Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem

Quarterly Bulletin

QB2 – June 2024

Contents

Back to "Contents"

Notes

1.   The permission of the Government has been obtained for the use in this Bulletin of certain material compiled by the Central Statistics Office and Government Departments. The Bulletin also contains material which has been made available by the courtesy of licensed banks and other financial institutions.

2.   Unless otherwise stated, statistics refer to the State, i.e., Ireland exclusive of Northern Ireland.

3.   In some cases, owing to the rounding of figures, components do not add to the totals shown.

4.   The method of seasonal adjustment used in the Bank is that of the US Bureau of the Census X-11 variant.

5.   Annual rates of change are annual extrapolations of specific period-to-period percentage changes.

6.   The following symbols are used:

    e   **estimated**
    n.a.   **not available**
    p   **provisional**
    . .   **no figure to be expected**
    r   **revised**
    –   **nil or negligible**
    q   **quarter**
    f   **forecast**

7.   Data on euro exchange rates are available on our website at www.centralbank.ie and by telephone at +353 (0)1 224 5800.

Enquiries relating to this Bulletin should be addressed to:
Banc Ceannais na hÉireann
Bosca PO 559, Baile Átha Cliath 1, Éire

Central Bank of Ireland,
PO Box 559, Dublin 1, Ireland

Phone +353 (0)1 224 5800 Fax +353 (0)1 224 5550
www.centralbank.ie Email: enquiries@centralbank.ie

Comment

A benign international backdrop, from which Ireland may disproportionately benefit, and broadly favourable domestic conditions are expected to support moderate growth in the Irish economy out to 2026. Global influences on Irish inflation have eased. While domestic price pressures are high, central projections are consistent with inflation returning to sustainable levels. As economic activity is expected to be broadly in-line with its medium-term potential, policy attention needs to more firmly turn to bolstering that potential by addressing capacity constraints and reducing structural vulnerabilities in the economy and public finances.

Rising real incomes for Irish households, an uptick in residential construction, a normalisation of activity in MNE-dominated sectors and a gradual increase in world demand underpin the central expectation for domestic (MDD) and headline (GDP) economic growth in this *Bulletin*. Given the strong links between the Irish and US economies, the stronger outlook for the US is broadly positive for the Irish economy, irrespective of any implication US growth may have for the US interest rate path relative to that of the euro area (Box C).

However, risks to the overall growth outlook are judged to be to the downside, and there is uncertainty around the projections in a number of key areas.

On the external side, there is the possibility of an escalation in geopolitical tensions with a possible impact on supply chains. Uncertainty around global oil supply is a salient risk factor to both the Irish growth and inflation outlook (Box E). On the domestic side, the outlook for consumer spending is sensitive to potential changes in household savings behaviour, as the realised pick-up in consumption appears weak relative to the rise in incomes.

The outlook for residential construction is an important element for the MDD forecast. While there have been welcome increases in the numbers of housing units completed in recent years, looking ahead the uncertainty around the timing and scale of further increases is relatively high. This has arisen given the implications of pandemic-related delays, rising input costs and supply

constraints challenging viability, and in part the operation of policy initiatives, such as the changing deadlines for the waiver of development levies and water connection fees. Combined these have have contributed to a more uncertain lag from planning permissions to commencements to when housing units are finally completed (Box D). The recent report of the Housing Commission highlights a number of challenges to the delivery of housing, especially as needs according to the Commission may well exceed 50,000 units per annum. Despite the extension of the waivers complicating the near-term forecast for housing supply, it is timely to consider whether such charges are the most effective means of land value capture and for providing funding for necessary infrastructure to support housing delivery, as recommended by the Housing Commission.[1]

Labour market conditions are stabilising as the gap between supply and demand narrows. With the unemployment rate anticipated to remain low, forecast growth in wage rates averaging 4.9 per cent out to 2026 is consistent with domestic price pressures normalising, albeit at levels higher than prior to the pandemic. This outlook is predicated on profit margins and productivity growth absorbing higher labour costs. If such a scenario does not materialise then inflation would likely be higher than in the current central forecast. This is particularly relevant for service price inflation, which is expected to remain above 3 per cent through most of the forecast horizon. Energy, food and non-energy industrial goods prices, which are determined more by global market conditions, are projected either to rise at a much more moderate pace or to decline. As a result both headline and core measures of HICP inflation in Ireland are likely to ease toward and hover around 2 per cent this year and next. The recent experience of analysing and forecasting Irish inflation in the Central Bank, outlining some of the key challenges, advances made and the potential avenues for further work are discussed in detail in a *Signed Article* accompanying this *Bulletin*.[2]

The anticipated path for inflation in Ireland broadly corresponds with that for the euro area as a whole. At its meeting of 6 June, the Governing Council of the ECB decided to reduce the level of restriction by lowering the key monetary policy rates by 25 basis points. This was informed by the euro area inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission. In order to ensure that euro area inflation sustainably returns to the 2 per cent medium-term target in a timely manner, the

---

[1] Recommendations #16 and #17 in the Report of the Housing Commission, May 2024.
[2] Signed Article is available here.

Governing Council will keep policy rates sufficiently restrictive, with future decisions following a data-dependent and meeting-by-meeting approach.

The Irish economy has rebounded well from the economic effects of the pandemic and Russia's invasion of Ukraine. Domestic policy has played its part in this. The tax-and-transfer system has helped real disposable incomes across the entire household income distribution to be back above pre-pandemic levels this year. This has coincided with an overall expansionary fiscal stance. However, given overall economic conditions at present it would not be appropriate to continue with an expansionary fiscal stance over the period 2024-2026. As illustrated in a *Signed Article* accompanying this *Bulletin*, a continuation of government expenditure net of discretionary changes in tax growing at a pace similar to recent years would significantly contribute to overheating risks.[3] Such a scenario would lead to higher inflation, damaging Ireland's competitiveness and long-term prospects for growth in living standards.

At the same time siginificant structural vulnerabilities are present in the public finances. These have the potential to restrict countercyclical fiscal policy to support the economy in the future without a significant rise in government debt. Most notable of these is the concentration risk surrounding corporation tax receipts, with 10 large multi-national firms accounting for 52 per cent of these receipts in 2023, and 10 per cent of total government revenues last year. This leaves the public finances vulnerable to firm- or sector-specific shocks, while also presenting significant uncertainty as to the eventual effect of reforms to the global framework for corporation tax being concluded through the OECD BEPS process. Both the Irish Fiscal Advisory Council[4] and the Parliamentary Budget Office[5] have noted other dimensions of concentration in the tax base by income decile and even on the basis of certain products. Other challenges arise through the additional demands on the public finances that are emerging as the population ages.

The planned creation of the Future Ireland Fund (FIF) and the Infrastructure, Climate and Nature Fund (ICNF) with the use of excess corporation tax receipts is welcome in this respect. However, they should not be seen as a solution for the challenges and opportunities arising from the demographic and

---

[3] https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/quarterly-bulletin-signed-articles/fiscal-priorities-for-short-and-medium-term.pdf

[4] https://www.fiscalcouncil.ie/understanding-irelands-top-corporation-taxpayers/.

[5] https://data.oireachtas.ie/ie/oireachtas/parliamentaryBudgetOffice/2024/2024-05-24_spring-commentary-2024_en.pdf.

climate transitions, nor the critical housing and related infrastructure gap that exists. The ultimate size of the funds is uncertain, given the relatively higher uncertainty around the path for GDP, and relatedly corporation tax receipts. In addition, based on estimates from the Department of Finance, the extra age-related demands on the public finances expected from 2035 are larger than the estimated future drawdowns from the FIF.[6]

A significant part of achieving an appropriate fiscal strategy is establishing a credible anchor for the conduct of fiscal policy through the cycle. Recent reforms to the EU economic governance framework achieve this only partially in the Irish case. While the setting and oversight of new medium-term fiscal structural plans is welcome, it remains necessary for an appropriate national fiscal rule to complement the provisions of the Stability & Growth Pact. The Government established such a rule in 2021, whereby increases in Exchequer spending would not exceed 5 per cent each year without countervailing new tax measures. Limiting net expenditure growth to the nominal trend growth rate of the economy, which at the time of establishing the rule was estimated at 5 per cent by the Department of Finance, has the potential to be an appropriate and credible anchor for fiscal policy. However, a number of items need to be considered for this to be achieved. Firstly, the rule should be complied with. Estimates by both the Irish Fiscal Advisory Council[7] and in Conefrey *et al* (2024) show that net expenditure growth has exceeded 5 per cent in 2022 and 2023, is envisaged to do so again in 2024 and is at risk of continuing to do so out to 2026. Secondly, the justification for 'temporary' or 'non-core' expenditure items to be excluded from the rule is increasingly difficult to maintain as the extarordinary economic shocks from the pandemic and the Russia-Ukraine war pass and certain related expenditures have become de facto permanent. Accordingly, in order for the net spending rule to achieve its aim of promoting an appropriate fiscal stance and more resilient public finances, all expenditure should be included. Thirdly, and in the same vein, the rule should be expanded to cover expenditure on a General Government basis, not just on an Exchequer basis.

The Department of Finance predicts a possible decline in long-term economic growth potential to below 3 per cent per year in the next decade, mainly due to a shrinking workforce and lower productivity.[8] This projection implies that

---

[6] Department of Finance (2023) *Future-proofing the public finances – the next steps*.
[7] https://www.fiscalcouncil.ie/2024/06/fiscal-assessment-report-june-2024/.
[8] Department of Finance (2023) *Horizon Scanning – calibrating medium to long-term economic projections*. This analysis broadly corresponds with forthcoming work by Central Bank Staff

even maintaining net government spending growth as high as 5 per cent could result in trend inflation in Ireland exceeding 2 per cent in the medium-to-long term. To prevent this unwelcome scenario, efforts should be focused now on increasing efficient investment in physical and human capital to boost the economy's real potential growth rate.

In that regard, sustainably addressing infrastructure constraints in housing, water, energy and transport should be priorities over the medium-term. Public capital investment alongside structural reforms and initiatives to enhance its efficiency and enable complementary private capital investment needs to play a significant role. Model-based analysis in Conefrey et al. shows how longer delays in planning and delivery of public infrastructure materially reduce the benefit of such expenditure. This includes a persistently lower level of private investment than would otherwise take place, that is either crowded-out or not enabled to happen.

One of the more significant areas where concerted investment efforts are needed is the decarbonisation of the economy if Ireland is to meet the target of a 51 per cent reduction in greenhouse gas emmisions relative to 2018 by 2030. With current projections from the Environmental Protection Agency signalling a significant undershoot in meeting this target[9], estimates in Conefrey *et al.* point to an additional annual investment need of around 2 per cent of GNI*, or €54.5 bn in total by 2050 to achieve it, just under 30 per cent of which could be public investment. Over the period to 2027, this would constitute an increase of 15.7 per cent in public capital expenditure over and above what is currently envisaged in the *Stability Programme Update 2024*. With the economy already operating at or around its medium-term potential, it would be appropriate for fiscal and wider public policy to actively create the necessary economic capacity to facilitate the rise in investment to meet climate targets, housing and other infrastructural needs over the rest of the decade. This is necessary to avoid running the risk of overheating and excessive inflationary pressures. As a consequence, within the boundaries of the sustainable net 5 per cent rule for growth in public expenditure, growth in public capital expenditure should be prioritised.

Addressing structural vulnerabilities, maintaining an appropriate fiscal stance and sustainably delivering on the necessary rise in public capital investment in the coming years has to be achieved alongside choices on current spending to

---

(Conefrey, T., D. Staunton and G. Walsh *Estimating potential output and the output gap for Ireland (mimeo)*).

[9] EPA (2024).

maintain or alter existing levels of public services. Given increasing demands on, and relative priorities for the public finances, measures to broaden the tax base and increase government revenue as a share of national income are increasingly unavoidable.

An Timpeallacht Gheilleagrach

Meastar go dtacóidh an timpeallacht idirnáisiúnta fhabhrach, a mbaineann Éire tairbhe díréireach aisti, agus dálaí intíre atá fabhrach tríd is tríd, le fás measartha ar gheilleagar na hÉireann as seo go dtí 2026. Tá tionchair dhomhanda ar bhoilsciú na hÉireann maolaithe anois. Cé go bhfuil brúnna ar phraghsanna intíre ard, meastar sna réamh-mheastacháin lárnacha go bhfillfidh boilsciú ar leibhéil inbhuanaithe. Ó tharla go meastar go mbeidh gníomhaíocht eacnamaíoch ag teacht, tríd is tríd, lena cumas meántéarmach, ní mór aird beartais a dhíriú níos mó ar an gcumas sin a neartú trí aghaidh a thabhairt ar shrianta acmhainneachta agus trí leochaileachtaí struchtúracha sa gheilleagar agus san airgeadas poiblí a laghdú.

Tá fíorioncaim mhéadaitheacha do theaghlaigh na hÉireann, borradh faoi fhoirgníocht chónaithe, normalú ar ghníomhaíocht in earnálacha ina mbíonn Fiontair Ilnáisiúnta i réim agus méadú de réir a chéile ar an éileamh domhanda mar bhonn taca faoin bpríomhionchas d'fhás intíre (MDD) agus d'fhás eacnamaíoch príomha (OTI) san *Fhaisnéis Ráithiúil* seo. Ó tharla go bhfuil naisc láidre idir geilleagar na hÉireann agus geilleagar SA, is díol fabhrach do gheilleagar na hÉireann é an t-ionchas níos fearr do SA, beag beann ar aon impleachtaí a bheidh ag fás SA do chonair na rátaí úis i SA i gcoibhneas leis an gcéanna sa limistéar euro (Bosca C).

Ar a shon sin, meastar gur rioscaí ar an taobh thíos iad na rioscaí don ionchas maidir le fás foriomlán agus tá éiginnteacht ann maidir leis na réamh-mheastacháin i bpríomhréimsí áirithe.

Ar an taobh seachtrach, tá an fhéidearthacht ann go ngéaróidh an teannas geopholaitiúil agus go mbeidh iarmhairt aige sin ar shlabhraí soláthair. Tá an éiginnteacht a bhaineann le soláthar domhanda ola ina riosca suntasach d'ionchas fáis agus boilscithe na hÉireann (Bosca E). Ar an taobh intíre, tá an t-ionchas maidir le caiteachas tomhaltóirí íogair d'athruithe féideartha ar iompar coigiltis na dteaghlach ó tharla gur cosúil go bhfuil an méadú réadaithe ar thomhaltas lag i gcoibhneas leis an méadú ar ioncaim.

Is gné thábhachtach de réamhaisnéis MDD é an t-ionchas maidir le foirgníocht chónaithe. Cé go raibh méaduithe ar líon na n-aonad tithíochta a tógadh le blianta beaga anuas, tá éiginnteacht sách mór ann maidir le huainiú agus scála aon mhéaduithe breise a bheidh orthu amach anseo. Tá sé seo amhlaidh mar gheall ar impleachtaí moilleanna a bhain leis an bpaindéim, costas méadaitheach ionchuir agus srianta soláthair a chuireann isteach ar inmharthanacht agus, go páirteach, mar gheall ar oibriú tionscnamh beartais, amhail spriocdhátaí athraitheacha maidir le tarscaoileadh tobhach forbartha agus táillí nasc uisce. I dteannta a chéile, cuireann siad seo le hagaí níos éiginntí idir an t-am a ndeonaítear ceadanna pleanála, go dtí go gcuirtear tús leis an tógáil agus go gcríochnaítear na haonaid tithíochta (Bosca D). Sa tuarascáil is déanaí ón gCoimisiún Tithíochta, tarraingítear aird ar roinnt de na dúshláin a bhaineann le seachadadh tithíochta, go háirithe toisc gur dóigh leis an gCoimisiún go bhféadfaidh go mbeidh gá le breis agus 50,000 aonad in aghaidh na bliana. D'ainneoinn tarscaoileadh a leathnú, rud a dhéanann an réamhaisnéis ghearrthéarmach maidir le soláthar tithíochta níos casta, is tráthúil a mheas an iad na táillí sin an bealach is éifeachtaí chun luach talún a léiriú agus chun maoiniú a sholáthar don bhonneagar riachtanach chun tacú le seachadadh tithíochta, mar atá molta ag an gCoimisiún Tithíochta.[10]

Tá dálaí sa mhargadh saothair ag cobhsú de réir mar a laghdaíonn an bhearna idir soláthar agus éileamh. I bhfianaise go meastar go bhfanfaidh an ráta dífhostaíochta íseal, tá an réamhaisnéis go mbeidh fás ar rátaí pánna comhionann le 4.9 faoin gcéad ar an meán suas go dtí 2026 i gcomhréir le normalú na mbrúnna praghsanna intíre, cé go mbeidh na leibhéil sin níos airde ná mar a bhí ann roimh an bpaindéim. Tá an t-ionchas seo ag brath ar iompar costas saothair níos airde ag corrlaigh bhrabúis agus fás táirgiúlachta. Mura dtarlaíonn sé sin, is dócha go mbeadh boilsciú níos airde ná mar atá sa réamhaisnéis reatha lárnach. Tá sé seo tábhachtach go háirithe i ndáil le boilsciú praghsanna, a meastar go bhfanfaidh sé os cionn 3 faoin gcéad thar an gcuid is mó de thréimhse na réamhaisnéise. Maidir le praghsanna fuinnimh, bia agus earraí tionsclaíocha neamhfhuinnimh, a bhíonn á gcinneadh ag dálaí margaidh domhanda, réamh-mheastar go méadóidh siad ar luas níos measartha nó go laghdóidh siad. Dá thairbhe sin, is dócha go maolóidh tomhais phríomha agus lárnacha ar bhoilsciú ICPT in Éirinn i dtreo 2 faoin gcéad agus go bhfanfaidh siad thart ar an leibhéal sin i mbliana agus an bhliain seo chugainn. In Airteagal Sínithe a ghabhann leis an bh*Faisnéis Ráithiúil* seo, pléitear go mion an taithí a bhí ag an mBanc Ceannais le déanaí ar anailís agus ar réamhaisnéis a

---

Moltaí #16 agus #17 sa Tuarascáil ón gCoimisiún Tithíochta, Bealtaine 2024.

dhéanamh ar bhoilsciú na hÉireann, agus leagtar amach roinnt de na príomhdhúshláin, mar aon leis an dul chun cinn atá déanta agus na réimsí féideartha ina bhféadfá tuilleadh oibre a dhéanamh.[11]

Tá conair réamh-mheasta an bhoilscithe in Éirinn ag teacht tríd is tríd leis an gcéanna don limistéar euro ina iomláine. Ag a cruinniú ar an 6 Meitheamh, chinn Comhairle Rialaithe BCE go laghdófaí leibhéal an tsrianta trí na heochair-rátaí beartais airgeadaíochta a ísliú faoi 25 bhonnphointe. Bhí an t-ionchas maidir le boilsciú an limistéir euro, dinimic an bhoilscithe bhunúsaigh agus neart an tarchurtha beartais airgeadaíochta mar bhonn eolais faoi seo. Chun a chinntiú go bhfillfidh boilsciú sa limistéar euro ar sprioc mheántéarmach 2 faoin gcéad ar mhodh tráthúil agus ar mhodh inmharthana, cinnteoidh an Chomhairle Rialaithe go mbeidh rátaí beartais sách srianta, agus go mbeidh aon chinntí a ghlacfar amach anseo bunaithe ar chur chuige a bheidh ag brath ar shonraí ar bhonn cruinniú-ar-chruinniú.

Tá geilleagar na hÉireann tagtha chuige féin arís i ndiaidh éifeachtaí eacnamaíocha na paindéime agus ionradh na Rúise ar an Úcráin. Bhí ról ag an mbeartas intíre sa mhéid seo. I mbliana, chuidigh an córas cánach agus aistrithe le fíorioncaim indiúscartha ar fud leithdháileadh iomlán ioncam na dteaghlach a thabhairt ar ais os cionn na leibhéal a bhí ann roimh an bpaindéim. Tharla sé seo i gcomhthráth le staid fhoriomlán fhorleathnaitheach fhioscach. Ar a shon sin, ní bheadh sé oiriúnach, i bhfianaise dálaí foriomlána eacnamaíocha faoi láthair, leanúint de staid fhorleathnaitheach fhioscach thar an tréimhse 2024-2026. Mar a léirítear in *Airteagal Sínithe* a ghabhann leis an bh*Faisnéis Ráithiúil* seo, chuirfí go mór le rioscaí an róthéimh dá leanfadh caiteachas rialtais, glan ar athruithe neamh-lánroghnacha ar cháin, de bheith ag méadú ar luas ar aon dul leis an luas a bhí ann le blianta beaga anuas. Bheadh boilsciú ní b'airde sa chás sin, rud a dhéanfadh damáiste d'iomaíochas na hÉireann agus d'ionchais fhadtéarmacha maidir le fás ar chaighdeáin mhaireachtála.

Ag an am céanna, tá leochaileachtaí suntasacha struchtúracha san airgeadas poiblí. Féadfaidh siad seo srian a chur le beartas fioscach fritimthriallach tacú leis an ngeilleagar amach anseo gan mhéadú suntasach ar fhiachas rialtais. An leochaileacht is suntasaí is ea an riosca comhchruinnithe a bhaineann le fáltais ó cháin chorparáide, sa mhéid gur bhain 52 faoin gcéad de na fáltais sin a fuarthas in 2023 le 10 ngnólacht ilnáisiúnta mhóra, agus bhain 10 faoin gcéad d'ioncam iomlán rialtais leo anuraidh. Fágann sé sin go bhfuil an t-airgeadas

---

[11] https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/quarterly-bulletin-signed-articles/fiscal-priorities-for-short-and-medium-term.pdf

poiblí leochaileach do thurraingí atá sonrach do ghnólachtaí nó d'earnálacha ar leith, agus go bhfuil éiginnteacht shuntasach ann maidir le héifeacht na n-athchóirithe ar an gcreat domhanda maidir le cáin chorparáide a dhéanamh trí phróiseas BEPS ECFE. Tá gnéithe eile de chomhchruinniú an chomhbhoinn cánach de réir deicíl ioncaim, agus fiú ar bhonn táirgí áirithe eile, tugtha faoi deara ag Comhairle Chomhairleach Bhuiséadach na hÉireann[12] agus ag an Oifig Buiséid Pharlaiminteach[13]. Eascraíonn dúshláin eile as éilimh bhreise ar an airgeadas poiblí, ar éilimh iad a thagann chun cinn de réir mar a bhíonn an daonra ag dul in aois.

Sa chomhthéacs seo, fáiltítear roimh bhunú beartaithe an Chiste do Thodhchaí na hÉireann (FIF) agus an Chiste Bonneagair, Aeráide agus Nádúir (ICNF), trí fháltais bharrachais ó cháin chorparáide a úsáid. Ar a shon sin, níor cheart breathnú orthu mar réiteach ar na dúshláin nó na deiseanna a bhaineann le haistrithe déimeagrafacha nó aeráide, nó ar an mbearna atá ann maidir le tithíocht ríthábhachtach agus bonneagar gaolmhar. Baineann éiginnteacht le méid iarbhír na gcistí i bhfianaise na na héiginnteachta níos airde a bhaineann le conair OTI agusle fáltais bharrachais ó cháin chorparáide. Anuas air sin, meastar go mbeidh na héilimh bhreise de bharr aoise ar an airgeadas poiblí ó 2035 ar aghaidh níos mó ná na tarraingtí anuas measta ón FIF, ar bhonn meastachán ón Roinn Airgeadais.[14]

D'fhonn straitéis fhioscach iomchuí a bhaint amach, is gá ancaire inchreidte a bhunú maidir le beartas fioscach a sheoladh le linn an timthrialla. Ní éiríonn le hathchóirithe AE le déanaí ar an gcreat rialachais eacnamaíoch é sin a bhaint amach ach go páirteach i gcás na hÉireann. Cé go bhfáiltítear roimh bhunú agus fhormhaoirsiú na bpleananna meántéarmacha fioscacha struchtúracha nua, tá gá go fóill le riail fhioscach náisiúnta iomchuí chun forálacha an Chomhaontaithe Cobhsaíochta agus Fáis a chomhlánú. Bhunaigh an Rialtas riail den sórt sin in 2021, eadhon nach sáródh méaduithe ar chaiteachas Státchiste 5 faoin gcéad gach bliain gan bearta cánach nua a fhrithchúiteamh. Maidir le srian a chur le fás ar ghlanchaiteachas go ráta fáis treochta ainmniúil an gheilleagair, arna mheas mar 5 faoin gcéad nuair a bhunaigh an Roinn Airgeadais an riail, féadfaidh sé sin feidhmiú mar ancaire inchreidte iomchuí don bheartas fioscach. Ní mór nithe áirithe a chur i gcuntas, áfach, chun é seo a

---

[12] https://www.fiscalcouncil.ie/understanding-irelands-top-corporation-taxpayers/.

[13] https://data.oireachtas.ie/ie/oireachtas/parliamentaryBudgetOffice/2024/2024-05-24_spring-commentary-2024_en.pdf.

[14] An Roinn Airgeadais (2023) *Future-proofing the public finances – the next steps*.

bhaint amach. Ar an gcéad dul síos, ní mór an riail a chomhlíonadh. Léiríonn meastacháin ó Comhairle Chomhairleach Bhuiséadach na hÉireann[15] agus in [Conefrey et al (2024)](#) gur sháraigh an fás ar ghlanchaiteachas 5 faoin gcéad in 2022 agus 2023, agus meastar go ndéanfaidh sé amhlaidh arís in 2024 agus go bhfuil an baol ann go dtarlóidh sé arís suas go dtí 2026. Ar an dara dul síos, tá sé ag éirí níos deacra an chúis le nithe caiteachais 'shealadacha' nó 'neamhlánacha' a chosaint de réir mar a théann na turraingí urghnácha ón bpaindéim agus ó chogadh na Rúise san Úcráin i léig agus is caiteachais bhuana de facto iad caiteachais ghaolmhara áirithe. Dá réir sin, ba cheart gach caiteachas a chur san áireamh chun go bhféadfaidh an riail maidir le caiteachas glan a haidhm a bhaint amach maidir le staid fhioscach iomchuí agus airgeadas poiblí níos athléimní a chur chun cinn. Ar an tríú cur síos, agus ar an dul céanna, ba cheart an riail a leathnú chun caiteachas a chlúdach ar bhonn Rialtais Ghinearálta, seachas díreach ar bhonn Státchiste.

Measann an Roinn Airgeadais go bhféadfaidh go mbeidh laghdú ar an ionchas fáis eacnamaíoch san fhadtéarma go dtí faoi bhun 3 faoin gcéad in aghaidh na bliana sna deich mbliana atá amach romhainn.[16] Tugann an réamh-mheastachán seo le fios go bhféadfaidh an boilsciú treochta in Éirinn 2 faoin gcéad a shárú sa mheántéarma agus san fhadtéarma fiú má choinnítear fás ar ghlanchaiteachas rialtais ag 5 faoin gcéad. Chun an cás neamh-inmhianaithe seo a sheachaint, ba cheart iarrachtaí a dhéanamh anois ar infheistíocht éifeachtúil i gcaipiteal fisiciúil agus daonna a mhéadú chun ráta fáis ionchais an fhíorgheilleagair a neartú.

Ar an ábhar sin, ba cheart go mbeadh sé mar thosaíocht sa mheántéarma dul i ngleic ar bhonn inmharthana le srianta bonneagair a bhaineann le tithíocht, le huisce, le fuinneamh agus le iompar. Ba cheart go mbeadh ról sa mhéid sin ag infheistíocht chaipitil phoiblí i dteannta athchóirithe agus tionscnaimh struchtúracha chun a héifeachtúlacht a fheabhsú agus chun infheistíocht chaipitil phríobháideach chomhlántach a chumasú. Léiríonn anailís shamhail-bhunaithe in Conefrey *et al.* an chaoi ina laghdaítear go suntasach buntáiste an chaiteachais sin nuair a bhíonn moilleanna níos faide ar phleanáil agus ar sheachadadh bonneagair phoiblí. Áirítear sa mhéis sin leibhéal níos ísle

---

[15] https://www.fiscalcouncil.ie/2024/06/fiscal-assessment-report-june-2024/.
[16] An Roinn Airgeadais (2023) *Horizon Scanning – calibrating medium to long-term economic projections*. Tagann an anailís seo tríd is tríd le foilseachán de chuid fhoireann an Bhainc Ceannais a bheidh ar fáil go luath (Conefrey, T., D. Staunton agus G. Walsh *Estimating potential output and the output gap for Ireland (mimeo)*).

infheistíochta príobháidí ná mar a bheadh ann murach sin, toisc go mbrúitear amach í nó toisc nach gcumasaítear í.

Ceann de na réimsí is suntasaí ina bhfuil gá le hinfheistíocht chomhbheartaithe is ea dícharbónú an gheilleagair chun go bhféadfaidh Éire an sprioc a bhaint amach chun astaíochtaí gás ceaptha teasa a laghdú faoi 51 faoin gcéad i gcoibhneas le 2018 faoi 2030.   Tugann réamh-mheastacháin reatha ón nGníomhaireacht um Chaomhnú Comhshaoil le fios go mbeidh an laghdú iarbhír i bhfad níos lú ná an sprioc sin[17], agus tugann meastacháin in Conefrey *et al.* le tuiscint go mbeidh gá le hinfheistíocht bhliantúil thart ar 2 faoin gcéad de OIN*, nó €54.5bn san iomlán faoi 2050 chun é a bhaint amach, agus go bhféadfaidh gur infheistíocht phoiblí í 30 faoin gcéad den mhéid sin. Bheadh sé seo comhionann le 15.7 faoin gcéad de chaiteachas caipitil phoiblí os cionn an méid atá i gceist faoi láthair sa *Nuashonrú ar an gClár Cobhsaíochta 2024*. Ó tharla go bhfuil an geilleagar ag feidhmiú ar a acmhainn reatha mheántéarmach, tá sé iomchuí acmhainn chuí eacnamaíoch a chruthú trí bheartas fioscach agus trí bheartas poiblí níos leithne chun go n-éascófar méadú ar infheistíocht chun freastal ar spriocanna aeráide, tithíochta agus bonneagair eile as seo go 2030. Is gá é seo a dhéanamh chun riosca an róthéimh agus brúnna boilscitheacha iomarcacha a sheachaint. Dá bharr sin, ba cheart tús áite a thabhairt don fhás ar chaiteachas caipitil phoiblí, faoi réir na rialach a bhaineann le fás glan inmharthana 5 faoin gcéad ar chaiteachas poiblí.

Is gá dul i ngleic le leochaileachtaí struchtúracha, staid fhioscach iomchuí a chothabháil agus freastal ar bhonn inmharthana ar an méadú iomchuí ar infheistíocht chaipitil phoiblí sna blianta atá le teacht, i dteannta roghanna maidir le caiteachas reatha chun leibhéil reatha seirbhísí poiblí a chothabháil nó a athrú. I bhfianaise éilimh mhéadaitheacha ar an airgeadas poiblí agus i bhfianaise tosaíochtaí faoi seach don airgeadas poiblí, tá bearta, lena leathnófar an bonn cánach agus lena méadófar ioncam rialtais mar chion den ioncam náisiúnta, dosheachanta.

---

[17] EPA (2024).

The Irish Economy

Overview

Moderate growth in economic activity in the first half of 2024 is projected to continue over the forecast horizon, consistent with the economy operating around its medium-term potential. Growth in Modified Domestic Demand picked up in Q1 2024 with renewed growth in investment in machinery and equipment by large multinationals. Further increases in residential construction points to a positive outlook for overall modified investment. With improvements in real incomes underpinning consumer spending, overall MDD is forecast to grow at an annual average rate of 2.2 per cent per annum from 2024-26. The drag on goods exports arising from sector-specific issues in the pharma and ICT sectors in 2023 appears to be waning and stronger growth in net exports is anticipated from 2024, aided by a gradually improving external environment.

Headline inflation has dipped below 2 per cent but price pressures remain elevated for services and food. Externally-driven inflation in energy and non-energy industrial goods was negative in the year to May 2024 which has been the main development reducing headline inflation. However, almost two thirds of items in the services basket are registering inflation of 5 per cent or more up to May, broadly unchanged from the position a year previously. Food inflation also remains elevated. Domestic price pressures – as reflected in services inflation – are forecast to ease over the coming years, but will be the main positive contributors to headline and core inflation out to 2026.

Though the pace of employment growth has slowed, labour market conditions remain tight. Employment grew at its slowest annual pace since 2021 in Q1 2024. Despite this, the unemployment rate is stable at close to historical lows of just over 4 per cent, even with increases in labour supply from rising labour force participation and net inward migration. The unemployment rate is projected to remain low, averaging 4.5 per cent out to 2026. These labour market conditions are forecast to underpin nominal earnings growth of 4.9 per cent per annum on average from 2024-2026, bringing real wage growth into positive territory.

The central outlook for economic growth is favourable but risks are tilted to the downside. The central forecasts for MDD in this *Bulletin* anticipate a pick

Back to "Contents"

up in consumer spending over the remainder of 2024, on the basis of continued improvements in real incomes as observed in recent data. There is a risk that consumer spending could be more subdued if households choose to save a higher proportion of these income gains. There is also uncertainty around the pace and scale of increases in residential construction throughout the forecast horizon, which may be lower than currently expected (Box D). On the external side, pharma and ICT manufacturing exports – around 75 per cent of overall goods exports – have increased in early 2024 but further data are needed to confirm the extent of the recovery. Renewed weakness in these sectors if it materialised would weaken net exports, domestic investment, tax revenue and economic activity more broadly relative to the central forecasts.

Risks to the inflation outlook are tilted to the upside. The central projections for headline inflation are sensitive to assumptions on international energy commodity prices. These have increased compared with the data available at the time of the last *Quarterly Bulletin* (March) and geopolitical tensions remain elevated. As a result, there is a risk that prices for energy and other key commodities such as food could be higher than envisaged in current assumptions. This would result in faster growth in HICP inflation in Ireland than in the central forecasts. With the economy at full employment, containing domestic price and wage inflation will be conditional on envisaged productivity growth emerging and avoiding an excessively expansionary fiscal stance. Expansionary fiscal policy along with delays in addressing capacity constraints in housing and other infrastructure would generate higher and more persistent price and wage inflation and damage competitiveness.

Table 1: Macroeconomic Projections for the Irish Economy
(annual percentage changes unless stated)

		2023	2024f	2025f	2026f
Constant prices	Modified Domestic Demand	0.5	2.1	2.5	2.0
	Gross Domestic Product	-3.2	1.8	4.4	4.0
	Personal Consumer Expenditure	3.1	2.7	3.0	2.0
	Public Consumption	1.7	0.9	1.6	1.9
	Gross Fixed Capital Formation	2.9	2.0	2.1	2.0
	Modified Gross Fixed Capital Formation	-7.1	1.7	1.9	2.1
	Exports of Goods and Services	-4.8	2.0	5.8	5.5
	Imports of Goods and Services	0.4	2.5	4.8	4.7
Total Employment		3.4	1.6	1.5	1.5
Unemployment Rate		4.3	4.5	4.5	4.4
Harmonised Index of Consumer Prices (HICP)		5.2	1.7	2.0	1.4
HICP Excluding Food and Energy (Core HICP)		4.4	2.5	1.9	1.5
Compensation per Employee		4.5	5.6	4.8	4.4
General Government Balance (% GNI*)		2.9	2.8	2.8	2.8
'Underlying' General Government Balance (% GNI*)[18]		-1.4	-1.3	-1.2	-1.3
General Government Gross Debt (%GNI*)		78.5	73.8	71.2	67.6
Revisions from previous Quarterly Bulletin					
Percentage points	Modified Domestic Demand	-	-0.1	0.6	-
	Gross Domestic Product	-	-1.0	0.9	0.7
	HICP	-	-0.3	0.2	-
	Core HICP	-	-0.5	-0.2	-0.2

[18] 'Underlying' General Government Balance excludes estimates of excess corporation tax receipts.

Back to "Contents"

Recent Developments

Modified Domestic Demand (MDD) returned to growth in 2024 Q1. MDD grew by 1.4 per cent in 2024 Q1, following a decline of 0.7 per cent in the previous quarter. This is the fastest MDD growth since 2022 Q2. Growth was driven by quarter-on-quarter increases in personal consumption, which rose by 0.6 per cent, and modified investment, which grew by 6.9 per cent (Figure 1). MDD grew by 1.1 per cent when compared to the same quarter in the previous year. Domestically focused sectors experienced growth, with *Information & Communication* sector growing by 3.4 per cent, and the *Distribution, Transport, Hotels & Restaurants* sector growing by 0.9 per cent, though the *Construction* sector contracted by 4.9 per cent. With inflation falling and consumption continuing to grow, consumer sentiment remains more positive than a year ago but it has been weakening somewhat over the past four months. The Credit Union Consumer Sentiment Index peaked at 74.2 in January 2024, before gradually declining to 65.7 in May (Figure 2). The volume of Retail Sales in 2024 Q1 increased 2.1 per cent when compared with the previous quarter (Figure 3).

Gross Domestic Product (GDP) also returned to growth in 2024 Q1 though is still below its 2023 Q1 level. GDP rose by 0.9 per cent in 2024 Q1 compared to the previous quarter following five successive periods of retraction (Figure 4). GDP growth was driven by a sharp increase in net exports, which was in part offset by a 40.6 per cent fall in headline investment. Following weak growth last year, GDP is 6.5 per cent below where it was in the same quarter in 2023. Gross Value Added (GVA) fell by 11.9 per cent year-over-year in MNE-dominated sectors reflecting a contraction in the MNE-dominated *Industry excl. Construction* sector (Figure 5). Exports grew sharply by 7.3 per cent after five successive periods of retraction. Following a weak performance in 2023, exports of goods grew by €2.3 billion in the first quarter of 2024 (Figure 6).

Headline inflation is declining though services inflation remains elevated. The Harmonised Index of Consumer Prices (HICP) year-on-year inflation rate was 2.0 per cent in May 2024 up from 1.6 per cent in April. In the 12 months to April, food prices rose by 3.4 per cent while energy prices fell by 6.3 per cent. Services inflation remains high, with prices increasing by 4.2 per cent in the same time period (Figure 7). Headline inflation in Ireland is now dominated by its services component, in large part due to increasing prices in the Restaurant (5.4 per cent), Accommodation (3.5 per cent), and Rental (5.3 per cent) sectors. While about two thirds of services inflation is driven by supply constraints,

likely reflecting higher labour costs, about one third of services inflation is demand-driven (Figure 8). This is consistent with the finding that Irish services inflation reflects domestic demand pressures in wages and consumption to a greater extent than other inflation components (see Signed Article). While the unwinding of supply shocks to food and energy prices and diminishing pent-up demand have contributed to goods inflation falling to below zero, almost two thirds of services prices grew by five per cent or more in the year to April (Figure 9). The Consumer Price Index grew by 2.6 per cent in twelve months to May.

Employment levels are increasing steadily albeit at a slower rate than in recent years, while the monthly unemployment rate remains close to historical lows. The CSO monthly employee index recorded a year-on-year increase of 59,000 persons in April 2024, compared to 81,300 persons in the previous year, as the labour market continues to moderate following the post-pandemic expansion (Figure 10). The seasonally-adjusted monthly unemployment rate was 4 per cent in May 2024, the twenty-ninth consecutive month of unemployment being below 5 per cent. Labour demand, as indicated by Indeed job postings, continues to decline with the index down 19 per cent year-on-year in May 2024 (Figure 11). Growth in posted wages for prospective new hires has increased slightly to 4 per cent, which may be reflective of increases in the national minimum wage in January as well as public sector pay agreements. The series has declined from a 2023 peak of 5.2 per cent, broadly in line with developments in core inflation.

The Central Bank's Business Cycle Indicator (BCI) shows domestic economic activity continuing to grow steadily in the opening months of 2024. The BCI indicates that domestic activity grew at a rate slightly above its long-term average in each month of the year up to April 2024 (Figure 12). Tax revenue, PMIs, and traditional sector output made a positive contribution to the BCI in April, while consumption was the primary negative contribution to it due to a fall in the year-over-year volume of retail sales. Economic activity has moderated following a spike in December that was due to increases in traditional sector output.

Investment in buildings and other construction fell in 2024 Q1, but housing commencements increased sharply. The latest quarterly National Accounts point to weakness in both the residential and non-residential activity in Q1 2024, with building and construction down 13.5 per cent year-on-year. Growth in machinery and equipment investment limited the fall in overall modified investment to 3.1 per cent in Q1 2024 in year-on-year terms. On a seasonally

adjusted basis, modified investment grew 6.9 per cent in 2024 Q1 compared to the previous quarter. However, housing investment has shown early signs of growth with an annual increase of 21 per cent in the total number of dwelling units approved for planning permission in the twelve months to 2023 Q4 (to 41,225 units) (See Box D). Housing commencements increased by 205 per cent in the first four months of 2024 compared with the same period in 2023. The volume of activity in the Residential Building sector was up 8.5 per cent (Figure 13). Construction PMIs are consistent with growth in the sector in the first half of 2024, with output, new orders and employment posting increases in May 2024 (Figure 14).

When transactions that have no impact on the General Government balance are excluded, the Exchequer ran a small deficit of €183m in the first five months of the year. This compares to a surplus of €1.6bn in the same period of 2023. Revenue increased by 6.5 per cent on an annual basis, driven by a robust tax performance. Income tax and VAT increased while corporation tax receipts have recovered from a weak start to the year. Expenditure was 11.5 per cent higher, with particularly strong growth recorded in the Health and Social Protection vote groups. Gross voted expenditure was also 2.6 per cent (€975m) ahead of its Budget profile, primarily reflecting developments in the Health vote group.

MDD growth in 2024 Q1 was driven by Consumption and Modified Investment

Figure 1
Per cent

Consumer sentiment remains high but has declined in Q1

Figure 2
Index (Base = 2015)
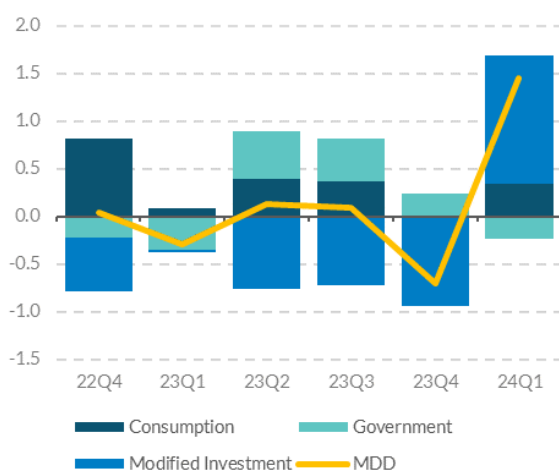
Source: CSO, author's calculations.
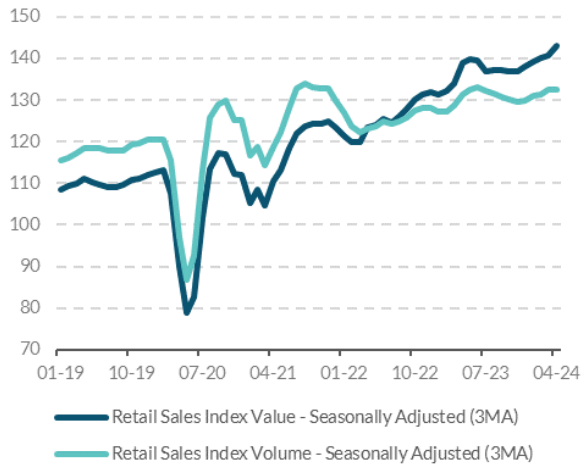Notes: Quarter-on-quarter MDD growth decomposed into its constituent components.

Source: Credit Union.

