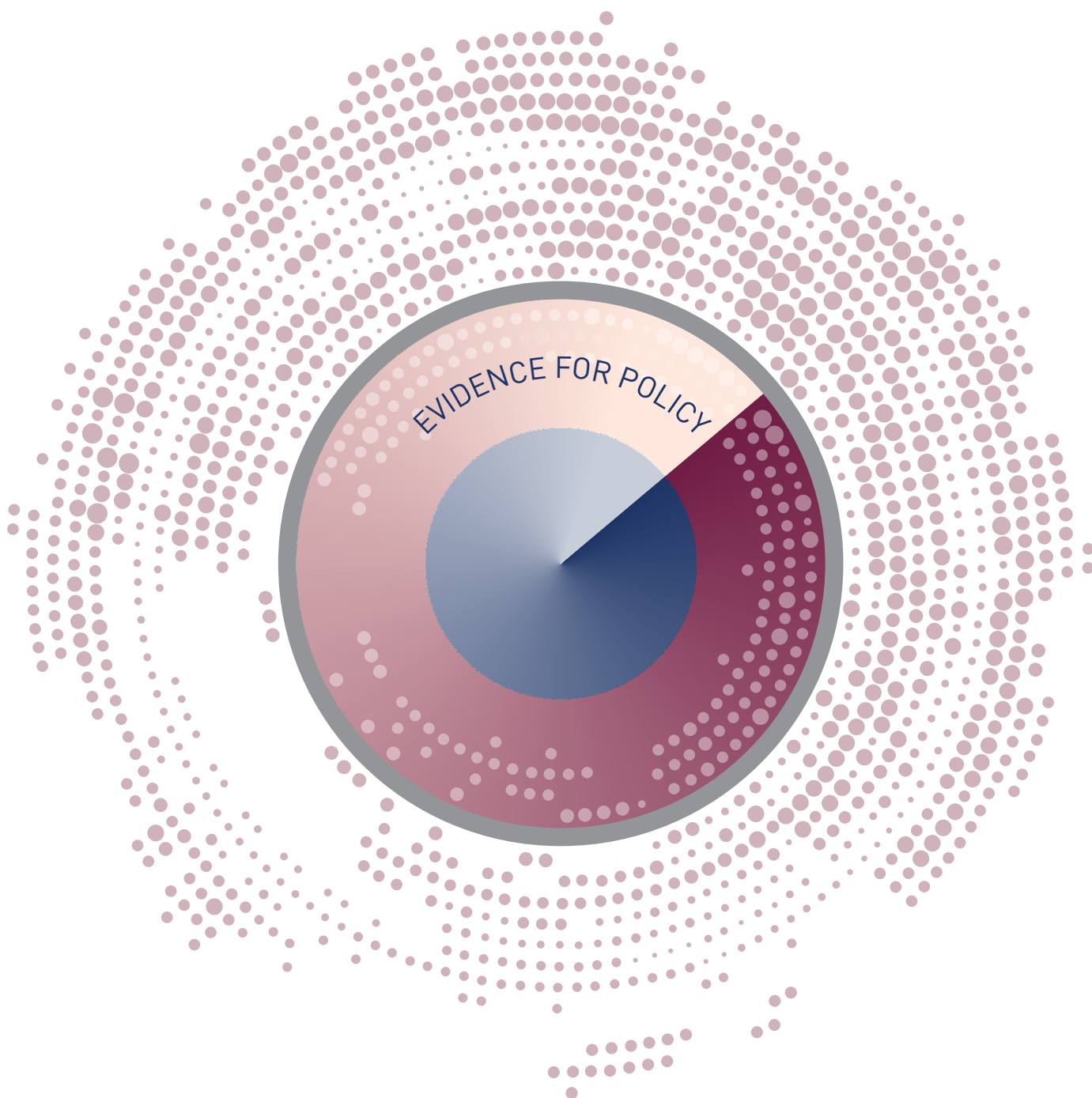


MACRO
ECONOMIC
FORECASTING
June 2023

QUARTERLY ECONOMIC COMMENTARY

SUMMER 2023

KIERAN MCQUINN, CONOR O'TOOLE, WENDY DISCH AND EOIN KENNY



QUARTERLY ECONOMIC COMMENTARY

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Eoin Kenny

Summer 2023

The forecasts in this *Commentary* are based on data available by 21 June 2023

Draft completed on 23 June 2023

© The Economic and Social Research Institute,
Whitaker Square, Sir John Rogerson's Quay, Dublin 2.

ISSN 0376-7191

DOI: <https://doi.org/10.26504/qec2023sum>



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SUMMARY TABLE

	2022	2023	2024
Output (Real Annual Growth %)			
Private Consumer Expenditure	6.6	4.7	5.0
Public Net Current Expenditure	0.7	0.5	0.8
Investment	25.9	5.7	6.1
<i>Modified Investment</i>	19.8	3.9	4.5
Exports	15.0	4.2	5.1
Imports	19.0	7.0	6.5
Gross Domestic Product (GDP)	12.0	0.1	3.5
Gross National Product (GNP)	6.7	-1.7	2.1
<i>Modified Domestic Demand</i>	8.2	3.6	4.0
Domestic Demand (excl. Stocks)	13.2	4.4	4.9
Labour Market			
Employment Levels ('000)	2,548	2,628	2,673
Unemployment Levels ('000)	130	107	101
Unemployment Rate (as % of Labour Force)	4.9	3.9	3.7
Public Finances			
General Government Balance (€bn)	8.0	9.8	15.5
General Government Balance (% of GDP)	1.6	1.9	2.9
Price Developments			
Inflation (CPI)	7.8	5.0	3.0
Inflation (HICP)	8.1	4.3	2.8

Notes: Labour market data from March 2020 to February 2022 are based on the monthly unemployment and the COVID-adjusted monthly unemployment series published by the Central Statistics Office (CSO). Import forecasts for 2023 and 2024 refer to underlying activity. However, if National Accounts data reveal a significant impact of distortionary activity on import levels later in the year, modified and headline forecasts will be provided in future *Commentaries*. Modified Domestic Demand refers to Modified Final Domestic Demand, which excludes large transactions of foreign corporations that do not have a large impact on the domestic economy. Definition available here: <https://www.cso.ie/en/interactivezone/statisticsexplained/nationalaccountsexplained/totaldomesticdemandandmodifiedtotaldomesticdemand/#:~:text=Modified%20Total%20Domestic%20Demand%20goes%20further%20in%20trying,to%20exclude%20certain%20items%20that%20are%20in%20TDD>. Modified investment excludes investment in aircraft for leasing and investment in R&D from abroad.

Summary – Forecast overview

- In this *Commentary* we trial a new format along a thematic basis. Rather than focus on the previous breakdown, which was mainly inspired by the expenditure approach to the National Accounts, the *Commentary* is structured on the basis of key issues impacting the performance of the Irish economy.
- The general assessment of the Irish economy can be characterised as follows: Economic headwinds such as rising interest rates, slower than expected global trade and persistent inflation are clouding the international outlook but the domestic economy is growing robustly. However, the emergence of capacity constraints, particularly in the labour and housing markets may have implications for future growth.
- We now believe the economy as measured by modified domestic demand (MDD) will increase by 3.5 per cent this year and 4.0 per cent in 2024. The greater pace of economic activity next year is mainly attributable to the expected lower rate of inflation.
- The Irish labour market continues to perform in a robust manner. The recent decline in the unemployment rate below 4 per cent is a notable occurrence. This is a historically low rate.
- In a Box to the *Commentary*, Cunniffe and Disch use unique data on applications for permits by non-EEA nationals to highlight the change in labour demand at a sectoral level within the Irish economy.
- This continued robust economic performance comes against the backdrop of persistent global uncertainties such as inflationary pressures, rising interest rates and ongoing geopolitical risks.
- The present *Commentary* contains a special article by FitzGerald, which again tackles the important issue of measuring the actual underlying performance of the Irish economy. This issue is of even more importance given the growing divergence between GDP and GNI* in recent years.
- This paper is complemented by a Box in the *Commentary* which focusses on the recent contributions of the multinational sector to developments in the Irish labour market.
- Another Box by Kakkar et al. looks at the pass-through relationship between changes in wholesale energy markets and the retail level. The Box notes the strong relationship between gas and electricity retail prices in the domestic market.

