



An Roinn Airgeadais  
Department of Finance

# ANNUAL REPORT ON PUBLIC DEBT IN IRELAND 2021

February 2022

Prepared by the Economics Division  
Department of Finance  
[finance.gov.ie](https://www.finance.gov.ie)



## Foreword

The pandemic has triggered a large increase in public debt, both in Ireland and elsewhere. This was the appropriate strategy: debt-financed budgetary supports helped to cushion the economic fallout from the pandemic, by supporting household incomes and firm revenues. That fiscal and monetary policies were working in-sync further vindicates this approach – in Ireland, as well as in other advanced economies, much of the additional debt has been purchased by the domestic central bank.

Fortunately, high vaccination rates in our country mean that the tide appears to have turned on the pandemic. Therapeutic improvements, including the development of anti-viral drugs, are also a positive step forward.

The vast majority of restrictions have been unwound at this point, and the release of pent-up demand is set to drive domestic demand forward. As the economic recovery gains traction, it will be necessary to slow, and subsequently end, the pace of public debt accumulation.

Public debt in Ireland now amounts to nearly a quarter of a trillion euros. This is an enormous amount for a small economy – over 100 per cent of our national income. This is why it is essential there is a shared understanding of trends as well as the vulnerabilities that this creates.

The purpose of the analysis set out in this assessment – published annually by my Department – is to shed light on recent trends and possible future developments, as well as to highlight the various structural dimensions to our public debt. The key message that flows from the analysis is that the increase in public debt is manageable but, in order not to impinge on our living standards, it must be managed in a careful and prudent way.

From a policy perspective, that is what I intend to do. Government has set out a medium-term framework for the public finances, with public expenditure ceilings that are fixed for the next few years. This means that *inter alia* any in-year permanent expenditure increases automatically reduce the room-for-manoevre in subsequent years.

Many fiscal challenges lie ahead of us, further underlining the importance of a prudent approach to debt management. These include risks to the sustainability of corporation tax receipts, the need to finance the transition to ‘net zero’ and the very large fiscal costs arising from demographic change. Such challenges highlight the importance of rebuilding our fiscal buffers in the years ahead.

In summary, allowing public debt to increase was the best way for our economy to absorb the global health shock. As the pandemic passes, it will be necessary to – once again – align public receipts with public spending. We can do this while, at the same time, continuing to invest heavily in our public capital programme – the *National Development Plan* – and laying the foundations for future growth.

**Paschal Donohoe T.D.**  
**Minister for Finance**

## SUMMARY AND KEY MESSAGES

### *The fiscal landscape is very different to that pre-pandemic*

- > Public debt increased by €33 billion during the two years of the pandemic and, at the end of last year, stood at an estimated €237 billion.
- > As a share of national income, this is an estimated 106 per cent, up from 95 per cent just before the pandemic. To put it another way, this is the equivalent of around €47,250 for every person in the country, a figure that is amongst the highest in the world.
- > Allowing debt to increase was the most appropriate way to limit the economic disruption from the pandemic. As well as cushioning household incomes and firm revenues in the short-term, the debt issued to finance increased expenditure and tax reductions helped to minimise economic ‘long-Covid’, i.e. to limit ‘scarring’ effects on the economy.

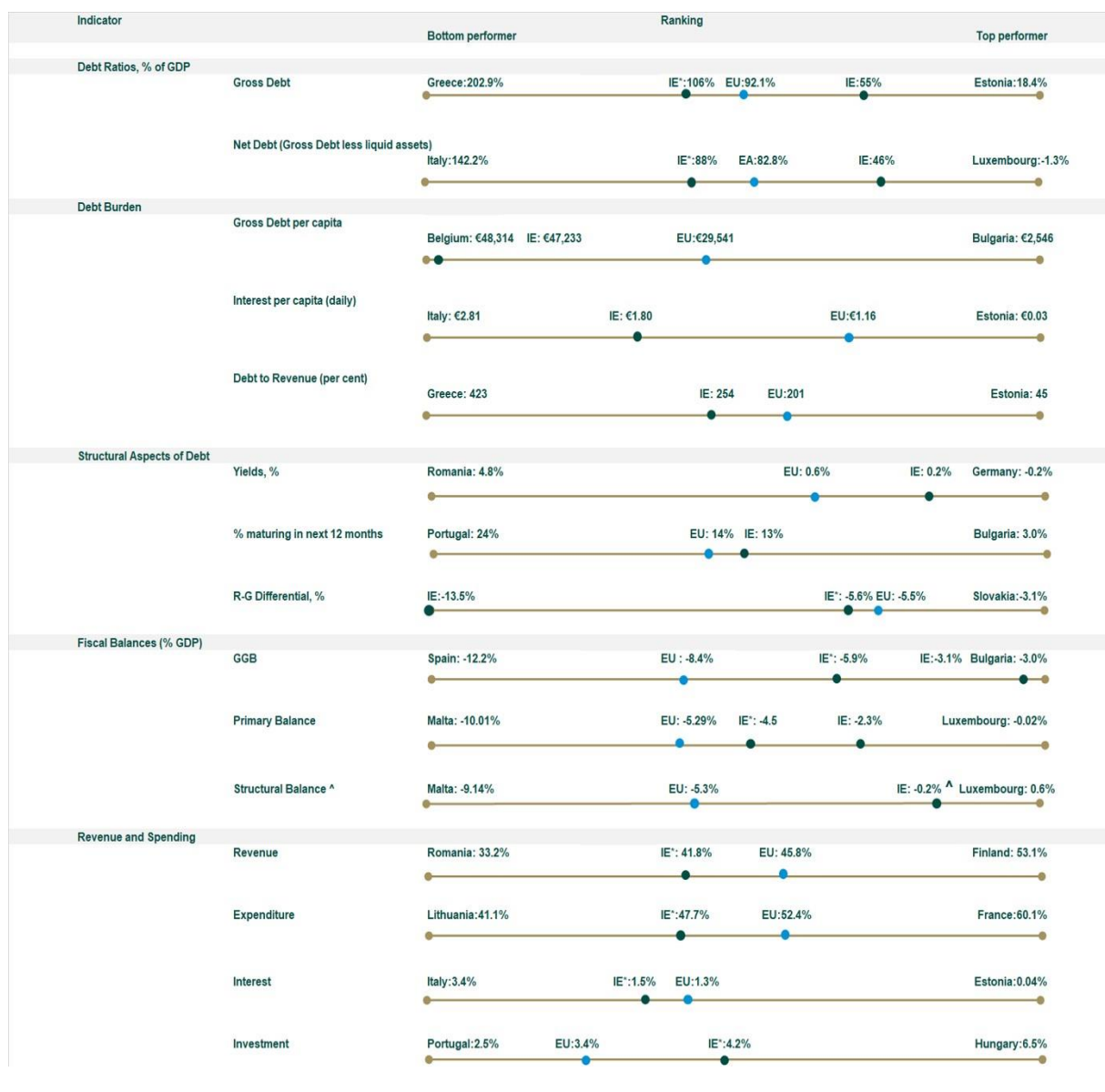
### *Several structural aspects help to mitigate the accumulation of gross public indebtedness*

- > A balance sheet approach – which takes account of financial assets as well as liabilities – shows a somewhat better position; the general government sector had assets of the order 18 per cent of national income at end-2021.
- > The balance sheet position is further strengthened by the fact that some of the debt issued in recent years has been purchased by the *Central Bank of Ireland* as part of the eurosystem’s *Pandemic Emergency Purchase Programme*.
- > Notwithstanding the increase in gross indebtedness, the debt service burden has continued to fall, reflecting exceptionally low sovereign borrowing costs.
- > Favourable financing conditions have also enabled the NTMA to issue longer dated bonds helping to maintain the long average life of the debt.

### *As the pandemic passes, further debt accumulation would increase fiscal vulnerability*

- > While the increase in public debt can be absorbed, the public finances remain exposed to a fall in the corporation tax yield. An adverse shock to the economy – one that puts the debt-income ratio on a rising trajectory – is an additional risk.
- > While deficit-financed expenditure is sometimes appropriate in a downturn, the economy is now rebounding strongly following the elimination of almost all restrictions; counter-cyclical budgetary policy works in both directions.
- > The direction of travel for sovereign borrowing costs is clear: as central banks in the euro area look to withdraw their support from sovereign debt markets, the cost of borrowing will rise.
- > The population is ageing and the planet is warming; financing these scientifically-proven developments involves serious fiscal challenges. A ‘head-in-the-sand’ approach to adverse demographic trends would involve serious intergenerational inequalities.

# Debt Dashboard in 2021<sup>1</sup>



<sup>1</sup> \* indicates ratio to modified Gross National Income (GNI\*) for Ireland.

Note: IE gross and net debt figures based on *Budget 2022* forecasts updated to reflect better than expected end-year position. All other fiscal figures are taken from *Budget 2022*. Net Debt figures based on IMF projections and excludes Bulgaria, Croatia, Cyprus, Greece, Hungary, Malta, Poland, and Romania.

Yields are based on average number of observations in period – October 2021, from ECB Statistical Data Warehouse.

Per cent maturing in next 12 months refers to remaining stock of debt maturing (all maturities) in next 12 months, based on Eurostat data and excludes Denmark, Germany, Greece, Cyprus, Luxembourg, Netherlands, Austria, Poland, Finland, and Sweden.

^Estimates of the output gap for Ireland are based on the Department's preferred methodology for calculating the potential output using domestic gross value added (GVA), see Murphy *et al* (2018) available at: <https://www.gov.ie/en/publication/65c119-estimating-irelands-output-gap/>.

Treatment of one-off/temporary measures in line with approach described in Box 6 of the 2021 *Stability Programme Update*, available at:

<https://www.gov.ie/en/publication/d3e2f-stability-programme-update-2021/>.

## Government debt – SWOT analysis

### Strengths

Maturity profile- long average life of debt

Strong credit rating

Limited debt maturities in coming years

Vast bulk of debt at fixed rates

Low interest burden – effective interest rate below 2%

Sticky holders of debt

Growth strong and well balanced prior to crisis

### Weaknesses

Scale and speed of Covid shock– jump in exchequer borrowing

Certain debt metrics elevated prior to shock

Difficult to model the recovery given unprecedented nature of shock

Corporation tax concentration related risks

Risk of over-heating/constraints in some sectors starting to bind

Age-related spending pressures to increase

### Opportunities

Temporary shock allowing fast recovery

Low interest rate/financing environment

Strong underlying growth potential

Current favourable demographics

Coordinated and synchronized EU response to pandemic

Windfall Corporation tax receipts can rebuild fiscal buffers (including Rainy Day Fund)

### Threats

Future waves of crisis/risk of re-introduction of restrictions

Elevated levels of uncertainty

Slow removal of policy supports delays necessary restructuring within economy

Prolonged periods of high inflation and increased borrowing costs

Tightening monetary policy and/or financial market correction raise market pressures on high-debt euro area member states

Future ageing and climate costs

Source: Department of Finance

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<sup>2</sup> The data and analysis set out in this document are compiled by Department of Finance staff. Every effort is made to ensure accuracy and completeness. When errors are discovered, corrections and revisions are incorporated into the digital edition available on the Department’s website. Any substantive change is detailed in the online version.

<sup>3</sup> Projections are based on *Budget 2022* estimates with adjustments made for the better-than-expected end-year fiscal position.

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## Section 1: Introduction

Across the globe, the Covid-19 pandemic has triggered a broad-based increase in public debt which, as a share of income, is now at its highest level in half a century. Notwithstanding this elevated level, however, the economic literature is near-universal in its support for allowing public indebtedness to rise in order to absorb this once-in-a-century shock.<sup>4</sup>

These global trends are mirrored in Ireland. Debt issued to finance counter-cyclical fiscal support during the two-year pandemic has resulted in level-shift in gross public debt, from 95 per cent of GNI\* immediately before the pandemic to an estimated 106 per cent of GNI\* at the end of last year.