The volume of retail sales continues to increase following the pandemic
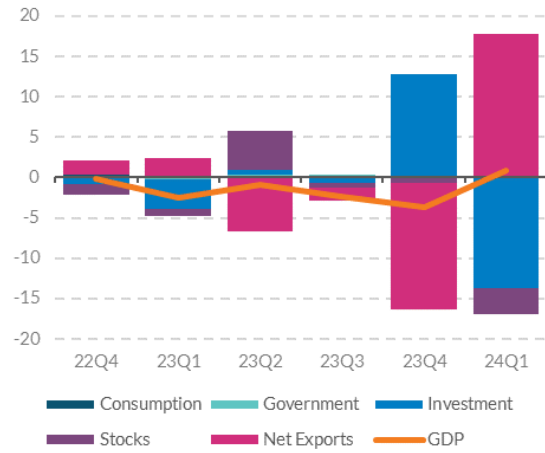
Figure 3
Index (Base = 2015)

Source: CSO

GDP returned to growth after five periods of retraction
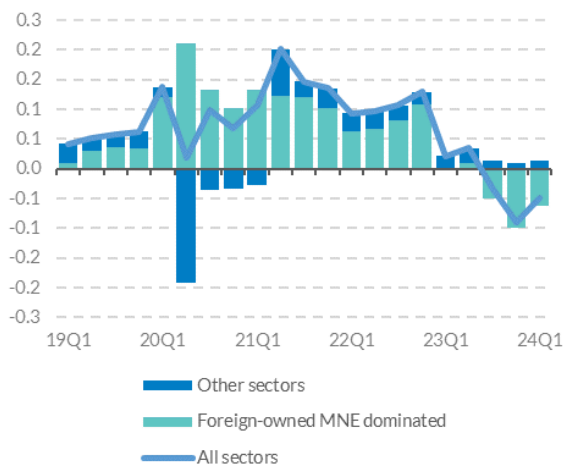
Figure 4
Per cent

Source: CSO, author's calculations.
Notes: Quarter-on-quarter GDP growth decomposed into its constituent components.

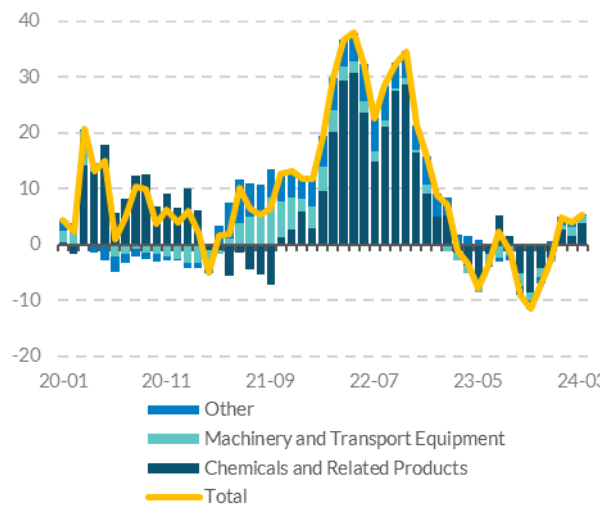## GVA in MNE-dominated industries shrunk in year-on-year terms

Figure 5
Per cent

Source: CSO, author's calculations.
Notes: Year-on-year GVA growth decomposed into the contributions of *MNE-dominated sectors* and *Other sectors*.

Exports of goods grew in the first quarter of 2024

Figure 6
Per cent

Source: CSO Value of Merchandise Trade, author's calculations.
Notes: Three month moving average of the value of merchandise exports decomposed into its constituent parts.

Back to "Contents"

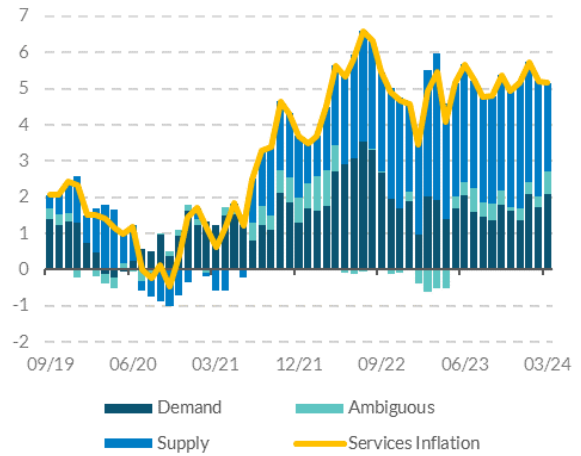## Services is the largest contributor to inflation

Figure 7
Per cent
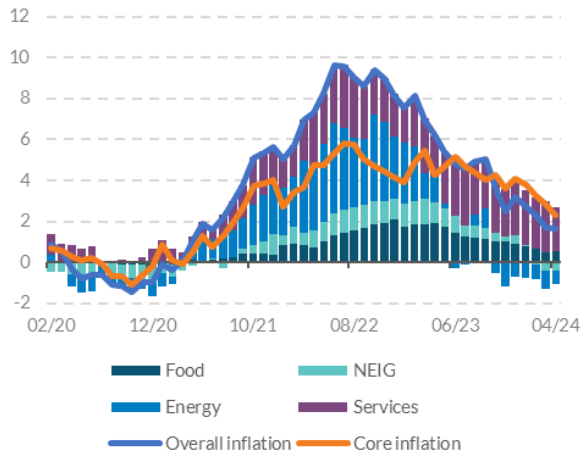
Source: Eurostat, author's calculations.
Notes: HICP core and overall inflation decomposed into the contributions of Food, Energy, NEIG, and Services.

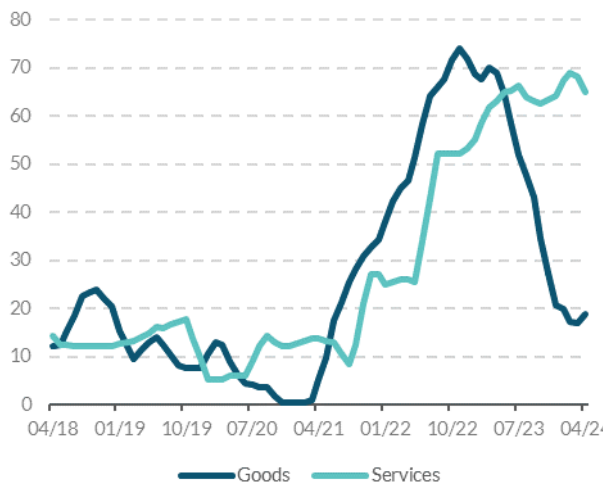## Services inflation has a large demand component

Figure 8
Per cent

Source: Eurostat, author's calculations.
Notes: Services inflation decomposed into its Demand and Supply components. See Economic Letter Vol 2023, No. 4 for details.

Price increases are much more pronounced for services compared to goods

Figure 9
Per cent

Source: Eurostat, author's calculations.
Notes: Proportion of items by weight in goods and services growing at 5 per cent or more year on year, three month average. Last observation is April 2024.
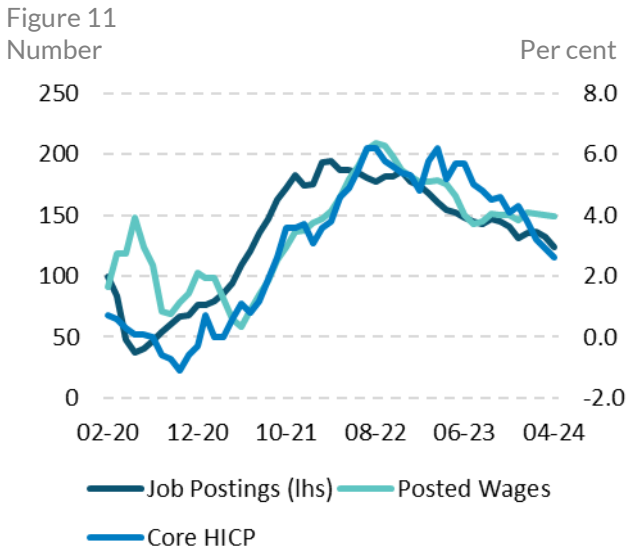
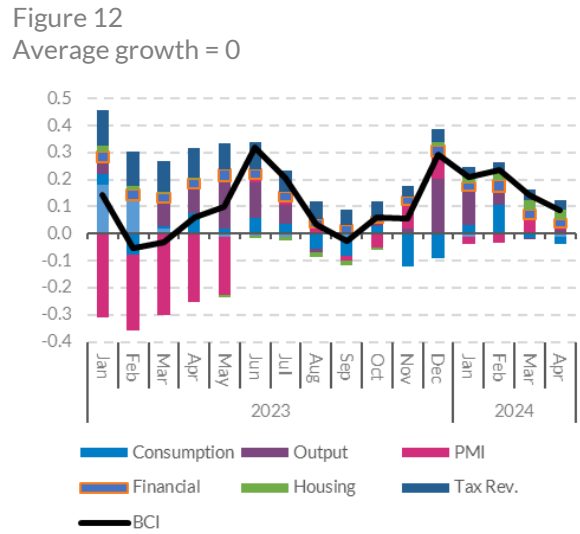## Employment levels are increasing steadily

Figure 10
Thousands   Per cent
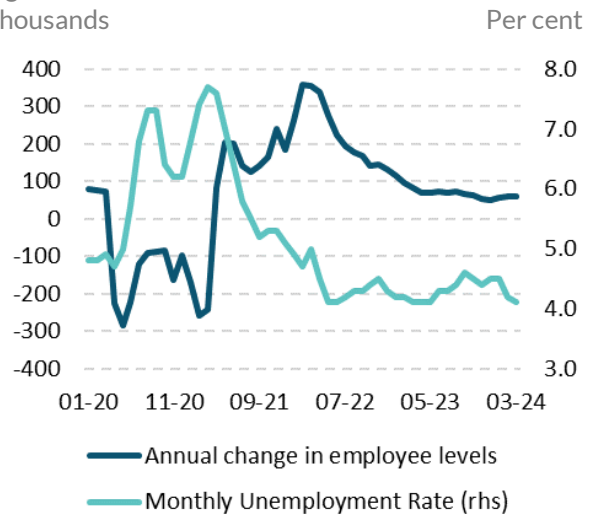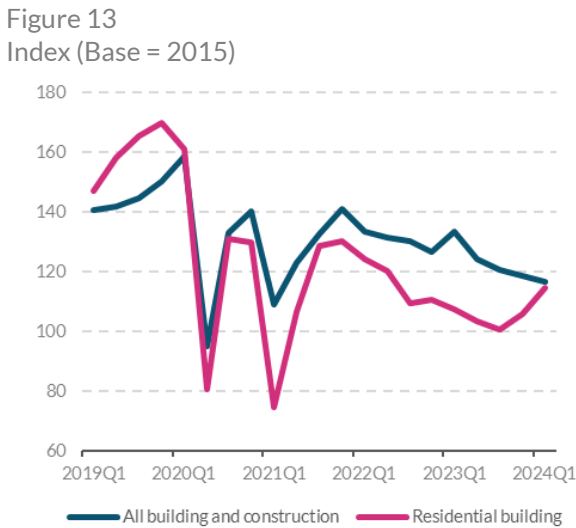

Source: CSO.

Labour demand continues to soften

Figure 11
Number   Per cent

Source: Indeed and CSO

The BCI indicates signals steady growth in economic activity
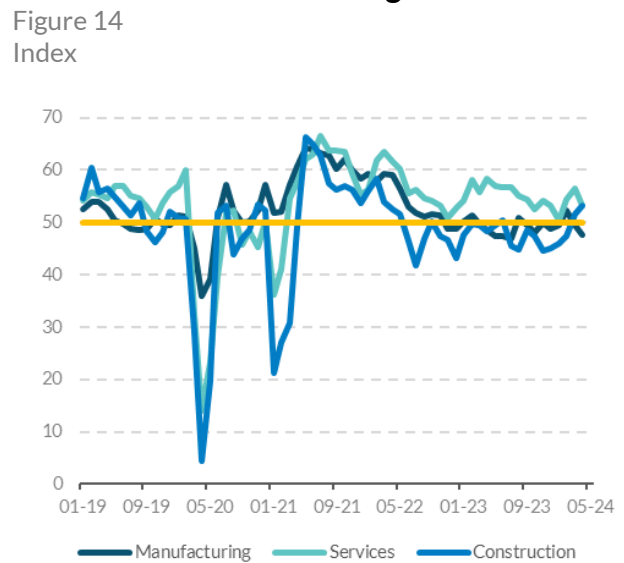
Figure 12
Average growth = 0

Source: CSO and Central Bank of Ireland
Notes: Central Bank of Ireland Business Cycle Indicator

There are signs of growth in residential construction

Figure 13
Index (Base = 2015)

Source: CSO Building and Construction Index.

PMIs indicate pick up in construction but weakness in manufacturing

Figure 14
Index

Source: AIB and BNP Paribas.

Back to "Contents"

Consumption

Consumption recorded a modest start to 2024, but an improvement in near-term macroeconomic conditions should support a pick up in the second half of the year. Seasonally adjusted data from the National Accounts indicate consumption grew by 0.6 per cent in real terms over the quarter to Q1 2024. This represents more modest growth than expected at the time of the last *Bulletin*. However, lower inflation combined with nominal wage catch-up should improve the real income position of households and enable consumption to grow more strongly over the coming months. Nevertheless, the weaker data in the first five months of the year means the forecast for annual consumption growth in 2024 has been revised down 0.5 percentage points from the last *Bulletin* to 2.7 per cent.

Looking further ahead, more modest gains to employment and wage growth are expected to moderate the consumption path. Strong wage growth in 2024 should pass-through to stronger consumption growth, albeit with a lag into 2025. Thereafter, consumption growth is expected to be more in line with its historical average. Consequently, the forecasts for growth in 2025 and 2026 are revised up slightly from the last *Bulletin*, to 3.0 and 2.0 per cent respectively (Figure 15).

However, there is a high level of uncertainty surrounding the projected path for consumption. There are potential upside risks. Stronger growth could materialise if households' consume part of their substantial stock of savings or reduce their rate of saving; which is currently elevated above trend, suggesting precautionary saving behaviour may be at play (Figure 16). Alternatively, if current savings rates are reflecting a new higher trend than previously experienced, then consumption growth could be lower than in the current central forecast. New National Accounts data releases over the coming months should shed light on the extent to which any revisions are required to reflect either stronger actual data or evidence of a higher propensity to save.

Consumption growth is expected to moderate over the forecast horizon

Figure 15

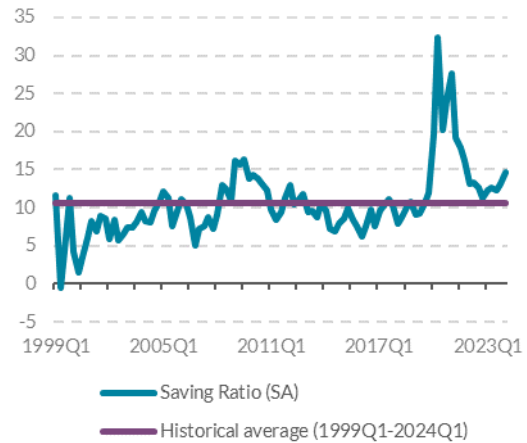Projected real and nominal consumption growth (percentage change, %)
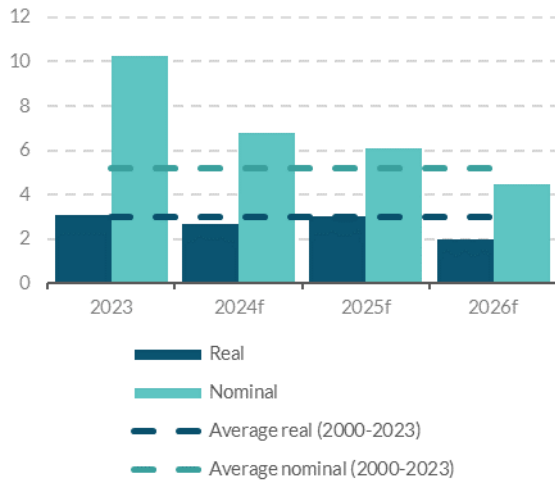
Source: Central Bank of Ireland

The household saving rate is currently trending above its long-term average

Figure 16
Seasonally adjusted gross household saving ratio (per cent, %)
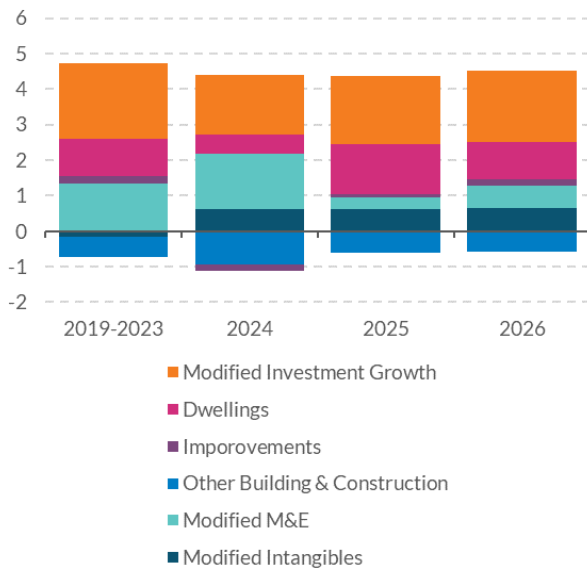

Source: CSO

Investment

Headwinds to modified investment growth remain following a contraction last year. Growth over the forecast horizon is likely to be modest and not broad-based (Figure 17). Investment requirements, however, remain pressing, particularly in the areas of housing and infrastructure. Modified investment as a proportion of national income (GNI*) is low by historical standards (Figure 18). If conditions allow, more substantial increases in spending than those forecast here could occur. An improvement in the global outlook and improved financial conditions as monetary policy eases are upside risks to the forecasts.[19] Substantial firm-specific investment in the MNC sector could also increase expenditure more than contained in the following forecasts. Modified investment is forecast to increase by 1.7 per cent, 1.9 per cent and 2.1 per cent in 2024, 2025 and 2026, respectively. Headline investment is expected to increase by approximately 2 per cent over the forecast horizon.

[19] The Bank Lending Survey for April 2024 reported that firms' aggregate loan demand increased marginally in Q1 2024, and a further increase is expected in Q2 2024.

Investment growth likely to be modest

Figure 17
Contributions to modified investment growth (%)

- Modified Investment Growth
- Dwellings
- Imporovements
- Other Building & Construction
- Modified M&E
- Modified Intangibles

Source: Central Bank of Ireland.

Investment is low relative to the rest of the economy
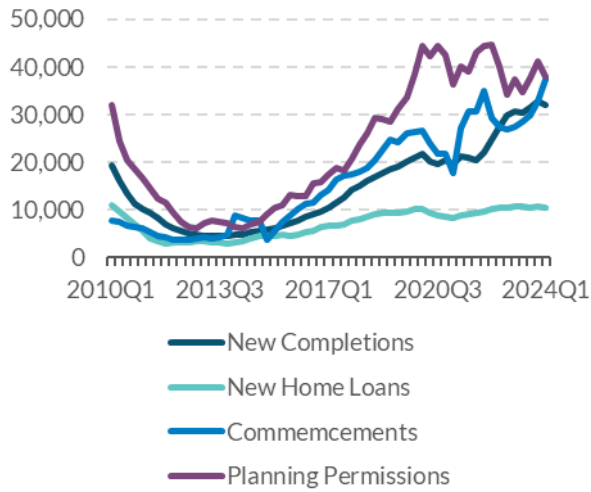
Figure 18
Modified investment, % of GNI*

Source: CSO, author's calculations

Housing investment will account for much of the increase in overall investment growth over the forecast horizon, but will remain below estimated requirements. Following approximately 33,000 new completions last year, housing output could increase further this year (Figure 19). With over 30,000 commencements in the first four months of the year, housing forecasts have been revised up since the last *Bulletin*. The timing of the translation of these commencements to completions is the subject of some uncertainty, however (see Box D). The surge in commencements likely relates to an anticipated end of the waiver of development and water connection charges for developers, which was subsequently extended. This introduces some uncertainty into the usual permissions-commencements-completions cycle and increases uncertainty around forecasts for activity in the sector. Housing investment could benefit from the decline in non-residential construction, with a shift in resources, including of labour, arising. Despite this potential transfer of labour from non-residential to residential, in the absence of substantial productivity gains and more widespread adoption of innovative construction methods, the availability of labour is likely to limit the scale of increase in residential construction that may be possible over the near-to-medium term (Figure 20). Housing completions are forecast to increase to 35,000, 37,500 and 39,500 in 2024, 2025 and 2026, respectively.

House completions expected to pick up
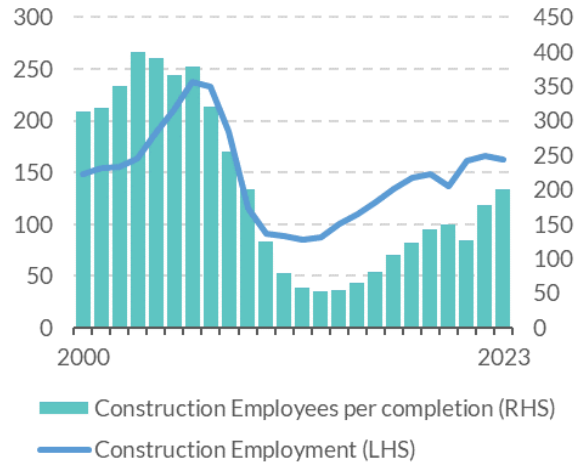
Figure 19

Rolling annual units

Source: CSO, DoHLGH, BPFI

Construction employment increasing

Figure 20

Construction employment

Source: CSO, author's calculations

Modest increases in modified machinery and equipment (M&E) investment are projected over the forecast horizon as MNE spending remains high.
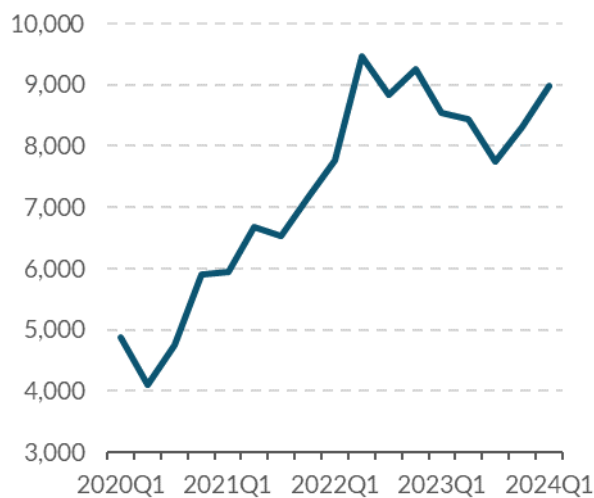Imports of M&E point to a rise in M&E investment in Q1 2024 (Figure 21). Imports of specialised machinery have increased substantially (Figure 22).

Imports of M&E has picked up

Figure 21

€ million

Source: CSO

## With an increase in specialised machinery

Figure 22

€ million

Source: CSO

Back to "Contents"

Exports, Imports and Balance of Payments

Compared with the last *Bulletin*, forecasts for exports are broadly unchanged – but the outlook for headline export growth this year is uncertain given developments in offshore activity. Domestically produced exports are expected to continue a modest recovery throughout the remainder of this year, before contributing to a stronger pickup in 2025. This recovery will be driven primarily by the MNE sector, in particular pharmaceuticals and computer services exports. However, the international environment remains challenging, and export growth rates are projected to be below historical averages this year and next. Euro area and UK GDP growth are projected to remain weak this year, although this is offset by a strong outlook for the US (see Box C). Continuing geopolitical tensions in the middle east have so far had little effect on global trade activity, but uncertainty around potential supply chain disruptions remain high (see Figure 23).
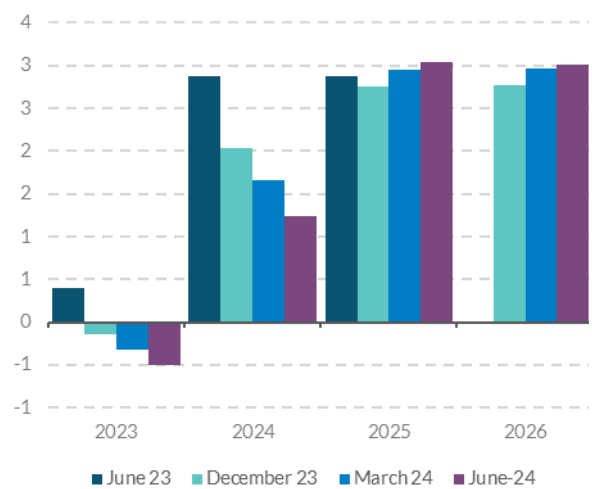
Supply chain pressures remain contained

Figure 23
Index
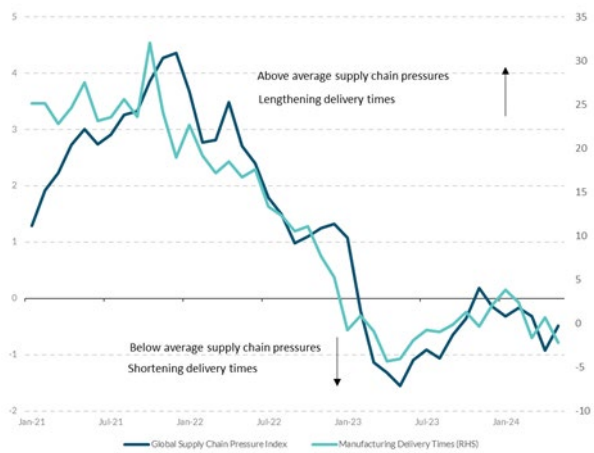
Source: Refinitiv

Trading partner demand is forecast to recover during 2025 and 2026

Figure 24
Per cent

Source: ECB

Despite these near term headwinds, the outlook for Irish net exports in 2025 and 2026 remains strong. As in the March projection, the decline in pharmaceutical exports seen in 2023 is expected to reverse, and first quarter data show tentative signs of this (see Figure 6). Services (particularly computer services) are expected to continue to contribute strongly to export growth this year after some weakness in 2023. By contrast, the forecast of contract manufacturing exports has been revised down over the forecast horizon,

reflecting new data and an assumption that the level of this activity has returned to its long-term trend. Based on this, contract manufacturing exports are judged to likely remain around their 2023 average level during the whole forecast horizon. This implies a strongly negative contribution to net exports in the first half of the year, before recovering over the forecast horizon as base affects unwind.

A recovery in the pharmaceutical sector, as well as continued growth in computer services, will bolster export growth
Figure 25
Per cent
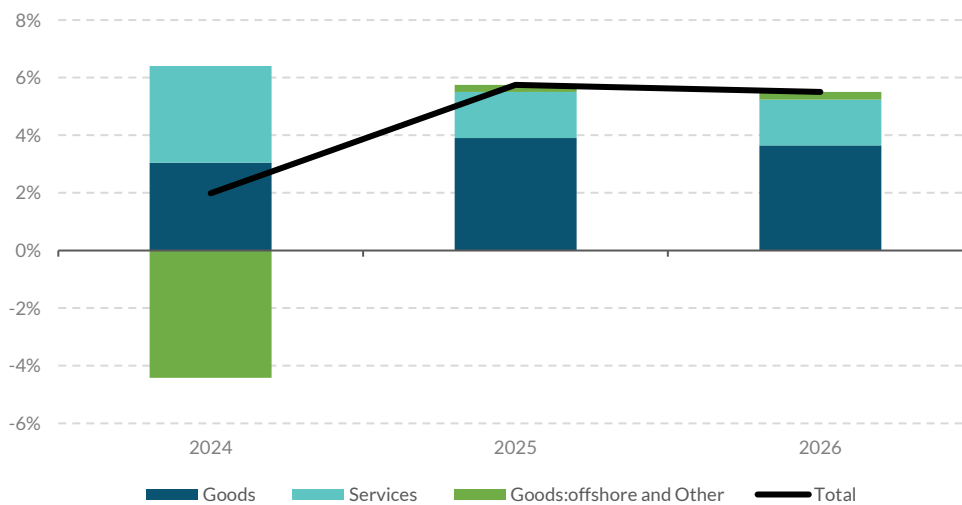
Source: CSO and Central Bank of Ireland calculations

The headline projection for exports is highly uncertain, owing to the impact of exports produced abroad, but risks to the underlying projection are broadly balanced. A stronger than anticipated rebound in exports by the pharmaceutical sector poses upside risks to the export projection, particularly in 2024. Exports of computer services are forecast to continue to grow at a robust pace, but any unanticipated changes to the taxation of digital services pose a downside risk to these exports, which currently account for around a third of overall exports.

Offshore production as well as investment by MNEs have driven large surges in imports in the first half of the year. Looking ahead, the effect of contract manufacturers on overall import growth is forecast to wane, but large investments by MNEs in intellectual property are forecast to drive significant import growth. Imports are forecast to grow by 2.5 per cent this year, before averaging 4.8 per cent in 2025 and 2026.

Headline measures of the balance of payments current account are projected to continue to record strong surpluses, as a result of developments in the multinational sector. Merchandise exports are forecast to outstrip import growth over the forecast horizon, increasing the trade surplus. Net income outflows are also expected to remain significant owing to the size of the multinational sector. As a result, the headline current account is expected to remain in surplus over the forecast horizon. The modified current account is expected to record a surplus, averaging 5.5 per cent of GNI* over 2024 to 2026.

Prices and costs

Inflationary pressures have declined further since the last *Bulletin*, although they still remain stronger than prior to the pandemic. Underlying inflation measures, which aim to abstract from temporary shocks and to provide a signal about medium-term price pressures, point to stronger pressures compared to years preceding the pandemic despite recent declines (Figure 26). Most measures of underlying inflation exceed headline inflation, which on average has been below 2 per cent over the past three months. Some of these measures tend to provide a more accurate signal about inflation over the medium term compared to the headline rate (see Section 3 of Signed Article). The instantaneous headline inflation rate fluctuated around zero per cent in recent months, close to its values prior to the pandemic (Figure 27). [20] It increased in May, but remained below headline inflation. PMI survey data on producer input and output prices signal subdued price pressures in the manufacturing sector. Price pressures in the services sector remain elevated, which is in line with demand factors positively contributing to services inflation (Figure 8).[21]

Both energy and non-energy commodity price assumptions have increased over the whole forecast horizon since the last *Bulletin* (Table 2). Oil prices have increased and were higher in recent months than previously expected, although this increase had partially reversed by the middle of May. Higher oil price expectations reflect ongoing geopolitical tensions in the Middle East as well as counteracting effects from developments in non-OPEC oil supply,

---

[20] The instantaneous inflation measure largely reflects price changes in recent months, with little weight assigned to the period 5-12 months ago (Eeckhout, 2023).
[21] Preliminary internal analysis showed that PMI input and output price series have some leading properties with respect to HICP NEIG and services inflation. Nevertheless, the pandemic period may have changed some of these relationships and more analysis is needed in this area.

OPEC oil supply restrictions, and concerns about oil demand as the global economy slows. Relatively mild weather and high storage levels has kept wholesale gas prices at low levels. Wholesale natural gas price assumptions are higher compared to the last *Bulletin*, most notably in 2025. Near-term risks to natural gas supply remain due to geopolitical conflicts. Wholesale electricity prices in recent months have turned out to be lower than expected. While the electricity price assumption for 2024 is lower, assumptions for 2025-26 have been revised upwards since the March *Bulletin*. In terms of annual percentage changes, energy prices are now expected to decline faster than assumed before at the end of forecast horizon. Financial market expectations for international food and hard commodity prices (both in levels and annual growth rates) are also higher in the current forecast exercise. However, domestic farm-gate food price assumptions, used as an input for Irish food inflation forecasts, are lower.[22]

The expected profile for headline HICP inflation is somewhat bumpy, although the headline rate is forecast to stay at or below 2 per cent over the projection horizon (Figure 29). Food, non-energy industrial goods (NEIG) and services inflation rates are expected to gradually ease, while expected volatility in energy inflation leads to a pick-up in headline inflation in 2025 and a subsequent decline in 2026. Although the headline inflation forecast is below 2 per cent for this year, domestic inflationary pressures remain strong. Services inflation, expected to stay above 4 per cent in 2024, is the highest among the HICP components over the whole horizon (Table 2) and it contributes the most to the headline inflation forecast (Figure 29). This is in line with expectations for strong income growth, given the tight labour market conditions and the expected path for consumption growth. In contrast, NEIG inflation is expected to contribute negatively to headline inflation in all years. Data tentatively suggest that the increase in the NEIG price index over recent years (see Figure 28 in QB1 2024), which was brought about by supply chain pressures, pent-up demand and commodity price shocks, may have stalled. Annual NEIG inflation has turned negative in recent months and stood at -2.0 per cent in April 2024. As commodity price shocks have faded, both energy and food inflation are expected to make small positive contributions to overall inflation. HICP inflation excluding food and energy is expected to decline gradually from 2.5 per cent in 2024 to 1.5 per cent in 2026, which is somewhat above its long-term pre-pandemic average of 1.3 per cent.

---

[22] This difference is partly because farm-gate prices do not cover cocoa and coffee, which are part of the international food commodity index.

Although inflation is forecast to be below 2 per cent for all but one HICP component in 2026, inflationary pressures are expected to remain stronger than in years preceding the pandemic. The headline inflation figure of 1.4 per cent expected for 2026 is below its long-term pre-pandemic average of 1.7 per cent.[23] Nevertheless, it is still considerably above average headline inflation over the five years prior to the pandemic of 0.3 per cent. In 2026, inflation rates for the main HICP components are above their respective five-year pre-pandemic averages[24].

Compared to the last *Bulletin*, the headline inflation forecast for 2024 has been revised down, with an upward revision for 2025. The projection for 2026 is unchanged. These revisions are explained by changes to NEIG, energy and services forecasts. The forecast for NEIG inflation has been revised down sharply in 2024 and to a smaller extent in 2025-26, given weaker than expected recent outturns. Energy inflation has been revised upwards for all years, especially for 2025, as energy commodity price assumptions have increased. Services inflation has been revised up for 2024-25 mostly due to stronger than expected data in recent months. Stronger expectations for wage growth has also played a role, although partially offset by lower forecasts for consumption growth in 2024.

Risks surrounding the inflation outlook are considered to be slightly to the upside. Upside risks to the headline inflation forecast may arise from continued geopolitical tensions resulting in further shocks to European energy markets (see Box E) and renewed pressures in global supply chains.[25] Food commodity supplies may be at risk due to negative climate conditions, manifesting themselves in stickier consumer food price inflation. Stronger than expected labour costs growth, in light of very tight labour markets, or fiscal stimulus could result in higher inflation. Consumer inflation expectations one year ahead remain well above current inflation, implying further upside risks to actual inflation.[26] Following significant downward revisions to NEIG inflation in the current *Bulletin*, upside risks may be present looking ahead if the NEIG price index does not follow an assumed negative trend, which prevailed before

---

[23] This refers to the period 1997-2019. Including the years after 2019, the long-term average of headline inflation increases to 2 per cent.

[24] In five years prior to January 2020, average inflation rate for services was 2.4 per cent, -3.3 per cent for NEIG, -0.6 per cent for food and -0.4 per cent for energy.

[25] Such tensions have had limited effects on energy commodities and supply chains so far.

[26] In April, the ECB Consumer Expectations Survey showed that median (mean) one year ahead inflation expectations in Ireland stood at 3.5 (6.5) per cent, up from March. Median expectations over the next three years stayed unchanged at 3.1 per cent, while average expectation increased slightly to 6.1 per cent.

the pandemic. On the other hand, the domestic economy could also recede more quickly than expected due to larger effects arising from interest rates, subdued consumer sentiment or higher savings implying downside risks to consumption outlook (see Consumption section), and a more protracted global slowdown than currently expected. Consequently, labour market slack could increase by more than assumed in the baseline forecast leading to slower real wage catch-up. Finally, Irish energy suppliers could continue to pass on past declines in wholesale energy prices to a larger extent than assumed in the near term (CRU, 2024).

Table 2: Changes in key technical assumptions

	QB2 2024			QB1 2024		
	2024	2025	2026	2024	2025	2026
Oil (USD/barrel)	83.8	78	74.5	79.7	74.9	72.2
Natural gas (EUR/MWh)	30.8	35.4	29.9	30	32.1	29.5
Wholesale electricity (EUR/MWh)	73	87.7	72.8	74.4	78.3	71.3
Non-energy commodities (USD, per cent change*)	11.4	3.9	0.9	0.6	2	0.1
USD/EUR	1.08	1.08	1.08	1.08	1.08	1.08
GBP/EUR	0.86	0.86	0.86	0.85	0.85	0.85

Source: ECB, Refinitiv. Notes: *Annual per cent change.

Table 3: Inflation Projections

	2023	2024	2025	2026
HICP	5.2	1.7	2.0	1.4
Energy	5.1	-6.5	3.2	1.8
Food	8.1	3.1	1.9	1.0
Non-Energy Industrial Goods	3.3	-1.7	-1.8	-2.0
Services	5.0	4.4	3.4	2.9
HICP ex Food & Energy (Core)	4.4	2.5	1.9	1.5

Source: CSO, Central Bank of Ireland

Underlying inflationary pressures continue to normalise, but remain stronger than in years prior to the pandemic
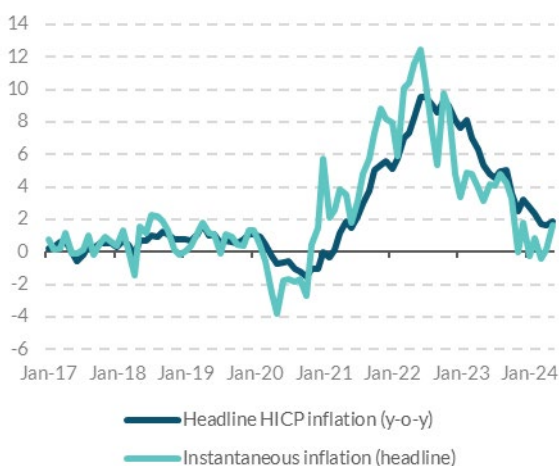
Figure 26
Year-on-year percent change (%)
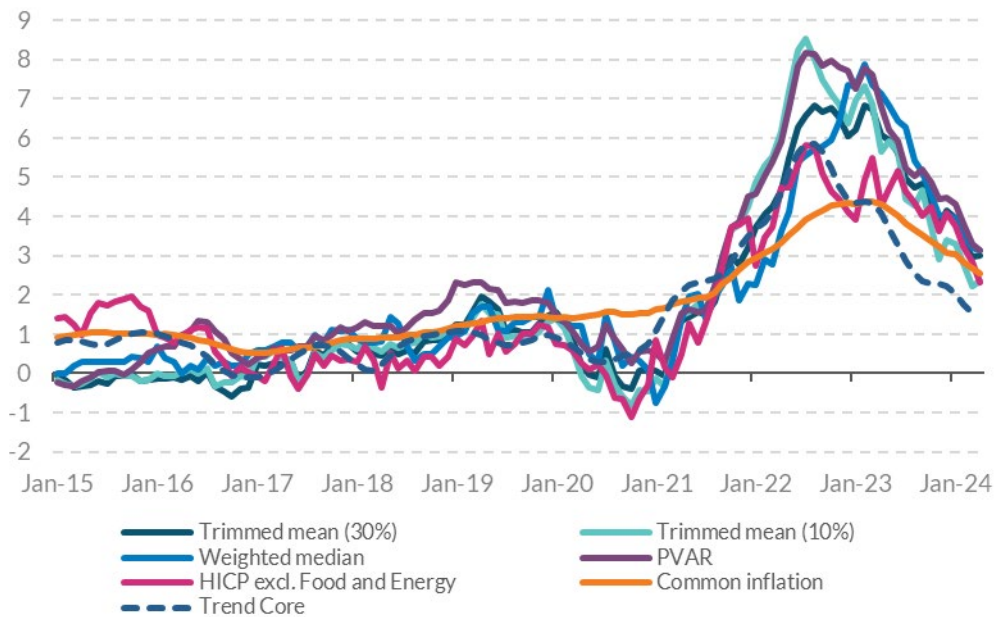
Source: Eurostat, Central Bank of Ireland calculations
Notes: Last observation for Trend Core inflation is March 2024, for all other measures – April 2024. For more details about underlying inflation measures refer to Signed Article in this Bulletin. PVAR for Volatility and Persistence Adjusted Rate of inflation.

Instantaneous inflation suggests normalised price pressures in recent months
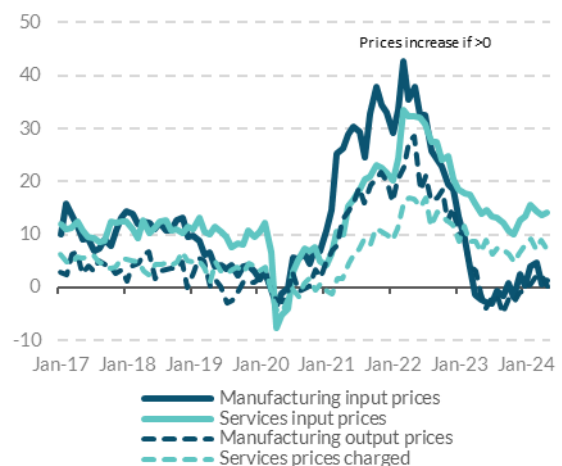
Figure 27
Percent change (%)

Source: Eurostat and Central Bank of Ireland calculations
Notes: Last observation: May 2024. For details about instantaneous inflation see Eeckhout (2023).

Price pressures in the services sector continue to be elevated
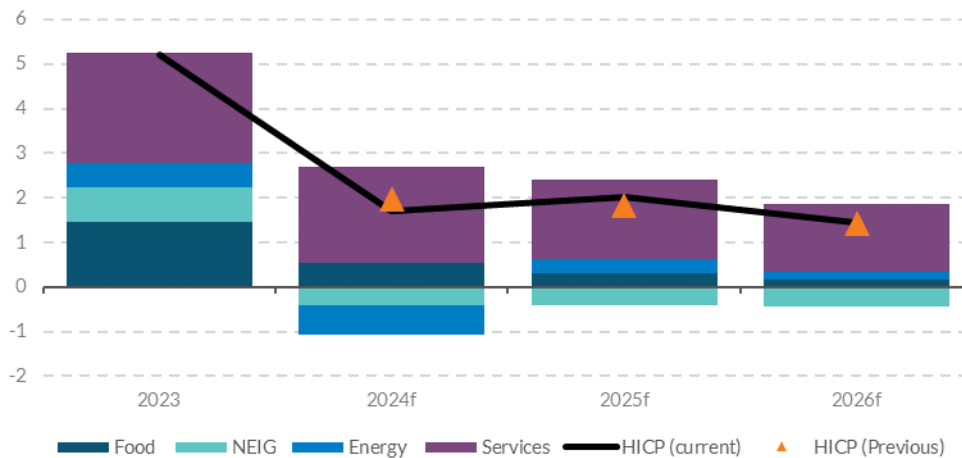
Figure 28
Deviation from neutral level = 50

Source: Refinitiv.
Notes: Last observation: May 2024.

HICP inflation forecast

Figure 29
Year-on-year percent change (%)

Source: CSO and Central Bank of Ireland
Notes: forecast figures for 2024-2026.

Labour Market

Employment growth in Q1 2024 continued to show signs of slowdown as the number at work remained relatively unchanged from the previous quarter. A year-on-year growth rate of 1.9 per cent (51,500 persons) saw employment levels rise to 2.7 million persons. This represents the lowest annual growth since 2021. Employment growth over the forecast horizon is likely to be lower relative to previous years due to base level effects following the substantial expansion in the post-pandemic period, in addition to relatively little domestic labour slack and a reliance on net inward migration. Employment growth of 1.6 per cent is forecast for 2024, dropping marginally to 1.5 per cent in both 2025 and 2026, respectively.