Risk analysis

International risks – banking sector uncertainty and geopolitical tensions

Despite downward revisions to inflation for next year, stubbornly high inflation has led central banks to continue with tighter monetary policies. High profile failures in the banking sector earlier this year have demonstrated the difficulty with which the global economy is adapting to higher interest rates. Financial uncertainty will likely continue throughout the year; further challenges in the banking sector could dampen investment and trade activities in both the international and domestic economy.

Another challenge for the global economy is the development of the war in Ukraine and relations between the US and China. While energy prices have shown signs of stabilising, food prices remain elevated and further shocks from the war may contribute to further inflationary pressures. The growing tensions between the US and China, meanwhile, could facilitate increased trade barriers and general uncertainty and contribute to a weaker international outlook.

Domestic risks – pharma and ICT vulnerabilities and continued inflation

As outlined in previous *Commentaries*, the ICT and pharma sectors contribute significantly to Irish economic activity. While exports and employment in the ICT sector have continued through the first quarter of 2023, the decline in pharma-related exports should be monitored closely. Given the robust growth of these sectors in recent years, it is likely that activity will moderate. However, any significant downturn in activity may have greater implications for the domestic outlook.

With a record low unemployment rate yet growing job vacancies, there is some risk that wage growth rises above current expectations. Should earnings growth pass through to wage-based price increases, a higher-for-longer interest rate cycle will likely be needed to address inflation. Any worsening in domestic financial conditions would dampen investment activity and consumer sentiment. Rising interest rates are also likely to act as a drag on the demand- and supply sides of the housing market. Additionally, the continued challenges being faced by key sectors to meet labour demand may escalate capacity challenges in the economy and reduce key outputs, such as housing completions.

Domestic and international outlook – trends and challenges

In this section of the *Commentary*, we review the most recent trends in the economy. In particular, we initially focus on the difference between the domestic and multinational dominated sectors of the economy. We then examine developments in international trade, domestic demand, the housing market, the labour market, inflation and the public finances.

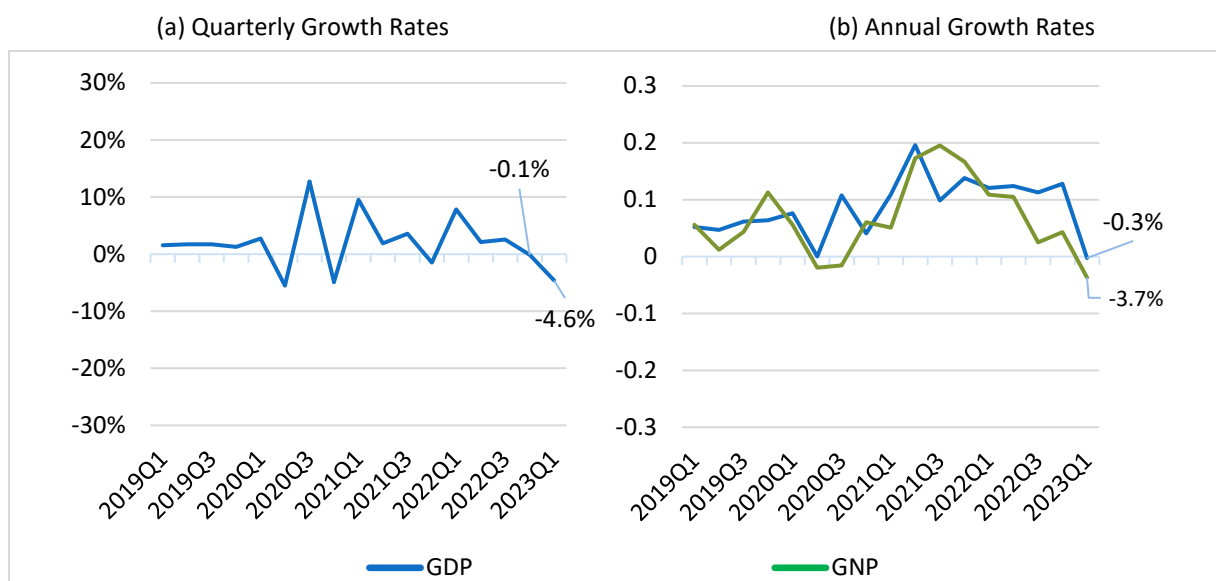
DOMESTIC ECONOMY GROWING BUT MULTINATIONAL ACTIVITY ADJUSTS

Falls in output further highlight divergence and dual economy

The publication of the most recent National Accounts data by the Central Statistics Office (CSO) presented a number of countervailing trends as to how the domestic economy was performing. While headline GDP contracted, indicators reflecting the performance of the domestic economy registered relatively robust growth. This provides further proof of the dual nature of the domestic economy as illustrated in O’Toole (2020).¹

Following a number of years of rapid, multinational export-led output growth, in the first quarter of 2023 the Irish economy entered a technical recession, which is defined as two consecutive quarters with negative GDP growth rates; quarterly growth for both Q4 2022 and Q1 2023 was below 0. This can be seen in Figure 1(a) which presents the quarterly growth profile for GDP and GNP for the period Q1 2019 to Q1 2023. Towards the end of 2022 and into 2023, both output indicators turned down, with the quarterly rates for GDP falling by 0.1 per cent and 4.6 per cent respectively. While quarterly growth rates can often be very volatile, the annual growth rates also declined in the first quarter of 2023 as can be seen in Figure 1(b); GDP fell marginally by 0.3 per cent and GNP declined by 3.7 per cent.

¹ O’Toole C. (2020). ‘The lockdown tale of two economies in Ireland: How big tech and pharma bucked the trend’, *Quarterly Economic Commentary*, Research Note, December.

FIGURE 1 OUTPUT GROWTH IRELAND – QUARTERLY AND YEARLY GROWTH RATES (SA)

Source: Central Statistics Office.

Given Ireland’s small open economy, this moderation in headline indicators is not at face value unsurprising. The outlook for the global economy deteriorated towards the end of 2022, given the persistent inflationary pressures in many large economies, global political tensions and potential trade fragmentation, and tighter financial conditions.

