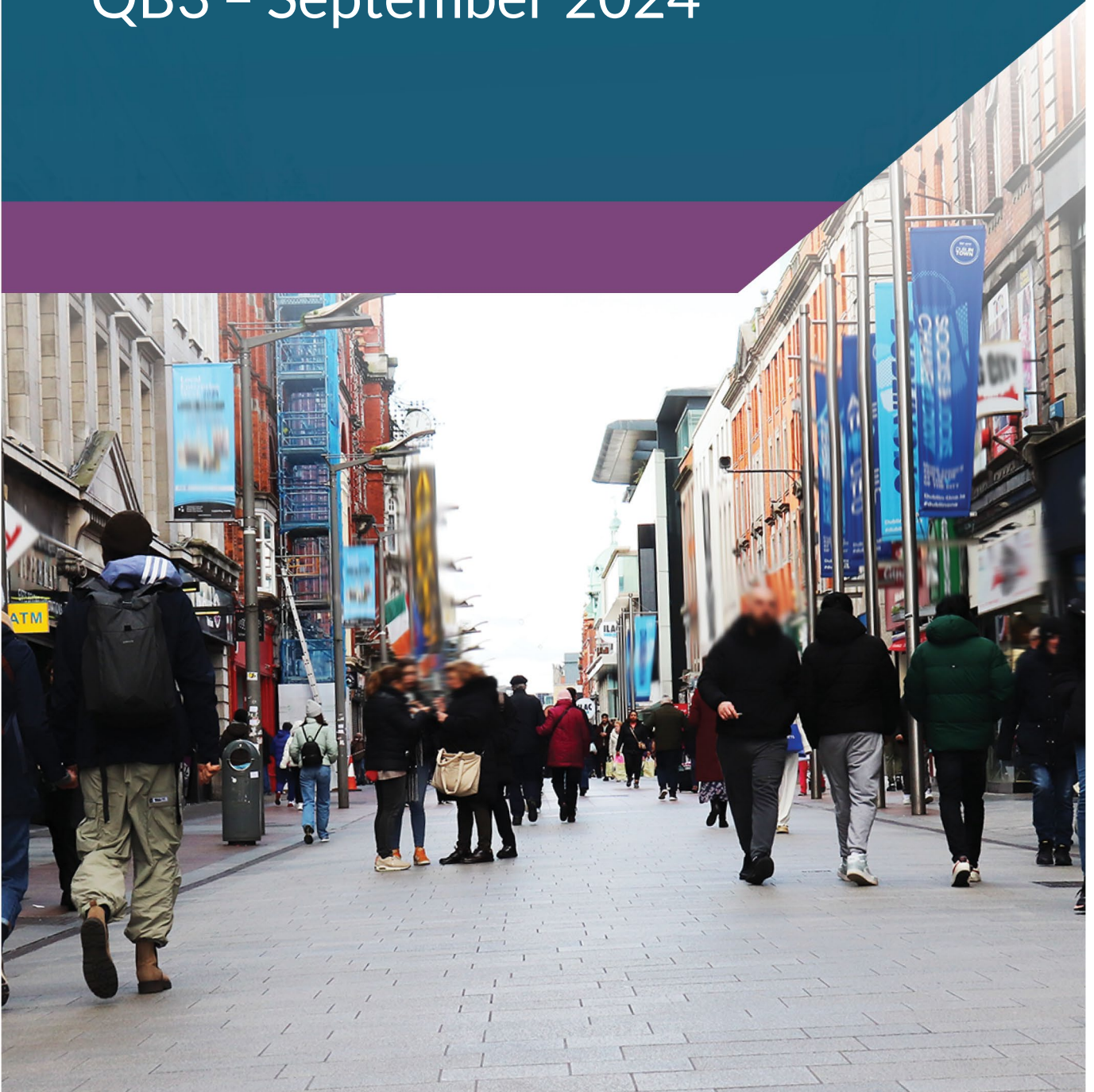




Banc Ceannais na hÉireann
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Notes

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

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Comment

Against a backdrop of global growth and inflation rates easing broadly in line with expectations, the Irish economy continues to perform well. Particular challenges to maintaining such performance, however, are now becoming more evident. Stronger than expected growth, over and above the economy's potential rate, has brought into sharp focus domestic supply and infrastructure constraints. These, in turn, present a situation where globally-determined inflation in Ireland is declining substantially, while more domestically-driven inflation remains significant.

While the central growth outlook remains broadly favourable, the dual nature of the Irish economy is clearly evident. Headline measures of growth, such as Gross Domestic Product (GDP), are likely to remain weak this year, mostly due to developments in the large Information and Communications Technology (ICT) sector resident in the State. In addition, the near-term outlook for exports is uncertain, although it remains generally favourable over the forecast horizon. However, firm and sector-specific risks in the traded sector remain noteworthy. Over time these could intersect with any negative retrenchment in global trade arrangements and cross-border investment. Beyond the direct effects of the operations of large foreign-owned multinational enterprises on investment, corporation tax, wages and employment, there are also important indirect effects, with significant interconnections arising between some foreign and indigenous sectors (Box C). For a small, open economy such as Ireland, it is important to adopt an approach to industrial policy and related matters in EU and global fora that maximises the benefits of multilateralism while at the same time addressing relevant aspects of supply chain security.

Most immediate in the near term, however, are the pressures the domestic economy is facing. Relatively buoyant demand is now increasingly intersecting with capacity constraints, contributing to higher costs for domestically-delivered goods and services. Headline inflation, as measured by the Harmonised Index of Consumer Prices (HICP), is currently below 2 per cent and is expected to remain so over the course of the forecast horizon. Underlying this projection, however, is a more persistent pace of growth in

services prices exceeding 3 per cent per annum out to 2026, reflecting more significant domestic price pressures. With unemployment forecast to remain low, supporting growth in wages and a continued rise in household real disposable income and, in turn, consumption, the domestic economy is expected to have substantial momentum.

The consistent, and so far persistent, nature of domestic supply and demand imbalances could well be contributing to perceptions of a high level of inflation by Irish households. This could particularly arise if consumers implicitly include owner-occupied housing costs, or weight housing costs more generally in their views on inflation. Indeed the gap between actual inflation and households' perceived inflation in Ireland is among the highest in the euro area (Box D). Irish households' perception of current inflation and expectations of future inflation have been declining, but they remain above the euro area average. Households' perception of inflation may inform their choices around consumption, saving and potentially wage demands beyond those consistent with productivity gains and real wage catch-up. If domestic supply and demand imbalances persist, in turn leading to higher levels of perceived inflation, it may ultimately contribute to damaging Ireland's relative competitiveness and reduce the scope for sustainable growth in living standards.

From a euro area perspective, incoming data and the outlook for euro area inflation over the medium-term provided support for the Governing Council's decision to reduce the extent of policy restriction at their meeting on 12 September. The Governing Council will continue to take a data-dependant and meeting-by-meeting approach when evaluating interest rate decisions. Those decisions will be informed by incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission.

The most prominent example of the imbalance between domestic supply and demand in Ireland is in the housing market. In an *Article* accompanying this Bulletin, the macroeconomic implications and economic policy issues arising from a decade of undersupply in the housing market are reviewed in-depth.¹ Pent-up demand has accumulated for over a decade as population growth has outstripped the pace of housing delivery. When combined with expected future population growth, which now exceeds previous estimates, plausible scenarios would point to an additional long-term housing need of circa 20,000 units over and above the levels actually delivered in 2023. The persistent undersupply of housing reflects the market's challenge to produce viable

¹ <https://www.centralbank.ie/publication/quarterly-bulletins/signed-articles>

housing projects at the required scale. Sustainably bridging the gap between the affordability of housing services to households and viability for the construction sector to deliver sufficient housing is a priority for public policy. The analysis in the Article shows the significant economic costs of this imbalance persisting, with higher costs of living, inflation and business costs ultimately damaging competitiveness or forcing investment opportunities to be foregone. However, given the economy is currently operating close to its potential, policy actions to address the undersupply of housing also come with macroeconomic risks that need to be carefully managed. In order to increase housing supply sustainably, policy needs to focus on the challenges that arise from the complexity of the planning process, the relative lack of zoned and serviced land in areas of highest housing demand, and the relatively constrained productivity levels in the construction sector itself. Improvements in these areas would also assist in sustainably enabling the construction sector to access sufficient development finance to fund the additional housing delivery. Additional financing alone cannot rectify housing imbalances. Trying to achieve a transition in the economy to produce more housing primarily through diverting more financial resources to housing delivery would exacerbate overheating risks. The *Article* highlights the importance of fiscal and other policy interventions that more actively close the gap between affordability and viability through a reduction in the cost of housing delivery rather than higher prices being borne by new households. On the fiscal side, it is necessary to sustainably fund and deliver necessary enabling public infrastructure in terms of water, transport, and energy, while at the same time incentivising the most active use of available zoned and serviced land.

With the economy performing at or around its medium-term potential, fiscal and wider public policy needs to create the necessary economic capacity to allow for the rise in investment envisaged to deliver both more housing and supporting infrastructure. At the same time, Ireland faces significant investment needs to mitigate the effects of climate change and to reduce greenhouse gas emissions. In order to avoid overheating and excessive domestic inflationary pressures, growth in public capital expenditure should be prioritised within the limits of the sustainable net five per cent rule for growth in public expenditure. All current and future windfall receipts from corporation tax should be used to smoothen public capital investment over the longer-term and address longer-term structural vulnerabilities in the public finances – such as those related to the ageing of the population and the concentration risk in the tax base.

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

An Timpeallacht Gheilleagrach

I bhfianaise fás domhanda agus rátaí boilscithe atá ag maolú, tríd is tríd, i gcomhréir leis na hionchais, tá ag éirí go maith i gcónaí le geilleagar na hÉireann. Tá dúshlán áirithe don fheidhmíocht sin ag éirí níos soiléire anois, áfach. Le fás níos láidre ná mar a bhíothas ag súil leis, sa bhreis ar ráta ionchasach an gheilleagair, leagtar béim mhór ar shrianta a bhaineann le soláthar intíre agus bonneagair. Fágann sé sin go bhfuil boilsciú arna spreagadh go domhanda ag maolú go mór in Éirinn, fad atá boilsciú arna spreagadh go hintíre fós ard.

Cé go bhfuil an príomhionchas fabhrach i gcónaí, tríd is tríd, tá cineál déach gheilleagar na hÉireann le feiceáil go soiléir. Is dócha go bhfanfaidh tomhais phríomha an fháis, amhail Olltáirgeacht Intíre (OTI), lag i mbliana, rud atá inchurtha go mór mór d'fhorbairtí in earnáil mhór na Teicneolaíochta Faisnéise agus Cumarsáide (TFC) sa Stát. Ina theannta sin, tá éiginnteacht ag baint leis an ionchas gearrthéarmach d'onnmhairí, cé go bhfuil sé fabhrach tríd is tríd thar thréimhse na réamhaisnéise. Ar a shon sin, is díol suntais go fóill iad rioscaí gnólachtsonracha agus agus rioscaí earnáilsonracha san earnáil thrádáilte. Le himeacht ama, d'fhéadfaidís teacht le chéile le hathdhaingniú trí ghearradh siar i socruithe trádála domhanda agus in infheistíocht trasteorann. Taobh amuigh de na héifeachtaí díreacha a bhíonn ag oibríochtaí fiontar ilnáisiúnta faoi úinéireacht eachtrach ar infheistíocht, ar cháin chorparáide, ar thuarastail agus ar fhostaíocht, bíonn éifeachtaí tábhachtacha neamhdhíreacha ann, le hidirnascaidh suntasach idir roinnt earnálacha eachtracha agus dúchasacha (Bosca C). I gcás geilleagar beag, oscailte amhail geilleagar na hÉireann, tá sé tábhachtach i bhfórait AE agus dhomhanda go nglacfar cur chuige maidir le beartas tionsclaíoch agus nithe gaolmhara lena n-uasmhéadófar buntáistí an iltaobhachais agus, ag an am céanna, lena rachfar i ngleic le gnéithe ábhartha de shlándáil an tslabhra soláthair.

Is iad na brúnna atá ag bagairt ar an ngeilleagar intíre an tsaincheist is práinní sa ghearrthéarma, áfach. Tá éileamh sách bríomhar ag teacht le chéile anois le constaicí ar acmhainneacht, rud atá ag cur le costais níos airde ar earraí agus ar sheirbhísí a sheachadtar go hintíre. Tá boilsciú príomha, arna thomhas leis an Innéacs Comhchuibhithe ar Phraghsanna do Thomhaltóirí (TCPT), faoi bhun 2

faoin gcéad faoi láthair agus meastar go bhfanfaidh sé amhlaidh thar thréimhse na réamhaisnéise. Is é luas seasmhach an fháis ar phraghsanna seirbhísí, a sháraíonn 3 faoin gcéad in aghaidh na bliana go dtí 2026, is bonn leis an réamhaisnéis seo, áfach, agus léiríonn sé brúnna níos suntasaí ar phraghsanna intíre. I bhfianaise go dtuairtar go bhfanfaidh dífhostaíocht íseal, rud a thacóidh le méadú ar phána agus ardú leanúnach ar fhíorioncam indiúscartha na dteaghlach agus, ar a uain, ar thomhaltas, meastar go mbeidh fuinneamh suntasach faoin ngeilleagar intíre.

D'fhéadfadh go bhfuil cineál comhsheasmhach, agus go dtí seo, cineál diansheasmhach na míchothromaíochtaí idir soláthar agus éileamh intíre, ag cur le dearcadh na dteaghlach in Éirinn go bhfuil leibhéal ard boilscithe ann. Bheadh sé seo amhlaidh dá gcuirfeadh tomhaltóirí costais a bhaineann le tithíocht úinéir-áitithe san áireamh go hindíreach, nó dá leagfaidís níos mó béime ar chostais tithíochta agus iad ag machnamh ar bhoilsciú. Go deimhin, tá an bhearna idir boilsciú iarbhír agus dearcadh na dteaghlach in Éirinn ina leith ar cheann de na bearnaí is mó sa limistéar euro (Bosca D). Tá dearcadh theaghlaigh na hÉireann i leith boilsciú reatha ag maolú, mar aon lena n-ionchais maidir le boilsciú amach anseo, ach tá siad fós os cionn an mheáin don limistéar euro. D'fhéadfadh go n-imreodh dearcadh na dteaghlach i leith an bhoilscithe tionchar ar a gcuid roghanna maidir le tomhaltas, coigealtas agus maidir le héilimh phá fiú, de shárú orthu sin a bheadh i gcomhréir le gnóchain táirgiúlachta agus breith suas ó thaobh fíorphánna de. Má leanann míchothromaíochtaí idir soláthar agus éileamh intíre, sa chaoi go meastar go bhfuil leibhéal boilscithe níos airde ann, d'fhéadfadh go ndéanfaidh sé damáiste d'iomáiochas coibhneasta na hÉireann agus go laghdódh sé an scóip atá ann maidir le fás inbhuanaithe ar chaighdeán mhaireachtála.

Ó thaobh an limistéir euro de, tacaíonn sonraí atá ag teacht isteach agus an tionchas do bhoilsciú sa limistéar euro thar an meántearma leis an gcinneadh a ghlac an Chomhairle Rialaithe ag a cruinniú an 12 Meán Fómhair chun méid an tsrianta beartais a laghdú. Leanfaidh an Chomhairle Rialaithe de chur chuige bunaithe ar shonraí agus cur chuige cruinniú ar chruinniú a ghlacadh nuair a bheidh measúnú á dhéanamh aici ar chinntí rátaí úis. Beidh sonraí eacnamaíocha agus airgeadais a thagann isteach, mar aon le dinimic an bhoilscithe bhunúsaigh agus neart an tarchuir beartais airgeadaíochta, mar bhonn eolais do na cinntí sin.

Tá an sampla is suntasaí den mhíchothromaíocht idir soláthar agus éileamh intíre in Éirinn le feiceáil sa mhargadh tithíochta. In *Alt* a ghabhann leis an bhFaisnéis Ráithiúil seo, déantar mionathbhreithniú ar na himpleachtaí

maicreacnamaíocha agus ar shaincheisteanna beartais eacnamaíocha a eascraíonn as an easpa soláthair sa mhargadh tithíochta le deich mbliana anuas.² Tá éileamh folaigh carntha le hos cionn deich mbliana anuas de réir mar a bhí luas seachadta tithíochta á shárú ag fás daonra. Agus fás daonra ionchasach amach anseo á chur san áireamh, ar fás é a sháraíonn meastacháin roimhe seo, thabharfadh cásanna dealraitheacha le tuiscint go mbeadh gá le tuairim is 20,000 aonad tithíochta nua breise ag teastáil san fhadtárma os cionn na leibhéil a seachadadh iarbhír in 2023. Leis an easpa soláthair tithíochta ar bhonn leanúnach, léirítear dúshlán an mhargaidh chun tionscadail inmharthana tithíochta a chur ar fáil ar an scála is gá. Tosaíocht don bheartas poiblí is ea an bhearna idir inacmhainneacht seirbhísí tithíochta do theaghlaigh agus an inmharthanacht a bhaineann le soláthar leordhóthanach tithíochta ag an earnáil foirgníochta a dhruidim. Léiríonn an anailís san *Alt* seo go mairfidh na costais shuntasacha eacnamaíocha a bhaineann leis an míchothromaíocht seo, agus go ndéanfar damáiste faoi dheoidh don iomaíochas de thoradh costais mhaireachtála, bhoilscithe agus ghnó níos airde nó go scaoilfear le deiseanna infheistíochta. I bhfianaise go bhfuil an geilleagar ag feidhmiú gar dá lánacmhainneacht, áfach, gabhann rioscaí maicreacnamaíocha le bearta beartais chun dul i ngleic leis an easpa soláthar tithíochta, agus is gá na rioscaí sin a bhainistiú go cúramach. D'fhonn soláthar tithíochta a mhéadú ar bhonn inbhuanaithe, ní mór beartas a dhíriú ar na dúshláin a eascraíonn as castacht an phróisis pleanála, as easpa talún criosaithe agus easpa talún seirbhísithe i limistéir ina bhfuil an t-éileamh is mó ar thithíocht, agus as leibhéil táirgiúlachta atá sách srianta san earnáil foirgníochta í féin. Le feabhsuithe sna réimsí seo, chuideofaí ar bhonn inbhuanaithe leis an earnáil foirgníochta chun go mbeadh sí in ann rochtain a fháil ar mhaoiniú forbartha leordhóthanach chun seachadadh tithíochta breise a chistiú. Ní féidir míchothromaíochtaí tithíochta a chur ina gceart trí bhíthin maoiniú breise amháin. Mhéadófaí rioscaí an róbhorrtha dá ndéanfaí iarracht níos mó tithíochta a chur ar fáil go príomha trí bhíthin níos mó acmhainní airgeadais a dhíriú ar sheachadadh tithíochta. Leagtar béim san *Alt* ar an tábhacht a bhaineann le hidirghabhálacha beartais eile lena ndruidtear an bhearna idir inacmhainneacht agus inmharthanacht ar bhealach níos gníomhaí, trí chostas seachadta tithíochta a laghdú seachas praghsanna níos airde a bheith á n-iompar ag teaghlaigh nua. Ar an taobh fioscach, is gá bonneagar poiblí cumasúcháin riachtanach a mhaoiniú agus a sheachadadh ar mhodh inbhuanaithe i dtéarmaí uisce, iompair, agus fuinnimh,

² <https://www.centralbank.ie/publication/quarterly-bulletins/signed-articles>

agus is gá úsáid ghníomhach talún criosaithe agus talún seirbhísithe atá ar fáil a spreagadh ag an am céanna.

Agus an geilleagar ag feidhmiú ag a hacmhainneacht mheántéarmach nó gar di, is gá go gcruthófar an acmhainn eacnamaíoch riachtanach chun go n-éascófar an méadú beartaithe ar infheistíocht d'fhonn níos mó tithíochta agus bonneagar tacaíochta araon a sheachadadh. Ag an am céanna, tá riachtanais shuntasacha infheistíochta ag Éirinn chun éifeachtaí an athraithe aeráide a mhaolú agus chun astaíochtaí gás ceaptha teasa a laghdú. D'fhonn róbhorradh agus brúnna iomarcacha boilscitheacha intíre a sheachaint, ba cheart tús áite a thabhairt do mhéadú ar chaiteachas caipitil phoiblí laistigh de theorainneacha na rialach de chúig faoin gcéad glan ar an bhfás ar chaiteachas poiblí. Ba cheart go mbainfí úsáid as fáltais uile reatha agus fáltais uile amach anseo ó cháin chorparáide chun infheistíocht chaipitil phoiblí a leathadh thar an bhfadtearma agus chun dul i ngleic le leochaileachtaí struchtúracha san airgeadas poiblí - amhail na cinn sin a bhaineann le daonra atá ag dul in aois agus comhchruinniú rioscaí sa chomhbhonn cánach.

Is gá dul i ngleic le leochaileachtaí struchtúracha, staid fhioscach iomchuí a chothabháil agus freastal ar bhonn inbhuanaithe ar an méadú riachtanach ar infheistíocht chaipitil phoiblí agus phríobháidigh 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 comhbhonn cánach agus lena méadófar ioncam rialtais mar chion den ioncam náisiúnta, iomchuí.

The Irish Economy

Overview

Revised data indicate that the economy grew strongly in 2023 – at a pace in excess of its long-run potential rate. The first estimate of modified Gross National Income (GNI*) for 2023 – published by the CSO in July – shows that the economy grew by 5 per cent in real terms last year. Gross Value Added (GVA) of the domestic sectors of the economy grew by 6.1 per cent. This pace of expansion, combined with an unemployment rate of below 4.5 per cent, points to the economy operating at a point where careful macroeconomic management is required to guard against overheating risks. Consumer spending is being supported by improvements in real incomes. Residential construction is projected to increase, albeit at an uneven pace as illustrated by the weak performance to date in 2024. With government spending stimulating demand, Modified Domestic Demand (MDD) is forecast to grow at an annual average rate of 2.6 per cent per annum from 2024-26. Pharmaceutical exports have rebounded in 2024. Combined with an expected pick up in external demand, such a development should result in a positive contribution from net exports to economic activity out to 2026.

Declines in both headline and underlying measures indicate a relatively broad-based easing of inflation now occurring but price pressures are expected to remain elevated in some areas, particularly in services. Inflation in energy and non-energy goods is negative to date in 2024 and the rate of food inflation has dropped by almost two-thirds compared to 2023. These developments have pushed the headline inflation rate below 2 per cent this year. Nevertheless, elevated price pressures are still evident in some areas. Underlying inflation measures (stripping out volatile components such as energy) have declined but are above pre-pandemic levels. Notably, services inflation remains above 4 per cent, more than twice the headline rate, and is expected to be the main positive contributor to headline and core inflation out to 2026.

Employment continues to grow, enabled by high levels of inward migration. Employment in the first half of 2024 increased by 47,800 persons, with 47 per cent of the rise accounted for by non-Irish nationals. Higher labour force participation of women is further adding to labour supply with the unemployment rate at close to historical lows. These favourable labour market conditions are forecast to persist over the short-term horizon, contingent on further projected growth in economic activity. Tight labour market conditions

are supporting increases in nominal wages well in excess of inflation at present. With some easing of labour demand expected, nominal wage growth is projected to slow down in 2025 and 2026. However, the combination of the expected rate of inflation, growth in employment and wage rates, the dynamics of non-labour income and the net effect of taxes and transfers is expected to deliver increases in average real household disposable income of 1.7 per cent per annum in both years.

The central outlook for economic growth and employment is favourable but risks are tilted to the downside. The economy faces a somewhat complex array of risks that could alter the outlook compared to the central forecasts. Further fiscal stimulus above that assumed in the central forecasts would result in the economy growing faster than projected in the short term. With the labour market already at full employment, this would come at the cost of higher and more persistent inflation with a negative effect on Ireland's relative competitiveness. This in turn could undermine growth prospects over the longer term once the initial positive effects of the stimulus have faded. On the external side, Ireland's export base remains highly concentrated among a small number of large multinational enterprises (MNEs). Pharma exports have rebounded in 2024 following a decline in 2023 but there is uncertainty about the prospects for ICT manufacturing. A downturn in that sector or in wider MNE-dominated activity (for example, if global economic growth weakens) would reduce net exports, domestic investment, tax revenue and economic activity relative to the central forecasts (see Box C).

Risks to the headline inflation outlook are judged to be broadly balanced. Risks to the near-term inflation outlook are mostly to the downside and relate to the possibility of a more substantial slow-down in the global economy, dampening externally-driven inflation. In contrast, risks to the outlook over the whole horizon are mostly to the upside, driven by the possibility of a more persistent imbalance between domestic demand and supply. An escalation of geopolitical tensions or renewed stress in global supply conditions could put upward pressure on prices for energy and other key commodities such as food, relative to current assumptions. However, a sharper than expected global economic slowdown may have a negative impact on external demand for Irish goods and services as well as damping global commodity prices, feeding into weaker than expected global and domestic price dynamics. Domestically, with the economy at full employment, containing price and wage inflation will be conditional on expected productivity growth being realised and an excessively expansionary fiscal stance being avoided. Sustainably addressing existing capacity constraints in housing and in other infrastructure would reduce the

risk that price and wage inflation would be above central projections in the medium term.

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

	2023	2024f	2025f	2026f	
Constant prices	Modified Domestic Demand	2.6	2.4	3.1	2.3
	Gross Domestic Product	-5.5	-0.9	4.6	4.4
	Final Consumer Expenditure	4.2	2.6	3.0	2.4
	Public Consumption	5.6	3.3	3.4	1.9
	Gross Fixed Capital Formation	2.8	-32.3	2.8	2.3
	Modified Gross Fixed Capital Formation	-4.4	0.6	2.9	2.5
	Exports of Goods and Services	-5.8	9.3	4.9	5.5
	Imports of Goods and Services	1.2	5.8	4.1	4.7
Total Employment	3.4	2.3	1.9	1.7	
Unemployment Rate	4.3	4.4	4.5	4.6	
Harmonised Index of Consumer Prices (HICP)	5.2	1.6	1.9	1.5	
HICP Excluding Food and Energy (Core HICP)	4.4	2.5	2.0	1.6	
Compensation per Employee	6.7	5.1	4.4	4.1	
General Government Balance (% GNI*)	2.7	3.5	2.6	2.9	
'Underlying' General Government Balance (% GNI*) ³	-1.5	-1.2	-2.0	-2.1	
General Government Gross Debt (%GNI*)	77.1	71.8	68.4	65.4	
Revisions from previous Quarterly Bulletin					
Percentage points	Modified Domestic Demand	2.1	0.3	0.6	0.3
	Gross Domestic Product	-2.3	-2.7	0.2	0.4
	HICP	-	-0.1	-0.1	0.1
	Core HICP	-	-	0.1	0.1

³ 'Underlying' General Government Balance excludes estimates of excess corporation tax receipts.

Recent Developments

Modified Domestic Demand (MDD) continues to grow in year-on-year terms, though growth slowed in Q2. MDD shrank in 2024 Q2 by 0.5 per cent on a quarterly basis, though it grew by 1.4 per cent compared to the same quarter in 2023. (Figure 1). The fall in MDD was driven by a quarter-on-quarter decline in Modified investment, which fell by 7.0 per cent. While MDD has grown in year-over-year terms, this growth has slowed in recent quarters. MDD growth was driven by Personal Consumption, which grew by 1.3 per cent, and Government Consumption, which grew by 3.7 per cent. The volume of retail sales has fallen in year-over-year terms in July 2024 after a period of consistent growth (Figure 2). Meanwhile, there has been strong demand for services, with the Services Index up 11.3 per cent in volume terms in July 2024 in year-on-year terms. With inflation falling and stronger than anticipated consumption growth, the consumer sentiment index was at 72.0 in August, up from 62.2 a year earlier (Figure 3).

Gross Domestic Product fell by 1.0 per cent in Q2 2024. Investment fell by 65.1 per cent or €15.5 billion compared with the previous quarter reflecting a significant export of Intellectual Property arising from global corporate restructuring in the multinational sector (Figure 4). Exports of goods grew by 8 per cent in Q2 compared to the same period in 2023 (Figure 5). After a weak 2023 for goods exports, growth this year has been driven primarily by Chemicals and Related Products. Gross Value Added (GVA) in MNE-dominated sectors declined by 13.3 per cent in the second quarter of 2024 compared to the same quarter in the previous year, while GVA for more domestically-oriented sectors grew by 0.1 per cent (Figure 6). GVA for MNE dominated sectors accounted for 43.9 per cent of overall GVA in this period.

Revised National Accounts data show that the economy grew faster than previously reported in 2023. Consumption in 2023 grew by 4.8 per cent, compared to a previous estimate of 3.1 per cent (Figure 7). This additional consumption meant that the MDD growth rate was revised upwards to 2.6 per cent for last year. Earnings were also revised sharply upwards, with Nominal Compensation per Employee growing 6.7 per cent in 2023 (Figure 8).

Headline inflation in Ireland has moderated though services inflation remains elevated. The EU Harmonised Index of Consumer Prices (HICP) for Ireland is estimated to have increased by 1.1 per cent in the 12 months to August 2024 and risen by 0.1 per cent since July 2024 (Figure 9). Energy prices are estimated to have fallen by 9.5 per cent over the twelve months to August. Services inflation, however, remains high with prices rising 4.0 per cent in the

same period. This mainly reflects inflation in the restaurant sector, with housing also playing a role (Figure 10). Elevated services inflation is driven in part by strong domestic demand and highlights the continued risk of overheating in the domestic economy.

Labour market indicators show continued strength, while there has been a slight loosening on the demand side. The estimated employment rate for people aged 15-64 years was 74.4 per cent in Q2 2024 – the highest rate recorded since the series began in 1998. This is equivalent to 71,500 more people working than a year earlier. However, the seasonally-adjusted monthly unemployment rate was 4.3 per cent in August 2024, up slightly from 4.1 per cent in February (Figure 11). The number of job postings continues to fall from its peak in March 2022. Even as demand slows, growth in posted wages for prospective new hires increased to 4.6 per cent (Figure 12).

Modified Investment decreased by 7 per cent in the second quarter of 2024. Building and Construction investment decreased by 0.8 per cent in the same quarter. New Dwelling Completions in Q2 2024 were down 5.4 per cent from the same quarter last year, driven mostly by a 15 per cent fall in apartment completions. The increase in Commencements in 2023 Q4 and 2024 Q1 has continued with over 21,800 Commencements in 2024 Q2, an increase of over 13,000 compared to the same period in 2023. The Building and Construction Index points to overall weakness in the first half of 2024 but an improvement in housing output (Figure 13). The construction PMIs are consistent with minimal growth in the sector in 2024, with new orders and employment in modest expansion territory.

Exchequer data continues to reflect strong revenue performance, with all major tax categories growing when compared with January to August 2023. Overall, the Exchequer has run a surplus of €2.8bn so far this year. Revenue increased by 12.1 per cent, with the largest gains again seen in corporation tax, up €3.6bn (28 per cent) compared to the same period last year. Exchequer revenue has increased faster than expenditure, leading to the surplus (excluding transactions with no General Government impact) standing €1bn above its August 2023 level. Expenditure has increased by 10.8 per cent, with most of the increased spending coming from two departments – health and housing. Health expenditure is 1.9bn (13.1 per cent) above the same period last year driven almost entirely by current spending, while housing expenditure is up 1.7bn (64.9 per cent) as a result of increased capital expenditure.

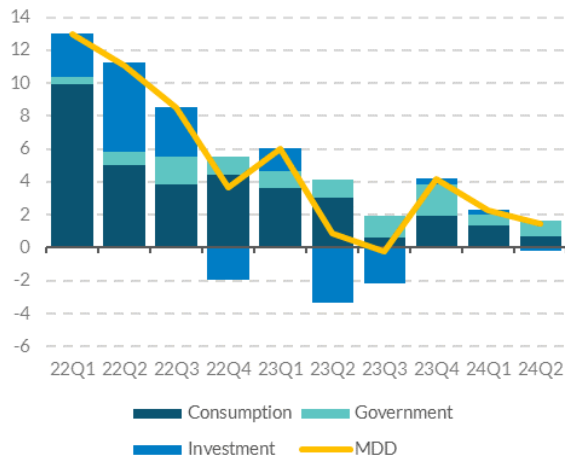
The Central Bank’s Business Cycle Indicator (BCI) shows domestic economic activity continuing to grow steadily. The BCI rebounded in July after a weak end to the second

quarter which showed mixed signals of strong consumer sentiment but weak retail sales (Figure 14). In July, tax revenue, PMIs, and traditional sector output (preliminary estimate) were the main positive contributors to the BCI, while the main negative contribution was from weak retail sales. The labour market contribution remains neutral.

MDD continues to grow in year-on-year terms

Figure 1

Per cent



Source: CSO, author’s calculations.

Notes: Year-on-year MDD growth decomposed into constituent components.

Consumer Sentiment continues to rise

Figure 3

Per cent



Source: Credit Union.

Retail Sales Volume fell in 2024 Q2 while services performed strongly

Figure 2

Per cent



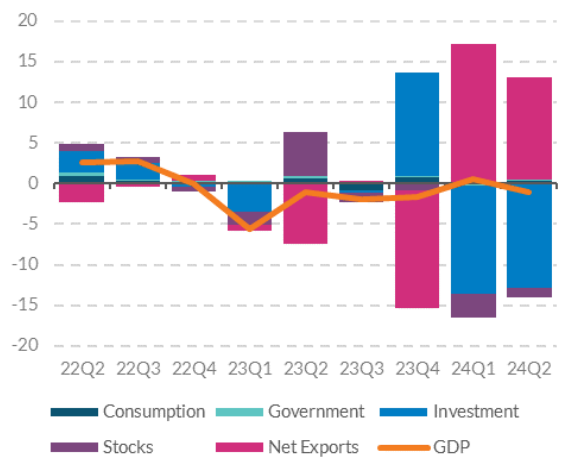
Source: CSO, author’s calculations.

Notes: Year-over-year growth in retail sales index volume and services index volume.

GDP declined in 2024 Q2

Figure 4

Per cent



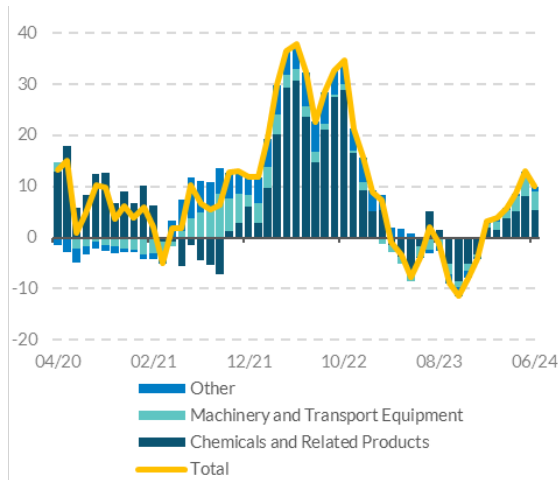
Source: CSO, author's calculations.

Notes: Quarter-on-quarter GDP growth decomposed into its constituent components.

Strong growth in Chemicals continues to boost trade

Figure 5

Per cent



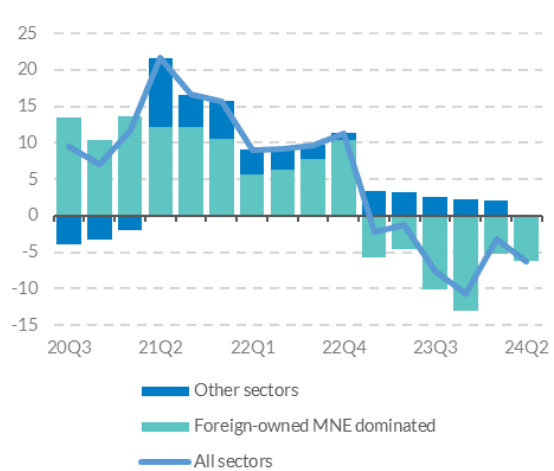
Source: CSO Value of Merchandise Trade, author's calculations.

Notes: Three month moving average of the value of merchandise exports decomposed into its constituent parts.

GVA in MNE dominated sectors shrank while other sectors were stagnant

Figure 6

Per cent



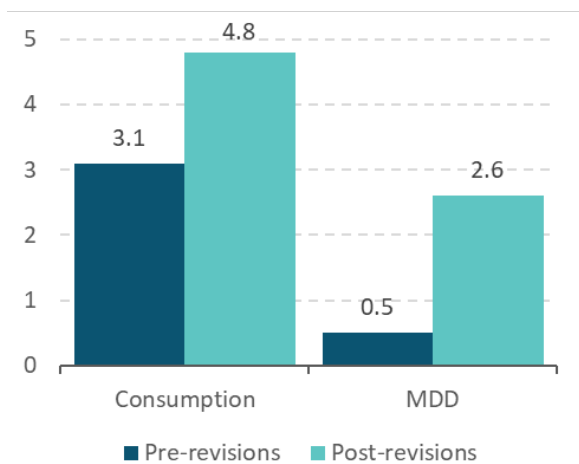
Source: CSO, author's calculations.

Notes: Year-on-year GVA growth decomposed into the contributions of MNE-dominated sectors and Other sectors.

Revised National Accounts showed stronger growth in 2023 than previous estimates

Figure 7

Per cent



Source: CSO

Notes: Consumption and MDD growth before and after CSO revisions in July 2024.

Compensation per Employee was revised upwards in 2023

Figure 8

Annual percentage change



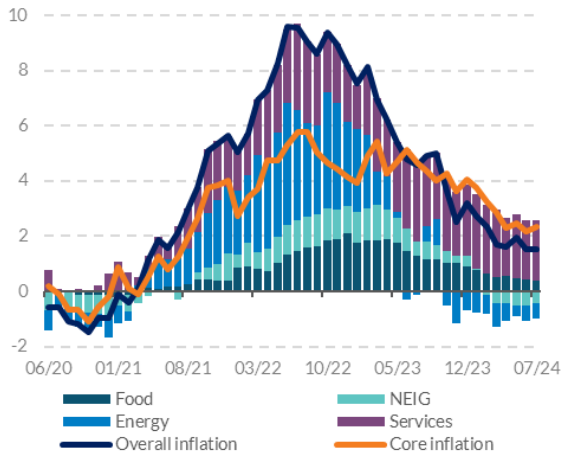
Source: CSO, author's calculations.

Notes: Compensation per Employee nominal growth before and after CSO revisions in July 2024.

Services remains the main contributor to headline inflation

Figure 9

Per cent



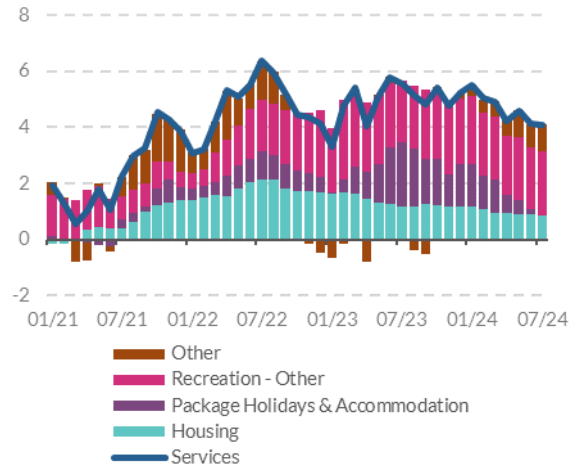
Source: CSO, author’s calculations.

Notes: Decomposition of headline inflation into its component parts.

Housing and recreation services related prices are driving services inflation

Figure 10

Per cent



Source: CSO, author’s calculations.

Notes: Decomposition of services inflation into its component parts. “Recreation – Other” is primarily restaurants and takeaways while “Other” is primarily Transport Services and Miscellaneous Services.

An uptick in unemployment and slowing labour demand show slight labour market loosening

Figure 11

Index (Feb 2020 = 100)

per cent

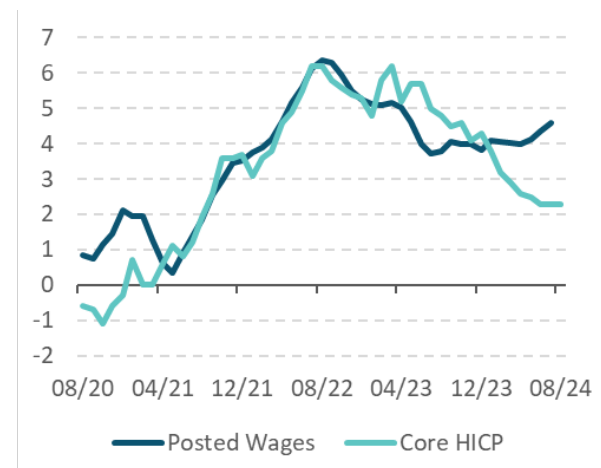


Source: Indeed, CSO and Central Bank of Ireland.

Indeed postings show labour demand cooling as growth in posted wages remains

Figure 12

Per cent



Source: Indeed, CSO and Central Bank of Ireland.

Weakness in indicators of construction activity

Figure 13

Per cent



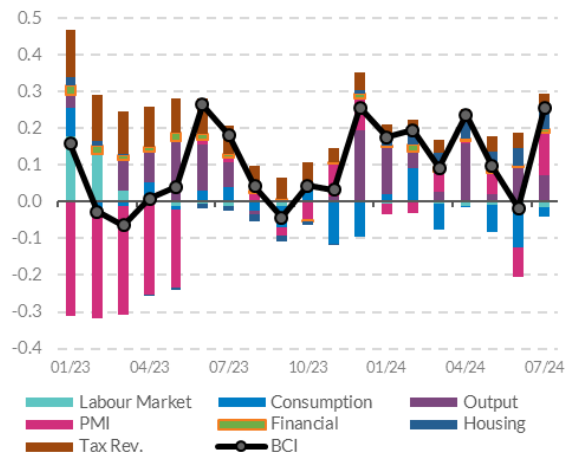
Source: CSO Building and Construction Index.

Notes: Year-on-year percentage growth of the CSO Building and Construction Index.

The BCI indicates steady growth in economic activity

Figure 14

Average growth = 0



Source: CSO and Central Bank of Ireland.

Notes: Central Bank of Ireland Business Cycle Indicator.

Consumption

Consumption growth so far in 2024 remains muted despite strong nominal income growth. Revised data from the National Accounts, incorporating the latest Census of Population 2022 and new Household Budget Survey data, indicates stronger consumption growth during 2022 and 2023 than previously reported by the CSO. Growth rates are now considered to have largely normalised after two consecutive shocks. In the most recent quarter, consumption increased by 1.0 per cent in real terms compared to Q1 2024 and was 1.9 per cent higher, on a half-yearly basis, than the same period in 2023.⁴ This growth is more modest than expected at the time of the last *Bulletin*, particularly in light of continued improvement in real gross disposable income per household (see the Earnings and Income section for more detail).

Households continue to save at a high rate. Latest data, incorporating revisions, indicates the seasonally adjusted saving ratio measured 12.7 per

⁴ Consumption is measured using Final Consumption Expenditure of Households and Non-Profit Institutions Serving Households (NPISH) from the National Accounts. This marks a change from previous *Quarterly Bulletins*, which used Personal Consumption Expenditure.

cent for Q2 2024, down from 14.6 per cent last quarter but still above the long-term average. This new data suggests a higher propensity to save in recent quarters than was assumed at the time of the last *Bulletin*, and the saving ratio is projected to remain above its historical trend (Figure 15). Consequently, the forecast for annual consumption growth in 2024 has been revised down slightly from the last *Bulletin* to 2.6 per cent.

