities in Ireland. Ukrainian teachers will be fast-tracked through the registration process to allow them to teach in Irish

([66]) Department of Further and Higher Education, Research, Innovation and Science (2022) Future funding in higher education. https://www.gov.ie/en/press-release/11787-landmark-policy-funding-higher-education-reducing-cost-for-families/#sustainable-funding-model-for-higher-education

([67]) Breslin, J. (2021) 'The tertiary education landscape', Ireland's Education Yearbook 2021. https://irelandseducationyearbook.ie/downloads/IEYB2021/YB2021-Higher-Education-01.pdf classrooms. Ukrainian children and youth will have access to two years of free pre-school, as well as general education. The Irish authorities aim at implementing a family-centred approach across schools and to help adults and children learn English. 16 Regional Education and Language Teams were established to meet the needs of Ukrainian children arriving in Ireland and to support and advise schools.

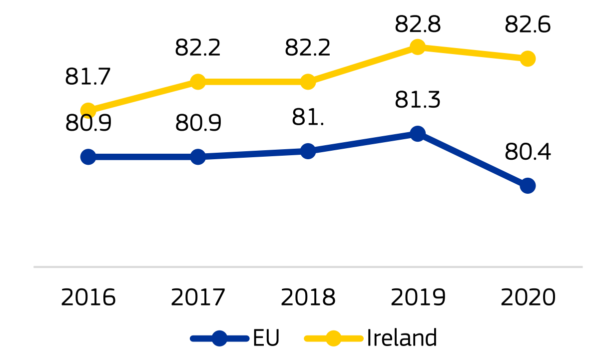
The reforms and investments under Ireland's recovery and resilience plan will help mainstream digital skills across education and training settings. They will support connectivity of schools, ICT equipment for disadvantaged students, boost the supply of graduates with high-level ICT skills, as well as intensive upskilling/reskilling and apprenticeships programmes, and enhance green skills. The 10-year Adult Literacy, Numeracy and Digital Literacy Strategy will also support the post COVID-19 economic recovery. The new Digital Strategy for Schools 2021-2027 ([68]), published in April 2022, focuses on further embedding the use of digital technologies in all teaching, learning and assessment activities.

([68]) Department of Education (2022) Digital Strategy for Schools to 2027 https://www.gov.ie/en/publication/69fb88-digital-strategy-for-schools/

Especially relevant in light of the ongoing COVID-19 pandemic, resilient healthcare is a prerequisite for a sustainable economy and society. This Annex provides a snapshot of the healthcare sector in Ireland.

Life expectancy in Ireland is higher than in the EU as a whole, but fell in 2020 by about two months and a half due to the COVID-19 pandemic. As of 17 April 2022, Ireland reported 1.4 cumulative COVID-19 deaths per 1 000 inhabitants and 303 confirmed cumulative COVID-19 cases per 1 000 inhabitants. Ireland fares comparatively well in preventing deaths from treatable causes. Although cancer mortality is close to the EU average, the incidence of cancer is estimated to be one of the highest in the EU for both men and women.

Graph A14.1: **Life expectancy at birth (years)**

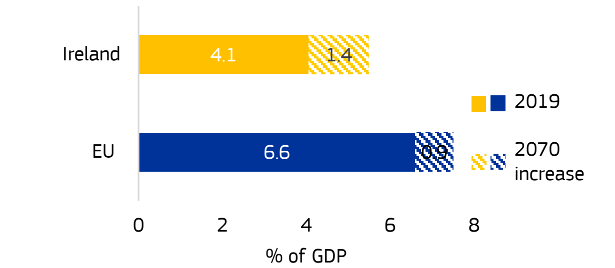


Source: Eurostat database

Health spending relative to GDP in Ireland was below the EU average in 2019. However, Ireland spends a higher amount per resident, despite public primary care not being universal for a large proportion of the working-age population. The public share of health expenditure is low, linked to high uptake of voluntary health insurance. Despite the current favourable age profile of the Irish population, health expenditure is projected to increase by 1.4 pps of GDP by 2070 (compared to 0.9 pps for the EU) ([69]), raising long-term fiscal sustainability concerns.

Ireland faces both a shortage and an uneven distribution of health workers, which exacerbates long waiting times for publicly funded services. In 2019, the number of doctors was 3.3 per 1000 population – the sixth lowest in the EU. Despite having the highest number of medical graduates per capita, the Irish health system is increasingly reliant on foreign-trained doctors and nurses. Although shortcomings remain in workforce planning, the implementation of the *Sláintecare* consultant contract is expected to alleviate shortages of doctors in public hospitals.

Graph A14.2: **Projected increase in public expenditure on health care over 2019-2070 (reference scenario)**



Source: European Commission/EPC (2021)

Through its RRP, Ireland plans to invest EUR 75 million (7.6% of the total RRP) to strengthen its digital health infrastructure, notably through deploying ePharmacy systems in hospitals. In addition, important reform measures included in the plan aim to underpin the implementation of the Sláintecare reform agenda.

([69]) European Commission (ECFIN) and Ageing Working Group (EPC) (2021) The 2021 Ageing Report: Economic and Budgetary Projections for the EU Member States (2019-2070).