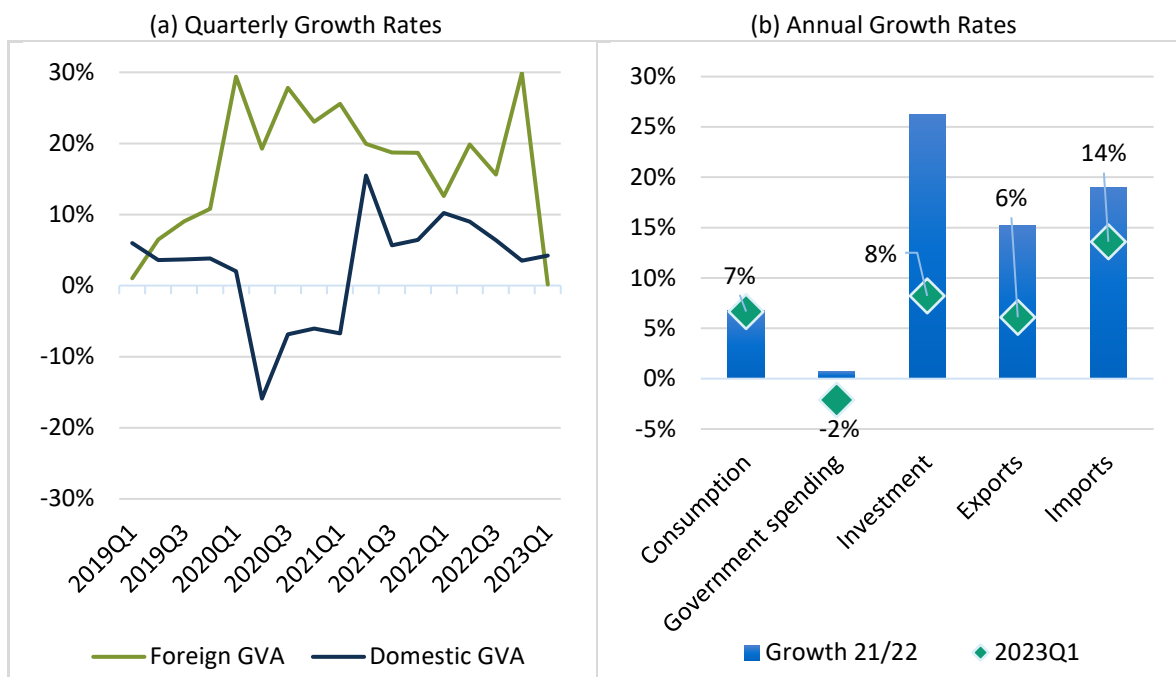
To understand the trends in more detail, Figure 2 presents the breakdown of the growth in gross value added by foreign dominated sectors as well as domestic-oriented sectors (as defined by the CSO).² It can be clearly seen in panel (a) that the major downward pressure in terms of GVA comes through the foreign-dominated sectors. Having grown at considerable double-digit levels in the period 2020 through 2022, it will be important over the coming months to determine whether these effects are an outlier or an international trade-related cyclical downturn.

Focusing on the domestic-oriented sector, it is also clear that output growth (while remaining strong) slowed throughout 2022. The most recent datapoint for Q1 2023 has trended upwards marginally. These data again highlight the considerable divergence in performance between the domestic economy and multinational activity. A paper to the *Commentary* by FitzGerald (2023) examines this issue in greater detail by providing an enhanced output-based measure of underlying activity in the domestic economy.

² See data explanation here: Background Notes – CSO – Central Statistics Office.

This divergence can be seen more clearly in Figure 2(b) which presents data for the expenditure components of GDP; consumption, government spending, investment, exports and imports. The latter three are affected by multinational globalisation issues as documented in various research papers (FitzGerald, 2018; 2023; Lane 2017)³ whereas the former are not. In the figure, the blue bars present the annual growth rate for the full year 2022 which provides context for the Q1 2023 year-on-year growth in green.

FIGURE 2 FOREIGN AND DOMESTIC GVA AND COMPONENTS OF GDP



Source: Central Statistics Office.

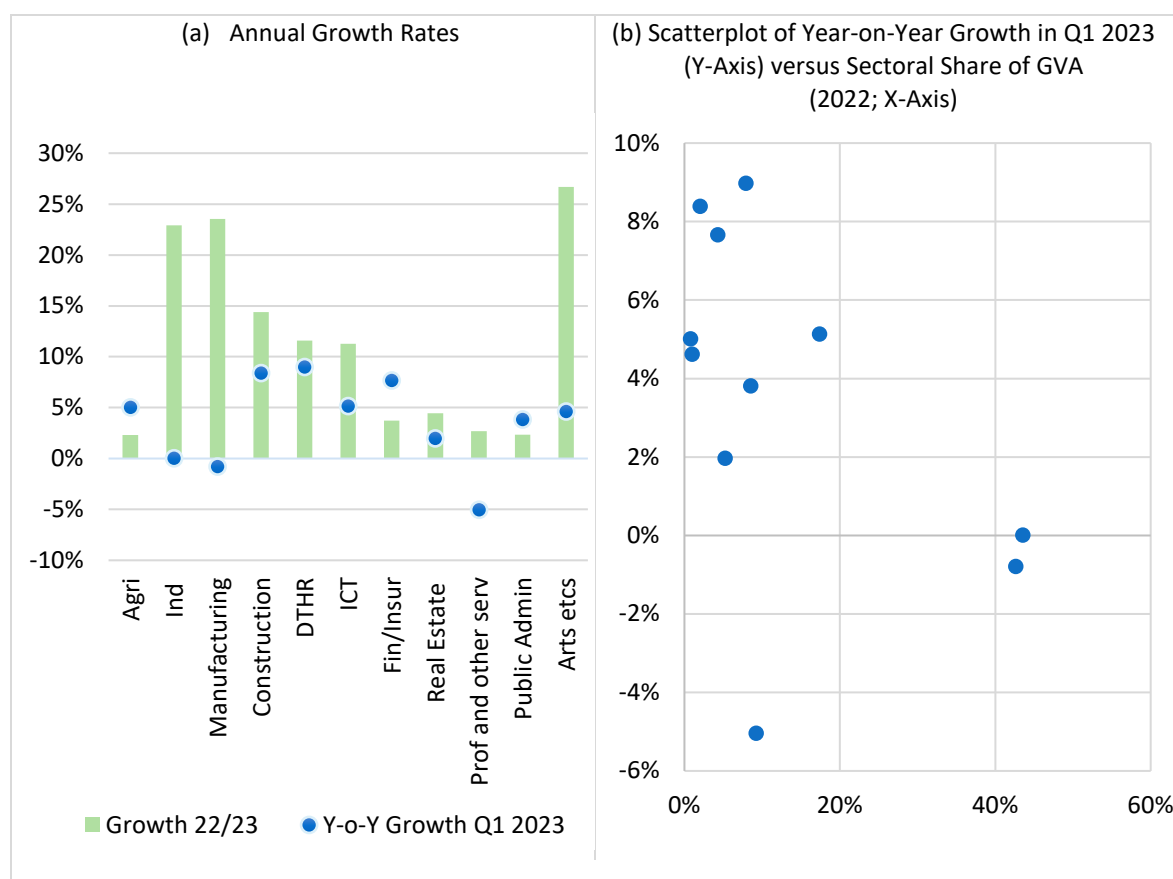
It can clearly be seen that household consumption is continuing to grow in Q1 2023 at just under 7 per cent year-on-year growth. The growth rates for investment, exports and imports are all lower in Q1 2023 than their corresponding rates in 2022.

Further insights into the divergence in performance between the foreign and domestic aspects of the economy can be seen from the sectoral output data. Figure 3 presents two charts: first, panel (a) provides the growth rate for each sector for the full year 2022 in green and the growth rate in Q1 2023 in blue; panel (b) plots the Q1 2023 growth rate for each sector (y-axis) relative to its share of total output in 2022 (x-axis).