While this can be thought of as the second wave of public debt build-up in Ireland since the beginning of economic and monetary union, it is very different to the first wave that followed the collapse of the domestic property bubble. Perhaps the most important distinction relates to the deliberate nature of the second wave – allowing debt to increase was the optimum approach to limiting the short- and medium-term economic fall-out from the pandemic. In addition, while public debt levels are now elevated, the burden of servicing those debts has declined. This follows from the non-standard monetary policies deployed during the pandemic, with central banks in advanced economies – including in Ireland – expanding their purchases of sovereign debt, financed by issuing newly printed (electronically) money.

Notwithstanding these differences, the laws of economics have not changed. High levels of public debt weigh on living standards, increase fiscal vulnerabilities and, if not reversed, could potentially generate sustainability concerns. On the pricing side, the cost of sovereign borrowing will rise as central banks gradually step-back from sovereign debt markets.

The purpose of this document is to take stock of public debt developments in Ireland. It is the Department's fifth annual assessment, and is motivated by the need to monitor the evolution of debt, to report on different structural aspects of financing the State, and to identify any risks that might compromise the downward trajectory in the debt-income ratio that constitutes the Department's baseline scenario for the next few years.

The remainder of the document is structured as follows. Section 2 reviews the impact of the pandemic response on debt accumulation, and briefly recalls the Department's baseline projection for the debt-income ratio over the medium-term. This central scenario involves a steady reduction in the debt-income ratio between now and mid-decade and, in section 3, the sensitivity of this trajectory to alternative assumptions is stress-tested. Section 4 documents several of the key structural features of Irish public debt in order to provide further robustness checks. The debt build-up in Ireland is compared with other European Union Member States in section 5 while, in section 6, the burden of debt is evaluated using a number of alternative metrics. Finally, section 7 concludes with some policy-relevant considerations.

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<sup>4</sup> See, for instance, *Designing the fiscal response to the COVID-19 pandemic*, O. Blanchard (2020), available at: <https://www.piie.com/blogs/realtime-economic-issues-watch/designing-fiscal-response-covid-19-pandemic>, and *Fiscal Policies for a Transformed World*, V. Gaspar and G. Gopinath (2020), available at: <https://www.joserobertoafonso.com.br/wp-content/uploads/2020/10/Vitor-Gaspar-and-Gita-Gopinath-published-by-IMF-.pdf>

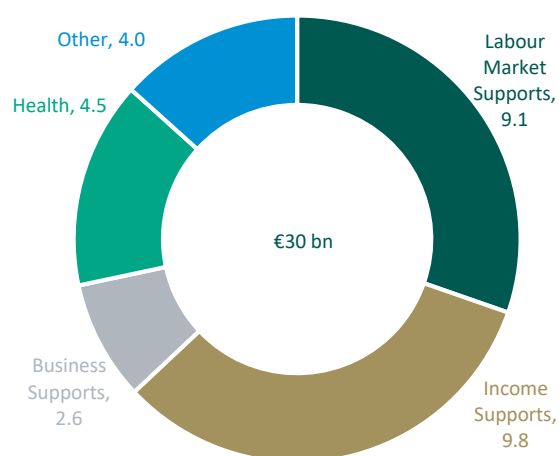
## Section 2: Debt dynamics during and after the pandemic

### 2.1 Policy response to the pandemic

In Ireland, the pandemic effectively began in mid-March 2020, with officially-mandated restrictions on mobility that would become some of the most stringent in the developed world. The *quid pro quo* was the mobilisation of significant fiscal resources in order to limit the economic disruption from these restrictions (**figure 1A**). The objective of the Government’s response was essentially three-fold: to shore-up household incomes (*pandemic unemployment payment*), to provide life-lines to firms (*employment wage subsidy scheme*, tax warehousing, loan guarantees, direct grants, commercial rate waivers) and to boost healthcare capacity (additional hospital supply, personal protective equipment, etc.).

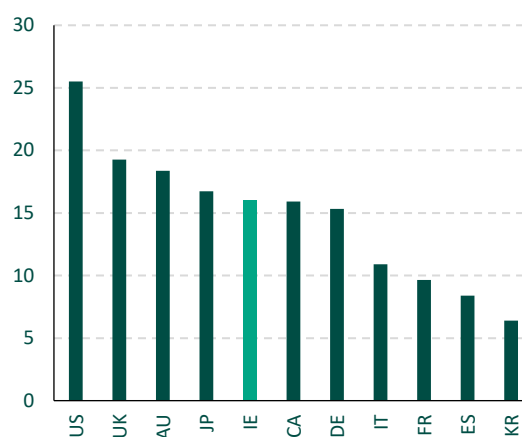
**Figure 1: fiscal support during the pandemic**

A: pandemic-related expenditure, € billions



Note: rounding can affect totals  
Source: Department of Finance.

B: Ireland vs other countries, per cent GDP



Note: Above the line measures only. IE figure as share of GNI\*.  
Source: IMF database of fiscal responses to Covid-19.

Overall, direct budgetary supports made available amounted to some €30 billion during 2020 and 2021.<sup>5</sup> As a share of national income (GNI\*), this was equivalent to approximately 13 per cent. When taxation measures amounting to 2.5 per cent of GNI\* are included, the total direct support mobilised came to 16 per cent of national income, a figure that compares favourably with other countries (**figure 1B**).

### 2.2 Short-term debt developments

The wave of public debt accumulation due to the pandemic is summarised below (**table 1**). The data are based on the Department’s *Budget 2022* projections,<sup>6</sup> adjusted for the better-than-expected end-year fiscal position.<sup>7</sup>

<sup>5</sup> With provision for up to a further €7 billion under *Budget 2022*.

<sup>6</sup> For details see *Economic and Fiscal Outlook*, Department of Finance (2021), available at: [http://www.budget.gov.ie/Budgets/2021/Documents/Budget/201020\\_Budget%202021\\_Economic%20and%20Fiscal%20Outlook\\_A.pdf](http://www.budget.gov.ie/Budgets/2021/Documents/Budget/201020_Budget%202021_Economic%20and%20Fiscal%20Outlook_A.pdf)

<sup>7</sup> The end-2021 deficit is expected to be €4.4 billion less than anticipated at Budget time. For the purpose of this document, this is expected to *ceteris paribus* reduce gross debt from 2022 onwards by an equivalent amount. All other drivers of debt dynamics (such as output, the interest rate and the stock flow adjustment) are unchanged from *Budget 2022* projections.

Immediately before the pandemic, the general government’s outstanding financial liabilities amounted to €204 billion (95 per cent of national income, or just under €44,000 for every citizen of the State). By 2020 this had risen to €218 billion and to just under €237 billion last year (106 per cent of GNI\*, or nearly €47,250 for every citizen).

**Table 1: public debt – baseline scenario**

	2019	2020	2021	2022	2023	2024	2025
Gross nominal debt, € bn	204.0	217.9	236.6	229.9	232.7	232.2	230.1
Gross debt-to-GNI*, per cent	94.6	104.7	106.1	95.6	91.5	86.7	81.6
Per capita, €	41,450	43,750	47,250	45,500	45,600	45,100	44,200
Financial assets, per cent GNI*	13.6	15.4	17.8	11.1	11.5	11.1	10.3
Net nominal debt, € bn	174.6	185.9	197.0	203.1	203.5	202.5	201.1
Net debt-to-GNI*, per cent	81.0	89.3	88.4	84.4	80.0	75.6	71.4

Note: figures for 2021 remain estimates until final data are published in April.

Source: CSO and Department of Finance.

Any assessment of public debt accumulation must also take into account the other side of the Government’s balance sheet, namely any financial assets that have accrued to the general government sector. At end-2021, the general government sector held significant financial assets (€40 billion, or just under 18 per cent of GNI\*)<sup>8</sup>. As such, net debt – total financial obligations less financial assets – is estimated at €197 billion (or 88 per cent of GNI\*) at the end of last year.

### 2.3 Medium-term outlook for public debt

The evolution of public debt in Ireland over a quarter of a century is presented below, with realised data covering 2000-2020 and the Department’s projections covering 2021-2025. The trajectories for both the nominal amount of debt (**figure 2A**) and the debt-to-income ratio (**figure 2B**) are presented.

The first wave of debt accumulation following the collapse of the property bubble was particularly severe, with an almost vertical increase over 2008-2012.<sup>9</sup> While also significant, the second wave has been much less severe and contained over a shorter timeframe. Importantly, the build-up in public debt during the second wave has been the result of a deliberate policy of supporting the economy during a once-in-a-century pandemic. This contrasts with the first wave which followed severe policy errors during the 2000s (financial regulation failures; fiscal policy failures, a flawed ‘social partnership’ model, etc.).

With the passing of the pandemic, and the phasing out of budgetary supports, a closer alignment of public revenue and expenditure is expected in the years ahead. At the same time, the Department’s medium-term economic projections envisage reasonably strong economic growth. On the basis of these assumptions, the baseline scenario involves a

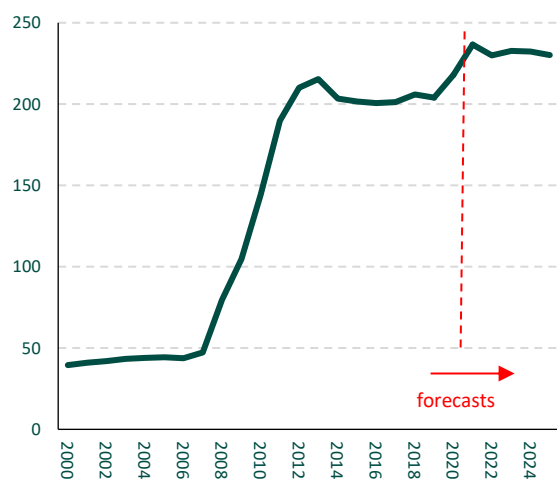
<sup>8</sup> EDP debt instruments assets.

<sup>9</sup> For further details, see *Annual Report on Public Debt in Ireland*, Department of Finance (2019), available at: <https://www.gov.ie/en/publication/d45694-annual-report-on-public-debt-in-ireland-2019/>

stabilisation of public debt at around €230 billion in nominal terms over the next few years and a decline in the debt-income ratio from its peak recorded last year. By the mid-part of this decade, the debt-income ratio is projected at around 82 per cent.

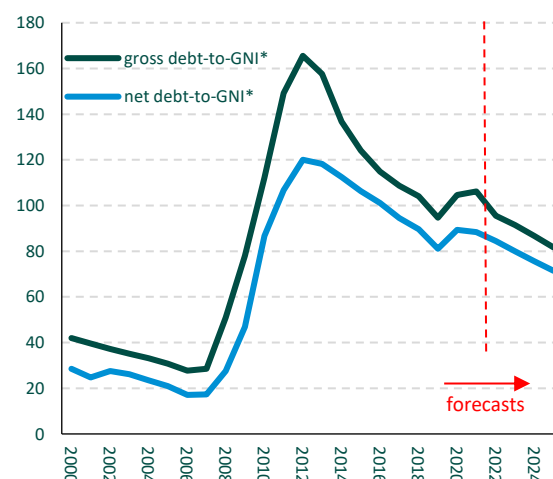
**Figure 2: public debt over a quarter of a century**

A: gross public debt €, billions



Source: CSO, Department of Finance

B: debt as share of national income, per cent



Source: CSO, Department of Finance

## 2.4 Summary

The economic shock triggered by the Covid pandemic, and the associated fiscal support to soften its blow, have resulted in a ratcheting-up of public indebtedness in Ireland over the last two years. This was a deliberate policy choice, and was necessary to minimise income losses in the private sector, and to limit the ‘scarring’ – or economic ‘long-Covid’ – effects of the pandemic.

With restrictions now almost fully lifted, the economy is rebounding strongly and the overall macroeconomic mix – fiscal and monetary – is pivoting away from an exceptionally supportive stance. As the various fiscal supports are gradually removed and balance restored to the budgetary accounts, the debt-income ratio can be expected to move back onto a downward trajectory.

## Section 3: Stress-testing the baseline scenario

### 3.1 Debt sustainability analysis – shocks to the baseline scenario

A key component of fiscal risk management involves ‘stress-testing’ baseline fiscal projections in order to assess their sensitivity to alternative assumptions. The standard approach is to ‘shock’, or change, some combination of the variables that feed into the calibration of the baseline calculations and to evaluate the trajectory of the debt ratio in these alternative scenarios.