At a sectoral level, employment gains continue to be largely driven by low-consumer facing and public sector roles.[27] Annual employment growth in Q1 2024 was largest in Professional services (15.4 per cent) and Education (7.9 per cent). Since Q4 2019, employment has increased by 13.7 per cent, although cumulative growth shows a limited recovery in high-consumer facing sectors suggesting a reallocation of workers to other sectors (Figure 30).[28] Looking

---

[27] 'Low-consumer facing' sectors include ICT, Finance and Professional services. 'Public' includes Health, Education and Public Admin. 'High-Consumer facing' includes Retail, Accommodation, Transport, Admin and Arts and Entertainment services. 'Other' includes Agriculture and Those not stated.

[28] Dept. of Social Protection (2022) analysis shows 170,900 (31 per cent) workers of a total 553,400 PUP recipients with pre and post-pandemic employment records have moved to a different economic sector.

ahead, employment growth may continue to be driven by the low-consumer facing and public sectors over the medium-term given labour demand trends as well as the ability of these sectors to offer relatively higher wage levels.

The labour force increased by 2 per cent year-on-year in Q1 2024 driven by females and non-Irish citizens. These cohorts accounted for the majority of the 55,400-person increase in the labour force in the year to Q1 2024. The labour force participation rate (LFPR) measured 65 per cent in Q1 2024, down slightly from 65.4 per cent in the previous quarter; this is primarily due to a relatively greater increase in the working age population of non-Irish citizens. Holding the contribution of these various cohorts fixed at end-2019 levels, the LFPR would be markedly lower if not for elevated female and non-Irish labour activity (Figure 31). As proxied by PPSN data, the contribution of inward migration to labour force growth may slow in the coming years, with quarterly levels beginning to converge towards pre-pandemic norms (Figure 32).[29] The future path of net inward migration is uncertain given domestic infrastructural constraints, particularly in housing and transport, as well as external geopolitical developments. Labour force growth of 1.8 per cent is projected for 2024, moderating to 1.5 per cent in 2025.

Despite signs of employment growth slowing, there is persistent tightness in the labour market with measures of slack close to historical lows. The ILO unemployment rate declined from 4.2 per cent in Q4 2023 to 4.1 per cent in Q1 2024. The unemployment rate for both long-term unemployed (1.2 per cent) and Irish citizens (3.6 per cent) are at their lowest respective measures in Labour Force Survey data, highlighting the shortage of domestic labour slack. Wider measures of labour slack such as Part-Time Underemployment and the Potential Additional Labour Force, which together comprise the Labour Underutilisation rate, have also declined on a quarterly basis (Figure 33).[30] Overall, the Labour Underutilisation rate has slowed to 11.7 per cent of the extended labour force. Unemployment is forecast to remain relatively low over the forecast horizon, averaging 4.5 per cent out to 2026.

---

[29] Excluding PPSNs for Ukrainian citizens, Jan-Apr 2024 cumulative figures are 8,200 lower than the equivalent period in 2023 driven by a decline in Brazilian, Indian and Romanian citizens.

[30] The Labour Underutilisation Rate refers to the number of persons classified as unemployed, plus those part-time under employed who wish to work additional hours and are available to do so. It also includes the 'Potential Additional Labour Force', which comprises those outside the labour force who are available for work but not seeking work as a percentage share of the extended labour force. See U6 definition.

Cumulative employment growth in recent years has been driven by two broad sectors
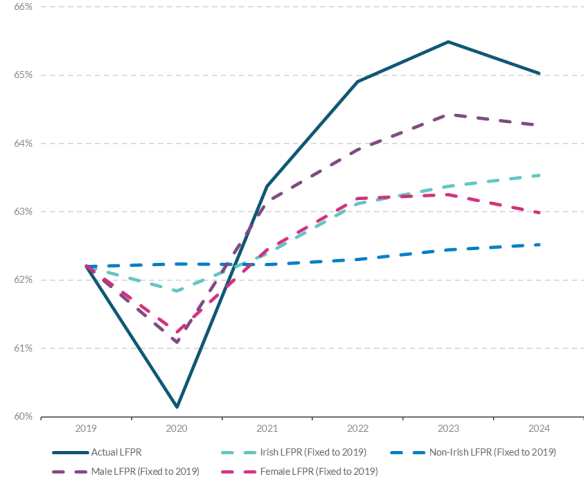
Figure 30
Cumulative change (Persons, Thousands)
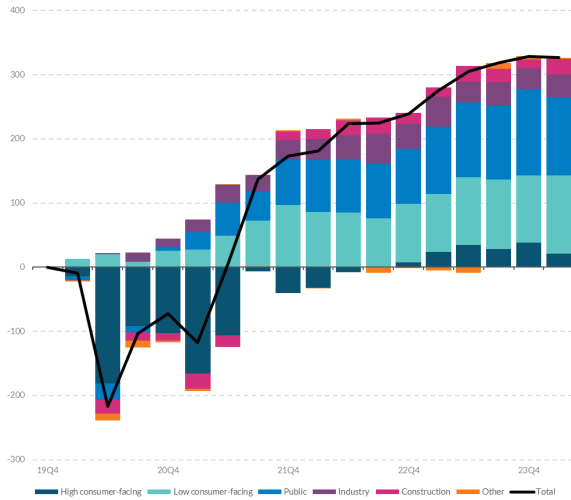
Source: CSO and Central Bank of Ireland
Notes: Contributions shown relative to Q4 2019 levels

Females and non-Irish citizens have the largest relative contribution to the participation rate growth
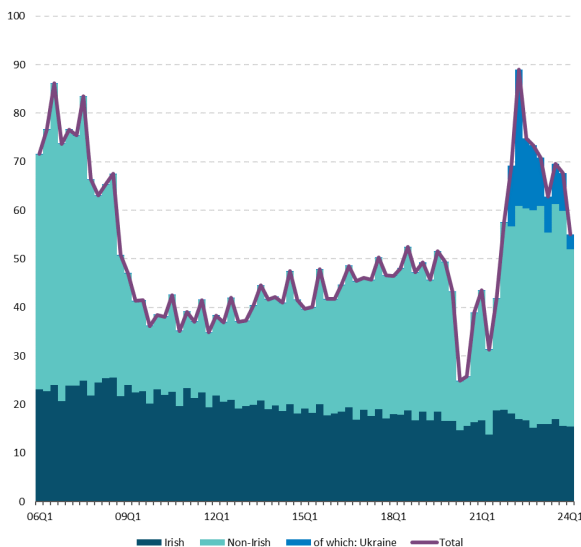
Figure 31
Labour Force Participation Rate (per cent)

Source: CSO and Central Bank of Ireland
Notes: Contributions fixed to Q4 2019 levels

Inward migration using PPS numbers appearing to slow towards pre-pandemic levels
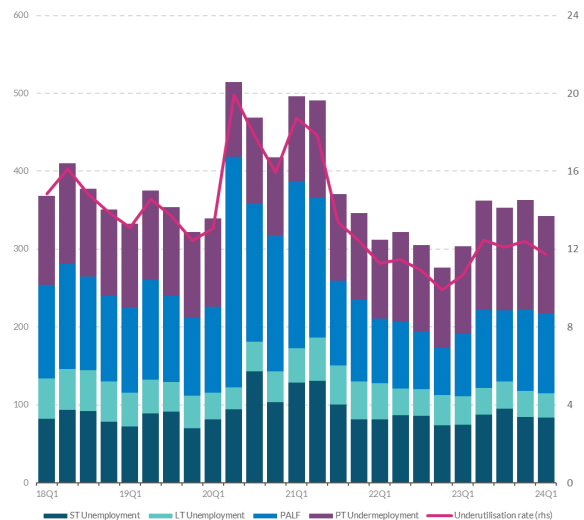
Figure 32
Persons (Thousands)

Source: CSO and Dept. of Social Protection

Wider measures of labour slack continue to decline as labour market remains tight

Figure 33
Persons (Thousands)   Per cent of extended labour force

Source: CSO and Central Bank of Ireland

Back to "Contents"

Earnings and Income

The job vacancy rate in Q1 2024, at 1.1 per cent, remained unchanged from the preceding quarter as labour demand eases following the post-pandemic expansion. The job vacancy rate has declined from a 1.6 per cent peak in 2022, which coupled with a relatively low and stable unemployment rate, has seen the Beveridge curve continue to slope downwards, suggesting that labour market tightness is easing from a more pronounced position compared to previous periods for which data are available (Figure 34). The unemployment-to-vacancy ratio indicates that there are 4.7 unemployed persons for every job opening, up from a series low of 3.5 persons in 2022. Labour demand is currently highest in the low-consumer facing (1.5 per cent) and public sectors (1.3 per cent). These sectors may experience stronger future employment growth relative to other sectors and have a large reliance on net inward migration in order to meet labour demand.

Average hourly earnings increased by 4.5 per cent year-on-year in nominal terms in Q1 2024 with positive real wage growth expected for each year of the forecast horizon. Positive nominal growth rates were observed across all sectors with the highest rates in ICT (7.1 per cent), Construction (7.1 per cent) and Accommodation (6.9 per cent). Many high consumer-facing sectors recorded strong earnings growth due to the increase to the National Minimum Wage on January 1st to €12.70 per hour. Looking ahead, nominal compensation per employee (CPE) growth of 5.6 per cent is projected in 2024. These projections are inclusive of the effects of the new public sector pay agreement, in addition to increases in the private sector amidst a tight labour market.[31]

Earnings in real compensation per employee terms are projected to return to 2019 levels by end-2024, aided by positive real growth this year. This would represent the first year of positive real CPE developments at an aggregate level since 2020, although data for the pandemic-period are affected by compositional issues. Gross disposable income (GDI), inclusive of taxes and transfers, is projected to increase by 2.8 per cent in real terms in 2024 aided by social transfers more than offsetting elevated inflation levels. On a per household basis, real gross disposable income is estimated to increase by 9.6 per cent on average between 2019 and 2024 to €60,818 per annum.[32]

[31] The public sector pay agreement saw workers in June receive backdated arrears to January 2024 of 2.25 per cent. Additional increases of 1 per cent in both June and October, which will affect annual growth rates in Q2 and Q4 2024.

[32] The 2024 figures are condition on central projections for income growth.

Combined increases to market income and social transfers (€24,887) have outweighed the effects of taxes and inflation (-€19,549) over this period to support real income growth (Figure 35). Real GDI growth is forecast to average 3.5 per cent over 2025 and 2026 facilitated by falling inflation.[33]

Beveridge curve shows easing in labour market tightness through lower job vacancy rate
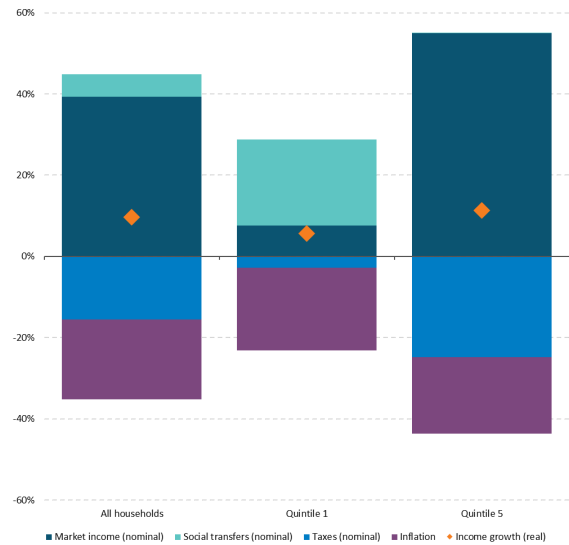
Figure 34
Vacancy rate (per cent)
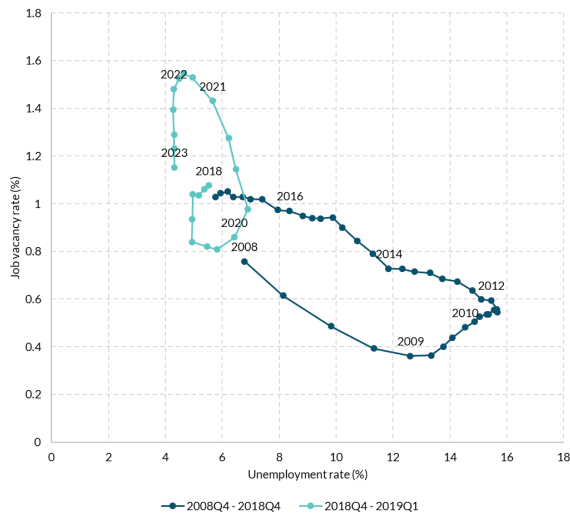
Source: CSO; EHECS
Notes: Data are calculated on a four-quarter rolling average.

Gross Disposable Income aided by income changes and social transfers between 2019 and 2024 to offset inflation

Figure 35
Contribution to growth

Source: SILC, CSO, Eurostat and author's calculations
Notes: 2024 levels are conditional on central forecasts.

Table 4: Labour Market Projections

	2022	2023	2024f	2025f	2026f
Employment (000s)	2,595	2,685	2,728	2,770	2,811
% change	6.9%	3.5%	1.6%	1.5%	1.5%
Labour Force (000s)	2,716	2,805	2,856	2,899	2,942
% change	5.0%	3.3%	1.8%	1.5%	1.5%
Participation Rate (% of Working Age Population)	64.9%	65.5%	65.5%	65.5%	65.6%
Unemployment (000s)	121	120	128	129	131
Unemployment Rate (% of Labour Force)	4.4%	4.3%	4.5%	4.4%	4.4%

[33] Projections for 2025 and 2026 are inclusive of the pension auto-enrolment scheme. While the employee will not receive this contribution in their wages, CPE includes both worker wages and salaries, as well as employer social contributions. A detailed assessment of the scheme and its effect on CPE is provided in IGEES analysis.

The Public Finances

The headline General Government Balance (GGB) is projected to record large budget surpluses over the medium term, supported by a very favourable labour market and strong domestic demand. The GGB outturn in 2023 - a surplus of €8.3bn (estimated 2.9 per cent of GNI*) - was broadly in line with Budget expectations. While expenditure growth increased sharply, reflecting large increases in government consumption, transfers and investment, this was offset by a slower, but still robust, increase in revenue. Turning to 2024, Exchequer data for the first five months of the year have been somewhat mixed. On the revenue side, developments have remained broadly positive. Tax receipts increased by 6.2 per cent on an annual basis in the year to May, broadly in line with the growth rate in 2023. Income tax and VAT receipts continued to rise on an annual basis while, following a weak start to the year, corporation tax receipts recovered in the second quarter. On the spending side, gross voted expenditure was 14.7 per cent higher than a year earlier and 2.6 per cent (€975m) ahead of its Budget profile. This primarily reflected developments in the Health Vote group where current spending was 10 per cent (€870m) above its target.

Table 5: Key Fiscal Indicators, 2023-2026

|	2023(e)	2024(f)	2025(f)	2026(f)
GG Balance (€bn)	8.3	8.4	8.8	9.2
GG Balance (% GNI*)	2.9	2.8	2.8	2.8
GG Balance (% GDP)	1.7	1.6	1.6	1.6
GG Debt (€bn)	220.7	224.2	227.4	226.9
GG Debt (% GNI*)	78.5	73.8	71.2	67.6
GG Debt (% GDP)	44.4	42.3	40.3	37.7
Excessive CT (€bn)	12.2	12.2	12.5	13.5
Underlying GGB (€bn)	-3.9	-3.8	-3.7	-4.3
Underlying GGB (% GNI*)	-1.4	-1.3	-1.2	-1.3

Source: Central Bank of Ireland Projections

For 2024 as a whole a GGB surplus of 2.8 per cent of GNI* is projected, with the budget balance expected to remain relatively stable in subsequent years (Figure 36). Compared to *Quarterly Bulletin 1*, this represents a large downward revision for 2025 and 2026, reflecting new Government expectations around non-core expenditure. Given the high level of uncertainty surrounding this category of spending, the Government introduced a contingency reserve in its

recent Stability Programme Update to ensure non-core spending remained unchanged at its 2024 level out to 2027 at €4.5bn or 1.3 per cent of GNI* per annum (Figure 37). Previously, it was assumed that almost all of this spending would be withdrawn by the end of 2024.[34] As a result, projected government spending growth now averages 5.5 per cent per annum over the period 2024 to 2026 compared to 4 per cent in *Quarterly Bulletin 1*. Anticipated average revenue growth, by comparison, is broadly unchanged at 5.3 per cent per annum.
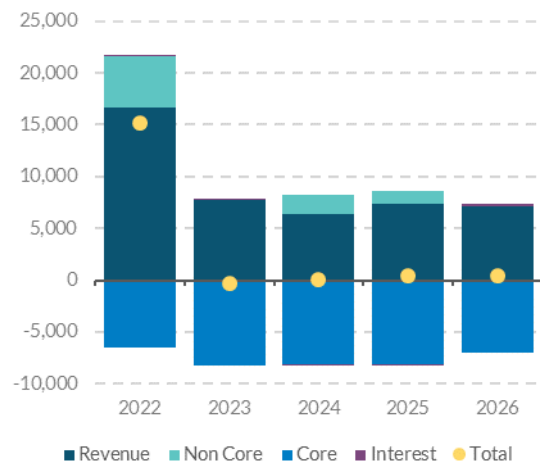
Outlook for GG Balance

Figure 36
per cent of GNI*
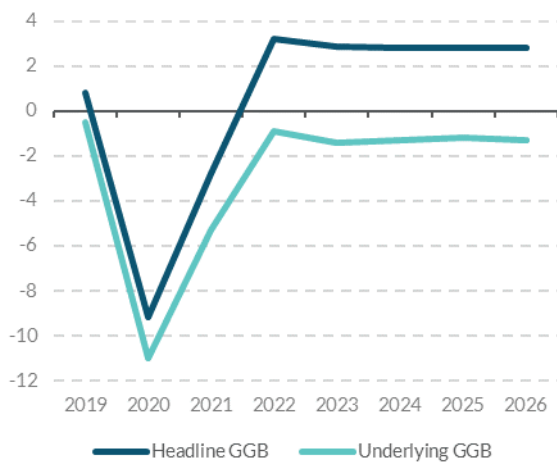
Source: Central Bank of Ireland.
Notes: Underlying excludes Central Bank estimates of exces corporation tax receipts.

Factors explaining change in GG Balance

Figure 37
€ million

Source: Central Bank of Ireland.

Reflecting large primary surpluses, strong nominal growth and a low effective interest rate, the General Government Debt (GGD) ratio is expected to continue its downward trend of recent years. While the euro area GGD ratio remained above its pre-pandemic level in 2023, the Irish ratio has fallen 18 percentage points since end-2019 and was at a 14-year low of 78.5 per cent of GNI* last year. A further decline to 67.6 per cent of GNI*is projected over the projection horizon (Figure 38). Looking at the main factors which determine government debt dynamics, the primary budget balance and interest-growth rate differential are expected to have a favourable impact, partly offset by a positive Deficit Debt Adjustment (DDA) as resources are

---

[34] The SPU notes that more detailed information on non-core spending will be provided in July's Summer Economic Statement. In the projections, the full contingency reserve in 2025 and 2026 have been included.

transferred to long term savings funds (Figure 39). Primary surpluses are expected to average 3.8 per cent of GNI* in the coming years, while the effective interest rate – which represents the average interest rate on the entire public debt stock – is expected to remain close to record lows, considerably below the average nominal GNI* growth. Marginal borrowing rates on 10-year debt have followed an upward trend in the second quarter of the year - moving back above 3 per cent for the first time since last November – but there is just one government bond set to mature in each of the years 2025 and 2026. The Government also has significant liquid assets at its disposal (€20.3bn or 7 per cent of GNI* at end April). While some of these assets are earmarked as funding sources for this year, their magnitude adds to the National Treasury Management Agency's (NTMA) funding flexibility over the medium term. The NTMA has issued €5bn of Government bonds so far this year, approaching the lower end of the €6bn to €10bn funding range set for 2024.
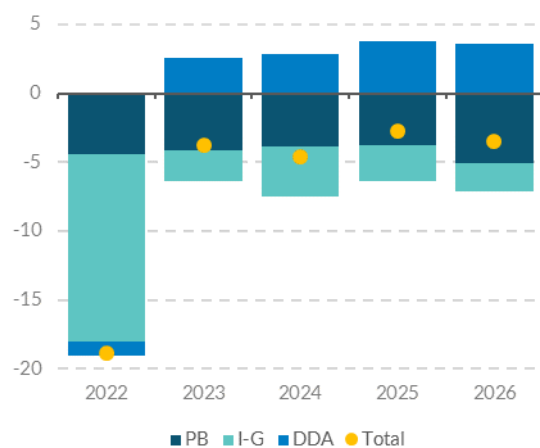
Outlook for GG Debt

Figure 38
per cent of GNI*
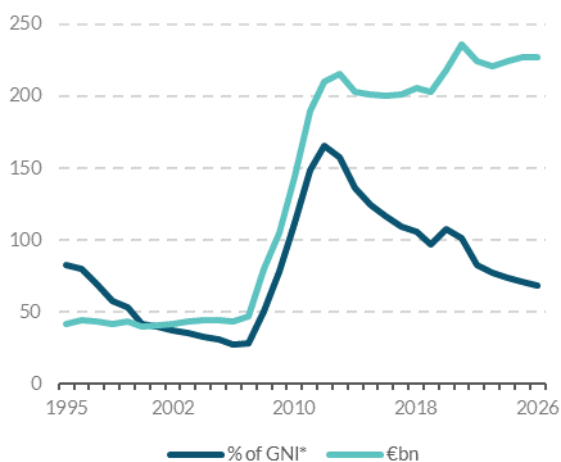
Source: Central Bank of Ireland.

Factors explaining change in GG Debt

Figure 39
per cent of GNI*

Source: Central Bank of Ireland.
Notes: PB – Primary Balance; I-G – Interest Growth differential; DDA – Deficit Debt Adjustment.

While Ireland's headline fiscal outlook is very favourable, it is surrounded by a high level of uncertainty. The uncertainty surrounding future corporation tax (CT) revenue is well established. The base for CT in Ireland is extremely narrow, with just 10 companies responsible for 52 per cent of corporation tax receipts in 2023. In addition, since 2015, growth in CT revenue has become disconnected from underlying growth in the real economy. When this "excess

CT" - which may not prove to be a permanent revenue source - is removed from the fiscal projections, the outlook for the GGB is significantly less favourable. The underlying GGB is now expected to remain in deficit throughout the projection horizon (Figure 36). International tax reforms as part of the BEPS process add further uncertainty to CT revenue. The increase to an effective CT rate of 15 per cent, introduced under Pillar 2 of BEPS, came into effect this year but the additional payments are not expected until 2026. A positive effect on CT receipts is currently expected from Pillar 2 over the projection horizon, but the overall effect of BEPS will ultimately depend on how companies react to the higher tax rate, and the introduction of Pillar 1 (which will reduce CT revenue paid in Ireland). The Government noted in its SPU that 'overall the net effect of the two-pillar solution on Ireland will be a significant loss of corporate tax revenue'. From a broader perspective, multinational companies also generate a significant proportion of income tax – 40 per cent of the total in 2022– and other receipts, adding to the concentration risk. [35] A number of expenditure pressures are also evident. Government investment spending is projected to grow strongly, underpinned by the National Development Plan (NDP). In terms of current spending, Exchequer data shows significant spending overruns in Health have continued so far this year. In the longer term, there is a need to ensure fiscal resources are available to support ageing and climate transition costs as well as continued public investment.

Box A: The International Economic Outlook

By the Monetary Policy Division

The global economy continues to tread an uncertain path marked by continued geopolitical tensions and a risk of global fragmentation in trade. After a period of tightening of monetary policy across the world in response to a global post-pandemic surge in inflation, central banks in a number of jurisdictions (e.g. euro area, Switzerland, Brazil, Canada) have started to reduce interest rates, with many others expected to gradually follow suit as inflationary pressures are expected to recede globally. However, uncertainty remains over the speed of convergence of inflation towards national targets and the associated monetary policy responses; expectations of interest rate reductions have generally been significantly revised since the beginning of

---

[35] Data from Revenue show that multinational companies were responsible for €12.4bn of income tax and USC in 2022. Total income tax receipts that year were €30.7bn.

the year, with fewer now expected in several economies by year-end. A number of risks face the world economy, with an escalation in geopolitical tensions and a fragmentation in global trade being key potential inflationary and recessionary risks. Growth in China might cause surprise in either direction due to policy and property sector dynamics, while strong labour markets and more persistent inflationary pressures could be seen in advanced economies.

The June ECB staff macroeconomic projection exercise revised up euro area growth projections for this year compared to the March exercise, expecting GDP growth of 0.9, 1.4 and 1.6 per cent in 2024, 2025 and 2026 (vs 0.6, 1.5 and 1.6 previously); private consumption is seen as the main contributor to growth in the second half of 2024 and beyond, as real wages rise. The inflation forecasts for 2024-26 have also been revised upwards to 2.5, 2.2 and 1.9 per cent, respectively, (against 2.3, 2.0 and 1.9 per cent in the March projections). The outlook for the global economy (excluding the euro area) has remained broadly stable, with GDP projected to grow by 3.3, 3.3 and 3.2 per cent respectively in 2024 to 2026. This is slightly below the rate of growth observed over the past decade. Trade – which has been weak in the past years also partly due to geopolitical tensions – is expected to grow more in line with GDP. Global CPI inflation is projected to continue reducing gradually, from 5.0 per cent in 2023 to 4.2, 3.3 and 2.9 per cent, respectively, in the following years. This pace of disinflation is only slightly slower compared to the March projections.

The euro area economy, while continuing to contend with sluggish domestic demand partly due to the effects of restrictive monetary policy (and despite record low levels of unemployment) as well as lagging productivity, returned to growth after a technical recession in the second half of 2023. In the first quarter of 2024, euro area GDP grew by 0.3 per cent on a quarterly basis, following growth of -0.1 per cent in the previous two quarters. Compared to Q1 2023, GDP was 0.3 per cent higher. Labour market dynamics remained strong, with employment growing by 0.3 per cent quarterly (1.0 per cent annually) in Q1 2024. The unemployment rate reached a record-low level of 6.4 per cent in April, from a steady 6.5 per cent in the previous five months. Euro area inflation remains close to, but above, the ECB target of 2 per cent. HICP Inflation ticked up to 2.6 per cent in May after two months at 2.4 per cent, with core inflation (i.e. excluding food and energy) rising to 2.9 per cent from 2.7 per cent in April, after it had been steadily declining. The increase in

both measures of inflation was primarily due to an acceleration in services inflation to 4.1 per cent in May, up from 3.7 per cent.

The Governing Council (GC) of the ECB decided in June to reduce the three ECB reference interest rates by 25 basis points, bringing the deposit facility rate (the main policy rate) to 3.75 per cent. The key ECB rates had been kept unchanged since September 2023, after cumulative increases of 4.5 per cent since the summer of 2022. The Governing Council deemed it appropriate to moderate the degree of policy restriction on the basis of an updated assessment of the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission. However, cautioning that domestic price pressures remained strong and pointing to upward revisions in its inflation forecasts, it reiterated that it will keep policy rates at a sufficiently restrictive level to ensure the return of inflation to its 2 per cent target in the medium term. The GC will remain data dependent and therefore is not pre-committing to any specific path for interest rates. The holdings within the Asset Purchase Programme continue to be reduced gradually in line with expectations by not reinvesting maturing securities. Holdings under the Pandemic Emergency Purchase Programme, starting from July, will be only partially re-invested so as to obtain a reduction in the portfolio of the order of €7.5bn per month; all PEPP reinvestments will be discontinued at the end of 2024.

Despite restrictive levels of interest rates and above-target inflation, the US economy remains resilient although growth has slowed down considerably in recent months. In the first quarter of 2024, the US economy expanded at an annualised rate of 1.3 per cent (corresponding to 0.3 per cent quarter-on-quarter), a significant slowing down compared to annualised growth of 3.4 per cent in Q4 2023. The labour market continues to remain tight, with historically low levels of unemployment arising. The unemployment rate was 3.9 per cent in April 2024, only marginally above 3.8 per cent the previous month and 3.4 per cent in April 2023. A few months of higher-than-expected inflation have prompted markets to revise expectations of rapid interest-rate reductions by the Federal Reserve, leading to higher bond yields and a stronger dollar. The annual US inflation rate has moved in a range of 3-3.5 per cent since October 2023, most recently declining to 3.3 per cent in May from 3.4 per cent the previous month. Core inflation, however, has displayed a steadier, albeit gradual, downward trend over the same period, falling to 3.4 per cent in May 2024 from 4.0 per cent in October 2023.

In June, the Federal Open Market Committee of the Federal Reserve maintained the target range for the federal funds rate at 5.25-5.5 per cent. The FOMC does not see it appropriate to reduce the target range until it has more confidence that inflation is sustainably moving towards its 2 per cent target; to determine this, the FOMC will carefully assess the incoming data and evolving outlook. Holdings of Treasury securities, agency debt and agency mortgage-backed securities continue to be reduced.

After a recession in the second half of 2023 (with quarterly GDP contracting by 0.1 and 0.3 per cent in Q3 and Q4 2023), the UK economy rebounded in the first quarter of 2024, growing by 0.6 per cent. The unemployment rate stood at 4.5 per cent in March. As with other advanced economies, this is a historically low level although it increased from a recent low of 3.8 per cent in December 2023. The UK CPI inflation rate dropped significantly in April to 2.3 per cent, from 3.2 per cent a month before and 8.7 per cent in April 2023. In April, the Monetary Policy Committee of the Bank of England decided with a majority of 7-2 to maintain the Bank Rate at 5.25 per cent, a level that was set in August 2023. The Committee indicated that it would keep under review for how long the rate should be maintained at the current level.

For the first time since it lowered its official interest rate to -0.1 per cent in 2016, in March 2024 the Bank of Japan decided to increase it to a range of 0-0.1 per cent. It cited positive developments in the establishment of a virtuous cycle between wages and prices that would lead to its 2 per cent inflation target being reached in the medium term. It has also stopped targeting a specific yield for 10-year Japanese Government Bonds, marking the end of its yield curve control policy, but will continue its purchases of those bonds. Both headline and core inflation in Japan have been above but close to 2 per cent since 2022, with a declining trend since 2023. GDP, meanwhile, contracted by 0.5 per cent in Q1 2024 (after stagnating the previous quarter), mostly due to declining consumer demand.

Growth in China performed better than expectations in Q1 2024, partly thanks to stimulus measures, with GDP growing by 1.6 per cent (5.3 per cent higher year-on-year) in the quarter after growing by 1.2 per cent in Q4 2023. The property sector, however, continues to weigh down on activity, with new house prices falling by 3.1 per cent annually in April, the decline in prices accelerating from previous months. Despite monetary and fiscal stimulus, inflation remains low, at 0.3 per cent in April 2024. The country had been in

deflation between October 2023 and January 2024, however core inflation, while below 1 per cent, remains firmly above zero.
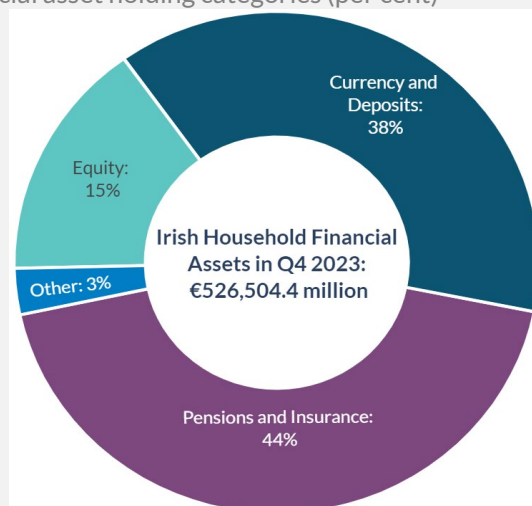
Box B: Household financial assets and the changing interest rate environment

By Mark Mulholland and Zita Szanto

Central Bank quarterly financial accounts statistics show that as of Q4 2023, aggregate Irish household financial assets are primarily comprised of 'currency and deposits' (38 per cent), and 'pensions and insurance' (44 per cent), together making up over 80 per cent of household financial assets. The rest of the household financial assets are divided between equity and other financial instruments such as debt securities and investment fund shares. (Figure 1). This *Box* considers recent developments in the two main components of financial asset holdings of Irish households – 'deposits' and 'pensions and insurance' - in the rising interest rate environment. We focus on the evolution of household deposit growth and composition, as well as on the movements in pensions and insurance holdings and asset valuation as a response to interest rate changes in recent years. [36]

Currency, deposits, pensions and insurance make up over 80 per cent of Irish household financial assets

Figure 1
Irish household financial asset holding categories (per cent)

Currency and Deposits: 38%
Equity: 15%
Other: 3%
Irish Household Financial Assets in Q4 2023: €526,504.4 million
Pensions and Insurance: 44%

Source: Central Bank of Ireland Quarterly Financial Accounts Statistics

---

[36] The recent economic letter 'Unravelling household financial assets and demographic characteristics: a novel data perspective' (Arrigoni, Bénétrix, McIndoe-Calder & Romelli, 2024) considers further the characteristics of households and their financial asset holdings

[Money and banking statistics](#) show the value of Irish household deposits increased substantially during the Covid-19 pandemic, with annual growth reaching a peak in Q1 2021 at 13.5 per cent. Annualised growth has now declined back towards pre-pandemic rates and at the end of 2023 it returned to being below 3 per cent, standing close to 2016 rates. Despite the decrease in annualised growth, the value of total household deposits did not show any decrease, even during the recent cost of living crisis period, and reached €152.4 billion by Q4 2023.

As of Q4 2023 over 90 per cent of deposits are held in 'overnight deposits' while term deposits (covering 'redeemable at notice' and 'agreed maturity' deposits) make up the remainder. The latter's share of household deposits, while small, has increased from 6 per cent a year ago to 10 per cent, reflecting the increased, albeit slow, return offered on such deposits. (Figure 2).

Household deposit growth has returned to pre-pandemic levels while remaining positive

Figure 2

Irish household deposits (€ million) and annual growth rate (per cent)

● Total household deposits ● Overnight household deposits — Annual growth rate of household deposits (%) (RHS)
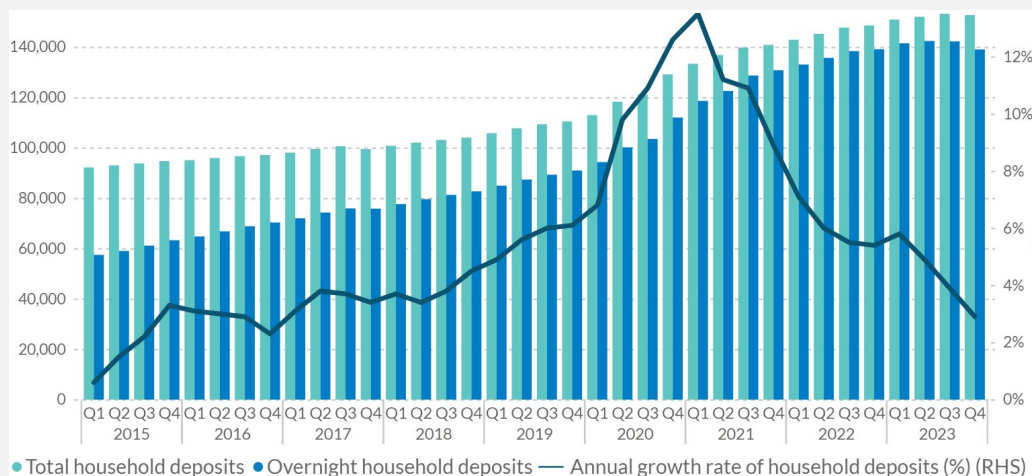
Source: Central Bank of Ireland Summary Irish Private Sector Credit and Deposits Statistics

'Pensions and insurance' provide protection against a range of risks as well as having a longer-term savings role for households. [Insurance](#) and [pension fund](#) statistics show Irish households predominantly hold these assets in the form of longer-term pensions and life insurance. [37] Nonlife insurance (for

---

[37] While being significant components of household income, due to their unfunded nature, [state pension](#) and [public service pensions](#) are not included as household assets. However

example, property or motor insurance) makes up a smaller share, in part reflecting the shorter-term nature of these products (Figure 3). Life insurance holdings partly reflect pension investment as life insurers provide pension products (for example personal pensions, annuities and drawdown products) as well as other life insurance products (such as mortgage protection).

For defined contribution (DC) pensions and unit linked (UL) life insurance, the household asset valuation generally mirrors the movements in premiums/contributions invested in asset markets such as bonds or equities, with risk[38] borne by the household. For defined benefit (DB) pensions and non- unit linked (N-UL) life insurance, the benefits received by the household are generally independent of the assets invested and, therefore, risk is borne by the pension fund or the insurer. These products are valued using actuarial techniques and depend on a range of variables including interest rates. There has been a longer-term trend away from risk being borne by insurers and pension funds towards it being borne by households driven by transactions in these products.

Irish household holdings of pensions and insurance assets declined during 2022 but began to recover in 2023

Figure 3
Irish household holdings of pensions and insurance assets (€ million)
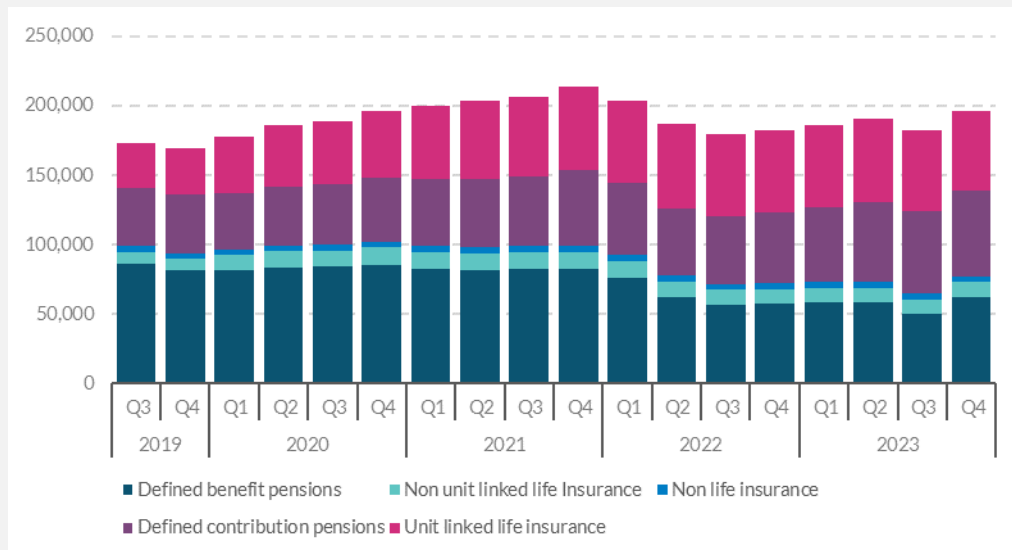
Source: Central Bank of Ireland Insurance Corporations and Pension Funds Balance Sheet Statistics

---

actuarial reviews undertaken every three years show that, as of 2021, state pensions have an 'accrued-to-date-liability' of €471 billion and public service pensions of €176 billion.
[38] Including, for example, risk of investments decreasing in value, or not providing sufficient income for the rest of the beneficiary's life in retirement

Notes: Insurance data adjusted for international effects and life insurance provided to the pension fund sector, nonlife insurance includes provision to business. While the pension fund sector is domestically focused the insurance sector in Ireland has both a domestic and international role. The life insurance sector provides products both directly to households and indirectly through pension funds.

As euro area inflation and policy rates increased in 2022, market interest rates such as the yield on sovereign debt[39] also increased and, at the same time, the market value of assets held by insurers and pension funds declined. As a result, household holdings of DC pensions fell by 11 per cent between Q4 2021 and Q3 of 2022 but have since recovered by 23 per cent. Having experienced growth prior to 2022, UL life insurance levelled off and declined slightly in 2023. The impact of these movements could vary depending on the circumstances of the beneficiary, for example if or when any change in valuation is realised or changes in annuity rates occur.

Similarly, interest (or discount) rates used to value DB pension and N-UL life insurance[40] products increased in 2022 which has led to a decline in the actuarial valuation of these products. In general, higher interest rates reduce the cost of future benefits to the insurer or pension fund - although an indexation of benefits to inflation could partially offset this. DB pensions fell in value by 32 per cent between Q4 2021 and Q3 of 2022 and have since recovered by only 8 per cent, while N-UL life insurance fell 10 per cent and recovered by just 1 per cent over the same periods.

Retail interest rates statistics show that deposit interest rates were slower to respond to the changing environment. While 'redeemable at notice' and 'agreed maturity' household deposits interest rates started to increase in 2023, interest rates for overnight deposits have shown only marginal growth, increasing to 0.13 per cent by Q1 2024 (Figure 4).

Despite potential risks emerging internationally (for example the UK gilt crisis), the changing interest rate environment has seen the net worth[41] of Irish DB pension funds improve, moving from a deficit to a surplus in aggregate. Total assets of the sector fell by 15 per cent between Q4 2021 and Q3 of 2022 while liabilities declined by 23 per cent over the same period. Since then, assets have recovered by 12 per cent and liabilities by 14 per cent, with the sector's net worth remaining positive in 2023. As seen in the

[39] The 'behind the data' 'The Insurance & Pension – Sovereign Nexus' discusses the role of the insurance and pension fund sectors in the sovereign debt market
[40] For example, the EIOPA risk free rates used to calculate liabilities under Solvency II
[41] i.e. the difference between assets and liabilities

second half of 2023, net worth is sensitive to movements in assets and liabilities, including as a result of volatility in interest rates. If interest rates were to decline then this could see a reversal of the upward movement seen in recent years, with the evidence of the recent period showing that pensions and insurance valuations move with markets while there is a lag in the pass through on interest rate changes on retail deposits.