³ FitzGerald J. (2018). ‘National Accounts for a global economy: The case of Ireland’. Economic and Social Research Institute (ESRI) Special Article, *Quarterly Economic Commentary*, Summer.
 Lane P. (2017). ‘The treatment of global firms in National Accounts’. *Economic Letters* 01/EL/17, Central Bank of Ireland.

The manufacturing sector which is heavily influenced by multinational related activity and the pharma sector in particular has seen its growth rate in the first quarter of this year drop notably relative to 2022. Other more domestic-oriented sectors such as construction, distribution, hotels and results are continuing to grow but at a slightly slower pace than in 2022. The ICT sector, which has been the subject of considerable attention due to recently announced job losses, financial challenges and revised profitability outlooks for some of the major firms, continues to grow, albeit at a slower pace than in 2022.

FIGURE 3 **SECTORAL OUTPUT GROWTH COMPARISONS**



Source: Central Statistics Office.

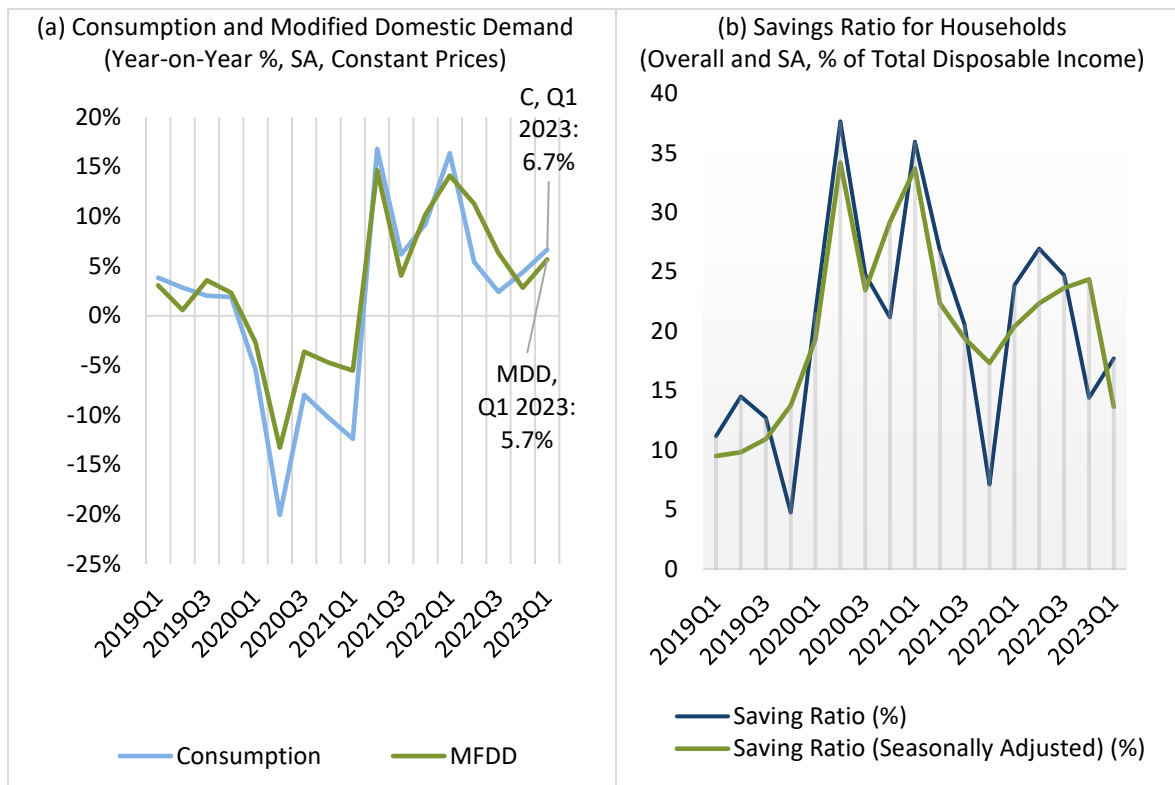
The scatter plot of the sectoral shares and their respective growth rates highlights the disproportionate impact of multinational related activity. Manufacturing has a significant impact on the growth performance of the broader economy as it constitutes over 40 per cent of sectoral GVA.

DOMESTIC GROWTH STRONG WITH CONSUMPTION AND INVESTMENT RISING

Domestic growth continues and savings remain high

While the international economy has experienced an increase in downside risks and lower momentum, the domestic Irish economy has continued to perform well. Figure 4(a) presents the growth rate in personal household consumption and modified domestic demand (this is the adjusted domestic demand calculation which replaces overall investment with the modified series removing aircraft leasing and R&D IP as discussed later). Household consumption expenditure growth has increased in each of the last two quarters relative to a low point in Q3 2022. This moderation in mid-2022 is likely driven by carry-over effects from the pandemic which altered the within-year path of consumption due to the impact of public health measures. Consumption expenditure increased by just under 7 per cent year-on-year in Q1 2023. Modified domestic demand had been declining throughout 2022 from exceptionally high levels in 2021. The growth rate increased somewhat in Q1 2023 to just under 6 per cent.

FIGURE 4 DOMESTIC DEMAND, CONSUMPTION AND SAVINGS



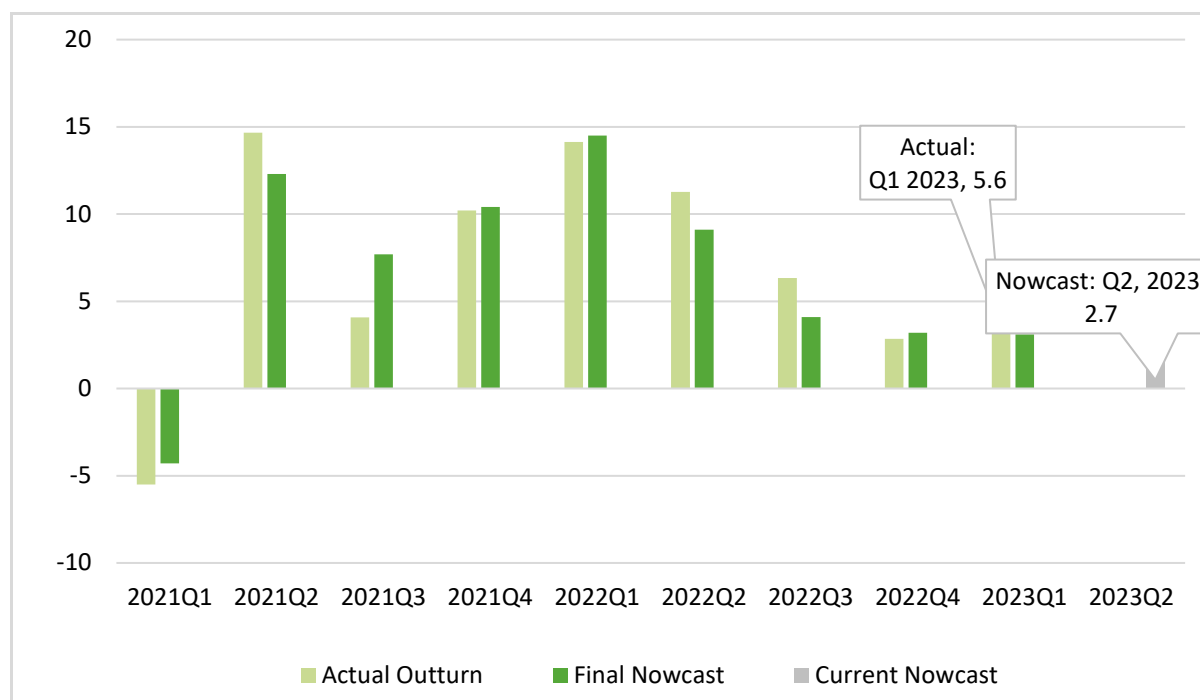
Source: CSO.
 Note: SA: Seasonally adjusted.