Table A14.1: **Key health indicators**

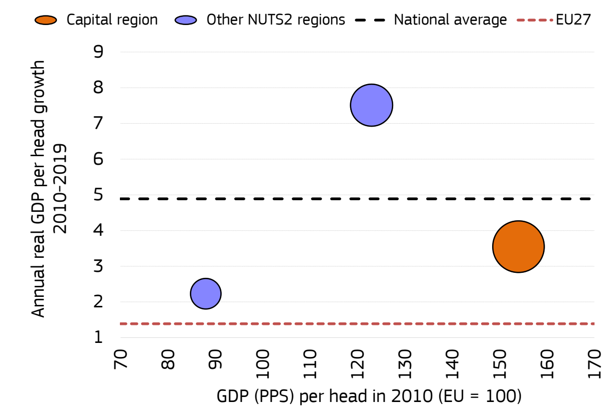
	2016	2017	2018	2019	2020	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	80.1	73.3	75.9	71.0		92.1 (2017)
Cancer mortality per 100 000 population	277.2	266.6	262.1	261.5		252.5 (2017)
Current expenditure on health, % GDP	7.4	7.1	6.9	6.7		9.9 (2019)
Public share of health expenditure, % of current health expenditure	72.7	73.0	74.1	74.6		79.5 (2018)
Spending on prevention, % of current health expenditure	2.6	2.7	2.6	2.7		2.8 (2018)
Acute care beds per 100 000 population	277.5	278.1	278.6	269.2		387.4 (2019)
Doctors per 1 000 population *	3.2	3.3	3.3	3.3		3.8 (2018)
Nurses per 1 000 population *	11.6	12.2	12.9			8.2 (2018)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day **	20.4	19.4	20.7	21.0	17.1	14.5 (2020)

Notes: Doctors' density data refer to practising doctors in all countries except FI, EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries (imputation from year 2014 for FI) except IE, FR, PT, SK (professionally active) and EL (nurses working in hospitals only).
More information: https://ec.europa.eu/health/state-health-eu/country-health-profiles _en
Source: Eurostat Database; except: * Eurostat Database and OECD, ** ECDC

The regional dimension is an important factor when assessing economic and social developments in Member States. Taking into account this dimension enables a well-calibrated and targeted policy response that fosters cohesion and ensures sustainable and resilient economic development across all regions.

Regional disparities remain significant in Ireland and are growing in terms of regional GDP per capita. Ireland's GDP per capita is 193% (2019) of the EU average. However, this is driven by a particularly strong performance from the Southern region – 236% of the EU average – and the Eastern & Midland region – 207% of the EU average – while the Northern & Western region is lagging behind, at 76%. Economic activity remains highly concentrated around Dublin and Cork. In 2019, the Southern region, encompassing Cork, produced three times the economic output per capita of the Northern & Western, in terms of regional GDP. These disparities have been increasing since 2010.

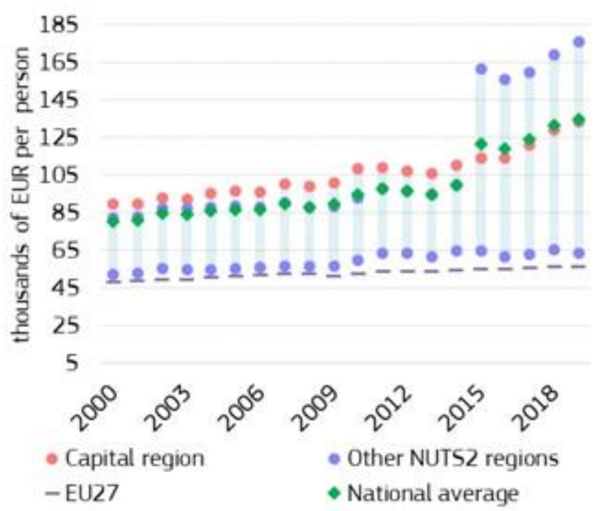
Graph A15.1: **GDP per head (2019) and GDP growth (2010-2019)**



Source: European Commission

Regional disparities are likely to continue growing in Ireland. Average growth in GDP per capita was high throughout Ireland over the 2010-2019 period. However, as the Southern region grew by 7.5%, the Eastern & Midland region by 3.6% and the Northern & Western region by only 1.4%, regional differences are likely to increase.

Graph A15.2: **Real GVA per worker**



Source: European Commission

Varying levels of labour productivity across Ireland's regions persist. A small number of highly competitive multinationals continue to outperform indigenous companies, and continue to concentrate capital, and attract skilled workers to the areas around Dublin and Cork. While Dublin has a gross value added (GVA) per worker of 147% of the national average, the Midlands and the Border Region, predominantly rural and remote, have labour productivity rates of 33% and 35% of the national average, respectively.

Differences in the labour markets of the three regions remain small. In 2020, the Northern & Western region's employment rate of 72.4% stood slightly higher than the Southern region's 72.1%, whereas the Eastern & Midland region had 74.5%. All regions experienced slight dips in employment levels due to the COVID-19 pandemic. The Northern & Western region has the lowest unemployment rate, standing at 4.9% in 2020 against slightly less than 6% in the other regions.

Companies and knowledge providers find differing innovation systems in each of the regions. Assessed via the Regional Innovation Scoreboard (2021), the Northern & Western region has only a moderately innovative ecosystem, even though its performance has been increasing. The Eastern & Midland region, and the Southern region provide strong innovation systems to their companies, knowledge providers and people. All Irish regions perform strongly in tertiary education and on collaboration between innovative SMEs. In addition, the Eastern & Midland region is

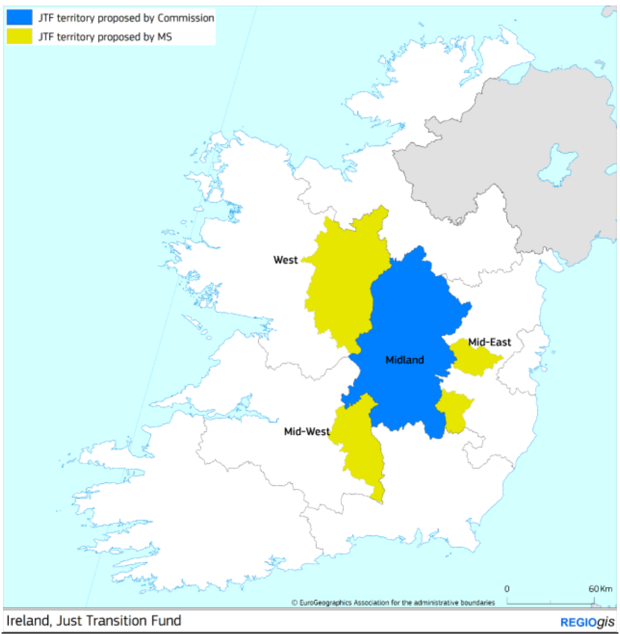
Table A15.1: **Selected indicators at regional level - Ireland**