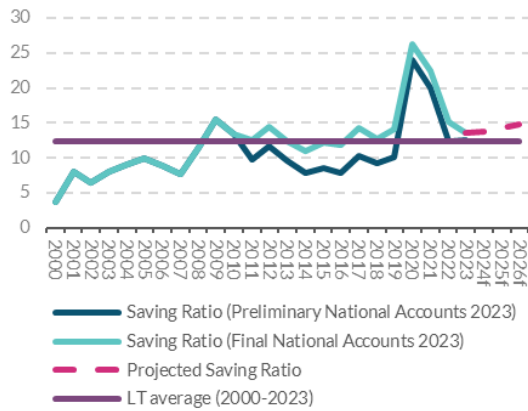
For the remainder of the forecast horizon, moderate consumption growth is expected. Lower inflation, combined with sustained nominal wage growth is expected to improve sentiment and enable consumption to grow more strongly in the coming years. The potential for a package of further fiscal supports or tax reductions in Budget 2025 (beyond those already announced) represents a further upside risk. Consequently, the forecast for consumption growth in 2025 is unchanged from the last *Bulletin* at 3.0 per cent, while 2026 growth is revised up 0.4 percentage points to 2.4 per cent (Figure 16).

The projected path for consumption growth is uncertain. The outturn could be weaker than in the central forecast if high household saving rates persist. Data from the July wave of the ECB's Consumer Expectations Survey (CES) suggest some cautiousness amongst Irish consumers. For example, while Irish households are increasingly optimistic about their personal financial situation, one third still believe they will be worse off in a year's time than today (Figure 17). This is just over 5 percentage points more than the share for the whole euro area. At the same time, the share of Irish households that intend to save over the next 12 months has gradually risen over recent years to just over 80 per cent (Figure 18). Together, the survey data suggest potential broad-based precautionary saving motives may be at play among households. These results may also be reflective of unmet housing demand, driven by either an increased propensity to save by prospective property buyers or by the relative absence of housing available to purchase.

Upward revisions to the saving rate suggest a higher propensity to save amongst households in recent periods

Figure 15

Gross household saving ratio (percent, %)

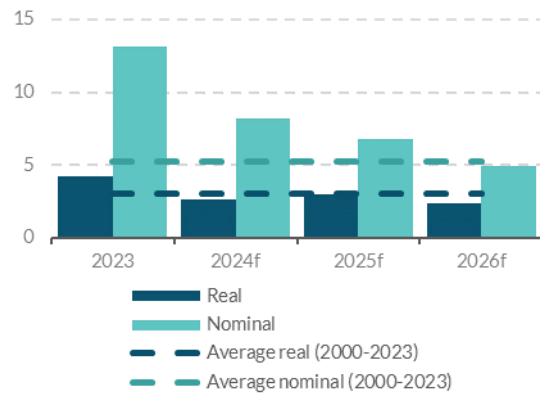


Source: CSO (Institutional Sector Accounts) and Central Bank of Ireland

Consumption growth is expected to moderate over the forecast horizon

Figure 16

Projected real and nominal consumption growth (percentage change, %)

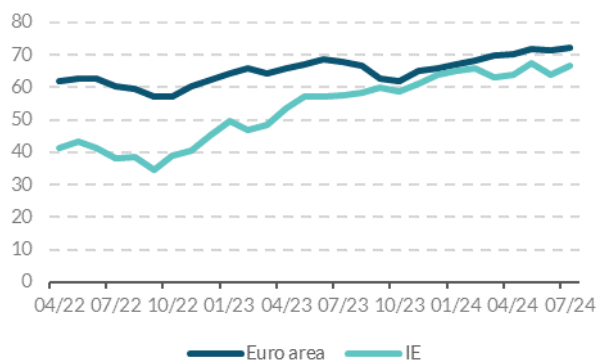


Source: Central Bank of Ireland

According to the CES, Irish households are increasingly optimistic about their personal financial situation, but a third still expect to be worse off over the coming year

Figure 17

Share of households who expect their personal financial situation to be similar or better off a year from now (%)



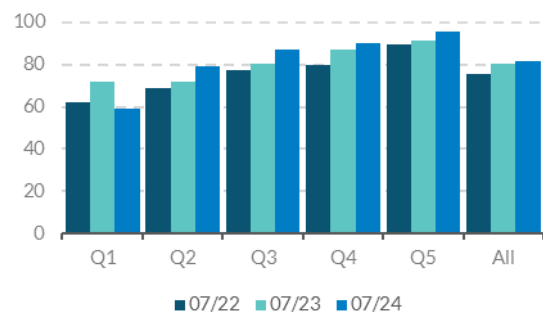
Source: ECB (Consumer Expectations Survey), July 2024

Note: Euro area under the CES reflects data from 11 countries: AT, BE, DE, ES, FI, FR, GR, IT, IE, NL and PT.

Survey data also suggests the share of Irish households who intend to save over the next 12 months has been increasing over time

Figure 18

Share of households who plan to save over the next 12 months – across the income distribution (%)



Source: ECB (Consumer Expectations Survey), July 2024

Note: Data reflects respondents who reported “Yes, definitely” and “Yes, probably” to the CES question.

Investment

Modified investment is forecast to grow at a modest pace over the *Bulletin* horizon, while remaining low as a proportion of national income. Modified investment as a proportion of National Income (GNI*) is low by historical standards (Figure 19) with infrastructure deficits evident in areas such as housing, water and energy⁵. Modified investment is forecast to increase by 0.6 per cent, 2.9 per cent and 2.5 per cent in 2024, 2025 and 2026, respectively (Figure 20). Headline investment is expected to decrease substantially this year due to the impact of the multinational sector but should return to modest growth of approximately 2 per cent over the forecast horizon.

Housing investment should increase over the forecast horizon, but will remain below updated estimates of requirements (see *Signed Article*). In the first half of the year 12,725 new units were completed (down 8.8 per cent on the same period in 2023). Looking forward, housing output is forecast to pick up in the latter half of this year and into next year. Housing starts increased substantially to over 51,000 on an annual basis in the first half of 2024 (Figure 21). These figures, however, are influenced by the timing of housing support measures aimed at incentivising house-building, including a waiving of the Local Authority “section 48” development contributions and a time-limited refund of Uisce Éireann standard connection charges. These measures had been due to expire in April/May 2024 but have been extended to later in 2024.⁶ This change in policy has introduced some uncertainty into the usual permissions-commencements-completions cycle⁷. The timing of the completion of these units is somewhat uncertain and is assumed to occur in 2025/6 in the current forecasts. Housing investment could benefit from the decline in non-residential construction, with a shift in resources, including of labour, arising. Despite this transfer of labour from non-residential to residential, in the absence of productivity gains and more widespread adoption of innovative construction methods, output in the sector could still be constrained relative to underlying levels of demand over the near-to-medium term (see [Signed Article on Housing](#)). Housing completions are forecast to increase to 32,000, 36,500 and 39,000 in 2024, 2025 and 2026, respectively.

Increases in modified machinery and equipment (M&E) investment are projected to add to growth in modified investment in 2024 over the rest of

⁵ Infrastructure deficits are outlined in more detail in the National Competitiveness and Productivity Council’s [2024 Competitiveness Report](#).

⁶ The water connection refund terminates on 30 September 2024, whilst the development levy waiver remains in place until 31 December 2024.

⁷ See Box D Housing Supply: uncertain in the delivery cycle in QB2 2024.

the forecast horizon. Imports of M&E for the first half of 2024 point to an increase in M&E investment in H1 2024 (Figure 22). Imports of office machinery and IT equipment have increased substantially in Q2 2024.

Investment in intangibles in 2024 was affected by a large negative export of Intellectual property in Q2. The net direct effect of this on the Irish economy on GDP is offset by an increase in exports of the same magnitude. This outflow is likely related to a transaction within a large multinational firm. Intangible investment is forecast to return to more normal trends over the remainder of the forecast horizon.

Investment is the most volatile component of domestic demand with a high degree of uncertainty around the central forecasts. Uncertainties in the geopolitical environment and restrictive financing conditions remain a downside risk to current forecasts. An improvement in the global outlook and improved financial conditions as monetary policy eases are upside risks to the forecasts.⁸ Substantial firm-specific investment by the MNC sector could also increase or decrease expenditure more than contained in the central forecasts.

Investment is low relative to the rest of economy

Figure 19

Modified investment shares (%)

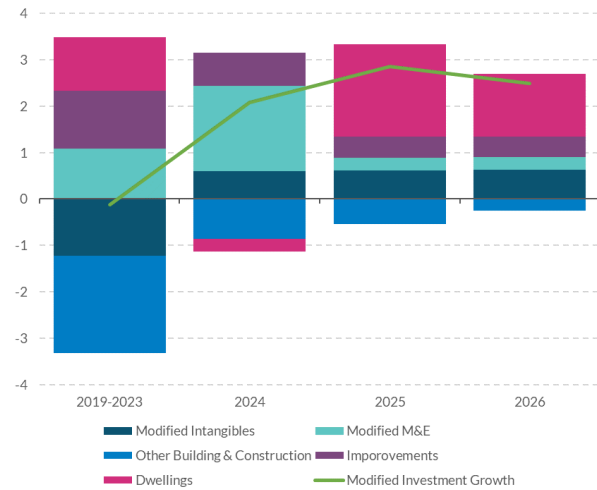


Source: CSO, Central Bank of Ireland calculations
 Notes: Chart shows modified investment as a proportion of GNI*.

Investment growth likely to be modest

Figure 20

Contributions to modified investment growth (%)

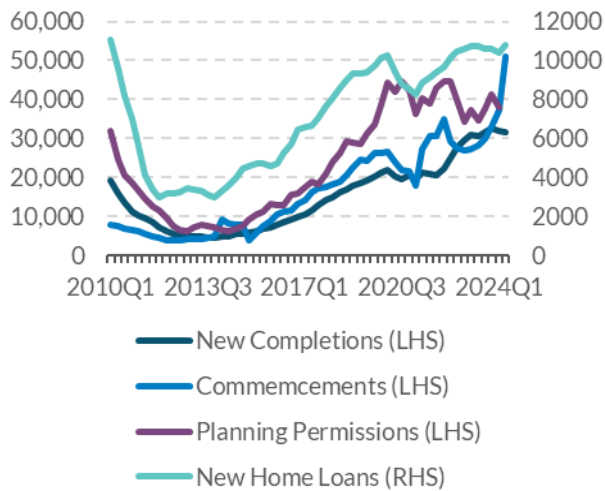


Source: Central Bank of Ireland.
 Notes: Chart shows contributions to year-on-year change in modified investment.

⁸ The Bank Lending Survey for July 2024 reported that firms' aggregate loan demand increased somewhat for SME's, and a further increase is expected in Q3 2024.

House completions should pick up following recent surge in commencements but precise timing is uncertain

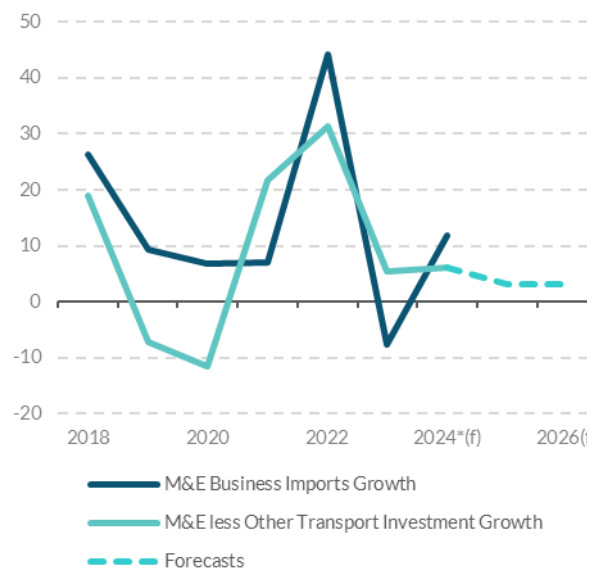
Figure 21
Rolling annual units



Source: CSO, DoHLGH, BPF1

Imports of M&E have remained relatively high and investment in M&E is projected to increase in 2024

Figure 22
%



Source: CSO, Central Bank of Ireland calculations

Note: Import data for 2024 refers to January to June. Chart shows year-on-year percentage changes.

Exports, Imports and the Balance of Payments

Exports are forecast to grow by 9.3 per cent this year, following a 5.8 per cent decline in 2023. Exports produced in Ireland are expected to be the main contributor to the recovery in total exports, as output in the chemicals and pharmaceuticals sector returns to growth (Figure 23). The sector saw a significant decline in activity in 2023 as the production of Covid vaccines, among other drugs related to the pandemic, fell compared with exceptionally high levels in 2022.

Demand from Ireland's main trading partners is forecast to pick up in 2025 and 2026 (Figure 24). A recovery in external demand should support growth in exports next year by the indigenous exporting sectors, particularly agri-food. Computer services exports, which continued to grow in 2023 despite economic headwinds facing the ICT sector, are expected to continue to grow in 2024. These exports are driven by the large imports of intellectual property (IP) in recent years. Further investments in IP in 2023 suggest that growth in this export category will continue to be strong. Exports produced offshore (contract manufacturing (CM)), which were the main driver of the decline in

overall exports in 2023, appear to have stabilised (Figure 25). The forecasts incorporate the technical assumption that the level of contract manufacturing exports remains at its 2024Q2 level over the entire forecast horizon. This implies that CM exports contributes negatively to export growth in 2024.

The outlook for Irish exports in 2025 and 2026 remains strong, broadly unchanged from the June Bulletin. Demand from Ireland's trading partners is projected to increase by 2.9 per cent in 2025, slightly weaker than expected at the time of the last Bulletin, and by a further 3 per cent in 2026. Moreover, trends in the pharmaceutical sector appear favourable, with industry reports suggesting that Irish pharmaceutical production facilities are expected to expand production to meet rising global demand. While it is difficult to make a precise link between investment in production by MNEs and subsequent export growth, we assume that this will generate rates of growth in merchandise exports similar to those seen between 2016 and 2019, when similar expansions occurred. The large growth rates arise because Ireland is expected to gain market share in markets which themselves are seeing fast-growing global demand.

Import growth is expected to moderate out to 2026. Offshore production as well as investment by MNEs have driven large surges in imports in the first half of the year. Looking ahead, the impact 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.

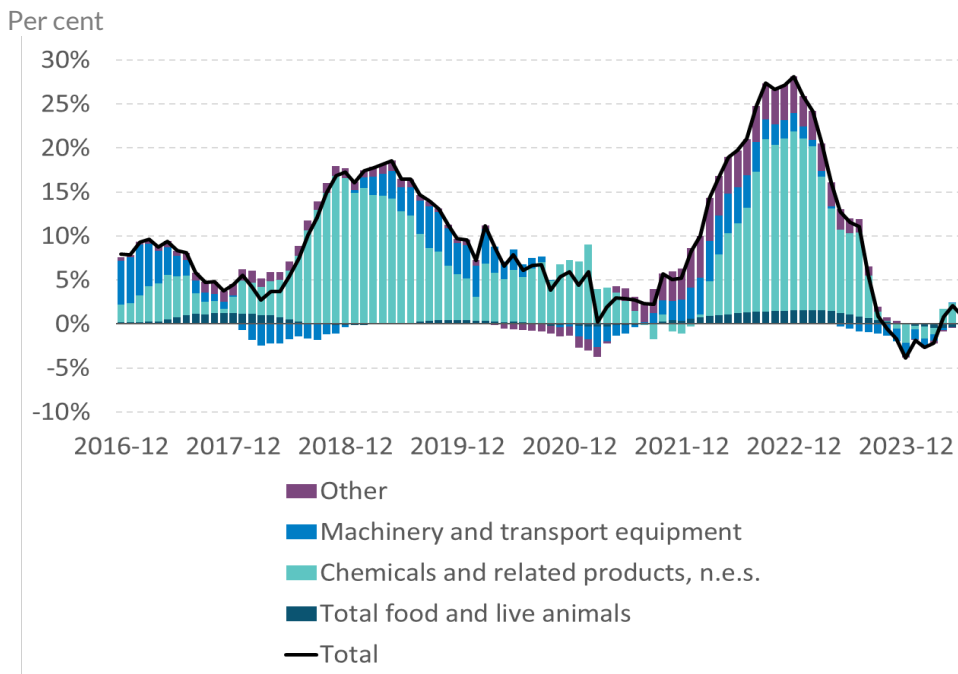
The balance of risks to the export growth forecast is tilted to the downside, however. Firstly, if the US were to increase tariffs or other trade barriers on imports this could have a significant impact on Irish MNEs in particular (see Box C for the impact of an MNE shock on the Irish Economy). Secondly, there is uncertainty around the outlook for semiconductor manufacturing in Ireland. Semiconductor exports declined by 52 per cent (€5.6 billion) in 2023 compared to 2022 and their share of overall goods exports has dropped from 5.3 per cent in 2021 to 2.7 per cent in 2023. Activity in the sector is concentrated among a small number of firms and is therefore sensitive to the performance of individual firms. A loss of market share or prolonged downturn in the performance of one or more individual firms poses a risk to overall export growth in Ireland, with related potential negative implications for employment and tax revenue. Thirdly, while the baseline forecast assumes that geopolitical tensions remain at levels similar to 2024, any escalation of ongoing conflicts

would restrict the flow of global trade with knock-on effects for Ireland as a small open economy. On the upside, there is the potential for a stronger than forecast rebound in exports by the pharmaceutical sector in 2024. The headline growth rate of exports is also heavily influenced by the level of contract manufacturing assumed in the forecast, but this rate has been particularly volatile in recent quarters.

Headline measures of the balance of payments current account are projected to continue to record strong surpluses, with the modified current account surplus (CA*) expected to stabilise. 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 projected continued growth in the profits of the multinational sector. Abstracting from some of these effects, the modified current account (CA*) is expected to record a surplus, averaging 3.6 per cent of GNI* over 2024 to 2026 (Figure 26). This would represent an increase in the surplus of 3.3 per cent of GNI* reported for 2023. GNI* is forecast to grow in real terms by 1.9 per cent in 2024, and by 3.3 and 2.8 per cent in 2025 and 2026 respectively.

Pharmaceutical exports have pushed goods exports back into positive growth

Figure 23



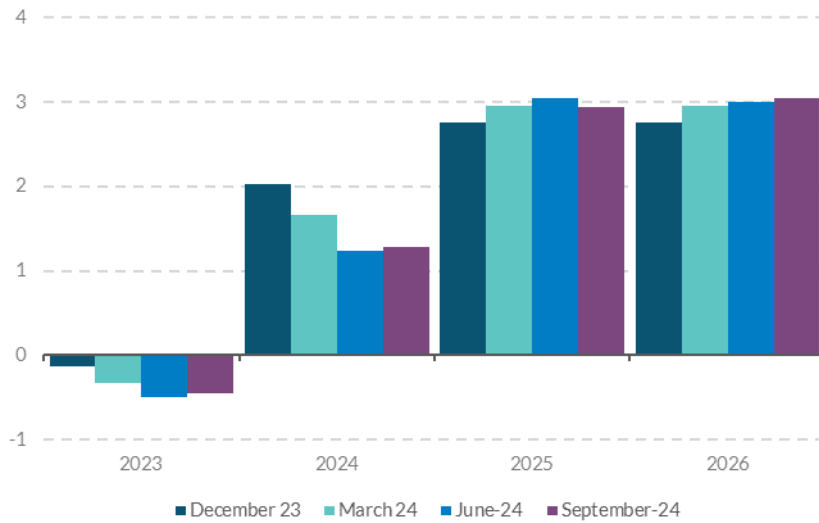
Source: Eurostat and Central Bank of Ireland calculations.

Note: Chart shows contributions to the 12-month rolling average change in merchandise exports.

Trading partner demand is forecast to recover during 2025 and 2026.

Figure 24

Per cent



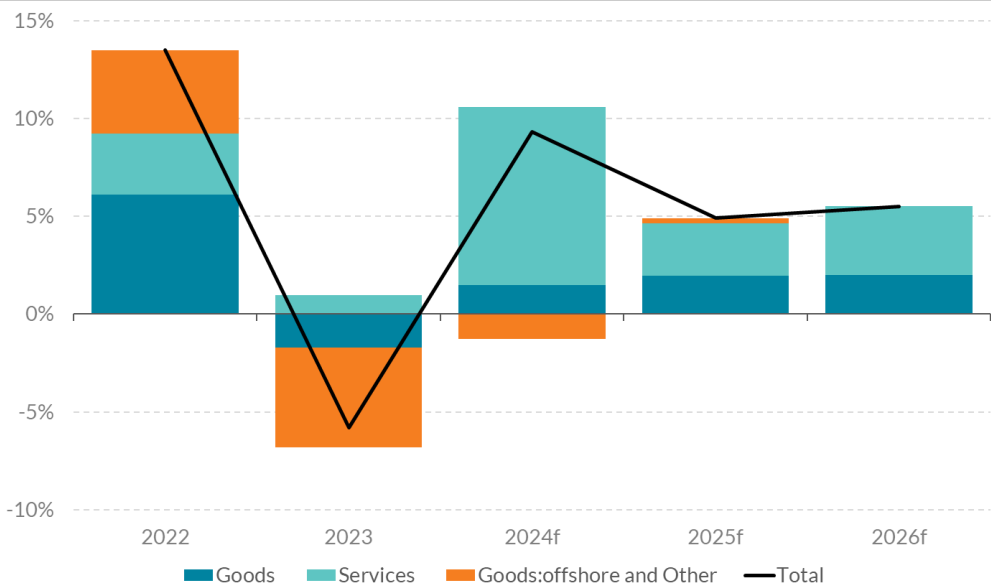
Source: CSO and Central Bank of Ireland calculations

Notes: Chart shows annual percentage change in weighted external demand for Irish exports.

Exports in 2024 are dominated by the large export of IP in Q2, but both underlying goods and overall services exports are projected to grow

Figure 25

Per cent



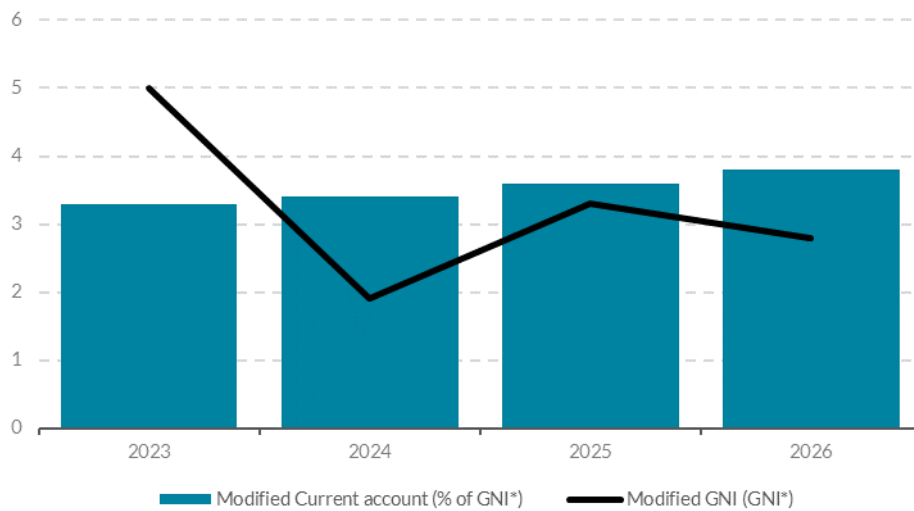
Source: CSO and Central Bank of Ireland calculations

Notes: Chart shows contributions to the annual percentage change in overall exports.

Real GNI* growth is forecast to slow this year, before recovering in 2025 while CA* is projected to stabilise as a proportion of GNI*

Figure 26

Per cent



Source: CSO and Central Bank of Ireland calculations

Prices and costs

Headline inflation has declined considerably since the last *Bulletin* (Figure 9), but underlying inflationary pressures have eased by less and remained strong. Underlying inflation measures⁹ continued to decline over the past three months, however, the pace of the decline has slowed significantly compared to the period between January and April (Figure 27). The exception is the weighted median measure, which fell sharply in recent months and stood at 2.1 per cent in July. Underlying inflationary pressures remain above the historical average, with only trend core inflation declining below its historical average of 1.4 per cent in recent months.

Pipeline price pressures in the economy continue to normalise, albeit the services sector is experiencing relatively stronger inflationary pressures.

Global supply chain pressures ticked up over the past months to a level close to their historical average, while manufacturing delivery times fluctuated around the no-change level and below the historical average (Figure 29).¹⁰ Input price increases intensified in the manufacturing sector¹¹, with output price

⁹ For details how these measures are constructed see [Signed Article](#) in QB2.

¹⁰ [Drewry's World Container Index](#) shows shipping rates increased further since May but retreated somewhat in last week of August.

¹¹ Rising raw material costs were noted.

pressures remaining broadly stable (Figure 28). Relative to the historical average, manufacturing price pressures are contained. Input and output price pressures in the services sector eased somewhat but upward pressures on prices charged remain above the historical average (Figure 28). In the first half of 2024, firms' expectations of input costs pressures (non-labour as well as wage costs) and selling price inflation over the next twelve months eased (Figure 30).¹²

Consumers' near-term inflation expectations have declined, but remain elevated compared to observed HICP inflation. Consumer inflation perceptions (median) have declined further since May, but remained elevated relative to actual inflation (see Box D for a brief overview). Similarly, the median inflation rate expected over the next year stood at 2.9 per cent in July - well above recent inflation figures and only marginally lower than in the preceding two months. Median inflation expectations three years ahead remained stable at 3 per cent, indicating that consumers do not expect an improvement in inflation between the short and medium term.^{13, 14} This may influence consumers' future economic decisions, including wage demands.

Gas and electricity price assumptions have increased since the last *Bulletin*, while price assumptions for non-energy commodities, including food, have declined (Table 2). By the middle of August (cut-off date for current forecasts), oil prices (in USD) declined from levels recorded in June. Compared to the last *Bulletin*, oil price assumptions are slightly lower over the whole forecast horizon. In contrast, European wholesale electricity and gas prices increased more than expected in recent months. Market-based expectations imply higher natural gas price and electricity price assumptions for all years out to 2026 compared to June. Financial market expectations for non-energy commodity prices are lower. This reflects lower food commodity prices as well as lower non-energy hard commodity prices. In year-over-year terms, assumptions are lower for 2024-2025 period, but a little higher for 2026. Euro area farm-gate food price assumptions, used as an input for Irish food inflation forecasts, are also lower. The euro exchange rate assumptions against GBP are broadly unchanged, while a stronger euro against the US dollar is assumed in this *Bulletin*.

¹² The latest round of the Survey on the Access to Finance of Enterprises (SAFE) was conducted between 28 May and 20 June 2024. See [here](#) for more information about the survey.

¹³ The data on inflation perception and expectations is available from the Consumer Expectations Survey (CES) run by the ECB.

¹⁴ In contrast, at the aggregate euro area level (based on 11 countries), inflation expectations three years ahead are lower than expectations over the next year.

Relative to the previous *Bulletin*, the forecast for headline HICP inflation is revised down slightly in 2024-2025 and up slightly in 2026, although the expected profile is broadly unchanged (Figure 31). HICP inflation is expected to stay below 2 per cent over the whole forecast horizon, with a temporary tick-up in 2025 due to a higher forecast for energy price inflation. Energy inflation is expected to pick up towards the end of this year and into the next year. Large energy price cuts last year will fall out of annual comparison, and VAT rate cuts for electricity and gas prices will be reversed. In addition, increases in standing charges and PSO levy this autumn are incorporated in the baseline forecast. Food inflation is expected to continue to ease, with small positive contributions to the overall inflation rate in 2025-26. Domestic inflationary pressures are forecast to remain robust out to 2026 relative to the pre-pandemic period. HICP inflation excluding food and energy is expected to decline gradually from 2.5 per cent in 2024 to its historical average of 1.6 per cent in 2026. Nevertheless, this is well above the average in the pre-pandemic years. Non-energy industrial goods (NEIG) prices are forecast to fall in year-over-year terms, with NEIG inflation below its historical average over the forecast horizon. Services inflation is expected to remain strong and drive overall inflation before gradually declining to its historical average of 3.1 per cent in 2026 (Table 2). This is in line with expectations for strong income growth, tight labour market conditions and the expected path for consumption growth. Inflation as measured by the CPI and personal consumption deflator are also expected to gradually moderate over the projection horizon.

The lower profile for headline inflation forecast in this *Bulletin* compared to the Q2 forecast largely reflects lower food inflation that is partially offset by slightly higher services and energy inflation. Energy, food and NEIG inflation have been revised down for 2024, largely reflecting recent data outturns. Lower food commodity assumptions as well as recent data outturns lead to downward revisions to food inflation also in 2025-26. Higher energy inflation forecast for 2025-26 reflects higher energy assumptions and the estimated effects of changes to standing charges and the PSO levy. Services inflation has been revised up over 2025-26 in light of data revisions for 2023, stronger consumption growth in 2026, although lower income growth dampened this increase in services forecast. For 2026, upward revisions to non-food components offset downward revisions to food inflation.

Risks surrounding the inflation outlook are considered to be broadly balanced. Upside risks to the headline inflation forecast may arise largely from the domestic economy. Stronger than expected labour costs growth, in light of very tight labour markets and elevated consumer inflation expectations, or

additional fiscal stimulus could result in higher inflation. Continued geopolitical tensions present additional upside risks.¹⁵ Poor weather conditions put food commodity supplies at risk and may manifest themselves in stickier food price inflation. Downside risks to the inflation outlook are mostly external, especially in the near term. Past increases to interest rates weigh on global economy and could lead to a sharper slowdown in global economy, weaker global price pressures and lower demand from trading partners than is currently expected. Dampening effects of higher interest rates on domestic economy and price dynamics may also intensify domestically.

Table 2: Changes in key technical assumptions

	QB3 2024			QB2 2024		
	2024	2025	2026	2024	2025	2026
Oil (USD/barrel)	83.2	76.1	73.2	83.8	78	74.5
Natural gas (EUR/MWh)	34.2	41.1	35.4	30.8	35.4	29.9
Electricity (EUR/MWh)	77.4	93.3	82.2	73	87.7	72.8
Non-energy commodities (USD, percent change*)	7.3	1.3	2.5	11.4	3.9	0.9
USD/EUR	1.09	1.10	1.10	1.08	1.08	1.08
GBP/EUR	0.85	0.86	0.86	0.86	0.86	0.86

Source: ECB, Refinitiv. Notes: *Annual percent change.

Table 3: Inflation Projections

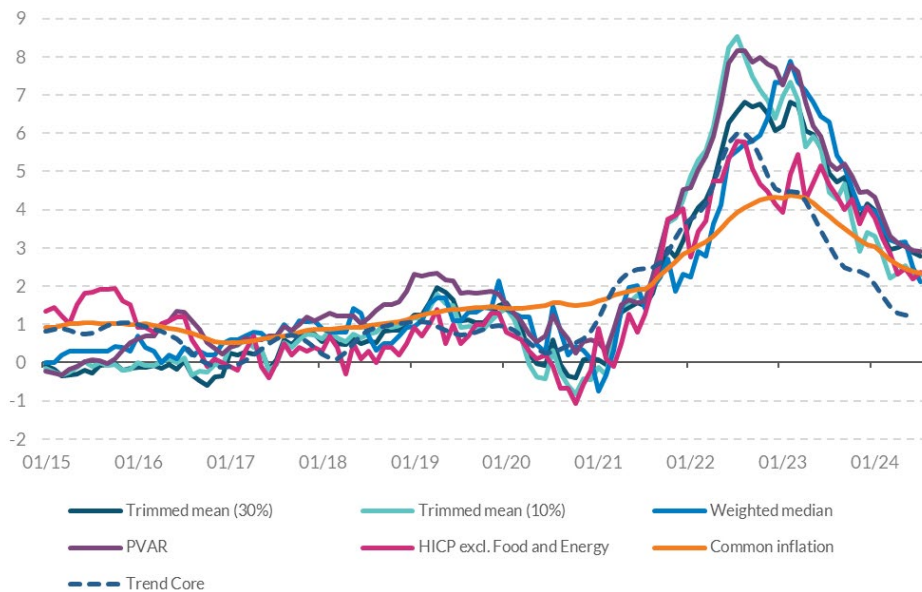
	2023	2024	2025	2026
HICP	5.2	1.6	1.9	1.5
Energy	5.1	-6.8	3.9	2.2
Food	8.1	2.6	0.2	0.4
Non-Energy Industrial Goods	3.3	-2.0	-2.0	-1.9
Services	5.0	4.4	3.5	3.1
HICP ex Food & Energy (Core)	4.4	2.5	2.0	1.6
CPI	6.3	2.3	2.0	1.6
Personal Consumption Deflator (PCD)	8.5	5.5	3.7	2.5

Source: CSO, Central Bank of Ireland

¹⁵ Such tensions have had limited effects on energy commodities and supply chains so far.

Underlying inflationary pressures continue to ease, but remain higher than in years prior to the pandemic

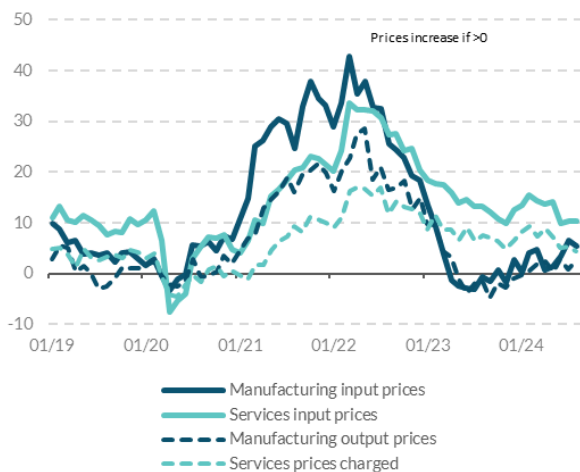
Figure 27
Year-on-year percent change (%)



Source: Eurostat, Central Bank of Ireland calculations.
Notes: Last observation for Trend Core inflation is June 2024, HICP excl. energy and food – August 2024, for all other measures – July 2024.
PVAR denotes Volatility and Persistence Adjusted Rate of inflation.

Price pressures in the services sector continue to be elevated

Figure 28
Deviation from neutral level = 0



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

Supply chain pressures remain contained globally and domestically.

Figure 29
Standard deviation from historical average
Deviation from neutral level (RHS)



Source: Federal Reserve Bank of New York, Refinitiv.
Notes: Last observation: August 2024.

Firms expectations of input costs and selling price inflation over the next twelve months moderated so far in 2024

Figure 30

Year-over-year percentage change (%)

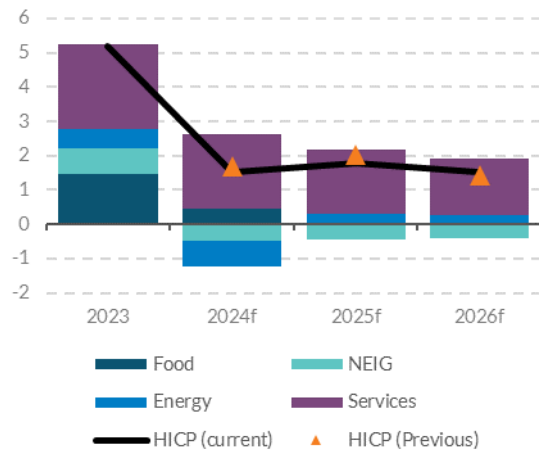


Source: ECB SAFE, CBI calculations.
 Notes: Weighted data, trimmed at 1st and 99th percentiles. The pink dots denote the respective median expectation. Survey waves: Oct-22 to Mar-23 (W1), Apr-23 to Sep-23 (W2), Jan-24 to Mar-24 (W3) and Apr-24 to Jun-24 (W4).

HICP inflation is forecast to stay below 2 per cent, with services inflation being a key positive contributor.

Figure 31

Year-over-year percentage change (%)



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

Labour Market

Employment growth was notably stronger in Q2 2024 relative to recent quarters and has prompted an upward revision in annual growth projections for 2024. A year-on-year growth rate of 2.7 per cent (an increase of 71,500 persons in work) in Q2 2024 marked a reversal in the recent trend of slowing employment growth. Public sector employment contributed 1.4 percentage points of the overall 2.7 per cent year-on-year growth in Q2 2024 with the Health sector accounting for much of this increase (Figure 32). Non-Irish citizens accounted for 57 per cent of annual growth (41,100 persons) and now constitute 20 per cent of total employment. Demand for labour from abroad remains high as evidenced by employment permits data with levels for the year to August up 31 per cent from the previous year to 27,181 permits. This increase in numbers for the Health and ICT sectors mirrors trends in the Labour Force Survey (Figure 33).

Incorporating the latest figures, employment growth projections for 2024 have been revised upwards to 2.3 per cent. The momentum from faster employment growth in 2024 results in a slight increase in projections over the forecast horizon although employment growth is still anticipated to moderate.

Growth of 1.9 per cent and 1.7 per cent is forecast for 2025 and 2026, respectively.

The labour force participation rate (LFPR) increased to 66 per cent in Q2 2024, the highest level recorded since Q3 2008. The female LFPR registered a new peak value of 61.4 per cent with record high activity levels for all age categories between 25-54 years. There is scope for further LFPR increases for persons aged over 25 years. Reaching previous peak participation rates across each gender and age category would yield a 1.1 per cent increase in current labour force levels. Much of this potential increase would come from males resulting in an equivalent LFPR of 66.8 per cent (Figure 34).¹⁶ CSO net inward migration figures for the year to April 2024 were estimated to be 79,300 persons, up from 77,600 in 2023. This was the second highest net increase in the data back to 1987. Along with rising labour force participation, continued high levels of net inward migration are providing a major boost to overall labour force growth. Looking ahead, average labour force levels for 2024 are projected to increase by 2.5 per cent. Further growth of 2 per cent in 2025 is expected to be supported by net inward migration remaining above pre-pandemic levels.¹⁷

Labour demand growth remains tentatively higher relative to labour supply with the unemployment rate close to historical lows. Growth in labour demand (the sum of employment and job vacancies) has been greater than the change in labour supply (the sum of the labour force and the potential additional labour force) since end-2021 (Figure 35).¹⁸ These developments coincide with the unemployment rate dropping below 5 per cent, consistent with the unemployment rate having decreased on a historical basis whenever growth in demand has exceeded growth in supply. The ILO unemployment rate for Q2 2024 measured 4.6 per cent, up from 4.1 per cent in the previous quarter; though much of the change is related to short-term unemployment by persons classified as students by their principal economic status and may be temporary given seasonal factors. A decline in job vacancies could see a slowdown in labour demand relative to supply resulting in an uptick in the unemployment rate. This increase may be limited, however, as there are

¹⁶ The LFPR for persons aged under 25 years is notably lower than mid-2000s peak values though current values may be more reflective of societal trends towards increasing educational attainment.

¹⁷ [Population and Migration Estimates, April 2024](#). The pre-pandemic average (2015-2019) was 30,000. [CSO Population and Labour Force Projections 2023-2057](#) provide scenarios for future growth based on differing net migration levels.

¹⁸ The 'Potential Additional Labour Force' comprises those outside the labour force who are available for work but not seeking work as a percentage share of the extended labour force and have a closer attachment to the labour force than other inactive persons. [See U6 definition](#).

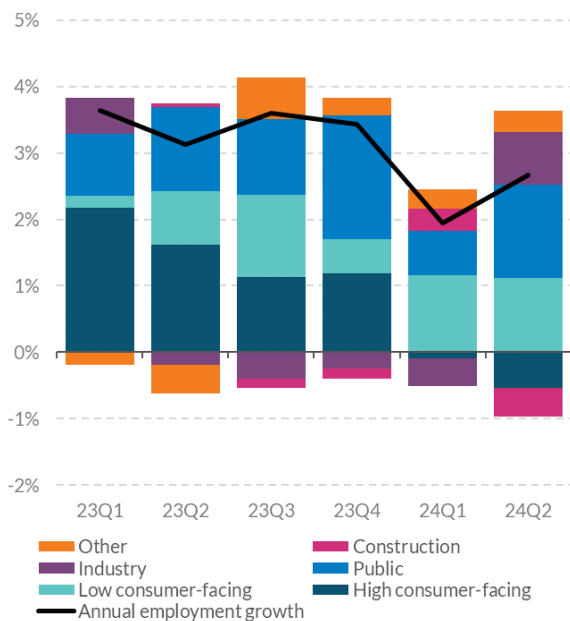
varying degrees of labour market tightness across economic sectors. Overall, the unemployment rate is projected to average 4.5 per cent this year and to remain below 5 per cent over the forecast horizon.

The EHECS job vacancy rate has remained stable with other labour demand indicators pointing to a continued slowdown. The job vacancy rate measured 1.1 per cent in Q2 2024 with the rate unchanged from Q4 2023. The level of vacancies increased slightly in the quarter to 26,500 as open positions in public sector areas such as Health account for one in every three vacancies Figure 36). Based on data from Indeed, job postings for August are down 22 per cent from August 2023 and currently stand at 11 per cent above pre-pandemic levels.¹⁹ Overall various labour demand indicators point to current levels being above pre-pandemic levels. Elevated labour demand in essential sectors may contribute to further net inward migration as signalled in the latest employment permits data and labour force growth.

Strong employment growth driven by low-consumer facing and public sectors

Figure 32

Contribution to annual growth (per cent)

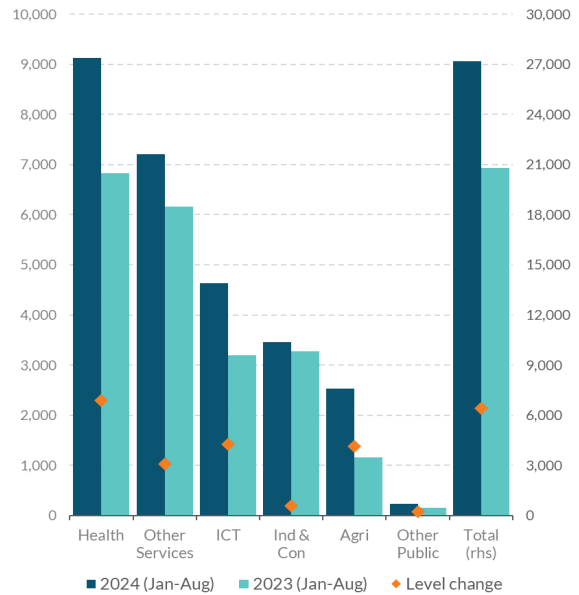


Source: LFS

Elevated demand for international labour in Health, ICT and Agri sectors

Figure 33

Work permits issued (number)



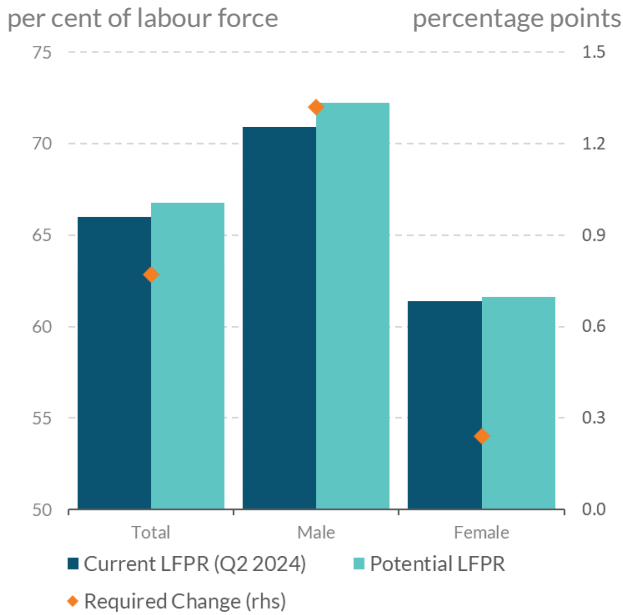
Source: DETE employment permits data

Note: Ind & Con refers to Industry and Construction. Other services includes Retail, Accom, Admin, Professional and Finance

¹⁹ [Indeed analysis](#) has shown that job posting levels are decreasing across the euro area.