The overarching objective is to assess the sustainability of public debt under different circumstances – this debt sustainability analysis (DSA) is a key part of the fiscal management toolkit. Debt is said to be sustainable once the debt-income ratio is stabilised and put on a downward path following the shock. On the other hand, debt is said to be unsustainable if, following a shock, the debt-income ratio moves onto an explosive path; the crystallisation of this shock could then require fiscal intervention in order to stabilise the debt-income ratio.

To stress-test the Department’s baseline, medium-term projections, the impact on debt dynamics of the following shocks is considered:<sup>10</sup>

- 3½ percentage point shock to GNI\*;
- 50 per cent decline in corporation tax receipts;
- 100 bps increase in the effective rate for sovereign borrowing; and,
- combined shock to GNI\* and a fall in corporation tax receipts.

It is important to highlight that, in line with standard international practice, these shocks provide indicative orders of magnitude for the debt path. To capture the pure dynamics of the shocks, no policy change is assumed in each of the scenarios. Additionally, the impact is assumed to be broadly linear although, in reality, non-linear effects are possible. Finally, the analysis should be seen as a form of ‘partial equilibrium’: it does not show the impact on the economy more widely but rather focuses on the variables in question (**box 1**).

#### 3.1.1 Output shock

To quantify the impact of an alternative, less benign macroeconomic scenario, a number of technical assumptions are necessary. Firstly, nominal GNI\* growth in 2022 and 2023 is reduced by 3.5 percentage points (half a standard deviation of GNI\* growth over the past two decades) relative to the baseline projection, a significant downward impulse.<sup>11</sup> Post-2023, the nominal growth rate is assumed to revert to the rate in the central scenario, i.e. the lost activity due to the shock is not recovered. Secondly, the fiscal feedback is captured by assuming that both the revenue-to-GNI\* ratio and the level of primary expenditure are unchanged. Thirdly, because of the no-policy change assumption, the deterioration in the primary balance is assumed to increase sovereign borrowing costs. A technical assumption is made whereby each 1 percentage point deterioration in the primary balance adds 10 basis

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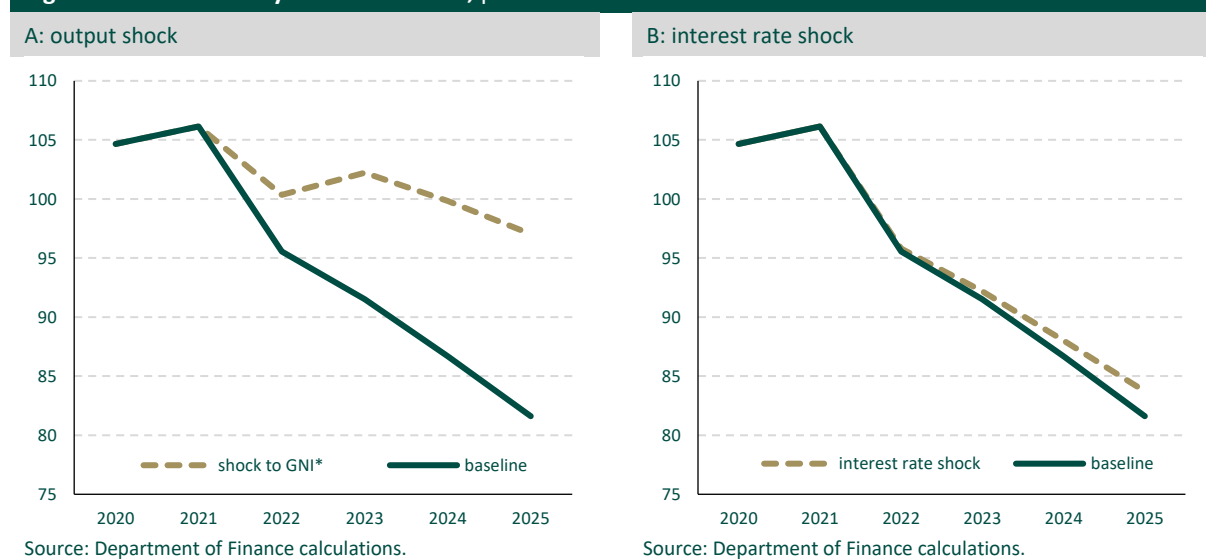
<sup>10</sup> Note that the source of the shock is not of particular importance in a DSA.

<sup>11</sup> A standard deviation is a measure of volatility/variability in a dataset. By using half of one standard deviation as the magnitude of the potential shock, this roots the shock within the context of volatility evident in the Irish economy over the past two decades.

points to the effective interest rate. Finally, the stock-flow adjustment is assumed to make no contribution.

On the basis of these assumptions, the analysis shows that a temporary, but significant, shock to GNI\* could result in a debt-income ratio that is around 15 percentage points of GNI\* higher than in the baseline scenario by the mid-part of the decade (**figure 3A**). This shows that the debt-income trajectory is very sensitive to the path for nominal economic activity though, crucially, once recovery sets in, the downward trajectory in the debt-income ratio resumes.

**Figure 3: scenario analysis for debt ratio, per cent of GNI\***



### 3.1.2 Interest rate shock

The cost of borrowing is a key determinant of the sustainability of the public finances in any country. Standard international practice, therefore, is to assess the impact of changes in sovereign borrowing costs on debt dynamics.

To calibrate this shock, an incremental increase in the interest rate is assumed such that the effective interest rate (EIR) is 100 basis points higher by 2025 in comparison to the baseline scenario.<sup>12</sup> It is also assumed that output remains unchanged despite the increase in the EIR.

Before proceeding, it is important to highlight that, while an increase in the interest rate would result in a rise in the cost of additional borrowing or the refinancing of existing liabilities, the impact is lessened in the short-term by the maturity profile of Irish debt<sup>13</sup> (**section 4.3**) and the fact that the vast bulk of debt is at fixed rates. In other words, an increase in the effective rate of 100 basis points would require a very large increase in marginal borrowing costs as well as a much greater quantity of debt issuance.

Simulations suggest such an increase in the EIR would increase the debt-to-GNI\* ratio by just over 2 percentage points by 2025 relative to the baseline (**figure 3B**). In this scenario, the

<sup>12</sup> Given the maturity profile of Irish debt, this could be viewed as a severe shock.

<sup>13</sup> The weighted average maturity of Irish public debt is one of the longest in Europe. Long-term debt instruments issued since 2015 have a weighted average maturity of 15 years. See: <https://www.ntma.ie/uploads/general/NTMA-Investor-Presentation-December-Website.pdf>

nominal growth rate is expected to remain greater than the effective interest rate, *ceteris paribus* generating downward debt dynamics.

In the short-term, therefore, the maturity structure and dominance of fixed-rate debt instruments mean that the debt-income trajectory is not particularly sensitive to interest rate shocks. However, higher interest rates now would raise debt services costs later in the decade at a time when demographic-related costs will absorb a larger share of public expenditure.

### 3.1.3 Corporation tax shock

A key risk to the sustainability of the public finances relates to a decline in corporation tax (CT) receipts.<sup>14</sup> To calibrate this shock, two scenarios related to the severity of shock are assumed.

First, CT receipts are reduced by 20 per cent relative to the baseline forecasts in the first year of the shock and remain 20 per cent below baseline thereafter. While a reduction in receipts of this magnitude could certainly be viewed as significant, this would only bring receipts back to broadly similar levels recorded in 2019.

In this scenario, where other inputs remain unchanged, the shock to CT revenue would worsen the general government balance by just over 1 percentage point of GNI\* (relative to baseline) each year between 2022 and 2025. As a result of this weaker fiscal position, the debt-to-GNI\* ratio would be over 4 percentage points higher than baseline by mid-decade (**figure 4A**).

Given the speed and scale of the increase in CT receipts in recent years, it is prudent to also include a more severe scenario. Accordingly, a scenario that incorporates a 50 per cent reduction in CT receipts from this year, relative to the baseline forecasts, is also included.<sup>15</sup> Such a shock would see receipts return to 2015 levels.

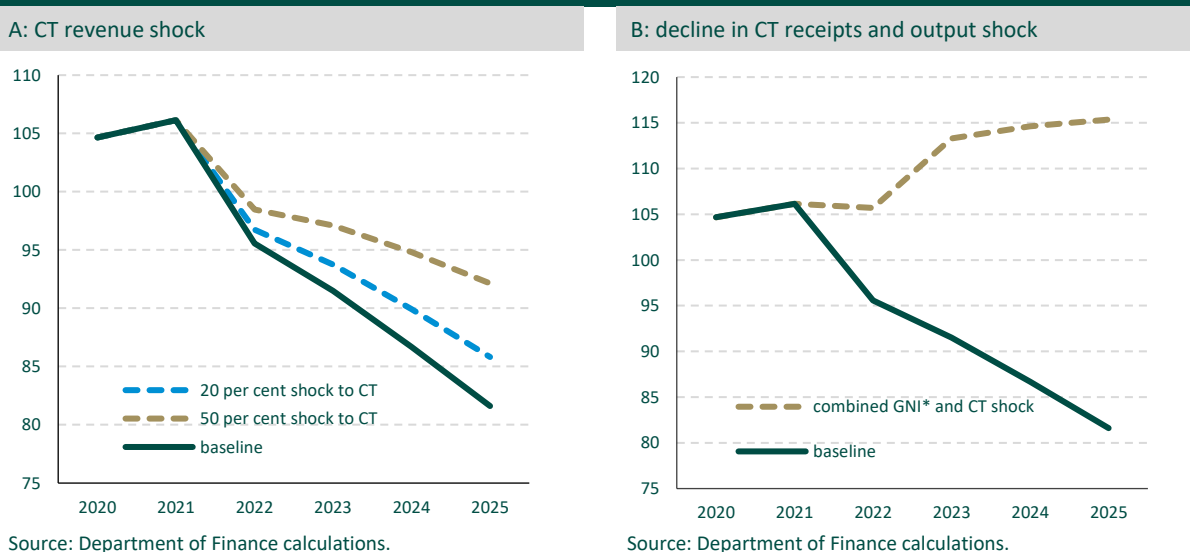
Such a shock would result in the general government balance worsening by just under 3 percentage points of GNI\* (relative to baseline) each year between 2022 and 2025; the debt-to-GNI\* ratio would be more than 10 percentage points higher than the baseline by 2025. The debt-income ratio would likely remain on a downward trajectory, but decline at a very modest pace.

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<sup>14</sup> See, for instance, *Addressing Fiscal Vulnerabilities*, Department of Finance (2019), available at: <https://www.gov.ie/en/collection/b4c8d-budget-2020/>

<sup>15</sup> Assumes CT receipts remain 50 per cent below baseline thereafter.

**Figure 4: shock to corporation tax receipts and combined shock**



### 3.1.4 combined shock

Ireland’s economic experience over the past two decades – two major shocks (sovereign debt crisis, pandemic) – highlights the importance of assessing ‘tail risks’ to the economy and public finances, i.e. low probability but high impact shocks. In this regard, multiple shocks to the economy, that crystallised simultaneously (and are, perhaps, inter-related), is another possibility. To calibrate such a shock, it is assumed that nominal GNI\* falls by 5 percentage points in 2022 and 2023, and that CT revenues decline by 50 per cent in the first year of the shock and remain below baseline thereafter.

The impact of these developments on the public finances is severe (**figure 4B**). The debt-income ratio would be expected to increase from next year, and remains on a rising trajectory thereafter. The simulations suggest that a shock of this magnitude would lead to a 34 percentage points increase in the debt-to-GNI\* ratio relative to the baseline by 2025. This rising debt-income trajectory, which would almost certainly trigger a higher risk premium (borrowing costs) for lending to the Irish sovereign, could require policy intervention to stabilise the debt path.

### 3.2 Medium- and long-term fiscal challenges

Scientific evidence confirms that several fiscal challenges are now firmly on the horizon. These include financing the ‘dual transitions’, namely the digital and ‘net neutral’ economy.