Market interest rates have increased while overnight retail deposit rates have not grown at the same pace as other deposit rates

Figure 4

Development of various interest rates (per cent)
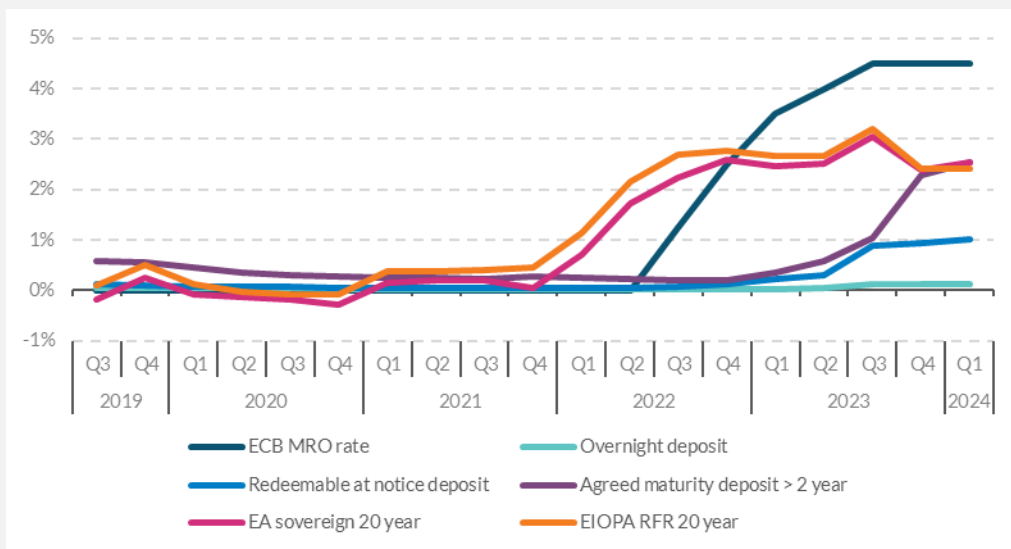
Source: Central Bank of Ireland, European Central Bank and European Insurance and Occupational Pensions Authority

Notes: Euro area (EA) sovereign yield curve calculated by the ECB; 20 year rate presented given the longer term nature of pensions and life insurance liabilities; all values displayed at quarterly frequency. Risk free rates (RFR) produced by EIOPA are used by insurers to calculate liabilities under Solvency II; Main refinancing operations (MRO) is the rate banks pay when they borrow money from the ECB for one week

Irish pension fund net worth turned positive in 2022 as interest rates increased but with volatility in 2023

Figure 5

Irish pension fund sector total assets and net worth (€ million)
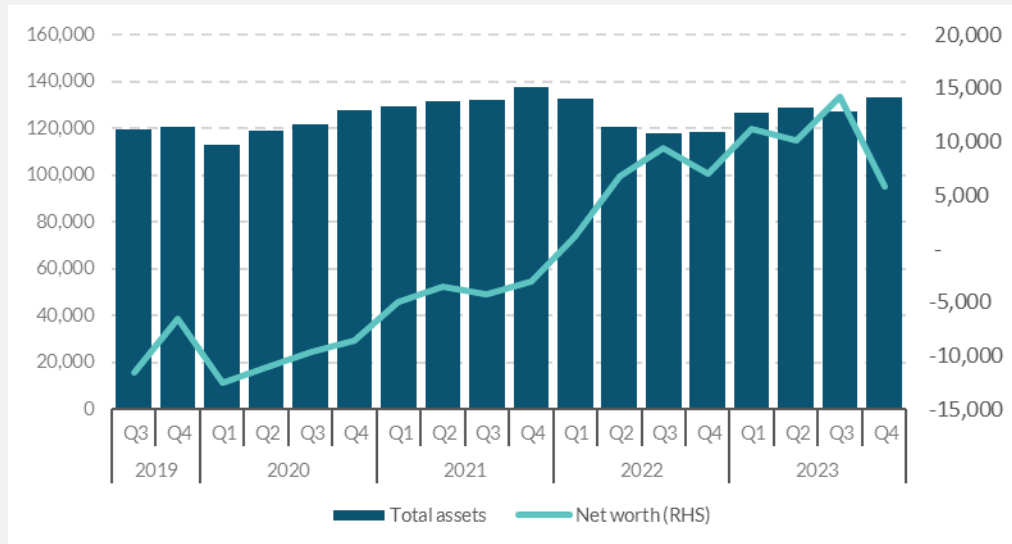
Source: Central Bank of Ireland Pension Funds Balance Sheet Statistics

Box C: Implications of euro area-US interest rate divergence for the Irish economy

By Thomas Conefrey, Cian Ruane and Graeme Walsh

Introduction

The recent economic performance of the United States has been solid even with historically high interest rates, as confirmed by a series of data releases between end-2023 and early-2024. This has led financial markets to expect the timing of a first interest rate cut to be later than previously anticipated. Markets have also signalled an expectation that the overall extent of monetary policy easing in the US will be more curtailed than envisaged 12 months ago. In the euro area, by contrast, expectations regarding the path of the ECB interest rates have changed to a lesser extent. As a result, financial markets have started to price in some divergence between the monetary policy paths expected in the euro area and in the United States. This is reflected in a widening interest rate differential (Figure 1). Market expectations of policy rates as of early June 2024 (solid lines) point to a significantly wider gap between expected ECB and Fed policy rates out to 2026 compared with market expectations a year ago (dotted lines). The

purpose of this box is to assess the possible implications of this divergence for the Irish economy.

Interest rates in the US are set to remain higher for longer than previously expected

Figure 1

Per cent
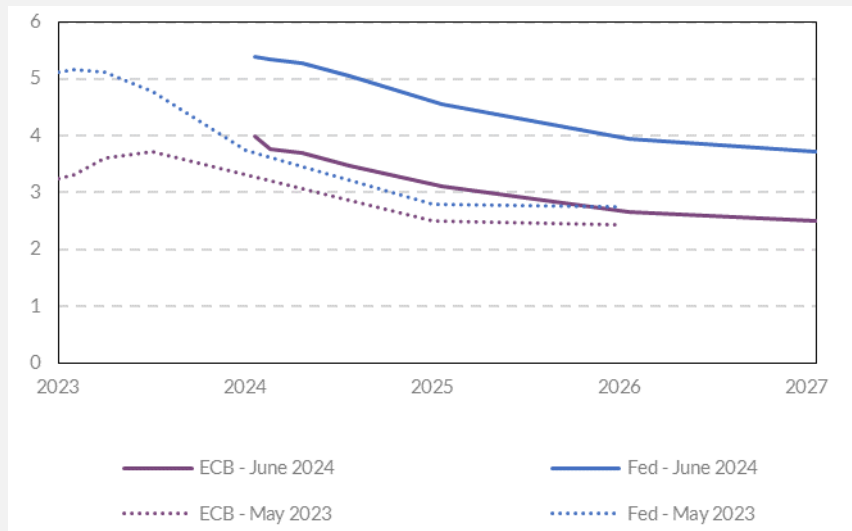
Source: St.Louis Fed, ECB, Bloomberg.

Note: Chart shows the market implied policy rates for the ECB and Fed.

Transmission channels

The main transmission channels of euro area-US interest rate divergence to the Irish economy are through the trade and the exchange rate. In relation to trade, US economic growth overperformed expectations considerably in the second half of 2023 and early 2024 (Figure 2). In April 2024, the IMF revised upward its projections for US growth by 1 percentage point compared with its October 2023 forecast, largely due to stronger than expected consumption. Ireland, as a small open economy, is sensitive to US consumer demand through exports. Indeed, the US was Ireland's largest market for goods exports and second largest for services in 2022. The sector most exposed to US demand is chemicals and pharmaceuticals, where US exports account for over 40 per cent of the total. The US is also an important market for Irish exports in the ICT sector, both manufactured goods and services. While an increase in US demand stimulates activity in these sectors in Ireland, it may also increase demand and hence prices for a range of global commodities. Such a rise in commodity prices would increase import prices in

Ireland, leading to rising costs in exposed sectors and putting upward pressure on inflation.

Growth outlook for the US economy revised upwards since October 2023

Figure 2

Per cent
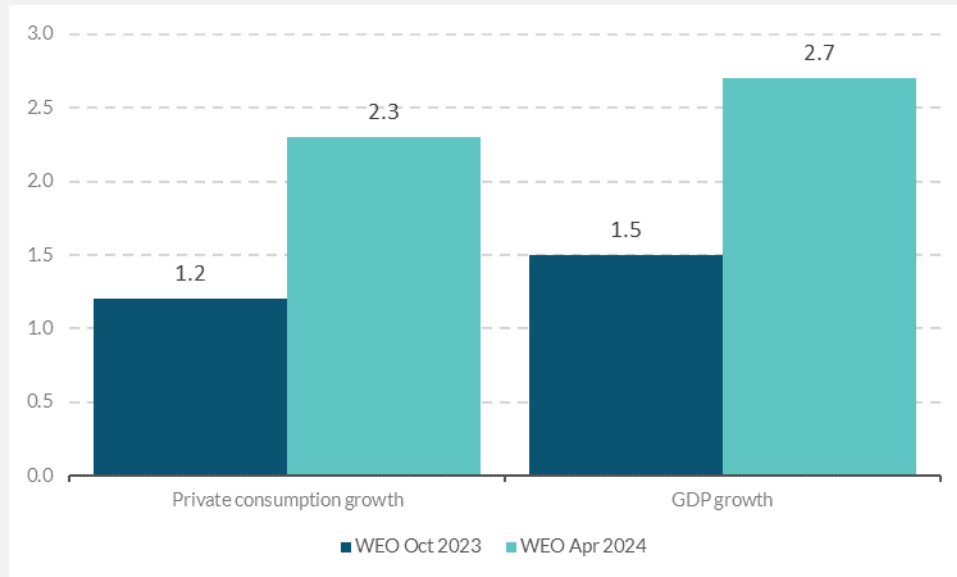
Source: IMF World Economic Outlook (WEO).

Note: IMF WEO Apr 2024, IMF WEO Oct 2023.

In terms of exchange rate implications, the divergence between Fed and ECB rates could lead to a depreciation of the euro relative to the dollar. In principle, such a depreciation would boost euro area exports, all else equal, as European goods would become relatively cheaper for US consumers. The strength of this mechanism will depend on the currency that European exports are priced in. Gopinath (2015) shows evidence of dominant currency pricing, i.e. a large proportion of global trade is priced in dollars. This is particularly true for Ireland where 70 per cent of manufactured goods exported outside the EU are priced in dollars, a significantly higher proportion than in other EU countries (Figure 2). If exports are priced in dollars, demand is not affected by an appreciation of the dollar, muting the real effects on trade arising from the change in relative exchange rates.

Back to "Contents"

A high proportion of Ireland's manufactured goods exports to outside the EU is priced in dollars

Figure 3

Per cent
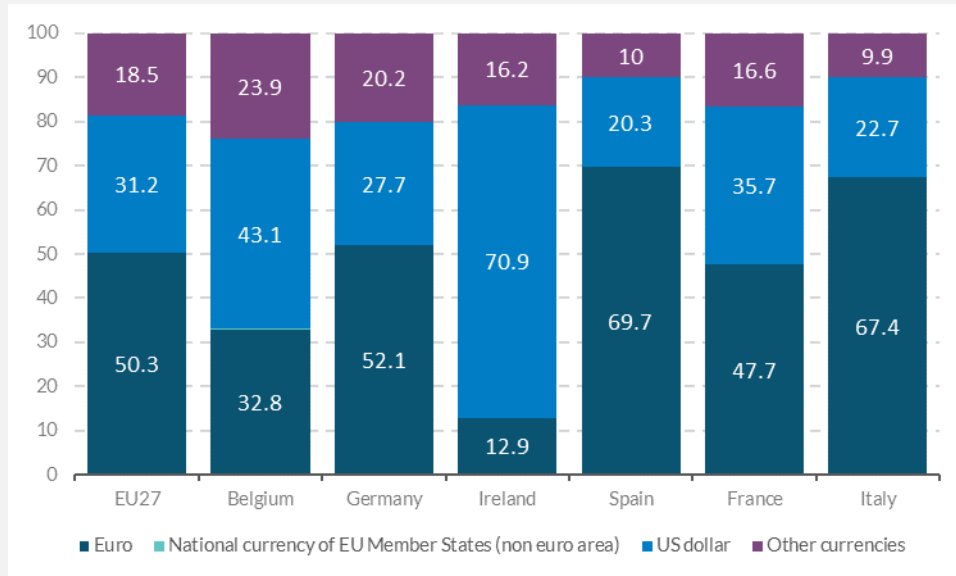
Source: Eurostat.

Simulating a US-euro area interest rate divergence: US demand shock

To estimate the potential macroeconomic impact of a divergence between US and euro area interest rates, we perform a simulation exercise using the National Institute of Economic and Social Research's Global NiGEM model in conjunction with the Central Bank's semi-structural model of the Irish economy. The purpose of this exercise is to illustrate the transmission channels of euro area-US interest rate divergence and to estimate the potential effects.

A divergence between US and euro area interest rates may occur for different reasons, including demand shocks, supply shocks, and monetary policy shocks. On the basis that US GDP growth forecasts for 2024 were revised upwards from 1.5 to 2.7 per cent in the most recent IMF forecasts (Figure 1), we focus on a stylised US demand shock. Since US private consumption was the main driver of the IMF's upward revision to GDP – itself revised up from 1.2 to 2.3 per cent in 2024 – we run a positive exogenous shock to US consumption growth in NiGEM of approximately 1.1 percentage points which lasts for one year. The shock is designed to capture the impact on Ireland of the better than expected

performance of the US economy and the related implications for euro area and US interest rates and exchange rates.

The shock has a direct impact on US GDP growth which increases temporarily by 0.6 percentage points in 2024 (Figure 3) and would put upward pressure on US inflation. In the model, the increase in inflation leads to a rise in the policy interest rate, which is assumed to respond according to a Taylor rule. The increase in US interest rates in the simulation is in line with the observed rise in the market-implied path for US rates since October 2023. This creates a transatlantic divergence in interest rates, leading to an appreciation of the US dollar relative to the euro.

The Irish economy would be affected through the external demand and exchange rate transmission channels discussed above. Higher US GDP growth would increase the external demand for Irish exports by 0.4 per cent in 2024 and boost tradable sector output. Ultimately, our simulation suggests that output (GNI*) growth in Ireland would be 0.3 percentage points higher than otherwise in 2024. In relation to inflation, the increase in economic activity in Ireland would exert some upward pressure on consumer prices. This effect would be added to by higher import prices which would rise due to the depreciation of the euro against the dollar. The combined impact of these effects on overall inflation is estimated to be small, amounting to about 0.1 percentage point in 2024.

It is important to note that the central forecasts in this *Bulletin* already incorporate the latest projections for euro area and US growth, interest rates and exchange rates. Therefore, euro area-US interest rate divergence as contained in current market expectations is reflected in our baseline projections and the simulation results should not be interpreted as representing additional impacts on top of the central forecast.

Macro Impact of a Positive US Demand Shock

Figure 4

Deviation from baseline in 2024
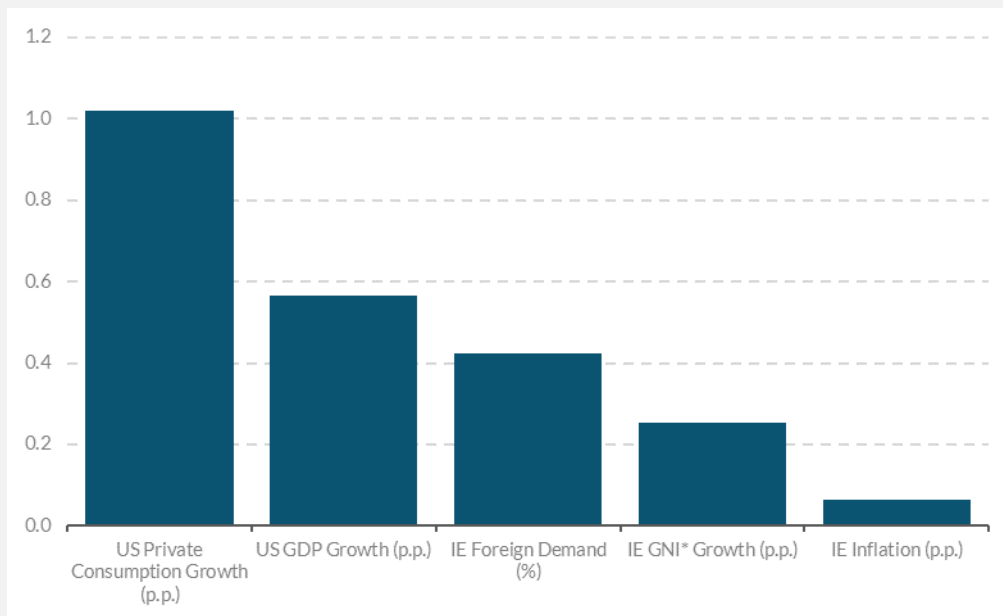
Source: authors' calculations using NiGEM and Central Bank semi-structural model.
Note: These deviations are incorporated into, and not additional to, the baseline forecasts presented in this Bulletin.

Summing up, the market implied paths for euro area and US interest rates have diverged over recent months reflecting new information on the realised and expected performances of both economies. The analysis in this *Box* shows the net impact on Irish activity and inflation of EA-US interest rate divergence in 2024 is likely to be small. Over the longer term, underlying issues such as the prospects for long-term growth in the two economies and differences in investment and productivity growth will have a more material impact on economic growth and inflation in Ireland relative to the effects of short-term divergence in interest rates.

Box D: Housing supply: uncertainty in the delivery cycle

By Thomas Conefrey, Niall McInerney, John Scally[42] and Gerard Kennedy[43]

Recent developments in the life cycle of housing supply in Ireland have created some uncertainty around current forecasts for housing completions. In particular, the period since the pandemic saw a large increase in the number of units granted planning permission but which have not proceeded to construction. Recently, the first four months of 2024 has seen a surge in housing commencements, which increased by 205 per cent compared with the same period in 2023. While historically up to early 2020, new commencements typically led to housing units being completed 12 to 18 months later, this pattern has weakened of late, leading to uncertainty over the future level of completions arising from the surge in commencements. This Box discusses recent developments in key indicators in housing supply in Ireland and the interactions between planning permissions, commencements and completions. Several factors affect the level of housing completions over the longer term, including house prices, the cost of new house building and the overall viability of specific residential projects. The Box also illustrates the potential impact of a reduction in building costs on housing investment.

The housing supply cycle

A planning permission application for development on land zoned for residential use is often the first stage where a potential housing unit enters official statistics. The planning permission application process for any potential multi-unit residential development has multiple stages and can take a considerable time to complete. The pre-application stage involves feasibility studies, including technical environmental, economic, legal, operational and assessment feasibility studies. The next step of the pre-application is the detailed design of the proposed development, pre-planning meetings with local authorities and public consultation phase. A successful pre-application stage may then elicit a full planning application if all the stages are successful and a development looks viable. A decision on a successful application is, in theory, issued within 8 weeks. In practice, the process can take significantly longer. The post-decision phase of an

---

[42] Irish Economic Analysis Division.
[43] Macro-Financial Division.

application in the form of planning appeals and judicial reviews can add significantly to the timeline of a potential residential development.

With a successful planning permission application and when a residential development is deemed viable, the next phase where a potential housing unit shows up in official statistics is in commencement figures. These are derived from reported commencement notices, which are required by law to be submitted between 14 and 28 days prior to work starting on site. The Department of Housing, Planning and Local Government publish these commencement data on a monthly basis. When work is completed on a development, a notice of completion is submitted to the Building Control Authority. The Central Statistics Office publish new dwelling statistics informed by these notices of completion, as well as data on planning permissions on a quarterly basis. A recent study by The Department of Finance indicated that the average time between the granting of planning permission and work commencing nationally was 14 months and 18 months for apartment buildings. [44] In Dublin city, where there is a relatively greater number of apartments, the average length of time between a granted permission and the commencement of construction was 21 months. The Department's analysis also indicated lengthening permission-commencement lags of late, with the share of sites moving to construction in the first six months falling by 5 per cent last year compared with previous years. The number of units that have received planning permission but have not commenced has increased in recent years (Figure 1). These unfulfilled or non-commenced housing units appear to correlate negatively with house price developments relative to building costs, with periods of decelerating house prices relative to building cost changes resulting in higher non-commencements, as expectations of future profit margins potentially affecting viability. [45] This indicates that the permissions-commencement part of the cycle is likely to be state dependant on developers' expected profit margins.

[44] Mind the gap - measuring the lag between planning permissions and commencements
[45] The pick-up in house prices from 2020Q3 to 2022Q1 coincided with a period of significant increases in housebuilding costs negatively affecting developer profit margins.

Price and cost developments result in changes to the permissions to commencements relationship

Figure 1: Uncommenced permissions, house costs and prices
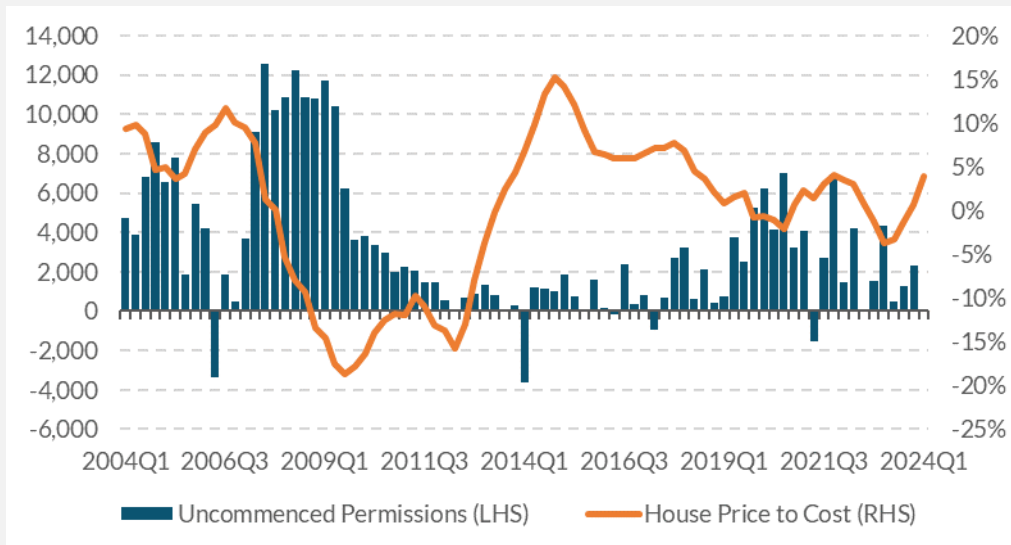
Source: Central Bank of Ireland, CSO, DoHLGH.

The next phase of the housing supply cycle is from commencements to completions. Historically, there has been a relative stable relationship between the two (see Figure 2). The correlation between completions and the previous year's commencements is high at 0.99 over the 2005 to 2023 period, with last year's commencements being a good guide to this year's completions, assuming that it takes between 12-18 months to complete a housing unit. This rule of thumb, however, is less stable during periods of uncertainty or economic volatility, or when there are changes in housing policy or regulations. For example, the correlation between completions and the previous year's commencements broke down during COVID when sites were closed and builders were unable to build out commencements. More recent volatility in commencements has increased uncertainty around completions. The weakness in completion figures for 2024Q1 likely relates to the uncertainty developers and builders faced 12 to 18 months previously when energy and building material costs increased substantially after the Russian invasion of Ukraine.

The housing supply cycle: past trends in planning permissions and commencements are usually a good guide to completions

Figure 2: Planning permissions, commencements and completions
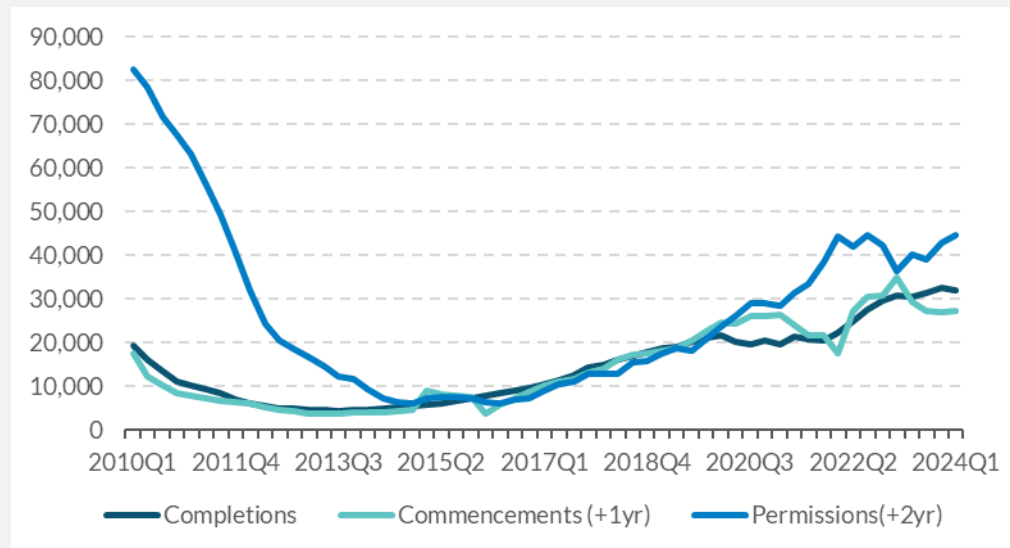
Source: Central Bank of Ireland, CSO, DoHLGH.

The strong pick-up in commencements in the opening months of 2024, which were running at over 52,000 annually, including over 18,000 commencements in April alone, have also increased uncertainty about completions. The rise in commencements coincides with reductions in development levies and rebates for water connections, which were due to expire in April 2024. These have now been extended until the end of the year. These commencements have to be completed by end-2026 in order to avail of the waivers and levy reduction. Based on the past relationship between commencements and completions up to 2020, the units commenced in Q1 2024 would be expected to be reflected in housing completions from early 2025. The precise timing of the delivery of these units is unclear at present and will be influenced by several factors including viability and capacity in the construction sector. Recent house price and cost developments would suggest that an increased pool of potential developments that have planning permission are likely to become viable (Figure 1).

Another factor affecting the relationship between permissions, commencements and completions is the changing mix of housing. Planning permissions and completions for apartments have increased substantially (Figure 3 and Figure 4). Apartments are generally more likely to be subject to

Back to "Contents"

delays, objections and judicial reviews.[46] The average of successful cumulative apartment completions is less than one third of cumulative apartment planning permissions since 2018 (Figure 4). This compares to an average of 80 per cent for cumulative housing permissions over the same period. A growing reliance on apartments as part of increasing overall housing output would likely lead to a longer lag between planning permissions and completions in the data.
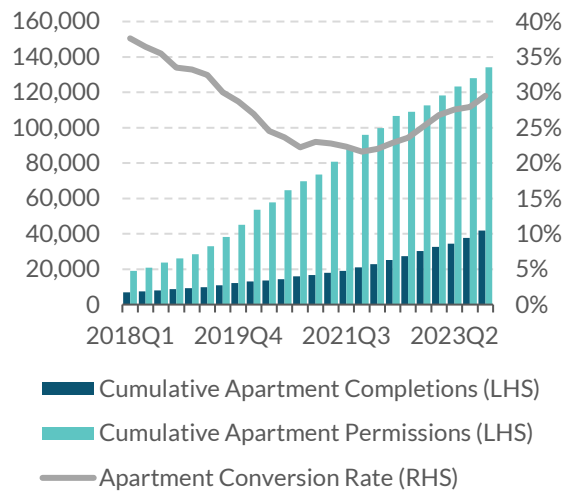
The housing mix is changing with an increase in the number of apartments

Figure 3: Completions
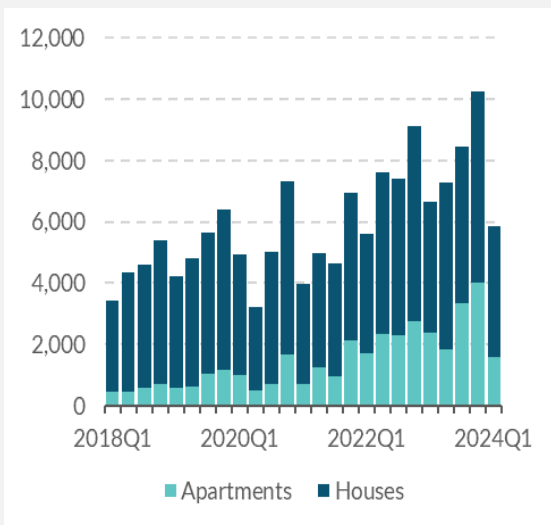
Figure 4: Planning Permissions

Source: CSO.

Source: CSO, Author's calculations.

Modelling the impact of the cost reduction on housing supply

Housing supply is a slow moving process with activity commenced well in advance of the delivery of a new dwelling. Many factors determine the pace at which new dwellings are completed. Changes in the demand for housing including changing population levels, incomes, interest rates and credit availability affect affordability and, ultimately, prices, which feed into developers' supply plans. Changes in housing policy and regulations, as well as changes in labour and material costs, affect the viability of any development. Forecasts for housing supply are subject to uncertainty but particularly so when there are market interventions that change traditional dynamics. Statistical models used for estimating housing supply models may not fully capture the impact of policy interventions. As a result, we use

---

[46] A report by construction consultancy firm Mitchell McDermott pointed to over 8,000 housing units held up by judicial reviews in January of 2024.

structural model-based assessments to determine the actual impact of a policy change to inform our judgement in making projections for housing supply.

To explore further the impact of viability on construction activity, we now examine the expected actual increase in completions from a supply-side cost shock similar to the decline in costs experienced with the reduction in local authority levies and the Irish Water rebate on connection fees. To quantify the potential impact of this reduction in building costs on future housing supply, we use the Bank's semi-structural model. This model relates investment in the residential sector to the profitability of building new housing units. The latter depends on how house prices change relative to construction costs, while greater availability of construction credit will also stimulate investment. The model then derives the number of housing completions consistent with this level of investment. A priori, a reduction in building costs should increase housing supply in the short-to-medium term, all else being equal.

Construction levies and water charges comprise approximately 5 per cent (or approximately €20,000) of the overall cost of delivering new housing units (SCSI, 2023).[47] Given the assumed temporary nature of the measures, we calibrate the shock as a 5 per cent reduction in construction costs (equivalent to the levy and water waiver) that lasts for seven quarters from the second quarter of 2023 to the end of 2024. The impact of this shock on housing completions over a five-year period is shown in Figure 5. The reduction in construction costs raises residential investment relative to baseline throughout the scenario horizon, with a peak impact of 2.8 per cent around 10 quarters after the shock. This translates into an increase in completions at peak of approximately 4.5 per cent relative to baseline. All other things being equal, this decline in costs would lead to approximately 1,500 more housing units over the following 18 months. It should be noted that other factors have an important role to play in determining whether such an increase in housing supply in response to a reduction in costs would materialise in reality, including credit conditions and the rate of house price growth.

---

[47] SCSI (2023). *The Real Cost of New Housing Delivery 2023*. Society of Chartered Surveyors Ireland.

Housing cost shock and supply response

Figure 5

% deviation from baseline

Source: Central Bank of Ireland and author's calculations.

Box E: Risks to Irish Inflation from elevated global oil supply uncertainty

By Gabriel Arce Alfaro

On the range of upward risks to present inflation, energy prices – and particularly oil prices – stand out among the most significant threats to the current path of inflation back to target. This is due to its direct and indirect effects on goods and services consumed by households, as illustrated by the recent surge in inflation, triggered by rising energy prices. Considering the link between oil prices and inflation, as revealed by recent events, a large volume of research has focused on the effects of an unexpected shortfall in global oil supply on energy prices and inflation. Recent research shows that periods of heightened Global Oil Supply Uncertainty (OSU) are linked to geopolitical developments and changes in the trajectory of global oil supply, with quantifiable effects on real oil prices arising and an important response of global oil inventories. [48] Using this estimated measure for Global Oil Supply Uncertainty, we estimate the effects of periods of increased OSU on

---

[48] Arce Alfaro, Gabriel, 2024. "Oil Supply Uncertainty in the Global Oil Market". *Manuscript.*

the Irish economy. This Box summarises the findings of this recent research and outlines the potential implications for the inflation forecasts in this *Bulletin*.

Methodology

Global oil supply uncertainty is measured as the volatility in that part of global oil production that is not explained by a standard model of the global oil market. Implicitly, this suggests that oil supply uncertainty peaks during periods where the determinants of oil production – namely, a change in aggregate demand, inventories or global oil prices – are insufficient to explain changes in the current level production (Figure 1). We proceed to use this measure of oil supply uncertainty in a Structural Vector Autoregressive (SVAR) model of the Irish economy. Using monthly data consider the Business Cycle Indicator (BCI)[49] as a monthly measure of economic activity, HICP index, Irish energy prices and the oil supply uncertainty from (Arce Alfaro, 2024) in the model. To interpret the effects as percentage changes, HICP and Irish energy prices are included in log-levels. We identified the shocks using sign restrictions and employ Bayesian methods to estimate the model.

Global oil supply uncertainty

Figure 1: Estimated oil supply uncertainty measure and global oil market events
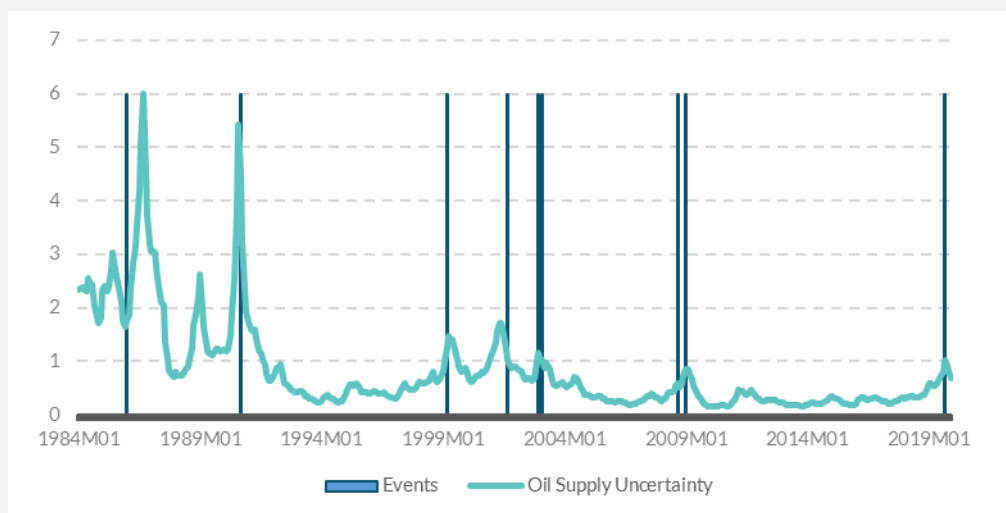
Source: Arce Alfaro, 2024.
Note: Events are taken from the U.S. Energy Information Administration.

---

[49] Conefrey, Thomas & Walsh, Graeme, 2018. "A Monthly Indicator of Economic Activity for Ireland". *Economic Letters 14/EL/18, Central Bank of Ireland.*

What are the effects of elevated oil supply uncertainty on the Irish economy?

Figure 2 illustrates the responses of the variables to an unexpected increase in OSU. An increase in OSU, measured as a one standard deviation shock comparable to the increase observed during the Global Financial Crisis (2008 – 2010), raises Irish energy prices by 1 per cent. This effect peaks within 3 months and persists for half a year after the shock. Heightened OSU also leads to higher Irish inflation, increasing it by 0.2 per cent, with a peak effect after 3 months and a persistent response lasting 8 months.

Additionally, Irish economic activity is negatively affected by this shock, as indicated by a 0.2 p.p. decrease in the Business Cycle Indicator. This decline lasts for 22 months, with the strongest response observed after 12 months.

In accordance with the literature on the effects of uncertainty shocks[50], these lower economic activity by suppressing current consumption. However, in contrast with aggregate uncertainty shocks, oil supply uncertainty has an opposite effect on prices, leading to an increase in energy and headline inflation.

Effects of a global oil supply uncertainty shock in the Irish economy

Figure 2: Impulse responses to a one S.D. shock to global oil supply uncertainty

Median responses are plotted jointly with the 68% error bands
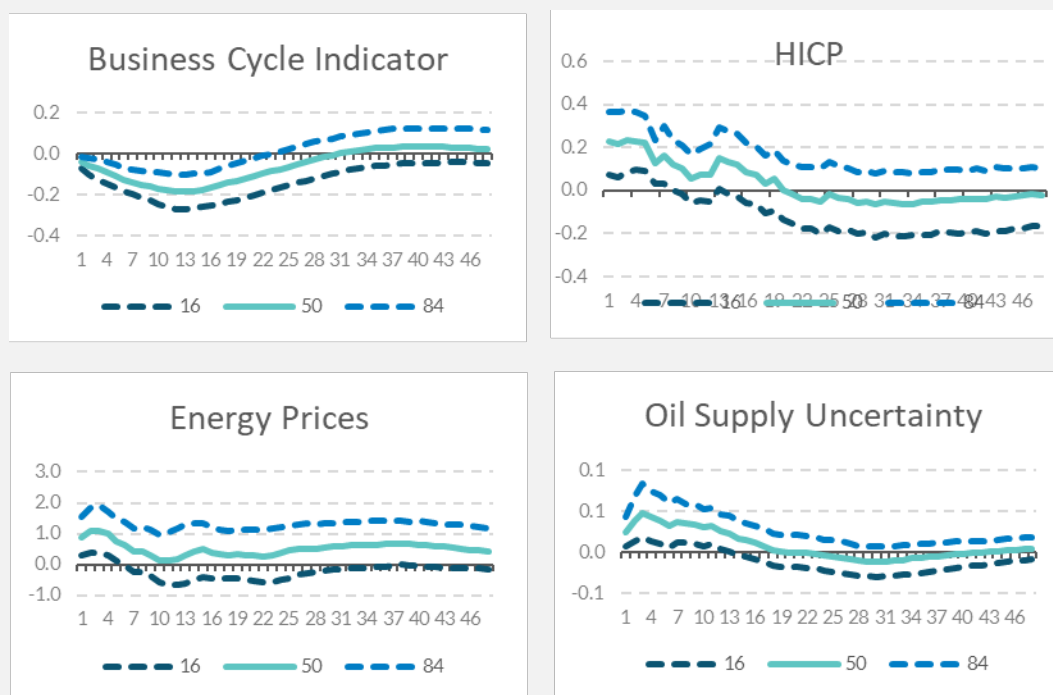
Source: Arce Alfaro, 2024.

Summary

It is well established in the economic literature that an unexpected shortfall in oil supply has marked effects on real oil prices and economic activity. However, less evidence has been presented on the effects of periods of high uncertainty in the global oil market. Building on results from (Arce Alfaro, 2024), we quantify the effects of unforeseen increases oil supply uncertainty for the Irish economy, departing from the standard analysis of level effects of a cut in oil supply.

Various factors contribute to increases in OSU, from unexpected changes in global oil production targets to geopolitical developments. We observe that these surges in OSU have notable implications for the Irish economy, reflected in an increase in energy prices and inflation, and a decrease in economic activity. While forecasts in this Bulletin foresee a fall in Irish energy prices in 2024, with a moderate rise in 2025 and 2026, it is clear that geopolitical and supply chain risks still exist with respect to oil supply. Should these risks materialise, based on the analysis in this Box, the outturn for inflation and economic activity in Ireland could be materially different.

---

[50] See for example (Leduc, Sylvain and Zheng, Liu, 2016)

Signed Articles

The articles in this section are in the series of signed articles on monetary and general economic topics introduced in the autumn 1969 issue of the Bank's Bulletin. Any views expressed in these articles are not necessarily those held by the Bank and are the personal responsibility of the author.

Inflation Forecasting at the Central Bank of Ireland

Stephen Byrne, Paraic O'Gorman, John Scally and Zivile Zekaite[51]

Abstract

Analysing changes in inflation and forecasting its future path are important exercises in assessing overall economic conditions and as an input to domestic and monetary policy decision making. Lately, large and unexpected shocks, such as the Covid-19 pandemic and the Russia-Ukraine war, have complicated this task and have prompted many forecasters to review their approaches. This *Article* provides an overview of the recent experience in analysing and forecasting inflation in Ireland, outlines the tools and methods used by Central Bank staff to conduct these analyses, and how those practices have been changing in light of recent experience and methodological advances.

1. Introduction

As a Central Bank in a monetary union, our forecasts of inflation serve two important purposes. Firstly, setting monetary policy for the euro area requires analysis of inflation dynamics across member countries that may be at different stages of the business cycle. Accurate and credible forecasts of inflation are a crucial input in the setting of monetary policy, since interest rate decisions taken today will have their full effect on the economy and prices in one to two years' time (Lane, 2022). Secondly, understanding the interaction of inflation dynamics and broader domestic macroeconomic developments is crucial for the Bank to fulfil its economic advice mandate and in the formulation of domestic economic policy.

In this context, the Central Bank produces inflation forecasts for the current and the next two calendar years. The key variable of interest is the year-over-

year change in the Harmonised Consumer Price Index (HICP). In addition, forecasts for its main components of energy, food, non-energy industrial consumer goods (NEIG) and services are also published. These forecasts are published in the *Quarterly Bulletin* together with a detailed analysis of recent economic and price developments in Ireland. In addition, the Central Bank contributes its forecasts for Ireland to the Eurosystem Staff Macroeconomic Projections for the euro area twice per year, in June and December.

The task of inflation forecasting is very complex. This complexity stems from changing relationships between economic variables and uncertainty stemming from exogenous shocks. Many studies have shown that is difficult to find a forecasting model that improves upon a simple benchmark model, such as a random walk or an autoregressive process (Faust and Wright, 2013). Using the random walk model, a forecaster naively predicts that the future inflation rate will be the same as the current rate of inflation. The autoregressive model also relies on the inflation rate in the previous period, i.e., AR(1), to predict inflation but does not assume a strict one-to-one relationship. The standard Phillips curve model of inflation, where inflation is assumed to be related to economic activity or labour market conditions, has been often criticised, with evidence that it does not improve upon these simple univariate models (Atkeson and Ohanian, 2001; Stock and Watson, 2007). Nevertheless, some research has shown that information on variables other than inflation itself can help to improve forecast accuracy (Faubert, 2021; Fulton and Hubrich, 2021; Medeiros et al., 2021).

Earlier literature on forecasting Irish inflation found evidence of inflation being predominantly determined by external factors. This partly reflects the fixed exchange rate regime with sterling until 1979. For instance, Irish inflation in the 1962-1974 period can be explained to a large extent by inflation in the UK, driven by the prevalence of goods imported from the UK (Geary, 1976; Browne (1984). The exchange rate dynamics in the late 1990s was the key driver of a spike and a subsequent decline in Irish inflation in the early 2000s (Honohan et al., 2003; Honohan and Lane, 2004). It has also been shown that oil price information is a very important determinant of Irish inflation (Bermingham, 2008). In the period after Ireland joined the Exchange Rate Mechanism, domestic factors received more attention in the literature.[52] More recent studies find support for the role of domestic factors in determining Irish inflation, such as the overall or short-term unemployment rate, measures of

---

[52] For a brief overview, see Gerlach et al. (2016).

unemployment and output gaps, employment growth, etc.[53] For instance, Bermingham et al. (2012) find that a relationship between inflation and domestic slack exists[54], albeit it is dependent on the cyclical position of the economy. Gerlach et al. (2016) demonstrate that labour market conditions influenced Irish inflation not only in more recent decades, i.e., 1980-2012, but also over the longer period 1926-1979.

Both external and domestic factors matter for forecasting Irish inflation. The relative importance of external and domestic factors over the period 2007-2017 are evaluated in Byrne and Zakipour-Saber (2020). Since the global financial crisis, external factors (e.g. the exchange rate and oil prices) have resurfaced as important determinants of inflation. However, domestic factors such as labour market slack have been increasingly important in more recent years of their sample. Faubert (2021) finds that domestic economic conditions are relevant for headline, core and, particularly, services inflation in Ireland over the period 1999-2019, while exchange rate and international commodity prices (e.g. oil price) matter for modelling headline and core inflation but not services. This is in line with other recent studies taking a dual approach to Irish inflation, with an important role for exchange rate and commodity price dynamics, as well as domestic conditions (Reddan and Rice, 2017; Byrne, McLaughlin and O'Brien, 2022).

The global inflationary surge, beginning in 2021 until recently, has necessitated that central banks and policy institutions reassess their framework for forecasting inflation.[55] In particular, forecasts dependant solely on models estimated on historical time series tend to revert to the long-run average inflation rate towards the end of the typical projection horizon of about three years (Schnabel, 2024). This reflects assumptions that supply side shocks are transitory. It is possible that large and persistent supply shocks, such as those seen in recent years, could become a feature of the global economy (Lagarde, 2023). It is thus important that data analysis and modelling tools used for forecasting inflation are reviewed and improved over time.

In this paper, we describe the current framework for analysing and forecasting inflation used in the Central Bank of Ireland, following the regular update of modelling tools conducted early in 2024. Section 2 outlines how inflation

---

[53] The unemployment gap indicates whether unemployment is below or above its level consistent with non-accelerating inflation. The output gap show the output level relative to its potential level.

[54] This is true not only for headline but also for core and services inflation.

[55] See Ben Bernanke's review of forecasting at the Bank of England here.

forecasts for Ireland and the euro area have compared to observed outturns in recent past. Section 3 describes the suite of analytical tools used by the CBI to decipher underlying inflation trends in Ireland, which tend to provide useful signals about medium-term inflationary pressures. Section 4 provides details of the overall forecasting framework, selection and evaluation of the forecasting models used to inform the projections for individual components of inflation. Section 5 concludes.