Female labour force participation close to historic peak with potential for further gains amongst males

Figure 34

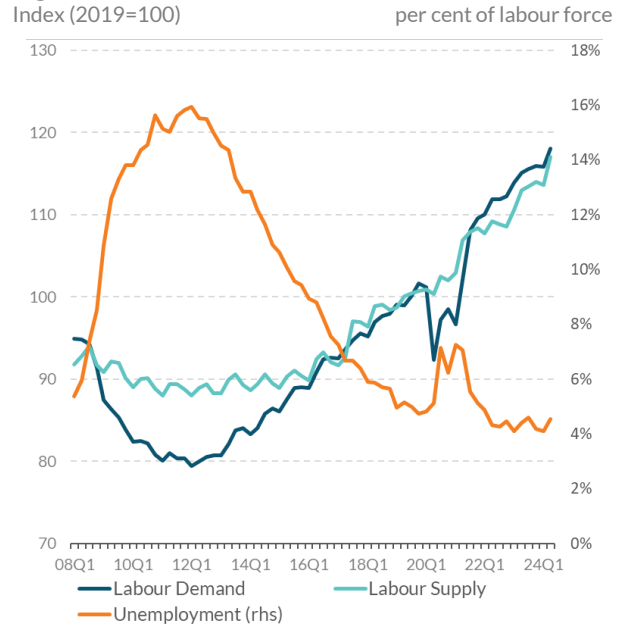


Source: LFS

Note: Potential LFPR is calculated using peak rates for males and females aged 25 years and over only

Higher labour demand growth relative to supply contributing to low unemployment

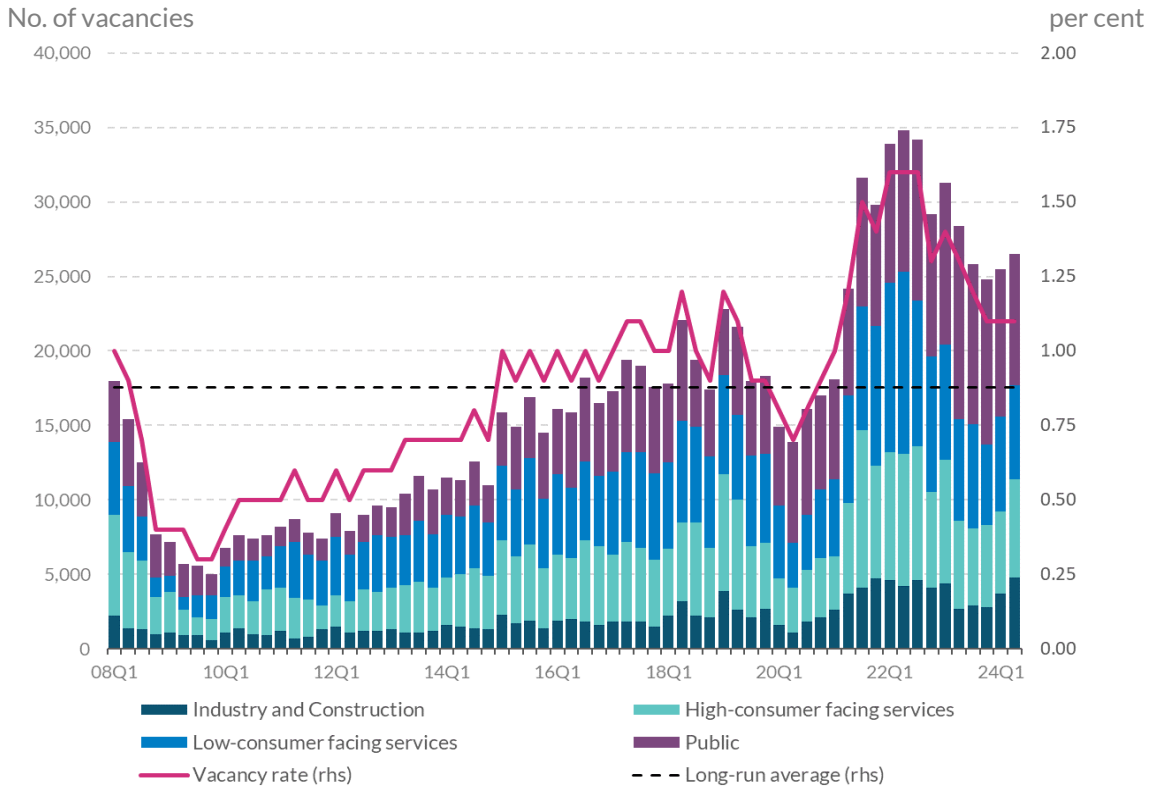
Figure 35



Source: CSO; LFS and EHECS

Job vacancies down on previous year though remain above long-run average

Figure 36



Source: CSO; EHECS

Earnings and Income

Nominal average hourly earnings increased by 5.3 per cent year-on-year in Q2 2024, partly influenced by the public sector wage agreement. Public sector hourly earnings increased by 5.8 per cent compared to a 4.9 per cent increase in the private sector based on data from EHECS. Public sector workers received a 1 per cent increase in annualised basic salary in June with a further 1 per cent rise to occur in October. Growth in posted wages as reported by Indeed has increased from 4 per cent in March to 4.6 per cent in July, which saw the series divert somewhat from the moderating path in core HICP. These trends may reflect the staggered nature of collective bargaining on wage developments as well as increases in the national minimum wage that occurred earlier this year.

CSO revisions have pushed up historical Compensation per Employee levels with growth in 2023 notably higher relative to previous estimates. Upward revisions in the annual National Accounts published in July have been applied back to 2011 resulting in higher nominal Compensation of Employees (COE) levels in recent years.²⁰ The effect of these revisions have increased annual growth in Compensation per Employee (CPE) in 2023 from the initial estimate of 4.5 per cent to 6.7 per cent in the latest CSO data (Figure 37). Nominal growth of 5.1 per cent is projected for 2024, slowing to 4.5 per cent in 2025.²¹

Growth in Gross Disposable Income (GDI) per household remains positive in real terms with further increases expected over the forecast horizon. GDI per household levels were also elevated by recent national account revisions with nominal growth moving from 2.9 per cent in 2022 to 13.6 per cent in 2023. In real terms, GDI per household increased by 4.6 per cent in 2023 to €62,973 (Figure 38). Average annual real growth of 1.4 per cent is projected out to 2026 with upside risks related to potential taxation and social transfer announcements in Budget 2025.

²⁰ The upward revision to COE is related to the inclusion of PAYE income for PRSI class S individuals. These changes resulted in Compensation of Employees increasing by an average of 4.5 per cent per year back to 2011.

²¹ ECB SAFE data also point to moderating wage costs in one year's time relative to previous firm surveys (See Inflation section).

Data revisions resulted in stronger nominal Growth in Compensation per Employee

Figure 37

Annual percentage change



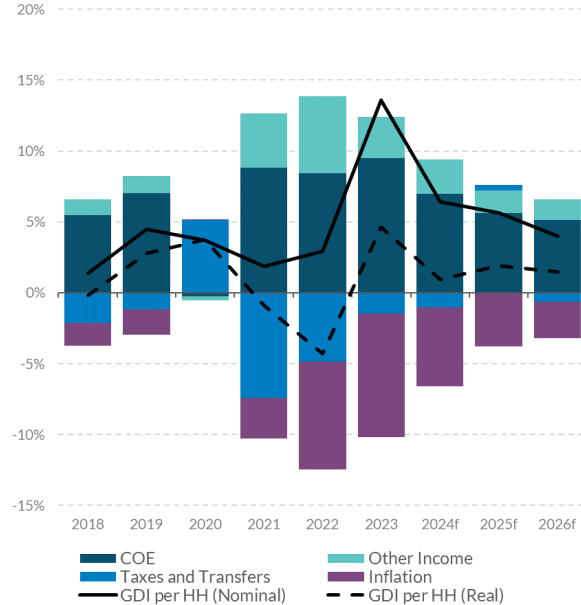
Source: CSO

Note: Central forecasts out to 2026 are presented in dashed line

Average Gross Disposable Income per household continues to grow in real terms

Figure 38

Annual percentage change



Source: CSO and author’s calculations

Note: Chart shows contributions to the annual percentage change in real GDI.

Table 4: Labour Market Projections

	2022	2023	2024f	2025f	2026f
Employment (000s)	2,595	2,685	2,747	2,800	2,848
% change	6.9%	3.5%	2.3%	1.9%	1.7%
Labour Force (000s)	2,716	2,805	2,875	2,933	2,985
% change	5.0%	3.3%	2.5%	2.0%	1.8%
Participation Rate (% of Working Age Population)	64.9%	65.5%	65.7%	65.7%	65.7%
Unemployment (000s)	121	120	128	133	136
Unemployment Rate (% of Labour Force)	4.4%	4.3%	4.5%	4.5%	4.6%

The Public Finances

The headline General Government Balance (GGB) is projected to remain in surplus over the medium term but to record large deficits when excess corporation tax is excluded. The outlook is now more favourable for this year, when compared to *Quarterly Bulletin 2*, reflecting the very strong performance of corporation tax in recent months (Figure 39). Cumulative corporation tax

receipts were 28.4 per cent higher (€3.6bn) in year-on-year terms in the first eight months of 2024, driving a 12.6 per cent increase in total tax revenue. While gross voted government expenditure was well ahead of profile over the same period - by 4.3 per cent, the extent of the former means we now expect a headline surplus of 3.5 per cent of GNI* (€10.9bn) this year. This assessment does not include any assumption about the anticipated cost of living package, which is expected to form part of Budget 2025, given the size of the package has not been announced. The outlook for the headline GGB over the medium term is broadly unchanged from *Quarterly Bulletin 2*, with headline surpluses of 2.6 and 2.9 per cent of GNI* (€8.7bn and €10bn) projected for 2025 and 2026 respectively. For 2025, the budgetary strategy outlined in July's Summer Economic Statement - including planned tax cuts, increased spending on Existing Level of Services and new expenditure measures²² - offsets the favourable base effect from the stronger outturn this year. In relation to 2026, the projected improvement in the headline surplus is driven by the estimated effect of the introduction of BEPS Pillar 2, which we anticipate will have a positive impact on corporation tax receipts. No assumptions are made about the possible impact of BEPS Pillar 1 given there is no clarity on the specific details of the possible changes that could be implemented and the timing of any changes is uncertain at present.²³ The outlook for the GGB is much less favourable when excess corporation tax flows - which cannot be explained by developments in the real economy and, as a result, could be subject to a sudden reversal - are excluded (Figure 40). This 'underlying' GGB would record a deficit of 1.2 per cent of GNI* this year, deteriorating to a deficit of 2.1 per cent of GNI* in 2026.

²² The budgetary strategy outlined in the Summer Economic Statement provided for an overall package of €8.3bn. €5.1bn of this is to finance budgetary decisions that the Government has already committed to - maintaining existing level of public services and investment in the National Development Plan. The remaining €3.2bn of resources to be allocated is expected to be split between expenditure measures (€1.8bn) and tax cuts (€1.4bn). This package does not include the potential introduction of new cost of living measures that are expected to form part of Budget 2025.

²³ This represents a change from previous forecast where an assumption was made that BEPS Pillar 1 would have a negative impact on corporation tax receipts in 2026. The change reflects uncertainty that the policy will be introduced over the current forecast horizon out to 2026. The Department of Finance anticipates that if Pillar 1 proposals were implemented, the net effect of Pillar 1 and Pillar 2 would be negative for the public finances.

Table 5: Key Fiscal Indicators, 2023-2026

	2023(e)	2024(f)	2025(f)	2026(f)
GG Balance (€bn)	7.8	10.9	8.7	10.0
GG Balance (% GNI*)	2.7	3.5	2.6	2.9
GG Balance (% GDP)	1.5	2.1	1.5	1.7
GG Debt (€bn)	220.7	222.4	226.0	226.9
GG Debt (% GNI*)	77.1	71.8	68.4	65.4
GG Debt (% GDP)	44.0	42.7	40.1	37.8
Excessive CT (€bn)	12.2	14.6	15.4	17.5
Underlying GGB (€bn)	-4.4	-3.7	-6.7	-7.4
Underlying GGB (% GNI*)	-1.5	-1.2	-2.0	-2.1

Source: Central Bank of Ireland Projections

The outlook for the General Government debt (GGD)-to-GNI* ratio remains favourable. Since reaching 110 per cent of GNI* in 2020, the debt ratio has fallen by 33 percentage points to 77 per cent of GNI* as of end-2023 (Figure 42). While primary surpluses played a supportive role in reducing the debt ratio, the main contributor to its decline was the pace of economic growth in the years immediately following the pandemic. Primary surpluses, continued economic growth, and a favourable funding environment are expected to support a further decrease in the debt ratio to 65.4 per cent of GNI* by 2026. In this regard, Ireland is an outlier within the euro area. Total public debt in the euro area is expected to remain broadly stable over the forecast horizon, reaching 88.6 per cent of GDP in 2026.²⁴ The sovereign funding outlook remains positive given forecasts for headline GGB surpluses over the medium term and a favourable maturity profile. So far this year the National Treasury Management Agency (NTMA) has issued €6bn of bonds with a weighted average yield of 2.7 per cent. While this is above the effective – or average – interest rate on the total debt stock, risks are mitigated by the significant cash balances held by the NTMA (€27bn or 9 per cent of GNI*) at end-July.

The reliance on continued growth in corporation tax revenue remains the primary risk to the public finances, while ongoing spending overruns need to be managed. We project that annual corporation tax receipts will have come close to trebling in the five years to end-2024, a rapid acceleration. Receipts in the three months to August alone were broadly in line with the total for the whole of 2018 (€10bn compared to €10.9bn). As noted above, without this growth in CT revenue – much of which cannot be explained by developments in the real economy – the levels of expenditure seen in recent years would not

²⁴ [June 2024 BMPE projections](#)

have been possible without running a deficit. Given the heightened uncertainty around the overall effects of the BEPS tax reforms - most notably the introduction of Pillar 1 which would have a negative impact on corporation tax receipts - and the extremely concentrated nature of this tax base, expenditure growth should be kept to a level consistent with the sustainable rate of Irish economic growth. This could be achieved by the Government adhering to its 5 per cent net expenditure rule. In terms of spending overruns, gross voted expenditure was significantly higher than target in the year to August, with Health representing just over half of the overshoot. While overruns in Health have been a feature of public expenditure for a number of years, the overruns so far this year are especially large (Figure 41). The total Health spending overrun in 2023 was €1bn; by August of this year the overrun in Health stands at €1.5bn.²⁵ Considering the need to deliver sustained investment in public infrastructure and housing, as well as the costs related to ageing and climate transition, decisions on current expenditure, capital expenditure and taxation must ensure fiscal sustainability over the long term.²⁶

On 10 September 2024, the Court of Justice of the European Union (CJEU) delivered its judgement relating to the Apple state aid case.²⁷ The ruling means that the Government is required to recover €13bn in tax relating to the period 1991 to 2014. These funds have, since 2018, been held in an escrow account managed by the NTMA and have increased to €14.1bn. The Escrow Fund is invested in short-dated, highly rated, liquid fixed income instruments. These will be realised over the coming months, with the funds transferred to the Exchequer.²⁸ Government has stated that the revenue will not affect the parameters of Budget 2025, which were set out in the Summer Economic Statement.²⁹ The precise timing and accounting treatment of this revenue is not yet confirmed and it has not been included in the current projections. However, this revenue will have a once-off positive impact on the GGB – most likely in 2024 – but subject to confirmation by statistical authorities.

²⁵ See [Fiscal Council \(2024\)](#) for further detail on spending overruns.

²⁶ See Conefrey *et al.* (2024) [Fiscal Priorities for the Short and Medium Term](#), Central Bank of Ireland Signed Article, Quarterly Bulletin 2, 2024

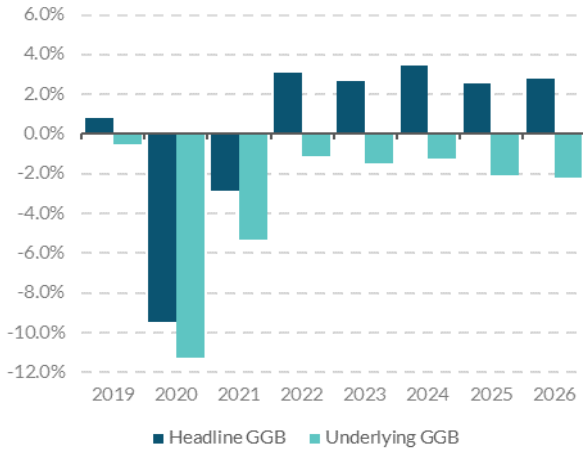
²⁷ [CJEU press release 133/24](#)

²⁸ See <https://www.gov.ie/en/press-release/24349-information-note-re-apple-escrow-fund-and-third-country-adjustment/>

²⁹ [Statement on CJEU judgement](#)

Headline GGB projected to remain in surplus

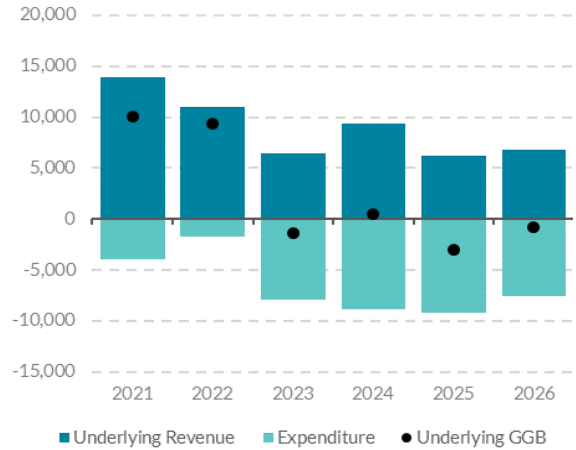
Figure 39
% GNI*



Source: Central Bank of Ireland.
Notes: Underlying excludes Central Bank estimates of excess corporation tax receipts.

Worsening outlook for the underlying GGB

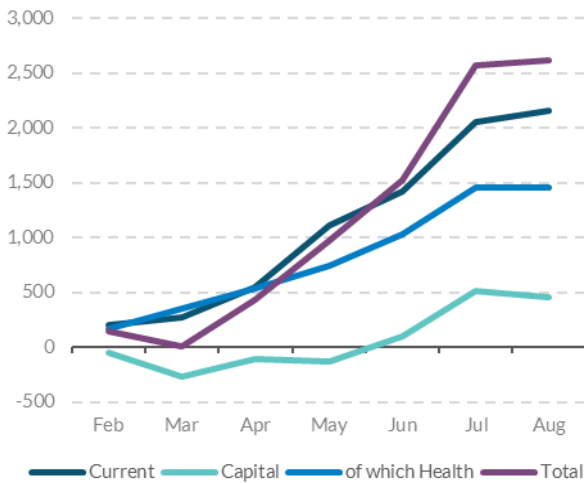
Figure 40
€mn, change



Source: Central Bank of Ireland.
Notes: Chart decomposes the change in the underlying GGB (headline GGB excluding estimated excess CT) into the projected growth in tax revenue and the growth in expenditure (shown as a negative value).

Revenue is ahead of Budget expectations but spending overruns are increasing, especially in Health

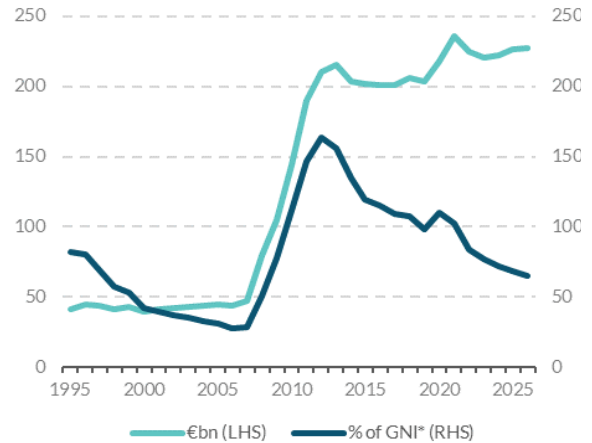
Figure 41
€mn



Source: Central Bank of Ireland.
Notes: Chart shows Exchequer spending outturns for period up to August 2024 compared to Budget 2024 forecasts.

Debt ratio is decreasing but nominal stock remains elevated

Figure 42
€ bn
GNI*



Source: Central Bank of Ireland.

Box A: The International Economic Outlook

By the Monetary Policy Division

The global economy continues to be relatively resilient, with the IMF’s July World Economic Outlook update forecasting world GDP growth of 3.2 and 3.3 per cent in 2024 and 2025 respectively (it grew by 3.3 per cent in 2023). This however conceals wide variation across regions, with growth in emerging markets outpacing advanced economies. A number of economies, such as the euro area and China, are facing cyclical weaknesses in demand, and potentially longer-term structural issues due to slowing productivity growth and trade frictions, while others, notably the US, have continued to grow.

Global inflation continues to decline, but at a slowing pace, with services inflation in particular slowing progress towards national inflation targets. An easing in the monetary policy stances of a large number of central banks is underway, with several having started to cut rates in response to moderating

inflation. There is, however, uncertainty around the speed of convergence of inflation towards target, with most policymakers remaining in a 'data-dependent' mode.

The September ECB staff macroeconomic projection exercise remained broadly in line with the previous round of forecasts in June. Projections for headline HICP inflation are unchanged, at 2.5, 2.2 and 1.9 per cent respectively for 2024-2026. Core inflation has been slightly revised upwards to 2.9, 2.3 and 2.0 per cent. Euro area GDP growth has been adjusted downwards by 0.1 per cent for each year of the 2024-2026 projection, to 0.8, 1.3 and 1.5 per cent. The pickup in growth in 2025 and 2026 is seen as consumption-led, supported by robust (but moderating) real wage growth and waning effects of past monetary policy tightening. The revisions compared to the June forecast were mostly due to revisions to private consumption projections.

Euro area labour productivity growth, cyclically low at the current juncture, is expected to rise to about 1 per cent by 2026. The outlook for the global economy (excluding the euro area) has slightly improved, with world ex-EA GDP projected to grow by 3.4, 3.4 and 3.3 per cent respectively in 2024 to 2026. Forecasts for global trade growth have been significantly revised upward for 2024 and are now very close to GDP growth rates across the forecast horizon. Trade remains a major source of uncertainty for the global economy. Global CPI inflation is projected to continue reducing gradually, from 5.0 per cent in 2023 to 4.2, 3.3 and 2.8 per cent, respectively, in 2024-2026.

The euro area economy continued to grow at a slow pace in the second quarter of 2024 with euro area GDP growing by 0.2 per cent on a quarterly basis (0.6 per cent higher compared to Q2 2023), down from 0.3 per cent in Q1. The main contribution to growth in GDP in Q2 2024 came from net exports and partly from Government consumption, while investment had a large negative contribution and households' consumption's contribution was negligible.

Labour market dynamics remained relatively strong, with employment growing by 0.1 per cent quarterly (0.8 per cent annually) in Q2 2024. The unemployment rate was 6.4 per cent in July – again, its lowest ever level. Euro area inflation remains close to, but above, the ECB target of 2 per cent. HICP Inflation fell to 2.2 per cent in August after ticking up to 2.6 per cent in July from 2.5 per cent the previous month. This decline was largely due to

energy and industrial goods inflation. Core inflation (i.e. excluding food and energy) also fell to 2.8 per cent after three straight months at 2.9 per cent. Services inflation however increased to 4.2 per cent from 4.0 in July. The persistence of services inflation continues to keep the core and headline rates of inflation above target.

In March 2024, the Governing Council (GC) of the ECB agreed to changes to the operational framework for the implementation of monetary policy, which will take effect from 18th September 2024. Under this new framework, the GC confirmed that the monetary policy stance would be steered by adjusting the deposit facility rate (DFR, which is the lowest of the three policy rates); i.e., the ECB will operate monetary policy under a floor system. The spread between the DFR and the main refinancing operations (MRO) rate will be reduced to 15 basis points, with the main lending facility (MLF) rate remaining at a spread of 25 basis points from the MRO. Once the balance sheet of the Eurosystem returns to growth, structural longer-term refinancing operations and a structural portfolio of securities will be established to provide structural liquidity levels to the banking sector and ensure a smooth functioning of the floor system.³⁰

The GC decided in September to reduce the three key ECB interest rates by 25 basis points, with the DFR standing at 3.5 per cent. The key ECB rates had been kept unchanged at the previous meeting in July, and had been lowered by another 25 basis points in June 2024; that had been the first reduction in ECB policy rates since 2019. 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. The GC noted that recent inflation data was broadly within expectations; domestic inflation remained high although it is expected to moderate. The Council reiterated that it will keep policy rates at a sufficiently restrictive level for as long as necessary to ensure the return of inflation to its 2 per cent target in the medium term. The GC decision-making will remain data dependent and therefore the GC 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, are being partially re-invested so as to obtain a reduction in the portfolio of the order

³⁰ See this [ECB explainer](#) for further background on the operational framework review, and forthcoming changes.

of €7.5bn per month; all PEPP reinvestments will be discontinued at the end of 2024.

The US economy continues to grow at a strong pace, despite tight monetary policy, and posted annualised growth of 3.0 per cent in Q2 2024, significantly up from 1.4 per cent in the previous quarter. The labour market has given mixed signals in the past weeks but overall continues to remain resilient; despite recent increases in the number of people filing jobless claims the unemployment rate in August stood at 4.2 per cent, just below 4.3 per cent in July, while it had been 3.8 per cent in the same month of 2023. In August, inflation dropped sharply to 2.5 per cent, from 2.9 in July and 3.0 in June; it had been above 3 per cent since April 2021. PCE inflation, the Federal Reserve's preferred metric, was 2.5 per cent in July, unchanged from June. Core inflation has been on a steady decline from the heights of over 6 per cent reached in 2022; it fell to 3.2 per cent in July and remained unchanged in August.

In July, the Federal Open Market Committee of the Federal Reserve decided to maintain the federal funds rate at a level between 5.25 and 5.50 per cent, noting that, in the US, economic activity has continued to expand at a solid pace, but employment growth has moderated and unemployment has picked up in recent months. Inflation, which has been on a downward trend towards the 2 per cent target, remained somewhat elevated. Uncertainty as to the interpretation of recent US employment and activity data, and the potential response of the Federal Reserve's monetary policy in the next months have led to significant financial market volatility between August and September.

The UK economy continued its strong rebound from the technical recession in the second half of 2023 with 2024 second-quarter growth of 0.6 per cent, which was only marginally below the 0.7 per cent growth the economy saw the quarter prior to that. The unemployment rate stood at 4.2 per cent in June, this follows four months of rising unemployment rates albeit from a historical low of 3.8 per cent in December 2023. The UK CPI inflation rate remained at 2 per cent in the month of June, a level consistent with the Bank of England's target. In August, the Monetary Policy Committee of the Bank of England decided with a majority of 5-4 to reduce the Bank Rate by 0.25 percentage points to 5 per cent. The Committee indicated that it continues to monitor inflationary pressures and expects an increase in CPI inflation in the second half of this year due to second-round effects capturing persistent inflationary pressures.

In July 2024, the Bank of Japan increased its policy rate by 0.15 per cent to 0.25 per cent, after raising it for the first time in March 2024 from the level of -0.1 per cent it had maintained since 2016. This move contributed to a quick appreciation of the yen in early August, which contributed to high but temporary volatility in financial markets. The BOJ expects to further increase the policy rate and continue towards a path of policy normalisation if its projected outlook is realised. It also outlined plans for a gradual reduction in its purchases of Japanese Government bonds to 3tn JPY per month by Jan-Apr 2026, from the current 6tn. Inflation in July was 2.8 per cent, for the third consecutive month, with core inflation increasing to 2.7 per cent from 2.6 per cent in June, the highest level since February. 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 decelerated to an annual growth rate of 4.7 per cent in Q2 2024, from 5.3 per cent the previous quarter, missing expectations. The country is facing weakness in domestic demand, tensions with trading partners, and a property downturn. The property sector continues to weigh down on the economy, with new house prices falling by 4.9 per cent annually in July, an acceleration in the decline from previous months. Amidst the slowdown in demand, fiscal stimulus remains strong, while the People's Bank of China has in July lowered the 1 and 5-year loan prime rates by 10 basis points each to 3.35 and 3.85 per cent, respectively. Despite monetary and fiscal stimulus, inflation remains below target, recording 0.5 per cent in July 2024; core inflation is also weak, having fallen to 0.4 per cent in July.

Box B: Developments in Business Lending in Ireland

By *Rían Ó Cléirigh & Nicholas Kaiser*

This *Box* provides a brief overview of the current state of lending to businesses in Ireland. New NFC lending volumes were low in the rising interest rate environment of 2022 and 2023, but have stabilised as rates have plateaued. SME lending, which makes up approximately one quarter of total lending to private enterprises in Ireland, mirrors the key developments in overall lending³¹.

³¹ [NFC new lending/deposits](#) and [lending to Irish resident private enterprises \(and SMEs\)](#) are collected under different regulations and differ slightly in methodology. See explanatory notes [here](#) & [here](#) & for more information.

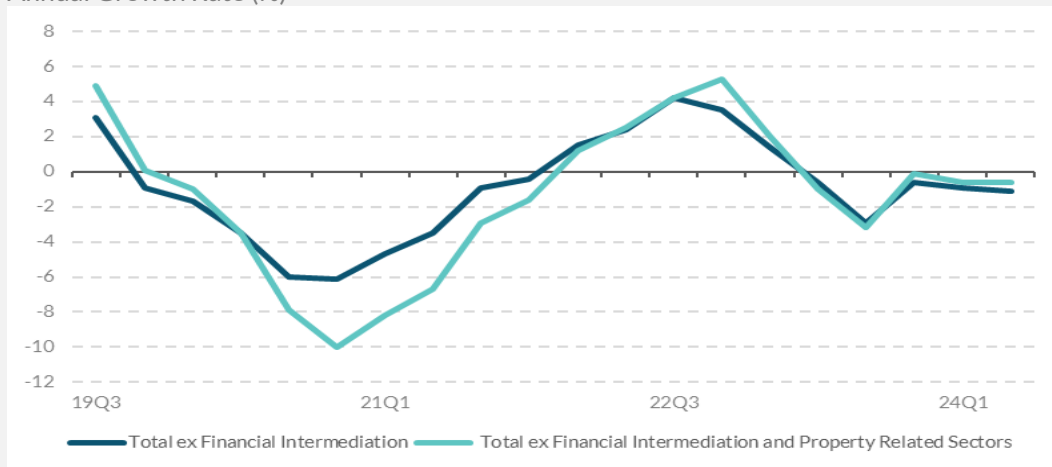
Lending to Businesses

The twelve-month growth rate in total lending is a significant indicator of the state of credit in the economy (Figure 1). Beginning in 2019, there was negative lending growth as lending declined through Q3 2021 when the negative trend reversed. The growth rate of business lending excluding financial intermediation peaked in mid-2022. Growth rates have since stabilised around zero. This near-zero level has held from Q4 2023 until the most recent data in Q2 2024.

Lending to business still contracting as repayments exceed drawdowns

Figure 1

Annual Growth Rate (%)

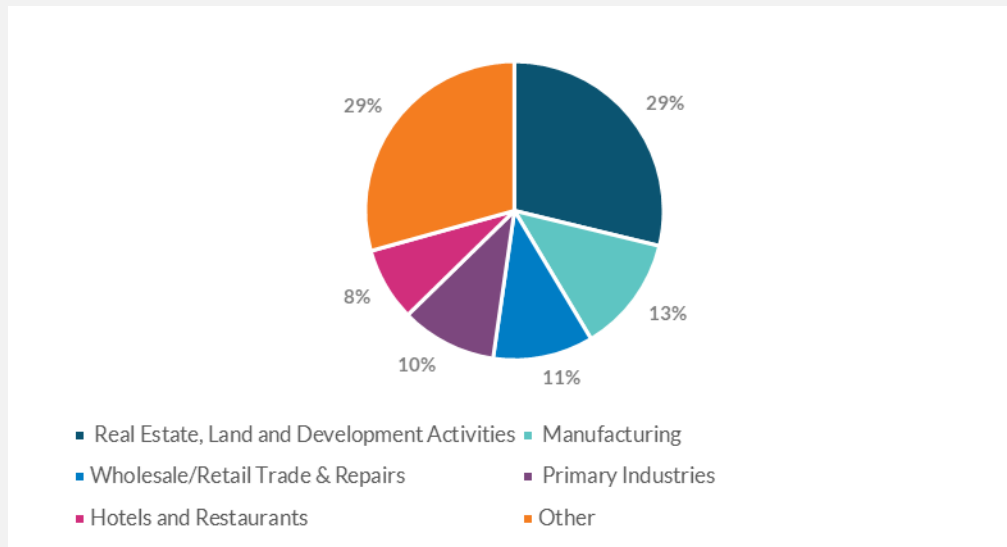


Source: Central Bank of Ireland Money & Banking Statistics

Lending to the financial intermediation³² sector is the most significant component of bank lending to Irish resident private enterprises, accounting for 48% of lending as of Q2 2024. However, the exclusion of financial intermediation from the aggregate business lending figures gives a clearer picture of lending to the real economy. Excluding financial intermediation, the sector with the largest balance of outstanding lending is Real Estate, Land and Development Activities (29%, figure 2).

Real Estate remains the largest sector by volume of outstanding lending in Q2 2024

Figure 2



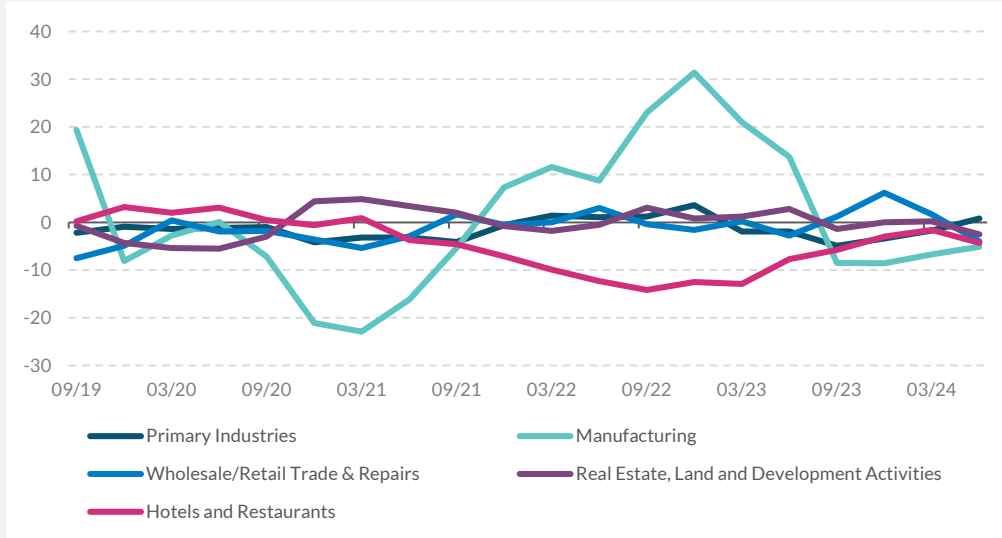
Source: Central Bank of Ireland Money & Banking Statistics

Among the top five sectors by volume of outstanding lending, Primary Industries, Wholesale/Trade & Repairs, and Real Estate, Land & Development have had relatively flat and stable annual lending growth rates over the past five years. The annual growth rate of lending to the manufacturing sector has been the most volatile of the largest sectors. The growth in lending to this sector decreased significantly in 2021 to a low of -22.9 per cent in Q1 2021 and rebounded strongly post-pandemic to a maximum of 31.4 per cent in Q4 2022, but has shrunk back to pre-pandemic levels and is negative as of Q2 2024 (-5.1 per cent). Lending to the Hotels & Restaurants sector also shrunk significantly in 2022, reaching a low of -14.2 per cent annual growth. More recently the pace of contraction has been less severe, at -4.3 per cent annual growth in Q2 2024.

³² Define financial intermediation

Manufacturing and Hotels & Restaurants have had the most volatile lending annual growth rates over recent years

Figure 3
Annual Growth Rate (%)



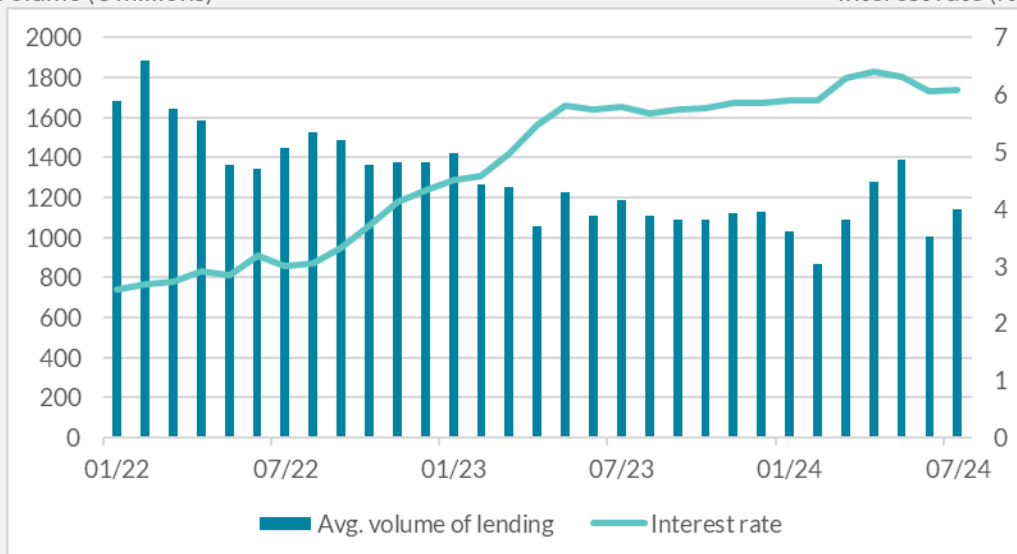
Source: Central Bank of Ireland Money & Banking Statistics

The cost of borrowing and the credit environment

Businesses have faced higher costs of financing since the ECB began raising policy rates in 2022. The weighted average interest rate on new lending to non-financial corporations (NFCs) increased from 2.67 per cent in July 2022 to a peak of 6.51 per cent in March 2024, but the rate of increase slowed beginning in May 2023.

NFC lending volumes decreased in 2023 as interest rates increased

Figure 4
Volume (€ millions) Interest rate (%)



Source: Central Bank of Ireland Retail Interest Rates Statistics

The decrease in new NFC lending between 2022 and 2023 is consistent with rising interest rates that were seen over the same period. As interest rates on new NFC lending stopped rising, the volume of new lending also stabilised and has begun showing signs of growth recently (Figure 4).

In the 12 months leading up to the first of the most recent policy rate increases (August 2021-July 2022), there was an average of €1.51 billion of new NFC lending per month, while in the 12 months following the first rate increase, new NFC lending averaged €1.26 billion per month. Although policy rates have not increased since September 2023, and have decreased by 25 basis points since then (as of end-June 2024), policy rates and downstream retail interest rates are still elevated relative to pre-2022 levels.

The ECB's Survey on the Access to Finance of Enterprises (SAFE) for Q2 2024 reports similar findings. Not only has the rise in interest rates on new lending to businesses slowed, according to the survey, fewer businesses across the Euro Area reported increases in other costs of financing (e.g. fees & commissions) in Q2 than in Q1. Conversely, banks reported a small tightening of credit standards for loans to businesses across the Euro Area in Q2 2024, according to the ECB's Bank Lending Survey.

The picture for SMEs

SME lending has long been a consistent and significant proportion of overall outstanding lending to Irish resident enterprises. Over the last 5 years, SME lending as a proportion of total lending to domestic private enterprises has ranged from a peak of 29% in June 2021 to a low of 25% in June 2022 and currently sits at 27% of total lending. Interest rates on new lending to SMEs (excluding financial intermediation) started to rise in Q2 2022, peaked at 5.62 per cent in Q4 2023, and have now decreased to 5.49 per cent at end-Q2 2024. The annual growth rate of SME lending fell beginning in Q3 2022, but began recovering in Q3 2023. As of Q2 2024, the annual growth rate of lending to SMEs was positive for the first time since Q4 2022, at 0.6 per cent (Figure 5)

Growth in SME lending has followed a similar trend as growth in overall lending

Figure 5
Annual Growth Rate (%)

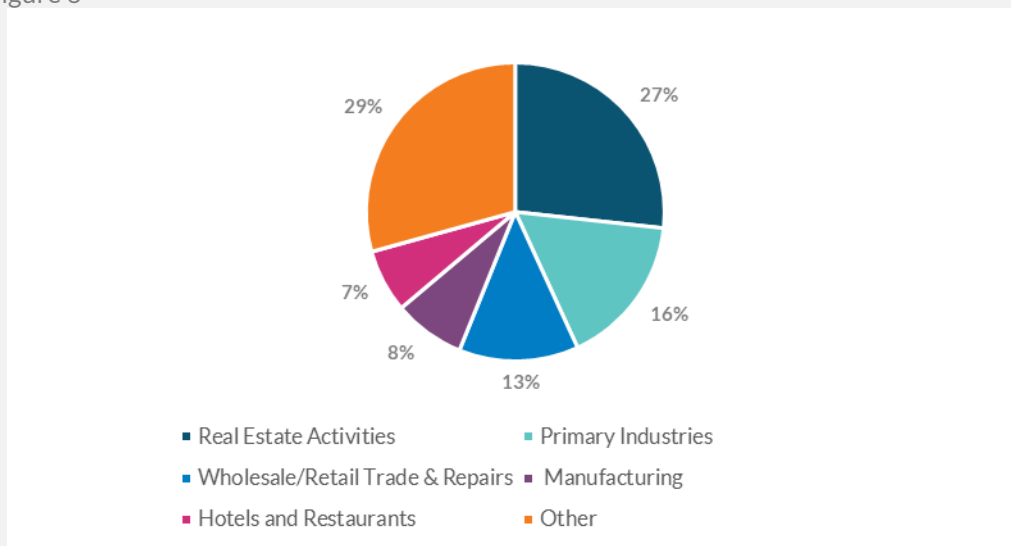


Source: Central Bank of Ireland Money & Banking Statistics

The sectoral makeup of the stock of SME lending is similar to the makeup of overall private sector lending in Ireland. Real estate activities is the largest sectoral component of the stock of SME credit as at Q2 2024 (figure 6).