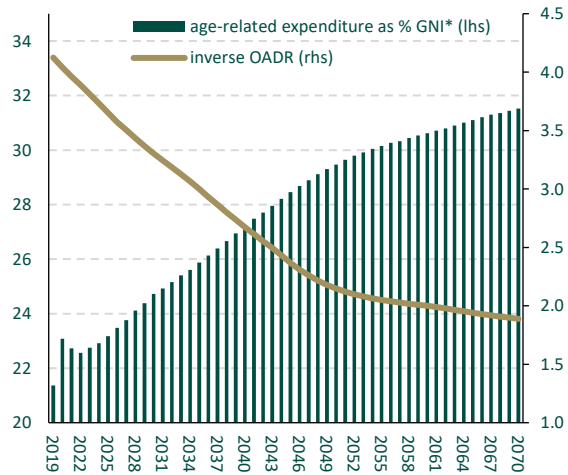
Science also confirms that the population is ageing and that the fiscal costs associated with this are enormous.<sup>16</sup> The fiscal costs arise through two main channels: firstly, shifts in the age-profile of the population will involve increased outlays in demographically-sensitive components of public expenditure, such as pensions and healthcare (**figure 5A**) and, secondly, an ageing of the population will slow the economy’s growth rate (and, hence, tax revenue growth) via the labour supply channel.

<sup>16</sup> See, for instance, *Population Ageing and the Public Finances in Ireland*, Department of Finance (2021), available at: <https://www.gov.ie/en/publication/6ba73-population-ageing-and-the-public-finances-in-ireland/>



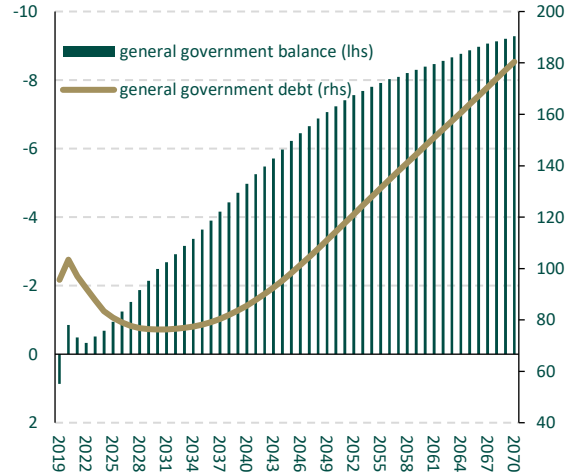
**Figure 5: impact of population ageing on public finances**

A: demographic and expenditure projections



Note: Inverse Old Age-Dependency Ratio (OADR) shows the population aged 65 and over relative to the population aged between 20-65- a proxy for the working age population  
 Source: 2021 Ageing Report / Dept of Finance calculations.

B: no-policy change basis, per cent of GNI\*



Source: Department of Finance calculations.

## Box 1: a general equilibrium approach to debt sustainability analysis

The simulations of the debt trajectory described above involve a ‘partial equilibrium’ approach, i.e. they capture the impact of a particular shock on one variable, such as the impact of a shock to output on the debt-to-income ratio. The key advantage of this approach lies in its simplicity: the calibration is relatively straightforward and the outcomes reasonably robust.

The downside of this approach is that – by construction – it does not capture other dynamics at work. To address this, a ‘general equilibrium’ approach usually involves making use of a structural model of the economy to capture the ‘whole-of-economy’ impact of a shock.

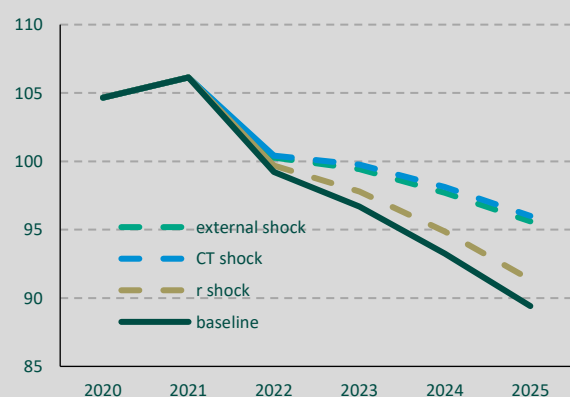
The analysis below shows the impact of the various shocks using the COSMO (the COre Structural MOdel) of the Irish economy).<sup>^</sup> While the simulations differ slightly in approach, they produce broadly similar results to the simulations described above. The following three shocks were carried out in this exercise:

- external shock in the form of a 5 per cent deterioration in world demand (to approximate a domestic output shock);
- a 50 per cent reduction in corporation tax revenues; and,
- a 100 basis point increase in interest rates;

The results of these shocks are set out in the figure below (figure 6A and table B).

**Figure 6: general equilibrium shock to corporation tax receipts**

A: shocks to economy – general equilibrium results



Source: Department of Finance calculations based on COSMO

B: pp deviation from baseline

	T	T + 3	T + 5
external demand	1.1	6.2	9.7
50 fall in CT receipts	1.2	6.6	10.0
Interest rates (100bps)	0.5	1.9	2.2

Source: Department of Finance based on COSMO

An **external shock** is simulated by assuming a permanent reduction in the level of global output of 5 per cent relative to baseline projections. This reduces Irish economic activity, with the effects transmitted primarily through the trade channel.<sup>^^</sup> The model suggests the overall impact of such a shock would lead to close to a 10 percentage point increase in the debt-to-GNI\* ratio after 5 years, relative to the baseline.

An **interest rate shock** is simulated by assuming a one-off ECB policy rate increase of 1 percentage point which remains higher over a 5-year horizon. As well as sovereign borrowing costs, such an increase would also be expected to affect the level of Irish economic activity. Given the maturity profile of the outstanding shock of debt, such a shock is projected to result in relatively minor increases in interest payments (an average of 2 per cent higher than baseline estimates each year over 5 years<sup>^^^</sup>). Overall, this shock is projected to increase the debt-to-GNI\* ratio by 2.2 percentage points after 5 years, relative to the baseline, driven by the associated weaker output growth rather than an increase in debt servicing costs.

The impact of a shock to Government revenue, in the form of a **50 per cent permanent reduction in Corporation Tax (CT) receipts**, on the debt-to-income ratio is also estimated using the COSMO model.<sup>^^^</sup> The shock involves a permanent 50 per cent reduction in CT receipts from year t, resulting in an increase in the general government balance of 2 percentage points over 5 years. Overall, such a shock is estimated to increase the debt-to-GNI\* ratio by 10 percentage points relative to the central scenario after 5 years.

<sup>^</sup> Bergin, A. *et al.* COSMO: A new COre Structural MOdel for Ireland ESRI Working Paper No. 553.

<sup>^^</sup> Under this scenario, a decrease in external demand contributes to reductions in both the demand for Irish produced goods and services which, in turn, lead to falls in investment, employment and wages in the traded sector.

<sup>^^^</sup> Equating to an increase in interest expenditure of approximately 0.1 per cent of GNI\* each year.

<sup>^^^</sup> This only assumes a reduction in CT receipts. It does not include any changes to multinational activity in Ireland.

In terms of quantifying the impact, age-related expenditure is projected to increase by 3 percentage points of GNI\* by 2030 (and by 8 pp of GNI\* by the mid-point of this century). In terms of the impact on the public finances, simulations suggest that, in a hypothetical scenario in which there were no further policy responses, the fiscal costs associated with population ageing would add around 20 percentage points to the debt-to-GNI\* ratio by 2050. Beyond 2050, the fiscal position is expected to deteriorate significantly, with the debt-to-GNI\* ratio reaching 180 per cent by 2070 (**figure 6B**).<sup>17</sup>

This no-policy change scenario gives an illustration of the potential pressures facing the public finances. If structural changes, such as increasing the retirement age are postponed, this would effectively mean that the burden of footing the bill will fall on younger age cohorts, involving intergenerational inequality issues.

### **3.3 Summary**

The analysis set out in this section suggests that the public finances can absorb the impact of the pandemic and that, under the Department's baseline macroeconomic scenario, the debt-income ratio should soon revert to a downward trajectory.

However, this downward trajectory cannot be taken for granted, and several factors could jeopardise this. Perhaps the most significant near-term vulnerability relates to the overdependence of revenue on corporation tax receipts, with international reforms likely to reduce receipts in the years ahead.

Beyond the medium-term, the evidence is compelling that an ageing population will seriously erode the State's fiscal capacity. Failure to raise the retirement age – and to better align it with increases in life-expectancy – would involve a serious intergenerational inequality. The need to finance the transitions to a digital and green economy will also absorb significant fiscal resources.

Put simply, without structural changes, not all of these obligations can be met.

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<sup>17</sup> See *Population Ageing and the Public Finances in Ireland*. Available at: <https://www.gov.ie/en/publication/6ba73-population-ageing-and-the-public-finances-in-ireland/>

## Section 4: Irish debt developments in an international context

### 4.1 Introduction

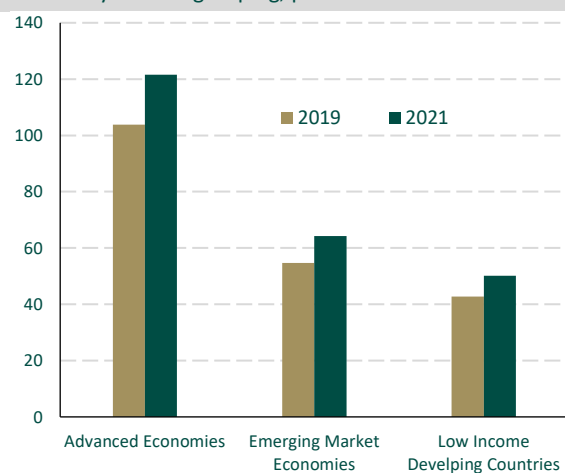
Ireland is, of course, not unique in the accumulation of public indebtedness over the last two years; the debt landscape has changed in the vast majority of advanced, middle- and low-income countries. Data from the International Monetary Fund (IMF) show that global public indebtedness reached 99 per cent in 2020, the highest in half a century, and remained elevated last year at 98 per cent.<sup>18</sup>

The situation is, however, markedly different across income groupings (**figure 7A**). In advanced economies, public debt reached 123 per cent of GDP in 2020 and an estimated 122 per cent last year. However, stronger institutional frameworks (including central bank independence) mean that, notwithstanding the elevated level, debt servicing capacity has not been undermined.

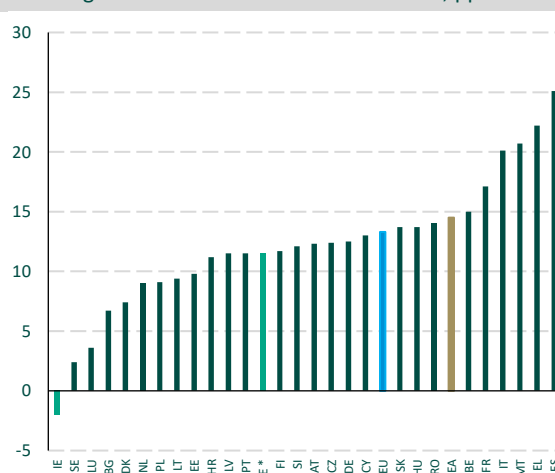
On the other hand, while debt-income ratios in middle- and low-income countries are lower than in advanced economies, many have not benefited from lower borrowing costs. Because of this, elevated levels of debt distress have become increasingly evident – c.60 per cent of low-income countries are now in, or at risk of, debt distress.<sup>19,20</sup>

**Figure 7: public debt**

A: debt by income grouping, per cent GDP



B: change in debt ratio in EU Member States, pp of GDP



Note: change from 2019 to 2021. Irish forecasts from *Budget 2022*.

IE\* = change in Irish debt-to-GNI\* ratio.

Source: European Commission autumn forecasts

Source: IMF Fiscal Monitor October 2021

<sup>18</sup> See *Fiscal Monitor*, IMF (October 2021), available at:

<https://www.imf.org/en/Publications/FM/Issues/2021/10/13/fiscal-monitor-october-2021>

<sup>19</sup> See IMF “*The G20 Common Framework for Debt Treatments Must Be Stepped Up*” available at:

<https://blogs.imf.org/2021/12/02/the-g20-common-framework-for-debt-treatments-must-be-stepped-up/>

<sup>20</sup> At the onset of the pandemic, and in recognition of the need to provide support to lower-income countries, the G20 and the Paris Club agreed a Debt Service Suspension Initiative (DSSI). This was essentially a liquidity tool, the objective of which was to allow low-income countries to temporarily suspend their debt service payments and, in doing so, generate additional fiscal room to support investment in health and social infrastructure to respond to the global pandemic.