In terms of the outlook for the domestic economy, consumption expenditure is likely to continue to remain strong in the short term as the high savings ratios of

households (Figure 4(b)) will provide a countervailing force to higher price levels and rising interest rates. Rising wage levels and low unemployment are also likely to support nominal incomes which will further boost consumption over the period ahead and allow households to maintain expenditure in the face of rising prices.

Figure 5 presents the Nowcast for modified domestic demand that is published on a monthly basis (Disch and Egan, 2023) following an approach outlined in Egan (2022).⁴ The actual outturn for MDD has been trending downwards throughout 2022 as a normalisation occurred following the COVID-19 pandemic but also in line with economic challenges including higher inflation and rising interest rates. However, in the first quarter of 2023, the downward trend has appeared to stabilise and modified domestic demand rose by 5.6 per cent on the back of stronger than anticipated investment and higher consumption. However, the Nowcast estimate for Q2 2023 (as presented in Figure 5) reverts to 2.7 per cent which is lower than Q1 2023. Given that the year-on-year growth in Q1 2023 is likely to have received an uplift due to the low base in 2022 (where some public health measures were still in place), the Nowcast for Q2 2023 points towards continued robust growth in the domestic economy.

FIGURE 5 **MODIFIED DOMESTIC DEMAND NOWCAST (%)**



Source: CSO.
Note: SA: Seasonally adjusted.

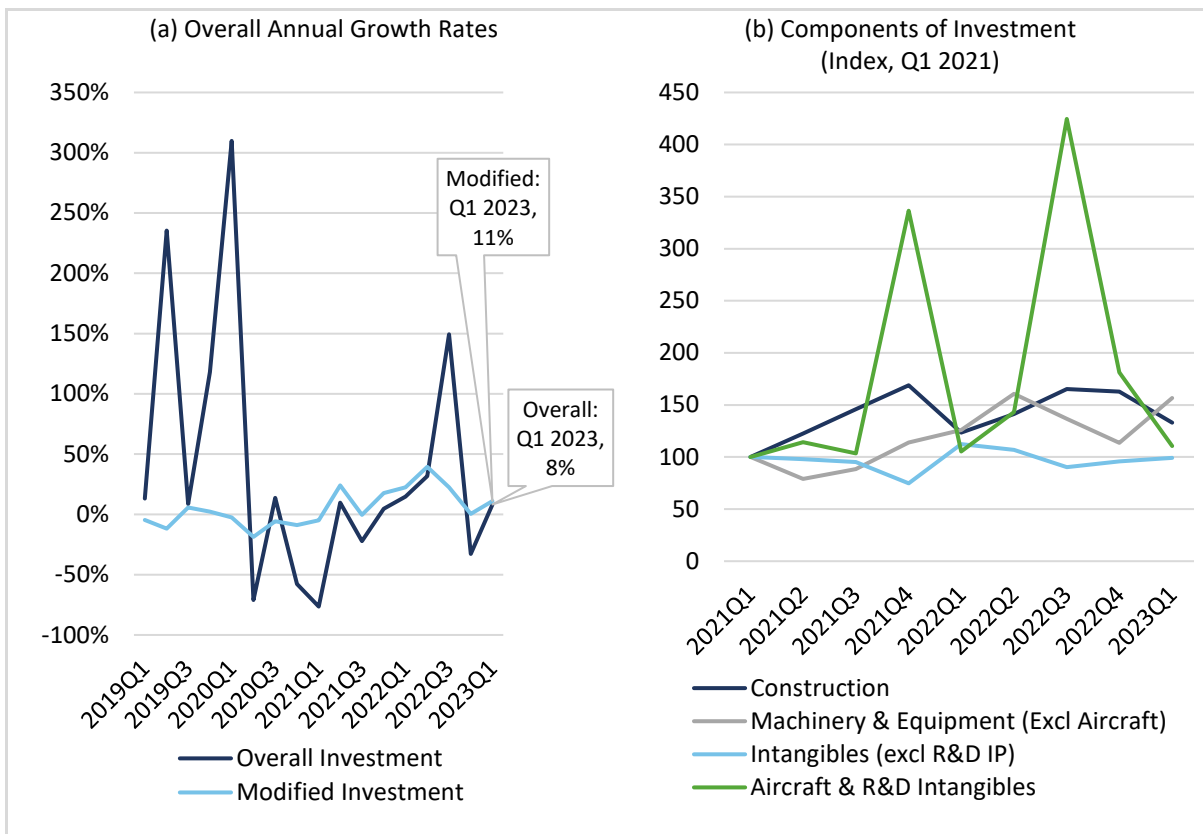
⁴ Egan P. (2022). 'Nowcasting domestic demand using a dynamic factor model: the case of Ireland'. *Applied Economics Letters*. DOI: 10.1080/13504851.2022.2103500.

Investment likely to continue but with challenges from financial headwinds

Over the past number of years, investment expenditure has been growing strongly in Ireland across a range of assets. In Ireland, investment is extremely volatile given the impacts of very large investment flows by multinational enterprises. These flows include assets such as aircraft leasing investment and investments in research and development related intellectual property. These substantial flows in investment are often linked to considerable swings in trade data.

To deal with these distortionary trends, the CSO has produced a modified investment series which removes the aircraft leasing and R&D intellectual property assets. Both the overall and the modified investment series are presented in Figure 6(a). The extreme volatility of the total investment data can be seen and is linked to the volatility in aircraft and R&D intangibles (as demonstrated in Figure 6(b)).

FIGURE 6 IRISH INVESTMENT TRENDS



Source: Central Statistics Office.