Real Estate is the sector with the most outstanding SME lending

Figure 6



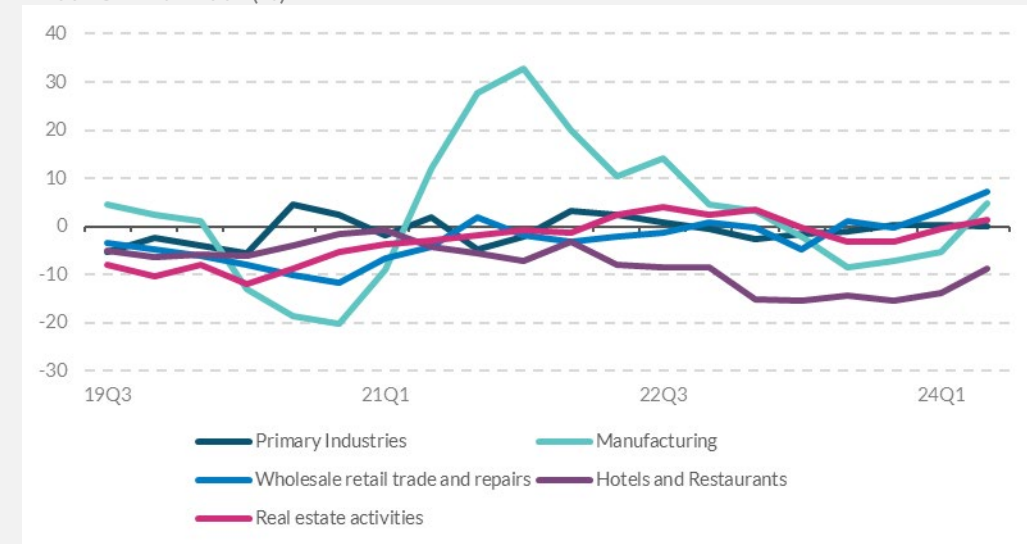
Source: Central Bank of Ireland Money & Banking Statistics

The trend in the sectoral makeup of SME lending is much the same as for overall lending to domestic private enterprises, with volatility in both lending

to the Manufacturing and Hotels & Restaurants sectors, but stability in the growth rate of lending to the other large sectors (figure 7).

The sectoral breakdown of SME lending follows a similar trend to the growth lending inclusive of large enterprises

Figure 7
Annual Growth Rate (%)



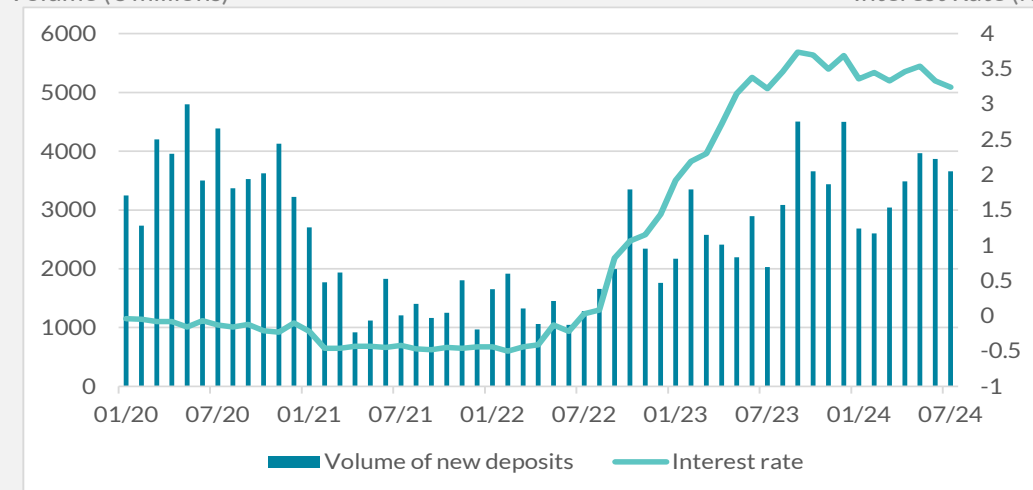
Source: Central Bank of Ireland Money & Banking Statistics

Deposits

As the volume of lending to NFCs shows signs of recovery and the growth rate of lending stabilises, the volume of new NFC term deposits has also recovered from the low levels seen in 2022 and remains relatively elevated despite a fall in the weighted average interest rate on NFC term deposits from a peak of 3.74 per cent in September 2023 (Figure 8).

The level of new NFC deposits with agreed maturity has rebounded from 2022 lows

Figure 8
Volume (€ millions) Interest Rate (%)



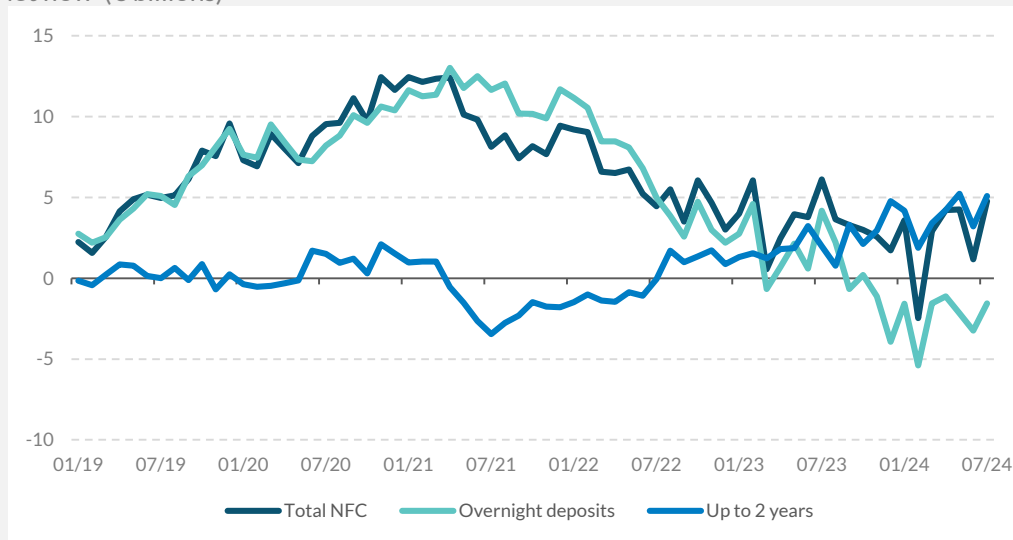
Source: Central Bank of Ireland Retail Interest Rates Statistics

In the five years from July 2019, deposits from the NFC sector saw an inflow of €33 billion and currently stand at €84 billion. Deposits grew significantly during the Covid-19 Pandemic, peaking through Q1 2023. While the total net flow remains positive, except for February 2024, recently there has been a shift in deposit composition. Overnight deposits had the highest net flow of all categories of NFC deposits, but Term Deposits have since overtaken Overnight deposits as Term deposits became more attractive in the rising interest rate environment.

Net flow into term deposits as overnight deposit flows decline

Figure 9

Net flow (€ billions)



Source: Central Bank of Ireland Money & Banking Statistics

Box C: The Role of Multi-National Enterprises in Global Shock Transmission

By Michael O'Grady³³

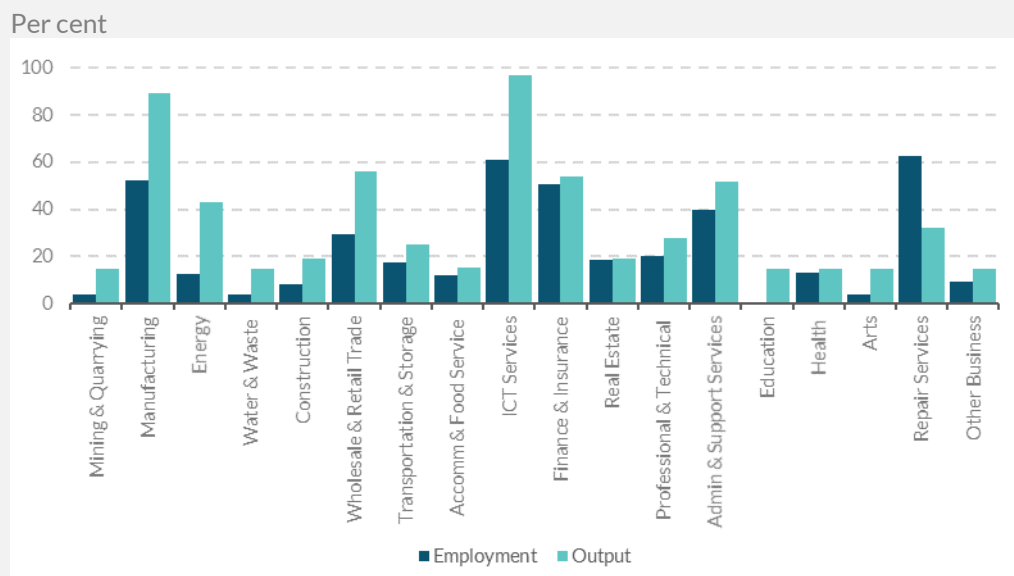
Multinational enterprises (MNEs) account for a large share of employment and economic activity in Ireland. In 2021, MNEs accounted for over 33 per cent of total employment in Ireland. At the sectoral level, foreign-affiliate ICT, Manufacturing, Admin & Support Services and Wholesale & Retail Trade enterprises account for 20 per cent of total business economy employment (Figure 1). While foreign-affiliate enterprises provide substantial contributions to the Irish economy, they also introduce direct and indirect

³³ Irish Economic Analysis Division

channels through which external economic conditions can influence the domestic economy. Direct channels include changes in the economic conditions and level of demand in the markets where those firms sell their products. Indirect channels arise from the consequent change to the demand of these sectors for other goods and services produced in Ireland that they use in the course of their own production activity. With diminished production in MNE affiliates, there is both a reduced demand for the intermediate goods and services that contribute to the affiliates' output (backward linkages), as well as a reduced supply of the intermediate goods and services that the affiliate produces to be used in production processes across other sectors (forward linkages). These backward and forward linkages can be large, and act as the mechanism through which external shocks that affect MNE activities at the sectoral level propagate through to the wider domestic economy.³⁴ The purpose of this *Box* is to deepen understanding of Ireland's exposure to external shocks, by examining the effects of a potential adverse shock in the productive activities of foreign-affiliate enterprises in the Manufacturing sector of the Irish economy, highlighting the role of domestic supply-chain linkages.

Employment and Output Shares by Sector and Firm Ownership

Figure 1



Source: CSO, Eurostat, Author's Calculations.

To analyse these sectoral linkages, and the degree of sectoral interdependence within an economy, economists have historically made use

³⁴ The importance of these linkages has been identified and emphasised in the economic development literature as far back as [Hirschman \(1958\)](#).

of input-output tables. Input-Output Tables (IOTs) are data that provide a detailed analysis of the production process, the use of goods and services and the income generated in that production, at the sectoral or sub-sectoral level. By quantifying the supply chain across all sectors of the economy, IOTs can identify the aggregate change in output from a change in one or more specific sectors. These aggregate effects can further be broken down into direct, indirect and induced effects.

Given the importance of foreign-affiliate production in the pharmaceutical and computer hardware manufacturing sectors and the higher “upstream” position of their outputs in the value chain, shocks to these sub-sectors are of particular relevance to the Irish economy.³⁵

Additionally, estimates of IOTs at the ownership-sector level for 2019 suggest that the foreign-affiliate manufacturing sub-sector accounts for more than 22 per cent of the inter-sectoral use of intermediate goods and 44 per cent of total exports. Even accounting for the effects of distortionary globalisation activities (including IP transfer, merchanting and contract manufacturing), foreign-affiliate manufacturing remains responsible for 19 per cent of inter-sector intermediate consumption.³⁶ Only the foreign-affiliate ICT sector uses a higher share of inter-sector intermediate goods (27 per cent), while no indigenously owned sector accounts for more than 6 per cent of between-sectors intermediates usage.

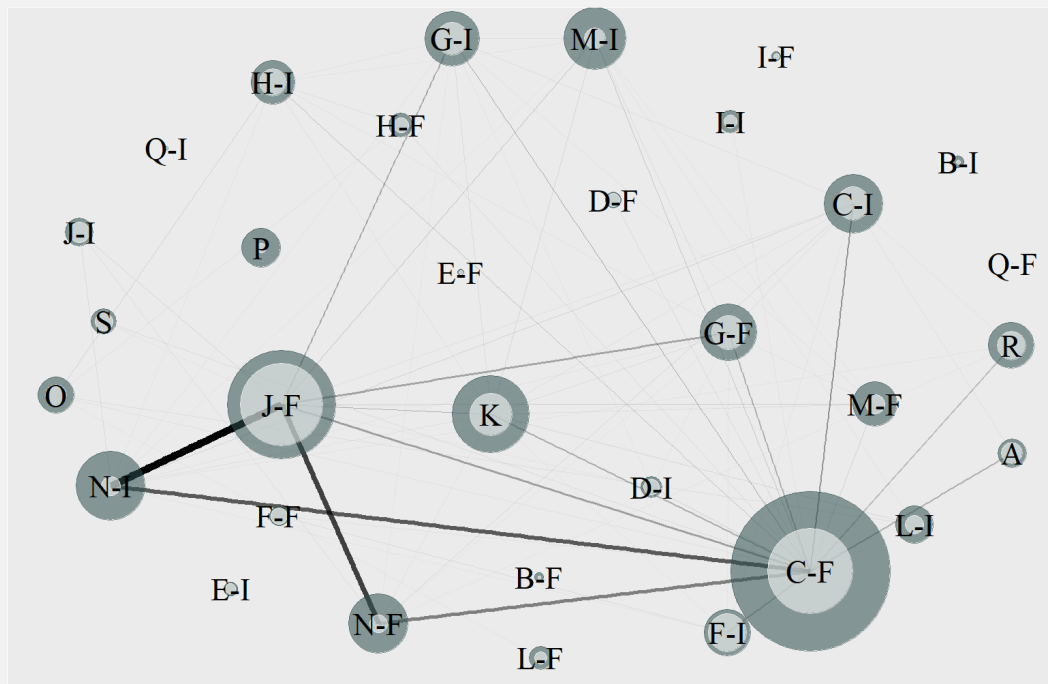
Figure 2 presents the mapping of the largest 2 per cent of inter-sectoral connections for 2019, with NACE sectors split into indigenous (I) and foreign affiliate (F) enterprises. As can be seen from the network map, the foreign-affiliate manufacturing sub-sector (C-F) is highly interconnected, with multiple apparent transmission paths through which external shocks can propagate through to other sectors in the domestic economy.

³⁵ As discussed by Olabisi (2020), sectors that are more upstream display more output and export volatility in response to demand shocks. Kalemli-Özcan et al. (2014) show that firms in higher upstream sectors are more exposed to credit and interest rate shocks, as they have higher investment costs and maintain higher levels of working capital. Wang and Disney (2016) demonstrate that, as shocks to demand for final goods transmit through supply chains, industries that are further upstream have higher levels of output and employment volatility.

³⁶ See [O’Grady \(2024\)](#).

Intermediate Consumption Network Map, Ownership Extended IOTs

Figure 2



Source: Author's calculations from CSO Supply & Use Tables, and Eurostat AES & FCE data.

Notes: Data refer to 2019. Sectors are represented by a circle (node). The lighter, inner portion of the node represents total intermediate consumption, while the darker, outer portion represents total inputs. The lines between nodes (edges) represent the cumulative value of intermediate consumption flows between both sectors. Legend: A = Agriculture, B = Mining & Quarrying, C = Manufacturing, D = Energy, E = Water & Waste Management, F = Construction, G = Wholesale & Retail Trade, H = Transport & Storage, I = Accommodation & Food Service, J = Information & Communication Technology, K = Finance, L = Real Estate, M = Professional, Scientific & Technical, N = Administration & Support, O = Public Administration & Defence, P = Education, Q = Repair of Computers & Household Goods, R = Health, S = Arts & Other Service Activities.

To quantify the potential effects of a foreign-affiliate manufacturing shock to the wider domestic economy, we employ the hypothetical extraction method (HEM): a prominent empirical approach used to measure inter-industry linkages and the importance of industries to aggregate economic growth. The HEM estimates a counterfactual scenario in which a certain sector operates at a diminished level of productive capacity. The output of the new "hypothetical" economy will be reduced, partly due to the reduction in the extracted sector's output, but also from the decline in purchases from / sales to the remaining sectors, and their subsequent loss of linkages elsewhere in the economy.

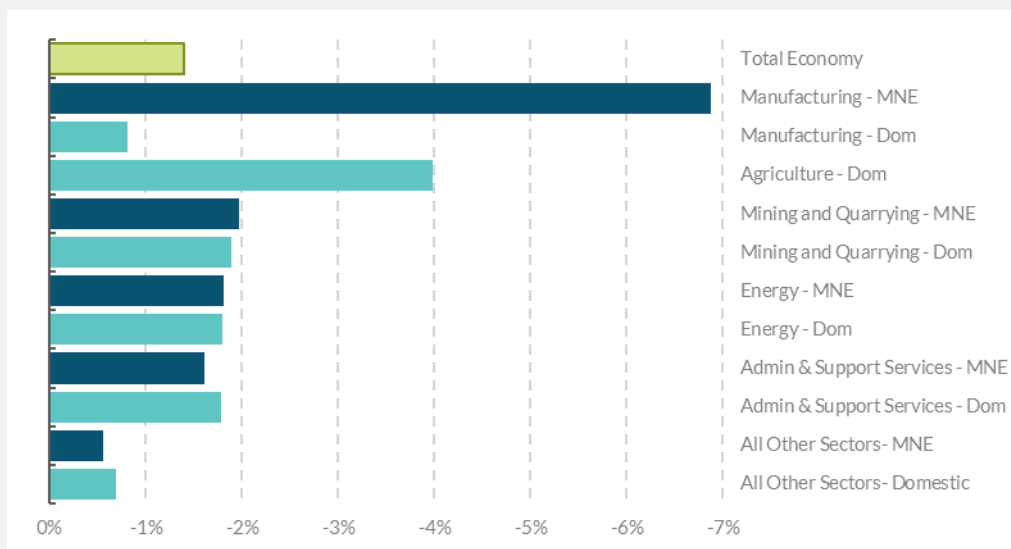
Figure 3 presents the results of a HEM scenario using modified Irish input-output tables for 2019, designed to disaggregate sectors into indigenous firms and foreign-affiliate enterprises, and to remove the economic distortions introduced by the globalization activities of multinational firms in specific sectors.³⁷ Under this scenario, the foreign-affiliate MNE sub-sector reduce

their sales and purchases of intermediate goods in the Irish economy by 5 per cent, with corresponding reductions in final demand goods.³⁸

This direct effect represents an aggregate decline in intermediate usage of 1.6 per cent within the economy. However, further losses occur throughout the economy, as the reduced demand for intermediates previously purchased by the foreign-affiliate manufacturing sector (and the reduced availability of intermediates previously produced by the sector) cause output losses across other sectors. In turn, these cause further output losses as a result of the reduced purchases to make their outputs, and lower sales of these outputs that are used by other sectors in their production processes.

GVA loss from a 5% decline in Foreign-Affiliate Manufacturing sales/purchases

Figure 3



Source: Author's calculations from CSO Supply & Use Tables, and Eurostat AES & FCE data

The aggregate effect of this 5 per cent reduction in the foreign-affiliate manufacturing sector results in total intermediate consumption and production losses of 2 per cent, and an aggregate GVA decline of 1.4 per cent. Of the sectors that are most affected by the contraction, Agriculture (-4 per cent), foreign-affiliate Mining and Quarrying (-2 per cent) and indigenous Admin and Support Services (-1.9 per cent) experience large relative declines,

³⁷ See [O'Grady \(2024\)](#) for a full discussion of the process used to generate these modified input-output tables for Ireland.

³⁸ Such a reduction could be caused by a foreign-affiliate's parent firm anticipating a decline in global demand conditions, or shifting some production from the Irish affiliate to an affiliate located in a third country.

due to their dependence on the foreign-affiliate manufacturing sector purchasing their output.

In conclusion, our analysis shows the potential economy-wide output losses from a contraction in the foreign-affiliate Manufacturing sector. Primarily consisting of a relatively small number of MNE subsidiaries in the pharmaceutical, chemical and computer hardware sub-sectors, firms in these industries are more exposed to changes in global financial and economic conditions and, consequently, provide an additional transmission channel through which external shocks can affect indigenous Irish firms. As a small open economy that is already dependent on external trade markets, these indirect effects add an additional element of volatility to the Irish outlook that may arise from a decline in global, sectoral or firm-specific economic conditions.

Box D: Minding the perception gap: how do consumers perceive inflation in Ireland?

By Zivile Zekaite

Central banks closely monitor consumer inflation expectations. Beliefs about future inflation can affect people's economic behaviour, such as their consumption, investment and labour market decisions, and subsequently feed into actual inflation as measured officially by a consumer price index (D'Acunto et al., 2024). Among other things, inflation perceptions, i.e., what people think inflation was in the recent past, is a significant determinant of inflation expectations, (Weber, Gorodnichenko and Coibion, 2022; Huber, Minina and Schmidt, 2023). Generally, consumer survey evidence shows that perceived inflation by consumers at the aggregate level is higher than officially measured inflation – that is, there exists a positive *inflation perception gap*. This may result in higher inflation expectations than in the case of a zero gap. Furthermore, inflation perceptions across consumers are widely dispersed.³⁹

³⁹ The same properties can also be noted for consumers' inflation expectations.

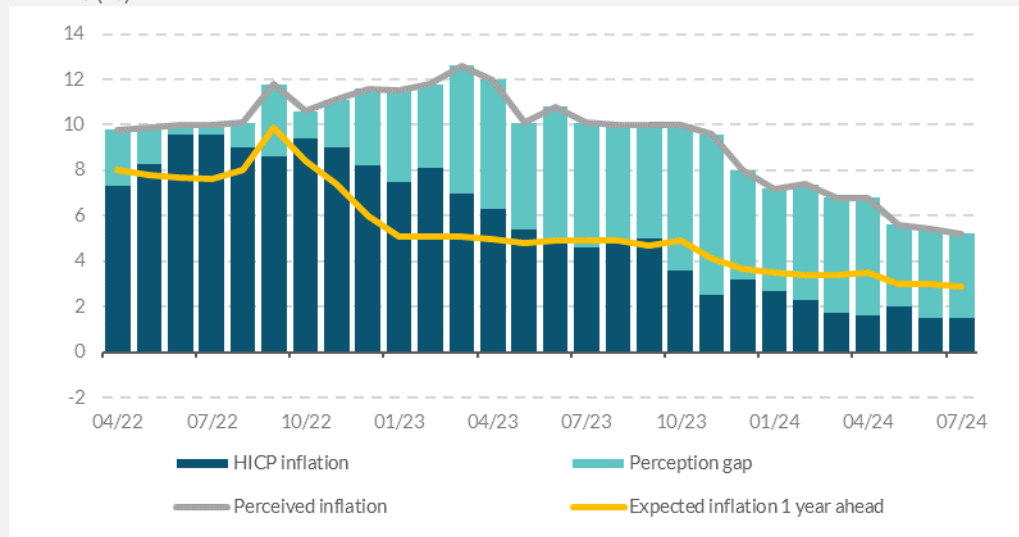
Since April 2022, the monthly Consumer Expectations Survey (CES) run by the European Central Bank (ECB) provides timely information on inflation expectations and perceptions in Ireland and other euro area countries.⁴⁰ Quantitative inflation perceptions are gauged by asking respondents “How much higher [lower] do you think prices in general are now compared with 12 months ago in Ireland?” The analysis in this Box uses these data to examine consumer inflation perceptions in Ireland between April 2022 and July 2024.

Determinants of inflation perceptions in Ireland

The median perceived inflation gap reported by survey respondents in Ireland was modestly positive in early 2022. By early 2023, the gap had widened substantially as consumer inflation perceptions increased while actual consumer price inflation, measured as the year-over-year percent change in the Harmonised Index of Consumer Prices (HICP), declined (Figure 1). In July 2024, median inflation perceptions are 3.7 percentage points above the official inflation rate.⁴¹ Inflation perceptions are correlated with inflation expectations, which also exceed HICP inflation. Similarly, the perception gap is large and positive at the euro area level, although smaller than in Ireland (Figure 2).

In Ireland, the perceived inflation gap widened after inflation peaked in 2022 and remains large and positive.

Figure 1
per cent (%)



Source: ECB CES, Eurostat.

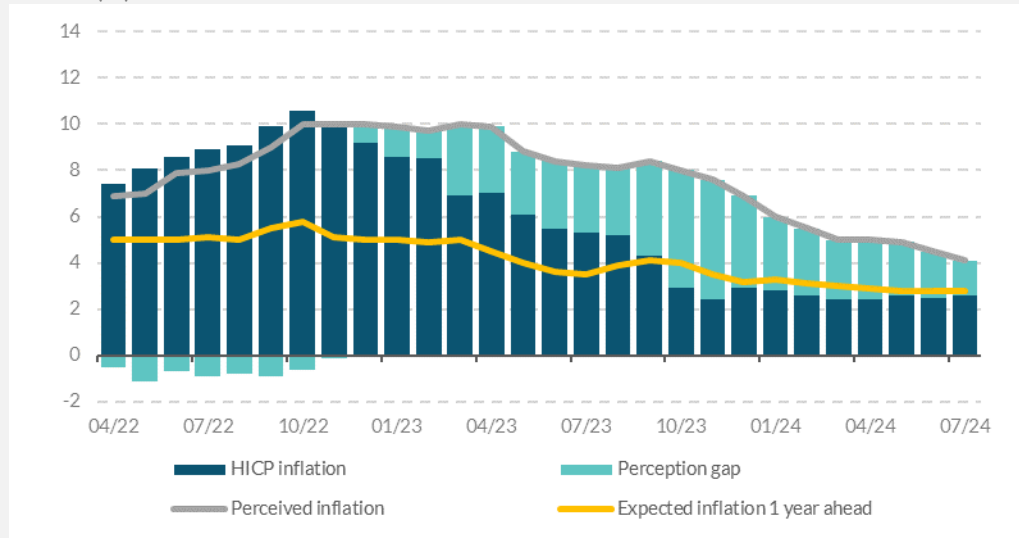
Notes: survey weights used to ensure population representation. Perceptions refer to a median value to abstract from outliers.

⁴⁰ Eleven countries are covered: Belgium, Germany, Spain, France, Italy and the Netherlands since April 2020, with Ireland, Greece, Austria, Portugal and Finland included since early 2022.

⁴¹ Similarly, if the Consumer Price Index (CPI) is used instead, the gap is large and positive. See [here](#) for more about the differences between HICP and CPI inflation.

At euro area level, a positive perceived inflation gap also widened in 2023, but it remains smaller than in Ireland.

Figure 2
per cent (%)



Source: ECB CES, Eurostat.

Notes: survey weights used to ensure population representation. Perceptions refer to a median value to abstract from outliers.

In an attempt to understand the drivers of the perception gap, we estimate a simple model based on the data collected among consumers in Ireland.⁴² The baseline results show that sociodemographic characteristics matter but explain only a small share of the variation in the perception gap (less than 5 per cent). A higher inflation perception gap is associated with being a female, living in small cities and rural areas, lower education level, lower household income, being over 35 years old, actively paying for housing services through either a mortgage or rent, having children younger than 18 years. This is broadly in line with similar analysis for other countries ([Arioli et al., 2017](#); [Abildgren and Kuchler, 2021](#); [Bignon and Gautier, 2022](#)).

Systematic differences in inflation perceptions across sociodemographic groups likely reflect personal experiences with inflation, amongst other factors. A consumer's own basket of goods and services could be very different to that used to construct the official consumer price index. Consumers tend to form inflation perceptions relying heavily on their own shopping experience, especially on prices of frequently bought items, such as

⁴² In the baseline Ordinary Least Squares (OLS) model, perceived inflation of an individual is regressed on a set of indicators reflecting main socio-demographic characteristics: gender, education, income, age group, region of residence, degree of urbanisation of residence location, housing tenure, employment status, the number of children, and country of birth. Survey weights used to ensure respondent sample is representative of the population. The full results are available from the author on request.

food, fuel and rents ([Huber, Minina and Schmidt, 2023](#)). According to the Central Statistics Office (CSO), certain groups of households experienced relatively greater inflation over the five years to September 2023. This includes households on lower income, homeowners with a mortgage, and people older than 35 years, in line with the results discussed above.⁴³

Next, the baseline model is extended to include additional factors: respondents' assessment of the current unemployment rate, own knowledge and experience in financial matters, experienced changes in one's household's financial situation over the past year, as well as controls for common shocks and economic trends over time, e.g., actual inflation developments. While controlling for sociodemographic information, a higher perceived inflation gap is significantly associated with a more pessimistic view of the current unemployment rate, experienced deterioration in the household's financial situation and not being a sole maker of daily financial decisions. [Abildgren and Kuchler \(2021\)](#) also find that overly-pessimistic households in Denmark report higher inflation perceptions.

The extended model explains 14.5 per cent of variation in the perception gap. In terms of explanatory power⁴⁴, the perceived unemployment rate, past changes in own financial situation as well as gender appear to be most important.⁴⁵ Among males who report a stable or improved financial situation and believe the current unemployment rate is 5 per cent or less (optimists), the median perceived inflation gap is 2 percentage points. This is five times lower than the median gap among females who report a worsened financial situation and believe the current unemployment rate is above 5 per cent (Figure 3).

As the model explains only some of the perception gap variation, there are likely other factors behind the elevated inflation perceptions in Ireland. Consumer inflation perceptions could be influenced not only by certain frequently purchased items but also by items excluded from consumer price indices, e.g., house prices ([Zekaite, 2020](#)). Consumers underestimating prices they actually paid for their purchases in the past could also explain an upward bias in perceived inflation ([D'Acunto et al., 2024](#)). Observed price increases or inflationary news may have a bigger impact on inflation

⁴³ See the latest release at the time of writing [here](#).

⁴⁴ Measured as a change in the model's fit due to the inclusion of a respective variable.

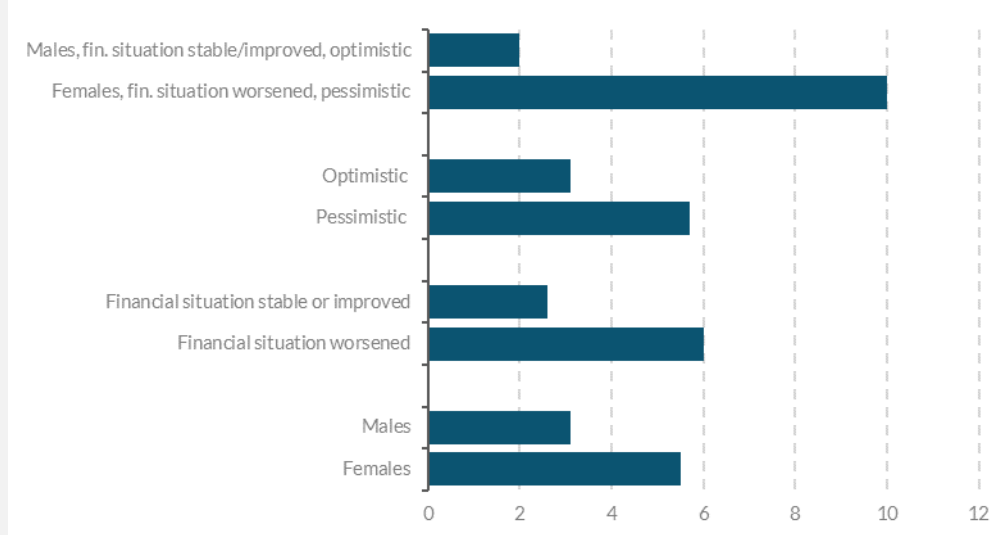
⁴⁵ The gender factor may be linked to grocery shopping duties ([D'Acunto, Malmendier and Weber, 2021](#)).

perceptions than price cuts or deflationary news ([Stanisławska, 2019](#); [Baqae, 2020](#)). In addition, consumers' attentiveness to inflation news more generally may have an effect on perceptions ([Guillochon and ter Ellen, 2023](#); [Weber et al., 2024](#)).⁴⁶

Differences in gender, economic sentiment and past developments in own financial situation result in large differences in perceived inflation gap.

Figure 3

Median perceived inflation gap (percentage points)



Source: ECB CES, own calculations.

Note: for each respondent, the gap is calculated as the inflation perception less actual HICP inflation rate for each month in the sample. Survey weights used to ensure population representation, inflation perceptions are winsorised at the 2nd and 98th percentiles. "Optimistic" denotes a respondent who believes current unemployment rate is 5 per cent or less, while "Pessimistic" respondent believes it is above 5 per cent. Financial situation change refers to self-reported worsening/improvement of household financial situation over the previous twelve months.

Conclusion

Overall, consumers in Ireland perceive inflation to be much higher than the official measures. The analysis in this *Box* suggests that inflation perceptions vary systematically across sociodemographic groups and relate to personal inflation experiences as well as economic sentiment. Further research is warranted to better explain the large positive perception gap in Ireland, why it is greater than at the aggregate euro area level, and whether it influences consumer behaviour in areas such as spending and saving decisions or in wage demands. The Central Bank continues to monitor consumers' inflation perceptions and expectations as part of its ongoing surveillance of the Irish economy.

⁴⁶ The list of potential factors discussed in this box is not exhaustive.

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.

Economic policy issues in the Irish housing market

Executive Summary⁴⁷

The capacity of housing supply to meet underlying demographic needs is a key driver of sustainable growth in living standards. Following the Global Financial Crisis, the Irish housing market has been subject to more than a decade of under-supply. Over this period, house price and rental growth have outstripped income growth, stretching affordability. While these challenges have a global dimension, housing output as a share of national income here has been significantly below the euro area average for a prolonged period.

At its core, the underlying challenge relates to the housing system's ability to produce viable housing projects at the required scale. Viability refers to producing housing units at sale or rental prices that are consistent both with the costs of production and within the reach of Irish households, given income levels. Sustainably bridging the gap between purchaser affordability and viability for the construction sector is a priority for public policy, with increasing economic implications both now and into the future, if not achieved.

Policy has already responded to this challenge. From a fiscal perspective, the State has increased spending on housing from an estimated €1bn to €6.5bn per year over the past decade, with around three quarters now devoted to capital and one quarter to current spending. Irish government housing expenditure is now the second highest proportionately in the EU, and close to its 2007 peak. In that context, our analysis points to the need to consider *how* the State uses its wider policy tools, as well as its financial resources, to most efficiently enable higher housing supply.

Housing supply has increased meaningfully in recent years. In 2023, levels of housing completions were broadly in-line with previous estimates of underlying demand embedded in the Government's housing plans. However, population growth has exceeded previous expectations in recent years, meaning that previous estimates must be revised upwards. Further, the under-delivery of homes relative to underlying demand over more than a decade has meant that significant "pent-up" demand has accumulated.

Estimates of the underlying need for housing have increased. Updated estimates by Central Bank staff based on new population projections by the CSO – and taking into account the accumulated pent up demand – indicate that around 52,000 new homes could be needed per year out to the middle of the

⁴⁷ Produced by the Central Bank's Working Group on *Housing and the Macroeconomy*. Corresponding authors: Thomas Conefrey, Fergal McCann, Martin O'Brien. Group membership comprised Angelos Athanasopoulos, David Staunton, Paul Kilgarriff, Tamanna Adhikari, Niall McLnerney, Gerard Kennedy, Mudabbir Farooqi, Niall McGeever, Michael Mahony, Edward Gaffney, Rónán Hickey, Anuj Pratap Singh, Emil Bandoni. Special thanks to external stakeholders who provided input during this project: Dermot O'Leary, Aileen Gleeson, Mike Hoey, Michelle Norris, Colin Richardson, Fergus Mangan, Paul Mitchell, Eleanor Treanor. The views expressed in this Article are those of the authors and do not necessarily reflect the official position of the Central Bank of Ireland or the European System of Central Banks.

century, or a 20,000 unit increase relative to 2023 supply. Of course these estimates rely on assumptions and are subject to uncertainty, as was evident for example in the faster than expected population growth since the last set of population projections in 2018.

There are **three overlapping dimensions** that will have a bearing on construction viability and the ability of the market to deliver additional housing supply to the scale envisaged in this *Article*:

- **Planning, building regulation and serviced land:** A complex and protracted planning environment, alongside issues relating to the size and specifications of housing units, add to the costs of delivering housing. Capacity to deliver the necessary enabling infrastructure, as well as zoned land, in areas where demand is highest also remains a source of uncertainty.
- **Capacity and productivity of the construction sector:** The financial crisis has left long-lasting scars on the construction sector. Its productivity is low, both by historical and cross-country standards. In part, this relates to an over-reliance on small enterprises, not able to benefit from economies of scale and suffering from over a decade of relative under-investment in machinery, equipment and more widespread adoption of modern technologies. This leads to comparatively lower output per worker and will pose challenges in scaling towards higher delivery requirements. It also means that the sector is less well placed to absorb higher costs of labour and more globally determined raw material inputs needed to produce housing.
- **Access to development finance:** Delivery of circa 50,000 units per annum would require sustainable access to financing of sufficient scale. Our analysis suggests that an estimated €6.5bn to €7bn of additional development finance over and above the maintenance of existing levels would be required to fund 20,000 additional homes per annum. This additional finance will require a diverse set of domestic and international sources. Our analysis suggests that key debt financing sources – including bank and non-bank lenders – have the potential capacity to extend additional financing. The ability of the construction sector to generate or attract equity capital may be more challenging however, in light of the two dimensions outlined above.

These dimensions overlap and re-enforce each other. Additional financing alone cannot rectify housing imbalances. Construction firms are more likely to achieve scale in a setting where adequate amounts of zoned and serviced land are available, in locations where the demand for housing is highest. At the same time, addressing viability challenges and improving productivity will strengthen the construction sector's ability to attract equity capital, which will in turn improve its capacity to raise debt and maintain an essential diversity of financing.

Our macroeconomic scenario analysis highlights the economic costs of prolonging the imbalance between housing demand and supply. These amount to a higher cost of living, and in turn, a higher cost of doing business in Ireland, ultimately damaging competitiveness and the sustainable growth in living standards of Irish residents over the medium-term. However, **transitioning to produce an additional 20,000 residential properties also comes with risks to the economy and public finances that need to be carefully managed.** It presents trade-offs which policy needs to actively consider, especially in the context of an economy that is operating at, or around, capacity, and also faces additional needs for broader infrastructure investment.

The analysis highlights the importance of policy interventions that **seek to close the gap between affordability and viability, through reducing the cost of housing delivery.** Further addressing the viability of housing delivery requires a multifaceted approach encompassing fiscal and non-fiscal policy interventions. In this respect, over and above the appropriate role of the State in directly meeting the

housing need of those in the lower end of the income distribution, the relative balance of public policy action should focus more on enabling measures, including:

- (1) Addressing challenges and providing policy certainty in the planning and building regulation process;
- (2) Focusing additional direct capital investment on necessary infrastructure and appropriately funding the provision of more serviced land in areas of high demand;
- (3) Incentivising greater scale and productivity in the construction sector through initiatives that lead to enhanced adoption of modern construction methods, standardisation of designs, and other innovations within the procurement process;
- (4) Using policy levers to further incentivise and crowd-in private investment, in particular equity investment, into the construction sector.

1. Introduction

Housing is unique within the economy, being both an essential good for households' consumption as well as a key investment and asset class for households and financial institutions. Challenges facing the housing market can have a wide range of societal as well as economic implications, including for labour supply, inflation, competitiveness, regional reallocation, and fiscal sustainability. Broadly speaking, the market is divided into three blocks, which involve distinct forms of development and financing: the owner-occupier market, the private rental market, and social or affordable forms of housing. Given its societal importance, housing is closely connected to government policies and subject to a wider range of interventions than is common in most product markets.

The Irish housing market has undergone extraordinary volatility over more than two decades. Ireland experienced among the most amplified boom-bust cycles in housing either side of the post-2008 crisis (referred to hereon as the Global Financial Crisis, GFC). Over the period 1997 to mid-2007, the ratio of house prices to household disposable income (HPI) more than doubled, with the HPI ratio reaching 5.5.⁴⁸ An unsustainable loosening in credit conditions, which ultimately ended in the Irish financial crisis, drove this growth. During the 2007-2013 period of sharp credit contraction and widespread mortgage

⁴⁸ To calculate the HPI ratio, an estimate of the average national house price, is divided by the CSO's total disposable income figure itself divided by the number of households in the State.

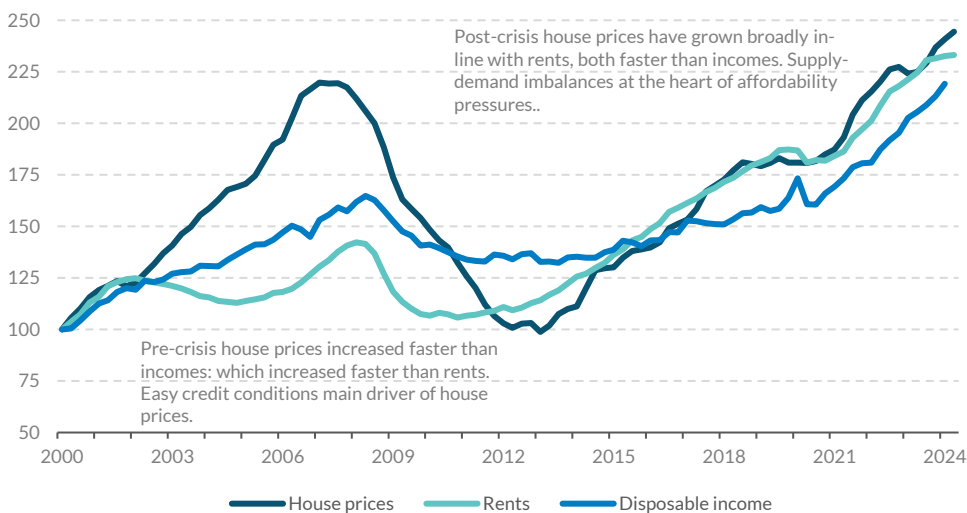
default, the HPI ratio fell sharply, with the fall in nominal house prices above 50 per cent driving close to half of all mortgage holders into negative equity.

House prices and rents have steadily risen relative to incomes over the past decade, despite muted credit growth. From end-2014 to early 2024, HPI rose from 3.5 to 4.1. This growth in house prices relative to incomes over the past decade has not been driven by credit growth, which has been contained by the Central Bank of Ireland’s macroprudential mortgage measures. Rather, the fundamental driver has been sluggishness in the response of housing supply to the growth in underlying demand. This imbalance, and in particular challenges relating to the supply of new housing in cities, has not been unique to Ireland, with similar experiences across the developed world over the same period. The dynamics of rents relative to incomes, another measure of affordability for households accessing housing services, also shows a similar profile since 2014 (Figure 1).

House prices and rents have up until very recently been volatile relative to incomes

Figure 1

House prices, rents and disposable incomes (index 2000 = 100)



Source: CSO and Central Bank of Ireland calculations.

Ireland’s housing system differs from other European markets in a number of ways. The homeownership rate in Ireland has fallen from a historical high of 79 per cent in 1991 to 66 per cent in the most recent Census, now standing at almost exactly the European average. However, certain features of the housing system in Ireland differ from many other markets across Europe. For example, Ireland has the lowest share of households living in an apartment of any

European country.⁴⁹ In addition, Ireland has among the highest number of persons per household in Europe. This partly reflects Ireland's high share of households with children, but is also partly explained by a long period of constrained housing supply relative to underlying demand. The estimated share of social housing in the total housing stock in Ireland is above European and OECD averages.⁵⁰

In this *Article*, we highlight key issues facing the housing market for the years ahead. After more than a decade of under-supply amid recovery from the GFC, Ireland is facing a situation where the population is growing at a faster rate than was previously expected. In this setting, it is critical to Ireland's long-term economic well-being that the housing market can supply homes to meet estimated levels of demand. The economic and societal importance of this issue is borne out in the level of public discourse and policy focus devoted to the housing market in recent years, most notably in the 2024 report of [The Housing Commission](#). In this *Article*, we focus on the macroeconomic dimensions of this challenge. In particular, we produce updated estimates of the demographic-led need for new home supply. We assess the key factors that will have a bearing on the capacity of the housing system to meet these levels of underlying demand, broadly relating to planning, productivity, and finance. Finally, we assess the macroeconomic implications of the under-supply of housing persisting, as well as the key economic trade-offs related to increasing the delivery of housing substantially in the future, in the context of the current cyclical position of the economy.