## 4.2: Evolution of public debt – Ireland relative to other EU Member States

### 4.2.1: temporary suspension of the fiscal rules

In the European Union, the European Commission activated the *General Escape Clause* (GEC) of the *Stability and Growth Pact* (the ‘Pact’) in response to the pandemic in March 2020.<sup>21</sup> This suspended the regular fiscal requirements of the Pact and allowed Member States to take the necessary fiscal measures to effectively mitigate the pandemic-induced disruption without formal or legal impediments. In June 2021, the activation of the GEC was extended into 2022.

In October 2021, the European Commission published a Communication<sup>22</sup> which formally relaunched the review of the Union’s fiscal framework (which had previously opened in early-2020, but was subsequently paused due to the pandemic). The Commission has announced that its objective is to achieve a broad-based consensus on the way forward in time for 2023.

### 4.2.2: public debt developments in the EU during the pandemic

The review of Europe’s fiscal governance framework takes place against a backdrop where the pandemic has triggered a level shift in public indebtedness across all EU Member States over 2019-2021 (**figure 7B**). Only in Ireland is the debt-GDP ratio expected to fall over this period; this reflects *inter alia* the estimated 20 per cent nominal GDP growth rate recorded in 2021. Ireland’s debt-to-GNI\* ratio – the more appropriate metric – rose by an estimated 12 percentage points over the period; this increase is below the increase in both the euro area (15 pp) and EU (13 pp).

While the Irish debt-to-GDP ratio in 2021 is estimated to have been below the 60 per cent reference value set out in the Pact, the debt-GNI\* ratio is well above this threshold. Sixteen other Member States are estimated to have debt-income ratios in excess of 60 per cent of GDP: Greece, Italy, Portugal, Spain, France, Belgium, Cyprus, Austria, Croatia, Hungary, Slovenia, Germany, Finland, Slovakia, Malta, and the Netherlands. At 106 per cent of GNI\*, Ireland’s expected debt-to-income ratio last year ranks 8<sup>th</sup> highest amongst Member States (behind Greece, Italy, Portugal, Spain, Cyprus, France and Belgium).<sup>23</sup>

## 4.3 Public finance developments in the euro area during the pandemic

### 4.3.1: deficit and debt in euro area Member States

Key fiscal variables across euro area Member States in 2020 are set out below (**figure 8A**). Immediately before the pandemic, no Member State was in the corrective arm of the Pact. A year later, all euro area members were running deficits in excess of 3 per cent of GDP (GNI\* for Ireland). This situation largely prevailed once again last year, with only Luxembourg bringing its deficit below the Treaty reference value. Nevertheless, no excessive deficit procedure has been opened for any Member State, given the activation of the GEC.

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<sup>21</sup> See EU Commission communication, available at:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0123>

<sup>22</sup> See EU Commission communication, available at:

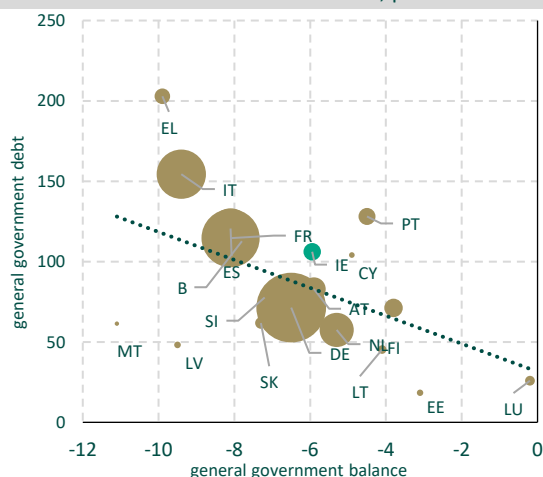
[https://ec.europa.eu/info/files/economic-governance-review-communication\\_en](https://ec.europa.eu/info/files/economic-governance-review-communication_en)

<sup>23</sup> In comparison with other Member States’ debt-to-GDP ratios.

The anticipated unwinding of Covid-related fiscal measures this year and next means that the debt-to-income ratio is expected to fall between 2021 and 2023 in around two-thirds of euro area Member States.<sup>24</sup> Nevertheless, Ireland is the only euro area Member State expected to have a debt-to-income ratio less than pre-crisis (2019) levels by 2023 (**figure 8B**).

**Figure 8: public finances in euro area Member States**

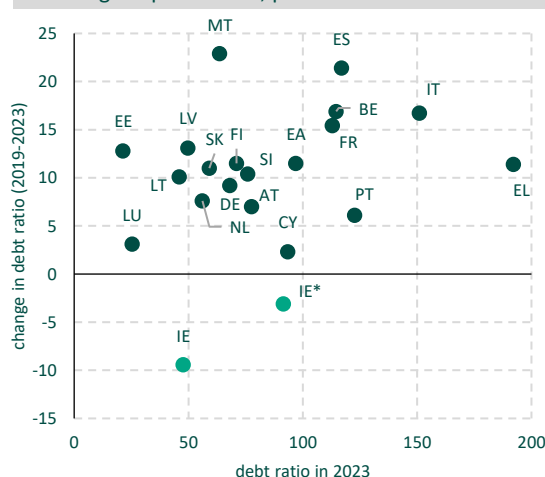
**A: deficit and debt in euro area in 2020, per cent of GDP**



Note: bubbles represent the size of GDP. Irish figures refer to GNI\*.

Source: Dept of Finance and European Commission

**B: change in public debt, per cent of GDP**



Note: Irish forecasts based on *Budget 2022* projections updated to reflect better than expected end-year fiscal position. IE\* = change in Irish debt-to-GNI\* ratio.

Source: Dept of Finance and European Commission.

### 4.3.2: structural features of public debt in euro area Member States

#### Effective interest rates

Unlike the euro area sovereign debt crisis a decade ago, re-denomination risk has not been a feature of the pandemic. Sovereign borrowing costs have remained exceptionally low across all euro area Member States during the pandemic, largely because euro area central banks have back-stopped debt issuance (**box 4**). This complementarity between fiscal and monetary policies has allowed all Member States to issue the public debt necessary to finance support for the private sector at exceptionally low cost.

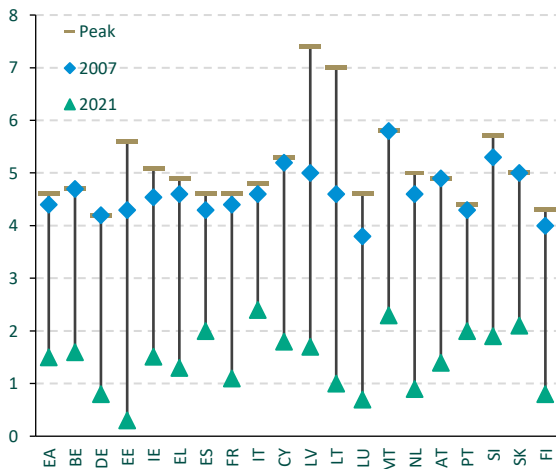
Issuing new debt and re-financing maturing debt at lower rates have resulted in a decline in the average – or effective – interest rate on all outstanding debt (**figure 9A**). For the euro area as a whole, the estimated effective interest rate was around 1½ per cent last year, 3 percentage points below its level a decade-and-a-half ago, i.e. pre-global financial crisis and subsequent sovereign debt crisis. The trend in Ireland mirrors that of the euro area average; the current effective interest rate is 1½ per cent, down from 4½ per cent a decade-and-a-half ago.

The decline in interest rates means that, once recovery sets in, the growth rate should exceed the effective interest rate in most euro area Member States (**figure 9B**), with a favourable read-across to debt dynamics. That said, the debt pile left in the wake of the pandemic means that some Member States may be vulnerable to changing market perceptions of risk once the euro area central banks retreat from sovereign debt markets.

<sup>24</sup> The debt-to-GDP ratio is expected to increase between 2021 and 2023 only in Belgium, Estonia, Latvia, Lithuania and Malta.

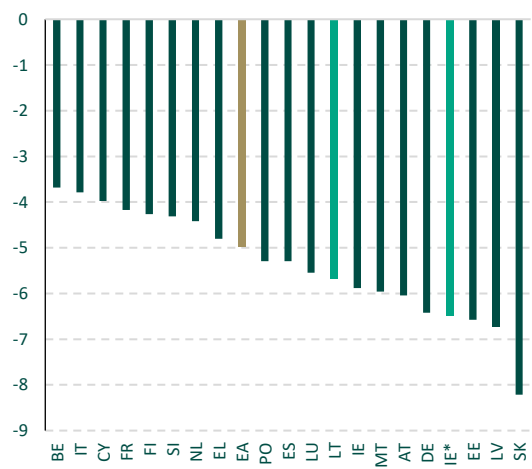
**Figure 9: interest rates for euro area sovereign borrowing**

A: effective interest rates in the euro area, per cent



Source: Dept of Finance calculations based on AMECO data.

B: r-g in the euro area 2022



Source: Dept of Finance calculations based on AMECO data

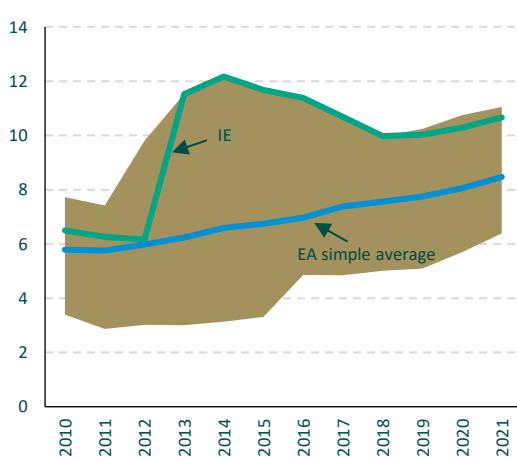
### Maturity profile

Almost all countries have taken advantage of the favourable financing environment to lengthen debt maturities (**figure 10A**). For the euro area as a whole, the average maturity is now around 8½ years, about 2 years longer than a decade ago. This longer duration reduces roll-over risk and is a key part of the debt management operations for all sovereigns. In Ireland, the average maturity of outstanding debt in Ireland is just under 11 years, a figure which is amongst the longest in the euro area; a decade ago, the figure was closer to 6 years.

These structural features – low effective interest rate and an extended maturity profile – help to mitigate (though not to negate) the fact that Irish debt per capita is amongst the highest in the euro area (**figure 10B**).

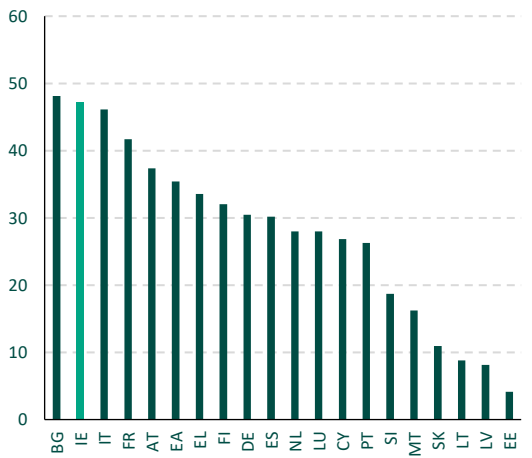
**Figure 10: other structural features of euro area debt**

A: maturity profile, years



Source: Dept of Finance calculations based on AMECO data.

B: debt per capita in euro area, € 000



Source: Dept of Finance calculations based on AMECO data.

#### **4.4 Summary**

The pandemic has changed the debt landscape across the euro area and wider European Union. While the stock of outstanding debt has increased – with no exceptions – the burden of servicing this debt has fallen, as central banks have expanded their balance sheets to allow governments provide the necessary fiscal support.