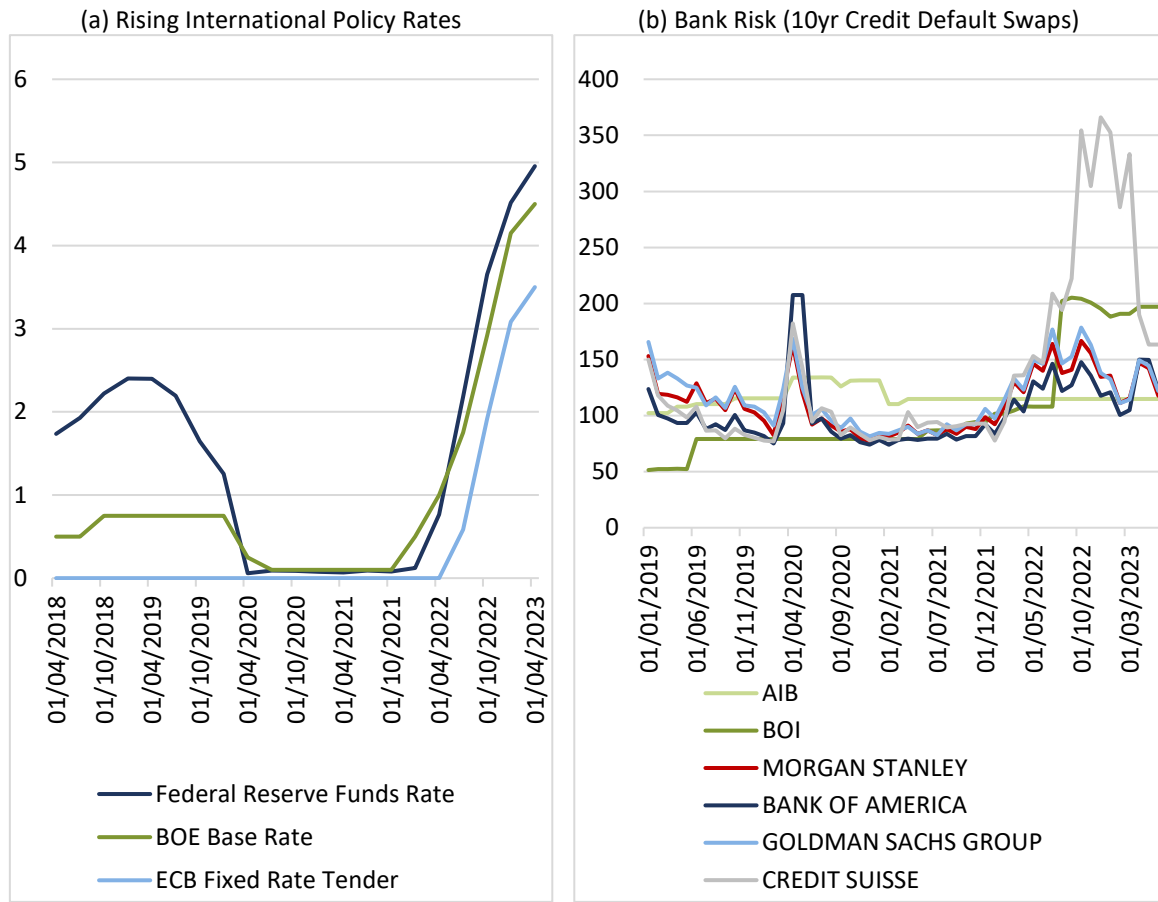
Throughout 2022, there was a moderate slowdown in modified investment activity which was driven mainly by a downward trend in machinery and equipment investment. There is also some moderation apparent in investment in the construction sector towards the end of 2022. In Q1 2023, modified investment

grew by 11 per cent year-on-year which reverses the downward trend. Stronger machinery and equipment investment was the main driver of this change.

While the main distortive effects of the multinational enterprises can be seen in aircraft leasing and R&D IP intangibles activity, investment in most asset classes such as machinery and equipment and non-construction are also affected by the presence of multinational firms who are building plant, purchasing machinery, fitting out offices and factories etc. and whose capital expenditure is extremely large relative to the typical Irish enterprise. The relative size of the firms and their target market (domestic or export) are important considerations in impacting domestic investment over the forecast horizon. For example, major international firms in sectors such as pharmaceuticals and computer services are likely to be more affected by global economic conditions than smaller Irish enterprises whose performance is linked to the domestic economy. Therefore, modified investment activity is also likely to be driven by international factors as well as the prevailing domestic economic trends.

For major international firms, there are a number of factors that are likely to feed into their investment planning over the coming period. First, financial conditions are likely to be tightening with a rising cost of financing internationally as central banks raise interest rates to combat inflationary pressures. This can be seen in Figure 7. This tightening of financial costs is likely to lead to a deferral or cancellation of marginal investment decisions. In addition to the increasing cost of finance, the recent banking issues in Europe and the US (with the failure of Silicon Valley Bank, Signature Bank and the problems with Credit Suisse), are likely to increase risk aversion and tighten credit access more generally. Figure 7(b) presents data on ten-year credit default swaps for major US banks, AIB, BOI and Credit Suisse. These products are insurance against an adverse credit event and rise as the perceived risk increases. There has been a clear increase in the swap rates over the past number of months reflecting the banking distress and the rising interest rate pressures. This is likely to manifest itself into tighter financial conditions.

FIGURE 7 INTERNATIONAL FINANCIAL HEADWINDS



Source: St. Louis Fed, Bank of England, ECB, Datastream.

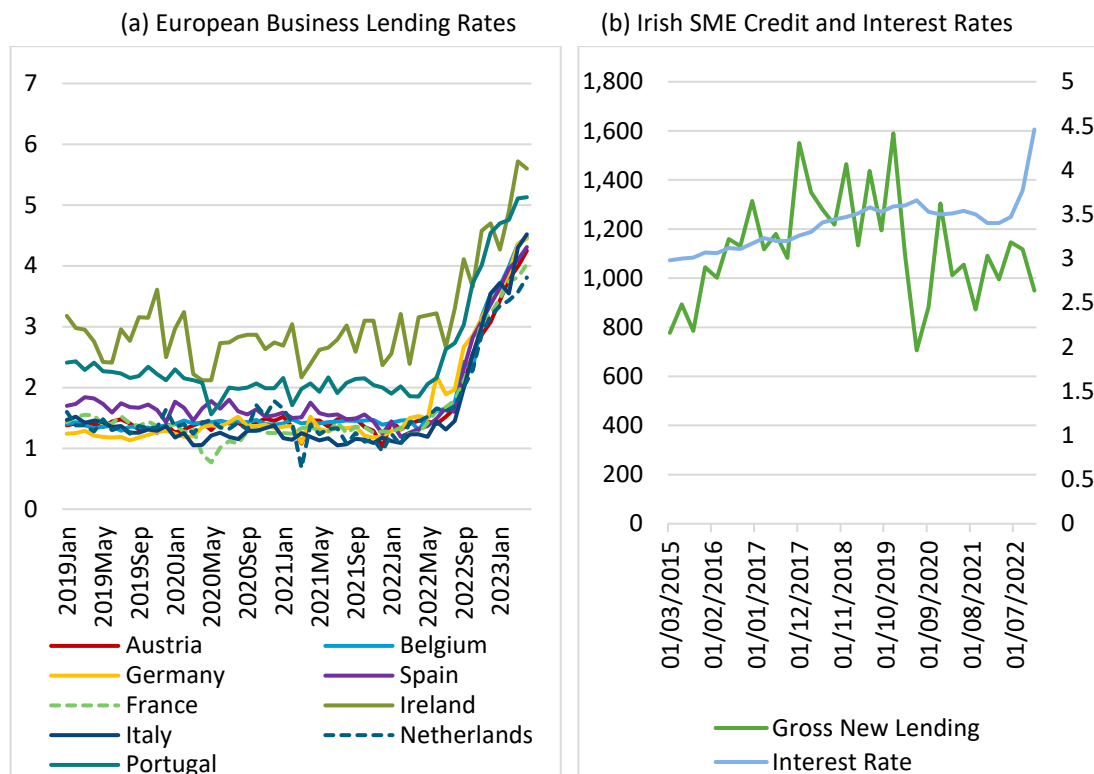
The tighter financial conditions are also likely to exacerbate the generalised international slowdown in global trade that has become more pronounced in recent months (IMF, 2023).⁵ This is driven by the persistence in high inflationary pressures, difficulties in some major markets, and the geopolitical fallout from the war in Ukraine.

For Irish enterprises, the challenges facing the outlook are similar in nature in terms of the inflationary pressures and the cost of financing. Figure 8 presents the new business lending rate for non-financial corporation loans for Ireland and other European countries as well as presenting the SME lending interest rate and new gross lending data. Both of the interest rate charts indicate a steep rise in the cost of financing in the period since October 2022 in line with the policy rate hikes. However, despite the rising cost of financing, the continued buoyancy in the domestic economy is likely to provide a supportive demand context in the near term. Furthermore, the recent trend of Irish enterprises financing a notable share

⁵ International Monetary Fund (IMF) 2023. 'World economic outlook: A rocky recovery'. Available here: World Economic Outlook, April 2023: A Rocky Recovery (imf.org).

of their investment from internal funds (Gargan et al., 2018)⁶ may weaken the relationship between credit costs and investment expenditure.