2. Recent developments in supply and demand

Housing supply has not kept up with the growth in underlying demand based on the rise in population. Previous estimates of annual housing need for the period 2020-2029 – based on CSO population projections from 2018 – ranged from 34,000 to around 45,000 units.⁵¹ Population growth has been faster than envisaged in the 2018 projections. Overall, the cumulative number of housing units added over the 2011 to 2022 period was far below the growth in the

⁴⁹ See, for example, <https://ec.europa.eu/eurostat/web/interactive-publications/housing-2023#environmental-impact-of-housing>

⁵⁰ [OECD Affordable Housing Database](#). Data for 2022 show approximately 12 per cent of the housing stock in Ireland is social rental, with the equivalent for the OECD (EU) being closer to 6 (9) per cent. Social rental includes housing provided by for-profit and individual providers and non-governmental not-for-profit entities, but the cost of which is ultimately paid by central or local government. Approximately 55 per cent of Ireland's social rental housing stock was provided directly by local authorities in 2022.

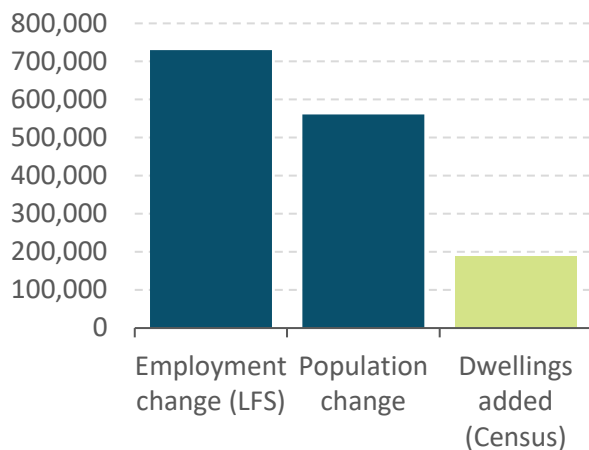
⁵¹ See, for example, [Conefrey and Staunton \(2019\)](#).

population and in the labour force (Figure 2). Relative to the euro area in aggregate, the extent of this period of undersupply in housing in Ireland is striking. Housing output as a share of national income remains below 5 per cent in Ireland, and has now been lower than the euro area average since 2010 (Figure 3), pointing to the persistent scars of the financial crisis on housing supply.

Population and employment growth far exceeded growth in housing 2011-2022

Figure 2

Number of individuals/dwellings

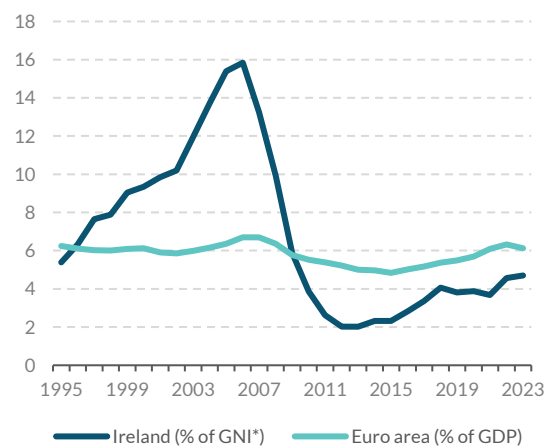


Source: CSO, LFS and Census.

Housing investment in 2023 was below its 1995 share of national income

Figure 3

Per cent of national income



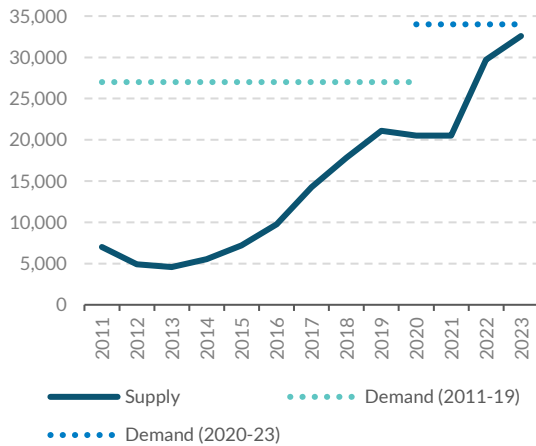
Source: CSO, Eurostat

Despite the challenges facing the sector, momentum has picked up since 2021, with supply approaching previous demand estimates. New supply increased from circa 20,000 to 21,000 per year in 2019-2021 to circa 30,000 and 32,500 in 2022 and 2023, respectively. The 2023 outturn was close to the target contained in the Government's *Housing for All* plan, based on estimates of housing demand from 2020 which have recently been updated (Figure 4). These increases occurred during a period when construction costs continued to rise. While distortions in the timing of delivery may have played a role in the specifics of year-on-year developments, the trajectory points to significant improvements in the supply capacity of the housing system, despite ongoing challenges. The enhanced role of State intervention in financing at various stages of the development or sales process, and across a range of procurement models, may also have contributed to this increase. Apartment completions have been particularly important, rising from 3,900 in 2020 to 11,600 in 2023, while scheme houses (i.e. those in multi-unit developments of two or more units) increased by 5,000 to 15,500 over the same period (Figure 5).

Housing supply in 2023 reached previous estimates of long-term demand in Government plans, now being updated

Figure 4

Units Completed



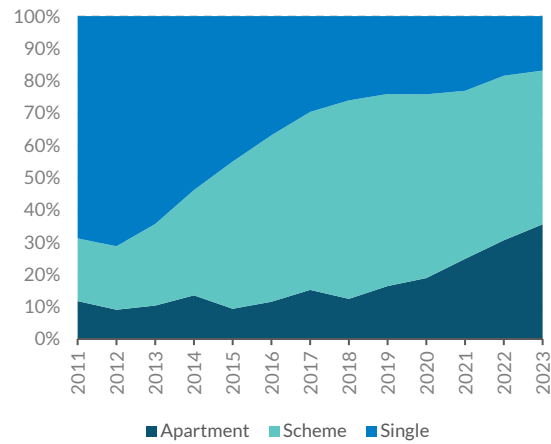
Source: CSO, table NDA02 (Supply); [Conefrey and Staunton \(2019\)](#) for estimates of demand.

Notes: The 34,000 estimated annual housing demand (lower horizontal line) was calculated from 2020-2029 using CSO’s 2018 high migration scenario (M1) with unchanged headship and was published in 2019. The figure is close to the 33,000 target for annual completions out to 2030 in the Government’s *Housing for All* plan. The 27,000 figure is based on a retrospective calculation of estimated housing need over the period 2011-2019 based on the observed population growth over this period.

Apartments have been the most important driver of supply growth

Figure 5

Percentage Share



Source: CSO, Table NDA02

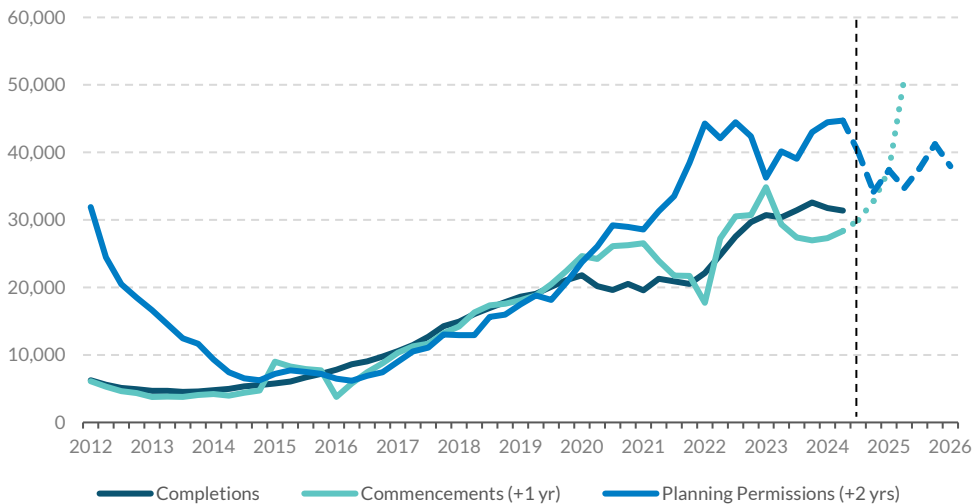
Traditional relationships between supply indicators have become more volatile recently. Historically, the relationship between planning permissions, commencements and completions in the Irish housing market had been relatively stable. Once planning permission for a housing project was acquired, construction tended to commence about a year later, which typically led to the delivery of housing units 12 to 18 months after that (Figure 6). A surge in planning permissions from around 29,000 units per annum in early 2019 to well over 44,000 in 2020 was not matched by a corresponding increase in the number of units completed in subsequent years. Further complicating the picture is the recent surge in commencements from around 30,000 units in 2023 to well over 50,000 by 2024Q2. The increase in commencements likely relates to an anticipated ending of the waivers on development levies and water connection charges for developers earlier this year, which were subsequently extended to the end of December and September 2024,

respectively. This introduces some uncertainty into the usual permissions-commencements-completions cycle with implications for forecasts for activity in the sector.⁵²

Lagged construction indicators may have become less informative since the pandemic

Figure 6

Housing units



Source: CSO table (completions), table (commencement notices), table (planning permissions) and Central Bank of Ireland calculations

Note: Completions data are real time, commencements data are moved 1 year forward, that is, the initial observation in the series is from 2011Q1, while planning permissions data are moved 2 years forward, that is, the initial observation in the series is from 2010Q1. Latest observations 2024Q2.

A quarter of new home completions can be attributed to new-build social housing in recent years, but the State's role extends more broadly than this. An indicative breakdown of 2023 completions highlights the importance of the State within the housing system. From approximately 32,500 homes delivered last year, 8,110 can be identified as directly provided social houses. Separately, close to 3,900 social homes were provided through leasing or acquisition in 2023, although these homes were not necessarily completed in that year.⁵³ The rapid build-up in State capital spending from 2015 to 2023 (from €1bn per year to €5bn per year, see Section 5) suggests that new housing supply will continue to be supported by the State over the coming years.

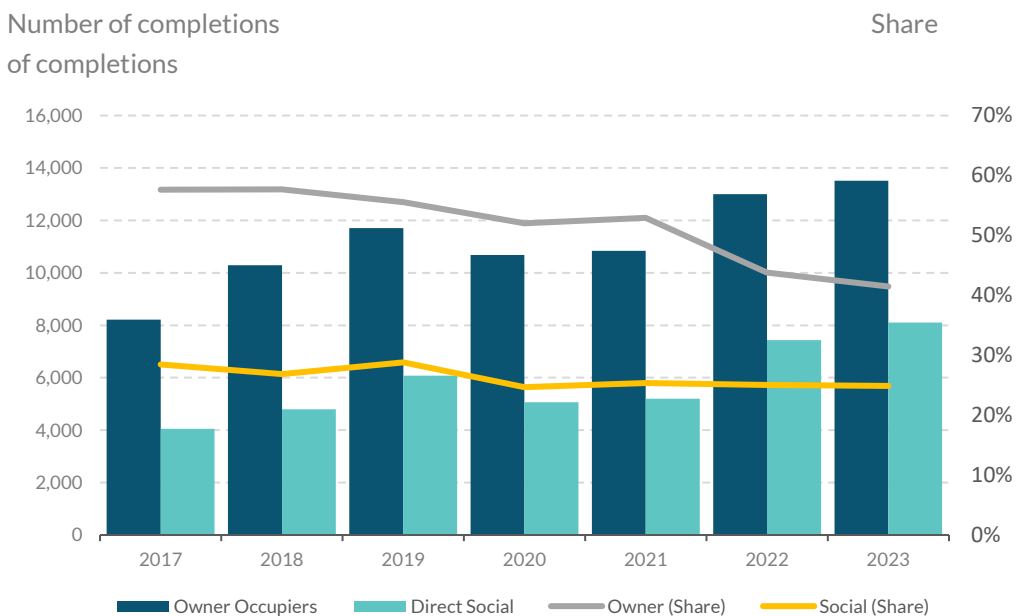
⁵² See Quarterly Bulletin 2, June 2024. "[Housing Supply: uncertainty in the delivery cycle](#)".

⁵³ Department of Housing [data](#). The 11,939 total includes 8,110 new-build homes, 1,830 acquisitions and 1,999 homes through leasing programmes. On top of this, the State is also involved in the funding of cost-rental and affordable housing, which are measured and reported separately.

Owner-occupiers have purchased more than half of newly-supplied homes for most of the past decade, but this share has fallen in the past two years. Owner-occupiers can access new housing supply in two ways, either through the self-build of one-off houses, or through the purchase of newly-built homes. Using a combination of BPFi and Central Bank of Ireland data, we provide a joint estimate of total owner-occupier purchases of newly-built homes per year since 2017. While their *volume* increased from 8k to 13k over the period 2017-2023, the *share* of owner-occupier purchase/builds in new home supply has fallen from 60 per cent to close to 45 per cent over the period. During that period, new build social housing has grown in proportion with total market-wide supply, with its share remaining close to 25 per cent.

The share of newly built homes accounted for by owner-occupiers has been falling

Figure 7



Source: BPFi, Central Bank of Ireland, CSO, Department of Housing

Notes: **Owner Occupier** combines BPFi data on mortgages for new house purchase, Central Bank granular data on New Build loans, and CSO housing completions data on One-Off housing. **Direct Social** includes new-build social housing, excluding acquisitions and leases, as reported by [Department of Housing data](#).

The private rental sector (PRS) has been a key driver of the growth in apartment delivery in particular over the past half-decade. While a direct breakdown is not available, it is likely that many of the newly-supplied homes not captured by either category in Figure 7 were for the purpose of institutional investment in the PRS. According to figures from [Hooke and McDonald](#), of the 58,000 new units completed in Dublin over the period 2016

to 2023, about 20,000 transacted in the residential investment / PRS market.⁵⁴ Separate research from [Daly \(2023\)](#) estimates that institutional investment in new housing units averaged between 3,000 and 4,000 annually between 2019 and 2021. Consistent with global patterns, transactions of new units in the PRS segment decreased sharply during 2023 and into 2024, relative to previous years, in the context of higher interest rates. While the outlook for global institutional investment in residential property is uncertain, the Dublin market continues to offer competitive yields with respect to other European locations.⁵⁵

3. The demand for housing

Demographic determination of housing demand

The role of demographic change in driving housing demand is central to projections for the need for new dwellings over the medium to long term.

Population growth has a direct effect on housing demand, as does the rate at which people in each age category form households (known as the “headship rate”). Since these factors are subject to a significant degree of uncertainty, we estimate scenarios for Irish housing demand under a range of assumptions for population growth and headship by age. The latest population projections from the CSO, released in July 2024, run for the thirty-five years from Census 2022 until 2057.⁵⁶ These are based on assumptions for the natural increase (births minus deaths) and net migration (immigration minus emigration).

⁵⁴ This figure includes more than 14,200 new units purchased by investors, in addition to over 4,000 apartments developed by entities intending to rent out these properties on their own behalf. According to Hooke and McDonald, transactions of new builds in the resident investment/PRS market have declined in recent years, from over 4,000 units in 2021, to 2,700 units in 2022 to less than 200 units in 2023, owing to a combination of global financial factors and increased uncertainty surrounding elements of domestic rental market policy.

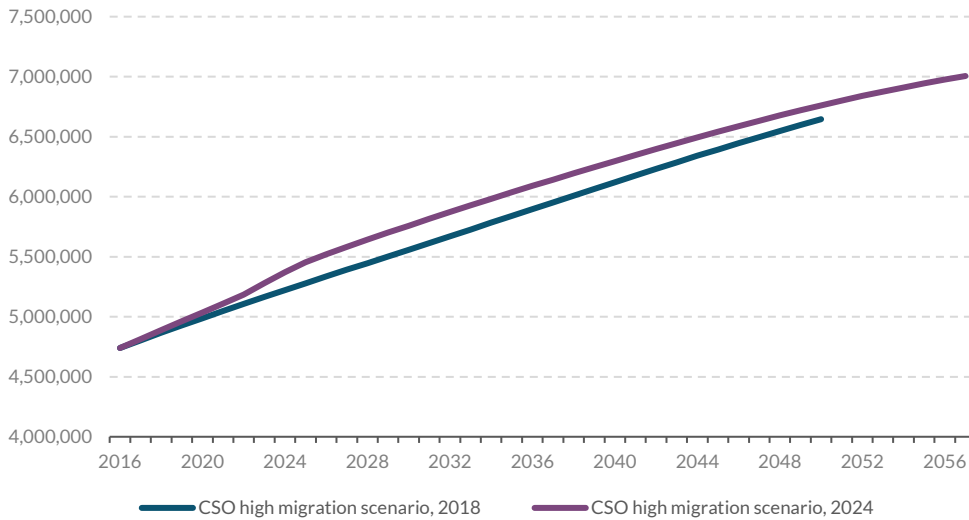
⁵⁵ See for instance [Catella](#) “*European Residential Market Overview*”, 2023Q3, according to which prime residential yields in Dublin at the time (4.75 per cent) were 6th highest from a list of 20 European capital cities and well above the European average of 4.35 per cent. In addition, prime residential yields in Cork (5.5 per cent), rank tied-3rd highest amongst a more comprehensive list of 56 European cities.

⁵⁶ [CSO population and labour force projections, 2023 -2057](#)

Projected population in new CSO high migration scenario (July 2024) higher than in 2018 exercise

Figure 8

Persons



Source: CSO

Assumptions around net migration flows have increased significantly since the 2018 projections. The 2018 population projections had a low and high fertility scenario for each of the three migration scenarios, giving six projections in total. There is just one fertility scenario used in the current projections so we present housing demand for each of the three migration scenarios. All three scenarios have net migration of 75,000 at the beginning of the projection, but vary in how net migration falls over the coming decades. In the high migration scenario, net migration declines to 45,000 per year by 2027, maintaining this rate until 2057. In this scenario, the population grows to just above 7 million people by 2057. The moderate net migration scenario also assumes net migration declines incrementally from 75,000 to 30,000 persons by 2032 and remains at this level until 2057 when the population reaches 6.4M. The low migration scenario sees net migration fall to 10,000 persons by 2032, leading to a population of 5.7M in 2057. The projected population in the high migration scenario in the updated CSO projections exceeds the highest forecast from the previous vintage of projections published in June 2018 (Figure 8).

We use the CSO population projections to generate housing demand scenarios to 2050 using the headship rate method.⁵⁷ Taking the new population projections from the CSO, the total housing need can be projected by allowing the housing stock to grow in line with the growth in the population in each age

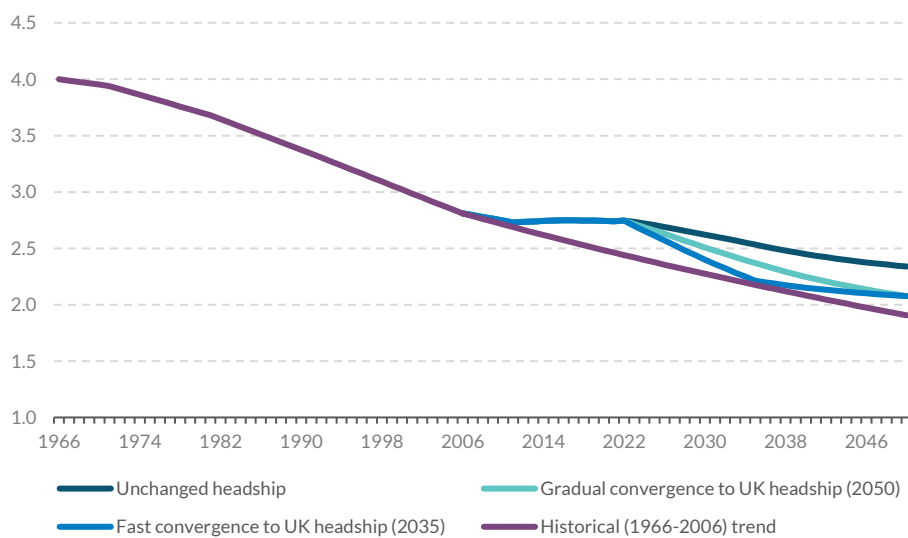
⁵⁷ See Pirounakis, G., N (2013) *Chapter 7: Housing Demand and Supply in Real Estate Economics: A Point-to-Point Handbook*, Routledge.

group, taking into account the probability of headship at each age. The headship rate refers to the proportion of individuals in an age group who are head of a household. Combining the headship rate and the projected change in the levels of the population across age groups yields a particular value for the number of persons per household (PPH). The results of the projections are summarised in Table 1 and show that between 27,000 and 42,000 new dwellings are needed annually to maintain current headship rates. While all scenarios imply a reduction in persons per household in aggregate, this does not imply that household formation has increased for all age categories. Rather, it is the result of population ageing - more of the population in 2050 will belong to the higher headship age brackets (e.g. > 65 years old). The headship rates within each category remain unchanged so younger age groups would, in these scenarios, continue to exhibit suppressed household formation as identified by the Housing Commission.

Number of persons per household is projected to decline under each scenario

Figure 9

Persons per household



Source: CSO

Notes: Persons per household is presented using the population in private households.

To account for ‘pent-up’ demand for housing, we allow the headship rate to increase at each point of the age distribution in two alternative scenarios, where Irish headship rates converge to that of the UK. Two speeds of convergence are considered.⁵⁸ One where UK headship rates are reached by

⁵⁸ We use the same UK headship rates as the Housing Commission (2024) which are taken from the England and Wales census, since a single UK wide census does not exist. The increase

2050, and an accelerated scenario where UK headship is reached by 2035. The convergence to UK headship rates implies a significantly higher annual housing need of 52,000 dwellings. All scenarios naturally contain some frontloading due to the profile of demographic change embedded in the population projections. However, this is particularly pronounced in the fast convergence scenario, where 67,000 dwellings would need to be completed per annum to reach UK headship by 2035, with a lower estimated number needed thereafter. The scenario assuming convergence in the Irish headship rate to that of the UK, and by extraction a lower PPH, effectively incorporates an estimate of pent-up demand for housing into future housing demand projections. This implies an assumption that the current level of headship in Ireland, particularly for younger age cohorts, is artificially low due to a lack of housing supply.

In all scenarios, the required completions are higher in the early years of the projection. This is due to the faster rate of demographic change implied by the high inward migration at the beginning of each demographic scenario. In addition, in the scenario where UK headship is reached by 2035, a higher number of new dwellings have to be completed in the first half of the projections.

Table 1: New dwelling scenarios under a range of demographic assumptions

	Low Migration	Moderate Migration	High Migration	High Migration - UK headship convergence (by 2050)	High Migration - fast convergence (by 2035)
Population in 2050	5.8M	6.3M	6.8M	6.8M	6.8M
Average completions 2023 - 2035	33,000	37,000	42,000	54,000	68,000
Average completions 2023 - 2050	27,000	34,000	39,000	52,000	52,000
Number of new dwellings by 2050	754,000	948,000	1,102,000	1,461,000	1,461,000
PPH in 2050	2.4	2.4	2.4	2.1	2.1

Note: Completions include obsolescence of 0.25% of 2022 stock per annum.

The headship rate method does not project actual economic demand and the projections are subject to uncertainty. It estimates the underlying need for housing based on assumptions around demographic change and household size. The level of housing actually demanded each year until 2050 will depend

is concentrated in the younger age brackets with the largest increase coming in the 25 to 29 age bracket, which rises from 26 per cent to nearly 38 per cent.

on a range of factors including economic growth, wage developments, and household preferences. All of these factors are co-determined and as such difficult to project over the long term. The usefulness of this approach lies in highlighting that the new CSO population projections imply a significant increase in housing need over the coming decades relative to previous projections. Of course, this estimation approach necessarily relies on assumptions and is subject to uncertainty, as was evident for example in the faster than expected growth in the population since the 2018 CSO population projections. It is, therefore, important that these assumptions are revisited on a periodic basis.

The composition of demand: housing tenure

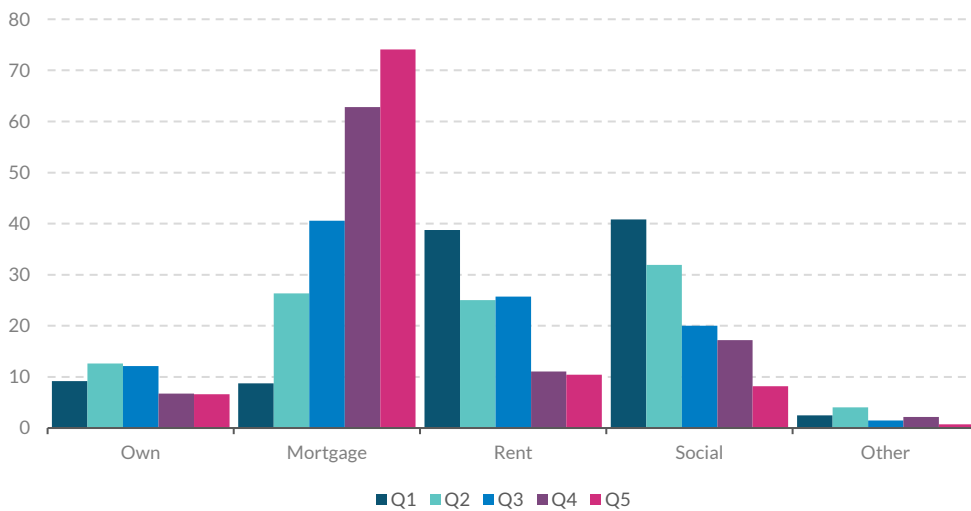
[Homeownership has traditionally been the predominant tenure type of Irish households, but this has been declining for some time.](#) Two thirds of Irish households own their own home. However, the homeownership rate has been in decline, falling gradually from a historical maximum of 79 per cent in 1991, driven by a range of forces including changing lifestyles, family formation, job security, migration, credit availability, and the removal of purchase schemes for social housing tenants, which was a historic driver of high homeownership. Ireland's current homeownership is close to the European average.

[Among 25-50 year olds, the homeownership rate is 52 per cent.](#) Focussing on those aged 25 to 50, the group more likely to have demand for new housing for purchase, the homeownership rate of 52 per cent composes 9 per cent outright owners and 43 per cent owning with a mortgage. The remainder is composed of those renting privately (22 per cent) and those in social forms of housing (24 per cent).

Homeownership is much more common at higher income levels

Figure 10

Share of households (Percent)



Source: EU-SILC

Notes: households in which head of household is between 25 and 50 years old. “Own” implies outright ownership without debt, while “Mortgage” implies ownership with a mortgage.

Tenure varies widely across the income distribution. According to Central Bank analysis of SILC micro data for households aged 25-50, about 10 per cent of households in each income quintile own their home without a mortgage (Figure 10). The strong relationship between income and tenure is apparent when analysing the share of households owning with mortgages: 9 per cent of those in the bottom quintile own their home with a mortgage, compared to over 70 per cent in the top quintile. By contrast, over 40 per cent of bottom-quintile households are in the social housing system, with another 39 per cent in private rental.

The strong relationship between incomes and tenure types suggests that future housing supply will require a diverse set of property types, serving a variety of needs. The patterns in Figure 10 provide important context on the likely required composition of future new home supply. The proportion of lower-income households that access housing via private mortgage-financed ownership has typically been small, a pattern that is likely to persist. This underlines the importance of the provision of social and affordable housing, as well as private rented accommodation, in providing housing to meet the diverse needs of different groups of the population. On the other hand, the majority of new housing provided to higher-income households is likely to continue to be for private mortgaged owner-occupation. The breadth of tenure

types across the population points to the need for housing policy to ensure that supply is enabled to respond flexibly to demand across all market segments. In particular, a private development sector that can viably supply housing at price points that are affordable for broad cohorts of the population, is an essential complement to a State-supported housing sector focussed on those with lower incomes.

4. The drivers of housing supply

In this study, we identify three broad themes that will have an important bearing on the capacity of the housing market to increase supply to circa 50,000 homes per year:

- Planning, building regulation and serviced land
- Capacity and productivity of the construction sector
- Development finance.

These dimensions overlap and re-enforce each other, with improvements in one area likely to prove supportive in another. For example, enhancing productivity and capacity in the construction sector would reduce the sensitivity of supply viability to externally driven costs. At the same time, construction firms are more likely to achieve scale in a setting where adequate amounts of zoned land are available in locations where the demand for housing is highest, and the planning system operates with certainty and at reasonable pace. The larger the pool of viable projects and construction firms, the more likely it would be that development finance can be attracted sustainably. Appropriate efforts across all dimensions would be necessary for the scale of increase in housing supply considered in this report.

Planning, building regulation and serviced land

The role of delays, objections, and bottlenecks in the planning system is difficult to quantify or to compare internationally, but the evidence suggests that a more efficient system could unlock substantial housing supply.

According to estimates from consultants Mitchell-McDermott, as of early 2024, over 20,000 housing units in Strategic Housing Developments were awaiting a decision at An Bord Pleanála, while another 8,000 units were subject to delay due to Judicial Reviews.⁵⁹ Planning decisions on these units were an average of 16 months late at the end of 2023. Delays of this nature increase the cost of construction as well as likelihood of certain residential

⁵⁹ A detailed assessment of these issues is outlined by [Mitchell-McDermott](#) in a 2024 press release.

developments not proceeding due to the expiration of the planning permissions associated with these developments.

Greater policy certainty and more efficient and rapid decision-making will have a positive impact on future housing delivery. Given the evident need for substantial private sector participation both in the development and construction process, as well as in its financing, it is important that the Irish planning and housing system becomes more streamlined, faster to make decisions, simpler to navigate, and more predictable and stable. Greater certainty about the process of appeals and objections is one of the underlying themes of the Housing Commission's recommendations. Changes that increase longer-term certainty for investors will likely support the attraction of long-term capital into the system, particularly from international sources, which will be required in order to increase supply towards 50k homes per year.

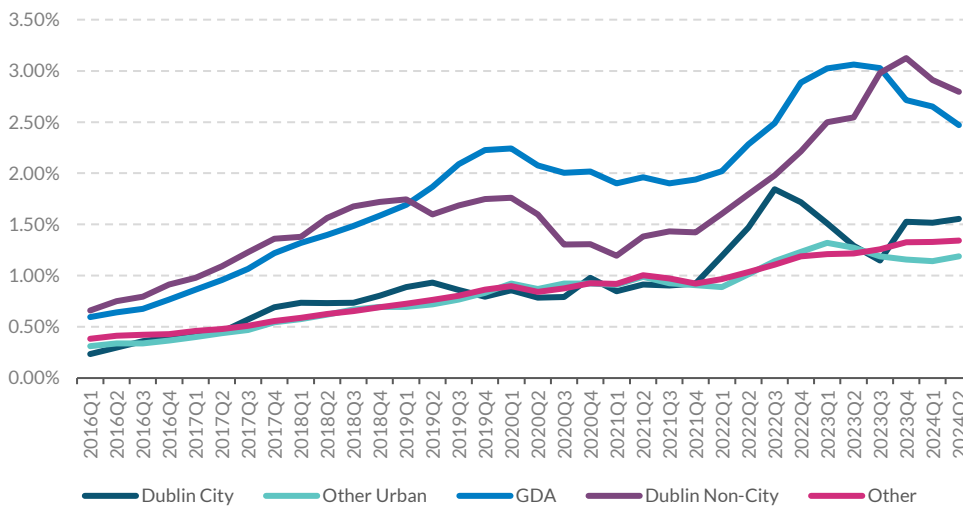
Housing supply has been most responsive in the region surrounding Dublin, but has been much weaker in the city itself and in other urban areas. The planning and regulatory environment may be incentivising the development of housing in areas of lower population density, where land is more readily available, and where objections and delays are less likely. While households' preferences for space also likely play a role, this is consistent with the evidence in Figure 11, where the administrative counties in Dublin county (outside Dublin City), and the three counties bordering Dublin, have had the highest ratio of completions to housing stock since 2016.

By contrast, disproportionate growth in urban areas may be required in a market delivering 50,000 new homes per year in line with broader public policy objectives. Development of higher-density housing, nearer to urban centres, is required from an environmental/climate policy perspective, as well as from an infrastructure/fiscal perspective. Figure 11 suggests a step-change relative to trends in recent years will be required in order to achieve this, including a reduction in uncertainty and timelines within the planning system, and the availability of greater volumes of zoned and serviced land in the areas where housing demand, and employment, are greatest.

Housing supply has been more responsive in commuter belts than in urban centres

Figure 11

Ratio of housing completions to housing stock by region (Percent)



Source: CSO and Central Bank of Ireland calculations

Note: Annual completions by region divided by 2022 Census estimates of households in permanent dwellings (a proxy for the housing stock). Regions defined as follows: Dublin City given as Dublin City Council area separately. Dublin Non-City (Fingal, DLR, South County); GDA (Meath, Kildare, Wicklow); Other Urban (Galway, Cork, Limerick, Waterford)

Dublin does not currently have adequate volumes of zoned land relative to its population, pointing to ongoing challenges in achieving greater density. A key barrier to residential development cited by many industry sources, particularly in Dublin, relates to the availability of adequate amounts of zoned and serviced land. Figure 12 shows that, relative to its share of the population aged 20-39, Dublin has a particularly low share of the land in Ireland currently zoned for residential development. By contrast, the Mid-East region (previously referred to as the GDA, or counties surrounding Dublin), has a particularly high ratio of zoned land relative to its population. Even when considering Dublin and the Mid-East together, there is currently a lower proportion of available zoned and serviced land in comparison to the population of household-formation age.⁶⁰ This is consistent with findings from a recently published study from Goodbody, according to which there is insufficient zoned serviced land in the Eastern and Midland region (encompassing Dublin and its commuter belt) to meet updated housing targets as laid out in County/City Development Plans. The study estimates that additional residential land to supply a further 40,000-

⁶⁰ For instance, together the Dublin and Mid-East regions account for just under 50 per cent of the population aged 20-39, while around 40 per cent of the land currently zoned for residential development is located there.

70,000 housing units is required in across the Eastern and Midland region over a six-year period.⁶¹

The distribution of zoned land does not match the distribution of demand.

Figure 12

Percent



Source: RZLT Maps Dept. of Housing, Census 2022 CSO, and Central Bank staff calculations.

Note: Land zoned “New Residential”, GZT category R1 as per the Dept. of Housing and the latest published maps underpinning RZLT designation by Local Authorities. Circa 6,500 hectares of land is listed in this category in 2024. Nominally this land is both zoned for residential and serviced in order to be eligible to be charged the RZLT.

The provision of zoned and serviced land closer to major urban areas requires effective delivery of additional public infrastructure. Additional investment in supporting infrastructure in terms of water, sewerage, energy and transport are necessary to facilitate the required increase in housing delivery. From a public finance and land use perspective, sustainably funding additional levels of public investment needs to be considered carefully.⁶² An effective means of increasing the provision of public infrastructure is to ensure that the system of planning and building regulation does not excessively add to delays. Such

⁶¹ Goodbody [report](#), September 2024: Residential land availability - An assessment of residential land provision in Ireland. As well as the additional residentially zoned land required for the Eastern and Midland region, the report also calculates that additional residential land to supply an extra 1,000 to 19,000 units may be needed in the Southern region.

⁶² In particular, equitable land value capture measures levied across the broadest base of eligible land could contribute more sustainably to the delivery of enabling public infrastructure, reflect the benefit to existing landowners of such infrastructure, and incentivise the best use of such available land. This would build on recommendations 16 and 17 of the Housing Commission.

delays in themselves can significantly reduce to benefits of what is, in the most part, public investment in water, sewerage, transport and energy networks.

[Recent analysis by Central Bank staff highlights the additional costs of not reducing frictions in public infrastructure delivery related to “time to plan” delays.](#)⁶³ An important result from this analysis is that longer delays in planning for public infrastructure investment can have a permanently negative affect on levels of private investment. A more efficient delivery of public infrastructure will be an essential foundation for the private housing investment needed to achieve circa 50,000 units per annum. The importance of issues pertaining to the delivery of enabling infrastructure needed to facilitate the construction of residential properties is also highlighted in the Housing Commission’s recommendations.

Capacity and productivity of the construction sector

[Measured productivity in the Irish construction sector is low in comparison to other European markets.](#) The level of output per hour worked in the Irish construction sector in recent years is roughly 25 per cent below the euro area average (Figure 13). In almost all comparator countries (exceptions being the Netherlands, Italy and Portugal) construction sector productivity has declined over the decade to 2022. The decline in Ireland has been the most pronounced at 2.7 per cent, approximately double the extent of decline in the euro area overall. In the absence of productivity improvements, through exploiting economies of scale, investing in technology in order to modernise methods of construction, and enhancing skills within the sector, it will be more challenging to increase supply substantially above existing levels. These issues feature prominently among the recommendations of the Report of the Housing Commission.

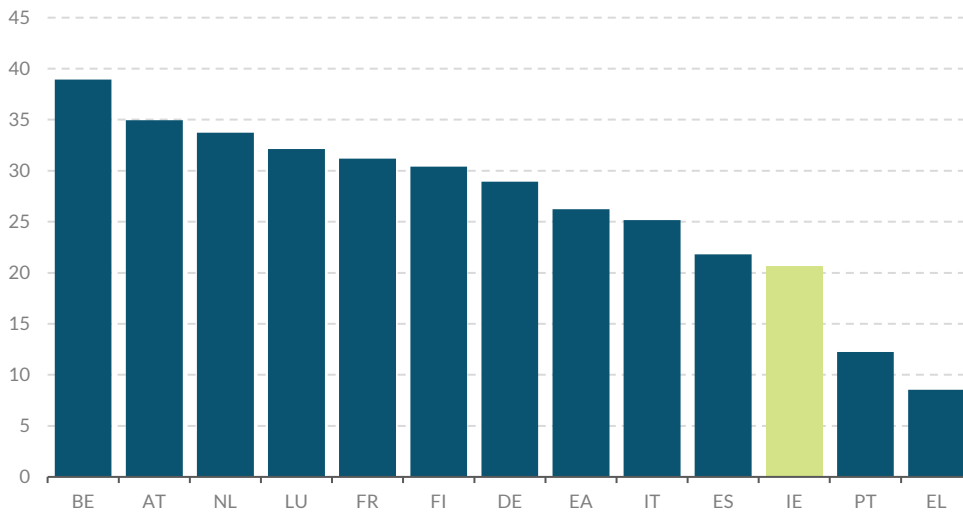
[The market structure of the domestic homebuilding industry may compound the productivity challenges and could impede further expansion in output.](#)

Construction firms in Ireland are small when compared to other European markets. Only 3.2 per cent of Irish construction enterprises have 10 or more employees (Figure 14). This is significantly lower than countries of similar population size, such as Finland (5.5 per cent), or even of smaller population such as Estonia (7.2 per cent).

⁶³ See Section 4 of [“Fiscal priorities for the short and medium term”](#), Central Bank Quarterly Bulletin Signed Article, June 2024.

Construction sector productivity in Ireland is below comparator countries in the euro area.

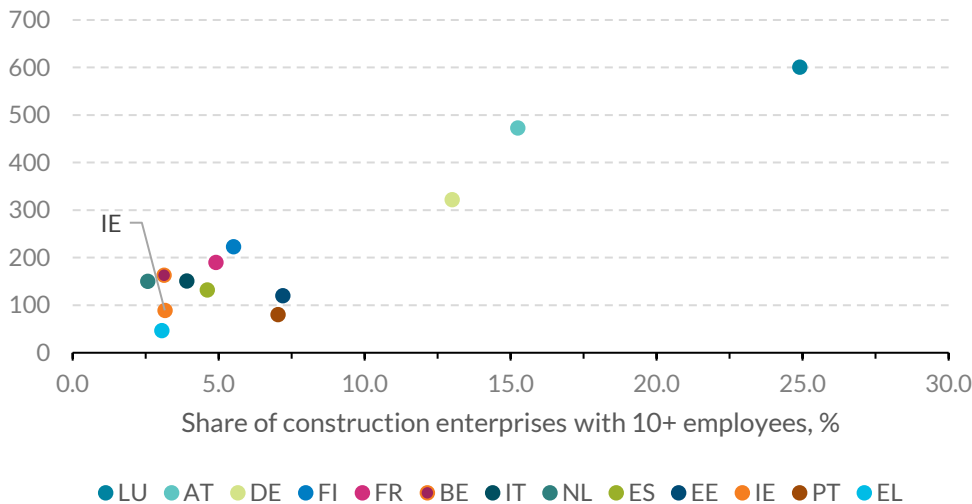
Figure 13
GVA per hour worked, 2022



Source: Eurostat, and Central Bank staff calculations.

The construction sector in Ireland has a higher proportion of small firms.

Figure 14
GVA per hour worked, 2022



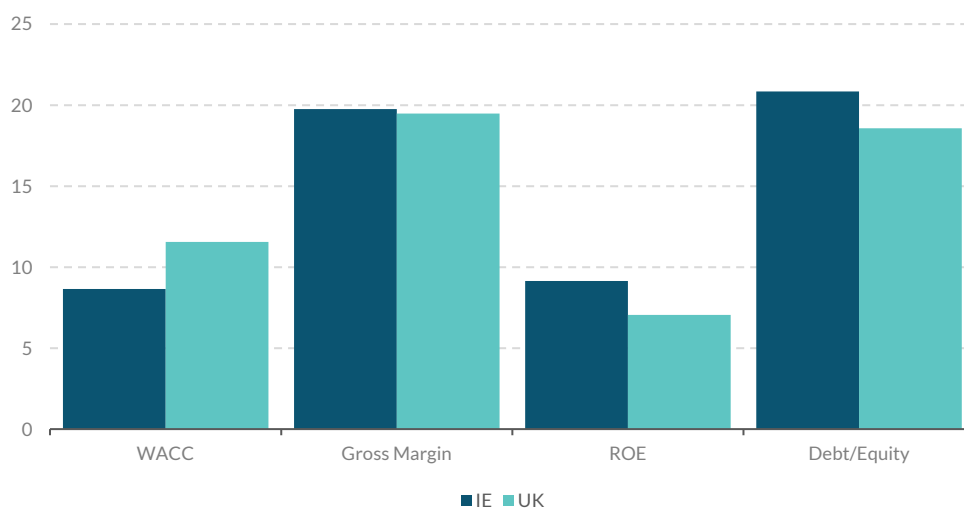
Source: Eurostat, and Central Bank staff calculations.

Despite challenges across the sector more broadly, the performance of the two listed homebuilders in Ireland is in line with UK counterparts. An analysis of key financial metrics suggests that the two largest homebuilders in Ireland, both of which are listed on the stock exchange, on average perform broadly in-line with their listed UK counterparts, and in fact have a lower weighted

average cost of capital and higher return on equity last year (Figure 15). However, these listed builders only accounted for 13 percent of completions (excluding one-off houses) since 2019. Analysis by Goodbody has shown that the top ten Irish builders accounted for roughly one third of domestic RRE commencements in 2023, compared to an equivalent figure of 42 per cent in the UK.⁶⁴ Achieving greater scale within the construction sector would facilitate greater output, higher productivity, and would likely prove beneficial in accessing external finance more sustainably.

The performance of Ireland’s listed homebuilders is on a par with UK peers.