The deployment of central bank balances was always temporary, and linked to the pandemic. With the pandemic now beginning to lose its grip, central banks in most advanced economies are beginning the process – tapering – of stepping back from sovereign debt markets. The sharper-than-anticipated pick-up in consumer price inflation may even accelerate this process, and this will affect the cost at which sovereigns can borrow, including in Ireland.

In summary, the pandemic will leave higher public debt in its wake; while lower borrowing costs have softened the blow, the era of ultra-cheap money is coming to a close. From a fiscal perspective, this means that trade-offs will once again become a fact of life.

Finally, in lower income economies, signs of debt distress are increasingly evident and monetary policy tightening in advanced economies – especially in the US – could up-the-ante further.



## Box 2: a risk of fiscal dominance?

The nature and scale of the economic fall-out from the Covid-19 pandemic was completely different to normal fluctuations in the economic cycle. In response, the full macroeconomic policy toolkit was deployed – with fiscal, monetary and financial sector policies complementing each other over the past two years.

The unique nature of the economic shock has raised questions about the optimum policy response and, more specifically, potential risks to the macroeconomic policy mix that may arise in the aftermath of aggressive policy actions. One concern is that the inevitable interaction between fiscal and monetary policy setting during the pandemic may give rise to the well-known problem of *fiscal dominance*.<sup>^</sup>

Fiscal dominance arises when public indebtedness constrains the flexibility of monetary policy to address the usual targets focussed on by central banks: essentially high levels of public debt mean that a central bank may be constrained from tightening monetary policy in response to higher inflation for fear that this may jeopardise the sustainability of the sovereign's debt. In these circumstances, fiscal policy is said to dominate monetary policy.

Pre-pandemic (or possibly before the global financial crisis), it was widely accepted that, within the macroeconomic toolkit, monetary policy was the primary instrument to smooth the economic cycle (in the euro area but also in other jurisdictions, etc.). Within this framework, the main objective of fiscal policy was the allocation of resources within the economy and, from a purely stabilisation perspective, fiscal policy was of second order importance (operating ideally via the automatic stabilisers).

In the euro area, this orthodoxy was reflected in the architecture of monetary union, where monetary dominance was a core precept, enshrined in the statutory independence of the ECB. This independence is supported by the EU's fiscal governance framework, which includes the *Stability and Growth Pact*, intended to act as a further safeguard against the risk of fiscal dominance.

The heavy reliance on budgetary supports policy during the pandemic, however, has blurred the lines between monetary and fiscal policies in many jurisdictions. This was, however, unavoidable for a number of reasons.

Firstly, monetary policy has been constrained by a declining trend in 'equilibrium' (the natural) interest rates in recent decades (**box 3**). This has limited the room for manoeuvre of monetary policy, with short-term policy rates at, or close to, the effective lower bound (ELB) in the years leading up to the pandemic. The constraints for monetary policy at the ELB naturally raise the importance of fiscal policy within the overall policy mix, a development that is supported by a large literature showing that fiscal multipliers are higher at the ELB.<sup>^^</sup>

In addition, the increased reliance on fiscal policy reflects the asymmetric nature of the impact of public health measures on certain sectors of the economy – fiscal policy can be targeted to individual sectors whereas monetary policy cannot. This asymmetric impact of the pandemic is evident in Ireland; while large components of the traded sector remained relatively resilient during the pandemic (and some sectors even benefitted from the pandemic), significant swathes of the non-traded sector economy were close (or operating at reduced capacity). This was, of course, also the case for many southern European countries, where tourism-related sectors were severely impacted by travel restrictions.

Fiscal policy has the capacity to target the areas of the economy most affected by these measures. So the optimum strategy was for fiscal policy to provide targeted support to the economy, while monetary policy ensured that financing costs remained favourable.

With inflation now picking up in the euro area, market participants are now beginning to price-in a change in the monetary stance. This points to the importance of the second safeguard against fiscal dominance in the euro area, namely the fiscal governance framework. While the normal application of the EU's fiscal rules have been suspended until next year, the European Commission has recently re-launched the public debate on the review of the fiscal framework, with the aim of building consensus on the way forward 'well in time' for 2023.

<sup>^</sup> See <https://voxeu.org/article/tackling-inflation-if-it-reappears>

<sup>^^</sup> See <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200911~ea32bd8bb3.en.html>

<sup>^^^</sup> See, for instance, *Public Debt and Low Interest Rates*, Blanchard (2019) and *A Reconsideration of Fiscal policy in the Era of Low Interest Rates*, Furman and Summers (2020).

## Section 5: Burden of debt

### 5.1 Introduction

Across advanced economies, the debt landscape is fundamentally different to that a decade ago. Debt-income ratios are higher while debt servicing burdens are lower. As outlined previously, this largely reflects that lower borrowing costs have been one of the dominant features of the global economy in recent decades (box 3).

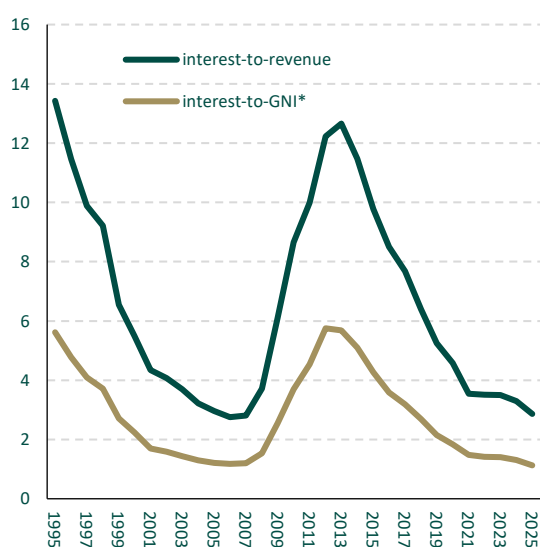
From a macro-fiscal perspective, there is now a greater awareness of some of the limitations of examining sustainability purely through the prism of the stock of public debt. This section builds upon the analysis set out in previous iterations of this report, and compares the burden of government debt in Ireland over time and with the rest of the EU, using a number of additional metrics that have become increasingly common in the economic literature.<sup>25</sup>

### 5.2 Comparing ‘flows with flows’

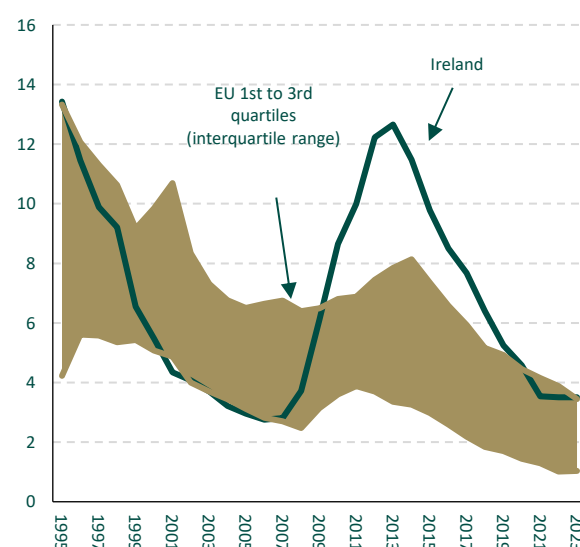
Traditional measures of the debt burden rely solely on relating the *stock* of debt to the *flow* of national income (GDP, or GNI\* in an Irish context). A major shortcoming of this approach is that *stock versus flow* comparisons doesn’t take into account the fact that interest rates have been on a steady downward trajectory in recent years.

**Figure 11: interest burden, per cent**

A: in Ireland



B: interest-to-revenue, relative to EU norms



Note: The EU ‘norm’ is defined here as observations in the second and third quartiles.

Source: Dept. of Finance calculations based on AMECO figures.

Source: CSO and Department of Finance calculations.

<sup>25</sup> See, for instance, *A Reconsideration of Fiscal Policy in the Era of Low Interest Rates*, Jason Furman and Lawrence Summers (2020), available at: <https://www.brookings.edu/wp-content/uploads/2020/11/furman-summers-fiscal-reconsideration-discussion-draft.pdf>

Attention has increasingly re-focused on *flow versus flow* comparisons which aim to address this short-coming. Examples of flow-flow comparisons include interest payments as a share of national income or as a share of total revenue.

In 2020, interest payments on general government debt amounted to €3.8 billion or 1.8 per cent of GNI\* (**figure 11A**), a figure that has been trending downwards in recent years, having peaked at nearly 6 per cent a decade ago. In 2020, interest costs in Ireland absorbed 4.6 per cent of government revenue (**figure 11B**),<sup>26</sup> a figure that fell to 3.5 per cent last year. To put this into perspective, debt service costs absorbed one-in-eight euros of revenue just a decade ago. In terms of cross-European comparisons, Ireland's debt burden was significantly ahead of the EU norm for most of the past decade. Last year, however, the debt servicing in Ireland moved within EU norms.

### 5.3 Alternative metrics

For completeness, this section presents two additional *stock vs flow* metrics that are sometimes used for assessing the debt burden.

The first is the debt-to-revenue ratio, a metric highlighted by some of the credit rating agencies when assessing debt sustainability (**figure 12A**).<sup>27</sup> Following the financial crisis, this ratio increased sharply, peaking at over 350 per cent of revenue in 2012. Thereafter, a steady improvement in revenue helped put the ratio on a downward path, falling to 232 per cent in 2019.

The pandemic and its associated health and economic impacts saw the ratio increase again, as the stock of debt increased and revenues fell. As a result, the debt-to-revenue ratio increased to 260 per cent in 2020. The metric is expected to improve over the forecast horizon- falling below the pre-pandemic level by 2025. However, this would remain above the EU average.

A second alternative for assessing the debt burden is the public debt to national pay bill ratio (**figure 12b**).<sup>28</sup> A key advantage of this metric is that the pay bill is not distorted by the multinational sector and, therefore, is a better indicator of underlying economic conditions and repayment capacity. In some ways, this metric is analogous to a loan-to-income ratio for a household.

This ratio peaked in Ireland in 2013 at 307 per cent. Since then, the ratio has been on a strong downward trajectory, mainly reflecting the recovery in employment, and reaching 203 per cent immediately pre-pandemic. This subsequently increased to 215 per cent in 2020. This is expected to be temporary, however, with the downward trajectory expected to resume from this year onwards. Such a trajectory would see the Irish ratio fall just below the euro

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<sup>26</sup> This refers to the gross interest cost on an accrual basis. The net interest cost, which takes into account the interest paid to the Central Bank from the exchequer, would be lower.

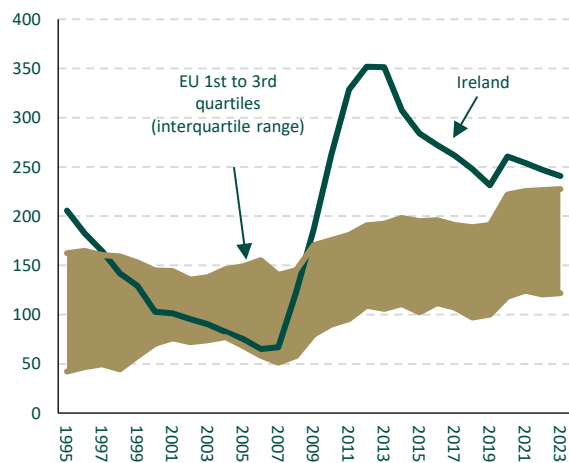
<sup>27</sup> See, for instance, Fitch (2021), available at: <https://www.fitchratings.com/research/sovereigns/irelands-economic-performance-puts-debt-gdp-on-downward-path-04-11-2021>

<sup>28</sup> Pay-bill refers to data on non-agriculture employee compensation from the National Income and Expenditure accounts.

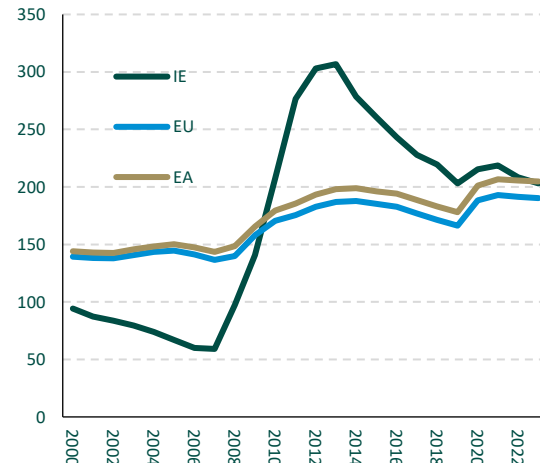
area average in 2023, having been nearly 110 percentage points higher just a decade previously.