NUTS 2 Region	GDP per head (PPS)	Productivity (GVA (PPS) per person employed)	Population with high educational attainment	Employment in high-technology sectors	Regional Competitiveness Index	CO_2 emissions from fossil fuels per head	Innovation performance
	EU27=100, 2019	EU27=100, 2018	% of population aged 30-34, 2017-2019	% of total employment, 2020	Range 0-100, 2019	tCO_2 equivalent, 2018	RIS regional performance group
European Union	100	100	39,4	4,5	57,3	7,2	
Ireland	193	204	55,4	9,2	67,7		
Northern and Western	78	89	53,0	5,9	52,6	6,9	Moderate innovator +
Southern	240	266	51,2	9,0	65,3	10,8	Strong innovator -
Eastern and Midland	202	203	58,4	10,5	74,9	6,8	Strong innovator

Source: Eurostat

particularly strong in employing ICT specialists, while the Southern region is strong in producing innovative products as well as scientific publications.

Graph A15.3: **Territories most affected by the climate transition in Ireland**



Source: European Commission

The most immediate employment impact of Ireland's transition to a climate neutral economy can be seen throughout the wider Midlands area. In 2020, Ireland successfully withdrew peat from the electricity generation process. As a result of the closure of two peat-fired power plants, overall CO2 emissions from electricity generation fell by 7% in that same year ([70]). The EU and the Irish Just Transition Fund are addressing the challenges posed to employment and economic diversification stemming from this transition throughout the wider Midlands area.

Regional disparities are also apparent when looking at poverty indicators. The Northern & Western region has a significantly higher share of people at risk of poverty or social exclusion (27.2%) than the Southern (22.1%) or the Eastern and Midland (18.4%) regions. We can observe a similar pattern in the proportion of quasi-jobless households, which again is highest in the Northern & Western region (17.7%). However, homelessness is concentrated in the Dublin area (more than 70% of homeless people were registered here in December 2021), where the consequences of the ongoing housing crisis are most severe.

The COVID-19 pandemic has exacerbated the duality of the Irish economy and its regional disparities. While Ireland was the only EU country with positive GDP growth in 2020, this growth can be entirely attributed to sectors dominated by multinational companies, which grew by 23.1%. This growth therefore manifested itself in the strong performing regions in and around Dublin and Cork. Meanwhile, the GVA of all other sectors declined by 8.7%.

([70]) Sustainable Energy Authority of Ireland (2021) Energy Related CO2 emissions in Ireland in 2020

This Annex provides an overview of key developments in Ireland's financial sector. Irish banks have made large strides in improving their asset quality over the recent years, a process only temporarily slowed down by the pandemic crisis. The financial crisis ended a period of excessive mortgage lending, which required the state to inject capital into banks badly affected. From a peak in the non-performing loans ratio of 23% in 2013, banks worked towards reducing it to 2.4% in 2021, thanks to a combination of portfolio sales, organic reductions and restructurings. At the same time, banks maintained solid capital buffers with a capital adequacy solvency ratio of 25.7% by the end of 2021.

Profitability improved in 2021, driven mainly by reductions, and in some cases write-backs, of pandemic-induced impairment charges which banks had frontloaded in 2020. However, overall, profitability remains a challenge and still lags behind other banking systems, given Irish banks' high operating costs and reliance on interest income. The cost to income ratio remains high, at 71.1% versus an EU average of 60.0%. Banks are actively reducing their costs, through branch closures, redundancies and digitalisation projects, and making efforts to diversify their income streams. Nevertheless, low profitability has prompted two foreign-owned banks to withdraw from the Irish retail market. The ensuing readjustment of market shares between the remaining, domestically-owned retail banks has led the Irish Competition and Consumer Protection Commission to launch an investigation over concerns that competition may be adversely affected.

Beyond the retail space, Ireland has gained importance as a hub for international investment banks. This is reflected in the growing asset share of foreign-owned banks which rose to 59% in 2021. These international banks have little exposure to the domestic economy and predominantly serve multinationals across the EU. Therefore, they are less exposed to the Irish business cycle.

Ireland is also home to a large non-bank financial sector, comprising investment funds, money market funds, special purpose vehicles and other entities. The sector has grown strongly in recent years with total assets reaching EUR 5.2 trillion in 2021, about 14 times the size of the Irish economy. These funds, while domiciled in Ireland, have mainly international shareholders and investments. Their exposures to the domestic economy are limited overall. Real estate funds, have the largest domestic exposures, as they invest in domestic real estate and borrow from domestic retail banks. This creates a channel for potential shocks to be transmitted from the

Table A16.1:**Financial soundness indicators**

	2017	2018	2019	2020	2021
Total assets of the banking sector (% of GDP)	354,5	338,0	351,2	371,8	332,2
Share (total assets) of the five largest bank (%)	45,5	46,1	49,7	55,7	-
Share (total assets) of domestic credit institutions (%)[1]	51,2	48,6	44,4	40,7	41,0
Financial soundness indicators:[1]					
- non-performing loans (% of total loans)	9,9	5,5	3,4	3,4	2,4
- capital adequacy ratio (%)	25,2	25,4	24,9	25,4	25,7
- return on equity (%)	5,0	4,9	3,7	-2,2	4,2
NFC credit growth (year-on-year % change)	1,2	3,9	2,3	8,4	19,8
HH credit growth (year-on-year % change)	-1,5	-0,8	0,1	-1,5	-1,2
Cost-to-income ratio (%)[1]	64,5	66,1	70,9	71,5	71,1
Loan-to-deposit ratio (%)[1]	95,3	90,2	91,5	83,9	75,7
Central bank liquidity as % of liabilities	1,8	0,7	0,4	1,3	4,3
Private sector debt (% of GDP)	249,8	231,2	209,4	188,9	-
Long-term interest rate spread versus Bund (basis points)	48,4	55,4	58,6	44,9	43,7
Market funding ratio (%)	80,7	80,9	82,9	84,6	-
Green bond issuance (bn EUR)	-	6,8	1,2	2,0	4,6

1 Last data: Q3 2021

Source: ECB, Eurostat, Refinitiv

real estate sector to the banking sector. A new development that requires monitoring is the increasing presence of non-bank lenders as a source of finance for Irish companies, including SMEs.