Figure 15
Per cent



Source: Bloomberg, Central Bank of Ireland calculations

Notes: The data consists of 2 listed Irish builders and 10 listed UK builders. WACC: weighted average cost of capital. ROE: return on equity.

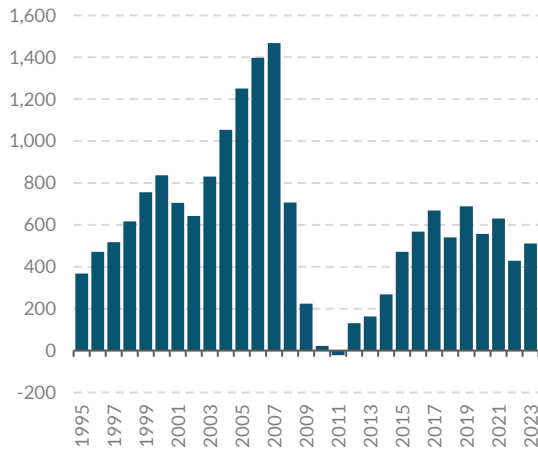
The productive capacity of the construction sector is likely curtailed by a persistently low level of investment, a ‘scarring’ effect of the financial crisis. A sector’s capital stock includes machinery and equipment as well as the intellectual property and technologies used in the production process. The construction sector in Ireland continues to have levels of investment significantly below pre-crisis peak (Figure 16). Over time, without sufficient levels of investment, the capital stock and the productive capacity of the sector has suffered. This has been more pronounced in Ireland than in most other European countries, with the productive capital stock in the sector being about 20 per cent below what it was in 2008 at the start of this decade (Figure 17). An insufficient availability or use of modern machinery and equipment and

⁶⁴ See “Who’s Building in Ireland”, Goodbody Analytics (February 2024).

technologies in the production process can impede the productivity of the sector.

Low levels of investment within construction since the financial crisis

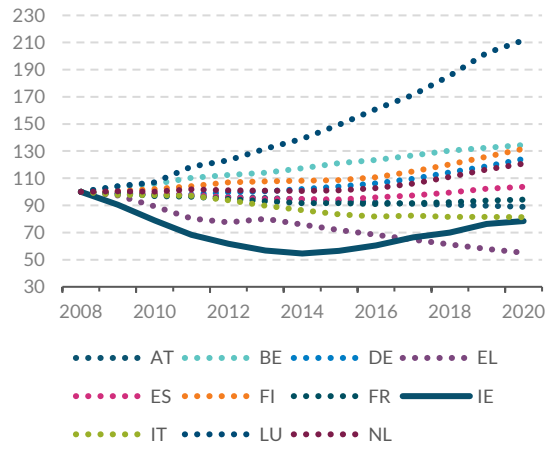
Figure 16
€ million, constant prices



Source: CSO

Leading to the capital stock being further below pre-crisis levels than peers

Figure 17
Index 2008 = 100

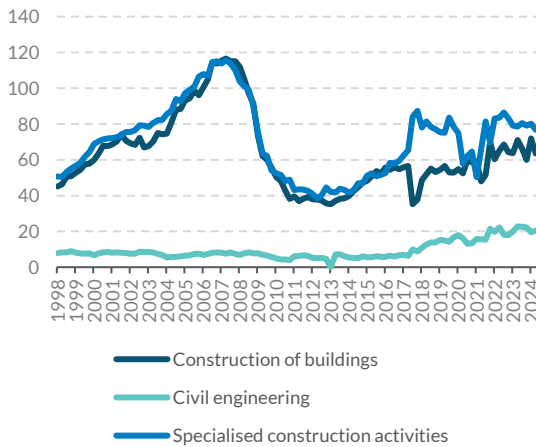


Source: Eurostat

The sector is also experiencing a relative scarcity of appropriately skilled labour, compounding productivity challenges. Employment levels in the construction sector have typically been more cyclical in Ireland than in most other European countries. Following an eventual recovery in employment levels after the financial crisis, the numbers of people working in the sector reached 170,000 by mid-2022 (Figure 18) and accounted for about 6 per cent of total employment. In that year, over 70,000 housing units were completed. Absent advances in productivity, the share of the construction sector in total employment would need to rise to facilitate required increases in output, necessitating the transition of workers from other sectors, or the entry of new workers to the labour force, or both. Challenges exist, in the context of a very low level of immediately available labour with construction sector experience (Figure 19). Inward migration of construction workers will likely be required in order to alleviate this challenge.

Employment in construction has recovered gradually...

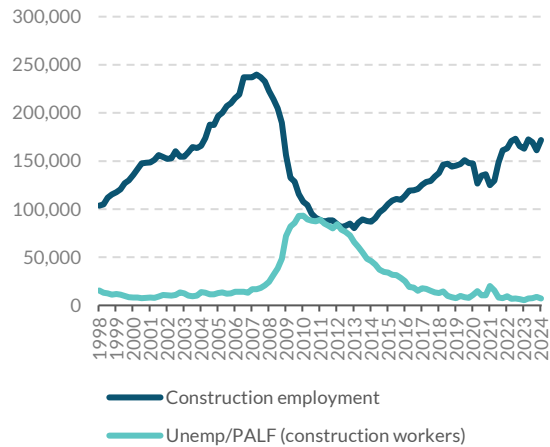
Figure 18
Thousands



Source: CSO

But immediately available labour is low

Figure 19
Thousands



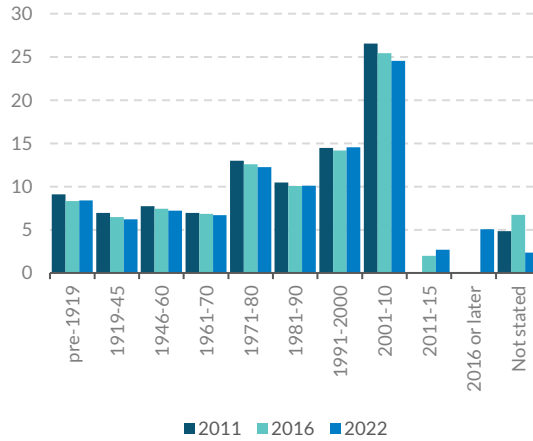
Source: CSO

High demand for construction workers for retro-fitting and other necessary climate initiatives is also creating labour supply challenges. Government has established targets for greenhouse gas emission reduction over time, and eventual climate neutrality by 2050. Included in these targets is a necessary upgrading of the existing housing stock to improve energy efficiency. According to data on the vintage of permanently occupied housing stock from Census 2022, approximately 40 per cent of the country's housing stock was built between 1970 and 2000, and would typically have insufficiently high energy ratings by modern standards (Figure 20). Indeed, there has already been a significant rise in the level of retro-fitting and related activity. As a result, the existing labour capacity in the construction sector has had extra demand that has needed to be met, such that the share of new dwellings in total residential activity is below its long-term average (Figure 21). Achieving carbon neutrality and mitigating the already unavoidable effects of climate change will require significantly higher levels of public and private investment outside of housing. This will to some extent also draw related labour into other construction projects such as flood mitigation, transport and energy infrastructure.⁶⁵

⁶⁵ See Section 3.4 of "[Fiscal priorities for the short and medium term](#)", Central Bank Quarterly Bulletin Signed Article, June 2024.

The age profile of the housing stock and climate targets point to high labour demand

Figure 20
Distribution of housing stock by vintage (percent of stock)

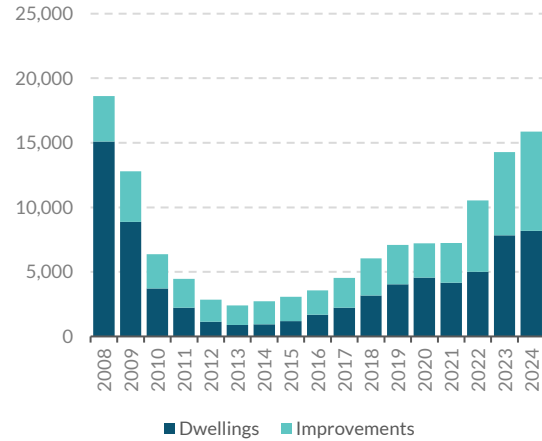


Source: CSO

Notes: Table F2006. Data refer to the vintage of housing stock occupied by usually resident private household, which in Census 2022 accounted for 87% of total housing stock.

With the share of new dwellings in building activity already below long-run average

Figure 21
Components of building activity (€m)



Source: CSO

Notes: Table NAQ05

Construction costs and viability of construction

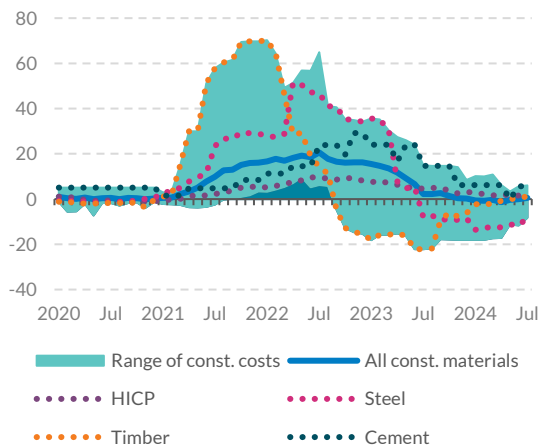
A key question within the debate on construction sector capacity relates to the cost of building homes in Ireland. According to [Günnewig-Mönert and Lyons \(2024\)](#): “just 23 homes were built per 1000 residents during the 2010s, compared to 155 in the 2000s, and an average of 75 in the 1970s, 1980s, and 1990s”. The authors formally model the housing supply process, highlighting the importance of the growth in construction costs in the most recent period: “while housing prices in 2020 were roughly 20% below their 2007 level, build costs after tax reliefs were between 70% and 90% higher in 2020 than 2007”. Their research concludes that supply has remained similarly responsive to prices over time, but was weaker over the past decade due to this sharp increase in construction costs. Their research also provides suggestive evidence that harder-to-measure features, such as restrictions on zoning, and challenges within the planning and housing regulatory system, have also played a role, as evidenced by particularly weak supply responsiveness in the Dublin area, where such issues are most pertinent.

Globally, and in Ireland, the cost of construction materials has increased rapidly since 2021. Cost inflation for construction materials increased rapidly starting in mid-2021. According to the CSO’s Wholesale Price Index, the

average annual rate of inflation for building and construction materials increased from 1.2 per cent between January 2016 and December 2020, to over 15 per cent during the 2-year period from July 2021 to June 2023, peaking at a rate of over 20 per cent in mid-2022 (Figure 22). While the rate has slowed considerably in the past year, averaging just 0.5 per cent per annum in the 12 months to June 2024, building and construction material costs have cumulatively risen by more than 36 per cent from their end-2020 levels. A comparison of growth rates from Eurostat’s output price index for construction of new residential buildings⁶⁶ across a selection of EU countries shows that developments in Ireland have closely tracked broader European trends for much of the past five years (Figure 23).

Annual building material price growth

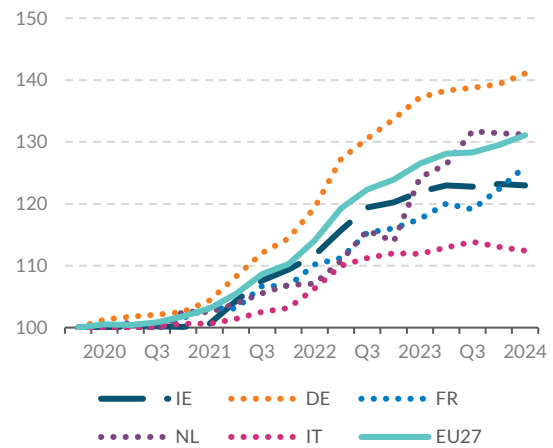
Figure 22
Percent



Source: CSO and Central Bank of Ireland calculations
 Note: Construction input costs include: "Stone, sand and gravel, Cement", "Ready mixed mortar and concrete", "Concrete blocks and bricks", "Other concrete products", "Structural steel and reinforcing metal", "Rough timber (including plain sawn)", "Other timber", "Bituminous macadam, asphalt and bituminous emulsions", "Electrical fittings" and "All other materials". Last observation Jun 2024.

Construction costs across Europe

Figure 23
index 100 = 2019Q4



Source: Eurostat and Central Bank of Ireland calculations
 Note: Figure based on data from Eurostat’s “producer” or “output” price index for new residential buildings series .Last observation 2024Q1.

Cross-country comparisons of construction costs using aggregate data mask differences in building types, regulatory requirements, labour costs, and taxes

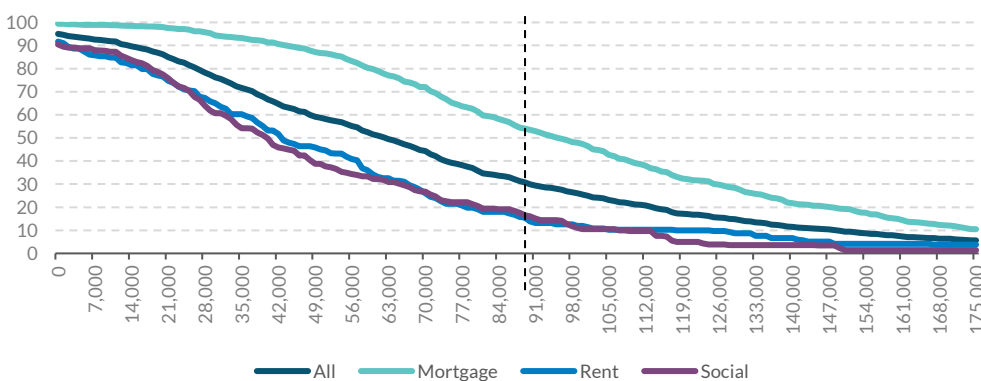
⁶⁶ Also known as the producer price index, this series provides a measure of what building contractors pay for the input factors in residential construction, and includes materials, labour, plant and equipment, transport, energy, productivity, profit margin and other related costs. For more information, see; [Construction producer price and construction cost indices overview](#), Eurostat.

across jurisdictions. Two recent reports address this issue and aim to provide new insight on how residential construction costs in Dublin compare with various locations across Europe, adopting methodologies that allow like-for-like comparisons. Box A summarises key findings from these reports, suggesting that costs are indeed higher in Ireland, by 15-30 per cent, than in relevant comparison locations. These differences appear more likely driven by specifications and size of units delivered to market in Ireland, rather than the observed price per square metre of key inputs.

The income profile of Irish households means many cannot purchase at current viable price points for private developers. Analysis of SILC 2022 micro data (Figure 24) shows that the median gross household income was €60k. This median household has a maximum mortgage available of €210-240k. In contrast, industry practitioners such as the SCSI estimate the average sales price to viably deliver a new 3-bed semi-detached house (once VAT and profit margin are included) ranged from €354,000 in the Northwest to €461,000 in the Greater Dublin Area (in 2023).⁶⁷ In line with this range of estimates, Central Bank mortgage data indicate that the median purchase price for mortgage borrowers purchasing new build homes was €405,000 in 2023, with median income being €96k. These figures highlight the “viability gaps” that emerge as a result of divergence between the cost of delivering homes and the income profile of the population.

Half of Irish households have income below €60k per year, with implications for private housing viability

Figure 24
Percentile



Source: EU-SILC, Central Bank of Ireland author calculations

Notes: Vertical axis – gross annual household income percentile within each cohort.
Horizontal axis: gross annual household income, €. Vertical dotted line reflects an income of €89k, consistent with a purchase of a 114m² newly built home at an LTI of 4 and LTV of 90.

⁶⁷ See [Real Cost of New Housing Delivery 2023](#), SCSI Report.

Government interventions have sought to reduce the “viability gap” by supporting the purchasing power of FTBs. Central Bank analysis indicates that 25 per cent of households in the pool of “potential FTBs” have sufficient income to clear the viability threshold for a semi-detached home (Table 2).⁶⁸ However, the availability of the Help to Buy and First Home Schemes increases the notional viability share for the same purchase to an estimated 50 per cent. These calculations highlight the role that recent policy intervention has played in bridging gaps between underlying income fundamentals and the cost base of the construction sector. Looking at transactions using HtB in recent years, Central Bank analysis of granular mortgage data shows that borrowing households using the scheme have, compared to other FTBs, been purchasing larger homes, at higher price points. This differential reflects the nature of the scheme, which only includes newly-built homes, which are more likely to be larger than the existing stock, and therefore more likely to be purchased by borrowers with higher incomes, particularly couples.

Table 2 Help-to Buy supports borrowers purchasing larger homes at higher prices

	Dublin	GDA	ROC
Average House Price (€)			
HTB	424,236	395,353	348,072
Non-HTB	382,356	366,644	264,684
Average House Size (m2)			
HTB	116.5	126.4	158.8
Non-HTB	99.4	114.6	122.2
Average Household Income (€)			
HTB	104,541	97,159	88,988
Non-HTB	89,796	86,965	71,192
Share of couples (%)			
HTB	87	86	84
Non-HTB	72	74	65

Source: Central Bank of Ireland loan-level data

Notes: average values for FTBs using, and not using, the HtB scheme across 2022 and 2023. GDA: counties Meath, Kildare, Wicklow. ROC: all other counties

The viability gap can also be narrowed through reductions in the cost of delivering new homes. Increased productivity would mean that the

⁶⁸ The baseline calculations are based on the SCSi national average cost for a 3-bed semi-detached house (114m²) of €397,000 (SCSi estimates). In these scenarios, the authors assume that, when borrowing at 4 times income, the potential buyers can access a mortgage deposit of 13 per cent of the purchase price (informed using Central Bank of Ireland loan-level data). Potential FTBs consist of employed adults living with their parent(s) and private rental households. The potential household reference person is aged 25-39 with a household income above the social housing support threshold (€30,000 net household income).

construction sector is better placed to absorb shocks to its cost base. Similarly, measures that support the construction sector in achieving scale, for example through greater standardization of unit designs, would also drive down the cost of delivery, supporting greater viability. Central Bank analysis indicates that similar viability improvements to those being delivered via the HtB and FHS could be achieved through cost reductions of around one quarter. Ultimately, the suite of measures chosen to ensure construction viability is a policy choice for government. While demand-side measures have a role to play, especially where government policy aims to affect distributional outcomes across different households, supply-side measures that contribute to improved viability through reductions in the cost of delivery have longer-term benefits from a competitiveness and fiscal perspective.

Box A: Are construction costs higher in Ireland? Insights from two recent reports

Gerard Kennedy, Fergal McCann

This Box summarises the findings of two recent reports that allow like-for-like comparison of construction costs in Ireland relative to comparator cities in Europe. The DHLGH [Residential Construction Cost Study Report](#) focused on construction costs of the direct building works and associated preliminaries only, across Dublin, Berlin, Copenhagen, Utrecht and Birmingham. Using a “travelling Box methodology”, the report compares ‘hard’ costs on a like-for-like basis across four separate types of home.⁶⁹ The Trinity/SCSI report (“[Building Homes: Apartment construction costs in Europe with a focus on Dublin](#)”) compares both ‘hard’ and some ‘soft’ costs of delivering apartments,⁷⁰ using the International Construction Management Standards V3 (ICMS3) framework to compare construction costs for a fixed project across ten cities in seven countries.

Apartments are more expensive to deliver in Dublin than most comparator cities, driven more by the specifications, scope and size of units delivered than the cost of inputs. The headline finding with respect to apartment construction across the two reports are as follows:

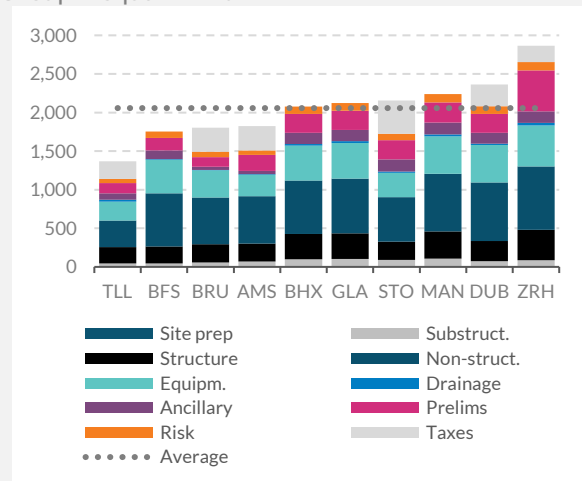
⁶⁹ The travelling box methodology measures the costs of building the same theoretical dwelling built to an Irish specification across a selection of locations.

⁷⁰ Costs not covered in this report include site acquisition, professional, development and connection fees, finance costs, developers’ margins, and marketing costs.

- The Trinity/SCSI report finds the construction cost for delivering an apartment block in Dublin was €2,363 per square metre (including tax), or €300 higher than the ten-city average, and second only to Zurich in the sample (Figure 25).
- The DHLGH report – focusing on hard costs only – finds that apartment construction costs, on a per square metre basis using the like-for-like “travelling box” method, were similar across locations studied.
- However, the DHLGH also notes differences in scope, size and specifications between the standard Dublin apartment and those in Copenhagen, Berlin and Utrecht. This means that the like-for-like comparison does not reflect the reality of units delivered in the market. Comparing specifications typically provided to the market, Dublin and Birmingham have delivery costs up to 30% higher than other cities studied, driven by higher specifications and larger units.⁷¹

Apartment construction costs in Europe

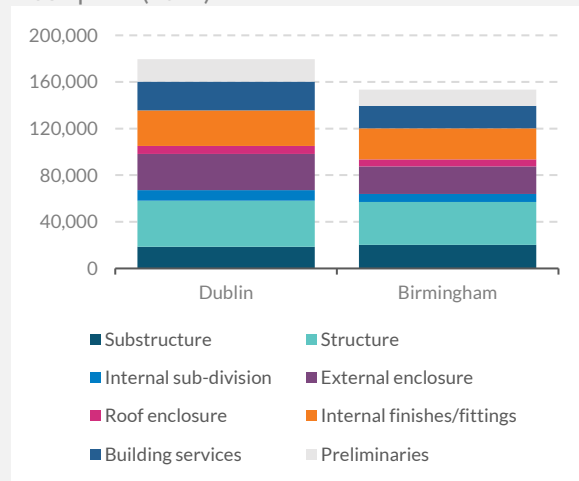
Figure 25
Cost per square metre



Source: Trinity and SCSI

Scheme home costs Dublin v Birmingham

Figure 26
House price (euro)



Source: DHLGH

Notes: Chart based on Data from Residential Constructor Report by DHLGH

For scheme house construction, Dublin appears 15 per cent more expensive than the UK on a like-for-like basis. For the scheme house studied in the DHLGH report, construction costs per square metre for the “travelling box” were approximately 15 per cent lower in Birmingham than in Dublin (Figure 26).⁷² The study also found significant

⁷¹ In these comparator cities (Utrecht, Copenhagen Berlin), for example, it is common for apartments listed for sale or rent to have bare ceilings, no floor finish, no fitted wardrobes, minimal or no kitchens, no light fittings, to have shared bathrooms / no en-suites, all of which lower the cost of delivery for the construction sector compared to Dublin.

⁷² A limitation of the DHLGH report’s findings on scheme houses is its focus on the UK, using Birmingham as a comparator market, rather than having a broader comparison group.

differences in terms of the size and specifications of the typical residential units delivered in the other cities compared to the typical Dublin unit. For instance, the report found that houses being delivered in Birmingham may be up to 15 per cent smaller than in Dublin (93 sqm vs 110 sqm), meaning Birmingham is 21-29 per cent cheaper than Dublin on a per-unit basis.

The reports indicate that the cost of construction is higher in Ireland than elsewhere for conventional residential property. The economic evidence suggests these higher costs have impeded supply over the past decade or more. The reports do not provide a single “silver bullet” policy solution to these issues. However, their findings do suggest that policy measures that support the construction sector in achieving scale, for example through greater standardization of unit designs, could be particularly beneficial in driving down the cost of delivery.

Financing housing development

In order for new home supply to match refreshed demand estimates of circa 50,000 homes per year, substantial additional financing will be required. New homes must be financed from two sides: firstly, the construction and development sector must be financed to deliver the housing through a variety of procurement models, and for a variety of tenure types (social, affordable, private rented, owner-occupied). Secondly, the ownership must be financed, either through mortgage finance for new owner-occupier buyers (from banks, non-bank lenders, and credit unions), or through institutional and other private sources for private rented housing. In the case of social and affordable housing, the distinction between the financing of development and of ownership is more blurred, given the role played by the State and its agencies on all sides of these transactions.

Private financing of both development and ownership will require a combination of debt and equity, from domestic and international sources, comprising banks and non-bank intermediaries. A diverse mix of financing types and sources has been involved in the delivery of housing in Ireland over the past decade, reflecting the increased participation of a broader set of financial institutions in housing markets globally. This diversity brings with it macro-financial benefits and will continue to be necessary in order to meet the growing needs of an estimated 50,000 new homes per year.

Birmingham was chosen by the study’s authors given that it is the second-largest city in the UK, similar in size to Dublin, and avoids analytical challenges involved in studying the London market, given London’s outlier characteristics as a city of global scale and reach.

We estimate that an indicative €10bn of financing underpinned the delivery of housing in 2023. Before beginning to assess future financing needs and their composition, we initially attempt to identify financing flows underpinning new home delivery in 2023. Pinpointing the precise financing requirements underneath a given year's housing supply is complex, given the lack of precise data available in Ireland to connect the delivery of a specific home to a specific financing source. Further, the precise development cost of a unit itself is uncertain, given the mix of property types, locations, and specifications underlying the volume of observed homes delivered. Using an average unit development cost value of €312k (before VAT and profit margin, see Box B) in 2023 would imply an indicative total financing need of €10.2bn. Under other assumptions for higher unit prices as used by other practitioners, this estimate would be in a range up to or above €11bn.

The State, non-bank financial intermediaries, and domestic banks each contributed importantly to financing 2023 housing supply. We use a range of data sources to provide an illustration of how key sectors likely contributed to the delivery of 32.5k homes in 2023. We estimate that, on top of 5.5k one-off or self-build homes (financed with an estimated €1.7bn of own savings and private mortgages), and 8k social housing units, around 19k homes required private development financing in 2023, equating to an estimated financing need of €5.9bn. To provide illustrative estimates of the role of various sectors underpinning financing delivery last year, we impose an industry benchmark of a 60% Loan to Cost or Loan to Value ratio at origination, and apply a 65/35 ratio between bank and non-bank lending based on research from [Lambert et al. \(2024\)](#). This gives an estimate of development financing to support 2023 housing supply of €2.3bn from banks (in the form of debt financing), and €3.6bn from non-bank financial intermediaries (providing a blend of debt and equity financing). We estimate state financing of social housing in 2023 amounted to €2.5bn, based on the delivery of 8k social housing units (Table 3).⁷³

⁷³ Using a different basis, the Housing Commission estimates €3.4bn was provided by State in capital commitments in 2022. This combines direct development financing with the funding of purchases by entities such as LHAs of properties already constructed with private sector funding.

Table 3: illustrative estimate of development financing underpinning 2023 housing supply

Source	€bn	Share
Individuals (incl. personal mortgages)	1.7	17%
Bank Development Finance	2.3	23%
Non-Bank Finance (debt and equity)	3.6	35%
Direct State	2.5	25%
Total	10.2	

Source: Central Bank of Ireland calculations

Notes: “Bottom up” approach, where starting point is an average unit cost of €312,000, and 32,582 homes delivered in 2023. “Individuals” provides an estimate of the total (mortgage debt and equity) financing requirements involved in the 5,512 self-build or one-off houses supplied in 2023. These are financed with own-funds and personal mortgages, and classified outside the development financing portfolios of the financial sector for the purpose of this study. Implied Debt and Equity calculated by assuming total debt funding underpinning 18,960 homes delivered via private sector development is subject to a 60% loan to cost ratio. Non-Bank and bank shares in debt finance are imputed by imposing a 65-35 ratio onto estimates of debt financing as per Lambert et al. (2024). Due to the nature of this estimation, the imputed Bank Development Finance number of €2.3bn does not correspond directly to data reported by specific Irish banks, but is rather an indicative illustration of the role of bank lending in 2023 development. “Direct State” figure uses as a basis 8,110 directly provided social houses as per Department of Housing information.

The supply of 20,000 additional homes per year could require growth of €4.5bn–€5bn in additional private financing, over and above a continuation of 2023 levels. We assume in this assessment that the financing mix underpinning the delivery of homes in 2023 is maintained in future scenarios, allowing the analysis to focus on the private financing needed to deliver 20,000 *additional new homes per year*. Based on assumptions outlined in Box B around construction costs, type mix, the direct role of the State and the loan-to-cost ratio, a central estimate of €3bn of additional debt financing for private development may be required, along with around €2bn in equity financing. Due to the recyclability of development financing, the estimated loan finance increase should be seen as an increase in the size of the balance sheet for lending to residential construction and development, rather than an increase in annual net flows that cumulates over time. There is a high degree of model uncertainty around these estimates, with the estimates depending on assumptions around drawdown frequency, duration of construction, debt to equity ratios, property type mix and unit costs.

Box B: Financing required to supply 20k additional homes per year

Angelos Athanasopoulos, Gordon Barham, Mudabbir Farooqi, Gerard Kennedy

We estimate the financing required to support the delivery of a given volume of housing, making assumptions about (i) the average construction cost per unit, adjusted for VAT and profit margins, (ii) the Loan to Cost (LTC) ratio for construction loans, and (iii) housing project delivery times and funding recyclability.

Our first key ingredient, the average delivery cost, has many potential sources of information available in Ireland, not all of which provide consistent answers. We begin by estimating new dwellings selling prices, using combined aggregate information on new dwellings transactions by type (scheme houses/apartments) from the CSO. We also use publicly available information on new mortgage lending from the BPFi and the Central Bank, information from annual reports of publicly listed real estate development firms, and trading statements from non-bank residential real estate specialist lenders operating in the Irish market. This is supplemented with hand-collected information on large/bulk transactions from news media reports and proprietary commercial databases. Our approach estimates the average new dwelling selling price for the unobservable mix of locations, types, and individual dwelling characteristics that was realised in housing market transactions in 2023. In our baseline, we estimate that in 2023 the average selling price of a new dwelling is approximately €425k.

To estimate average construction costs, we adjust our estimated new dwelling selling prices by deducting VAT of 13.5% and a 15% gross profit margin. In the baseline calculation, this gives an average construction cost of a new dwelling at €312k. While some information does exist for the type and location of dwellings transacted during a year, information on the characteristics of individual dwellings in terms of floor space and land plot size is generally not readily available. For this reason, we do not use construction cost estimates such as those produced by the SCSi and other commercial organisations. These estimates by design focus on the cost of specific property types and sizes, often for procurement purposes; instead we focus on the *average construction cost for the realised mix of new dwellings in the country*.

In our baseline projections, we maintain the current type supply mix of approximately 60%/40% for scheme houses and apartments respectively. We also simulate scenarios assuming a further tilt in housing production towards apartments, with apartments reaching 70% in the mix of dwellings delivered. To account for the effect of type mix, we estimate that in 2023, *in the realised mix* of homes delivered, an apartment costs 20% more to deliver than a house. Table 4 shows that under our cost assumptions, the

impact of altering the mix of houses and apartments in overall delivery does not significantly alter the overall financing need.

A second important parameter in our projections is the average leverage ratio for construction loans. In our baseline estimates in this Box, we maintain the standard mix of 60% debt and 40% equity used in previous analyses and widely confirmed by industry sources. We also provide estimates with a higher 70% average debt ratio, reflecting recent offerings from lenders outside the traditional banking sector. This diversity of funding offerings, conditional on such products maintaining appropriate risk management processes, has a role to play in funding the provision of housing in Ireland and can also entail macro-financial benefits through funding diversification.

The recyclability of development funding is also an important consideration for the estimation of the funding needs of housing production. In our analysis, the construction time of a typical project, and correspondingly the duration of the loan supporting this construction activity, can vary from 12 to 36 months. In our baseline projections, we use a central estimate of 24 months, with developers drawing funds monthly in the model, but acknowledge that delays in the construction process can disrupt the redemption schedule of funding, increasing the aggregate funding need, as can funding models where developers draw down funds with less frequency.

Table 4 provides the range of estimates for the financing need associated with the delivery of an additional 20k new units per year. The estimates in the table should be interpreted as *additional* financial resources required, under the assumption that all financing provided to support the current production of 32.5k homes in 2023 is maintained on an ongoing basis in the future.

Due to the recyclability of debt financing for RRE development, the additional financing requirement should be interpreted as an addition to the size of the balance sheet of the banking and non-bank lending system, rather than a new net flow that will be required annually and lead to cumulative growth in lender balance sheets. These estimates of balance sheet growth are sensitive to a range of assumptions, for example around the frequency of drawdown of funds by the borrower.

Table 4 provides ranges of potential private funding need outcomes conditional on assumptions about the share of the public sector participation in new housing delivery and the aggregate LTC ratio in construction lending. The range for debt funding requirements across the scenarios is between €2bn and €4.9bn, while €1bn–€2.7bn of equity capital would be required across the different scenarios. Focussing on our baseline scenario for the share of apartments and the LTC ratio, €6.7bn of new funding will be required to support the additional delivery of 20k new homes. This implies that in a scenario where the public sector did not account for any of the additional delivery

of these 20k units, *private* development finance of €4bn of debt and €2.7bn of equity financing would be required. For illustrative purposes, and reflecting the likely need for the public sector to at least maintain the current *proportion* of 2023 delivery of 25% in future growth scenarios, we place more emphasis on a financing requirement of €5bn, of which €3bn of debt and €2bn of equity are required.

Table 4: Private development finance requirements for 20k new homes

Total funding needs (€m)				
Share of public sector in total delivery				
Scenarios	0%	25%	33%	50%
Baseline: 40% apartments	6,739	5,054	4,515	3,370
Alternative: 60% apartments	6,989	5,242	4,682	3,494
Debt				
Baseline apartment share and 60% leverage	4,044	3,033	2,709	2,022
70% apartments and 70% leverage	4,892	3,669	3,278	2,446
Equity				
Baseline apartment share and 60% leverage	2,696	2,022	1,806	1,348
70% apartments and 70% leverage	2,097	1,572	1,405	1,048

Source: Central Bank of Ireland calculations

Notes: The estimates in the table are based on a €312,000 construction cost, and a 1.2 ratio of apartment cost to scheme house cost estimated from the observed mix of housing delivered in 2023. Funds are drawn down monthly in the model over a 24-month construction project.

Residential development and investment loans at Irish banks have fallen by close to 90 per cent in a decade, and currently represent a small portion of domestic lending. Currently, credit advanced from banks in Ireland for the purposes of Irish resident “Property investment/development of residential real estate” is €2.5bn, down from €19bn in 2010 and €7bn at end-2015 (Figure 27). Most of this decline was the result of a long period of post-crisis deleveraging, which included widespread borrower defaults and the transfer of large portfolios of development lending to the National Asset Management Agency. Even within this €2.5bn, not all is likely to have been devoted to the development of new housing (with the remainder supporting the purchase of existing properties for investment purposes). Based on public disclosures by AIB and Bank of Ireland, lending for the specific purpose of *residential land and development* currently is estimated to be close to €1.6bn across these two

banks, or just over 1% of total lending, although total exposures may be larger due to classification and definitional issues.⁷⁴

Domestic banks have balance sheet capacity to provide part of the additional debt finance required to deliver 50k homes per year. This year, the two largest domestic banks have both announced substantial increases in future commitments for financing of residential development, amounting to around €1.25bn of additional debt financing.⁷⁵ Separately, the nature of funding lines to residential development means there is additional funding already committed, but currently undrawn, within existing risk appetite at the main Irish banks. From a balance sheet perspective, current CET1 capital headroom at the two main domestic banks is in a range of €1.5bn to €3bn, which provides substantial balance sheet capacity to increase development financing in line with the needs estimated in this *Article*.⁷⁶ The ultimate allocation of banks' capital towards residential development remains a commercial matter for the banks, taking into account the risk profile of the lending and related capital costs.

⁷⁴ Based on AIB's [half-year report](#) for 2024, total balances for residential land and development were €1.1bn, of which €124m is attributable to the bank's UK operation. Bank of Ireland's [Interim Report](#) July 2024 reports €607m of development balances in ROI. This may be a lower bound on the likely total exposure of the sector to residential real estate development, as the funding model underpinning the development of social housing, student housing, and Private Rented Sector institutional investment means that in some cases, banks' exposures to these developments may be classified in other portfolios, therefore not included in the figures above.

⁷⁵ AIB announced an apartment construction fund of €500m in partnership with Activate Capital Limited, while Bank of Ireland announced an increase of €750m in its funding available for housing development, suggesting based on these announcements alone that €1.25bn of additional debt financing may be made available through the domestic banking system.

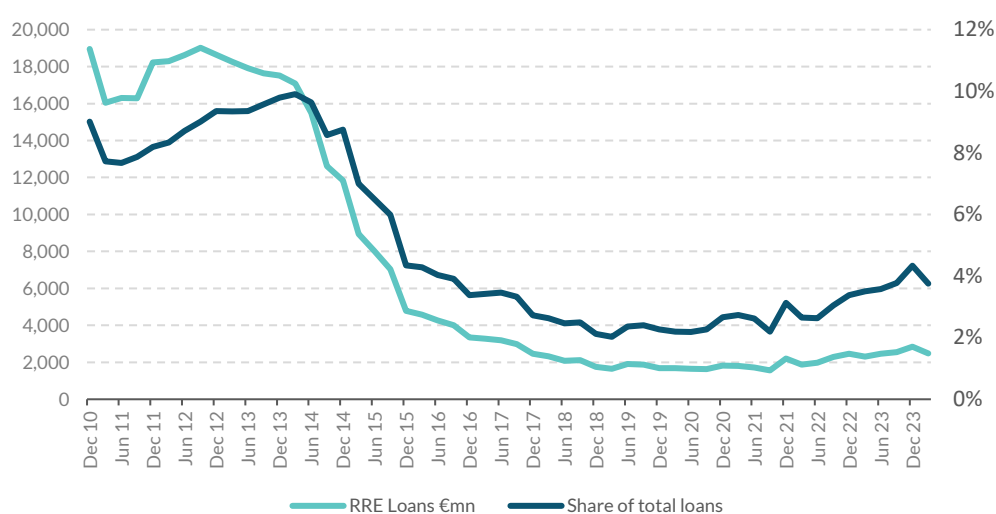
⁷⁶ The measurement of capital headroom depends on whether regulatory Pillar II Guidance is included, and on whether any management buffers are assumed to hold.

Lending to residential developers and investors is small relative to the past, but its share of total lending to corporations is twice as large as in 2018.

Figure 27

Outstanding loans €m

per cent



Source: Central Bank of Ireland Credit and Banking Statistics, [Table A.14](#), Credit advanced to Irish resident private sector enterprises.

Non-bank lenders are also likely to play an important role in the provision of additional debt finance. A range of non-bank lenders (NBL) are present in the Irish development finance market. Many are lenders with a branch presence in Ireland, and direct lending relationships with local developers and property investors, although direct lending from global financial institutions (for example through private credit funds) is also possible without a presence in Ireland. Individually, NBLs in Ireland are small when compared to banks, but Central Bank research suggests that collectively they account for 35 per cent of all lending to local real estate businesses ([Lambert et al., 2024](#)). These lenders typically compete with retail banks by offering higher-LTC/LTV lending, at higher interest rates. Their funding is usually sourced internationally, and is typically more volatile across the interest rate cycle than that of banks. Similar to the banking system, undrawn funding exists within the set of local non-bank lenders.

The State is also playing a growing role in lending to private developers.

Alongside the NBL sector, a key player in the provision of debt financing is Home Building Finance Ireland (HBFI). This is a State-sponsored lender with a mandate to lend directly to builders and developers delivering housing in Ireland. It has grown since inception in 2019 to become an important player in the lending market, with €314m of loans outstanding at end-2023, and over

€2bn of funding approved during its lifetime.⁷⁷ Given State commitments to support housing delivery, it is likely to be a further source of debt financing supporting growth in new home supply over the medium term.

Recent indications suggest a lack of equity in the homebuilding sector is a challenge to growth. The availability of debt and equity are inherently interrelated, with stronger equity likely to unlock greater debt volumes for developers. Stakeholder engagement suggests that the lack of equity (both from internally-generated retained earnings and from external private investment) among real estate development and construction firms is a key impediment to the financing of new home supply in Ireland. A further substantial increase beyond 2023 levels of equity could therefore prove challenging. The availability of own-equity through retained earnings would be boosted through increases in output, economies of scale, productivity and profitability, as discussed in Section 4.

Attracting additional external equity into the residential development sector may require further policy intervention. The attraction of external equity may require policy interventions to “crowd in” private investors, for example through State equity tranches participating in projects in partnership with international investors. A particular future challenge in this regard may relate to the industrial structure of the Irish homebuilding sector, in which there are many smaller businesses that are less likely to be attracted to the proposition of accepting external equity investment and ceding ownership stakes (Section 4). More broadly, international equity investment into residential development, much of which is for “build to rent” from institutional investors, will remain an important component of a long-term sustainable housing supply mix.

5. Fiscal interventions in the housing market

Having declined sharply in the period following the financial crisis, Irish government spending on housing has grown significantly in recent years. We estimate that government spending on housing has trebled in nominal terms since 2017, reaching a new high of €6.5bn last year (Figure 28).⁷⁸ This has been

⁷⁷ HBFi Annual Report 2023 ([link](#)).

⁷⁸ 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)

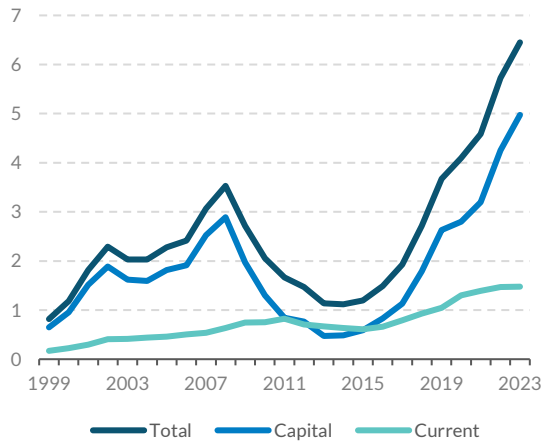
driven by a recovery in capital spending, as growth in Exchequer funding for the provision of social housing has increasingly been supplemented by the use of State supported agencies outside of the Exchequer. Investment and loan activity by these agencies with funding provided by or guaranteed by the State (the Land Development Agency, Housing Finance Agency and Home Building Finance Ireland) has been responsible for two-thirds of the increase in government capital spending on housing in the past five years. There have also been consistent increases in current housing spending over this period, which includes expenditure on the Housing Assistance Payments (HAP), leasing properties and accommodation for the homeless.

Relative to the overall size of the economy, housing expenditure is approaching pre-crisis highs. We estimate that government housing expenditure was just below its previous 2008 peak at 2.2 per cent of GNI* last year (Figure 29). With an increased housing budget package of €7bn announced in Budget 2024, a return to that peak is expected to occur this year. Capital spending, at €5bn, accounted for 77 per cent of total spending in 2023, with current spending accounting for 23 per cent.

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) 17 See Expenditure Report, Budget 2024.