2. Historical forecasting accuracy and post-pandemic surge

The Covid-19 pandemic and the Russian invasion of Ukraine have made forecasting inflation even more difficult worldwide in recent years (Koch and Noureldin, 2023). Firstly, the pandemic led to significant disruptions in economic activities, causing fluctuations in consumer demand patterns as well as large-scale supply disruptions globally. Secondly, the pandemic introduced unprecedented levels of uncertainty and volatility in the global economy, making it difficult for traditional forecasting models to account for such extreme conditions (Bobeica and Hartwig, 2023). Additionally, the Russian invasion of Ukraine led to heightened volatility in commodity markets and exchange rates – in particular in the market for natural gas (Caldara et al., 2022). Furthermore, the conflict has disrupted supply chains and trade relationships, resulting in large swings in the wholesale price of many intermediate inputs. Political repercussions of the invasion, such as sanctions and shifts in energy policies, have also added complexity to forecasting inflation by introducing additional variables that can influence inflation rates (Arce, Koester and Nickel, 2023).

To illustrate how these disruptions made it difficult to forecast inflation, the Central Bank's one-year-ahead inflation forecasts are compared with actual inflation outturns since 2016 (Figure 1). Similar to the finding of Byrne and Zakipour-Saber (2020), which looked at the period 2006 to 2016, inflation forecasts between 2016 and 2019 performed well. However, the Central Bank's forecasts for inflation in 2022 and 2023 (conducted in 2021 and 2022, respectively) turned out to be quite inaccurate. To a great extent, these large forecast errors can be explained by the fact that it was impossible to foresee the severe pandemic shock, which led to a collapse in prices and economic activity back in 2020, and a subsequent fast recovery. Similarly, the Russian invasion of Ukraine in 2022 and the subsequent war was not part of any central expectation at the time of the forecast exercises in 2021. By the third *Quarterly Bulletin* of 2022, a greater understanding of the underlying dynamics

governing the post-pandemic inflationary surge had developed and there were reduced forecast errors for 2023 in those *Bulletins.*

The decomposition of the inflation forecast errors for 2022-23 shows that the majority of the error is explained by forecast errors in energy and food prices (Figure 2). Forecasts of energy and food prices are primarily determined by market-based expectations of future commodity prices – see Section 4 (e.g. those of crude oil, natural gas and agricultural commodities). If actual commodity prices turn out to be substantially different from these market-based expectations, large forecast errors materialise. This was precisely the case in the period 2021-2023 (Figures 3 and 4). In early 2021, markets expected oil prices to average $60 per barrel and food commodity prices to remain broadly flat during 2022. For various reasons, primarily the supply shock induced by the Russian invasion of Ukraine, oil prices at times exceeded $100 per barrel and food commodity prices increased by around 40% during 2022 (Figures 3 and 4).

During 2020, the forecast was that inflation would recover in 2021, which it did, but it under-predicted the magnitude of the inflation resurgence as the economy reopened in 2021. Forecasts for 2022, conducted in 2021, were obviously unable to incorporate the effects of the Russian invasion of Ukraine, and the associated increases in energy costs as well as second-round effects on other goods and services occurring via higher production input costs. These second round effects led to forecast errors spreading into broader non-energy industrial goods (NEIG) and services, particularly in 2022 (Figure 2). Forecasts for these components also contained a direct energy measure resulting in an underestimation of inflation for the same reasons as for the energy and food components. Unprecedented increases in global shipping costs also contributed to the underestimation in goods prices. The historical downward bias inherent in Irish NEIG prices, related to the approach to quality adjustment adopted by the Central Statistics Office (CSO) in compiling NEIG prices, also resulted in lower model estimates for the goods forecasts. The services forecasts may also have underestimated the strength in the demand and the recovery in prices after the lockdowns ended. Strong disposable income, supported by government measures, as well as profit recovery by some firms led to stronger than expected prices in 2022. The services forecast for 2023 was also affected by a change in the measurement methodology by the CSO, which resulted in some underestimation in prices.[56]

---

[56] CSO, 2023. Change in Methodology for International Package Holidays.

Similarly, inflation forecast errors of the European Central Bank staff and the Eurosystem also increased in 2021 before declining in 2023 (Chahad et al., 2024). Energy prices accounted for most of their errors up until early 2022, especially in countries most exposed to the war in Ukraine. Then, an unexpected surge in food prices also started to be more important in driving errors. Later on, other factors were also starting to play a more prominent role, e.g., indirect effects of previous energy price spikes on other goods and services. In 2023, energy prices falling faster than expected led to forecast errors in the opposite direction. The ECB's Survey of Professional Forecasters (SPF) for the euro area also suffered from large prediction errors around the time of the pandemic and energy shocks. The Bank of England's review of its forecasting framework, which was led by Ben Bernanke, also pointed out that large forecast errors were observed at the Bank of England as well as other large central banks. Between 2016 and 2022, average forecast errors from the Central Bank of Ireland were in line with those from other Eurosystem central banks (Figure 5).

Forecasts of one-year ahead inflation failed to capture the surge in inflation in 2022

Figure 1
Per cent
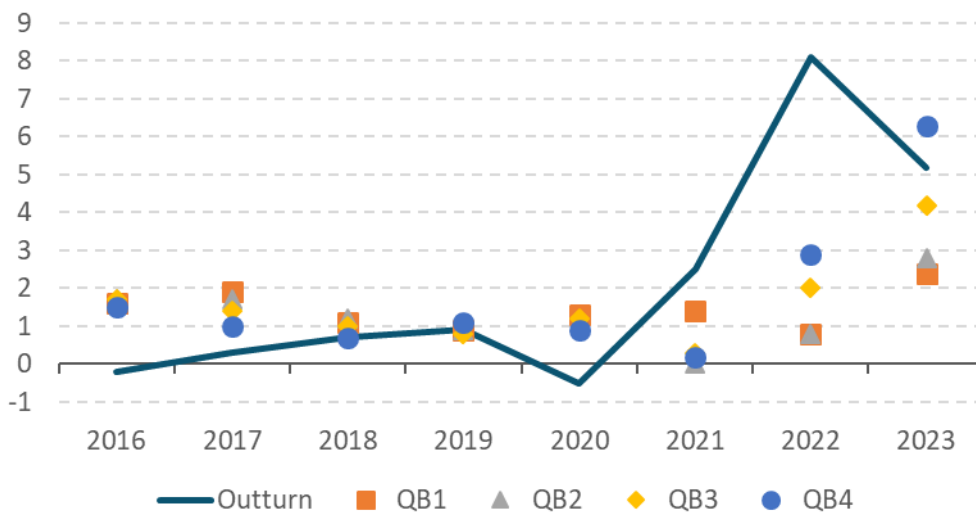
Source: CSO and Central Bank of Ireland.

Notes: The solid line refers to the average annual increase in the level of the harmonised index of consumer prices. Each marker refers to the forecast of that inflation rate in each Bulletin in the previous year. For example, the value of QB1 in 2016 refers to the forecast of the annual HICP inflation rate as published in the 1st Quarterly Bulletin of 2015 (published in March).

Forecasting errors were largely driven by errors in forecasting Energy and Food Inflation
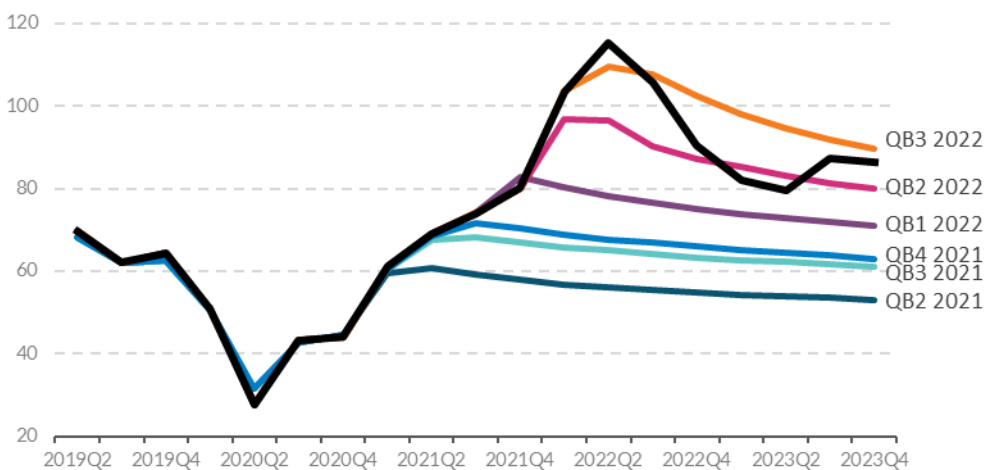
Figure 2
Percentage points
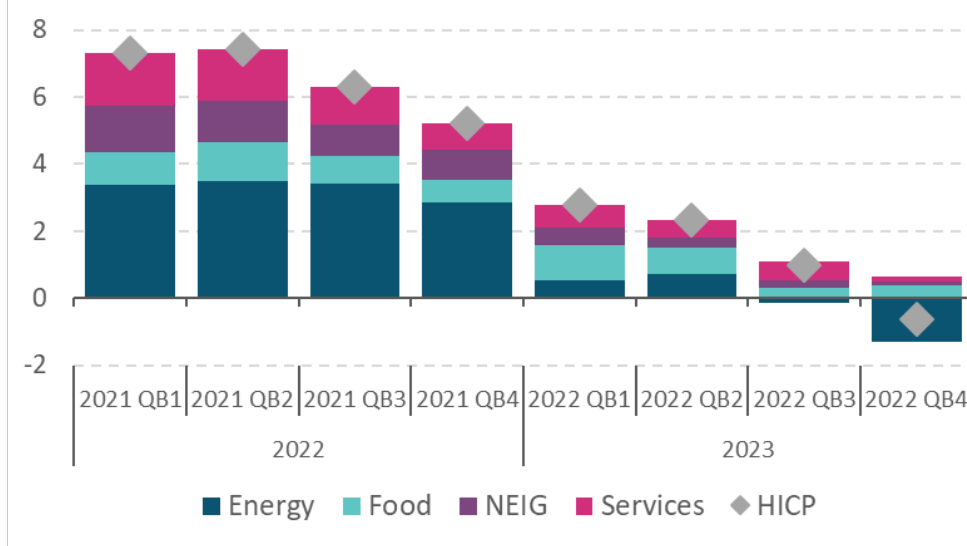
Source: CSO and Central Bank of Ireland.

Notes: HICP forecasting errors decomposed into the forecasting errors in their constituent parts. Errors refer to the forecast error of that inflation rate in each Bulletin in the previous year. For example, 2021 Q1 is the HICP inflation forecast error for 2022 decomposed into the contribution of the forecast error of Energy, Food, NEIG, and Services inflation.

Underlying energy assumptions failed to anticipate the rise in energy prices

Figure 3
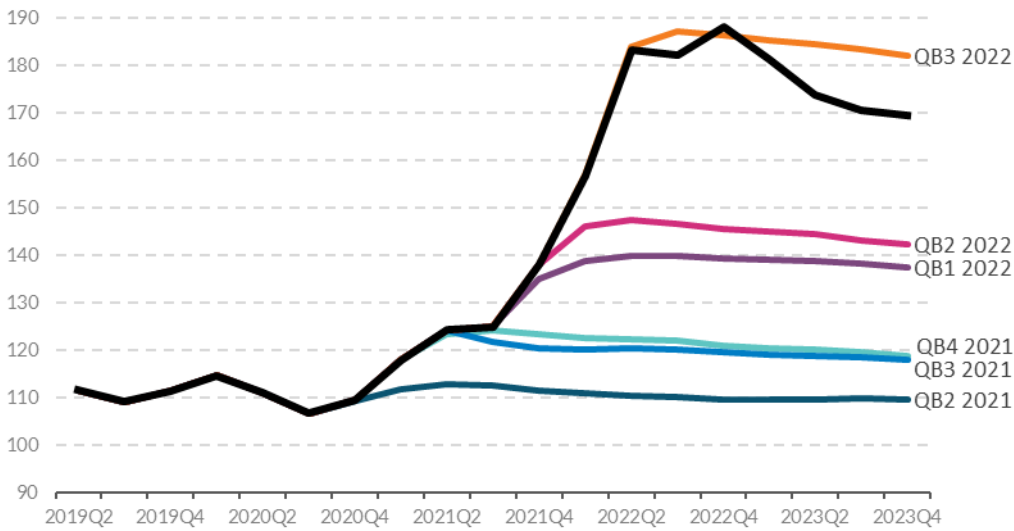Oil Price USD (base 2015 = 100)

Source: ECB technical assumptions

Notes: Oil price assumptions used to forecast energy inflation for the Quarterly Bulletin each quarter from Q1 2021 to Q2 2022. The black line signifies real data.

Food price assumptions failed to anticipate the rise in food prices

Figure 4
Farm-gate and wholesale market prices (base 2015 = 100)


Source: ECB technical assumptions

Notes: HICP forecasting errors decomposed into the forecasting errors in their constituent parts. Errors refer to the forecast error of that inflation rate in each Bulletin in the previous year. For example, 2021 Q1 is the HICP inflation forecast error for 2022 decomposed into the contribution of the forecast error of Energy, Food, NEIG, and Services inflation.

On average, forecast errors in the Central Bank of Ireland are in line with other national central bank forecasts in 2016-2022 period

Figure 5
Percentage points
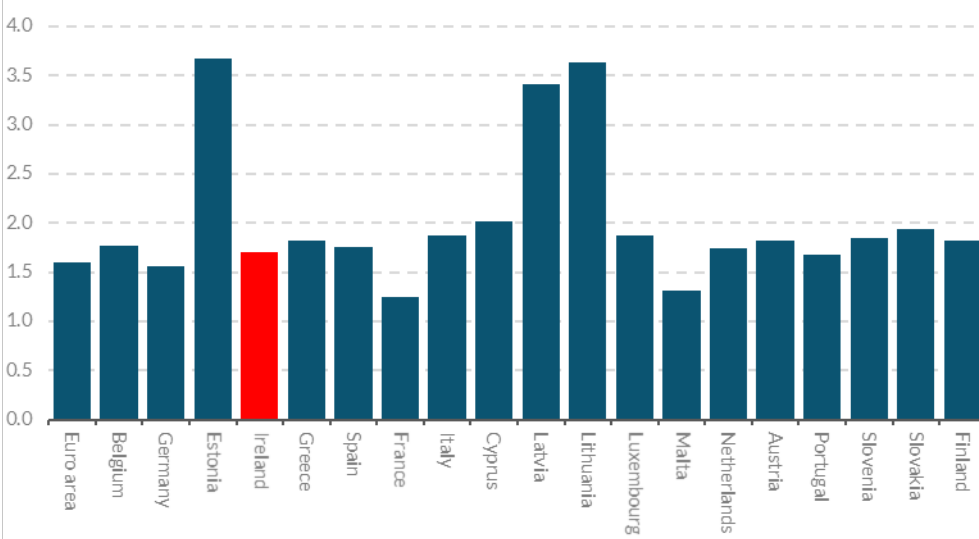
Source: ECB, Central Bank of Ireland calculations

Notes: Average forecast errors of one-year ahead inflation for forecasts submitted to the ECB by Eurosystem Staff between 2016 and 2022. Forecasts are submitted in June and September of each year.

Back to "Contents"

3. Measures of underlying inflation

It is important to monitor recent changes in actual inflation, also utilising more granular consumer price index data, before estimating forecast models. Current inflation data and price trends in the recent past may be helpful in informing about future developments in inflation. For instance, the weighted distribution of price changes across the consumer basket covered by the HICP informs about how wide-spread are large price increases among HICP items and how this share has been changing over time (e.g., Figure 30 in QB4 2023). Instantaneous inflation measures provide an insight into most recent prices changes and can inform about the trajectory of annual inflation over the next few months (see Figure 23 in QB4 2023). Over the past year, the Central Bank developed a range of so-called underlying inflation measures for Ireland, which may be informative of where inflation is heading in the medium term. This section presents these measures, which are used in conjunction with our formal forecasting models, and assesses their predictive ability.

The ECB, together with euro area national central banks, sets monetary policy with the aim of achieving annual headline inflation of 2 per cent in the euro area *over the medium term*. There are several reasons to focus on medium term inflationary pressures as opposed to current headline inflation. Temporary idiosyncratic shocks unrelated to underlying economic conditions lead to shifts in prices that are often quickly reversed. Furthermore, monetary policy decisions about the policy interest rate take time to affect consumer prices. Thus, it is important to know where inflation is headed in the future to make a decision today.

As part of the Bank's toolkit for understanding current inflation and forecasting future dynamics, a range of underlying inflation measures are monitored.[57] Underlying inflation relates to the notion of an unobserved slow-moving (persistent) component of inflation. Measures of underlying inflation aim to provide a signal as to where headline inflation is likely to stand after temporary shocks fade. Headline HICP inflation can be volatile due to sudden, unanticipated events of uncertain duration, e.g., oil price shocks or extreme weather events. Monitoring underlying inflation helps to remove such short-term noise. [58] These measures can be either exclusion-based, where specific

[57] This toolkit contains wide-ranging data on economic activity, prices, as well as consumer and firms' expectations about inflation and economic situation, among other things.
[58] In addition to all underlying inflation measures, bank's economists also regularly monitor what are key drivers of past inflation dynamics. Using a model-based approach one can

items of the HICP basket are removed, or model-based, where an econometric model is estimated to filter out the transitory inflation component, while retaining the persistent component. The next sub-section explains in detail the underlying inflation measures used at the Central Bank (Figure 6).

3.1 Exclusion-based measures

Prices of certain consumer items are known a priori to be volatile, providing a noisy signal about inflationary pressures. Thus, such items can simply be excluded from the overall price index to remove the noise on a permanent basis. The *permanent exclusion* underlying inflation measures exclude the same items every month, assuming that the persistence and volatility of inflation in those items do not change over time. The key permanent exclusion measure is the *HICP excluding food and energy*, i.e., core HICP.[59] It represents around 70 per cent of the total HICP basket, since energy and food has a weight of around 30 per cent.[60] Additionally, the *HICP excluding energy and unprocessed food*, representing approximately 85 per cent of the basket, is also monitored.

In contrast, temporary exclusion measures exclude items that may differ from one month to another (e.g., trimmed mean). They allow for potentially changing volatility in the price changes of individual items or for temporary spikes in typically non-volatile items. In other words, outliers in price changes are removed each month. For instance, trimmed mean inflation measures remove from the HICP a pre-specified share of items with the largest price increases or decreases in a given month. The share defines how much is removed from the top and bottom of the (weighted) price change distribution across the items. In this regard, the Central Bank uses the *trimmed mean inflation at 10 and 30 per cent*. Trimmed mean inflation at 10 per cent (30 per cent) removes the top and bottom 5 (15) per cent of the weighted distribution of price changes in a given month.[61] Trimmed means are complemented with the *weighted median*, which is simply the inflation rate of the basket item in the middle of the weighted distribution.[62]

---

decompose inflation dynamics into those driven by supply and demand forces (McLaughlin and Conefrey, 2023).

[59] Alcoholic beverages and tobacco are also excluded as part of the food component.

[60] This reflect the average share over the period 1999-2024. The weights of HICP sub-components are updated each year but typically do not differ substantially from one year to the next.

[61] All temporary exclusion measures are based on year-on-year inflation rates of over 80 HICP items.

[62] This is equivalent to 100 per cent trimming.

The main advantage of permanent exclusion measures is that they are simple to calculate and interpret due to a fixed composition. Temporary exclusion measures are somewhat less transparent as it is difficult to track what is excluded each month. Nevertheless, they account better for temporary large price changes in typically non-volatile components of inflation that would be included in permanent exclusion measures. A common disadvantage is that all exclusion-based measures are not fully representative of overall consumer prices and they tend to exclude items that are very salient for consumers, such as food and petrol and energy bills

3.2 Model-based measures

Persistent price changes increase the chance of second-round effects occurring.[63] Even volatile price changes could prove to be persistent such that both volatility and persistence of the price index components should be considered (da Silva Filho and Figueiredo, 2015). For instance, food prices could increase sharply due to draughts, floods, too hot or too cold weather conditions, etc. Such increases would be expected to reverse soon; however, this may not be the case if a sequence of extreme weather events prolongs the period of rising food prices. Higher food prices may lead to higher prices in services sectors where food is part of the cost (e.g., restaurants). In such cases, food inflation should not be excluded from underlying inflation measures. Following da Silva Filho and Figueiredo's (2015) method, the Central Bank constructed the *Persistence and Volatility Adjusted Rate* of inflation (PVAR) for Ireland. This measure is based on over 80 HICP items, where each item is re-weighted according to how volatile and persistent its inflation rate for that item was in the last three years. A higher weight is given to the items with more persistent price changes[64] (i.e., today's price change is heavily influenced by past price changes) and to the items with lower relative volatility[65] (i.e., how stable over the past three years is the gap between the item's inflation rate and overall inflation rate).

Another model-based measure of underlying inflation in the toolkit – *Common Inflation* – is based on a dynamic factor model that extracts the common trend in price changes across individual components of the basket.[66] The common

---

[63] Second-round effects occur when agents pass on the inflationary impact of price increase to wage and price setting, potentially leading to a wage-price spiral.

[64] The persistence of the inflation rate of an item is measured as the sum of the autoregressive coefficients from an estimated AR(p) model over the rolling 36-month window. Lag number p is selected according to the Schwarz criterion, allowing for the maximum of 3 lags.

[65] To measure volatility for each item, the standard deviation of the gap between its inflation rate and overall inflation rate, using 36 months rolling window, is calculated.

[66] Based on over 80 HICP items. For methodological details, see Box E, QB1 2022.

component of inflation excludes the temporary idiosyncratic component from each HICP item considered. The aim is to uncover the part of inflation driven by general increases in consumer prices, i.e., where all prices are affected by the same underlying economic shock(s).

The final model-based measure used at the Central Bank is the *Core Trend Inflation*, constructed using an unobserved components model with stochastic volatility and outliers. The Core Trend inflation captures the persistent component in core inflation (excluding food and energy), while removing seasonal and irregular components (Aydin-Yakut, 2023).[67]

It is important to note that model-based measures are not flawless despite being more sophisticated than simple exclusion measures. They are more difficult to construct and misspecification of assumptions or parameters can lead to misleading results. Moreover, they tend to be revised over time due to model estimates being updated as new data are published. Finally, model-based measures can be more challenging to communicate as the models can obscure the underlying factors underpinning the changes in inflationary dynamics.
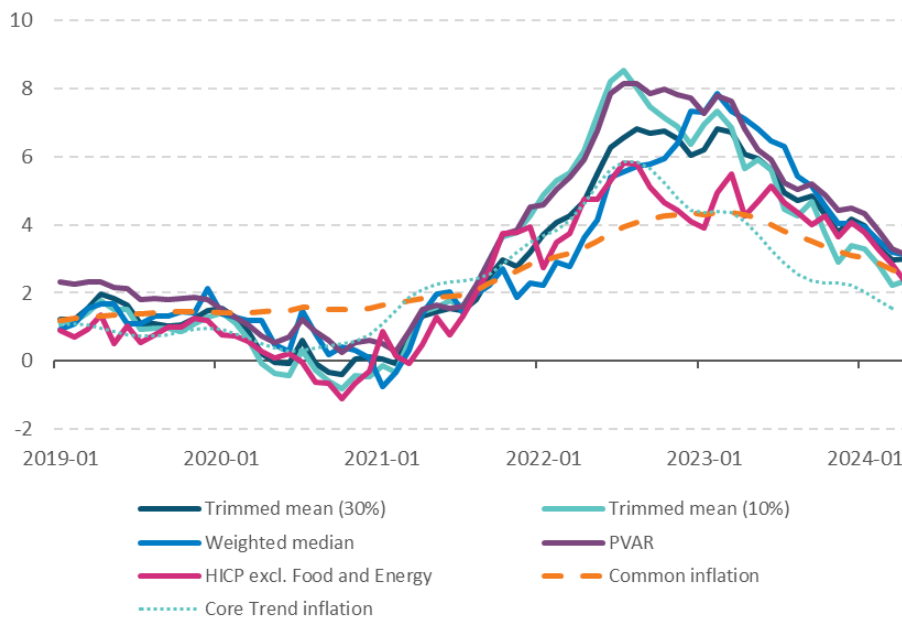
3.3 Assessment of underlying inflation measures

Different underlying inflation measures may provide conflicting signals about medium term inflation at times and the (relative) performance of any one measure may also change over time (Figure 6). This sub-section evaluates the relative success of the underlying inflation measures in tracking and predicting medium-term inflationary pressures using a number of empirical criteria: volatility, unbiasedness, overall precision and forecasting accuracy.

---

[67] Note that the estimation procedure however uses the information on food and energy items but they are excluded at the last stage when trend inflation across components is aggregated up.

Central Bank monitors a range of underlying inflation measures as they may provide conflicting signals at times

Figure 6
Annual percent change (%)

Source: Eurostat, CBI calculations.

Notes: Measures of underlying inflation in year-on-year percent changes. Last observation is March 2024 for Core Trend inflation measure and April 2024 for all the rest.

The time period of the analysis spans between November 2004 and August 2022. As a proxy for the persistent component of inflation, it is standard to use a 24-month centred moving average of monthly headline inflation when evaluating how well underlying inflation measures track medium-term inflation. For out-of-sample forecasting of trend inflation, the average monthly HICP inflation over the subsequent two years is used. The Technical Annex provides details of how the benchmark series are calculated and the detailed results of the in-sample assessment that follows here.

With respect to volatility, underlying inflation measures are less volatile compared to headline inflation. The evidence of unbiasedness is mixed, with many underlying inflation measures deviating by 40 basis points on average from the benchmark over the full period. At the same time, headline inflation is a relatively unbiased indicator.[68] To evaluate the *precision in tracking* the

---

[68] To measure the bias, we calculate the *average difference* between the benchmark series for medium-term inflation trend (24-month centred moving average of monthly headline inflation) and each underlying inflation measure.

persistent component of inflation, each measure is compared with the benchmark series at each point in time.[69] Current values of Core Trend inflation tend to provide a better signal about the underlying inflation trend than simply using the headline rate. However, the remaining measures perform worse than the headline.

The out-of-sample *forecasting accuracy* of underlying inflation measures is assessed by comparing contemporaneous values of underlying inflation measures with the benchmark for future medium-term inflation, i.e., average monthly HICP inflation over the next 24 months. This exercise is based on the observed data only. Common inflation and Core Trend inflation have the lowest RMSEs and also outperform headline inflation (see the Technical Appendix for the calculation of out-of-sample RMSE). Thus, their current values are more informative about the persistent inflation component over the next two years. Other measures also appear to be slightly better or at least no worse than headline inflation. Across the two sub-samples, the common and core trend inflation measures remain the best performers; however, the relative performance of other measures varies over time (Figure 7). While only four measures beat the headline rate in the first sub-sample, this figure rises to six in the second half.[70]

Overall, there does not seem to be a single best underlying inflation measure that meets all optimal criteria, in line with similar analysis for the euro area (Bańbura et al., 2023). Nevertheless, these measures can be useful in providing a signal about the medium-term inflationary pressures, in addition to headline inflation, and thereby inform any judgement that is applied to the output from forecasting models when arriving at a final forecast. Time-varying predictive ability underpins the rationale for the current approach of maintaining and monitoring many different measures.

---

[69] The root mean squared error (RMSE) is calculated to compare the measures numerically (see Technical Annex for details).

[70] There is some bias present, measured as average difference between underlying inflation measure and inflation trend, although in the full sample it is not significantly different from zero. However, it greatly increases in magnitude in the second sub-sample, as all measure implied a lower average inflation trend that it turned out to be. This likely reflects difficulties in predicting pandemic-related spike in inflation.

Out-of-sample forecast accuracy varies across time and measures of underlying inflation

Figure 7
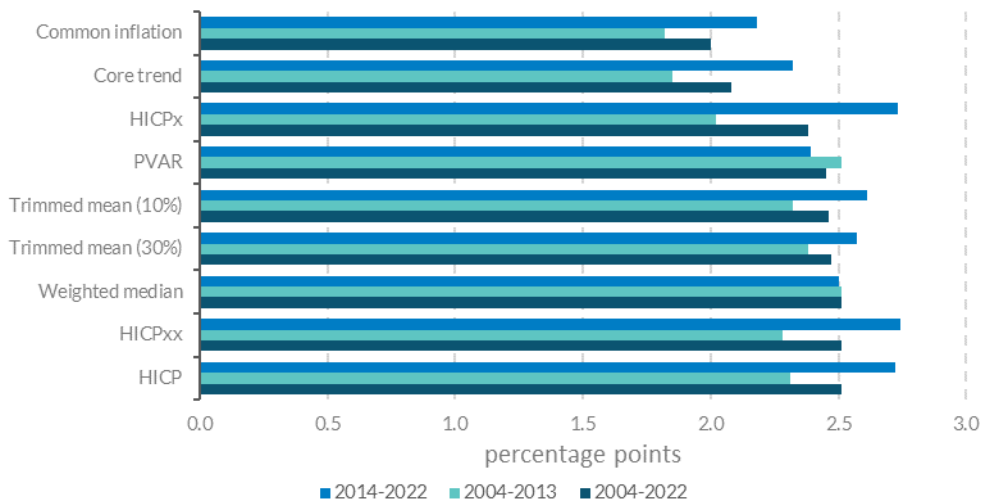
Source: Eurostat, CBI calculations.

Notes: The figure shows Root Mean Squared Errors for each underlying inflation measure with respect to two year ahead trend inflation over the three sample periods. The measures are sorted by the full-sample RMSE in ascending order.

4. Forecasting framework at the Central Bank

4.1 Bottom-up strategy

The analysis of recent developments in Irish inflation and inflation forecasts for the current and the next two calendar years are produced each quarter and are published in the *Quarterly Bulletin*. In general, the forecasting process consists of multiple steps: 1) production of a forecast using a baseline forecasting model; 2) assessment of risks to the baseline forecast; 3) assessment of any ad-hoc factors known to affect inflation over the projection horizon but omitted from the baseline model; 4) application of an expert judgment, if deemed necessary.

In order to produce a baseline forecast for headline inflation, a bottom-up approach is followed to account for the fact that inflation dynamics are different across inflation components (Table 1). This reflects different driving forces as discussed in the introduction. Energy inflation is the most volatile and has been on average the highest average inflation. In contrast, services inflation is the least volatile but higher than food or non-energy industrial goods (NEIG) inflation, on average. Lowest inflation has been recorded for

NEIG component, which on average has been negative, partly reflecting difficulties in quality adjustment (Keating and Murtagh, 2018).

The bottom-up approach involves forecasting selected individual inflation components first, and then aggregating their forecasts in the next step (Figure 8). In other words, the headline inflation forecast is a weighted average of forecasts of its components.[71] Among the four main components of headline inflation, only services inflation is forecasted directly. Meanwhile, forecasts for energy, food and non-energy industrial goods (NEIG) (blue boxes, Figure 8) are the aggregates of forecasts of their sub-components (green boxes, Figure 8). For each component that is forecasted directly, a baseline forecasting model has been selected, which is then regularly evaluated and updated or changed when required.

**Table 1: Statistical properties of headline inflation and its components in 2000-2024**

	HICP	Food	NEIG	Energy	Services
Mean	1.9	1.7	-1.6	5.3	3.1
Min	-2.9	-5.6	-8.6	-13.4	-1.1
Max	9.6	11.5	5.7	54.1	8.7
Standard deviation	2.4	3.1	2.6	11.1	2

Notes: all statistics provided in terms of year-on-year percentage changes. Source: Eurostat, CBI calculations

---

[71] The weights are fixed to consumption patterns of the previous year.

Overview of the bottom-up forecasting approach: headline inflation forecast is an aggregate of forecasts of its components

Figure 8
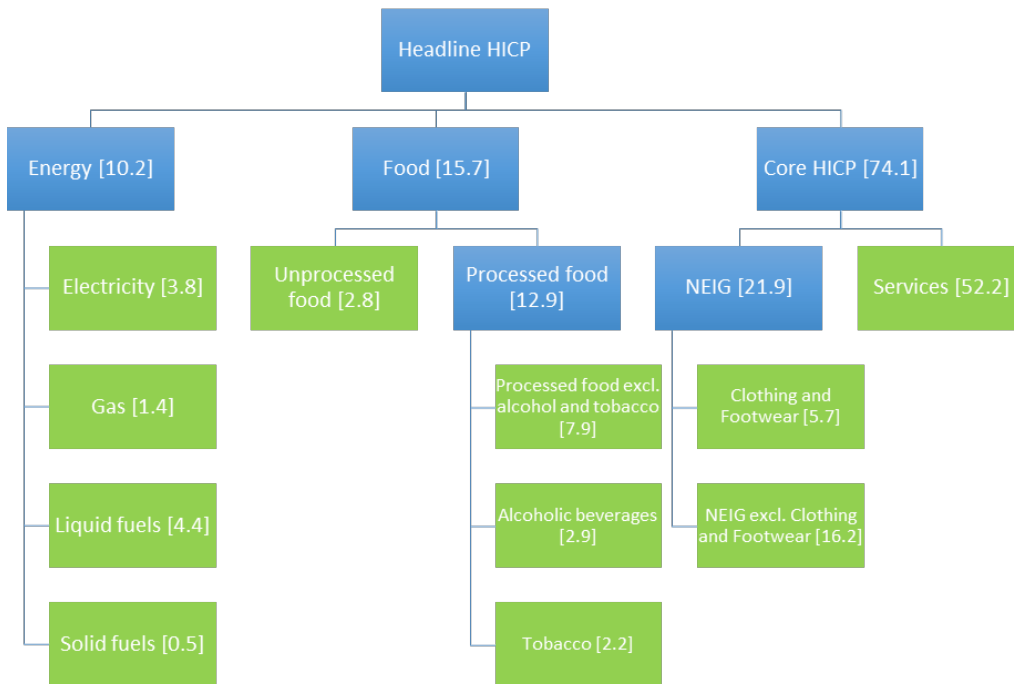
Notes: Bottom-up approach to forecasting inflation. The figures in square brackets denote the component's weight in the overall HICP. Blue boxes show components where forecasts are a weighted average of sub-components. Green boxes denote components that are forecast directly.

4.2 Baseline forecasting models: selection and evaluation

This section provides a brief discussion of how the baseline model for each inflation component is selected to be used in the Bank's forecasting framework. The performance of forecasting models often varies over time, reflecting changes in the relative roles of various inflation predictors, and/or changing model parameters. Therefore, the forecasting models in the Central Bank's toolkit are regularly reviewed and updated, if needed. The process of evaluation is the same as that for the initial selection of the baseline model.

A set of models is considered in order to identify the best forecasting model for each inflation component, i.e., the baseline model, drawing on the existing literature with respect to selecting predictors and the choice of econometric models. This set always includes a naïve model that acts as a benchmark, often a simple autoregressive model where a time series is forecast based on a constant and its own lag only, i.e., the AR(1) model. The remaining models in the set may differ in terms of 1) the number and type of predictors included; 2) the

number of lags at which those predictors are included; or 3) the type of model used (e.g., ARMA vs. ARDL). The baseline model is selected from the set based on the analysis of the in-sample properties and out-of-sample forecasting accuracy.

To evaluate the in-sample properties, i.e., how well each model performs at matching the observed outturn, the fit of the models over the estimation sample period is analysed. Metrics such as the standard error of the regression, adjusted R-squared statistic, Akaike Information Criteria (AIC) and Bayesian Information Criteria (BIC) are used for this purpose.

As the best fitting model does not always provide the most accurate forecasts, it is also assessed how well the models predict inflation out of sample. The steps are as follows. First, the models are estimated over the initial (shorter) sample period.[72] Second, the forecasts for year-on-year inflation rate are produced for the next three years and compared to the actual data to calculate the forecast errors in each month of the forecast period. Third, the Root Mean Squared Error (SME) is calculated (see Technical Annex for details). The RMSE is the standard deviation of a model's forecast error and shows how far the predictions are from outturns. The larger the standard deviation is, the less accurate the model forecast is. Then, an extra month of data is added to the estimation sample and a new forecast over the next three years is produced with a new RMSE generated. This procedure is repeated numerous times until all available data at that time are used up.[73] Finally, the average RMSE over all recursive steps for each model is calculated. The baseline forecast model for each inflation component is then selected taking into account the fit of the model and the relative forecasting accuracy compared to other models in the set of models for that inflation component. Typically, more weight is given to out-of-sample forecasting accuracy.

Generally, the baseline model on average produces more accurate or at least as-accurate forecasts as the simple benchmark model as well as performing much better than the worst performing model in the set (Figure 9). Energy inflation is the most difficult to forecast, as indicated by a much larger average RMSE of each energy component (Panel A, Figure 9), than any other inflation component (Panel A, Figure 9). In contrast, the baseline model for services has the lowest average RMSE (1.2). Assuming normally distributed forecast errors,

---

[72] In the latest model selection and evaluation exercise the initial period ended in January 2012.

[73] In the latest assessment, the models were estimated up to the end of 2020, to be able to construct forecasts and errors to the end of 2023, the last data point available at that time.

this implies that 95 per cent of forecast errors should fall within the range between -2.4p.p. and 2.4p.p.

Baseline models on average produce more accurate or at least as accurate forecasts as the simple benchmark model

Figure 9
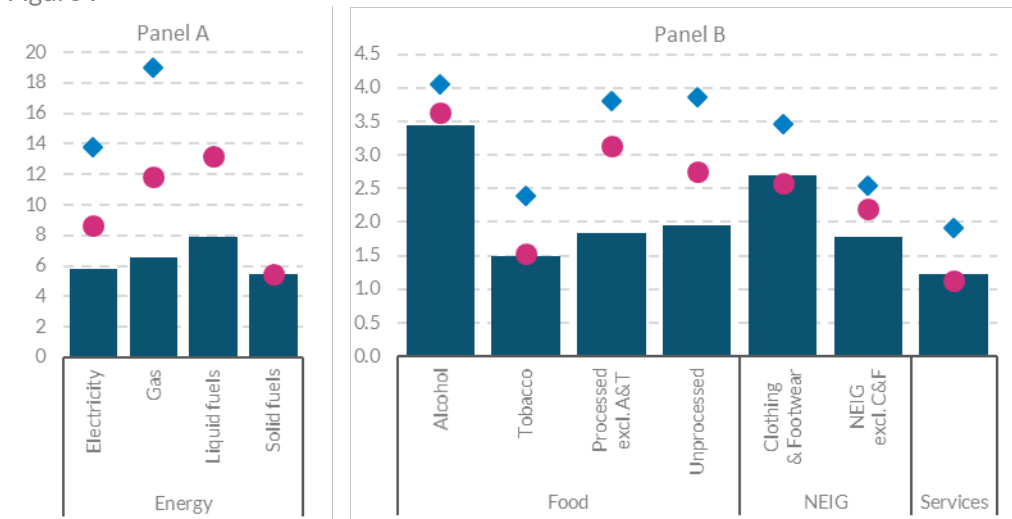
Notes: Each bar in the figure shows average RMSE of a baseline model for energy inflation components (Panel A) and non-energy components (Panel B). Average RMSEs of the benchmark (pink dot) and worst performing model (blue diamond) are also shown. Forecast evaluation period spans 2012-2023, with the final three-year ahead forecast referring to the period 2021-2023.

It is important to distinguish that the "point" forecasts discussed thus far are the forecasters' estimate of the most likely evolution of the relevant variable. However, the discussion of the forecast will also communicate both risks and uncertainty surrounding the forecasts. In this context, risks have a narrow range of outcomes with probabilities that can be estimated. For example, inflation forecasts are heavily influenced by oil price assumptions, but one can derive marked based estimates of the probability that oil prices would be, for example, $10 higher than assumed in the baseline forecast (see, for example, Byrne and Lawton, 2022). Uncertainty on the other hand involves unknown and unpredictable outcomes. An example of this is the forecast error discussed in section 2, which derived from the Russian invasion of Ukraine in March 2022. There is also "model-based uncertainty", which refers to random fluctuations in the data which cannot be explained by the model.

With this in mind, there is a need for regular sensitivity analyses as well as alternative scenarios that could inform forecasters about the risks to the baseline forecast. Forecasters can then also communicate that the forecast is also subject to uncertainty. . This has been especially the case in the past few years. The distribution of risks to the forecast increased substantially in light of

recent large and unprecedented shocks. Consequently, Central Bank staff have developed and used tools to produce alternative forecast scenarios at the height of the pandemic (see for instance Box B in QB1 2021).

The next four sub-sections will briefly describe the baseline forecasting models of the main inflation components used in the Central Bank. Table 2 provides an overview of these models (see the Technical Annex for more details on model specifications).

Table 2: Forecasting models

| Item	Modelling approach	Predictors
Electricity	Regression model of monthly growth rates	European wholesale electricity prices (in euro)
Gas	Regression model of monthly growth rates	European wholesale gas prices (in euro)
Liquid fuels	Regression model of monthly growth rates	EUR/USD exchange rate, international Brent crude oil price (in US dollars)
Solid fuels	Random walk model	Own lags
Unprocessed food	ARDL model	Own lags, current values and lags of EUR/USD exchange rate, farm-gate and wholesale food commodity prices, oil and gas commodity prices
Processed food excl. alcohol and tobacco	ARDL model	Own lags, current values and lags of EUR/USD exchange rate, farm-gate and wholesale food commodity prices, oil and gas commodity prices
Alcoholic beverages	AR model	Own lags
Tobacco	AR, MA and ARMA models	Own lags
NEIG: Clothing and Footwear	ARDL	Own lags, current values and lags of EUR/GBP exchange rate, non-energy non-food commodity prices, oil and gas commodity prices
NEIG excl. Clothing and Footwear	ARDL	Own lags, current values and lags of EUR/GBP exchange rate, non-energy commodity prices, oil and gas commodity prices
Services	ARDL	Own lags, current and past values of consumption growth, wage growth and energy inflation

Notes: over the forecast horizon, predictors follow the assumed path based on either financial markets or recent averages of these variables. More details provided in the sub-sections for each inflation component. Information on model specifications is provided in the Technical Annex.

Back to "Contents"

4.2.1 Energy inflation

Historically, HICP energy inflation largely reflected dynamics in liquid fuels, e.g. home heating oil, car fuels (Figure 10), which account for 43.3 per cent of the total energy price index. Electricity component accounts for another 37.5 per cent and has become a significant driver of energy inflation in recent years. Fluctuations in gas prices are also significant drivers of energy inflation recently, both directly and indirectly (via electricity generation).

Energy inflation is mostly driven by its liquid fuels component but the relative role of electricity and gas inflation increased in recent years

Figure 10
year-on-year percent change and percentage point contributions
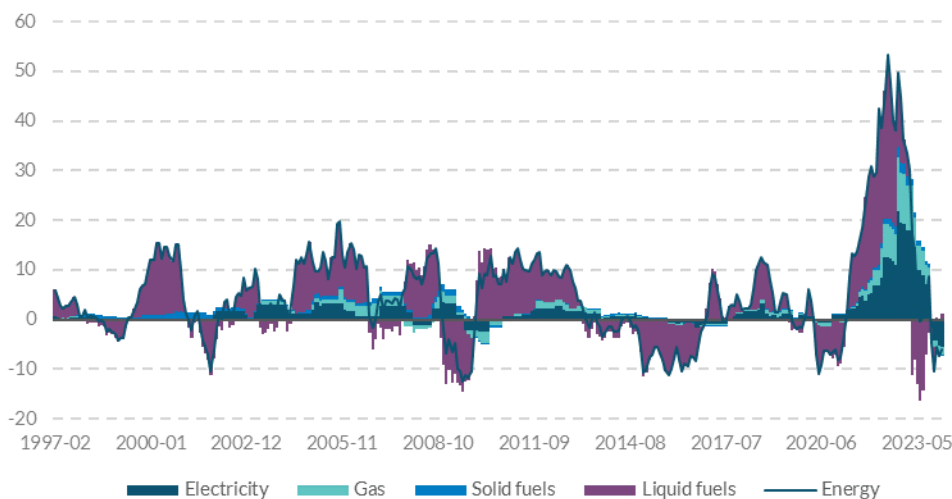
Sources: Eurostat, CBI calculations.