The Macroeconomic Imbalance Procedure matrix presents the main elements of the in-depth review undertaken for Ireland in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances, as summarized in SWD(2022)634 final [71]. For Member States selected in the 2022 Alert Mechanism Report it presents, separately for each source of imbalances and adjustment issue, the main findings regarding the gravity and the evolution of the identified challenges, as well as policy response and gaps.

Ireland has seen substantial and steady progress in reducing public and private indebtedness. The long-standing trend decline in private and public indebtedness has continued even during the pandemic. Household balance sheets have improved markedly over time. The corporate sector seems to have weathered the crisis well, and continued to deleverage. The large negative net international investment position (NIIP) has been shrinking, with its (smaller) 'domestic' component improving. Current account figures are very volatile, while the modified current account [72] has been in a surplus consistently. Government debt level has risen more slowly than GDP and is below the 60% threshold. House prices accelerated in 2021 as challenges remain in increasing housing supply sufficiently.

Going forward, the positive economic outlook is expected to contribute to a further reduction of public, private and external indebtedness, but marked house prices growth may be an issue for some time. The public debt ratio is forecast to remain below 60% of GDP over the forecast horizon. On current trends, both household and corporate indebtedness are expected to continue falling, while continued high current account surpluses are forecast to further improve the negative NIIP. Housing supply is still falling short of demand and thereby house price growth is expected to continue being an issue, at least in the short term before additional supply becomes available.

In 2021, the policy efforts continued to focus on short-term measures to address the impact of the pandemic. This shored up employment and household incomes, alongside a range of policies to support housing supply. That helped private sector deleveraging, especially by households, while government debt fell too. The government has actively intervened to address housing supply constraints. The RRP includes healthcare reforms and eHealth investments, which have the potential to support fiscal sustainability.

For those reasons, and more generally on the basis of the elements of the in-depth review undertaken for Ireland under Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances as summarised in the Staff Working Document (SWD(2022)634 final), **the Commission has considered in its Communication "European Semester – 2022 Spring Package" (COM(2022)600 final) that Ireland is no longer experiencing macroeconomic imbalances**.

(71) European Commission (2022), Commission Staff Working Document In-Depth Review for Ireland in accordance with Article 5 of Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances.

(72) Modified current account equals current account *less* depreciation on R&D service imports and trade in IP, aircraft leasing depreciation, redomiciled incomes and R&D related IP exports *adding back* net aircraft related to leasing, R&D related IP imports and R&D service imports.