**Figure 12: debt burden**

**A: debt-to-revenue ratio vs EU**



**B: debt-to-pay bill**



Note: The EU 'norm' is defined here as observations in the second and third quartiles.

Source: Dept of Finance calculations based on AMECO data.

Source: Dept of Finance calculations based on AMECO data.

### 5.4 Summary

Across a range of metrics, the burden of Irish public debt has improved in recent years and, after being among a small group of outliers a decade ago, the burden of debt is now in line with European norms. This would reinforce the assessment that, notwithstanding the accumulation of debt during the pandemic, the sustainability of public debt has improved.

That said, the various factors underpinning this improved position could easily move in the opposite direction. Most important is the evolution of sovereign borrowing costs, the direction of travel for which is clearly upwards. This highlights the importance of ensuring that budgetary policy is consistent with ensuring that the risk premium – that is the difference between Irish borrowing costs and those in, say, Germany – is minimised in the years ahead.

## Section 6: Structural aspects of Irish public debt

### 6.1 Introduction

The analysis in this section goes beyond the debt burden and highlights a number of key structural aspects of Irish public debt. These structural factors point to the Irish public finances being well positioned to absorb the increase in debt.

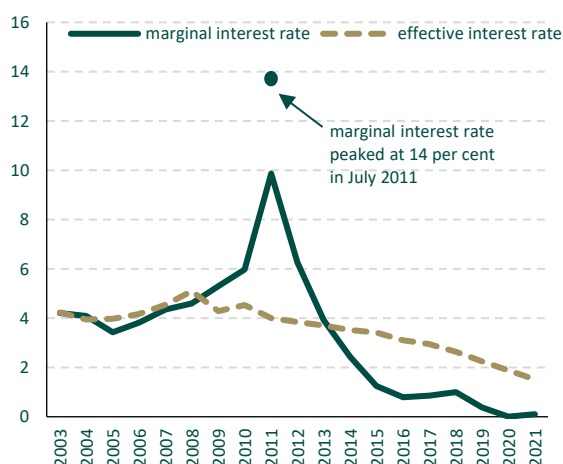
### 6.2 Interest rates

Moving beyond the absolute level of debt, a key determinant of the sustainability of public finances is borrowing costs. *Ceteris paribus*, a decline in interest rates enables a Government to absorb increased debt without threatening its repayment capacity.

Borrowing costs for the Irish sovereign have been on a continuous downward path over the last decade, following the significant increase in yields related to market fears over Ireland’s creditworthiness during 2008-2010 (and subsequent exclusion from private capital markets). This marked decline in borrowing costs reflects a combination of accommodative monetary policy (the monetary policy stance in the euro area)<sup>29</sup> and the dramatic reduction in the risk premium demanded by the market to purchase Irish sovereign debt instruments (the fiscal policy stance in Ireland).

**Figure 13: structural aspects of Irish debt**

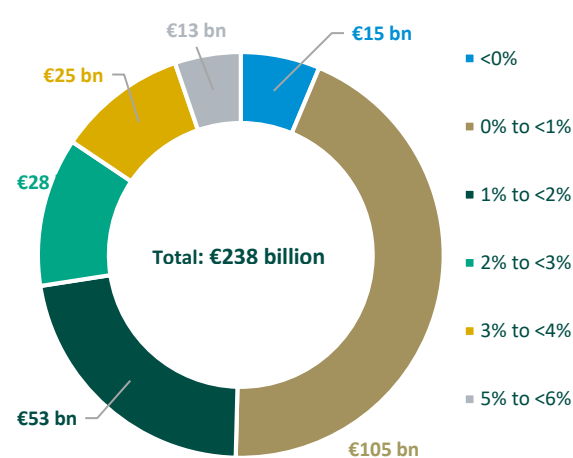
A: borrowing costs, marginal and effective per cent



Note: Marginal interest rate refers to annual average of yields on 10 year government benchmarks. Peak refers to daily peak.

Source: Macrobond and Department of Finance calculations.

B: debt by interest rate share, end-September 2021



Source: NTMA.

Importantly, Ireland’s debt management office – the National Treasury Management Agency (NTMA) – has taken advantage of the current low interest rate environment by issuing longer-dated debt at lower yields. This has resulted in a consistent downward trend in the average EIR (figure 13A). Nearly three-quarters of this debt is now at rates of 2 per cent or below (figure 13B) and, importantly, the vast majority of this debt is at fixed rates.

<sup>29</sup> In particular, the eurosystem’s so-called ‘quantitative easing’ (QE). Since 2012, the ECB has engaged in a range of non-standard monetary policy measures ranging from the outright monetary transactions (OMT) programme in 2012 to quantitative easing (QE) from March 2015 to December 2018, to the *Pandemic Emergency Purchase Programme* (PEPP) announced in March 2020.

### Box 3: equilibrium interest rates

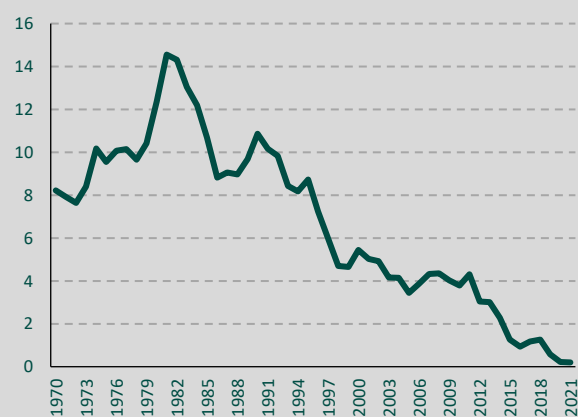
One of the most notable features of the global economy in recent decades has been the secular downward trend in global interest rates (figure 14A and 14B). In part, this is a reflection of lower inflation which, in turn, is a function of better institutional frameworks (central bank independence, for instance) and the various waves of globalisation that *inter alia* have outsourced heavy manufacturing to lower wage regions (and, hence, kept a lid on price pressures).

At the same time, the decline is also partly a function of the decline in the ‘natural’ or equilibrium interest rate.<sup>^</sup> The equilibrium interest rate is a theoretical concept (and, thus, an unobservable variable) that describes the interest rate that would balance demand and supply in the economy and, hence, would deliver output at capacity alongside price stability.

Many reasons have been put forward for this secular decline. These include slow-moving factors such as demographic change (with an ageing population in many regions boosting global savings and, hence, the supply of loanable funds) and slower productivity growth (reducing the return on capital and, hence, lowering the demand for funds). This interplay between the demand for, and supply of, loanable funds has, accordingly, led to a decline in the price (interest rate) of money that equilibrates demand and supply.

**Figure 14: interest rates in advanced economies**

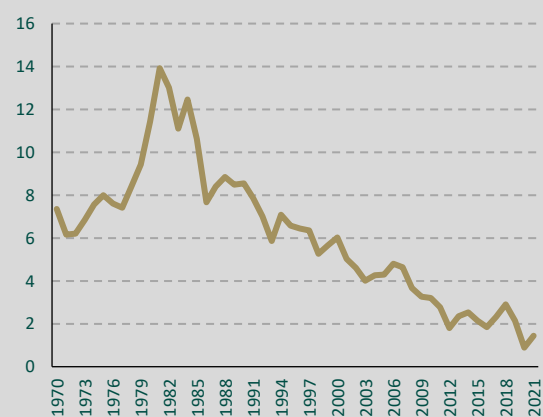
**A: 10-year interest rates in euro area, per cent**



Note: annual weighted average of yields on 10-year government bonds in euro area. Weighted based on outstanding amounts of government debt in each maturity bucket. Based on changing composition of euro area.

Source: Macrobond

**B: 10-year interest rates in US, per cent**



Note: annual average of yields on 10-year US government bonds.

Source: Macrobond

While this may appear somewhat theoretical, there are major policy implications that flow from this trend. Firstly, if the equilibrium rate is closer to zero, then the scope for monetary policy to stabilise demand in the economy is reduced – monetary policy has less room for manoeuvre. The corollary of this is that the importance of fiscal policy in cyclical stabilisation is enhanced – stabilising demand around the economy’s supply capacity in both good times and bad times.

A second implication relates to financial stability. If rates are structurally lower, then this is likely to trigger a ‘hunt-for-yield’ which, from a historical perspective, has sometimes been associated with excessive risk taking.

Going forward, it remains to be seen whether the pandemic could have a longer term impact on the equilibrium interest rate. If, for example, increased uncertainty and perceptions of risk were to lead to increase precautionary savings for a prolonged period of time or weigh on investment this might be expected to reduce long-term interest rates. Alternatively, a less efficient allocation of production and consumption (e.g. supply chain recalibrations) might argue for higher interest rates.

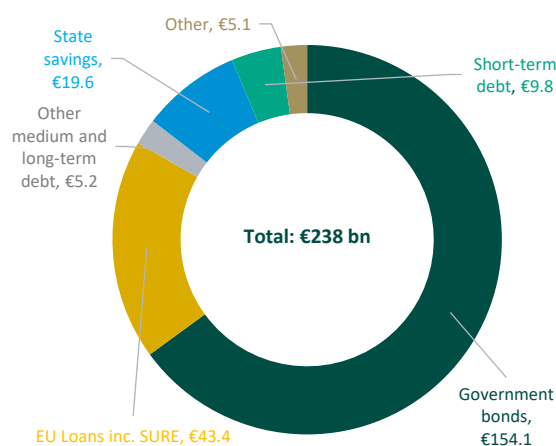
<sup>^</sup>See: [https://www.ecb.europa.eu/pub/economicbulletin/focus/2019/html/ecb.ebbox201902\\_06~0c96ee6f7c.en.html](https://www.ecb.europa.eu/pub/economicbulletin/focus/2019/html/ecb.ebbox201902_06~0c96ee6f7c.en.html)

### 6.3 Composition of debt and ownership structure

At end-September 2021, gross national debt amounted to €238 billion, up from €218 billion at end-2020 (**figure 15A**).<sup>30</sup> The majority of this increase in debt over this period took the form of government bonds (€152 billion at end-September 2021 versus €137 billion at end-December 2020). In addition, the Government drew-down approximately €2.5 billion from the European Commission’s SURE instrument in March last year.<sup>31</sup>

**Figure 15: additional structural aspects of Irish debt, € billions**

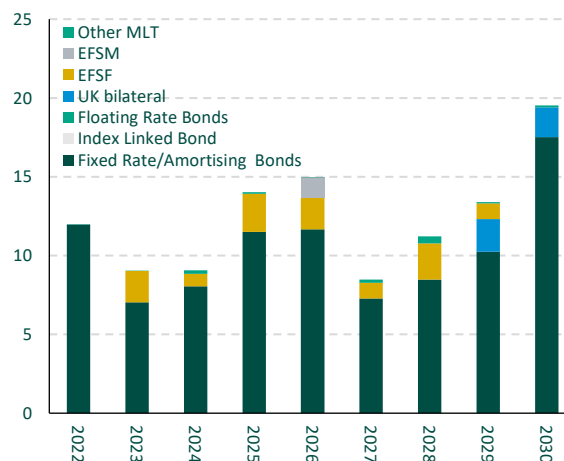
A: composition of Irish debt



Note: rounding can affect totals.

Source: NTMA.

B: maturity profile, € billion



Source: Central Bank of Ireland.

The bias towards medium- to long-term issuance by the NTMA has continued during the pandemic, helped by the *eurosystem’s* financial asset purchases (mainly, though not exclusively, government securities). The NTMA issued €24.6 billion of bonds in 2020, with a weighted average maturity of 11.5 years while, the NTMA issued €19.3 billion of bonds in 2021. This issuance was at a weighted average yield of under 0.2 per cent and a weighted average maturity of over 14 years.<sup>32</sup> Accordingly, the estimated weighted average maturity of the medium- to long-term debt portfolio was just under 11 years at end-2021. While no bonds matured in 2021, two bonds with a combined outstanding balance of €11.8 billion, are due to mature in 2022 (**figure 15B**).