Notes: The figure shows contributions to year-on-year energy inflation from its four components.

Domestic energy inflation is largely determined by external factors since Ireland is a small open economy and is a price taker in the global commodity markets. Historically, the price of oil has been the main driver of consumer energy inflation in Ireland and Irish consumer energy prices were highly correlated with the international oil price (Bermingham, 2008; O'Brien and Weymes, 2010). As the energy market's structure changed, this relationship weakened somewhat in the most recent decade. Irish gas and electricity markets were gradually deregulated, starting in 2012 and electricity and gas prices became fully market-based. The latest energy price shocks in 2021-2022 highlighted the fact that wholesale electricity and natural gas prices have become relatively more important for consumer energy prices (Byrne and Lawton, 2022). This has led to several changes in the forecasting approach.

Energy commodity prices and the euro exchange rate against the US dollar form the basis for domestic energy pricing and are the key inputs to energy inflation forecasts.[74] Until recently, the oil price in euro was used to forecast HICP liquid fuels, electricity and gas inflation, assuming a two-month pass-through of changes in wholesale oil prices to consumer prices. In response to recent energy price shocks, wholesale electricity and gas prices are now also taken as forecast inputs. The assumed pass-through of wholesale prices to consumer prices has lengthened for electricity and gas components, reflecting the use of forward contracts and hedging strategies by domestic energy suppliers (CRU, 2023). This hedging practice helps to insulate consumer prices from short-term volatile movements in wholesale energy prices.

More specifically, the baseline forecast for electricity (gas) inflation is derived from a simple econometric model where a monthly percentage change in consumer electricity (gas) prices is regressed on a fifteen-month moving average of monthly per cent changes in wholesale electricity (natural gas) prices in euro (see also the Technical Annex). For liquid fuels, a two-month moving average of monthly per cent changes in the Brent crude oil price (in euro) is used instead in the baseline forecasting model.[75] Finally, the HICP index for solid fuels is forecasted with a random walk model, i.e., it is kept constant at its latest value over the forecast period.

Over the forecast horizon, assumed future values for energy commodity prices are based on financial market expectations as implied by the respective futures contracts.[76] The US dollar oil price is converted to euro using the EUR/USD exchange rate. The exchange rate is fixed over the projection horizon at its average value over the ten business days preceding the cut-off date.

Ireland's exposure to various global shocks, uncertainty surrounding the degree of the pass-through of wholesale energy prices to consumer energy prices, and price changes by energy suppliers in discrete periods help explain why energy prices are generally the most volatile component of the HICP. This adds to the difficulty of forecasting this component of inflation. Forecast errors for energy can have a large bearing on the overall inflation forecast accuracy,

---

[74] International energy commodity prices are typically priced in the US dollars.
[75] A relatively quick pass-through of wholesale price movements continues to be assumed as before.
[76] An alternative to financial market expectations is to use a satellite model to predict wholesale energy prices based on their past values. Past internal assessments showed that information from futures contracts for energy products helps to improve the forecasting accuracy.

even if its weight in the total HICP is relatively small at 10.2 per cent (Byrne, McLaughlin and Scally, 2023).

4.2.2 Food inflation

Food inflation, to a large extent, reflects processed food price dynamics, given its much larger weight in the food price index (approximately 80 per cent) compared to unprocessed food (Figure 11). The unprocessed food sub-component is forecast directly, while the processed food forecast is the aggregation of forecasts for alcoholic beverages, tobacco and the rest (Figure 8).

Food Inflation is driven by its processed food component

Figure 11
year-on-year percent change and percentage point contributions
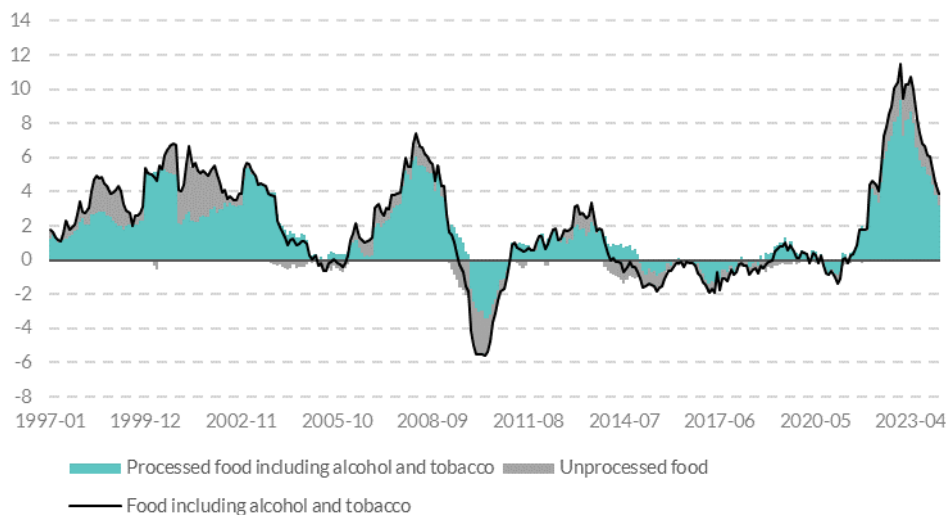
Sources: Eurostat, CBI calculations.

Notes: The figure shows contributions to year-on-year food inflation from its two components.

As in the case of energy inflation, since a large share of Irish food is imported, food price inflation in Ireland is greatly influenced by global factors via food commodity markets, exchange rate dynamics as well as trade costs. Recent energy price shocks also highlighted the role of energy as an input in growing raw food materials and producing food products, e.g. the price of fertilizers jumped up substantially on the back of a positive gas price shock.[77] Extreme weather events also have a bearing on food inflation; however, they are extremely difficult to model and forecast. In recent years, disruptions to grain

---

[77] This blog post discusses the factors behind fertilizer prices.

supply and transportation due to the war in Ukraine also had an impact on food prices.[78]

The baseline forecasting model for both unprocessed food and processed food excluding alcohol and tobacco is an *Autoregressive Distributed Lag* (ARDL) model, commonly used to forecast inflation (Bermingham, 2008; Bessonovs and Krasnopjorovs, 2021; Anderl and Caporale, 2023). In general, a month-on-month percentage change in a price index is regressed on its own lags and current and lagged values of other determinants. In addition to past values of the price index itself, the following variables are used as inputs in forecasting inflation of both unprocessed food and processed food excluding alcohol and tobacco: the EUR/USD exchange rate, euro area farm-gate and wholesale food commodity prices in euro, and energy commodity price index for Ireland in US dollars, calculated as a weighted average of oil and gas prices.[79] Seasonal dummy variables are included to account for the seasonality in food prices. As in the case of energy forecasts, future values of energy commodity prices are based on futures contracts, while the exchange rate is fixed over the projection horizon. Assumptions about farm-gate and wholesale agricultural prices are provided by the European Central Bank.

To produce baseline forecasts for alcoholic beverages and tobacco, versions of an *Autoregressive Moving-Average* (ARMA) model are used (Meyler, Kenny and Quinn, 1998). In these models, the time series in question is modelled and forecasted in terms of its own lags (autoregressive part, AR) and the current and past values of an error term (moving-average part, MA). Seasonal ARMA models also include seasonal AR and MA terms.[80] Hence, a forecaster relies on the past behaviour of prices to predict future prices for these two food index components, also accounting for seasonal patterns.

More specifically, alcoholic beverages inflation is forecast using autoregressive terms only, with seasonal dummies included as for other food inflation components. For tobacco, the average forecast from three models is used: 1) AR terms with seasonal dummies; 2) MA terms and seasonal MA terms; 2) both AR and MA terms, including respective seasonal terms.

4.2.3 NEIG inflation

The NEIG component is split into two sub-components for forecasting purposes (Figure 8). The Clothing and Footwear item is a much smaller

---

[78] See here for more details how the Russian invasion of Ukraine contributed to an increase in global food prices.
[79] This synthetic energy variable is calculated and provided by the ECB.
[80] In some models, seasonal dummy variables are used instead.

component and is modelled separately to the remainder of NEIG. The latter includes a large variety of household items, such as electrical items, furniture, DIY items, stationary and toiletries. The weight of non-energy industrial goods in the total HICP is larger than that of both the energy and food components. In the years prior to the pandemic, this component was critical to explaining the low inflation rates arising in Ireland due to global disinflationary forces as well as measurement issues in the NEIG price index in Ireland (Byrne and Scally, 2018).

The difficulty in adjusting the price index for quality changes partly explains a prominent downward trend in Irish NEIG prices in the CSO index (QB1 (2024)[81], which also reflects the dynamics of commodity prices and exchange rates. As a result of the downward trend, i.e., falling prices, NEIG inflation has been predominantly negative (Figure 12). The downward trend appears to have halted and reversed during the pandemic and NEIG inflation has now turned positive. This mostly relates to the global supply chain pressures and increased costs of trade and transport, increased demand for goods during the lockdowns as well as higher energy costs boosting productions costs in the manufacturing sector (see Prices and Cost section in QB3 2022). The most recent data signal a halt in the positive trend. The CSO has partially addressed the measurement issue by introducing changes in the methodology to adjust for quality changes in some NEIG items, which may have reduced the tendency for measured NEIG index to decline.[82]

---

[81] For more details on NEIG measurement issues see Keating and Murtagh (2018) and Byrne and Scally (2018).

[82] Related changes in the methodology are summarised here: CSO (2019), CSO (2021).

NEIG inflation has been often negative but it increased sharply during the pandemic

Figure 12
year-on-year percent change and percentage point contributions
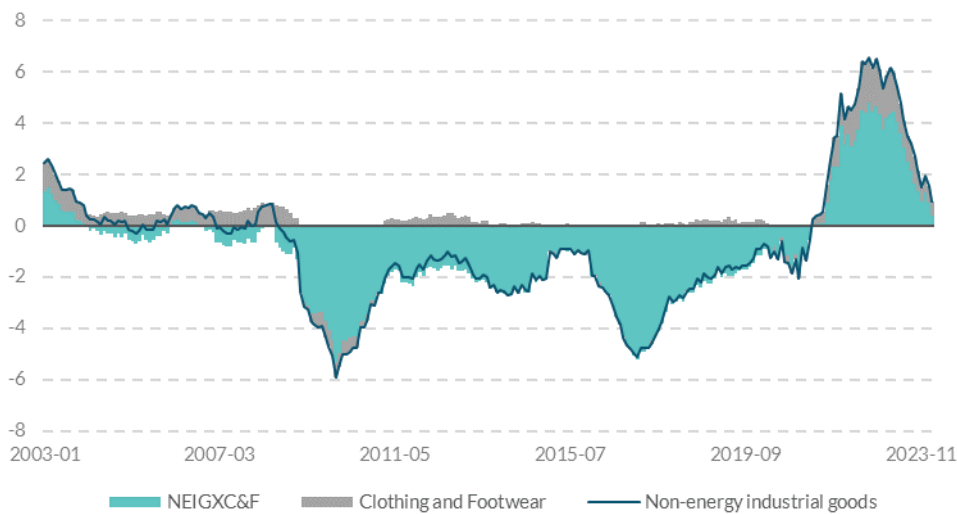
Sources: Eurostat, CBI calculations.

Notes: The figure shows contributions to year-on-year NEIG inflation from its two components.

A significant proportion of NEIG inflation is imported and as such, exchange rates and commodity prices play an important role for goods inflation in Ireland (Reddan and Rice, 2017). Both NEIG components are forecasted using an ARDL model. The set of the predictors, other than the series itself, is the same for both: the EUR/GBP exchange rate, non-energy non-food commodity prices and energy commodity prices (a weighted average of gas and oil prices). However, the number of lags of these predictors differ across the two NEIG components.

With respect to the futures values of the determinants over the projection horizon, futures markets are relied upon as with other inflation components. The assumption for the exchange rate is based on its 10-day average as with other inflation components.

4.2.4 Services inflation

Services inflation is the largest and "stickiest" component of headline inflation in comparison to food, energy and NEIG inflation (Figure 13). With over 50 per cent weight in the basket, it is a significant contributor to overall inflation. Generally, services inflation does not exhibit large fluctuations and it has the lowest standard deviation and the smallest range between the smallest and largest observations across all components (Table 1).

Services inflation is the stickiest component of headline inflation

Figure 13
year-on-year percent change (%)
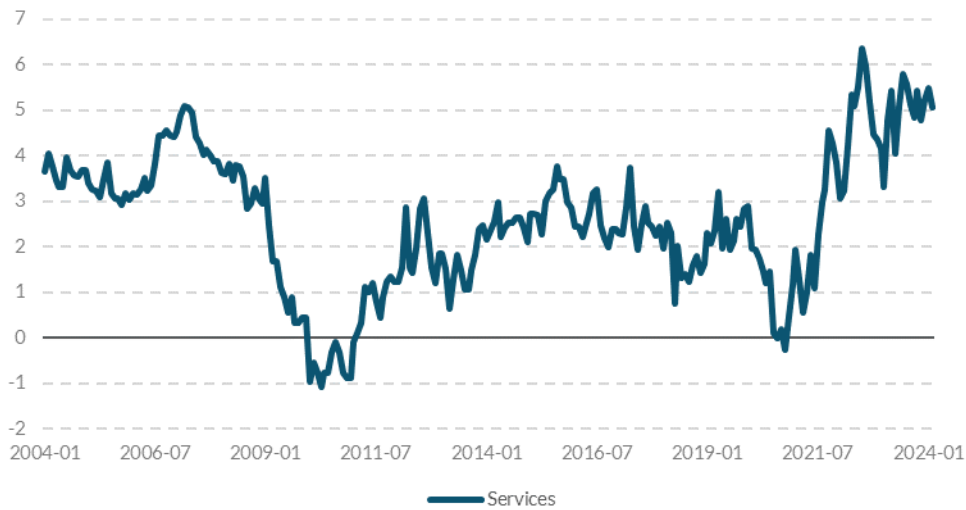
Sources: Eurostat. Notes: Year-on-year services inflation in per cent.

Services are typically much less traded than goods and so global factors are less important for it than for other inflation components. However, the ripple effects of recent energy price shocks on prices of all other goods and services via higher energy input costs demonstrated that some global commodity prices may have had a greater impact on services inflation over recent years.[83] Labour costs, such as wages, make up a larger share of input costs in the services sector compared to the manufacturing. Thus, services inflation reflects domestic demand pressures to a greater extent than other inflation components. Many recent studies find that domestic economic activity (domestic demand) is relevant in determining Irish inflation and its services component. For instance, Gerlach et al. (2016) and Byrne, McLaughlin and O'Brien (2022) find the role of the unemployment gap, i.e., the difference between the unemployment rate and its trend level, consistent with non-accelerating inflation, in explaining inflation. A number of other economic activity measures were shown to be relevant for inflation: output's deviation from its trend (also as measured by modified domestic demand), changes in the unemployment rate and the non-employment index, and potential labour force growth (Faubert, 2021).

---

[83] Our internal assessment showed that forecast performance of the model improved during the pandemic period when energy price inflation was also included.

As in the case of some other inflation components, a version of an ARDL model is estimated to forecast services inflation. The baseline forecast model contains the following forecast inputs: growth in real consumption, growth in nominal compensation per employee and wholesale energy price inflation in US dollars, based on a weighted average of oil and gas prices.[84] Over the forecast horizon, future values of commodity prices are based on financial market expectations as implied by futures contracts, while future values for consumption and compensation per employee (wages) are provided by internal forecasts, which are produced as part of the quarterly forecast exercise.

During the pandemic period, macroeconomic variables were distorted by pandemic-specific developments. Therefore, the model of services inflation also includes a dummy variable that takes value of 1 in the second quarters of the years 2020 and 2021 and zero otherwise. This helps to account for sharp changes during that time.

4.3 Risk assessment and expert judgement

As discussed in previous sections, focusing solely on point forecasts from the baseline models would ignore uncertainty surrounding model parameters and specification as well as forecast inputs, i.e., the economic outlook, including financial and global commodity developments.

In order to assess the balance of risks to the baseline forecast, satellite forecasting models may be used to produce alternative forecasts. Such risks may be related to model misspecification, i.e., some relevant predictors may be missing, a time-varying forecasting performance may arise, etc.[85] These satellite models typically come from the evaluation set, with good past forecasting performance. They could be versions of the baseline models or entirely different models. For instance, services inflation could be also forecasted using growth in modified domestic demand rather than using consumption growth as in the baseline model. Similarly, a Vector Autoregression (VAR) model could be applied to the same predictors as in the baseline ARDL model. By comparing the baseline with alternative forecasts, it can be noted whether the baseline is within, below or above alternative forecasts. This allows a forecaster to form a view whether the baseline forecast is subject to either downside (alternative models point to lower forecasts) or

---

[84] The energy variable is calculated and provided by the ECB. Quarterly macroeconomic data is interpolated into monthly where each monthly value in the given quarter is the same.
[85] It may also be useful to compare the bottom-up forecast for headline inflation with the top-down forecast where a single model is used to predict headline inflation directly. Currently, such a model is not being used given that past assessments did not yield favourable results for using such a model. Nevertheless, this could be reviewed again in future.

upside risks. Consequently, an informed expert judgment may be applied to the baseline forecast.

The expert judgement is informed not only by additional models but also based on close monitoring of relevant data, including the underling measures of inflation as well as announcements of fiscal policy or tax changes by the government, price changes by energy suppliers, etc. Expert judgment allows one to account for other relevant factors that are difficult to model due to either lack of good data, difficulties in making assumptions about future developments in those factors, or simply due to the very temporary nature of those factors. For instance, tax changes on consumer goods or services (e.g., VAT tax reductions during the pandemic and their subsequent reversals, excise taxes on alcohol and tobacco) lead to one-off changes in prices from one month to the next. If a tax change is known in advance, its effect may be estimated and included as an add-on to the baseline forecast for the relevant price index. Climate change effects on food price inflation are difficult to measure and predict in order to be able to account for their full impact over the forecast horizon. However, some judgement may be required to factor in the effects on food supply due to recent extreme weather events, for instance. Informed expert judgment help avoid or reduce forecast errors due to ad-hoc temporary factors.

Recent experience also highlighted the fact that new predictors may become useful over time while current predictors may become relatively less important. For instance, disruption of supply chains globally has been an important driver of an increase and a subsequent decrease in inflation, especially goods inflation. It is also clear that some processes and relationships between economic variable are or could become non-linear. Machine learning techniques could provide forecasts that account for non-linear relationships. Box A presents a short discussion of recent developments in that area.

In light of changes to economic environment, Central Bank staff continue to develop and regularly review a set of satellite and baseline forecast models as well as other econometric tools, which are useful to inform about inflation outlook. This is an ongoing process to ensure an adequate forecasting infrastructure.

Box A: Artificial intelligence, machine learning and inflation forecasting

Over the years, and as outlined in this article, researchers and practitioners have explored various methodologies to enhance the accuracy and efficiency of inflation forecasting models. With the advent of Artificial Intelligence (AI) and machine learning (ML) techniques, there has been growing interest in leveraging these methods to improve inflation forecasting. Indeed, central banks including the FED (Faria-e-Castro and Leibovici, 2024) and the ECB (Lenza et al, 2023) have begun publishing inflation forecasts using these techniques. This box examines the literature and current state of research regarding the use of ML techniques in inflation forecasting, highlighting some key methodologies, empirical findings, and challenges.

ML techniques encompass a broad spectrum of differing methods, including multilayer neural networks, random forests and natural language processing. These techniques offer the potential to capture nonlinear relationships, handle large and diverse datasets, and adapt to changing economic environments, making them potentially attractive for inflation forecasting. Machine learning techniques offer the advantage of capturing complex patterns and relationships in data without relying on strict economic assumptions or assumptions about the statistical properties of the underlying data. In terms of data usage, some studies and techniques use traditional macroeconomic and financial data while other techniques use more diverse data, such as micro, textual, satellite imagery, social media and web traffic data.

The use of ML techniques in inflation forecasting represents a promising avenue for improving predictive accuracy and understanding inflation dynamics. The performance of these models varies but some produce improvements in out-of-sample Root Mean Squared Error (RMSE) tests over standard techniques. The FED model, which uses a Large Language Model (LLM), generated a lower RMSE over most years and most time horizons. The ECB's model, which use a ML technique called Quantile Regression Forest, found that for core inflation the ML model was marginally more accurate than their standard BVAR. For headline inflation, the ML model was better able to capture the prolonged period of low inflation before and during the coronavirus (COVID-19) pandemic – but was outperformed by the standard BVAR during the Great Recession and its aftermath. In addition to the FED, Bybee (2023) conducts a similar study using a LLM's expectations of inflation based on a sample of news articles from the Wall Street Journal. Araujo and Gaglianone

(2020) also find that ML random forests outperformed a range of traditional forecasting methods in terms of RMSE when applied to a large database of macro and financial variables in determining Brazilian inflation.

Other ML models have gained traction in inflation forecasting due to their ability to extract patterns from historical data and make predictions based on learned relationships. Studies by Croushore and Stark (2001) use Support Vector Machines to forecast inflation by mapping historical data into higher-dimensional space to find a hyperplane that best separates different classes of inflationary periods. Giannone, Reichlin, and Small (2008) demonstrate the effectiveness of random forests and gradient boosting in capturing nonlinearities and improving forecast accuracy by combining the predictions of multiple models.

Deep Neural Networks, such as recurrent neural networks (RNNs) and long short-term memory networks (LSTMs), have shown promise in capturing complex temporal dependencies and nonlinearities inherent in inflation data. Research by Paranhos (2021) applied LSTM networks to inflation forecasting and achieved improved predictive accuracy in out-of-sample tests compared to benchmark models. Binner et al. (2024) use a Multi Recurrent Neural Network approach to forecast inflation one year ahead for the UK. This method combines several type of weighted feedback links from each neuron to other neurons with in the same or preceding layers.

Hybrid models that combine ML techniques with traditional econometric approaches have been proposed to leverage the strengths of both methodologies. For instance, Theoharidis et al. (2020) used a hybrid deep learning model that merges Variational Autoencoders and Convolutional

LSTM Networks to forecast inflation, demonstrating enhanced forecasting performance over standalone traditional models.

Despite the potential benefits of ML techniques in inflation forecasting, several challenges exist. These include data quality issues where ML techniques use large and diverse datasets, which may be subject to missing values and other quality issues and be difficult to monitor. Moreover, model interpretability can be an issue, particularly for deep learning architectures like neural networks, and are often considered 'black boxes'. Understanding how these models arrive at their predictions can be challenging, raising concerns among policy makers and stakeholders that require transparent and explainable forecasting methods. When ML techniques deal with complex datasets, they can be prone to overfitting – performing well with training data but not with new data sets. Ensuring that the

trained models generalise well to new data is important for robust inflation forecasting. Some interesting 'tinfoil hat' questions about the use of ML models arise if you consider that the some ML models potentially have access to the all the information available on the internet and could be cheating in out-of-sample tests by looking up actual inflation rates.

In conclusion, while numerous studies have demonstrated the efficacy of ML models in this domain, further research is needed to address methodological challenges and enhance the interpretability of ML-driven forecasts for practical applications in policymaking. ML models have demonstrated improvements in prediction over standard techniques but may not be as useful for causal inference as traditional econometric techniques. For now, these ML techniques are likely to provide another tool in the toolbox for researchers and analysts in addition to the standard techniques already used.

5. Conclusion

The Covid-19 pandemic and the Russian invasion of Ukraine have made forecasting inflation extremely difficult in recent years. Large, unexpected shocks to energy and food prices resulted in large forecast errors in forecasts published by the Central Bank of Ireland, as was the case in other central banks and policy institutions globally. In response, the Central Bank developed new analytical tools and continues to regularly review and update its main forecasting models and data inputs used in those models. As the extraordinary shocks faded, forecast errors in the most recent year declined compared to the errors made when these shocks were most prominent.

This paper presented and described the current framework for analysing and forecasting inflation used in the Central Bank of Ireland. A wide variety of measures of underlying inflation are monitored to determine the extent of medium-term inflationary pressures. It was shown that some of those measures may provide a more precise signal about medium-term inflationary pressures compared to information on the current headline inflation. Since different underlying inflation measures provide conflicting signals at times, it is very important to monitor a range of such measures and regularly assess their predictive ability.

The Central Bank applies a bottom-up approach to forecast headline inflation for the current year and two years ahead. The headline inflation forecast is the aggregation of model and judgement-based forecasts of the main components

of inflation. Given that Ireland is a small-open economy, external inflationary pressures have a large influence on Irish inflation. For instance, global energy and non-energy commodity prices play an important role in forecasting energy and food inflation, as well as non-energy industrial goods inflation. This is less of a feature for services, which has a stronger domestic component. Thus, domestic wage pressures, labour market strength and domestic economic activity are relatively more important when forecasting services inflation. As global economy is changing, models for forecasting inflation at the Central Bank are also regularly reviewed to ensure their suitability for the current environment. As new tools and models become increasingly available (e.g. AI and Machine Learning), these may be incorporated into the inflation forecasting process as appropriate.

Technical Annex

Section 3.3

The proxy for medium-term inflation trend (benchmark) used to evaluate the in-sample bias and RMSE is calculated as follows:

$$1200 * \frac{(p_{t+h} - p_{t-h})}{(2 * h)}, where\ p_t\ is\ the\ \log level\ of\ the\ price\ index\ and\ h = 12$$

The proxy for medium-term inflation trend over the next two years used to evaluate the out-of-sample bias and RMSE is calculated as follows:

$$1200 * \frac{(p_{t+H} - p_t)}{H}, where\ H = 24$$

For each underlying inflation measure (UI), the RMSE against the benchmark is calculated using the below formula:

$$\sqrt{\sum_{t=1}^{n} \frac{(UI_t - Benchmark_t)^2}{n}}, where\ n\ is\ the\ number\ of\ observations\ in\ the\ sample$$

In-sample bias in the period 2004-2022

Figure A1
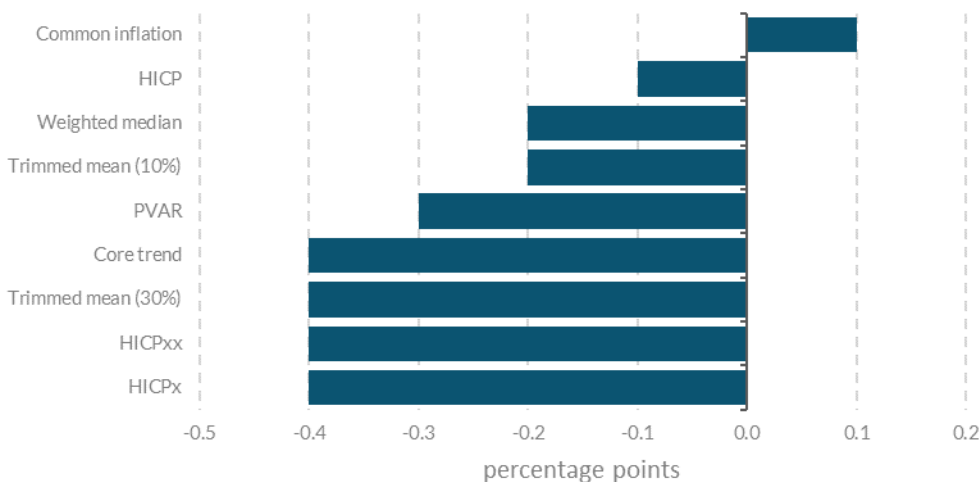
Notes: The bias is calculated as an average difference between the underlying inflation measure and the trend benchmark.

In-sample RMSEs in the period 2004-2022

Figure A2
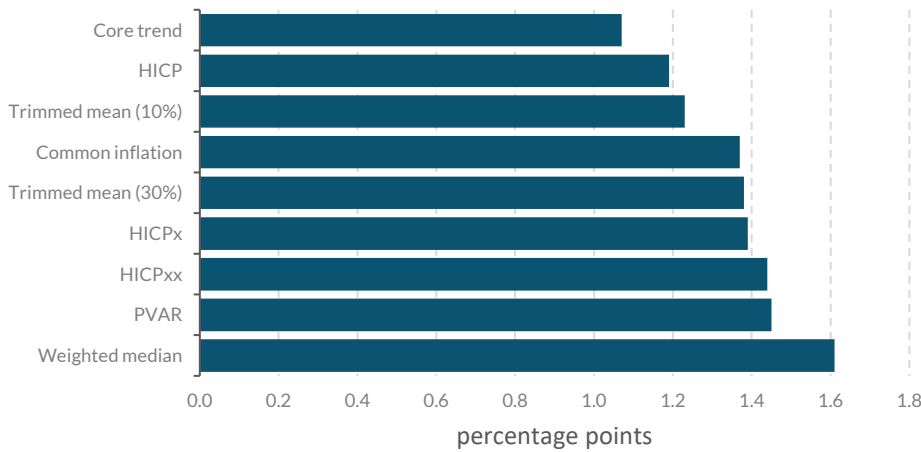
Source: CBI calculations, Eurostat

Notes: The figure shows Root Mean Squared Errors for each underlying inflation measure with respect to two year centred moving average inflation over the period 2004M11 to 2022M08.

Standard deviation of inflation measures

Figure A3
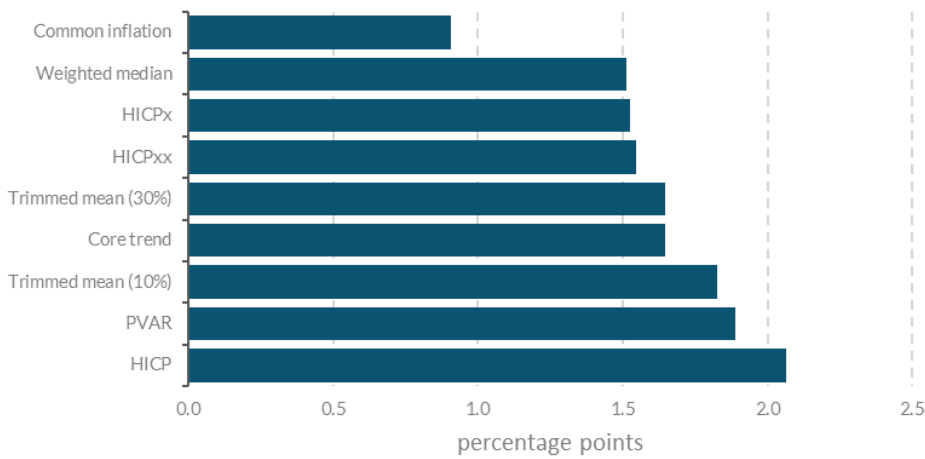
Source: CBI calculations, Eurostat

Notes: The figure shows standard devotion of each inflation measure over the period 2004M11 to 2022M08.

Back to "Contents"

Section 4.1

The specification of a forecasting model for electricity (gas):

$$\pi_t^{electricity\,(gas)} = c + \beta 15mav\_\pi_t^{we\,(wg)} + \varepsilon_t$$

Where $\pi_t^{electricity\,(gas)}$ is a month-on-month inflation in consumer electricity (gas) prices and $\beta 15mav\_\pi_t^{we\,(wg)}$ is a 15-month moving average of month-on-month inflation in wholesale electricity (gas) prices.

The specification of a forecasting model for liquid fuels:

$$\pi_t^{liquid} = c + \beta 2mav\_\pi_t^{oileur} + \varepsilon_t$$

Where $\pi_t^{electricity\,(gas)}$ is a month-on-month inflation in consumer electricity (gas) prices and $\beta 15mav\_\pi_t^{we\,(wg)}$ is a 2-month moving average of month-on-month inflation in oil prices in euro.

A general specification of a forecasting ARDL model:

$$\pi_t^i = \alpha + \sum_{p=1}^{n} \beta^p \pi_{t-p}^i + \sum_{p=0}^{n} \gamma^p x_{t-p} + \sum_{m=1}^{11} \delta_m D_m + \varepsilon_t$$

where π_t^i denotes a month-on-month inflation rate and

$$i \in \left\{ \begin{array}{c} unprocessed\ food, \\ processed\ excl.\ alcohol\ and\ tobacco, \\ clothing\ and\ footwear\ goods, \\ NEIG\ excl.\ clothing\ and\ footwear \end{array} \right\}$$

x_t is a vector of other determinants. The optimal lag length p is determined for each predictor based on the AIC. In addition, D_m represents m month dummy variable set to 1 for the month m and zero otherwise, where m includes months from February to December, with January as the base month.

A general form of an ARMA model (used for alcoholic beverages and tobacco inflation components):

$$\pi_t^i = \alpha + \sum_{p=1}^{n} \beta^p \pi_{t-p}^i + \sum_{p=1}^{m} \gamma^p \varepsilon_{t-p} + \varepsilon_t$$

Back to "Contents"

where π_t^i denotes a month-on-month inflation rate in either alcoholic beverages or tobacco.

Services inflation model:

$$\pi_t^{services} = \alpha + \sum_{p=1}^{n} \beta^p \pi_{t-p}^{services} + \sum_{p=0}^{n} \gamma^p x_{t-p} + \varepsilon_t$$

where $\pi_t^{services}$ denotes a year-on-year inflation rate in services.

Section 4.2

Average RMSE to evaluate a model's forecasting accuracy is calculated as follows:

$$\overline{RMSE}_i = \frac{\sum_{s=1}^{n} RMSE_s}{n}, \text{ where } RMSE_s = \sqrt{\frac{\sum_{t=1}^{36}(forecast_t - actual_t)^2}{36}} \text{ and } s \text{ denotes } n^{th}$$

recursive step $(s = 1, 2, \ldots, n)$, t is a month in the three-year forecast horizon $(t = 1, 2, \ldots, 36)$.

Fiscal Priorities for the Short and Medium Term

Thomas Conefrey, Rónán Hickey, Matija Lozej, Niall McInerney, David Staunton and Graeme Walsh[86]

Abstract

The Irish economy has withstood the effects of recent negative shocks and is at full employment. Starting from this favourable position, fiscal policy now has a central role to play in maintaining sustainable growth while at the same time addressing structural challenges. The public finances face growing demands linked to the cost of maintaining existing public services along with the need for additional investment to meet emissions reduction targets. Our analysis finds that expenditure growth above the Government's 5 per cent rule without offsetting revenue-raising measures would provide an unnecessary stimulus to demand and damage the economy's competitiveness. Additional expenditure should be accompanied by offsetting revenue-raising measures to help create capacity in the economy for public investment. Such measures are also warranted to ensure the tax base is resilient in the face of growing expenditure pressures and significant concentration risks to corporation tax and other government revenues. To help achieve these aims and to add credibility to fiscal plans, the government should commit to an anchor for expenditure growth net of tax changes. Policy should aim to reduce inefficiencies in the planning and delivery of capital projects to improve value for money and ensure the benefits of public investment for long-term growth are fully realised.

1.   Introduction

The Irish economy has proven resilient in the face of a succession of large negative economic shocks since 2020. Fiscal policy has played a central role in

---

how economic conditions have evolved in a broadly favourable direction over recent years. The estimated cost of the Government's counter-cyclical response to the pandemic stands at €32.4 billion between 2020 and 2023, or 12 per cent of modified national income (GNI*). These fiscal measures mitigated the extent of any permanent economic damage from the pandemic and laid the foundations for the economy's rapid recovery. In addition to this, expenditure to help households and businesses address cost of living pressures along with the humanitarian response by the Irish government to the Russian war in Ukraine is expected to amount to a further €8.3 billion (3.1 per cent of GNI*) in 2022 and 2023. The measures to address cost of living pressures – in particular those that have been targeted and temporary – reduced the hardship faced by the most vulnerable households and businesses as a result of rising prices.

Just as fiscal policy has played this stabilising role during recent economic challenges, the stance of budgetary policy will be equally instrumental over the coming years when economic conditions are expected to remain broadly benign. The unemployment rate has been at or below 4.5 per cent for two years and is forecast to stay close to this level out to 2026, signalling that the economy is operating at full employment. Inflation has reduced, but with relatively limited spare capacity in the economy, additional demand could amplify domestic price pressures keeping inflation higher than it would otherwise be and ultimately damaging Ireland's competitiveness.

Exceptionally strong growth in tax revenue from 2021-2023 has pushed the headline budget balance into surplus. However, this has been driven by windfall corporation tax (CT) gains that cannot be explained by growth in domestic economic activity. Excluding windfall CT, the budgetary position will remain in deficit in 2024 for the 17th consecutive year. The concentration of CT among a small number of large foreign-owned firms and the uncertainty over future revenue from this source given ongoing changes in international tax rules remains a key vulnerability for the public finances. The establishment of the Future Ireland Fund for saving a portion of CT is welcome but does not fully insulate the economy and public finances from the risk of a loss of corporation tax revenue, or more seriously a broader sector or firm-specific shock to the multinational-dominated sector of the Irish economy. The latter risk, were it to materialise, would have implications beyond a direct loss in CT as it would negatively affect income tax and other revenue sources as well as economic activity.

Against this backdrop for the economy and public finances, the priority for fiscal policy over the coming years is to maintain sustainable growth and resilient public finances while at the same time addressing structural challenges and boosting long-term growth potential. Consistent with these objectives, the Government introduced an expenditure rule in its July 2021 *Summer Economic Statement* to anchor fiscal policy. This rule allows core government spending to increase by 5 per cent per annum, with this growth rate chosen as it is in line with the economy's estimated long-run trend growth rate (when allowance is made for inflation). It was confirmed in the 2023 *Stability Programme Update* that "the Government's spending rule is calibrated on the basis of net spending, i.e. spending net of discretionary taxation measures". Limiting the growth in permanent net spending to match the long-run sustainable growth rate of the economy (i.e. 5 per cent) would help to avoid a procyclical fiscal stance and the tendency for boom-bust dynamics in the Irish economy. Since it is a net rule, it is important to note that spending growth in excess of 5 per cent can be accommodated, as long as revenue-raising measures are introduced. Although improvements to the current rule could be made, such as extending its coverage from Exchequer to General Government expenditure, overall it could provide a useful guide for budgetary policy if implemented effectively. Having an effective domestic fiscal rule has added importance for Ireland since the recently reformed EU rules – based on GDP and with no allowance for excess CT – are unlikely to provide useful guidance for budgetary policy.

The current fiscal projections in *Stability Programme Update 2024* (*SPU 2024*) imply that net spending will grow slightly faster than 5 per cent from 2024 to 2026. Our analysis shows that around three quarters of the additional core expenditure growth over this period would be needed to fund the cost of maintaining existing public services and for the planned increases in capital expenditure. This would suggest that if the Government's own fiscal anchor is to be complied with there is very limited scope for new spending in the absence of re-allocation of existing spending or new revenue raising measures. Moreover, scenario analysis shows that additional expenditure above existing plans without offsetting revenue-raising measures would add to inflationary pressures, risk triggering potentially damaging overheating dynamics and lead to a larger underlying budget deficit over the coming years.

Investment in the public capital stock has an important role to play in the coming years to ease constraints that are evident in housing and in other infrastructure. Our analysis shows that significant public investment above

existing plans will also be needed to ensure Ireland can meet its legally binding emissions reduction targets by 2030. To help create the economic capacity to absorb the necessary rise in public capital spending, additional public investment spending should be accompanied by offsetting revenue-raising measures. This would reduce the scale of the stimulus to the economy while the investment is being undertaken and at the same time safeguard the tax base which is vulnerable to a reversal in corporation tax and significant concentration risk across a number of dimensions. More broadly, to facilitate effective management of the public finances over the coming years, the government should commit to an anchor for medium-term expenditure growth net of tax changes that credibly accounts for the increasing cost of maintaining existing public services and expanding the public capital stock to meet climate and housing needs.

Even before allowance is made for additional investment in the climate area, existing Government plans envisage strong double-digit growth in public capital spending out to 2027. Our analysis shows that in the housing area, total Government spending has increased rapidly since 2019 and at 2.3 per cent of national income (GNI*) in 2023, was in line with previous highs. Overall housing spending as a proportion of national income was also the second highest in the euro area (see Box A). To ensure value for money and to maximise the benefits of any additional investment in housing, climate and other supporting infrastructure, public policy should aim to reduce delays and improve the efficiency with which public investment is delivered.

The rest of this *Article* is organised as follows. Section 2 sets out the macroeconomic and fiscal context for *Budget 2025*. Section 3 focusses on public expenditure and considers two scenarios to illustrate the impact of additional current and capital expenditure above existing plans as set out in *SPU 2024*. In relation to public capital investment, the analysis examines the impact on the economy and public finances of the estimated additional investment that could be required to ensure emissions reduction targets are achieved, including assessing the options for financing the additional investment. Section 4 focuses on public capital spending and illustrates how the benefits of public investment for the economy's long-term growth can be maximised by reducing delays in the planning and delivery of expenditure. Section 5 concludes.

2. Macro-Fiscal Context for Budget 2025

2.1. Assessment of macroeconomic conditions

Measured by employment growth, Ireland's recovery from the pandemic and recent economic performance was amongst the strongest in the euro area. Between 2019 and 2023, employment in Ireland increased by 15 per cent, the second highest of the 20 countries in the euro area (Figure 1). The scale of the increase in employment is reflected in the unemployment rate, which has remained at or below 4.5 per cent for the last two years. As discussed in the Labour section of this *Bulletin, o*verall labour market conditions remain tight, although there is some evidence of a slight easing over recent months with a decline in vacancies and an increase in some broader measures of labour supply. Inflationary pressures are still evident, despite monthly HICP falling below 2 per cent in March of this year. The decline in the headline rate is primarily driven by falling energy costs. Services inflation, which is more closely related to conditions in the domestic economy, stood at 4.2 per cent in April and is projected to remain elevated at around 3 per cent until 2026. Some sectors such as food and accommodation and residential rents are still exhibiting pronounced price increases.

Growth in employment from 2019 to 2023 was well above the euro area average
Figure 1
per cent
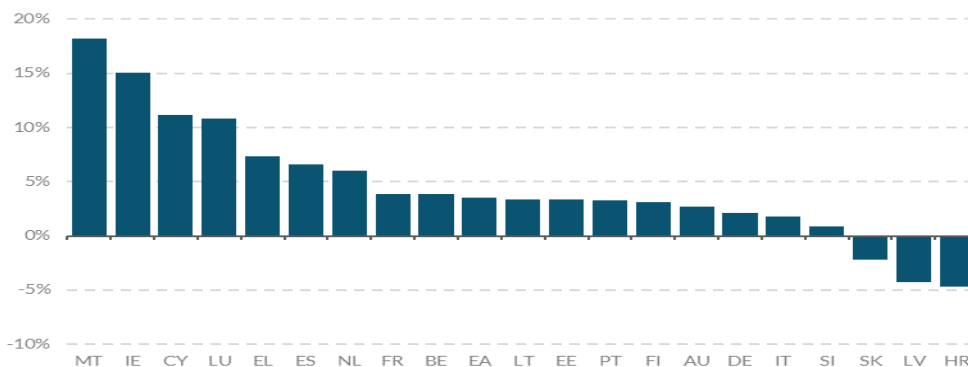
Source: Eurostat

To formally assess the current cyclical position of the Irish economy, the Central Bank of Ireland uses a number of structural and non-structural methods. By averaging across the range of production function and statistical filter-based estimates, we can generate an estimate of the output gap (Figure 2). This estimate implies that the recovery from the pandemic pushed the economy into a large positive output gap, meaning actual output was significantly higher than potential output during 2022 and 2023. Over the next

three years, this positive output gap is expected to close gradually but spare capacity will remain very limited. This is in line with the projections for the labour market in this *Bulletin* – which projects unemployment remaining at historic lows of around 4.5 per cent for the full forecast period.