Table A17.1:**Assessment of Macroeconomic Imbalances matrix**

	Gravity of the challenge	Evolution and prospects	Policy response
	Imbalances (unsustainable trends, vulnerabilities and associated risks)		
Private debt	Private debt is estimated to have further decreased to 179.1% of GDP in 2021. Household debt is expected to have fallen to 30.8% of GDP in 2021. It fell for the first time since 2002 to a level below 100% of households disposable income (98.9% in Q4 2021). Corporate debt is estimated to have decreased to 148.2% of GDP at the end of 2021) and is heavily influenced by the debt of multinational corporations. Debt of domestically-controlled firms slightly decreased to 63.1% of GDP in 2020 (or 113% of GNI*), above the fundamentals-based but below the prudential benchmark.	The steady decline in household debt relative to GDP since 2008 continued throughout the pandemic, supported by active deleveraging and very strong GDP growth and accompanied by falling NPLs. In 2021, household incomes continued to grow, thereby further reducing vulnerabilities, and were supported by employment and wage growth, except during periods of COVID-19-related restrictions. Multinationals, accounting for a large share of corporate debt in Ireland, performed particularly well in 2021, driving real GDP growth into double digits and domestic companies have generally weathered the crisis well. The growth outlook for Ireland remains very positive, which will lend support for further debt deleveraging.	Income support schemes materially a household hardship during the pandemic, and avoiding rise in non-performing loans as scarring effects on the labour market. The support scheme was extended into the first qu 2022. Government plans to expand the housir including social housing, could make housir affordable and ease the new mortgage bur households. Lower-income first-time buyers benefit from the extension of the Help-to-Buy the expansion of the local authority home loan introduction of the shared equity loan scheme accompanied by measures to increase housing these demand-side measures could contribute house prices
Public debt	Government debt decreased in 2021 to 56.0% of GDP, having remained below 60% threshold since 2019. Alternative metrics, such as debt relative to GNI*, which were around 100% in 2021, point to high levels of public debt in Ireland. There are mitigating factors to the risks posed by high debt, such as favourable financing conditions and long maturities.	The general government balance is projected at -0.5% of GDP in 2022 and 0.4% in 2023, and the gross government debt-to-GDP ratio is projected at 50.3% in 2022 and 45.5% in 2023. The structural balance worsened to -3.2% of potential GDP in 2021 from -2.6% in 2020, and it is projected to rebound to around -2.0% in 2022. Risks to the fiscal outlook are balanced.	In Budget 2022, the government set out a c medium-term path for the debt-GNI* ratio as c This foresees expenditure control mechanisms to reduce the deficit and turn into general gov surplus as soon as the recovery allows. T includes healthcare reforms and eHealth inve: which have the potential to support sustainability.
External sustainability	Ireland's net international investment position (NIIP) improved from -171% of GDP in 2020 to -138% at the end of 2021, dipping below the prudential benchmark for the first time. The still large NIIP stock is linked to the very sizeable onshoring of intellectual property assets to Ireland in previous years, arising from the tax optimisation strategies of a small number of multinational enterprises, and the large net position of the International Financial Services Centre, both with limited links to the domestic economy. The underlying, domestically relevant, NIIP remains hard to gauge. Commission estimates indicate an underlying NIIP (NIIP*) between -45% to -70% of GNI* in 2020.	Sizeable on-shoring of intellectual property assets has decreased since Q1 2020 and is expected to continue to be more sporadic. This is likely to limit future large deteriorations in the NIIP. Meanwhile, the external position of the domestic sectors is expected to have improved substantially, as well as that of the Central Bank and other financial intermediaries. In 2021, the current account was in surplus of 13.9% of GDP, due mainly to the net exports of multinational corporations but also helped by household precautionary savings. The current account is expected to remain in large surplus of 12.8% of GDP in 2022 and 13.1% in 2023. Stripping out the activities of the multinationals, the modified current account is expected to be smaller and to follow the increasingly positive trend of previous years (5.7% of GDP in 2019 and 6.4% in 2020).	
Property market	Residential property prices are estimated to have accelerated in 2021 to 8.3% y-o-y in nominal terms and 4.3% in real terms, driven by supply constraints. Rental prices followed a trend similar to house prices, increasing twice as much outside of Dublin as in the capital. At this stage, average national house prices do not appear to be overvalued according to standard valuation metrics. However, affordability remains a concern. The number of years of gross disposable income required by an average income household to buy a 100 square meter dwelling amounted to 16.3 in 2021, the third highest in the EU.	Despite improvements, housing supply is still falling short of demand. After increasing by almost 40% annually from 2017 to 2019, housing completions stagnated in 2020 and 2021 at 20 500 units due to the pandemic-induced lockdown of the construction sector. After the re-opening of the economy in the second quarter of 2021 construction activity restarted, and the number of housing commencements substantially increased, exceeding 30 000 units for the year as a whole, almost a fifth more than in 2019. This suggests that a further increase in completions is to be expected in 2022. The capacity of the construction sector is expected to increase but might be limited by labour constraints and rising costs of materials, which might strain the affordability and timing of new projects.	In recent years, the government has interv address housing supply constraints. The measu had an overall positive impact but need monito possible refinements. Many additional measur been announced in September 2021 un "Housing for All" plan. The plan aims to in average EUR 4 billion each year until 2030 to housing completions by 33 000 units yearly. H some risks remain in the implementation of the Legislative reforms to regulate short-term let Airbnb) in areas of high housing demand ca effect in 2019. If properly enforced, the contribute to boosting the rental stock. The vacant site levy seems to have been eff supporting land development. Solving admin deficiencies in its application may help housing supply. A full review of the planning process is in pr which has the potential to reduce cost and time faced by construction companies.

Modified Gross National Income (GNI*) is an indicator designed specifically to measure the size of the Irish economy by excluding Globalisation effects.
Source: European Commission

This Annex provides an indicator-based overview of Ireland's tax system. It includes information on the tax structure, i.e. the types of tax that Ireland derives most revenue from, the tax burden for workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance, and on the risks of aggressive tax planning, which appear to be high in Ireland's case.

Ireland's tax revenues are low in relation to GDP, and the tax system relies equally on labour taxation and on relatively growth-friendly taxes. Ireland's tax base is relatively narrow and excessively reliant on corporate taxes. The very low tax revenues translate into low rates across the board: labour, consumption, property and environmental taxes are all below the EU average. Recurrent taxes on property are among the lowest in the EU.

Ireland's labour tax burden is relatively low at various wage levels. The labour tax wedge for Ireland in 2021 was lower than the EU average at various income levels, i.e. for single people at the average wage (100%) as well as at 50% and 67% of the average wage. Second earners at a wage level of 67% of the average wage, whose spouse earns the average wage, also face a lower tax wedge compared to the EU average, though they are taxed more heavily than single people at the same wage level. The tax-benefit system helped reduce inequality – as measured by the GINI coefficient – by significantly more than the EU average.

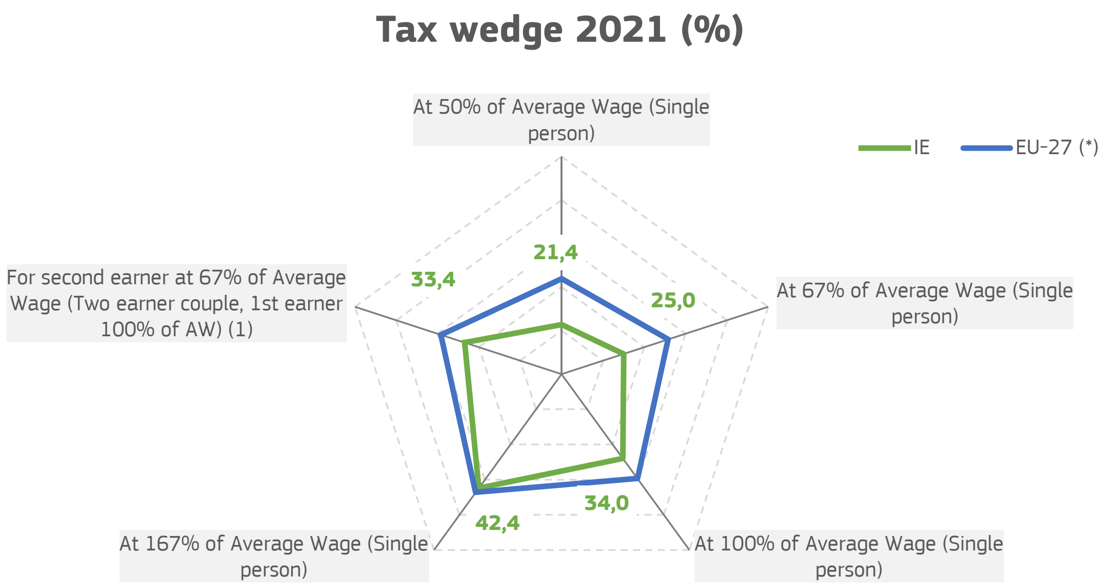
In 2021, Ireland committed to steps that have the potential to help tackle aggressive tax planning strategies. Ireland's legal structure regarding the withholding of taxes on outbound payments may encourage many companies to use Ireland's tax rules to engage in aggressive tax planning. Dividend, interest and royalty payment streams, relative to GDP, are therefore much higher than the EU average. However, for the first time, in its RRP Ireland has committed to introducing new legislation to apply to outbound payments in order to prevent double non-taxation. This will take effect from 2024 at the latest.