Significant increase in Government housing expenditure in recent years, driven by higher capital spending

Figure 28
Government Expenditure (€bn)

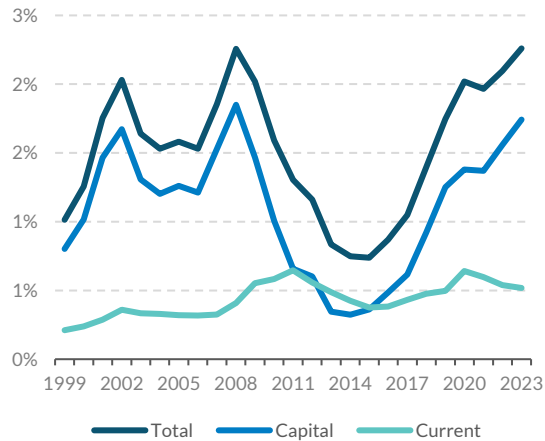


Source: Authors' calculations.

Notes: see footnote 31 for details

Spending now at previous peak levels relative to the size of the economy

Figure 29
Proportion of GNI* (per cent)



Source: Authors' calculations

Notes: see footnote 31 for details

Relative to the European average, Irish government expenditure on housing in 2023 is particularly high. Eurostat's COFOG (classification of functions of government) data series allows comparison of government housing spending across the euro area on a general government basis. This shows that Ireland recorded the second highest housing expenditure in the region in 2022, the latest year that data are available (Figure 30). 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).⁷⁹

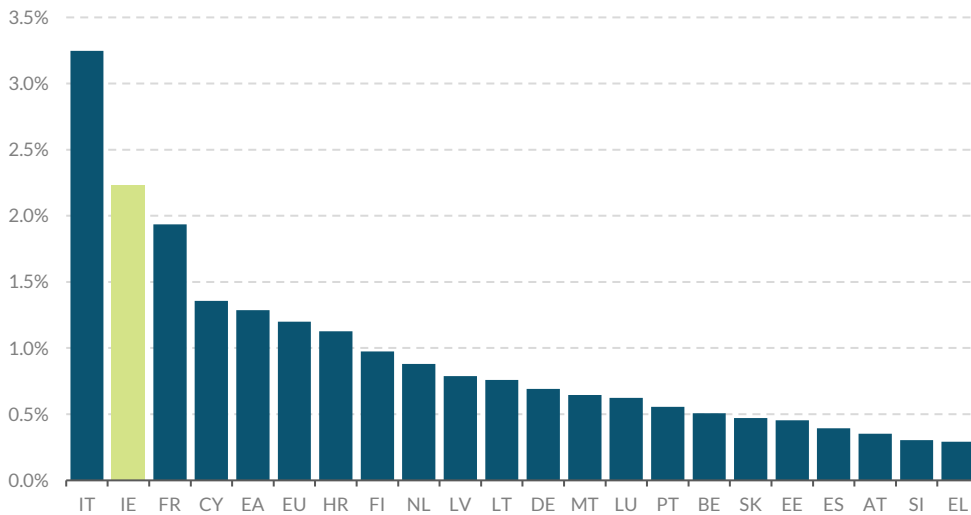
The government also provides support to the housing market through tax expenditures and reliefs. We estimate that these measures – which affect the fiscal position by reducing government revenue – cost €960m last year. This includes local authority home loans, rent tax credits and the Help to Buy scheme. When these measures are included, the total cost of government housing intervention increases to 2.5 per cent of GNI* in 2023, 0.3 percentage points below the previous 2008 peak when mortgage interest relief dominated

⁷⁹ 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).

tax measures. We estimate that 80 per cent of government housing measures represent supply side measures, with the remaining 20 per cent aimed at supporting demand.

Irish government housing expenditure is high relative to the rest of the euro area

Figure 30
Percent of GDP



Source: Eurostat, CSO

Note: Irish figure is shown as a per cent of GNI*

Private mortgage purchases are supported by the State through two headline schemes. The Help to Buy (HtB) scheme has supported around 44,000 purchases since introduction in 2017, providing an up-front deposit subsidy to eligible FTBs, with a total spend of €250m in 2023. Over seven thousand mortgages (from a total of 25,591 FTB mortgages) included a HtB claim in 2023. Separately, the First Home Scheme provides an equity tranche to eligible FTBs, which can substantially increase the total purchase price for those borrowing at the mortgage measures' LTI limit.⁸⁰ The FHS initially had a total funding allocation over 2022-2025 of €400m. Section 4 provides estimates of the role these schemes are playing in supporting viability currently, and considers the potential for viability to be achieved through cost-reduction, rather than the boosting of purchasing power.

⁸⁰ The State's role is less direct in the FHS when compared to HtB. The FHS is operated by a Special Purpose Vehicle that is jointly funded by the State and participating mortgage lending banks.

6. Housing in the wider macroeconomy

Developments in the housing market have implications across the wider Irish economy. We use the Central Bank's semi-structural model of the Irish economy to analyse the impact of the housing demand scenarios outlined in Section 3. In particular, we examine the macro-financial and macro-fiscal effects of the CSO's high migration population scenario, assuming that the Irish headship rate converges to the UK rate by 2050.⁸¹ In this scenario, around 52,000 new homes could be needed per year out to the middle of the century, or a 20,000 unit increase relative to 2023 supply (see Section 3).

Macroeconomic impact of unmet housing demand

Higher housing costs can feed through directly to workers' wage demands, damaging the competitiveness of the economy if not accompanied by higher productivity growth. Moreover, a scarcity of housing acts as a deterrent to inward migration, impairing the ability of firms to expand, reducing labour supply and placing further upward pressure on wages. In some instances, the shortage of housing has led firms in the private sector to enter the housing market by directly purchasing dwellings for use by their employees. As noted by the National Competitiveness Council, this has a number of potential negative implications including increasing these firms' operating costs, the reallocation of scarce capital into non-core business areas and it could also impair labour mobility.⁸²

To illustrate the economic effects of persistent unmet housing demand, we impose an increase in the share of 25 to 39 year olds in the population to match the higher levels of structural demand in the CSO high migration scenario, with convergence to UK headship by 2050 (see Section 3). This proportion of the population in the 25-39 age group is a key driver of housing demand in the model, along with personal income, the user cost of capital and credit conditions.⁸³ We simulate the model over the period 2024 to 2035 with the additional population-driven demand but holding housing completions at their baseline level.

In the absence of an increase in housing supply, house prices in this scenario rise by over five per cent above baseline at peak (Figure 31). The increase in

⁸¹ For expository reasons, we focus on the M1-UK scenario in this section. Results showing the macroeconomic impact of the scenario assuming faster convergence to UK headship by 2035 (M1-Fast) are available from the authors on request.

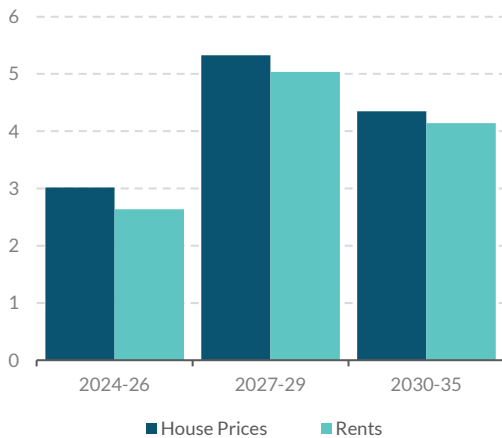
⁸² See https://www.competitiveness.ie/media/d2nhry3o/icc_2024_final_version.pdf and <https://www.competitiveness.ie/media/u5nbmtq1/bulletin-24-3-competitiveness-and-the-housing-market-in-ireland.pdf>

⁸³ See [McInerney \(2020\)](#) for details on the macro-financial component of the semi-structural model.

house prices leads to higher household consumption for existing homeowners through the housing wealth effect. Higher housing demand, however, also leads to higher rents, which rise along with house prices to restore equilibrium in the housing market.

House Prices and Rent

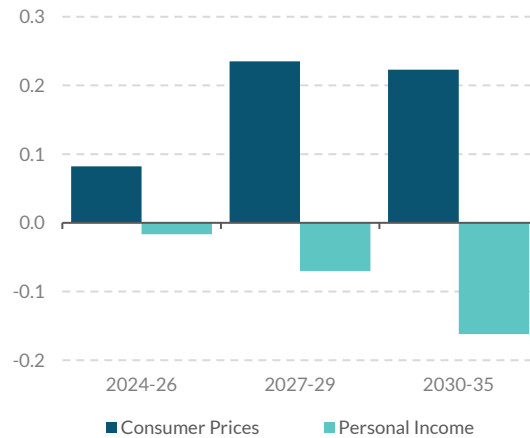
Figure 31
Deviation from baseline (Percent)



Source: Central Bank of Ireland calculations

Consumer Prices and real Income

Figure 32
Deviation from baseline (Percent)



Source: Central Bank of Ireland calculations.

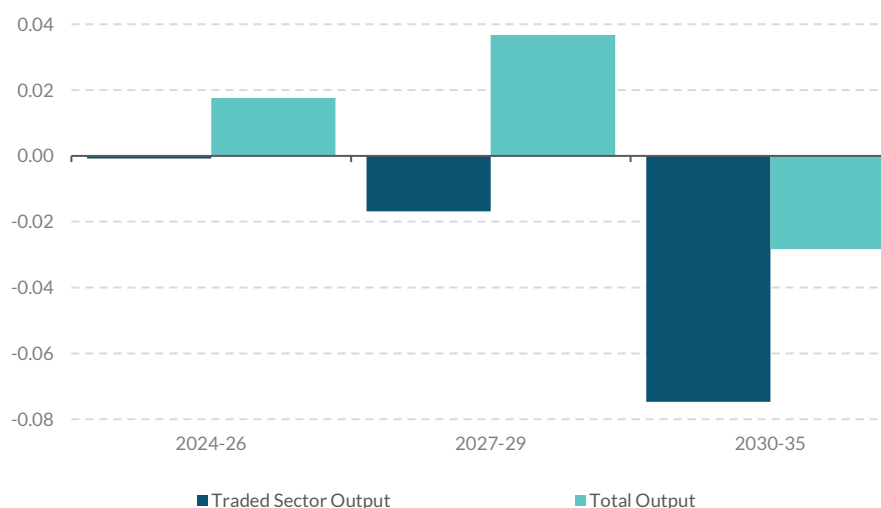
The increase in rents feeds into higher consumer prices, which reduce real household income and thus consumption. The level of consumer prices rises by over 0.2 per cent over the medium to long run (Figure 32). Although wages increase slightly as workers try to restore their consumption wage through bargaining, it is insufficient to prevent a persistent decline in real personal income over time. The net impact on consumption of higher housing wealth but lower real incomes is a small rise in consumption above baseline of approximately 0.1 per cent in the long run (not shown).

From an aggregate demand perspective, however, the increase in consumption is largely offset by a fall in external demand for Irish exports. Figure 33 illustrates the impact of the shock on traded sector and total output. The negative impact of the shock on traded output is mainly driven by the rise in prices, which increases the price of Irish exports relative to trading partners. While the precise quantification of the impact of the shock on competitiveness is not the main objective of our analysis, these results do illustrate the channels through which not dealing with higher housing demand could affect living standards and the broader economy. Moreover, it should also be noted that additional channels that incorporate the impact of higher house prices and

rents on the ability of firms to attract labour and new FDI investment may not be fully captured in the model. In overall terms, while the net effect of the housing demand shock on the economy is small, total output falls below baseline in the long run.

Traded Sector and Total Output

Figure 33
per cent deviation from baseline



Source: Central Bank of Ireland calculations

Macroeconomic impact of increasing housing supply to meet estimated demand

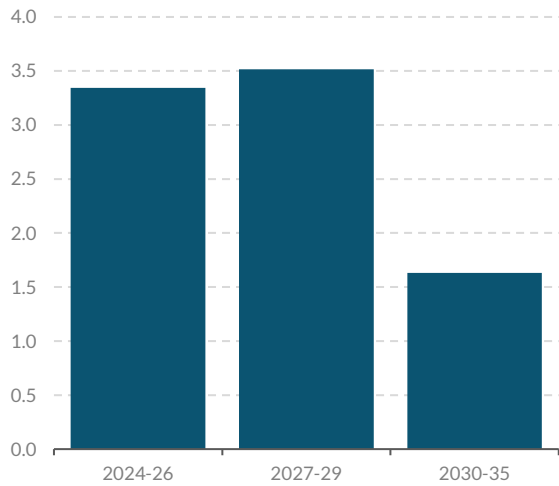
Increasing housing output to levels consistent with meeting long-run demand would provide a significant stimulus to domestic demand and require a large increase in construction employment. We now examine the macro-financial impact of assuming that construction firms raise production to meet the required higher level of completions in each year in the CSO high migration scenario, with convergence to UK headship by 2050. The scenario assumes that the government's financing of construction is capped at its current level of over €4 billion. The results of these simulations for selected real and nominal variables are presented in Figures 34 through 37.

Figure 34 shows the response of house prices when we combine increased housing demand with the increase in housing supply needed to satisfy this demand. Perhaps surprisingly, we find house prices initially actually rise more above baseline, when the supply and demand shocks are combined. This is mainly due to the stimulative effects on domestic demand of higher residential investment, which acts to further boost housing demand through the household income channel. Over time however, the dampening effect of higher housing supply on house prices dominates, so that by the end of the scenario

horizon, the latter are around one third of their level in the demand-only scenario that was shown in Figure 31 above.

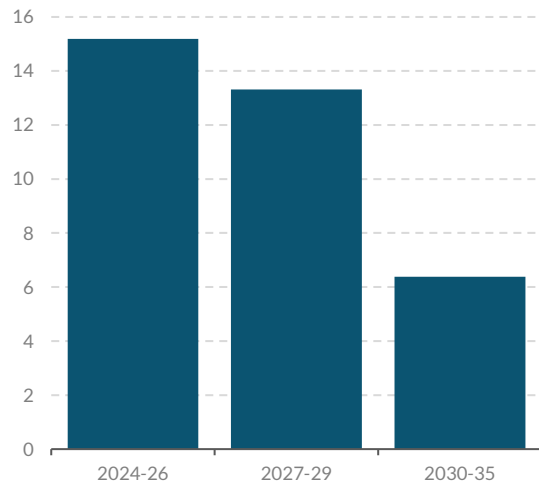
House Prices

Figure 34
Deviation from baseline (per cent)



Construction Employment

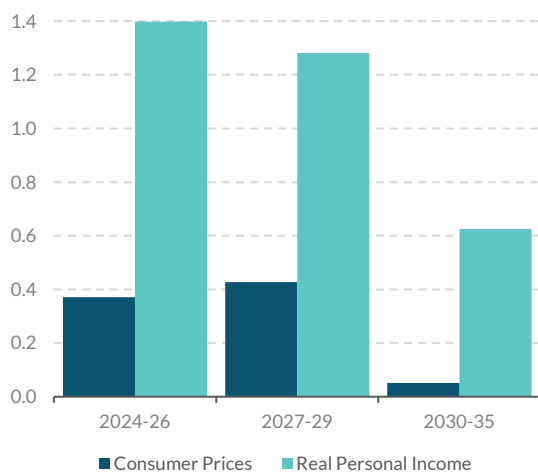
Figure 35
Deviation from baseline (per cent)



Source: Central Bank of Ireland calculations

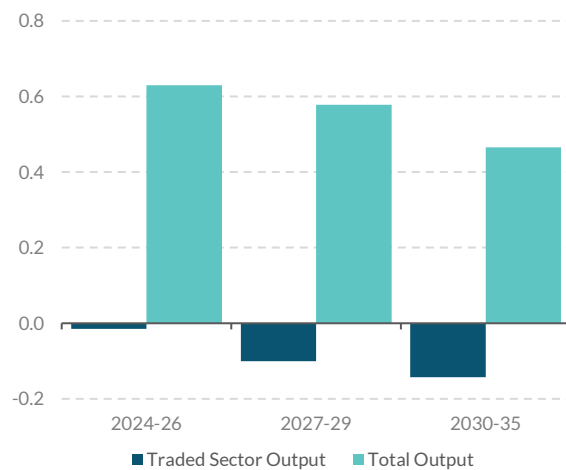
Consumer Prices and Real Income

Figure 36
Deviation from baseline (per cent)



Traded Sector and Total Output

Figure 37
Deviation from baseline (per cent)



Source: Central Bank of Ireland calculations

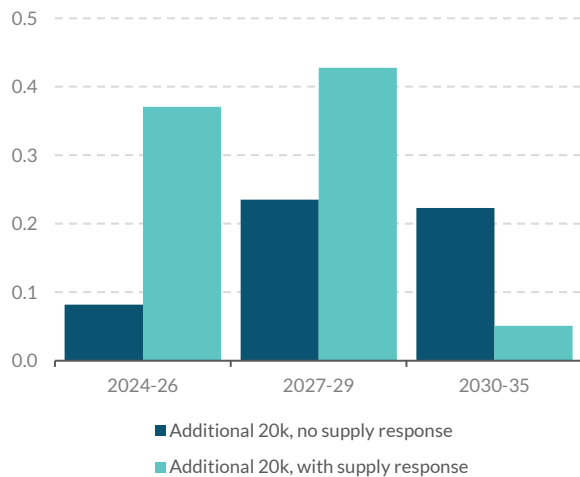
The increase in domestic demand mainly follows from the impulse to residential investment. Figure 35 shows that the rise in the required level of completions leads to a substantial increase in the derived demand for construction workers, with construction employment increasing by over 15

per cent in the short run (around 26,000 workers). Such an increase in employment would see the number at work in the sector return to the level observed in 2005. Both the direct increase in residential investment and the wider stimulus to aggregate demand spur an increase in total employment, which rises by 1.2 per cent above baseline in the long run (not shown).

With the economy already at full employment, careful macroeconomic management would be needed to ensure a ramp up in housing output does not create excessive overheating pressures. The stimulus to domestic demand puts upwards pressure on both wages and prices, with the latter also increasing due to the impact of the housing demand shock on rents. At the household level, the boost to incomes from higher wages and employment more than offsets the increase in prices thereby increasing real household income (Figure 36). The rise in wages levels in domestically-oriented sectors attracts workers away from the traded sector, with the increase in the price level generating a real exchange rate appreciation. As Figure 37 shows, this results in a fall in traded sector output of 0.14 per cent below baseline in the long run. Figure 37 also illustrates the overall impact on the total output of the economy. The growth in domestic demand significantly outweighs the fall in exports arising from lower external demand, resulting in a sizeable increase in total output.

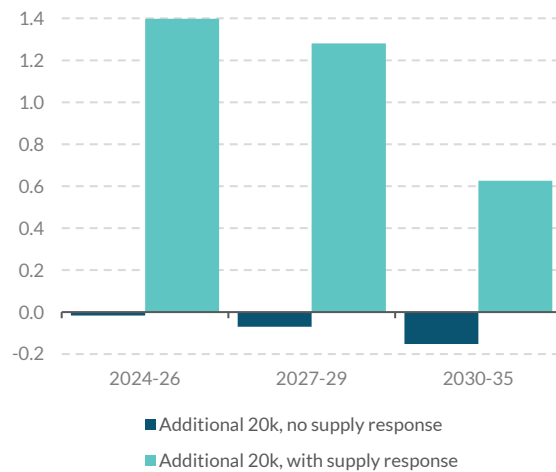
Consumer Prices

Figure 38
Deviation from baseline (per cent)



Real Personal Income

Figure 39
Deviation from baseline (per cent)



Source: Central Bank of Ireland calculations

Although there would be challenges in managing the economy while housing output is increasing, overall outcomes are more favourable than in a scenario with persistent unmet need. Relative to the housing demand scenario presented in the previous section where there is no supply response, it is the

notable how the responses of prices and real incomes differ when housing supply is calibrated to respond fully to the increase in housing demand. In the scenario with only the demand shock, prices continue to rise over the scenario horizon, while in the scenario that combines higher demand and supply, prices are close to baseline by the end of the simulation as housing supply meets the rise in demand (Figure 38). Real incomes are higher throughout the simulation when the shocks are combined, compared to a persistent decline below baseline when demand increases with no supply response (Figure 39).

Impact of higher productivity in construction

One of the constraints to achieving Ireland’s housing targets is the availability of skilled construction workers ([Housing Commission, 2024](#)). In the absence of significant expansion in the pool of workers, higher levels of innovation or productivity among existing workers could partially substitute for higher labour input in terms of boosting the capacity of the sector. This could include, for example, the deployment of modular construction methods, which generally are less labour-intensive and less costly than traditional methods, and enable production at greater scale ([DoHLGH, 2023](#), [CIOB/TASC, 2024](#)).⁸⁴

Improving construction sector productivity would enable housing output to rise in a manner that reduces overheating pressures. We consider the macroeconomic impact of an increase in labour productivity in the construction sector.⁸⁵ The results of this scenario are reported in Figures 40 through 45 (Additional 20k, with supply response *and higher productivity*) and are presented alongside those for the scenario outlined in the previous section for comparison (Additional 20k demand, with supply response). The main impact of the shock is to significantly reduce the demand for construction labour relative to the latter scenario, as firms are now able to produce the same quantity of output with a smaller worker-hour input (Figure 40). In the long run, the increase in construction employment is around one third of that generated in the housing supply scenario that keeps labour-augmenting technology at its baseline level. The increase in total employment is considerably lower than that generated by the latter scenario, which is mainly due to lower employment growth in both the construction sector and the non-traded sector more broadly (Figure 41).

⁸⁴ Modular methods can deliver a 20 to 40 percent reduction in construction costs and over a 70 percent reduction in onsite labour requirements ([DoHLGH, 2023](#)).

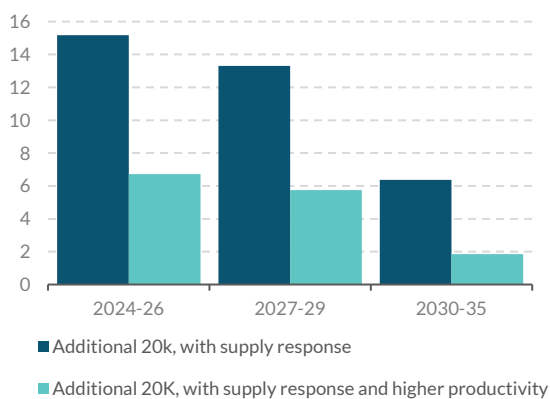
⁸⁵ In the Bank’s semi-structural model, technology is assumed to be labour-augmenting so that an increase in that variable expands the effective quantity of the labour input for a given level of employment. The scenario is calibrated as a permanent 10 per cent increase in labour-augmenting technology that is layered on the scenario outlined above with 20k additional units and a supply response.

The relatively lower demand for workers due also dampens wage growth with the two effects combining to generate a significantly smaller increase in total compensation above baseline over the scenario horizon (Figure 42). As unit labour costs are now lower, firms face relatively weaker pricing pressures in order to maintain markups and accordingly, the housing shock is less inflationary than it is in the absence of higher labour productivity (Figure 43).

By minimising wage and price inflationary pressures while housing output is increasing, improvements in productivity benefit the traded sector. In terms of output, while the impact of the housing shocks on total output is almost identical with and without the additional productivity shock, the composition of output is quite different (Figures 44 and 45). Higher productivity and concomitant lower levels of inflation result in a smaller output loss relative to baseline in the traded sector in the short and medium run, and a larger increase in output in the long run. The negligible difference in the response of total output in both scenarios is due to the productivity shock reducing compensation growth, which dampens the increase in consumption (not shown) and offsets the relative improvement in competitiveness.

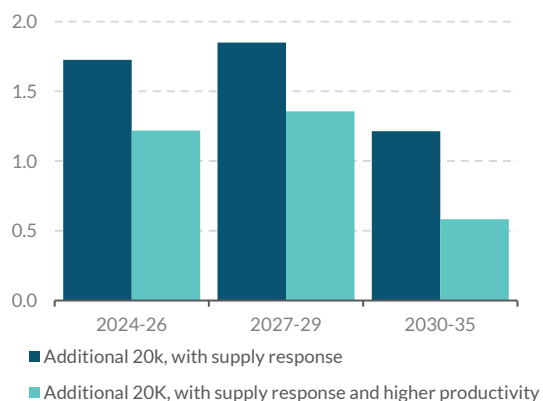
Construction Employment

Figure 40
Deviation from baseline (per cent)



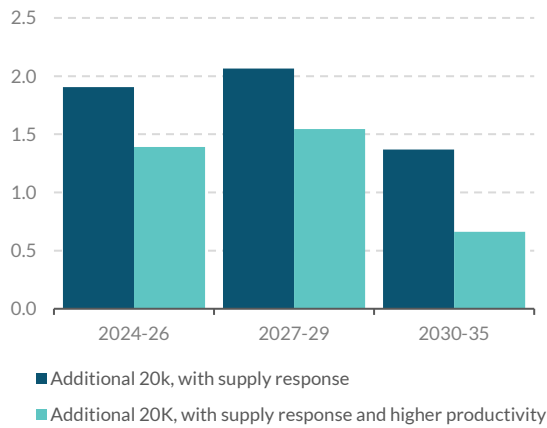
Total Employment

Figure 41
Deviation from baseline (per cent)



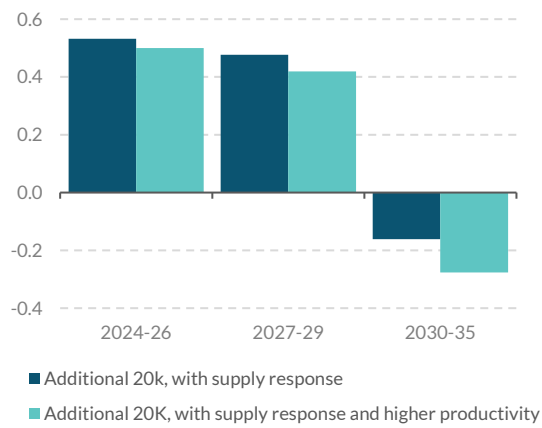
Total Compensation

Figure 42
Deviation from baseline (Percent)



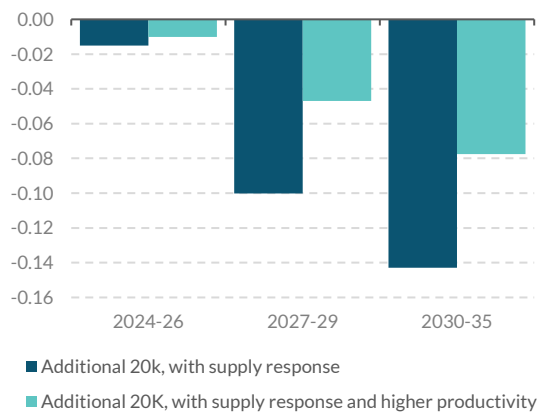
Producer Prices

Figure 43
Deviation from baseline (Percent)



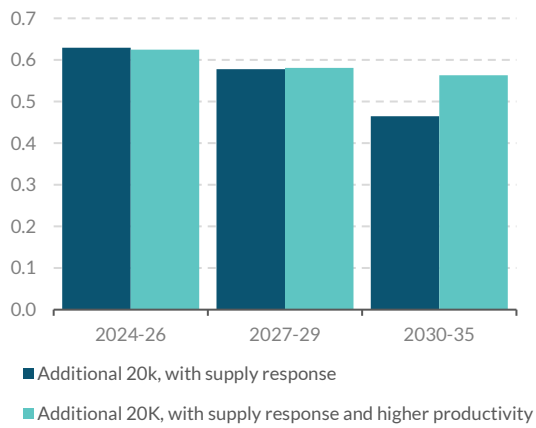
Traded Sector Output

Figure 44
Deviation from baseline (Percent)



Total Output

Figure 45
Deviation from baseline (Percent)



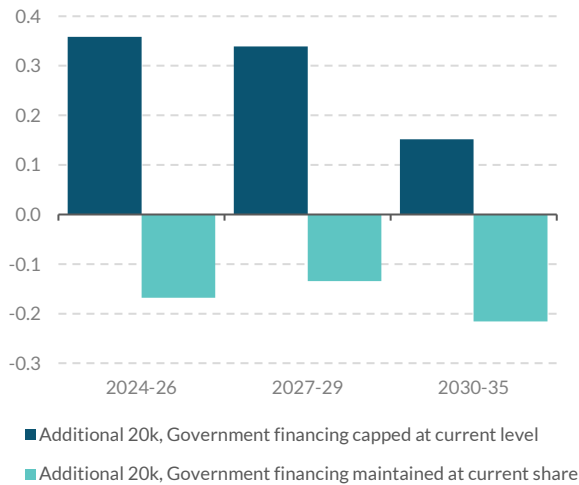
Source: Central Bank of Ireland calculations.

Public share of financing

Increasing public financing of residential investment from its current level would result in a deterioration in the budget balance and modestly higher government debt. The scenarios above assumed that government financing of residential construction is capped at its current level of over four billion euro per annum. We now consider a scenario in which the current share of construction finance provided by the Exchequer is maintained over the medium to long term. Specifically, for illustrative purposes, we assume that the government provides approximately half of the additional financing for the construction of an additional 20,000 housing units each year, with the remaining half provided by the banking sector.

Budget Balance Ratio

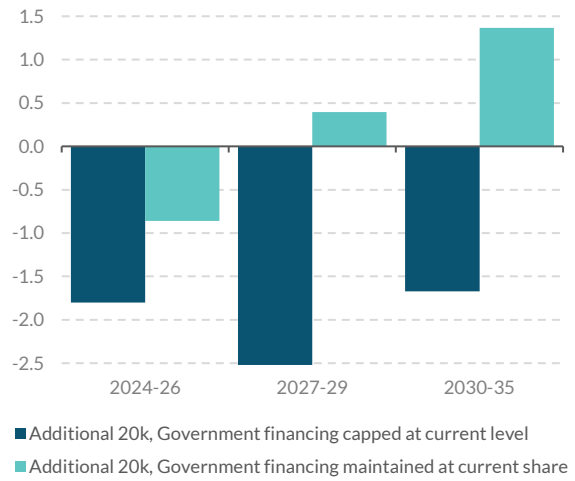
Figure 46
Deviation from baseline



Source: Central Bank of Ireland calculations.

Public Debt Ratio

Figure 47
Deviation from baseline



Source: Central Bank of Ireland calculations.

The results of this scenario are shown in Figures 46 and 47. With the macroeconomic impact broadly unchanged, the main impact of changing the funding mix is, intuitively, on the fiscal position and on the size of banks' balance sheets. As the government is now required to finance a higher share of residential construction relative to the capped funding scenario, the budget balance ratio deteriorates continuously over the scenario horizon. The long run effect of maintaining the 50 per cent funding share is to lower the budget balance ratio by around 0.2 percentage points relative to baseline (Figures 5a and 5b).

Assuming static policy, the deterioration in budgetary balances accumulate into higher levels of public debt. In terms of the public debt ratio, the growth in output dominates in the short term resulting in a fall in the ratio relative to baseline. However, the ratio increases modestly in the medium to long term as debt, rising 1.4 percentage points above baseline by the first half of the next decade. This contrasts sharply with the dynamics of public debt in the capped funding scenario, wherein the debt ratio is 1.6 percentage points below baseline by 2035.

7. Conclusions

The Irish housing market has undergone more than two decades of volatility, dominated by the boom-bust cycle either side of the Global Financial Crisis. For over a decade after the crisis, supply of new homes was below estimates of underlying demographic demand from population growth and migration,

creating pent-up demand that remains to be met. Despite these challenges, housing supply has risen substantially, by close to 50 per cent since 2021.

In this *Article*, we update the Central Bank's estimates of underlying demographic demand to around 50,000 homes per year from now until the middle of this century, driven both by unmet demand and population growth that has proven faster than was previously expected. These 50,000 homes per year will need to be delivered across a range of property types, locations, procurement and financing methods, involving the State, banks, and both local and global non-bank financial intermediaries.

We highlight three broad themes that will determine whether these new requirements for new home supply are likely to be met.

Firstly, the system of planning, building regulation, and zoned land availability must ensure that supply can come on stream in the areas where demand for new homes is most pressing. The State will have a key role to play both in terms of reforms of the planning and regulatory system itself, as well as in the provision of enabling infrastructure at necessary scale and speed. Our analysis suggests that, up to now, urban centres have seen disproportionately low levels of new home supply, and will need to be a focus for new development if environmental sustainability targets are to be met. Urban development will also require a renewed focus on the planning system, to ensure investment can occur without undue delays and bottlenecks.

Secondly, the productivity and capacity of the construction sector itself is weak in a historic and international context. Smaller businesses, benefitting less from economies of scale, are more common in Ireland than in many other jurisdictions. Policymakers can enable the sector to operate at greater scale by ensuring that ample land is zoned, serviced and available for development, particularly near urban centres, and that regulations are consistent and do not contribute to undue uncertainty levels among developers. Other measures to facilitate greater scale in the sector could include an increased focus on standardisation of building designs to facilitate more modern methods of production at large scale.

Thirdly, our analysis of the development financing landscape suggests that, rather than being a key barrier to development itself, it is likely that greater financing will be unlocked if challenges in the previous two areas are resolved. A diverse mix of State, bank and non-bank sources will be required to facilitate the supply of 20,000 *additional* new homes per year beyond 2023 levels. Our analysis suggests that, if development barriers in areas such as planning and

zoning can be unlocked, capacity likely exists on the balance sheets of key actors to facilitate growth in housing output. Our assessment is that access to equity may be the more pervasive financing challenge, and may require State intervention to “crowd in” additional external investment to support increased supply.

The persistent under-supply of housing has increasingly negative macroeconomic effects, in addition to the challenges clearly being faced by individuals, families and communities across the country. Our analysis highlights the economic costs in terms of higher cost of living and doing business, ultimately damaging Ireland’s competitiveness and attractiveness as a place to live and work. However transitioning to significantly higher housing output also comes with risks to the economy and public finances which need to be managed carefully. Without complementary measures that focus on enhancing productivity, providing supporting infrastructure and ensuring sufficient zoned and serviced land is available, bridging the underlying gap between affordability and viability will be more difficult to achieve sustainably.

Climate change and the financial sector: introducing the new ESCB analytical indicators of carbon emissions

Bernard Kennedy⁸⁶

Abstract

In July 2021, the ECB Governing Council committed to including climate change considerations in its monetary policy framework. This commitment involved, amongst other deliverables, new climate-related statistical indicators. The focus of this *Article* is on describing the new analytical indicators of carbon emissions for financial institutions resident in Ireland. The Irish values are broadly in line with the euro area responses although the headline statistics mask considerable heterogeneity. For some of the indicators, the highly globalised nature of the Irish economy makes it difficult to establish a link between the new analytical indicators of carbon emissions and the ongoing efforts of indigenous firms to transition towards a more carbon neutral production process. More disaggregated macroeconomic data in the coming years as input into the indicators combined with separate improvements planned to the estimation of these indicators will further assist policy makers in this regard.

⁸⁶ Central Bank of Ireland, Statistics Division – Bernard.Kennedy@centralbank.ie

The views expressed in this paper are those of the author and do not necessarily reflect the view of the Central Bank of Ireland or the Eurosystem. Very useful comments from Jean Cassidy, Martin O’Brien, Dave Cronin, James Carroll and many others are gratefully acknowledged.

The analytical indicators of carbon emissions have been jointly developed by the European Central Bank and the national central banks (including the Central Bank of Ireland) of the member states participating in the ESCB expert group on Analytical Indicators of climate change. The data cited in this article is based on the first and second wave of indicators published in January 2023 and April 2024 respectively and may be subject to subsequent updates and revisions.

1. Introduction

Climate change – as evidenced by the growing incidence of more extreme weather events – is recognised as one of the greatest challenges facing humanity. Efforts to coordinate policy at a global level to reduce, stop, and reverse the release of atmospheric greenhouse gases have intensified in recent years. The 2015 Paris Agreement aimed to limit the average global temperature rise to below 2°C compared to pre-industrial levels. Consistent with the Paris Agreement, both the European Commission and the Irish government have separately announced plans to reach net zero emissions by 2050. The European Commission has adopted a series of legislative proposals as part of the ‘European Green Deal’ outlining its ambition for Europe to become the world’s first climate neutral continent by 2050. The Irish government, in addition to its European commitments, published the *Climate Action Plan 2021* three years ago. The main goals of the plan are to reduce greenhouse gas emissions to 51 per cent of 2018 levels by 2030 before attaining net zero emissions by 2050.

As the incidence of extreme weather events intensify, the implications of climate change for short-term economic fluctuations have come into focus. In a detailed literature review, Ciccarelli et al (2023) outlines how the adverse impact of climate change on economic growth is widely documented, while the relationship between climate change and inflation is expected to be non-linear as climate change intensifies. In earlier research, Ciccarelli (2021) outlined the main channels through which climate change could influence activity and prices. The immediate impact of climate change on short-run economic developments is on physical capital, land, as well as agriculture and labour inputs as more extreme weather conditions disrupt economies’ supply side. At the same time that these disruptive effects occur, households and businesses need to transition to a low carbon economy in order to decouple carbon emissions from economic activity and this is likely to require significant policy interventions.

Against this background of more frequent extreme weather events, the implications of climate change for the financial sector have become a more immediate priority for policy makers. In 2015, finance ministers from the Group of Twenty (G20) asked the Financial Stability Board to consider how the financial sector could take account of the risks that climate change poses to the financial system. In a wide-ranging speech that year, then Bank of England Governor Mark Carney explained the intertemporal trade-off inhibiting measures to reduce climate change as the immediate costs arising from such

measures combined with longer-term benefits can disincentivise mitigation policies. Lane (2019) outlined what challenges arising from climate change imply for the implementation of monetary policy, the efforts required to gauge the risks to financial stability of such change, as well as the challenges that climate change poses for the regulation and supervision of firms and markets.

In 2021, the ECB Governing Council decided on a comprehensive action plan to incorporate climate change considerations into its monetary policy framework in line with its obligation under EU treaties. This action plan included, amongst other deliverables, new statistical collections of climate change that include indicators of sustainable debt securities, the exposure of financial institutions to climate-related physical risks, as well as indicators that can gauge the carbon emissions financed by the financial sector. Sustainable finance indicators encompass four categories of securities: Green bonds where the proceeds are used to finance green projects; Social bonds where the proceeds are used to finance social projects; Sustainability bonds where the proceeds are used to finance a combination of both green and social projects; and Sustainability linked bonds where the issuers are committed to future improvements in sustainability outcomes but with no binding restrictions on how the proceeds may be used. Third party entities such as the International Capital Markets Association or the Climate Bonds Initiative typically provide the sustainability classification. Total issuance of sustainable debt securities has surged in recent years although they still account for a small part of the wider debt securities market with Green bonds accounting for the majority of these securities.

Physical risk indicators gauge financial institutions' exposure to different natural disasters including flooding, windstorms, landslides, and subsidence. The construction of these indicators combines locational and geospatial data, with risk mitigation strategies such as insurance coverage considered. The risks and expected losses are calculated for Non-Financial Corporations (NFCs) that are counterparts to euro area financial institutions.

The sustainable finance indicators were classified as “[experimental](#)” as they weren't underpinned by as much rigour compared with official statistics. Nonetheless, experimental indicators are still robust enough for monetary policy analysis. The physical and carbon emission indicators were classified as “[analytical](#)” as they were underpinned by less rigour compared with experimental indicators. This in turn reflects the lower coverage rates, reliance on third party data providers, and some limitations with the underlying

methodology. However, the second wave of results published in April 2024 addressed many of these limitations.

The indicators of carbon emissions, which are the focus of this article, allow users to evaluate how the financial sector contributes to the funding of carbon related activities and, by extension, to assess the associated risk of carbon-intensive sectors transitioning to a low-carbon economy. The first wave of results was published in January 2023 with the underlying results calculated by country and by sector for 2018 to 2020. The second wave of results was published in April 2024 with the underlying results calculated for 2018 to 2021. Appendix 1 shows the higher coverage rates associated with the second wave of results compared with the first wave. Otherwise, all subsequent charts correspond to the second wave of results.

The remainder of this *Article* is structured as follows: Section 2 reviews two established data sources that were used in the construction of the carbon emission indicators before outlining how the indicators were constructed. Section 3 reviews the main findings that emerge regarding the indicators of carbon emissions for financial institutions resident in Ireland. Section 4 outlines how the carbon indicators are calculated based solely on financial institutions' direct holdings of debt securities and listed shares. This is a limitation inherent in the indicators as some sectors' indirect holdings are a multiple of their direct holdings. Some improvements currently in progress are also discussed. Section 5 concludes.

2. Current Climate Data and Indicators of Carbon Emissions

Before analysing how the indicators of carbon emissions are constructed, it is worth reviewing the main existing sources of data on Greenhouse Gas (GHG) emissions regularly used in economic analysis. One of the two main sources available to researchers to study the volume of economy-wide carbon emissions across the euro area is the EU's Emissions Trading Scheme (ETS). The ETS has been in operation since 2005 and works on the 'cap and trade' principle whereby a limit is set on the total amount of greenhouse gases that can be emitted. Within this cap, companies receive or purchase emissions which they can trade on a secondary market. Over time, the permissible volume of GHG emissions that can be released as part of the ETS has fallen as the EU has intensified its efforts to attain carbon neutrality. SEAI Ireland have detailed how the share of GHG emissions in Ireland from large companies participating in the ETS has decreased gradually from 28 per cent of total GHG emissions in 2005 to 21.5 per cent of total GHG emissions in 2022 or from

19,164ktCO₂ in 2005 to 12,614 ktCO₂ in 2021⁸⁷. Across all EU member states, participation in the scheme is mandatory for companies in the aviation and maritime sectors as well those NFCs operating above a certain size. Consequently, the data on firms' emissions that are recorded as part of the ETS can be used to gauge the broader efforts of policymakers to attain a more carbon neutral domestic production process.

The other primary source of data on economies' emissions is the European System of Environmental Economic Accounting (SEEA). SEEA records direct emissions from each economic sector as part of the system of environmental accounts. The regulation that established the SEEA accounts includes a module on Air emission Accounts, The module on AEA accounts is the component most relevant to the indicators of carbon emissions as it records the emissions of six greenhouse gases including CO₂ as well as seven air pollutants.

Data collected on greenhouse gases as part of the AEA accounts are published on an economy-wide basis making it difficult to disaggregate total emissions by economic sector or industry. However, the Non-Financial Reporting Directive (NFRD) framework, which came into effect in 2014, required NFCs with 500 or more employees to provide a review of their business model policies, outcomes, principal risks, and key performance indicators including environmental matters. To this end, many larger NFCs across the euro area have started to publish data on their Scope 1 and Scope 2 emissions. Data on Scope 3 emissions is more difficult to attain although the Corporate Services Reporting Directive (CSRD), which applies from the 2024 financial year onwards and requires a broader set of euro area NFCs to publish data on their Scope 3 emissions data as part of their climate disclosures. The differences in the emission types are outlined in Table 1 below.

⁸⁷ ktCO₂ denotes kilotons of carbon emissions and is a unit of measurement. Carbon dioxide emissions are often calculated and reported as elemental carbon before being converted to actual carbon dioxide mass by multiplying them by 3.667 (the ratio of the mass of carbon to that of carbon dioxide).

Table 1: Emission Types

Emissions Type	Definitions
Scope 1	Direct company emissions e.g. emissions from a production plant that a company owns.
Scope 2	Indirect emissions generated by businesses as a consequence of their energy consumption
Scope 3	Indirect emissions that occur due to companies' participation in Global Value Chains. This can include emissions released during the production of purchased inputs, employees commuting, etc.