The large positive output gap that emerged after the pandemic is expected to decline
Figure 2
per cent
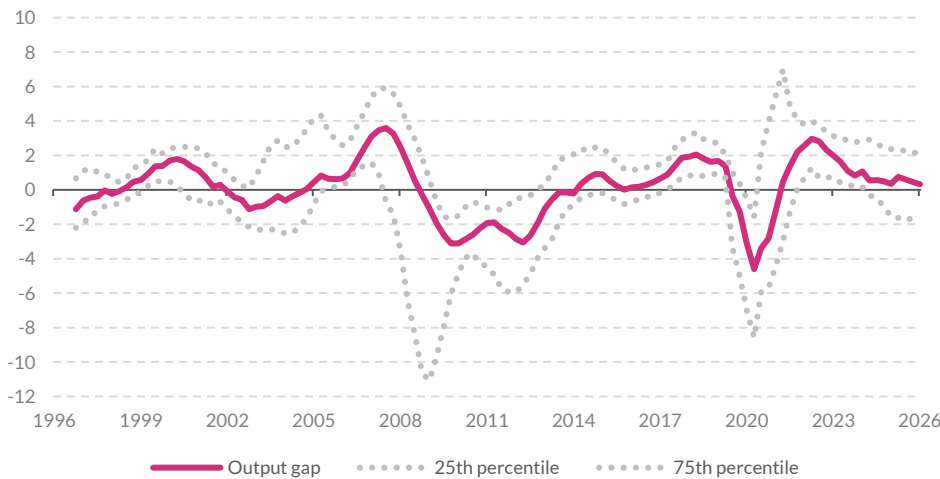
Source: Authors' calculations.

2.2. Fiscal context: recent developments in government revenue and expenditure

2.2.1 Recent Revenue Developments

Irish government revenue grew at an exceptional pace in recent years and was 40 per cent higher in 2023 when compared to its pre-Covid 19 level in 2019. Following a pandemic-led contraction in 2020, General Government revenue recorded its two highest annual growth rates on record in 2021 and 2022 (19.3 and 16.7 per cent respectively), surpassing those that occurred at the height of the housing boom. Three notable factors have supported the strength of revenue growth over this period. The first is the increase in employment (Figure 1). This has played a key role in supporting income tax receipts and social contributions (primarily PRSI receipts).

The second factor is the strength of corporation tax (CT) receipts, which more than doubled in the four years to 2023 as global output rebounded in the immediate post pandemic period and companies responded to changes in international tax rules. As discussed in more detail below, CT receipts are

highly concentrated, and a large part of the growth in this tax heading since 2014 cannot be explained by developments in the underlying economy. This raises concerns about the sustainability of revenue from this source over the medium and long term.

A third factor supporting revenue growth is the period of high inflation that the economy has experienced in recent years. Higher inflation, and the resulting higher price level, has meant that the volume of consumption in the economy supports higher VAT and excise receipts than had previously been the case prior to 2020. In progressive income tax systems, meanwhile, increases in income in line with inflation push more workers into higher tax brackets, strengthening direct tax receipts in a process known as 'fiscal drag'. The overall impact of high inflation on revenue growth has been reduced somewhat by Government measures to reduce specific VAT and excise rates and the change in income tax bands and credits in recent Budgets.

We can estimate the impact that higher-than-expected prices have had on VAT receipts by decomposing the increase in receipts that occurred in 2022 and 2023 into real and price effects. We use the Personal Consumption Expenditure (PCE) deflator to deflate nominal VAT and estimate a measure of 'real VAT'. The ECB's target of 'an inflation rate of 2 per cent over the medium term' is then used to determine the expected price increase. Decomposing the VAT change in this way suggests that around €1.8bn of the €4.9bn increase in 2022 and 2023 – or 37 per cent of the total change - was due to higher than expected prices. Similarly, we can use changes in the effective income tax rate to estimate the role that inflationary pressures have played in supporting income tax growth through fiscal drag. The effective income tax rate is generated by dividing total income tax receipts by whole economy compensation of employees, with the rate increasing from 24 per cent in 2021 to 24.9 per cent last year. Given actual tax rates did not change, this increase must reflect a greater proportion of compensation being taxed at the higher rate. Were the effective rate to have remained unchanged, the income tax increase would have been €1.2bn lower in 2023. While other factors could be at play, such as compositional changes in employment growth and stronger earnings growth in high wage sectors, this provides an estimate that up to 20 per cent of the income tax increase last year was due to fiscal drag.

Reflecting the above factors, direct tax receipts – mainly income and corporation tax – were responsible for two-thirds of the total growth in Irish government revenue in the four years to 2023, with indirect tax and social contributions playing smaller but still significant roles (Figure 3). Other

revenues, which includes government sales, investment income and capital receipts, made a smaller contribution. The strength of Irish revenue growth over this period is particularly evident when compared to developments in other countries, even when corporation tax growth is excluded (Figure 4).

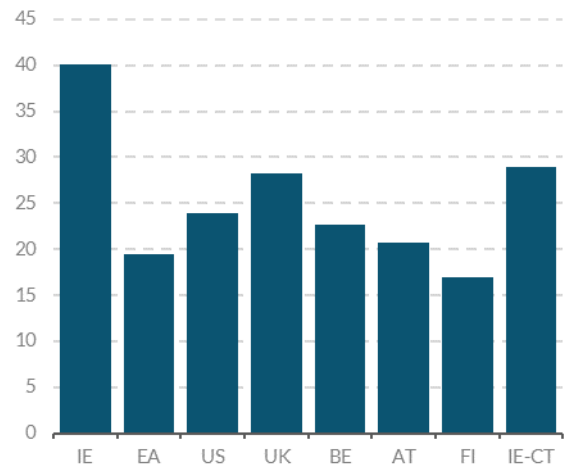**Exceptional revenue growth seen in 2021 and 2022 is not projected to continue**
Figure 3
per cent

Irish revenue growth from 2019 to 2023 was stronger than in the euro area
Figure 4
per cent
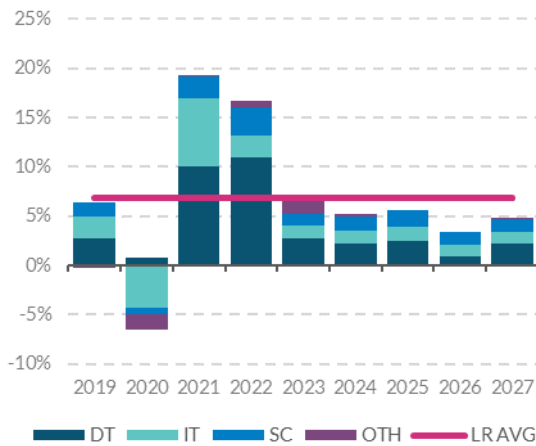
Source: Authors' calculations
Notes: DT – Direct Tax; IT – Indirect Tax; SC – Social Contributions; OTH – Other; LR AVG – Long Run Average

Source: IMF WEO Databank, Central Statistics Office
Notes: IE-CT is growth in Irish revenue excluding corporation tax receipts

Looking ahead, the pace of revenue growth is expected to moderate considerably over the medium term. *SPU 2024* forecasts average revenue growth of 4.7 per cent per annum over the period 2024 to 2027, half the average growth rate of the preceding four years (Figure 5).[87] This is led by a moderation in direct tax growth, reflecting an assumed negative impact of the Base Erosion and Profit Shifting (BEPS) reforms on corporation tax receipts.[88] The Government also notes that downside risks dominate this outlook, with international tax reforms identified as a key source of uncertainty. Growth in indirect tax receipts is also expected to moderate as inflationary pressures dampen leading to weaker increases in nominal consumption.

---

[87] Stability Programme Update 2024
[88] The Government noted in April's *SPU* that "overall, the net effect of the two-pillar [BEPS] solution on Ireland will be a significant loss of corporate tax revenue". The *Budget 2024* projections included a technical assumption, with an estimated overall net cost of the introduction of both pillars of €2 billion relative to the baseline in 2026.

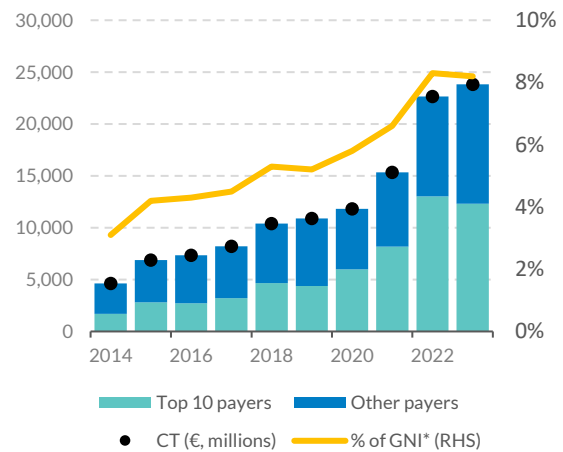**Growth in every tax category is expected to moderate**
Figure 5
per cent
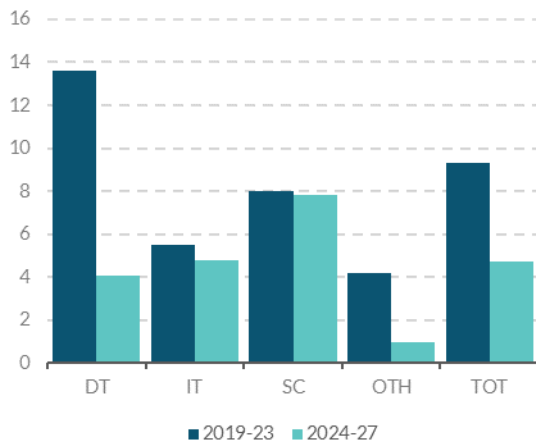
Source: Central Statistics Office, Stability Programme Update 2024
Notes: Projections for the years 2024 to 2027 are taken From the Stability Programme Update 2024.

Corporation tax receipts remain concentrated in just 10 firms
Figure 6
€, million   per cent GNI*

Source: CSO, Revenue, Department of Finance
Notes: Department of Finance Exchequer Returns, various years.

2.2.2 Corporation Tax

CT receipts continued to grow at a rapid pace during and after the Covid-19 pandemic. Receipts more than doubled from €10.9bn to €23.8bn between 2019 and 2023, and now account for just over one-quarter of total Irish tax receipts. As noted above, CT receipts are forecast to grow at a weaker pace over the medium term - average growth of 2 per cent per annum is projected by Government over the period 2024 to 2027 - with the impact of BEPS reforms expected to have a negative impact on receipts over this period.

There are two significant concerns over the increasing importance of CT to total revenue growth in the State. The first of these reflects the narrowness of the tax base. Data from the Revenue Commissioners show that just 10 large companies paid 52 per cent of net corporation tax receipts – or 14 per cent of total Exchequer tax receipts - in 2023 (Figure 6). IFAC (2023) estimates that payments are even more concentrated and just three company groups accounted for 43 per cent of corporation tax revenue in 2022. This concentration risk is evident more broadly as multinational companies also generate a significant proportion of other tax receipts, including 40 per cent of income tax in 2022 and just under 40 per cent of VAT revenue. This clearly represents a significant risk, leaving Ireland's revenue base – and ability to

Back to "Contents"

finance public expenditure without borrowing – highly exposed to the decisions and profitability of a small number of companies.

The second concern is that a very high proportion of CT receipts over the past decade are disconnected from actual economic activity taking place in Ireland. These receipts, which could therefore be vulnerable to reversal, are often referred to as 'windfall' or 'excess' revenues. As outlined by the Department of Finance (2022) and IFAC (2022) estimating the size of excess CT is subject to significant uncertainty and a number of different methodologies can be used. Reflecting this, we use a number of approaches to estimate a possible range for CT receipts that might be considered unsustainable over the medium to longer term.[89] These results highlight the uncertainty in estimating excess CT receipts, but also show that – using a number of different methods - a significant share of CT receipts cannot be explained by developments in the underlying economy or are out of line with historical and international norms. The mid-point of our estimates are also broadly in line with those produced by the Department of Finance in *SPU 2024* for most of the projection horizon, that is assuming around half of all CT is excess, with some divergence in 2026 (Table 1).[90]

Table 1 Estimate of 'excess' corporation tax receipts

€ billions

	2021	2022	2023	2024	2025	2026
Central Bank of Ireland	5.7	11.2	12.2	12.2	12.5	13.5
Department of Finance		10.7	11.2	11.2	11.5	9.9

Source: Stability Programme Update 2024, Budget 2024, Authors' calculations.
Note: CBI projection represents midpoint of estimates.

2.2.3 Recent Expenditure Developments

Government expenditure has increased at a strong pace in recent years, both in Exchequer and broader General Government terms.[91] Assessing overall government spending over this period is complicated by the Government's introduction of 'non-core' expenditure - expenditure on temporary external challenges that require additional resources outside of the day-to-day

---

[89] These approaches are discussed in more detail in Conefrey et al., 'Managing the Public Finances in a Full Employment Economy', Central Bank of Ireland Quarterly Bulletin 2, 2023.
[90] We assume that half of the additional revenue generated by BEPS Pillar 2 represents excess CT, consistent with the proportion of total CT receipts estimated to be excess in previous years.
[91] See IFAC for a detailed description of the difference between the Exchequer and General Government.

spending of Departments. These external challenges have included Brexit, the Covid-19 pandemic, the Russian invasion of Ukraine and the cost of living crisis. Non-core spending has declined each year since 2020 placing downward pressure on total expenditure growth, while core (or day-to-day Departmental spending) has continued to increase (Figure 7).

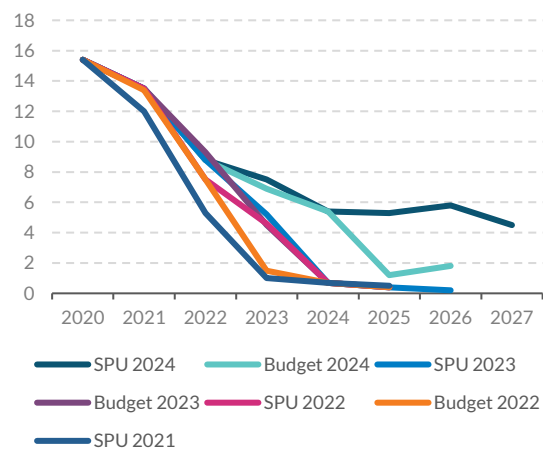**Exchequer spending growth is moderated by reductions in non-core spending**
Figure 7
per cent
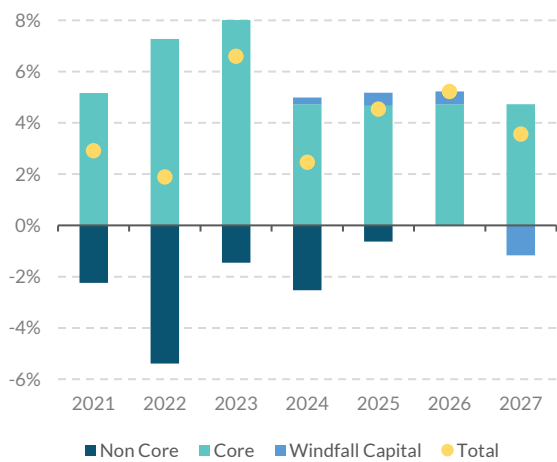
Duration of non-core spending has been repeatedly extended
Figure 8
€bn

Source: Department of Finance, *SPU 2024*.

Source: Department of Finance, Stability Programme Updates and Budgets, various years.
Notes: Chart shows the projections for non-core government spending from successive Budget and SPU publications from 2021 to 2024.

Additional capital spending funded by windfall corporation tax receipts is also planned over the next three years. This is separated from core spending in the Government's *SPU 2024* projections, although given it is similar to the remainder of government capital spending we include it in our measure of overall core expenditure. It is currently expected to fall to zero in 2027 – reducing overall spending growth - although it is not clear why this occurs. Core and non-core spending are presented by the Government on an Exchequer basis and, as a result, do not provide a full picture of overall General Government spending.

A key assumption underpinning the Government's fiscal projections in recent years was that non-core spending would be almost fully withdrawn by 2025. This assumption changed in April's *SPU*, when a contingency reserve equal to expected non-core spending in 2024 was included on a technical basis for the period 2025 to 2027 (Figure 8). Given uncertainty around much of this

spending, this represents a prudent approach. This persistence of non-core spending also means that it is not credible for it to be separated from more general, day-to-day spending when evaluating the fiscal stance or sustainability of the public finances. As noted in *Budget 2024*, for example, non-core spending continues to be allocated for Covid-19 in 2024, five years after the emergence of the pandemic. It also appears that spending linked to the Russian invasion of Ukraine may persist into the medium term. In both cases, this would appear to be stretching the definition of a temporary external challenge and would support the elimination of the distinction between "core" and "non-core" spending. Removing this increasingly unjustified categorisation would increase transparency, simplify domestic fiscal rules and mitigate downside risks related to the difficulty of withdrawing spending which has been present for a prolonged period.

 While "non-core" expenditure has been on a declining path in recent years, "core" spending has recorded strong growth (Figure 8). We estimate that permanent Exchequer spending increased by €20bn (7.3 per cent of GNI*) between end-2019 and 2023. The latest Government forecasts in *SPU 2024* anticipate that core Exchequer spending growth will moderate significantly this year from an estimated 8.9 per cent in 2023 to 5.1 per cent. [92] With gross voted expenditure already 2.6 per cent (€975m) ahead of its Budget profile in May, however, there are clear risks that the increase for the year will be stronger than this. Looking ahead, the *SPU* has forecast that core spending will grow at a pace consistent with the net expenditure rule over the period 2025 to 2027. This continues a trend, which has seen the Government's budgetary projections anticipate core spending growth in line with the net spending rule over the medium term, only for this to be delayed in subsequent projection exercises. [93]

Since the Government's expenditure rule is set in net terms, we adjust these projections to take account of announced and planned discretionary tax changes as well as additional "windfall" capital spending that is included in *SPU 2024*, but not incorporated into core expenditure. As discussed further in

---

[92] Core spending growth of 6.1 per cent had been forecast for 2024 in October's *Budget*. The downward revision in the *SPU* reflects a stronger than expected outturn in 2023 – increasing the 2023 base - rather than policy steps to bring the rate closer to the net expenditure rule.
[93] *Budgets 2022, 2023* and *2024* all projected that core spending growth would return to 5 per cent in the year following the budget (2023, 2024 and 2025 respectively). Similarly *SPU 2022, 2023* and *2024* all projected that core spending growth would return to 5 per cent in the following year (2023, 2024 and 2025 respectively).

Section 3.2 below, with these adjustments, core net spending grows in excess of 5 per cent out to 2026.

Government consumption is driving spending growth since the pandemic
Figure 9

per cent
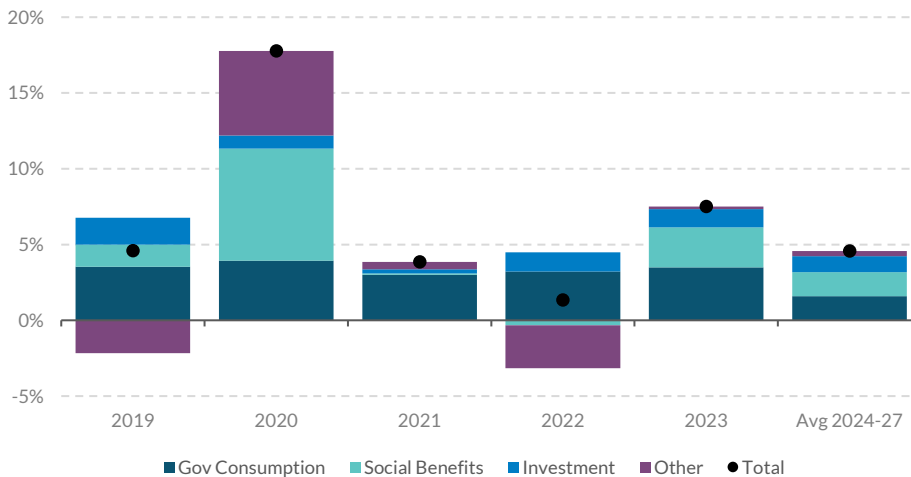
Source: Department of Finance, SPU 2024, authors' calculations.
Note: Government consumption includes intermediate consumption and compensation of employees. Other includes subsidies, interest, other current transfers, capital transfers and other acquisitions of non-financial assets.

2.2.4 General Government Revenue, Expenditure and overall Balance

Focusing on Exchequer spending developments presents an incomplete picture, as it only includes cash transactions undertaken by central government. General Government expenditure is the internationally recognised governmental accounting aggregate. It includes spending by all arms of government – central, local, the Social Insurance Fund - and non-commercial State bodies. General Government expenditure increased by 33 per cent between end-2019 and 2023, with government consumption accounting for around half of this increase and social benefits driving a further third of the growth rate (Figure 9).

The increase in government investment was also notable, growing by close to 50 per cent against the backdrop of the NDP. The Government anticipates that General Government expenditure will increase by an average of 4.6 per cent per annum over the period 2024 to 2027, with the composition of this growth more broadly balanced. Despite the change in the global interest rate environment in recent years the outlook for expenditure on debt interest remains relatively benign over the medium term. This reflects the supportive

fiscal outlook, a favourable maturity profile and the large cash balances at the Government's disposal.

Against the backdrop of the significant revenue growth outlined above, the General Government balance (GGB) is estimated to have improved from a small surplus of 0.8 per cent of GNI* in 2019 to an estimated surplus of 2.9 per cent last year (Figure 10). The latest Government outlook, taken from April's *SPU*, is that the State will continue to run headline budget surpluses over the medium term. As noted above, much of the recent improvement in the Irish budgetary position has been driven by growth in CT, a large part of which cannot be explained by underlying developments in the Irish economy. Given the risk that these excess CT receipts could be subject to sharp reversals, it is prudent to adjust the headline GGB to exclude such inflows. Doing so reveals that the outlook for the 'underlying' fiscal position is not as strong as the 'headline' projections would suggest. In fact, the underlying GGB would remain in deficit until 2026, which would make 19 successive years that the State has run a budget deficit.

General Government Balance to remain in deficit in the coming years when excess CT is excluded

Figure 10

per cent of GNI*
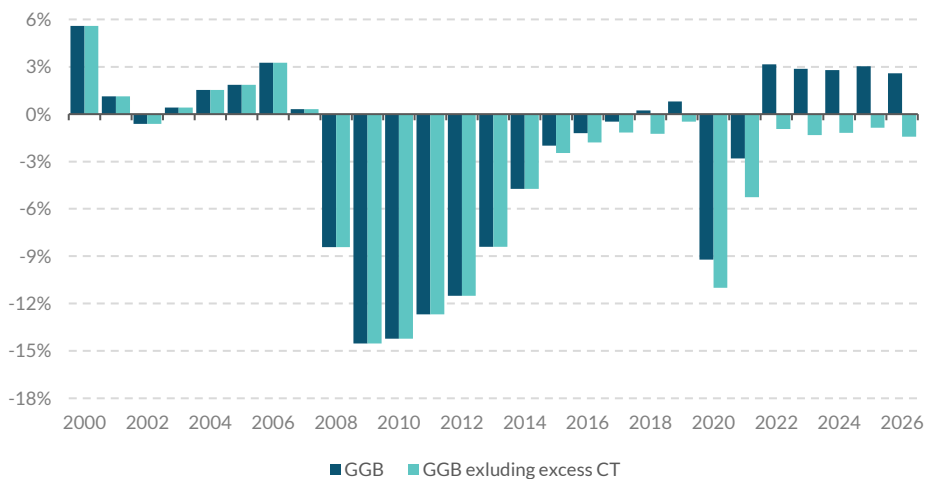
Source: CSO, authors calculations.

Notes: GGB excludes financial sector support provided during the financial crisis. Central Bank of Ireland estimates of excess corporation tax are used.

The structural primary balance - which excludes temporary measures (in this case also excess CT receipts), interest spending and adjusts for changes in the economic cycle – is considered a good proxy for the Government's overall fiscal stance as it removes factors not directly under its control. A deterioration

in the structural balance indicates fiscal policy is stimulating the economy while an improvement in the balance points to a restrictive stance. On the basis of the forecasts in *SPU 2024,* the structural primary balance is forecast by the Government to record a surplus of 0.8 per cent of GNI* in 2024. By 2027, the structural balance is estimated to stand at 0.9 per cent, a marginal improvement of 0.1p.p. from 2024. This signals that Government projections imply a broadly neutral fiscal policy stance in the coming years. Accordingly, any additional government spending or tax cuts – above those that underpin the Government's current fiscal forecasts – could result in an expansionary fiscal stance at a time when the economy is already growing at full capacity.

3. Managing Public Expenditure at Full Employment: Scenario Analysis

3.1 The estimated cost of maintaining existing public services

In assessing the future path for public expenditure, it is important to consider the increase in expenditure that would be required to maintain existing levels of public services into the future. The Department of Public Expenditure and Reform refer to this as "Existing Level of Service" (ELS). Using a different methodology, IFAC estimate these increases as "standstill" costs. ELS captures the additional expenditure needed to maintain today's levels of public services taking into account population growth and the impact of previous budgetary policy measures, including public sector pay agreements. ELS represents the amount of additional expenditure required each year to maintain existing services before any new policy decisions.

Based on the *SPU 2024* projections and adjusting for announced and planned discretionary tax changes, net spending is forecast to grow in excess of the 5 per cent rule from 2024-26 (by 5.4 per cent per annum on average) and by 3.7 per cent in 2027. The *Expenditure Report 2024* states that an estimated 3 per cent of the core expenditure base would be required each year to accommodate ELS costs.[94] Using this figure, it is possible to estimate the proportion of the projected increase in overall core spending that will be needed to cover the cost of maintaining existing services. On average, over the period 2024-2027, estimated ELS costs would absorb around two-thirds of the projected increase in overall core expenditure (Figure 11).

---

[94] See *Budget 2024: Expenditure Report*, page 24.

In addition to ELS costs, the Government expects to increase capital expenditure in line with the objectives in the NDP. Adding the forecast increase in public capital spending to the estimated expenditure required for ELS costs implies that on average, three quarters of the planned increases in overall core spending in the period out to 2027 is already accounted for by these two spending needs. In the absence of new discretionary revenue raising measures and assuming the 5 per cent net spending rule is complied with, this implies that there is very limited scope for any additional increases in expenditure or tax cuts beyond existing plans after ELS costs and capital spending have been accommodated.[95]

Three quarters of overall projected core expenditure growth required to cover costs of existing public services and planned capital spending

Figure 11

€, millions

- ■ Estimated remaining core spending
- ■ Change in capital spending (SPU 2024)
- ■ Estimated standstill costs (DPER Expenditure Report 2024)
- ── Total change in core spending (SPU 2024)
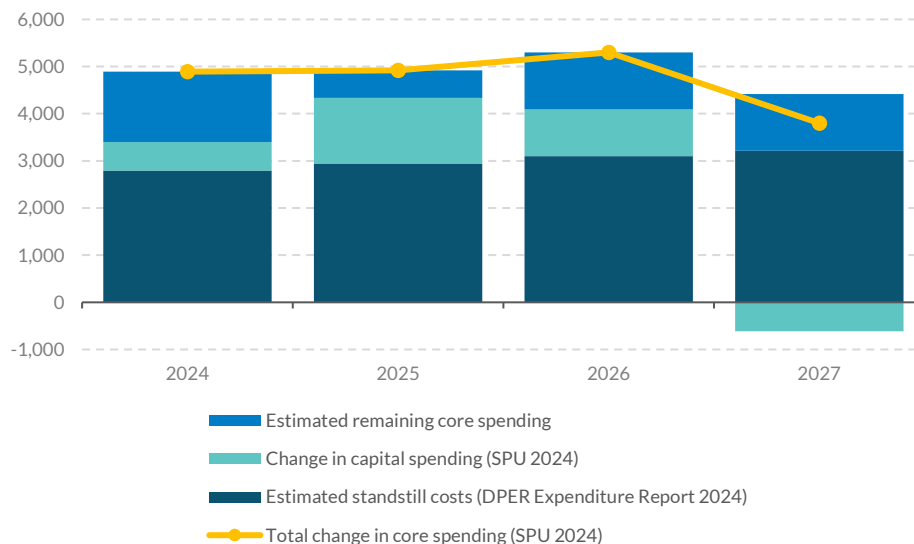
Source: Department of Finance, *SPU 2024*, Department of Public Expenditure and Reform, *Expenditure Report 2024* and authors' calculations.

Notes: The yellow line shows the projected increase in overall core net government spending from *SPU 2024*. The columns show the proportion of the overall increase that would be required to meet the cost of maintaining existing public services and planned capital spending increases based on *Expenditure Report 2024*.

3.2 Assessing the impact of a permanent increase in government expenditure

There is a clear risk that actual government expenditure growth exceeds projected growth in the coming years. This reflects not only the established pattern of realised government expenditure growth regularly exceeding

---

[95] Using a different methodology, IFAC's "stand-still" estimates are higher than the ELS costs derived here. IFAC estimate that stand-still costs would exceed the planned increases in current spending in *SPU 2024* over the period 2025-2027.

budget day projections, but also recurrent breaches of the Government's own 5 per cent net spending rule have been observed since 2021. Already in the first five months of 2024, health spending is already €0.7bn voted expenditure was almost €1bn (2.6 per cent) higher than planned in *Budget 2024* published last October. Moreover, there are considerable expenditure pressures over the coming years linked to the cost of maintain existing services before any new policy measures are accommodated, as outlined in the previous section. To assess this risk, we use the Central Bank's semi-structural model to illustrate the potential impact of a permanent increase in government spending above existing plans as set out in *SPU 2024*.[96]

Core expenditure growth: *SPU 2024* and alternative scenario
Figure 12
per cent
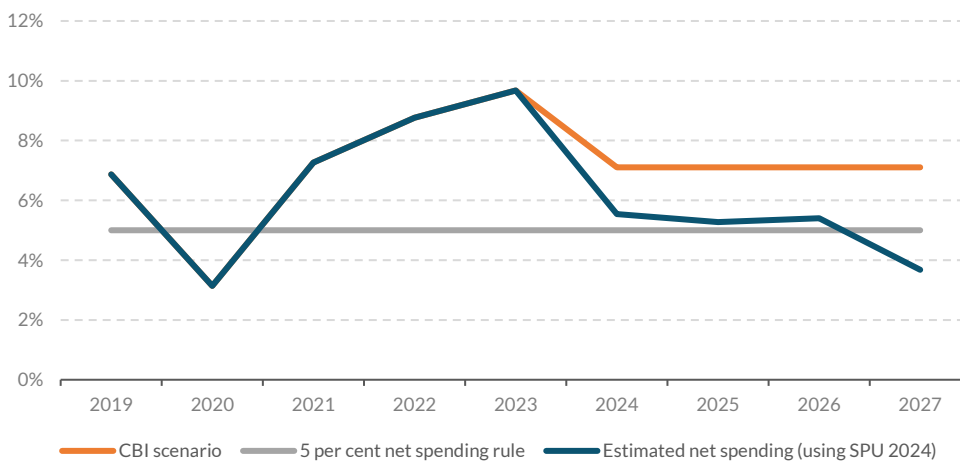
Source: *SPU 2024*, authors' calculations.

Notes: Simulation period is from 2022 to 2027.

As a basis for calibrating the scenario, we compare core spending growth to the Government's net 5 per cent rule.[97] Over the historic period from when the rule was introduced (2022-2023), core net spending grew by 9.2 per cent per annum on average (Figure 12). Over the forecast period (2024-2027), for the

---

[96] See McInerney, N. (2020), Conefrey, T., O'Reilly, G., & Walsh, G. (2018), and Bergin, A., Conroy, N., Garcia Rodriguez, A., Holland, D., Mc Inerney, N., Morgenroth, E., and Smith, D. (2017).

[97] To calculate core net expenditure, we take the projections for core spending from *SPU 2024* and adjust them to take account of the effect of announced discretionary tax changes. For the years 2019 to 2024 these come from the tax measures announced in the respective year's Budget. For 2025 and 2026 we use the tax measure assumptions in the 2023 Summer Economic Statement. In 2027 we assume that discretionary measures remain at the same level as those in the preceding two years (€1.1bn). We also class windfall capital spending as core rather than non core spending as it does not appear to fit the Government's criteria for non core (it is not spending in response to a temporary external crisis).

purpose of the scenario, we assume that core expenditure grows above 5 per cent at its historical (2019-2023) average of 7.1 per cent. The expenditure path in this scenario is not intended as a forecast but serves to illustrate the implications of higher than budgeted for core government expenditure over the 2024-2027 period. We assume that the additional spending is split equally between government consumption and transfers, and is debt-financed.

Focusing on the historic period (2022-2023), the simulation indicates that the observed higher expenditure growth above the 5 per cent rule since 2022 added around 2.1 per cent per annum on average to the level of domestic demand (Figure 13a) and an average of 0.5 percentage points per annum to inflation (Figure 13b).

Further increases in expenditure in excess of the 5 per cent rule over the coming years would increase domestic demand and inflation. In the short-run, the level of domestic demand would be up to 2.1 per cent higher in 2024 than otherwise, and would remain above 0.7 per cent until 2027. Additional inflation of 0.5 percentage points would occur in 2024 and remain higher than otherwise until the end of the period.

The additional expenditure would have an uneven impact on different sectors of the economy (Figure 13c). While the economy as a whole would be stimulated for the duration of the shock out to 2027, wage pressures (Figure 13b), through higher prices and a tighter labour market, would lead to a loss of cost-competitiveness in the tradable sector that would build up over time. Consequently, output in the more productive sector of the Irish economy, the tradable sector, would be lower than otherwise. In terms of the fiscal implications, the underlying (excluding excess CT) General Government deficit as a per cent of GNI* would be larger over the course of the simulation period by about 0.2 percentage points (Figure 13d). In the baseline, the underlying GG balance is projected to move into surplus by 2027. If expenditure growth exceeds 5 per cent without any offsetting revenue-raising measures as set out in this scenario, the underlying GG balance would remain in deficit out to 2027.
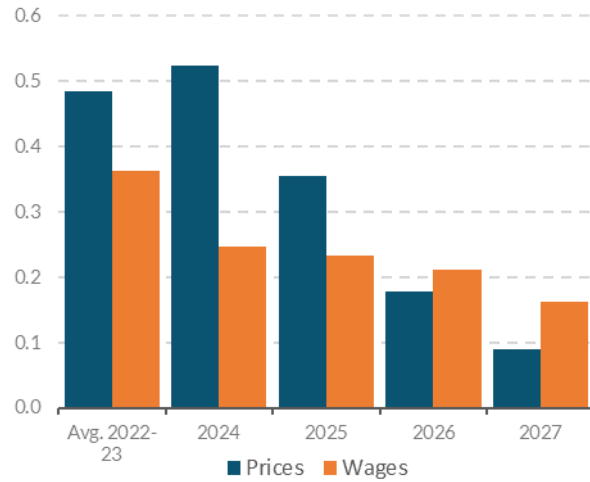
Domestic demand
Figure 13a
per cent deviation from baseline
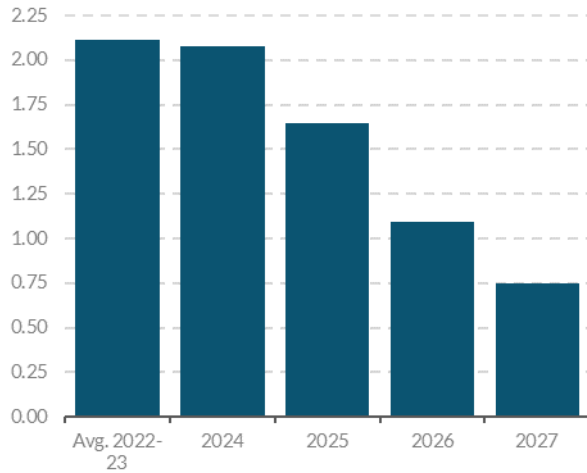
Source: authors' calculations.
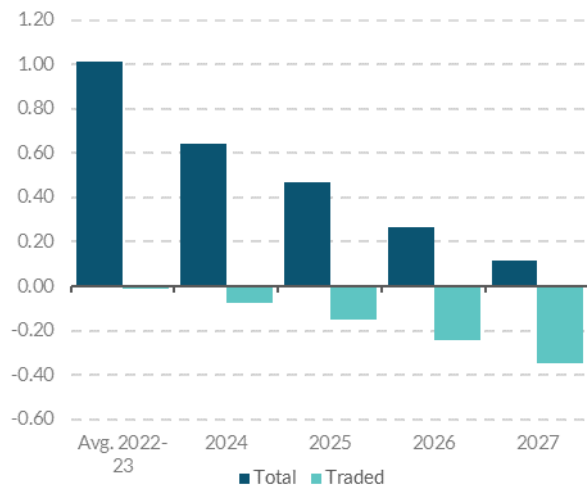
Inflation
Figure 13b
percentage point deviation from baseline

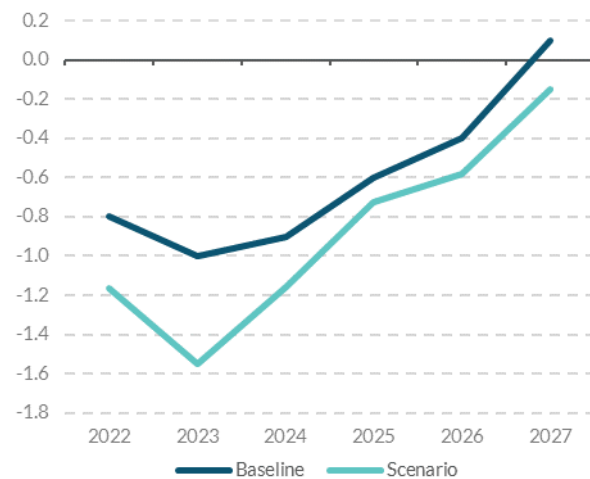Source: authors' calculations.

Output by sector
Figure 13c
per cent deviation from baseline

Source: authors' calculations.

GG Balance
Figure 13d
per cent of GNI*

Source: authors' calculations.

3.3 Focus on Public Capital Expenditure

Given the scale of the capacity constraints facing the Irish economy in key areas like housing, infrastructure, and health, increasing public capital investment is an important medium-term policy goal. While the marked growth in total spending over the last decade has been almost entirely driven by rising current spending, the 78 per cent growth in capital spending (from €6.6bn to

€11.8bn) in the five years to 2023 has added to the public capital stock and will drive improvements in the productive capacity of the economy. Capital spending is projected to grow faster than current spending out to 2026, with the share of government spending going to capital investment is projected to increase (Figure 14). This gradual rebalancing of public spending is welcome. Government investment differs from government consumption spending because it contributes to the stock of public capital, which can have a longer lasting impact on the economy. While estimates of the effect of public capital on long-term growth potential vary - and depend on factors such as the composition and efficiency of spending - the literature typically finds a positive relationship between the two.[98]

Capital spending projected to grow faster than current spending until 2027

Figure 14
per cent
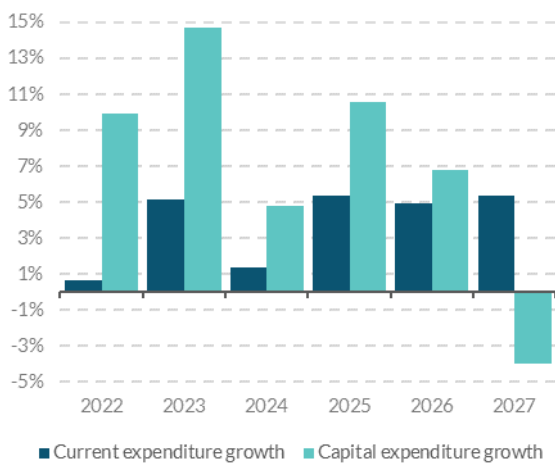
Source: *SPU 2024*, authors' calculations.

Revisions to nominal capital spending projections

Figure 15
€m
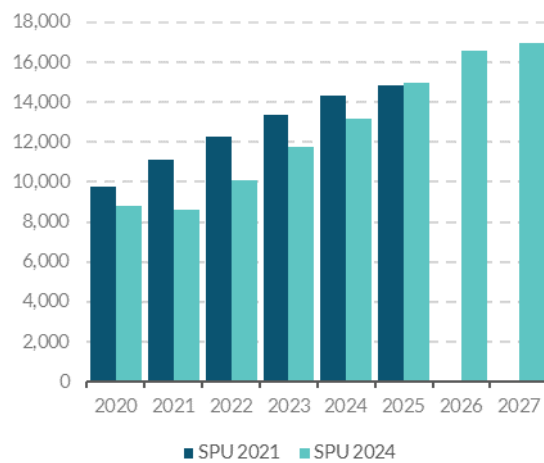
Source: *SPU 2024*, authors' calculations.

The current National Development Plan (NDP)[99], published in October 2021, sets out the Government's capital spending priorities out to 2030. It sets a target of spending (in Exchequer terms) of 5 per cent of GNI* per annum on capital investment. In nominal terms, this amounts to €165bn over the ten years of the plan. The NDP anticipated that the 5 per cent of GNI* target would be reached in 2024, which would imply a doubling in investment as a share of GNI* since 2017. Revisions to nominal capital spending since 2021 have been significant (Figure 15). Lower than expected investment in 2020 and 2021 as a

---

[98] For a more detailed discussion of the link between government investment and potential output see Hickey et al, (2018).
[99] National Development Plan 2021 - 2030

result of the pandemic carried into subsequent years, while the April 2024 *SPU* has announced a significant increase in spending out to 2027. As such, increased capital spending over the next three years will close some of the gap relative to the NDP, at least in nominal terms. For example, the NDP projected total growth in capital expenditure of 20 per cent from 2023 to 2027 – the *SPU* projects average growth of 26 per cent over the same period, with most of the increase coming in 2025.

More relevant for economic capacity, however, is the real level of investment that will be achieved relative to that anticipated in the existing NDP. In recent years, inflation has had a significant effect on the level of actual capital investment delivered for a given level of nominal spending. Nominal investment shortfalls in the early years of the NDP combined with higher than expected inflation pushed real investment levels well below what was planned (Figure 16). While the projections imply that investment will eventually reach the 5 per cent of GNI* target in nominal terms, higher inflation means that in real terms public investment as a share of output remains close to 3 per cent over the forecast period (Figure 17).

Last year, nominal investment spending was 17 per cent higher than the previous peak in public investment in 2008. In real terms, however, investment levels will have recovered only by 2026 (Figure 18). The effect of inflation is even more pronounced when looking at real investment per capita which has recovered in nominal terms but remains well below 2008 levels when adjusted for inflation (Figure 19). The shortfall in real capital investment implies that higher capital spending will be needed over the coming years if the investment targets of the NDP are to be realised. Delivering this in an economy that is operating at close to capacity, however, is challenging. Policymakers will need to balance investment needs with demand conditions in the real economy.