Table A18.1:**Indicators on taxation**

		Ireland					EU-27				
		2010	**2018**	**2019**	**2020**	**2021**	**2010**	**2018**	**2019**	**2020**	**2021**
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	27,8	22,4	22,0	20,1		37,9	40,1	39,9	40,1	
	Labour taxes (as % of GDP)	12,2	9,5	9,5	8,9		20,0	20,7	20,7	21,5	
	Consumption taxes (as % of GDP)	9,9	7,0	6,8	5,6		10,8	11,1	11,1	10,8	
	Capital taxes (as % of GDP)	5,7	6,0	5,7	5,6		7,1	8,2	8,1	7,9	
	Total property taxes (as % of GDP)	1,4	1,2	1,1	1,1		1,9	2,2	2,2	2,3	
	Recurrent taxes on immovable property (as % of GDP)	0,8	0,6	0,5	0,3		1,1	1,2	1,2	1,2	
	Environmental taxes as % of GDP	2,5	1,6	1,4	1,2		2,4	2,4	2,4	2,2	
Progressivity & fairness	Tax wedge at 50% of Average Wage (Single person) (*)	16,3	20,4	20,9	21,2	21,4	33,9	32,4	32,0	31,5	31,9
	Tax wedge at 100% of Average Wage (Single person) (*)	30,9	32,9	33,2	33,7	34,0	41,0	40,2	40,1	39,9	39,7
	Corporate Income Tax - Effective Average Tax rates (1) (*)		12,4	12,4	12,4			19,8	19,5	19,3	
	Difference in GINI coefficient before and after taxes and cash social transfers (pensions excluded from social transfers)	20,5	17,3		16,1		8,4	7,9	7,4	8,3	
Tax administration & compliance	Outstanding tax arrears: Total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		6,5	6,0				31,9	31,8		
	VAT Gap (% of VTTL)		9,8	10,1				11,2	10,5		
Financial Activity Risk	Dividends, Interests and Royalties (paid and received) as a share of GDP (%)		34,1	34,6	33,5			10,7	10,5		
	FDI flows through SPEs (Special Purpose Entities), % of total FDI flows (in and out)		2,1	1,7	1,7			47,8	46,2	36,7	

(1) Forward-looking Effective Tax Rate (OECD).
(*) EU-27 simple average as there is no aggregated EU-27 value.
Source: European Commission and OECD

Graph A18.1: **Tax wedge indicators**



The tax wedge measures the difference between the total labour cost of employing a worker and the worker's net earnings: sum of personal income taxes and employee and employer social security contributions, net of family allowances, expressed as a percentage of total labour costs (the sum of the gross wage and social security contributions paid by the employer).
(1) The second earner average tax wedge measures how much extra personal income tax plus employee and employer social security contributions (SSCs) the family will have to pay as a result of the second earner entering employment, as a proportion of the second earner's gross earnings plus the employer SSCs due on the second earner's income. For a more detailed discussion see OECD (2016), Taxing Wages 2016, OECD Publishing, Paris. http://dx.doi.org/10.1787/tax_wages-2016-en
(*) EU-27 simple average, as no aggregated EU-27 value
Source: European Commission