FIGURE 8 LENDING RATES AND SME CREDIT



Source: ECB, Central Bank of Ireland.

In general, the outlook for Irish investment is for continued, but more muted, growth with both multinational and domestic firms experiencing headwinds. Investment in the construction sector is explored in more detail below. We expect investment to grow by 5.7 per cent in 2023 and 6.1 per cent in 2024. For modified investment, we expect growth of 3.9 per cent in 2023 and 4.5 per cent in 2024.

Considering our forecasts for the domestic economy, we expect consumption to grow by 4.7 per cent in 2023 and 5 per cent in 2024 as nominal incomes continue to rise and inflation slows. Our forecast for modified domestic demand for 2023 is 3.6 per cent growth with a slight increase in 2024 to 4 per cent as inflationary pressures abate.

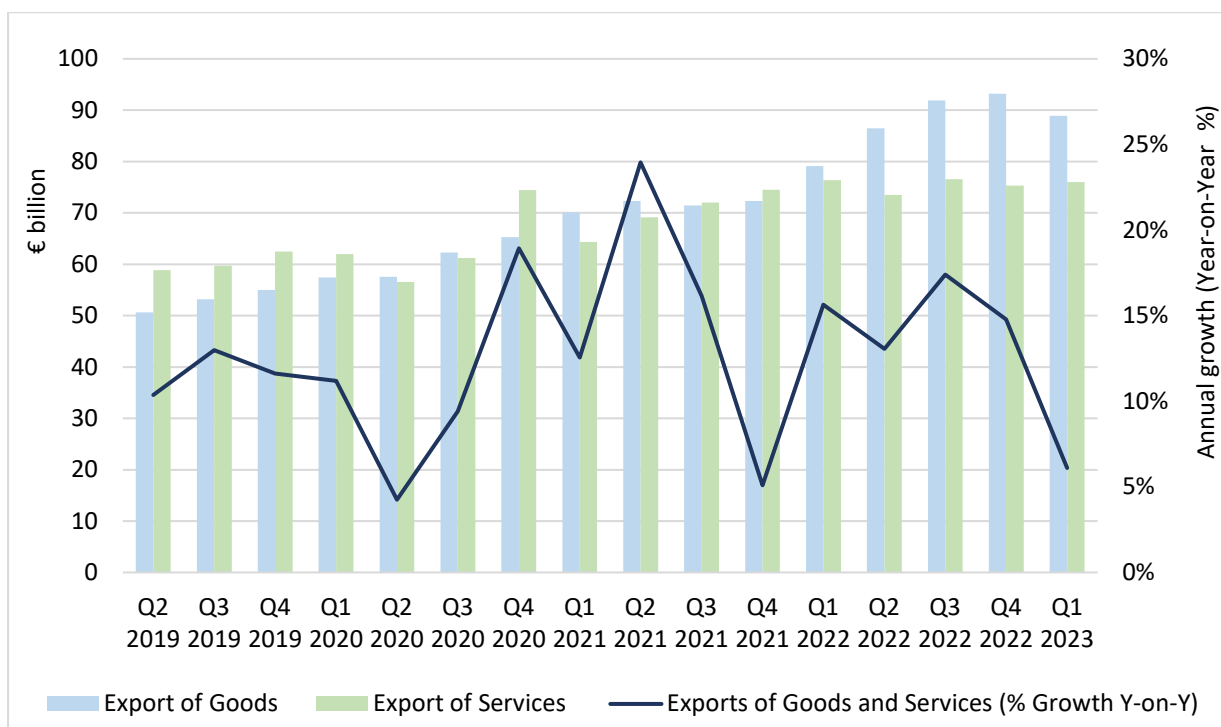
⁶ Gargan, E., M. Lawless, M. Martinez-Cillero and C. O’Toole (2018). ‘Exploring SME investment patterns in Ireland: New survey evidence’, *Quarterly Economic Commentary: Special Articles QEC2018AUT_SA_Otoole*.

EXTERNAL HEADWINDS RISE BUT SECTORAL CONCENTRATIONS AND GLOBALISATION FACTORS DOMINATE OUTTURN

Growth in global trade is anticipated to slow in 2023 as the post-pandemic catch-up effect wanes and traded products become more costly for many countries due to increases in trade barriers and the impact of the appreciation of the US dollar (IMF, 2023).⁷ Turmoil in the financial sector and the impacts of tightened monetary policy present further downside risks to trade in the near-term.

Despite the gloomy outlook for global activity, we expect further growth in the Irish traded sector. However, export activity has moderated significantly through the first few months of 2023 and overall growth is dependent on the performance of key sectors. In Q1 2023, total exports declined 2.1 per cent on a quarterly basis, however Q4 2022 represented the strongest quarter of export activity in 2022. On an annual basis, exports grew 6.1 per cent in Q1 2023 (Figure 9).

FIGURE 9 SEASONALLY-ADJUSTED EXPORTS (VOLUME, YEAR-ON-YEAR %)



Source: Central Statistics Office, Quarterly National Accounts.

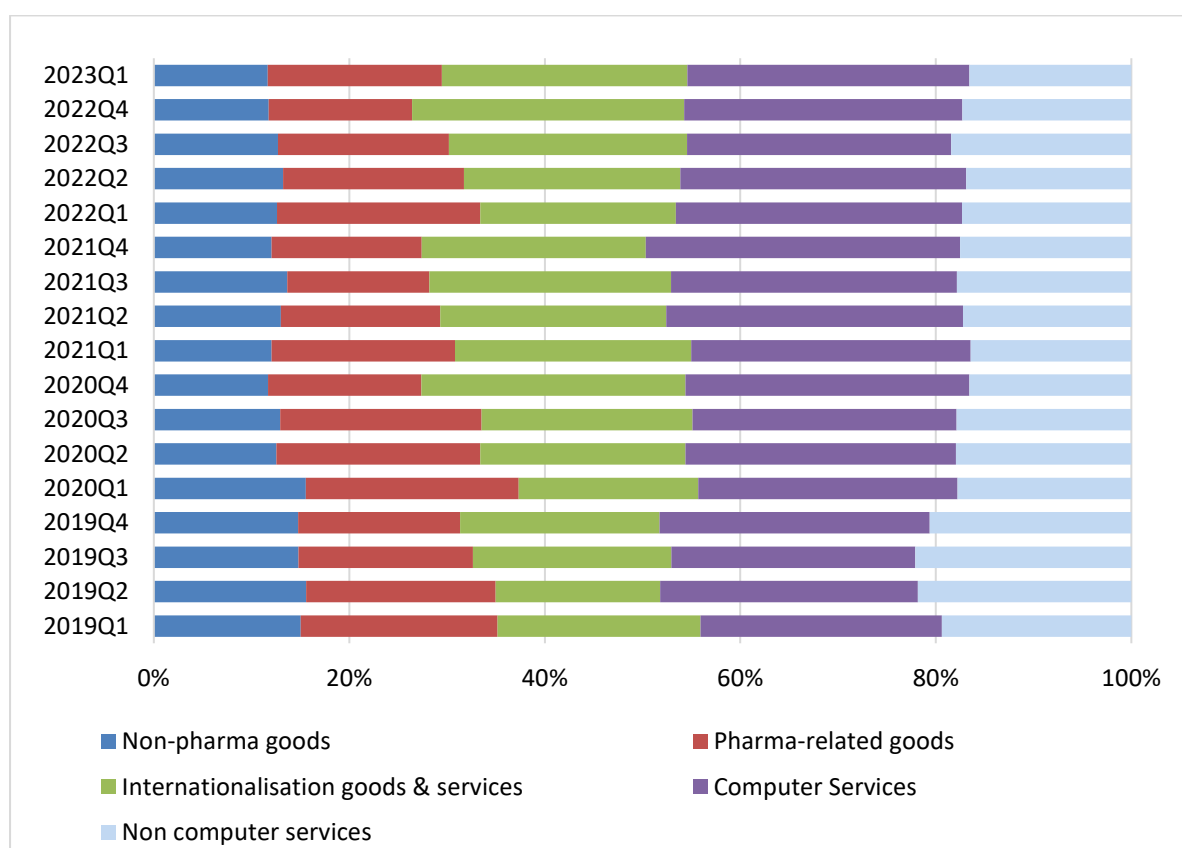
‘Real’ vs ‘internationalised’ activity in Irish exports