Source: Greenhouse Gas Protocol Corporate Standard

The data published as part of the EU's ETS and the AEA accounts detail the total volume of emissions associated with an economy's supply side rather than the end-user demand for carbon intensive sectors or the financing of carbon intensive sectors. In light of the risks associated with climate change, G20 finance ministers and central bank governors asked the Financial Stability Board (FSB) to review how the financial sector can take account of climate-related risks. The FSB established the Task Force on Climate-related Financial Disclosures (TCFD) in 2015⁸⁸ to develop recommendations for more effective climate-related financial disclosures that, amongst other things, "enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposure to climate-related risks". Using in part, the analysis undertaken by the Partnership for Carbon Accounting Financials⁸⁹, the TCFD has outlined a suite of additional exposure metrics that help to gauge the carbon intensity of financial institutions' claims: Financed Emissions (FE), Carbon Intensity (CI), Weighted Average Carbon Intensity (WACI) and Carbon Footprint (CFP).

FE and CI measure the emissions intensity of financial institutions' holdings. These two metrics calculate the amount (share) of carbon emissions by NFCs that can be attributed to financial institutions via their securities and loan portfolios. These indicators measure the financed emissions of a counterparty (either individually or at sector or country level) and as such can be used to understand how the debtors' or issuers' emissions change over time in anticipation of the need to transition to a net zero economy.

Financed Emissions (FE): The FE indicator connects debtors' investments⁹⁰ to issuers' GHG emissions. In Equation 1, GHG emissions from creditor/issuer j are assigned to financial institution i proportionate to the holder's share of

⁸⁸ <https://www.fsb-tcfd.org/>

⁸⁹ <https://carbonaccountingfinancials.com/en/standard>

⁹⁰ Investments are calculated in the form of loan exposures or each sector's direct holdings of debt securities and listed shares.

enterprise value. The emissions metric is calculated using different data sources - and this is discussed in more detail in Box A - for time period t (typically one year) by aggregating emissions across all resident institutions' holdings. The metric is calculated separately for banks, investment funds, and insurance corporations & pension funds (ICPF).

$$(1) FE_t = \sum_{i=1}^n \sum_{j=1}^n \left(\frac{\text{Investment Value}_{i,j,t}}{\text{Enterprise Value}_{j,t}} * \text{Emissions}_{j,t} \right)$$

Carbon Intensity (CI) The CI indicator extends the FE indicator by adjusting emissions for creditor/issuer economic activity, thus giving an estimate of investment emission intensity. The metric is reported in tonnes of CO₂ emissions per million euro revenue. As with FE, this metric is aggregated across resident institutions' holdings by sector.

$$(2) CI_t = \frac{FE_t}{\sum_{j=1}^n \sum_{i=1}^n \left(\frac{\text{Investment Value}_{i,j,t}}{\text{Enterprise Value}_{j,t}} * \text{Issuer's Revenue}_{j,t} \right)}$$

Although FE and CI provide information on how the transition to a net-zero carbon economy can be financed, these two indicators do not provide information on whether the financing is targeted to make businesses greener. Instead, the indicators help in monitoring overall emission reductions in economic activities and the correlation of financing in these developments.

The third and fourth indicators - WACI and CFP - are more closely aligned with financial system exposure to climate risk. Both indicators describe emissions relative to creditor portfolio values and can be used to provide a comparison of climate risks across institutions, countries and over time.

Weighted Average Carbon Intensity (WACI): In the WACI indicator, debtor emission intensity (tonnes of emissions per € million of company revenue) is weighted by its share of the creditor's portfolio. As with the previous indicators, this is generally aggregated across all investment holdings of resident institutions. Moreover, the indicator can also be used to compare transition risk between financial institutions.

$$(3)WACI_t = \sum_{j=1}^n \sum_{i=1}^n \left(\frac{Investment\ Value_{i,j,t}}{Portfolio\ value_t} * \frac{Issuer's\ emissions_{j,t}}{Issuer's\ revenue_{j,t}} \right)$$

Carbon Footprint (CFP): CFP is derived and interpreted similarly to WACI but instead describes debtor emissions relative to enterprise value (tonnes of emissions per € million of company value).

$$(4)CFP_t = \sum_{j=1}^n \sum_{i=1}^n \left(\frac{Investment\ value_{i,j,t}}{Portfolio\ value_t} * \frac{Issuer's\ emissions_{j,t}}{Issuer's\ enterprise\ value_{j,t}} \right)$$

The four metrics combine data on NFCs' emissions with a selection of financial variables: investment, company value, revenue, and portfolio value. Investment corresponds to banks' total lending to NFCs or the value of a financial institution's holdings of debt securities or listed shares issued by NFCs. Both market capitalisation, which is typically more easily available across NFCs, and enterprise value which is typically less responsive to financial transactions, can be used to approximate company value⁹¹. The most appropriate financial denominator to relate emissions to production would be value added (or GDP at the macroeconomic level) as this excludes all purchases of goods and services from external suppliers. As value added is typically unavailable at the required level of granularity, firms' revenue is frequently used instead. Although easily available, revenue can pose a risk of bias in the different measures of carbon intensity if large parts of the production process are outsourced to suppliers. Portfolio value is calculated as the sum of all loans and credit lines extended by banks to NFCs or the total market value (excluding short positions) of listed shares and debt securities issued by NFCs and held by euro area financial institutions.

Total FE is an absolute metric and expresses the volume of emissions associated with a financial institution's portfolio in terms of million tons of CO₂ emissions. Carbon Footprint (CFP), Carbon Intensity (CI), and Weighted Average Carbon Intensity (WACI) are relative indicators and the results are more comparable over time, across metric, and amongst institutions. The

⁹¹ Enterprise Value (EVIC) is collected by third party data providers and is typically calculated as the total value of firms' assets excluding cash and other non-operating assets.

results from the three relative metrics are calculated in terms of tonnes of CO₂ emissions per million euro.

3. The Evolution of the Carbon Emission Indicator Values in Ireland and the euro area

Before reviewing the Irish and euro area responses, it is important to distinguish between the indicators related to bank lending to NFCs that are calculated at single-entity level, at group level, as well as the indicators calculated at group-level based on financial institutions' direct holdings of debt securities and listed shares. The indicators calculated at single-entity level combine emissions data from the ETS as well as the AEA accounts with bank lending to NFCs using individual loan-level data from the Eurosystem's AnaCredit dataset⁹². The indicators calculated at group entity level based on bank lending to NFCs combine individual loan data from the AnaCredit dataset – both domestic and cross-border loans – with firms' Scope 1 or Scope 2 emissions that are typically reported on an unconsolidated basis at group level, along with matching financial data. The indicators calculated at group-entity level based on financial institutions' direct holdings of debt securities and listed shares combine security-by-security data from the Security Holding Statistics (SHS) database⁹³ with published, as well as imputed, data on NFCs' Scope 1 as well as their Scope 2 emissions along with matching climate and financial data. Table 2 lists the different emission sources applied across the single-entity and group-entity approach. Box A provides further details on the differences between the single-entity and group-entity methodology.

Table 2: Emissions Calculated Using Single and Group Entity Approach

	Single-Entity	Group-Entity	
	Bank Lending to NFCs	Bank Lending to NFCs	Financial Institutions' Direct Holdings of Debt Securities and Listed Shares
Scope 1 emissions	✓	✓*	✓
Scope 2 emissions			✓

*Only after the methodological improvements included in the second wave of results

⁹² AnaCredit is a dataset containing detailed information on individual bank loans above a minimum threshold of €25,000 in the euro area, harmonised across all member states.

“AnaCredit” stands for analytical credit datasets.

⁹³ Securities Holding Statistics (SHSS dataset) provide information on securities held by selected categories of euro area investors, broken down by country of residence.

Results at Single and Group Entity Level – Bank Lending

Charts 1 and 2 display at both single and group entity level the WACI Indicator for banks resident in Ireland as well as in the euro area based on a balanced panel of debtors⁹⁴. A limitation with the relative indicators is that any inference made based on the responses can only analyse the pattern evident in the series rather than the absolute figures. At single entity level, the Irish responses are higher than the comparable euro area responses with the other two relative indicators CI and CFP displaying a similar difference. The indicators aren't calculated by country of counterparty but some noticeable differences emerge when comparing the Scope 1 emissions for borrowers resident in Ireland and those across the euro area. Although the majority of individual borrowers are resident in Ireland many of the borrowers with the highest Scope 1 emissions are resident abroad. For borrowers resident in Ireland much of the emissions can be attributed to the transport sector and are highly concentrated on a firm-by-firm basis reflecting the importance of the aeronautical and aircraft-leasing sector to the Irish economy. For borrowers resident elsewhere in the euro area, much of their emissions can be linked to the manufacturing sector. Furthermore, the reported Scope 1 emissions are also concentrated by individual bank. These differences also reflect the business models of Domestic banks compared to International banks which typically have less exposure to the indigenous sector. However, a full disaggregation of the WACI indicator by lender and counterparty is beyond the scope of this article⁹⁵.

The results at group-entity level include many of the same underlying borrowers that feature in the calculations at single-entity level. The indicators calculated at group-entity level don't use data from the ETS or the AEA accounts. Instead, data on firms' Scope 1 or Scope 2 emissions that's reported on an unconsolidated basis at group level for the largest NFCs is utilised. Consequently, the point estimates at a single and group entity level can't be compared directly. Nonetheless, some similarities in both the headline series as well as the underlying influences can be observed. At group entity level, the measure of WACI for Ireland and the euro area diverges from 2019 with the Irish responses higher than the comparable euro area responses. The Irish

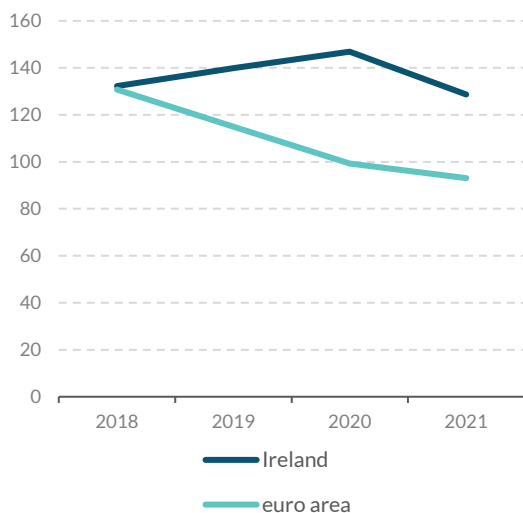
⁹⁴ The results published in April 2024 were reported for both a balanced and an unbalanced sample of debtors. The unbalanced sample arises from two sources: missing emissions or financial data of a debtor or issuer, investments and divestments of holders and creditors, respectively. Firms with matching climate and financial data remain in the (balanced) sample even if they are only present for a selection of the years examined.

⁹⁵ The distinction between Domestic banks and International banks is based on the criteria previously used in the Central Bank of Ireland's [Financial Stability Review](#).

responses are also higher at group-entity level for the other two relative indicators compared with the euro area responses. Similar to the single entity results, the Scope 1 emissions are also concentrated by lender and by borrower. Although the metrics calculated at group entity level includes borrowers from outside the euro area, the majority of reported emissions are still attributable to borrowers within the euro area. In contrast, the computation of the carbon indicators for some Irish resident financial institutions' holdings of debt securities and listed shares is heavily influenced by their claims on NFCs resident in the United States and this is discussed in more detail below.

WACI at Single-Entity Level – Lending to NFCs by Banks Resident in Ireland and the euro area

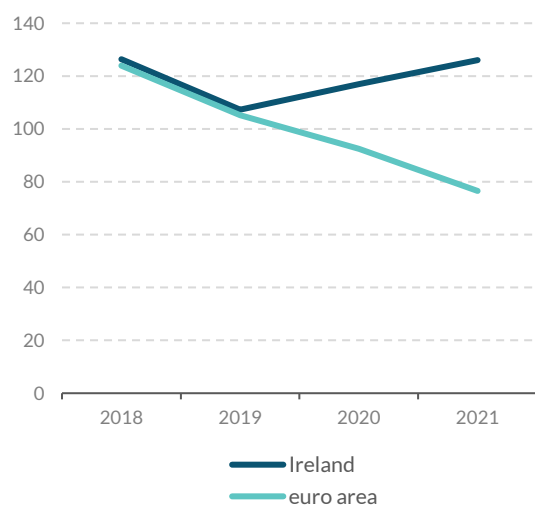
Figure 1
Tons of CO2 emissions per million euro



Source: ECB

WACI at Group-Entity Level – Lending to NFCs by Banks Resident in Ireland and the euro area

Figure 2
Tons of CO2 emissions per million euro



Source: ECB

Results at Group Entity Level – Financial Institutions' Holdings of Debt Securities and Listed Shares

Regarding financial institutions' direct holdings of debt securities and listed shares, Charts 3-5 display the WACI indicator from 2018 – 2021 for Ireland and the euro area. Across all three sectors, the Irish responses are broadly in line with the euro area responses. Within the banking sector, domestic banks' holdings of NFC debt has reduced in importance as a source of external funding with retail deposits now their main funding source. The measures of transition risk have decreased steadily from 2018-2021 but remain higher than the corresponding measures for the euro area. The indicators of carbon

emissions for the banking sector masks considerable heterogeneity across firms and individual security holdings. Kennedy (2023) outlines how the results from the WACI indicator for banks resident in Ireland is concentrated in a reduced cohort of securities held by a small number of international banks issued by a small number of non-resident NFCs.

Regarding the investment funds' sector, the majority of securities held are denominated in foreign currency (primarily US dollars) reflecting the highly globalised nature of the funds sector resident in Ireland, which has few linkages to the indigenous sector. The indicators of carbon emissions declined steadily from 2018-2021 even though the investment fund sector experienced heightened levels of volatility. The Central Bank of Ireland's Market Based Finance Monitor (2021) details this volatility which included a surge in the value of assets under management across the investment funds sector between 2020-2021, linked to a stark appreciation of asset values and increasing inflows from investors, notwithstanding the large redemptions at the onset of the COVID-19 pandemic.

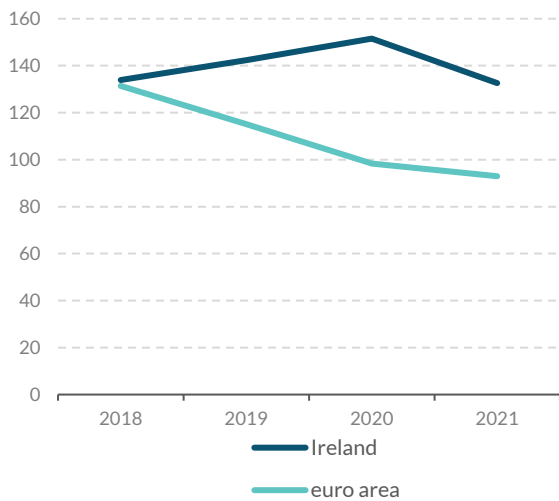
The indicators of carbon emissions for the ICPF sectors are combined for all years owing to the issue of market concentration in some countries. For pension funds resident in Ireland, data on their holdings of securities on an ISIN-by-ISIN basis only extends back to 2019 in the SHS⁹⁶. Consequently, the measure of transition risk for the ICPF sector resident in Ireland in 2018 only includes the insurance sector. Between 2018 and 2021, the adjusted measure of WACI for the ICPF sector declined notwithstanding some bounce in 2020. The main asset of insurance corporations resident in Ireland is their claim on investment funds. Regarding pension funds resident in Ireland, their main financial assets are technical reserves as well as their claims on investment funds. In the case of both sectors, their direct holdings of NFC securities represent a small portion of their balance sheet. It needs to be recalled that the indicators of transition risk are based on financial institutions' direct holdings of debt securities and listed shares whereas the indirect holdings of debt securities and listed shares of the ICPF sector are typically a multiple of their direct holdings. A more accurate gauge of the carbon emission indicators for the ICPF sector would use a look-through approach to gauge their holdings of debt securities and listed shares via their claims on money market funds and

⁹⁶ An ISIN is a twelve-digit alphanumeric code that uniquely identifies each individual security issued throughout the euro area. ISIN codes are issued by National Numbering Agencies (NNA) recognised by the Association of National Numbering Agencies (ANNA).

investment funds. This limitation with the transition risk indicators is discussed in more detail in Section 4.

WACI – Banks Resident in Ireland and euro area

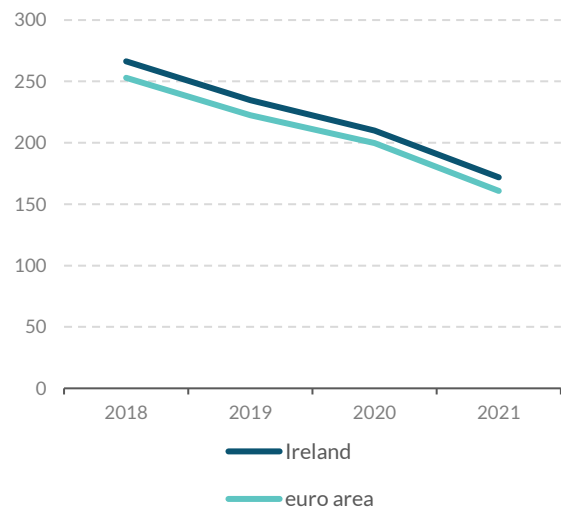
Figure 3
Tons of CO2 emissions per million euro



Source: ECB

WACI – Investment Funds Resident in Ireland and euro area

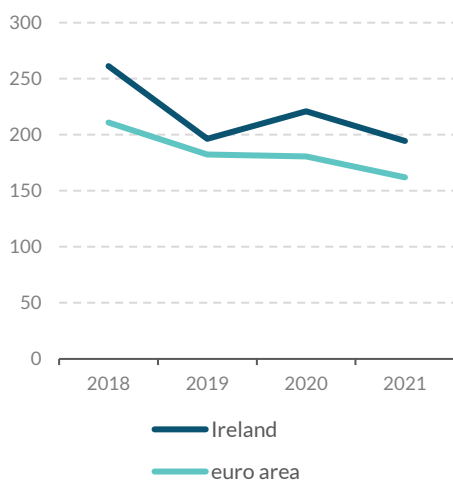
Figure 4
Tons of CO2 emissions per million euro



Source: ECB

WACI – Insurance Corporations & Pension Funds Resident in Ireland and euro area

Figure 5
Tons of CO2 emissions per million euro



Source: ECB

Only a very small portion of resident financial institutions' direct holdings of debt securities and listed shares correspond to NFCs resident in Ireland. The CSO's Institutional Sector Accounts disaggregate NFCs' liabilities between Foreign-owned and Irish-owned NFCs with a further distinction between Irish owned and redomiciled PLCs. An important result emerging from this dataset is that only a minority of resident NFCs' liabilities are attributable to Irish owned NFCs and this is outlined in Table 3. Consequently, the link between resident financial institutions' claims on NFCs and the external funding of the indigenous sector is further weakened. This in turn makes it difficult to link Irish resident financial institutions' holdings of debt securities and listed shares with the efforts of indigenous sector to raise external funding to attain a less carbon intensive production process.

Table 3: Financial Liabilities 2018-2021, Non Financial Corporations by ownership

Outstanding amounts €, millions	2018Q4	2019Q4	2020Q4	2021Q4
Debt Securities	23,904	30,434	62,275	80,774
Irish-owned NFCs		15,869	21,692	40,091
of which Redomicled PLCs		6,845	7,881	
Foreign-owned NFCs		14,565	40,583	40,683
Loans	705,838	673,771	631,441	614,727
Irish-owned NFCs	287,575	261,471	241,302	241,847
of which Redomicled PLCs	86,340	67,913	48,640	61,242
Foreign-owned NFCs	418,263	412,300	390,139	372,880
Equity and Investment Fund Shares	1,268,132	1,571,973	1,633,492	1,943,057
Irish-owned NFCs	703,007	865,059	832,658	1,098,854
of which Redomicled PLCs	398,557	522,313	459,160	666,107
Foreign-owned NFCs	565,125	706,914	800,834	844,202
Other	407,038	509,544	416,717	42,830
Total	2,404,912	2,785,722	2,743,925	3,121,388
Irish-owned NFCs	1,119,688	1,268,255	1,206,525	1,506,328
of which Redomicled PLCs	512,075	625,023	525,639	740,839
Foreign-owned NFCs	1,285,245	1,517,467	1,537,400	1,615,061

Source: Financial Accounts for Ireland, CSO.

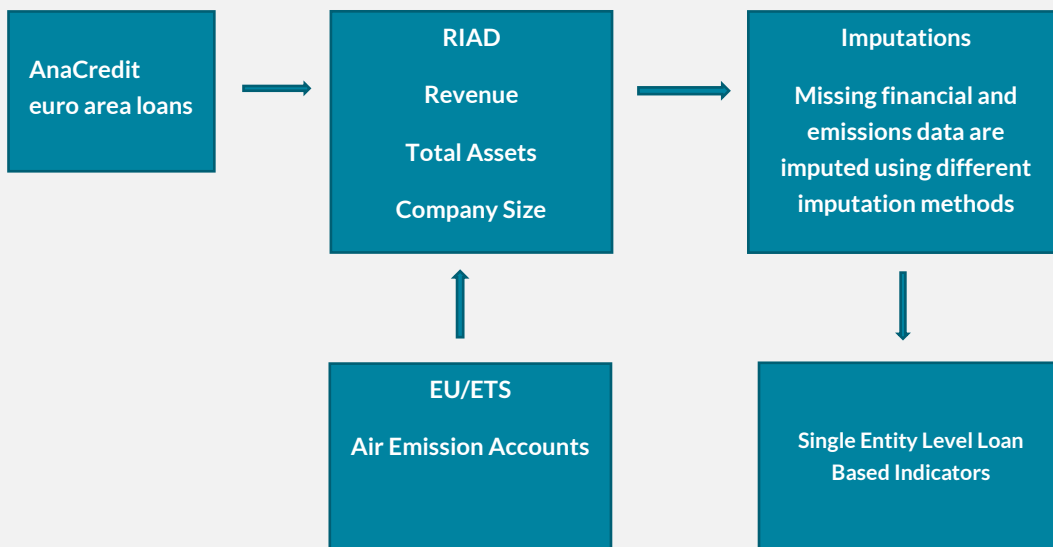
Box A: How different datasets were combined to calculate the various measures of Transition Risk

To estimate the carbon intensity of financial institutions’ claims, a selection of predominantly granular databases were joined and this combination is depicted in Figures 1 to 3 below. The measures of transition risk are based solely on banks’ outstanding loans and credit lines to NFCs and financial institutions’ direct holdings of debt securities and listed shares issued by NFCs.

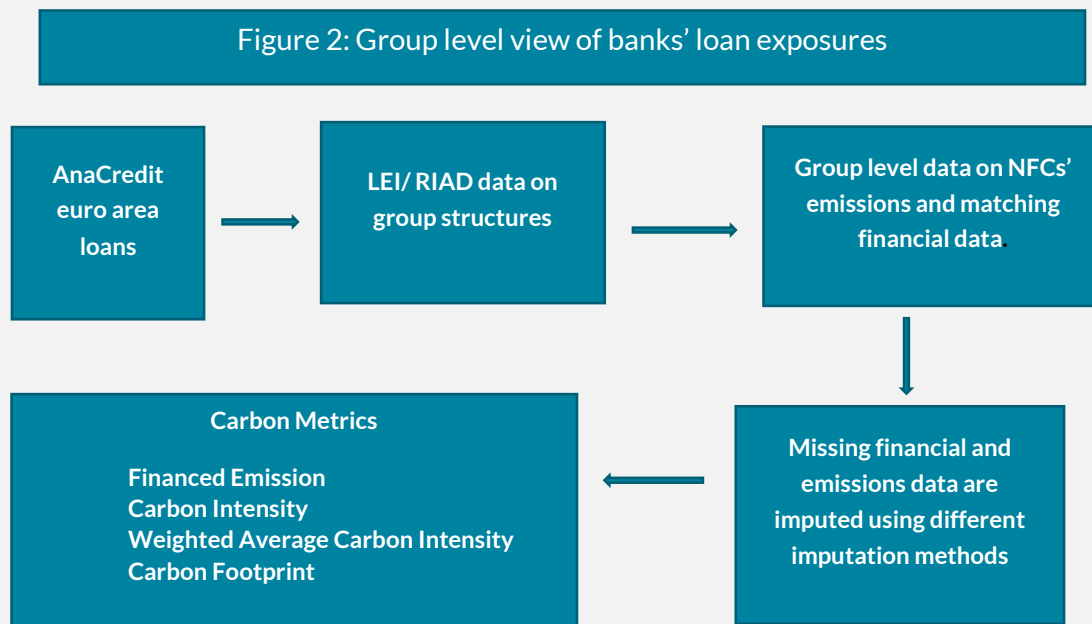
Across the euro area, small and medium enterprises (SME) account for the majority of banks’ loan exposures. At the same time, issuance of debt securities and listed shares is confined to much larger NFCs. Larger NFCs typically have substantial disclosure requirements including data on their Scope 1 and Scope 2 emissions owing to the NFRD Directive and the forthcoming CRSD Directive. At the same time, SMEs typically have fewer disclosure requirements and don’t always publish data on their Scope 1 and Scope 2 emissions. To allow for this, the carbon intensity of banks’ loan exposures was examined at both single entity and group entity level.

The carbon intensity of banks’ loan exposures at single entity applies data from the European Union’s ETS and in its absence, sector-level AEA data. For NFCs not participating in the ETS, Scope 1 emissions are attributed to a single entity in proportion to the entity’s employment share in the given sector. Therefore, the imputation procedure in turn requires the availability of financial information and this data is sourced from the Register of Institutions and Affiliates Data (RIAD).

Figure 1: Single-entity view for banks’ loan exposures



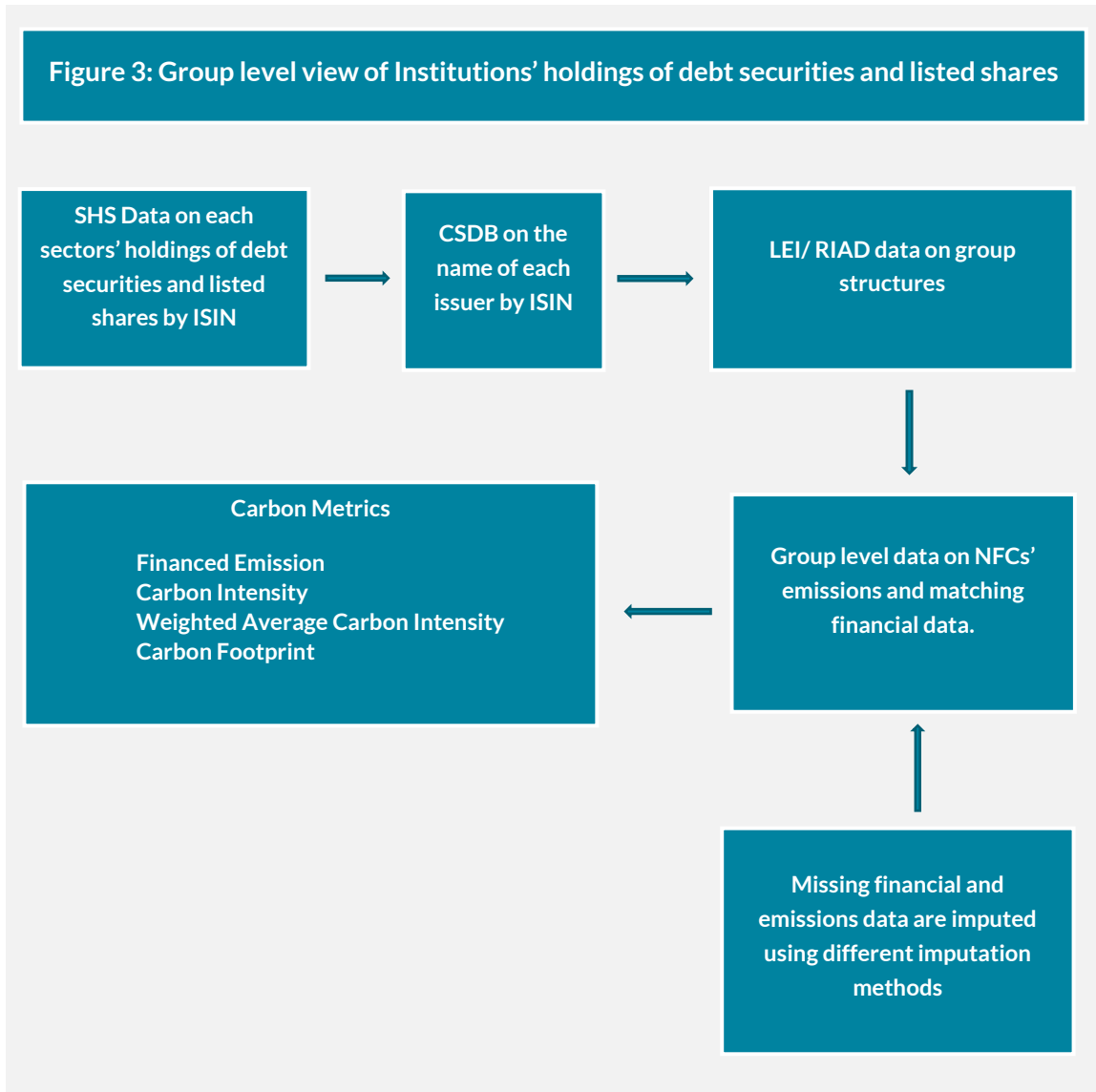
The indicators calculated at group level with respect to banks' loan exposures are particularly beneficial for transition risk analysis, as it fosters the understanding of the global transition risk of the group i.e. beyond the boundaries of the domestic economy. Figure 2 below shows how a combination of datasets were combined. An important difference between the single-entity and group-entity calculations is that data on NFCs' unconsolidated emissions reported at group level is used instead of emissions data from the ETS and AEA.



To estimate the carbon intensity of financial institutions' claims on NFCs' securities, Eurosystem granular databases were combined and this is depicted in Figure 3 below. The SHS database and the Centralised Securities Database (CSDB) collects data on holdings and issuance of debt and equity securities for financial institutions resident across the euro area. Crucially, each security has an ISIN. By joining the SHSS and CSDB by ISIN, it is possible to disaggregate each financial sector's holdings of debt securities and listed shares issued by NFCs to the underlying holder and issuer. To distinguish each NFC, the Eurosystem's master database, the Register of Institutions and Affiliates Data (RIAD) provided guidance on NFCs' group structure incorporating within this the global standard Legal Entity Identifier (LEI).

The purpose of such metrics is to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposure to climate related risks. Data on firms' Scope 1 and Scope 2 emissions along with the corresponding financial data was sourced from Institutional Shareholder Services Group.

Figure 3: Group level view of Institutions' holdings of debt securities and listed shares



4. Limitations and Work in Progress

The indicators of carbon emissions represent a best-effort estimate of the carbon emissions associated with a selection of euro area resident financial institutions' claims. Owing to the various limitations associated with the underlying data and the estimation techniques, the indicators are currently categorised as "analytical". As more NFCs disclose data on the environmental impact of their activities owing to the CSRD directive, subsequent releases of these indicators will enjoy greater levels of certainty. At present, the transition risk indicators are only calculated for financial institutions' direct holdings of debt securities and listed shares. In the case of the ICPF sector, the value of their indirect holdings of NFCs' debt securities and listed shares via money market funds and investment funds may be equal to or greater than their direct holdings. Related to this, much of the investment funds' sector direct holdings

of debt securities and listed shares correspond to the indirect holdings of the rest of the financial sector. To improve the accuracy of the indicators, a ‘look-through’ approach would allow policy-makers to gauge more accurately, the carbon intensity of financial institutions’ claims.

ECB (2024) outline three main methodological improvements that the subsequent release of the transition risk indicators are likely to benefit from: the use of input-output tables, a more complex time-series decomposition, and the calculation of Scope 3 emissions. The measure of WACI is underpinned by a decomposition of inflation and exchange rate fluctuations. A more complex decomposition will distinguish more thoroughly between inflation and exchange rate changes from other disturbances. At present, Scope 2 emissions are only reported at group-entity level. To derive a measure of Scope 2 emissions at single-entity level, input-output (I/O) tables may be used to allocate emissions from the energy sector to different debtors. Scope 3 emissions can account for a considerable volume of total emissions in some sectors although their reporting is not yet standardised. For single entity-level indicators, the imputation of Scope 3 emissions is expected to be advanced through I/O modelling. For group level indicators, the carbon emission indicators may in time be expanded to include Scope 3 emissions as NFCs start to publish this data owing to the CSRD directive.

The extension of the current analytical framework to include these improvements over time will provide a more holistic picture of the carbon emissions associated with financial institutions’ claims.

5. Conclusions

For many years, economists have studied the climatic implications of economic activity with a particular focus on GHG emissions. Until recently, many of these studies focussed on economies’ supply side and the need to de-couple longer-term economic growth from the growth in GHG emissions. The greater urgency across countries to attain carbon neutrality, the need for the financial sector to facilitate this, and the increased evidence linking extreme weather events with short-run fluctuations in activity and prices means that climate change has become a more pressing concern for central banks.

The indicators of carbon emissions reviewed in this *Article* represent the first attempt by the Eurosystem to gauge the financial sector’s exposure to counterparties with carbon-intensive business models and the carbon intensity of the same financial institutions’ security and loan portfolios. The indicators

encompass banks, investment funds, as well as the ICPF sector resident throughout the euro area from 2018 – 2021. So far, two waves of data releases have been published in January 2023 and April 2024 with the second wave of indicators benefiting from higher coverage rates and more rigorous estimation techniques.

Regarding financial institutions resident in Ireland, the results indicate that the carbon intensity of their outstanding volumes of loans to NFCs appears to be sensitive to the method of estimation used. So far, the results calculated at single-entity and group-entity level are moving in different directions partially reflecting the differences in the carbon emissions of domestic and cross-border loans. Regarding Irish resident financial institutions' direct holdings of debt securities and listed shares, the latest results indicate a decline in the carbon intensity of their claims although these headline results mask over a considerable degree of heterogeneity. Finally, much of their holdings of NFC securities relate to non-resident NFCs with debt securities and listed shares issued by Irish owned NFCs typically held by the non-resident sector. More disaggregated macroeconomic data in the coming years will provide further insights on this topic.

Appendix 1

While the second wave of transition risk indicators contain [several methodological improvements](#) one important aspect is that they now have much higher coverage rates associated with them owing to the imputation methods employed to increase data coverage. The coverage rates or the proportion of financial institutions' underlying claims that are reported in the first and second release of the transition risk indicators for financial institutions resident in Ireland are documented below. For comparison, the statistics reported in both tables correspond to Scope 1 emissions, and are based on an unbalanced panel. The increased coverage is most pronounced for bank lending to NFCs calculated at single-entity level. A similar increase is also evident in respect of Scope 2 emissions for financial institutions resident in Ireland. A similar increase is also evident in the euro area statistics.

Table 5a: Coverage Rates for Financial Institutions Resident in Ireland (2018-2020)

	Banks	Banks	Investment Funds	Insurance Corporations & Pension Funds
	Single Entity Results	Group Entity Results		
2018	39.7	52	73.8	82.1
2019	43	61.8	76	84.8
2020	34.8	40.5	81.1	86.6

Source: ECB

Note: The results relate to Scope 1 emissions published as part of the first wave of results in January 2023

Table 5b: Coverage Rates for Financial Institutions Resident in Ireland (2018 - 2021)

	Banks	Banks	Investment Funds	Insurance Corporations & Pension Funds
	Single Entity Results - bank lending to NFCs	Group Entity Results financial institutions' direct holdings of debt securities and listed shares		
2018	84.3	87.1	91.1	94.3
2019	91.5	92.7	91.8	94.4
2020	91.5	90.8	92.2	93.5
2021	89.7	92.7	94.1	94.5

Source: ECB

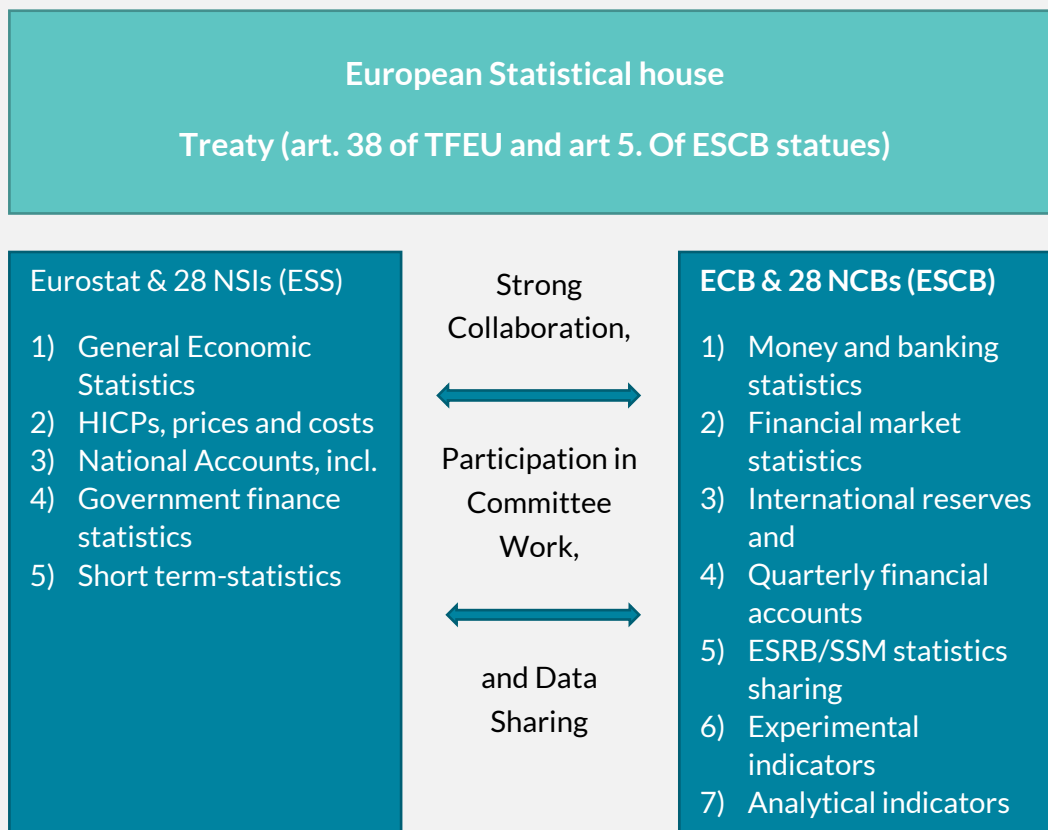
Note: The results relate to Scope 1 emissions published as part of the first wave of results in April 2024

Appendix 2

Understanding the different data types

The indicators of carbon emissions constructed by the ECB and the national central banks are one of three categories of climate indicators launched over the past few years, the other two being the physical risk indicators and the sustainable finance indicators. Although the indicators are not underpinned by an ECB regulation, the statistics can still provide important insights to policymakers. In this box, we review the different classifications assigned to Eurosystem statistics.

Article 127 of The Treaty on the Functioning of the European Union (TFEU) provides the ECB with the competence needed to collect all information required to perform the tasks of the European System of Central Banks (ESCB). To attain this, the ECB issues statistical regulations and guidelines to ensure that all reported statistics are underpinned by sufficient rigour. In practice, the collection of macroeconomic statistics is a shared responsibility between the ECB, the national central banks (NCB), as well as Eurostat and national statistical institutes (NSIs) and this collaboration is depicted below.



Shared

- (i) Balance of payments statistics
- (ii) International Investment Position statistics
- (iii) Financial and Non-Financial Accounts

To ensure that all economic statistics are underpinned by sufficient rigour, comparability, and harmonisation, all statistics are prepared in accordance with European System of National and Regional Accounts (ESA 2010), the Balance of Payments and International Investment Position Manual (BPM6), and System of National Accounts, 2008 (SNA 2008). SNA 2008 is a statistical framework that provides a comprehensive, consistent, and flexible set of macroeconomic accounts for policymaking, analysis, and research.

Furthermore, the SNA 2008 framework is intended for use by all countries. ESA 2010 is broadly consistent with SNA 2008 with regard to accounting rules and classifications. It nevertheless incorporates certain differences, particularly in its presentation, which is more in line with its specific use across the European Union. BPM6 serves as the standard framework for statistics on the transactions and positions between an economy and the rest of the world and is consistent with SNA 2008.

Experimental data including the indicators of sustainable debt securities are economic and financial data, collected and compiled by the ECB, whose quality is somewhat lower than that of other ECB statistics. Experimental indicators typically suffer from one of the following limitations: (i) insufficient harmonisation (ii) incomplete coverage (iii) sub-optimality regarding the statistical concepts and methodologies applied (iv) estimation techniques that are based on substantial assumptions. The experimental datasets are nevertheless regarded as sufficiently reliable to be useful for monetary policy purposes and various ESCB tasks and may therefore also be of interest to users outside the ECB.

Analytical indicators are data that are at a research and/or work-in-progress stage and have not yet reached the quality of experimental statistics due to the inherent limitations associated with the microdata that underlie them and the assumptions made to integrate disparate data sources with distinct characteristics. The indicators can still be relevant and insightful if they are used with care and take into account the characteristics of the underlying data and methodologies.

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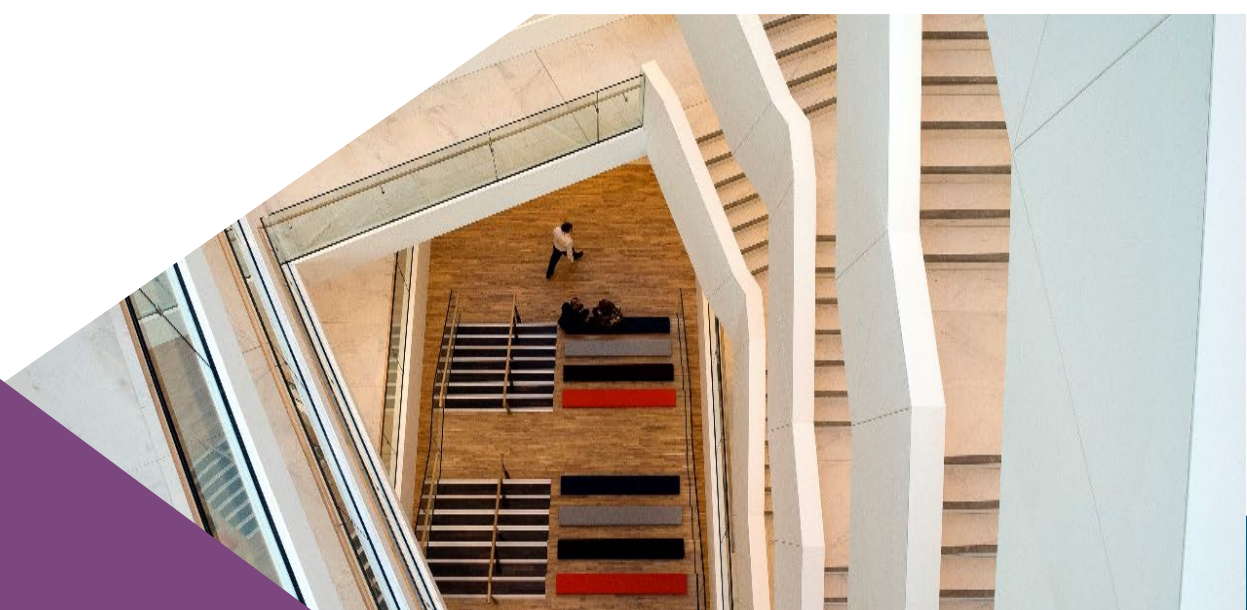
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T: +353 (0)1 224 5800
E: enquiries@centralbank.ie
www.centralbank.ie



Banc Ceannais na hÉireann
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