Table A19.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-18	2019	2020	2021	forecast 2022	forecast 2023
Real GDP (y-o-y)	5.7	-1.4	8.9	4.9	5.9	13.5	5.4	4.4
Potential growth (y-o-y)	4.4	-0.2	8.5	9.1	7.3	5.5	5.0	4.8
Private consumption (y-o-y)	6.0	-1.4	2.8	3.2	-11.1	5.7	5.7	4.1
Public consumption (y-o-y)	4.4	-1.4	3.2	6.8	9.4	5.4	1.5	1.2
Gross fixed capital formation (y-o-y)	8.3	-6.3	15.1	99.5	-22.9	-37.6	4.2	5.4
Exports of goods and services (y-o-y)	6.7	1.8	13.2	10.4	9.5	16.6	6.0	4.9
Imports of goods and services (y-o-y)	8.2	-0.5	11.4	41.7	-7.4	-3.7	6.2	5.0
Contribution to GDP growth:								
Domestic demand (y-o-y)	5.6	-2.6	5.0	29.9	-14.4	-12.8	2.6	2.4
Inventories (y-o-y)	0.0	0.0	0.1	1.0	0.2	-0.4	0.0	0.0
Net exports (y-o-y)	-0.3	2.0	4.2	-26.5	21.4	25.8	2.2	1.8
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	1.3	-1.8	1.8	2.0	1.5	1.5	1.4	1.1
Capital accumulation (y-o-y)	2.2	0.8	3.6	3.6	1.4	-0.4	-0.3	-0.1
Total factor productivity (y-o-y)	1.0	0.8	3.1	3.5	4.3	4.4	3.9	3.7
Output gap	1.7	-2.8	1.5	-3.5	-4.8	2.5	2.8	2.5
Unemployment rate	4.8	13.0	9.4	5.0	5.9	6.2	4.6	5.0
GDP deflator (y-o-y)	2.0	-0.9	1.8	4.2	-1.2	-0.4	4.8	4.1
Harmonised index of consumer prices (HICP, y-o-y)	2.5	0.6	0.3	0.9	-0.5	2.4	6.1	3.1
Nominal compensation per employee (y-o-y)	5.1	0.4	1.6	3.4	2.4	3.6	3.8	7.8
Labour productivity (real, hours worked, y-o-y)	1.6	3.2	5.1	2.6	9.2	7.3	1.0	2.0
Unit labour costs (ULC, whole economy, y-o-y)	3.8	-1.4	-3.8	1.4	-4.7	-5.2	1.3	4.0
Real unit labour costs (y-o-y)	1.7	-0.5	-5.5	-2.8	-3.5	-4.8	-3.3	-0.1
Real effective exchange rate (ULC, y-o-y)	3.3	-3.3	-4.7	-3.1	.	.	.	.
Real effective exchange rate (HICP, y-o-y)	1.4	-2.3	-0.6	-2.8	0.2	-0.1	.	.
Net savings rate of households (net saving as percentage of net disposable income)	1.4	8.1	4.6	5.2	21.4	.	.	.
Private credit flow, consolidated (% of GDP)	30.7	7.1	-4.2	-9.6	-1.8	.	.	.
Private sector debt, consolidated (% of GDP)	177.1	260.5	268.5	209.4	188.9	.	.	.
of which household debt, consolidated (% of GDP)	85.7	107.6	62.2	38.7	35.9	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	91.4	152.9	206.3	170.8	153.1	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	.	.	11.5	2.9	3.0	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	2.3	7.7	-3.1	-30.8	-10.7	9.2	9.4	9.8
Corporations, gross operating surplus (% of GDP)	33.9	33.8	48.3	55.8	58.0	59.5	60.0	60.6
Households, net lending (+) or net borrowing (-) (% of GDP)	-8.5	2.6	1.9	1.8	7.1	5.3	2.8	2.0
Deflated house price index (y-o-y)	8.4	-13.3	8.5	0.3	-0.2	.	.	.
Residential investment (% of GDP)	12.3	3.9	1.9	2.3	2.1	2.1	.	.
Current account balance (% of GDP), balance of payments	-3.9	-3.4	1.4	-19.9	-2.7	13.9	12.5	12.8
Trade balance (% of GDP), balance of payments	10.4	15.0	22.0	3.5	22.3	40.3	.	.
Terms of trade of goods and services (y-o-y)	-1.1	-0.7	-0.2	1.3	-1.0	-2.2	-0.8	0.9
Capital account balance (% of GDP)	0.2	0.1	-5.1	-9.9	-4.2	-0.2	.	.
Net international investment position (% of GDP)	-31.4	-120.3	-170.1	-193.5	-174.0	-138.9	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (1)	1.3	-224.9	-278.4	-282.8	-292.9	-336.0	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (1)	950.9	1384.8	1389.9	1320.0	1359.7	1412.9	.	.
Export performance vs. advanced countries (% change over 5 years)	9.9	-2.1	36.6	70.4	50.7	.	.	.
Export market share, goods and services (y-o-y)	-2.8	-4.0	11.2	9.8	21.7	6.0	1.2	0.6
Net FDI flows (% of GDP)	11.2	-4.0	-7.3	-31.1	-30.3	9.3	.	.
General government balance (% of GDP)	1.5	-15.0	-2.2	0.5	-5.1	-1.9	-0.5	0.4
Structural budget balance (% of GDP)	.	.	-2.9	2.3	-2.6	-3.2	-2.0	-0.9
General government gross debt (% of GDP)	25.4	84.1	84.4	57.2	58.4	56.0	50.3	45.5

(1) NIIP excluding direct investment and portfolio equity shares
(2) domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
Source: Eurostat and ECB as of 2022-05-02, where available; European Commission for forecast figures (Spring forecast 2022)

This annex assesses fiscal sustainability risks for Ireland over the short, medium and long term. It follows the same multi-dimensional approach as the 2021 Fiscal Sustainability Report, updated on the basis of the Commission 2022 spring forecast.

Table 1 presents the baseline debt projections. It shows the projected government debt 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. These projections assume that no new fiscal policy measures are taken after 2023, and include the expected positive impact of investments under Next Generation EU.

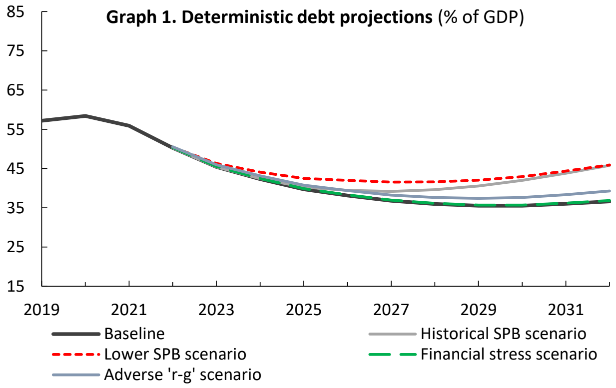
Graph 1 shows four alternative scenarios around the baseline, to illustrate the impact of changes in assumptions. The 'historical SPB' scenario assumes that the structural primary balance (SPB) gradually returns to its past average level. In the 'lower SPB' scenario, the SPB is permanently weaker than in the baseline. The 'adverse interest-growth rate' scenario assumes a less favourable snowball effect than in the baseline. In the 'financial stress' scenario, the country temporarily faces higher market interest rates in 2022.