Another important consideration is ownership structure of sovereign bonds and, in particular, the decomposition between resident and non-resident holders, with the former typically a more stable (or ‘stickier’) source of funding (**figure 16A**). As evident, the ownership of Irish Government debt is currently split more-or-less evenly between resident and non-resident holders; immediately pre-pandemic, around 60 per cent of Irish Government debt was held by non-residents. The *Central Bank of Ireland* and other credit institutions account for the bulk of domestic holdings – €71 billion at end-September 2021, an €11 billion increase from

<sup>30</sup> Up from the pre-pandemic level of €207 billion at end-2019.

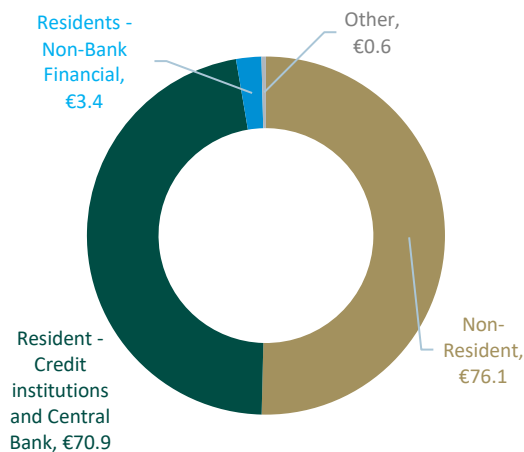
<sup>31</sup> European Commission’s Support to mitigate Unemployment Risks in an Emergency (SURE) instrument. The SURE instrument provides financial assistance by the European Commission to Member States in the form of loans up to €100 billion in total value.

<sup>32</sup> The issuance amounts include issuance in non-competitive bond auctions.

the same point in 2020. Approximately €3 billion is held by the non-bank financial sector, while the balance of less than €1 billion is held by other domestic entities.

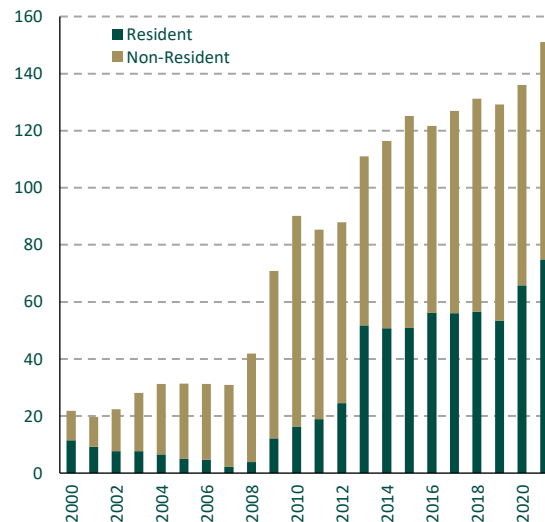
**Figure 16: additional structural aspects of Irish debt, € billions, end-September**

A: ownership structure of long-term government bonds



Source: NTMA.

B: ownership structure – over time



Source: Central Bank of Ireland.

One of the implications of the rise in the share of domestically-held debt is the potential for more insulation in the event of adverse shocks. This is because non-resident holders are often quicker to divest of bonds and, in doing so, raise refinancing costs (often in a pro-cyclical manner). Central banks are also likely to be more stable holders of debt, further reducing the risk of an abrupt divestment.<sup>33</sup>

#### 6.4 Credit ratings

Sovereign credit ratings for Ireland are summarised below (table 2). Irish ratings have remained robust over the course of the pandemic, receiving either AA or A ratings from all of the major agencies, reflecting strong underlying economic activity and improving public finances.

**Table 2: Irish sovereign credit ratings, February 2022**

	Long-term rating	Short-term rating	Outlook
Standard & Poor's	AA-	A-1+	Stable
Moody's	A2	P-1	Positive
Fitch Ratings	AA-	F1+	Stable
DBRS Morningstar	AA (low)	R-1 (middle)	Stable
R&I	AA-	A-1	Stable

Source: NTMA. As of February 21<sup>st</sup> 2022.

<sup>33</sup> <https://www.gov.ie/en/publication/d45694-annual-report-on-public-debt-in-ireland-2019/>



## 6.5 Summary

Joining the dots from the analysis set out in this section leads to a number of conclusions.

Firstly, despite the significant increase in indebtedness since the beginning of the pandemic, borrowing costs remain exceptionally low, with additional debt financed at rates close to zero. As a result, the average interest rate on the outstanding stock of debt continues to decline.

Secondly, active debt management operations by the NTMA has helped to extend the maturity profile of Irish government debt. Given that the vast bulk of Irish debt is at fixed rates, the probability of an interest rate shock having a significant near-term impact on debt sustainability is low.

Thirdly, the significant shift in the ownership of government debt in recent years – with around half of outstanding debt instruments now owned by domestic residents – provides some further insulation against the impact of an adverse shock.

Notwithstanding these positive structural features, it is also the case that once the exceptional monetary support is withdrawn, new debt issuance will be at higher rates. In addition, accumulated liabilities will need to be refinanced at higher rates.

## Box 4: pandemic emergency purchase programme – implications for borrowing costs

In many advanced economies, the balance sheets of central banks have become an increasingly important policy tool since the global financial crisis. The expansion of central bank balance sheets has been a key part of the macroeconomic response to the pandemic. The purpose of this box is to take stock of the balance sheet response in the euro area.

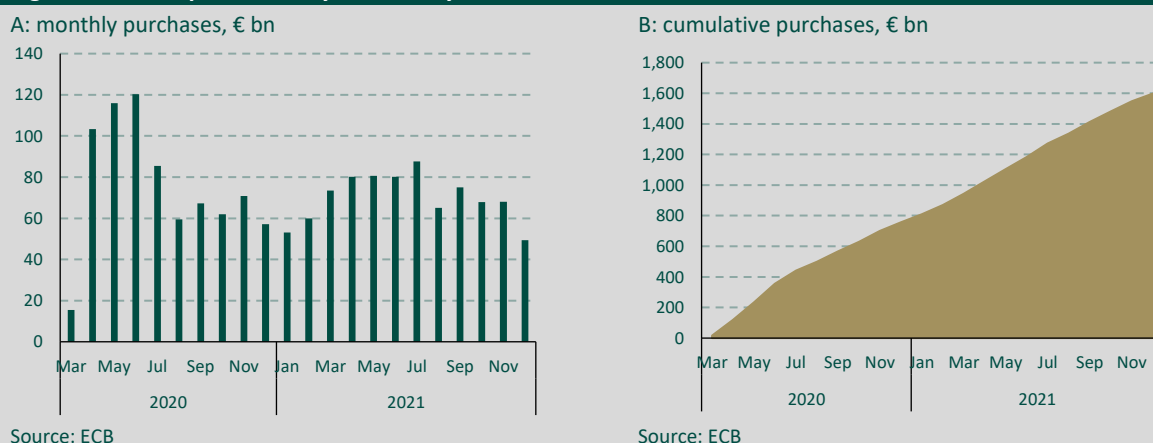
The *eurosystem* consists of the European Central Bank (ECB) and the National Central Banks (NCB) of the euro area. While monetary policy decisions are taken by the Governing Council of the ECB, much of the implementation falls to the NCBs.

The main (though not the only) monetary policy response to the coronavirus outbreak in the euro area was the launch of the *Pandemic Emergency Purchase Programme* (PEPP) on March 18 2020. The PEPP is an asset purchase programme whereby the *eurosystem* purchases financial assets (mainly sovereign debt instruments as well as some corporate debt). The objective of these purchases is two-fold: to offset the disinflationary impulse triggered by the pandemic and to ensure the smooth transmission of monetary policy across the entire euro area.

The PEPP was launched with an initial envelope of €750 billion. This was subsequently increased by €600 billion in June 2020 and a further €500 billion in December 2020, resulting in a total of €1.85 trillion.

Asset purchases under the PEPP began in March 2020, with exceptionally large purchases in subsequent months (€120 billion in June 2020 alone). The pace of asset acquisition subsequently eased to a monthly average of around €60 billion per month (figure 17A) so that, by end-2020, a total of just under €760 billion of net financial assets had been acquired (figure 17B). Additional net purchases averaging €70 billion a month in 2021, saw the cumulative total of net purchases under the programme reach €1.6 trillion by the end of last year.

**Figure 17: asset purchases by the eurosystem under PEPP**



Attention is now turning to the exit from the PEPP. At its December meeting, the Governing Council announced ‘that the progress on economic recovery and towards its medium-term inflation target permits a step-by-step reduction in the pace of its asset purchases over the coming quarters’.<sup>^</sup> In addition, it was announced that net asset purchases under the PEPP would cease at the end of March 2022.

In conjunction with the tapering and ending of the PEPP, the Governing Council announced a step-up in the pace of asset purchases under other programmes (the asset purchasing programme (APP) which pre-dated the pandemic). Monthly net purchases of €40 billion in the second quarter and €30 billion in the third quarter are envisaged. After that, the ECB committed to maintaining monthly net asset purchases of €20 billion under the APP for ‘as long as necessary to reinforce the accommodative impact of its policy rates’. At the same meeting in December, the ECB Governing Council communicated their expectation that net purchases will end shortly before rate rises commence.

In this manner, and implemented largely by the *Central Bank of Ireland*, sovereign borrowing costs in Ireland have been exceptionally low during the pandemic. However, as the *eurosystem* begins to step back from asset purchases in the coming months, a major source of demand for Irish government bonds is set to decline. Ceteris paribus this would trigger a fall in the price of bonds and, accordingly, an increase in borrowing costs.

<sup>^</sup> see account of the monetary policy meeting of the Governing Council of the European Central Bank, 15-16 December 2021.

## Section 7: Conclusion

Like elsewhere, the Covid-19 pandemic had a significant impact on the Irish economy – with both supply-side (shutting down large parts of the economy) and demand-side (mobility restrictions) dimensions. The *quid pro quo* for these necessary public health restrictions was a forceful and timely deployment of the public sector’s balance sheet to support household incomes and firm revenues.

Allowing public debt to increase in this manner was undoubtedly the optimum strategy for minimising the economic disruption caused by the pandemic and, furthermore, illustrates the benefits of counter-cyclical budgetary policy.

Counter-cyclical budgetary policy works in both directions; with the economy now rebounding strongly, it is necessary to better align public revenue and expenditure and to put the debt-income ratio on a downward path.

A higher level of public debt is one of the main economic legacies of the pandemic, and history shows that highly indebted countries are vulnerable to sudden shifts in market perceptions of risk. While the analysis set out in this document shows that the economy can absorb this higher level of debt, this is conditional upon no further additions to the debt pile and the assumption that the debt-income ratio is put on a downward trajectory.

A larger fiscal footprint of central banks in the euro area (and other advanced economies) is another legacy of the pandemic. Central bank balance sheets have expanded significantly in all major economies, and unwinding these asset purchases will be a long, drawn-out process. While this has reduced sovereign borrowing costs, the stronger-than-projected inflation in most economies in recent months has prompted an accelerated exit from the extraordinary monetary policies of the past two years. Sovereign borrowing costs are rising and this means that fiscal trade-offs will, once again, become evident.

Structural fiscal headwinds in the coming years will involve major challenges. Population ageing will involve very large increases in public expenditure while, at the same time, weighing on tax revenue growth. Reform of the international corporation tax regime is lurking in the shadows and has the potential to destabilise the public finances in Ireland. The need to finance climate change mitigation and the transition to a digital economy will also weigh on the public finances in the years ahead.

The window of opportunity for addressing these challenges is closing and the evidence is compelling that, without structural reforms, the State is unlikely to have the fiscal capacity to meet all of these challenges.



**Tithe an Rialtas, Sráid Mhuirfean Uacht,  
Baile Átha Cliath 2, D02 R583, Éire**  
Government Buildings, Upper Merrion Street,  
Dublin 2, D02 R583, Ireland

T:+353 1 676 7571  
@IRLDeptFinance  
[www.gov.ie/finance](http://www.gov.ie/finance)