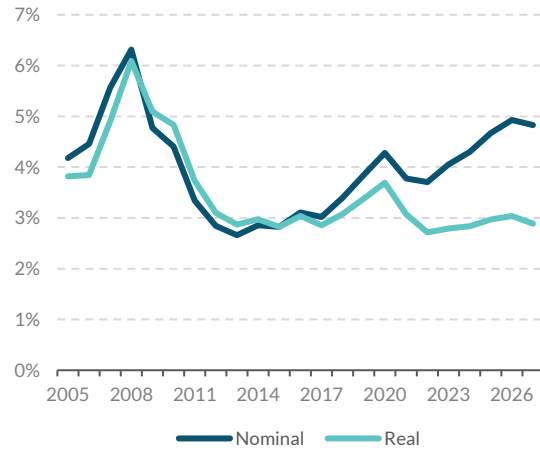## Real investment is lower than planned

Figure 16
€ million
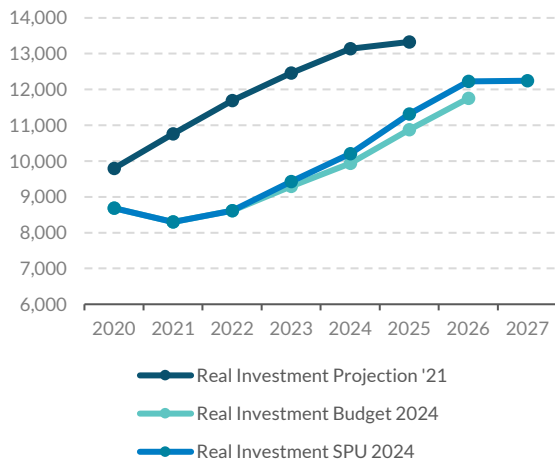
Source: *SPU 2024*, author's calculations.

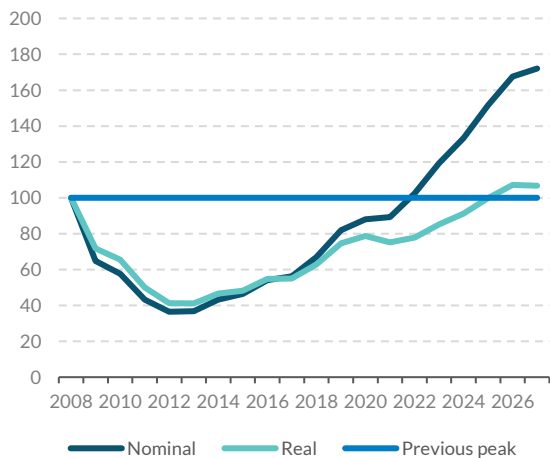## Public investment approaching 5 per cent of national income

Figure 17
per cent of GNI*

Source: *SPU 2024*, author's calculations.

Real public investment to surpass its 2008 level by 2026

Figure 18
per cent of 2008 investment

Source: *SPU 2024*, author's calculations.

Investment per Capita (€)
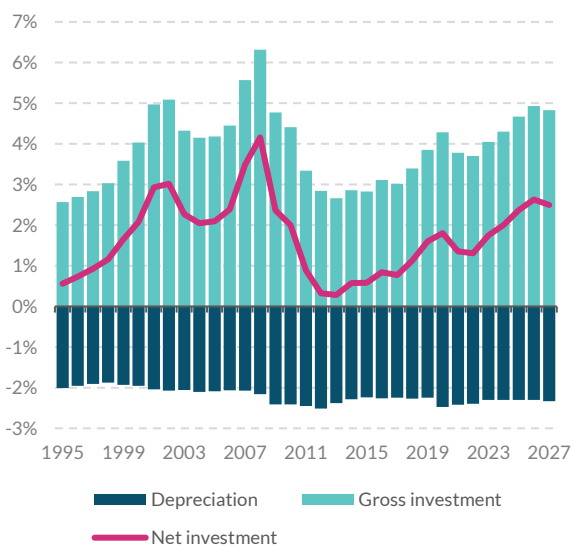
Figure 19
€

Source: *SPU 2024*, author's calculations.

Another factor to consider is the impact of depreciation on the existing public capital stock. Net investment – which excludes depreciation – declined sharply in the period of fiscal consolidation that followed the financial crisis, but has posted a strong recovery in the past five years (Figure 20). Further increases

are anticipated over the medium term, but net investment is expected to remain below the peaks recorded in the early 2000's. More broadly, taking account of these developments in net investment, we can estimate the evolution of the public capital stock (Figure 21). Following the approach of Hickey et al. (2018)[100] we use adjusted non financial assets (NFA) of the government as a proxy for the public capital stock. This removes the impact of valuation changes, which are not particularly relevant when it comes to determining the impact that public capital stock will have on future growth. Doing so we see that the public capital stock is estimated to have grown significantly – by 19 per cent - since 2018.

Net investment is re below pre-2008 peak rate is increasing
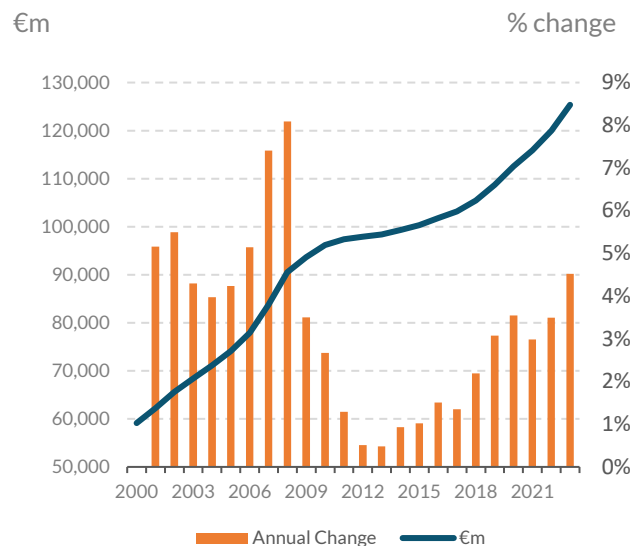
Figure 20

per cent of GNI*

Source: CSO, Department of Finance .

Note: Depreciation is assumed to grow at its 10-year average for the period 2024-27

Public Capital Stock growth

Figure 21

€m   % change

Source: CSO, authors' calculations.

Note: Adjusted government non financial assets (NFA) is used as a proxy for the public capital stock. This adjusts NFA to remove the impact of valuation changes

---

[100] Hickey, R., Lozej, M. and Smyth, D. (2018) Irish Government Investment, Financing, and the Public Capital Stock *Quarterly Bulletin Article 03/July 18*

Box A: Government Housing Expenditure

Having declined sharply in the years immediately after the financial crisis, Government spending on housing has followed a strong upward trend over the past decade (Figure A). This has been driven by a recovery in capital spending, reflecting not only large increases in Exchequer funding but also, in more recent years, the use of State supported non-Exchequer spending by agencies such as the Land Development Agency (LDA). There has also been consistent increases in current housing spending.

Significant increase in Government Housing expenditure in recent years
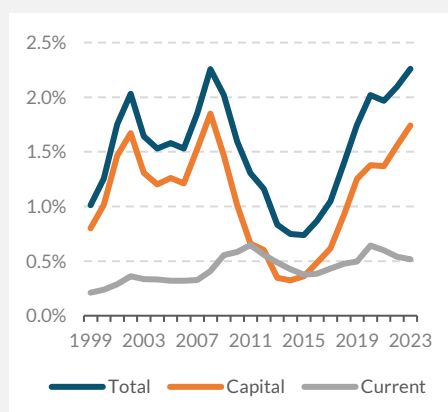
Figure A
€ billions
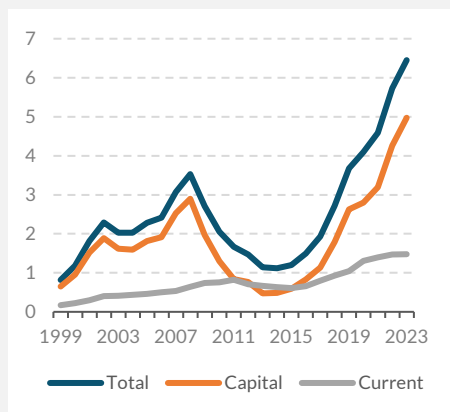
Figure B
% GNI*

Source: Authors' calculations (see Footnote 16 for details)

Reflecting these developments, we estimate that Government housing expenditure recorded a new nominal high of €6.5bn last year, with capital and current spending also reaching new highs of €5bn and €1.5bn respectively.[101] Budgetary plans point to a further increase in 2024 with a housing budget package of €7bn announced in Budget 2024.[102] In relation to

---

[101] Government housing expenditure is calculated as the sum of: (i) Exchequer spending on housing by the Department of Housing, Local Government and Reform (source: Department of Public Expenditure and Reform Databank); (ii) Exchequer spending on rent supplement by the Department of Social Protection (source: Department of Social Protection Annual Statistic Reports); (iii) non voted spending on local authority and social housing (source: Expenditure Reports, Budgets 2012-24 and Estimates for Public Expenditure, Budgets 2000-11); (iv) investment by the Land Development Agency (source: Expenditure Report, Budgets 2020-24); (v) gross lending by the Housing Finance Agency per annum (source: Housing Finance Agency Annual Reports 1999-2022 and Corporate Plan 2023-27); (vi) new lending per annum by Home Building Finance Ireland (source: Home Building Finance Ireland year end updates)
[102] See Expenditure Report, Budget 2024

the overall size of the economy, Exchequer housing expenditure returned to its previous 2008 peak of 2.3 per cent of GNI* last year (Figure B).[103]

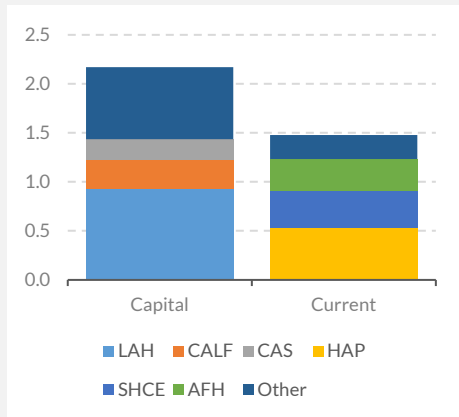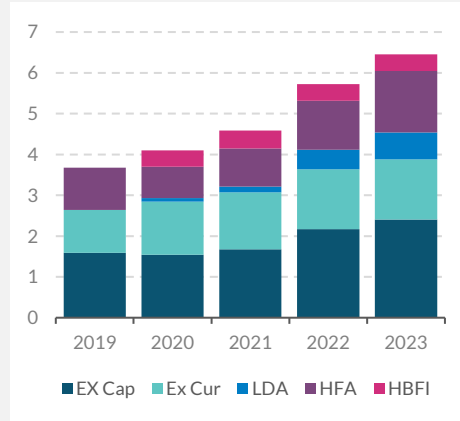**Composition of Government Housing expenditure**

Figure C
€ billions

LAH   CALF   CAS   HAP
SHCE   AFH   Other

Source: DPER Databank
Notes: LAH – Local Authority Housing,
CALF – Capital Advanced Leasing Facility,
CAS – Capital Assistance Scheme, HAP -
Housing Assistance Payment, SHCE – Social
Housing Current Expenditure, AFH –
Accommodation for Homeless

Figure D
€ billions

EX Cap   Ex Cur   LDA   HFA   HBFI

Source: Authors' calculations
Notes: EX Cap – Exchequer Capital, Ex Cur -
Exchequer Current, LDA – Land Development
Agency, HFA – Housing Finance Agency,
HBFI – Home Building Finance Ireland

On the Exchequer side, local authority housing was the largest contributor to housing capital spending last year, costing €930m or 40 per cent of total capital housing spending. The other largest capital contributions came from the Capital Advanced Leasing Facility and the Capital Assistance Scheme, bodies established to provide funding to Approved Housing Bodies (Figure C). In terms of current expenditure, the Housing Assistance Payment Scheme made the biggest contribution, costing €537m or one-third of the total. This component of current housing expenditure has risen by 40 per cent since 2019. The Social Housing Current Expenditure Programme – which funds the current payments for properties leased for social housing – and accommodation for the homeless were the next largest contributors. Together these three categories represented 80 per cent of all current

---

[103] The housing sector also receives fiscal support through a number of tax reliefs. In Budget 2024, for example, the Government introduced a temporary mortgage interest tax relief scheme that it is estimated will cost €125m. A previous scheme, at its peak, cost €700m in 2008. The Help to Buy scheme and Rent Tax Credit are other examples. The cost of these tax reliefs represents additional fiscal support for the housing sector on top of the expenditure measures we outline in this Box.

housing expenditure. Outside of the Exchequer, capital expenditure has increasingly been supplemented through investment activity by the LDA and loan activity by Housing Finance Agency (HFA) and Home Building Finance Ireland (HBFI). These State bodies are estimated to have financed an additional €2.6bn in new investment and loans in 2023 (Figure D).

Irish Government housing expenditure high relative to euro area

Figure E

% of GDP
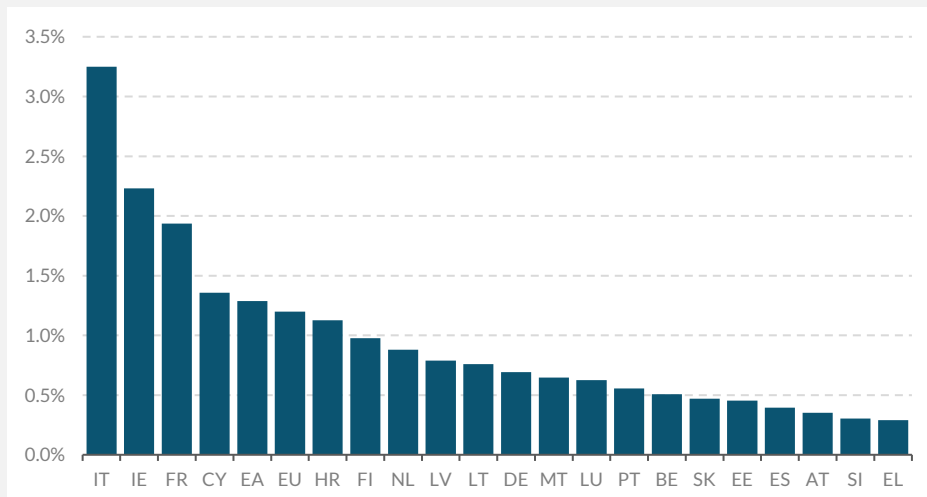
Source: Eurostat, CSO

Note: Irish figure is percentage of GNI*

While we can use Exchequer data to compare housing expenditure across time in Ireland, we need to use the broader General Government accounting system to compare expenditure across countries.[104] The COFOG (classification of functions of government) data series is considered by Eurostat to be 'the appropriate basis to examine the structure of government expenditure'. Developed by the OECD, it separates General Government spending into ten broad 'Divisions', with each Division further broken down into between six and nine smaller 'Groups'.[105] For the purposes of this Box, we use the Housing and Community Division (excluding Group 6.3 Water

[104] See Eurostat.
[105] The ten Divisions are: 1. General Public Services; 2. Defence; 3. Public Order and Safety; 4. Economic Affairs; 5. Environmental Protection; 6. Housing and Community; 7. Health; 8. Recreation, Culture and Religion; 9. Education; 10. Social Protection.

Supply) [106] and the Housing Group in the Social Protection Division [107] to calculate housing expenditure. This shows that Ireland recorded the second highest housing expenditure in the euro area in 2022, the latest year that data is available (Figure E). The only country to surpass Irish expenditure was Italy, where the introduction of the 'Superbonus' tax credit scheme has seen a surge in housing related capital transfers (Italian housing spending increased from 0.4 per cent of GDP in 2019 to 3.2 per cent of GDP in 2022 highlighting its impact). Excluding Italy, housing expenditure in Ireland was twice that in the Euro area in 2022 (2.2 per cent of GNI* compared to 1.0 per cent of GDP). It should be noted that expenditure by State agencies such as the LDA and HFA are not included in the COFOG data.

Summing up, overall government expenditure in the housing area has increased rapidly since 2015 – returning to its previous 2008 peak as a percentage of GNI* - and is high when compared to other euro area countries. The recent report of the Housing Commission showed that Ireland's overall housing need is likely to be higher than previously estimated reflecting strong population growth. If estimated overall housing need is revised up compared to the projections that underpin the existing NDP, this could imply a need for additional public expenditure in housing above current plans. With overall spending in this area having already increased above 2 per cent of national income (GNI*) in 2023, any decision to further increase expenditure in this area would need to consider whether there are options to more effectively allocate existing spending in the context of the current-capital mix, as well as improving the efficiency with which investment is being delivered (see section 3). How additional housing related investment would be accommodated and financed in the context of overall budgetary plans –without aggravating overheating pressures and weakening the public finances – would need careful assessment.

3.4 Macroeconomic and fiscal effects of climate-related investment

As outlined in Section 3, while the path for public investment is high in nominal terms, future growth in real investment is projected to be relatively modest.

---

[106] Division 6 Housing and Community includes Groups 6.1 Housing Development, 6.2 Community Development, 6.3 Water Supply, 6.4 Street Lighting, 6.5 R&D Housing and Community, 6.6 Housing and Community n.e.c.
[107] Division 10 Social Protection includes the groups 10.1 Sickness and Disability, 10.2 Old Age, 10.3 Survivors, 10.4 Family and Children, 10.5 Unemployment, 10.6 Housing, 10.7 Social Exclusion n.e.c, 10.8 R&D Social Protection, 10.9 Social Protection n.e.c.

One area where investment will need to increase is to support the transition to a low-carbon economy. Accordingly, in this section, we outline how much additional investment would be needed over the coming years in order for Ireland to meet its decarbonisation objective given the progress achieved to date. We then use the Bank's semi-structural model of the Irish economy to assess the macro-fiscal implications of that necessary additional investment.

The *Climate Action and Low Carbon Development (Amendment) Act* 2021 established the legal framework for Ireland to achieve net zero greenhouse gas emissions by 2050. As part of the Climate Amendment Act, Ireland has a set an interim target of achieving a 51 percent reduction in emissions relative to 2018 by 2030. It has also introduced five-yearly carbon budgets, along with sectoral emission ceilings consistent with these carbon budgets.
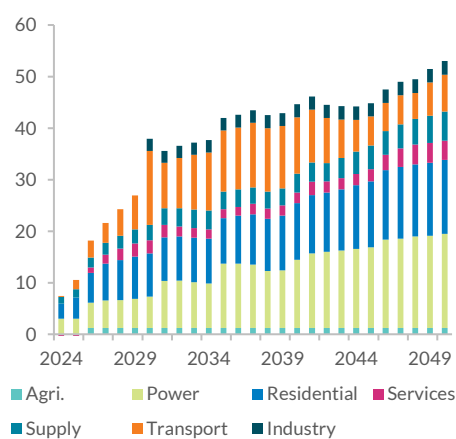
GHG Emissions Projections

Figure 22

$MtCO_2e$
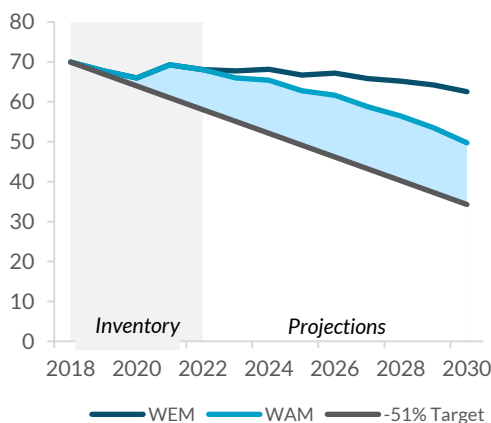
Source: EPA (2024)

Notes: Figure includes LULUCF sector emissions

Cumulative Additional Investment

Figure 23

€bn deviation from BAU scenario

Source: TIM model and author calculations

Ireland is currently on course to significantly undershoot its 2030 emissions reduction target with the EPA's "With Existing Measures" (WEM) and "With Additional Measures" (WAM) scenarios projecting reductions of 11 and 29 percent (on 2018 levels), respectively (Figure 22).[108] Moreover, almost all sectors apart from commercial and public buildings are projected to exceed

---

[108] The WEM scenario in Figure 23 includes all domestic polices and measures that had been implemented by end of 2022 (the latest inventory year). The WAM scenario assumes implementation of the WEM scenario in addition to further implementation of planned government policies and measures, including those outlined in Climate Action Plan 2024. See EPA (2024) for details.

their emissions ceilings. This suggests that further measures will be required if Ireland is to meet its emission reduction objectives.

To achieve Ireland's emission reduction targets will require significant 'green' investment over the next decade. To calibrate the size and sequencing of the investment shock we use projections from the TIM energy systems model (Balyk et al, 2022) for the 'cost optimal' level of energy-related investment that is consistent with Ireland meeting its climate objectives.[109]

Figure 24 illustrates the cumulative increase in energy-related investment that would be required to achieve Ireland's climate objectives by 2050.[110] Additional investment of over 50 billion euro would be needed over the period up to 2050, with around 70 per cent of this incurred over the next decade (Figure 23). The chart also highlights how investment in the power, transport and residential sectors will primarily drive the reduction in fossil fuel dependence in the energy system. As TIM does not model investment in energy infrastructure, we scale estimates for the required investment in the energy grid and transport infrastructure from European Commission (2020) and OBR (2021).[111]

The additional required investment amounts to close to two percentage points of modified GNI each year over the next decade. It is also likely to lead to a significant increase in the demand for construction labour, which could lead to overheating pressures arising from that sector. For example, ESRI (2024) estimates that around 24,000 new construction workers would be needed to meet Ireland's renewable energy targets (including retrofitting). This is in addition to over 26,000 new construction workers that would be needed to meet the housing targets outlined in the current National Development Plan – which as noted previously are likely to be revised upwards.[112]

---

[109] TIM is an energy systems model developed by UCC's MaREI energy policy and modelling group. We use the '300mt-BAU' scenario, which comprises a 300 million tonne CO2 carbon budget with energy demands growing at historical (business as usual) trends. We note that while this scenario focuses on the carbon budget that is consistent with a particular global temperature increase, it is also broadly aligned with Ireland's medium- to long-term decarbonisation targets.

[110] The Supply sector in TIM incorporates the production, trade and transformation of primary and secondary energy commodities, while the Power sector refers to the generation of power such as electricity from energy sources.

[111] One caveat to our approach of imposing the additional investment estimated by TIM as shocks in the semi-structural model is that it necessarily abstracts from potential spillovers or spillbacks between the cost-optimal investment path and the macroeconomic impact of these shocks.

[112] IFAC (2024) examines the potential sources of labour supply that could be available to meet the expected additional demand for construction workers in the coming years.

Table 2 Public Shares of Transition-related Investment

	Low (%)	Central (%)	High (%)
Public Share	15	26	36

Source: OBR (2021)

Notes: Shares refer to weighted average shares across all sectors.

The investment Ireland's energy systems will have both a private and a public component. While the share of the investment costs that will be borne by the State is a policy choice, government intervention will primarily be needed to undertake investment that would otherwise not be undertaken by the private sector, such as where the present value of future energy cost savings are insufficient to cover upfront investment costs(IMF, 2023).[113] In terms of calibrating the public share of transition-related investment, performing such calculations would, require a model with granular detail on both operating and investment costs. We instead consider three different scenarios based on OBR (2021), which computes 'high', 'low' and 'central' public shares for the UK (Table 2). The average shares in the central and high scenarios are similar to the average public shares used in Darvas and Wolff (2021) and estimated in Seghini and Dees (2024), while slightly lower than the shares assumed in Pisani-Ferry and Mahfouz (2023).

Simulating these public spending shocks in the Bank's semi-structural model, we find that the investment stimulus has a positive effect on total output over the scenario horizon, with the impact ranging from one to 1.9 percent in the short term to 0.3 to 0.56 percent in the longer term, depending the public share variant (Figure 24a).

The increase in investment drives up domestic demand, increasing wages in the non-traded sector and attracting resources away from the traded sector. This leads to a fall in the output of the traded sector as domestic wages and prices rise relative to trading partners. (Figure 24b).

---

[113] For example, carbon pricing policies can be used to shift transition costs onto the private sector (D'Arcangelo et al (2023), Pisani-Ferry and Mahfouz, 2023).
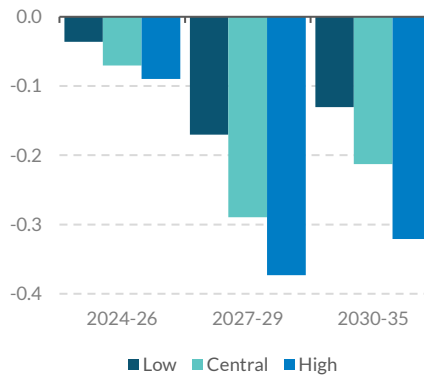
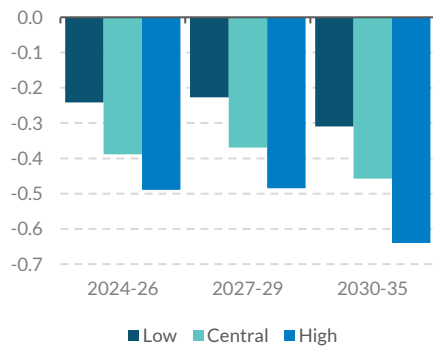**Total Output**
Figure 24a
per cent deviation from baseline
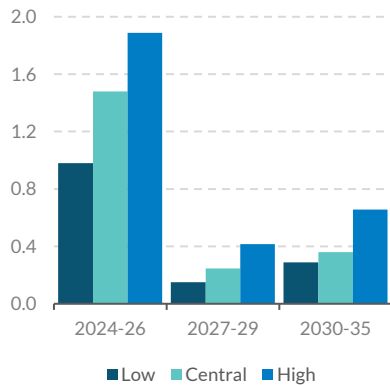
Traded Sector Output
Figure 24b
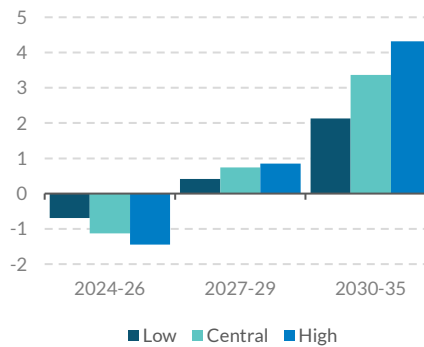per cent deviation from baseline

Budget Balance
Figure 24c
deviation from baseline

Public Debt ratio
Figure 24d
deviation from baseline

Source: author's calculations.

The investment increase also has a considerable impact on the fiscal position. The budget balance to output ratio deteriorates continuously over the simulation horizon relative to baseline (Figure 24c). The adverse impact on the budget balance accumulates into rising debt ratios over time. By 2035, the debt ratio is 2.1, 3.4 and 4.3 percentage points above baseline in the low, central and high spending variants, respectively (Figure 24d). While these scenarios are relatively stylised, they highlight how the transition to net zero could have important implications for the public finances.

We now repeat the simulation for the case where the additional public investment is financed by raising government revenue rather than through debt issuance. For the purposes for this exercise, we assume that the additional revenue is generated by increasing the effective tax rate on personal income. In reality, a combination of revenue-raising measures could be considered, particularly in the context of trade-offs between efficiency and equity trade-

offs across different fiscal levers.[114] Similarly, while carbon taxation could also be used to fund this investment, these revenues will also need to fund expenditure related to climate adaptation and the 'Just Transition'.[115] Assuming investment is funded by personal tax revenue is therefore a technical assumption that allows us to simplify the calibration of the scenario.

Figure 25a below shows that the increase in total output arising from the government investment shock is lower in the short term when it is financed by taxes rather than debt. The extent of this dampening effect on output is partly driven by the particular fiscal instrument used to raise revenue and thus the size of this effect would sensitive to the specific policy method adopted. In particular, distortionary taxes, such as those on capital and labour, generally have the most adverse effect on economic activity.
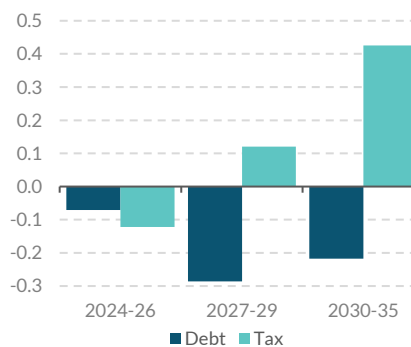
Total Output
Figure 25a
per cent deviation from baseline
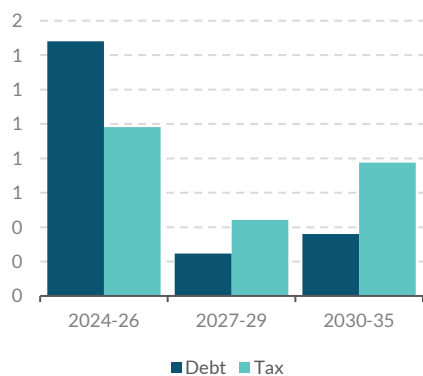
Traded Sector Output
Figure 25b
deviation from baseline, averages

Source: authors' calculations.

However, the scenario illustrates how, in the context of injecting stimulus into an economy with binding capacity constraints, offsetting fiscal measures could be used to manage potential overheating pressures. The impact of the investment stimulus on output is greater in the medium-to-long term when the increase in investment financed through tax revenue than through debt. This is mainly a result of the dampening effect of higher personal taxes on domestic demand, which results in lower labour demand and thus in more muted wage

---

[114] For example, funding transition-related expenditure through debt issuance raises complex issues of intergenerational equity (De Mooij and Gaspar, 2023)

[115] Transition-related investment could also be partly resourced from the recently announced Future Ireland Fund and Infrastructure, Climate and Nature Fund. However, due to their long-term horizon, these vehicles may be less suitable for financing investment in the decarbonisation of the energy system, which is concentrated in the next decade. From a modelling perspective, financing investment by drawing on these funds would have macroeconomic impact similar to the case where the investment is funded by debt.

growth relative to a scenario where the government stimulus is debt financed. This limits the appreciation of the real exchange rate and boosts traded sector output in the long run (Figure 25b). As capacity constraints are less likely to be binding in the longer term, these results therefore highlight how a mix of policy measures could be used to simultaneously achieve Ireland's decarbonisation objectives and ameliorate potential competitiveness concerns.

In terms of the public finances, while the tax-financed increase in investment is revenue neutral, a debt-financed increase leads to a significant increase in the debt ratio. As shown in Figure 24d, using debt to fund the public share of transition-related investment would see a significant spike in the debt ratio. Depending on assumptions regarding the share of the investment comprised by the State, the debt ratio could rise by over four percentage points over the next decade. If other costs related to, for example, investment in climate adaptation or transfers to households most affected by the transition, were included, the financial burden on the State could be materially higher.[116, 117]

Finally, it is important to note that our analysis has focused solely on the costs of decarbonising the economy. A full exploration of the impact of the transition on the public finances would also include an examination of the benefits of climate action in terms of avoiding potentially more severe costs from non-abatement, as well as the numerous co-benefits that accrue from mitigating climate change.

3.5 Combined impact of additional capital and current expenditure

Section 3.2 considered the impact on the economy and public finances of additional current expenditure above existing plans. It is useful to combine this analysis with the scenario in the previous section on the effect of higher public capital expenditure. This combined scenario shows the effect on the economy and public finances if both current and capital expenditure were to be increased above the Government's current plans over the coming years.

---

[116] Casey and Carroll (2023) estimate that extreme weather events could results in costs of approximately €0.5 billion per year. In terms of climate adaptation measures, the National Adaptation Framework outline the government's approach to addressing the physical risks from climate change. In addition, as part of the NDP, the government has committed to allocating €1.3 billion to flood relief schemes over the period to 2030.
[117] Note that compliance costs are not considered in our analysis as we assume the State meets its emission reduction targets. Based on current EPA emissions projections, these costs could amount to 0.35 billion per year until 2030 before rising to €0.7 billion (Walker et al, 2023) .
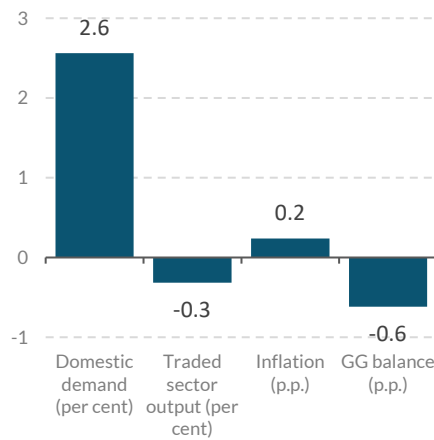
Net spending exceeds 5 per cent with additional expenditure
Figure 26a
per cent
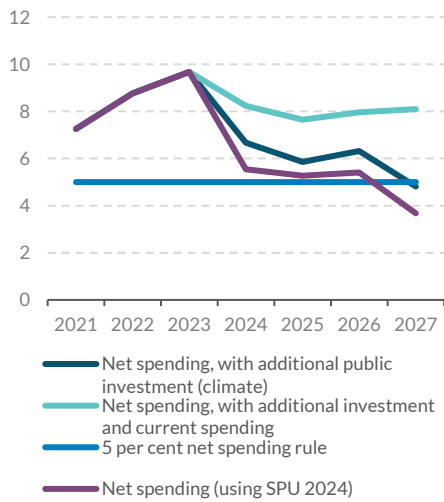
Higher expenditure creates overheating pressures
Figure 26b
deviation from baseline, average 2024-27

Source: authors' calculations.

Additional public capital investment without offsetting discretionary revenue-raising measures would result in net spending growing at an annual average rate of just under 6 per cent from 2024-2026, above the 5 per cent rule. Taking the additional climate investment along with the current expenditure scenario from Section 3.2 would see annual average spending growth rise to 8 per cent from 2024-26 (Figure 26a). This rate of increase in net spending would be significantly above the current estimated sustainable nominal growth in the economy, as reflected in the 5 per cent rule. Expenditure growth faster than the rate of sustainable economic growth would imply a significantly expansionary fiscal stance and would lead to the emergence of a structural imbalance in the government accounts. This indicates that a path for public expenditure along the lines envisaged in this combined scenario would necessitate offsetting revenue raising measures to avoid creating a structural gap in the public finances.

Moreover, increasing current and capital expenditure at the same time as assumed in this scenario would result in a large additional stimulus to domestic demand over the period 2024 to 2027 (Figure 26b). This would lead to higher inflationary pressures and a loss of competitiveness giving rise to a decline in traded sector output, relative to a baseline without the additional expenditure. The underlying General Government deficit would be 0.6 percentage points of GNI* larger per annum out to 2026. This implies that revenue-raising measures equivalent to this amount would be needed to offset the deterioration in the

budget balance, prevent the debt from rising and bring net spending growth back to 5 per cent.

4. Delivering Public Investment Efficiently: Model-Based Analysis

Ideally, the delivery of higher capital spending would be conducted in an efficient and timely manner in order for the economy and society to benefit fully from such investment. However, investment in public infrastructure can experience delays. One source of friction is related to the time needed to go through the planning process. Projects can be stalled due to the slow speed of getting planning approval, as well as potential court challenges to the proposed plans. This is referred to as *"time to plan"* frictions.

A second source of friction arises because many public infrastructure projects by their nature are large in scale and require an extended period of time to complete before they come on stream, for instance large scale road or rail projects or hospitals. Here, the duration of construction itself cannot be readily expedited even if all resources needed were available. For the purpose of this analysis this is referred to as *"time to build"*.

During the *time to plan* phase, the direct stimulus to the economy is typically very small, as planning does not involve large outlays by the government. In contrast to planning delays, during the *time to build* phase the stimulus to the economy is significant, as goods and services are purchased or contracted by the government, which is typically a relatively large outlay that can have macroeconomic consequences. Additional bottlenecks may arise during the construction phase if there are constraints in terms of the availability of workers, equipment, or materials.

The reason why *time to plan* and *time to build* are considered as frictions is that all of them delay the benefit that accrues from having public infrastructure in place. As emphasised by the National Competitiveness and Productivity Council (NCPC, 2023),[118] the delay in the delivery of public infrastructure can act as a constraint on economic activity, can lead to an increase in prices of goods that are provided and can have negative impact on the quality of life. This applies to all types of government investment, regardless of whether it is infrastructure, water supply, energy or housing.

---

[118] National Competitiveness & Productivity Council (2023) Ireland's Competitiveness Challenge 2023, September 2023

We attempt to quantify these issues by analysing the consequences of delays in planning and building times.[119] To do so, we use a model of Ireland as a small open economy, embedded in a monetary union and the rest of the world, with a rich fiscal sector (see Clancy, Jacquinot, and Lozej (2016)[120] and Hickey, Lozej, and Smyth (2018)).[121] We consider the ideal scenario with no time delays as the benchmark and compare the consequences of delays in planning and delays in building with this ideal scenario. In all cases, we consider a one-percentage point of output permanent increase in government capital expenditure above the level envisaged in *SPU 2024*. To account for the fact that it is likely that not all resources will be readily available due to capacity constraints, we consider a gradual increase of government investment expenditure over several years to the new level.

Macroeconomic consequences of delays in planning

Figure 27
Deviations from baseline
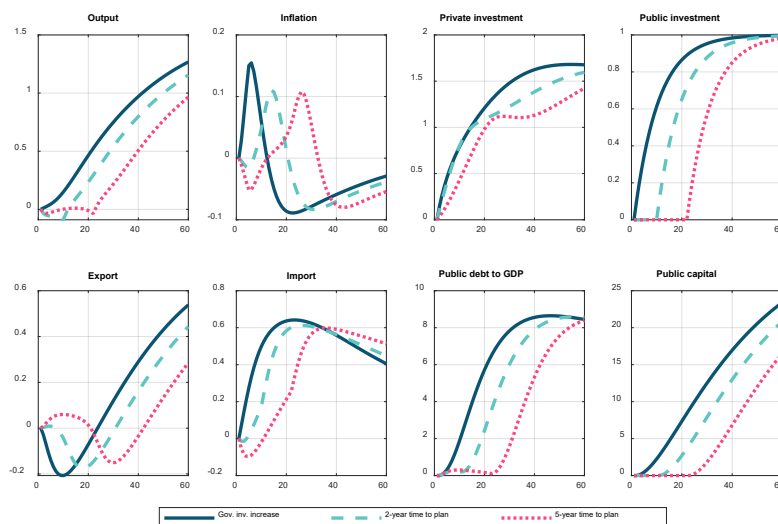
Source: author's calculations.

Planning (*time to plan)* delays (2-year and 5-year) cause a delay in government investment, which in turn causes public capital to increase later in the future (Figure 27). The delay transmits into delays throughout the economy, as

---

[119] We do not consider the uncertainty related to the duration of various delays, which is a friction in its own right.

[120] Clancy, D., Jacquinot, P., and Lozej, M. (2016). Government expenditure composition and fiscal policy spillovers in small open economies within a monetary union. *Journal of Macroeconomics*, 48, 305-326.

[121] Hickey, R., Lozej, M. and Smyth, D. (2018) Irish Government Investment, Financing, and the Public Capital Stock *Quarterly Bulletin Article 03/July 18*

output, private investment and trade also increase later, the longer is the delay in planning. Similarly, inflation increases further in the future, when government investment takes place. More importantly, the benefits from higher public capital also accrue later in the future. For instance, the increase in output and the decrease in inflation that improves the external competitiveness of the economy when there are no frictions are now shifted further into the future. From the social welfare perspective, the benefits that occur far in the future are lower, because they are discounted for a longer period of time.

In addition to reaping the benefits later, the delays in public investment complicate the demand management of the economy, as the economy may be in a different stage of the business cycle when planning hurdles have been overcome. For instance, there could be a risk that, due to delays, the strongest economic stimulus from the projects in the pipeline materialises when the economy is already at the peak of the business cycle.

Macroeconomic consequences of delays in building (construction)

Figure 28
Deviations from baseline
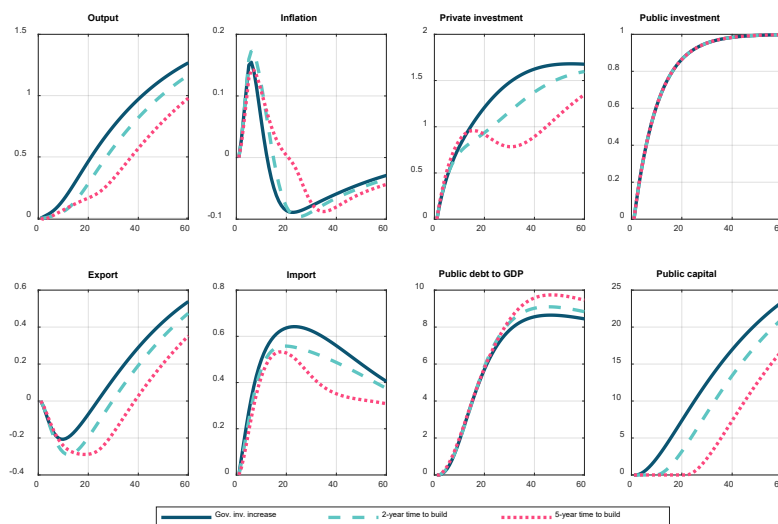
Source: author's calculations.

Figure 28 shows the consequences of the delays in the building (construction) phase of public investment (*time to build)*. This includes unavoidable delays due to the technology involved in construction but also the impact of capacity constraints which slows down the increase in investment. Overall, the consequences are similar to the delays in planning. When there are construction delays, output increases later and more slowly, while the public

debt increases for a longer period of time, because the benefits of higher public capital (and therefore higher tax revenues) are shifted farther into the future.

Inflation now occurs earlier (during the investment phase, as there are no delays in planning), and lingers on for longer, which damages the external competitiveness of the economy while the construction lasts. This can be seen in the stronger and more protracted decline in exports compared to the benchmark during the initial periods. While imports also increase by less when there is a delay in time to build, this is not sufficient to offset the difference in the decline in exports.

It is realistic to expect that delays related to planning, construction, and capacity constraints occur concurrently. It would therefore be prudent to minimise the delays that can be minimised and implement investment plans quickly. This would bring the benefits of public infrastructure closer and would make the management of the business cycle less uncertain to the extent that fluctuations further in the future are more difficult to predict.

5.   Conclusions

The economy is at full employment in 2024 and, based on current projections, is expected to grow broadly in line with its estimated potential rate over the medium term. Although the headline budget balance has moved into surplus, when excess corporation tax receipts are excluded, the public finances would remain in deficit out to 2026. The underlying structural balance – a measure of the budgetary position excluding the effect of the economic cycle and windfall CT – is projected by the Department of Finance to remain broadly unchanged between 2024 and 2027, consistent with a neutral fiscal stance over this period.

The cost of maintaining existing public services in future years and the planned increases in capital spending are estimated to absorb a substantial proportion of the projected increases in overall core government expenditure out to 2027, consistent with the 5 per cent net spending rule. Our analysis shows that if the recent pattern of net spending growth exceeding the 5 per cent rule was to be repeated in future years, this would result in a stimulatory fiscal stance at a time when the economy is already growing at or above full capacity and would leave the public finances more exposed to adverse risks. This implies considered choices and tradeoffs will be faced in managing the public finances over the coming years. In particular, based on current projections there is

limited scope for additional new expenditure increases or tax cuts in the absence of offsetting changes elsewhere in the budget.

Existing projections envisage strong growth in public capital spending over the coming years. This investment is needed to alleviate infrastructure deficits in housing and other parts of the economy and to enable compliance with emission reduction targets. In relation to the latter, Ireland will miss its legally binding 2030 targets based on EPA projections and additional investment will be needed to deliver compliance. Our scenario illustrates how, in the context of injecting stimulus into an economy with binding capacity constraints, offsetting fiscal measures could be used to manage potential overheating pressures while at the same time delivering needed additional investment in the green transition.

With the economy at full employment and the related need to mitigate overheating risks, along with known expenditure pressures linked to ageing and climate investment, it would be prudent to introduce measures that would contribute to increasing government revenue as a share of national income and broadening the tax base, in line with the recommendations of the Commission on Taxation. In the short run, this could help to ease inflationary pressures while public capital spending is being ramped up. Longer term, with material uncertainty over the sustainability of current revenue from corporation tax and concentration risks in other revenue sources, new revenue-raising measures would help to create a more sustainable tax revenue base and more resilient public finances with which future fiscal challenges can be addressed. To help guide fiscal policy in a sustainable direction, the Government should commit to a credible anchor for medium-term expenditure growth net of tax changes.

Banc Ceannais na hÉireann
Central Bank of Ireland

Eurosystem