Graph 2 shows the outcome of the stochastic projections. These projections show the impact on debt of 2 000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

Table 2 shows the S1 and S2 fiscal sustainability indicators and their main drivers. S1 measures the consolidation effort needed to bring debt to 60% of GDP in 15 years. S2 measures the consolidation effort required to stabilise debt over an infinite horizon. The *initial budgetary position* measures the effort required to cover future interest payments, the *ageing costs* component accounts for the need to absorb the projected change in ageing-related public expenditure such as pensions, health care and long-term care, and the *debt requirement* measures the additional adjustment needed to

Table A20.1:**Debt sustainability analysis for Ireland**

Table 1. Baseline debt projections	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Gross debt ratio (% of GDP)	**57.2**	**58.4**	**56.0**	**50.3**	**45.5**	**42.4**	**39.8**	**38.2**	**36.8**	**36.0**	**35.5**	**35.5**	**36.0**	**36.7**
Change in debt	-5.9	1.2	-2.5	-5.6	-4.8	-3.1	-2.6	-1.6	-1.4	-0.8	-0.4	0.0	0.5	0.6
of which														
Primary deficit	*-1.8*	*4.1*	*1.1*	*-0.3*	*-1.1*	*-0.5*	*-0.1*	*0.5*	*0.8*	*1.0*	*1.1*	*1.3*	*1.5*	*1.6*
Snowball effect	*-4.1*	*-1.5*	*-6.0*	*-4.5*	*-3.3*	*-2.6*	*-2.5*	*-2.1*	*-2.1*	*-1.8*	*-1.6*	*-1.3*	*-1.0*	*-1.0*
Stock-flow adjustment	*0.0*	*-1.4*	*2.3*	*-0.9*	*-0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Gross financing needs (% of GDP)	5.7	11.9	6.2	5.0	4.6	4.5	4.8	5.0	4.9	5.1	5.3	5.3	5.4	5.6



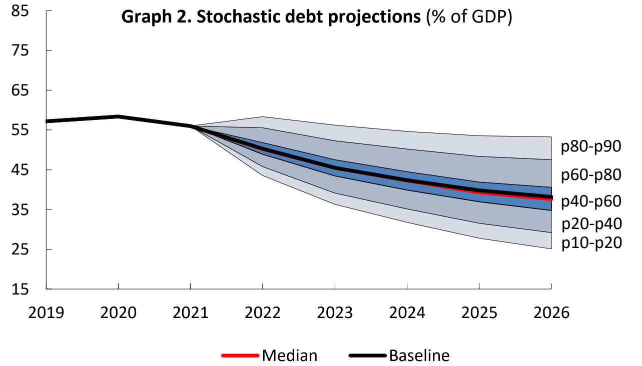


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

			S1	S2
Overall index (pps. of GDP)			**-1.5**	**5.3**
of which				
Initial budgetary position			-1.7	0.3
Debt requirement			-1.2	
Ageing costs			1.4	5.0
	of which	*Pensions*	*0.9*	*2.3*
		Health care	*0.3*	*1.2*
		Long-term care	*0.3*	*1.6*
		Others	*-0.1*	*-0.1*

Source: European Commission

Table A20.2: **Heat map of fiscal sustainability risks for Ireland**

Short term	Medium term										Long term	
			Debt sustainability analysis (DSA)									
					Deterministic scenarios							
Overall (S0)	Overall (S1+DSA)	S1	Overall		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	Stochastic projections	S2	Overall (S2+DSA)
LOW	LOW	LOW	LOW	Overall	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	MEDIUM
				Debt level (2032), % GDP	37	46	46	39	37			
				Debt peak year	2021	2021	2021	2021	2021			
				Fiscal consolidation space	65%	75%	75%	65%	65%			
				Probability of debt ratio exceeding in 2026 its 2021 level						7%		
				Difference between 90th and 10th percentiles (pps. GDP)						28		

(1) *Debt level* in 2032: 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 the debt ratio exceeding in 2026 its 2021 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: European Commission (for further details on the Commission's multi-dimensional approach, see the 2021 Fiscal Sustainability Report).

reach the 60% of GDP debt target.

Finally, the heat map presents the overall fiscal sustainability risk classification (Table A20.2)**.** The *short-term risk category* is based on the S0 indicator, an early-detection indicator of fiscal stress in the upcoming year. The *medium-term risk category* is derived from the debt sustainability analysis (DSA) and the S1 indicator. The DSA assesses risks to sustainability based on several criteria: the projected debt level in 10 years' time, the debt trajectory ('peak year'), the plausibility of fiscal assumptions and room for tighter positions if needed ('fiscal consolidation space'), the probability of debt not stabilising in the next 5 years and the size of uncertainty. The *long-term risk category* is based on the S2 indicator and the DSA.

Overall, short-term risks to fiscal sustainability are low. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A20.2).

Medium-term risks to fiscal sustainability are low. Both elements of the Commission's medium-term analysis lead to this conclusion. First, the debt sustainability analysis (DSA) shows that government debt is projected to fall, from about 50% of GDP in 2022 to around 37% of GDP in 2032 in the baseline (Table 1). The debt path is robust to possible shocks to fiscal, macroeconomic and financial variables, as illustrated by alternative scenarios (Graphs 1 and 2). Though the stochastic simulations show some uncertainty surrounding the projections. Moreover, the sustainability gap indicator S1 signals that no additional fiscal effort is required to reach a debt ratio of 60% of GDP in 15 years' time (Table 2). Overall, the low risk reflects the favourable initial budgetary position, notably with a moderate debt ratio, which compensate for the projected increase in age-related expenditure.

Long-term risks to fiscal sustainability are medium. Over the long term, the sustainability gap indicator S2 (at 5.3 pps. of GDP) points to medium risks, compared to low risks for the DSA, leading to the overall medium risk assessment. The S2 indicator suggests that stabilising debt over the long term would require addressing the projected rise in ageing costs, in particular due to pension, long-term care and health care spending (Table 2).