As has been the case for some time now, Irish exports are heavily influenced by pharmaceutical-related and ICT industries, as well as activities related to

⁷ International Monetary Fund (IMF) 2023. *World economic outlook: A rocky recovery*. Available here: World Economic Outlook, April 2023: A Rocky Recovery (imf.org).

internationalisation, such as royalties, licensing and R&D. In order to better understand the nature of Irish exports, Figure 10 provides a breakdown of the share of the total value of exports into five main components: pharma-related goods; all other goods (excl. international activity); computer-related services; all other services (excl. international activity); and exports of goods and services related to internationalisation (e.g. royalties, licensing, R&D, etc.). In Q1 2023, computer services accounted for the largest share of total exports (28.8 per cent), followed by internationalisation activities (25.1 per cent). Understanding the drivers of Irish exports allows us to explain some of the volatility associated with Irish export growth.

FIGURE 10 SHARE OF TOTAL IRISH EXPORTS (VALUE)



Sources: Authors' calculations using Current Account and Merchandise Exports from the Central Statistics Office.

Note: Goods related to internationalisation include: merchanting, goods for processing and other conceptual adjustments. Services related to internationalisation include: royalties/licensing and research and development.

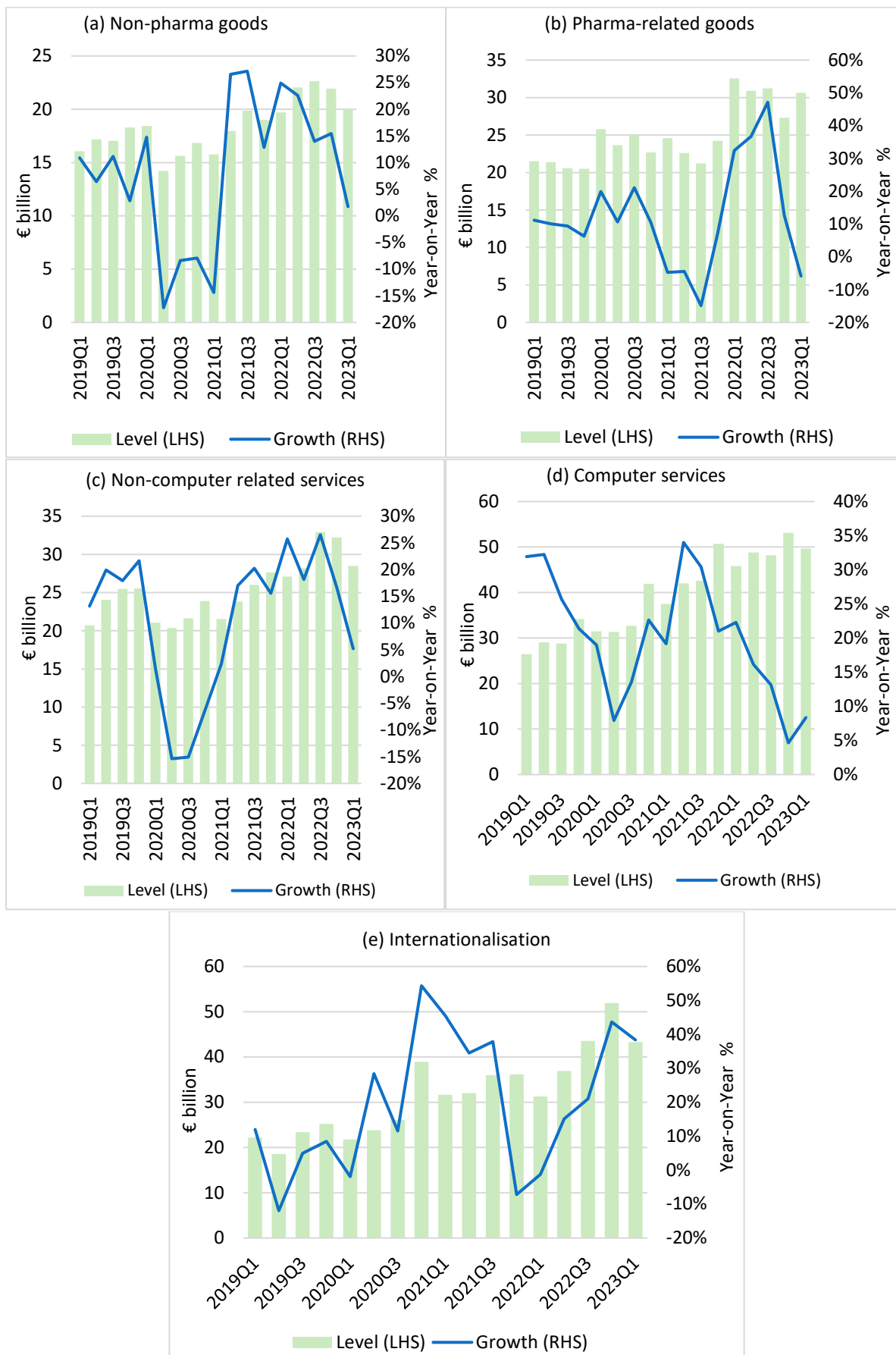
Using these five main export categories, Figure 11 shows the recent growth and level in value terms of these exports. Given its significant share of overall exports, we look first at developments in computer-related services (panel (d)). Although the growth of these exports has been slowing relative to their pandemic-related boom, computer services still grew 8.3 per cent in Q1 2023. As outlined in previous *Commentaries*, the ICT sector contributes significantly to the overall economy and volatilities in this sector can pose significant risks to growth. Therefore, it is

reassuring to see continued growth in exports related to this sector through the start of 2023.

The pharma sector is also a significant driver of overall economic activity. In Q1 2023, exports related to this sector declined by 5.9 per cent, yet the total value remained high on a historical basis. Further declines in this sector may have a negative impact on overall export growth this year. Goods exports related to all other sectors increased moderately in Q1 (+1.7 per cent).

Exports associated with activities related to internationalisation grew 28.4 per cent in Q1, contributing significantly to overall export growth. These exports are highly volatile and not linked to 'real' activity in the domestic economy. While we expect export growth in this category to be positive through 2023, we assume no growth in this category in 2024 due to the volatile nature of these exports.

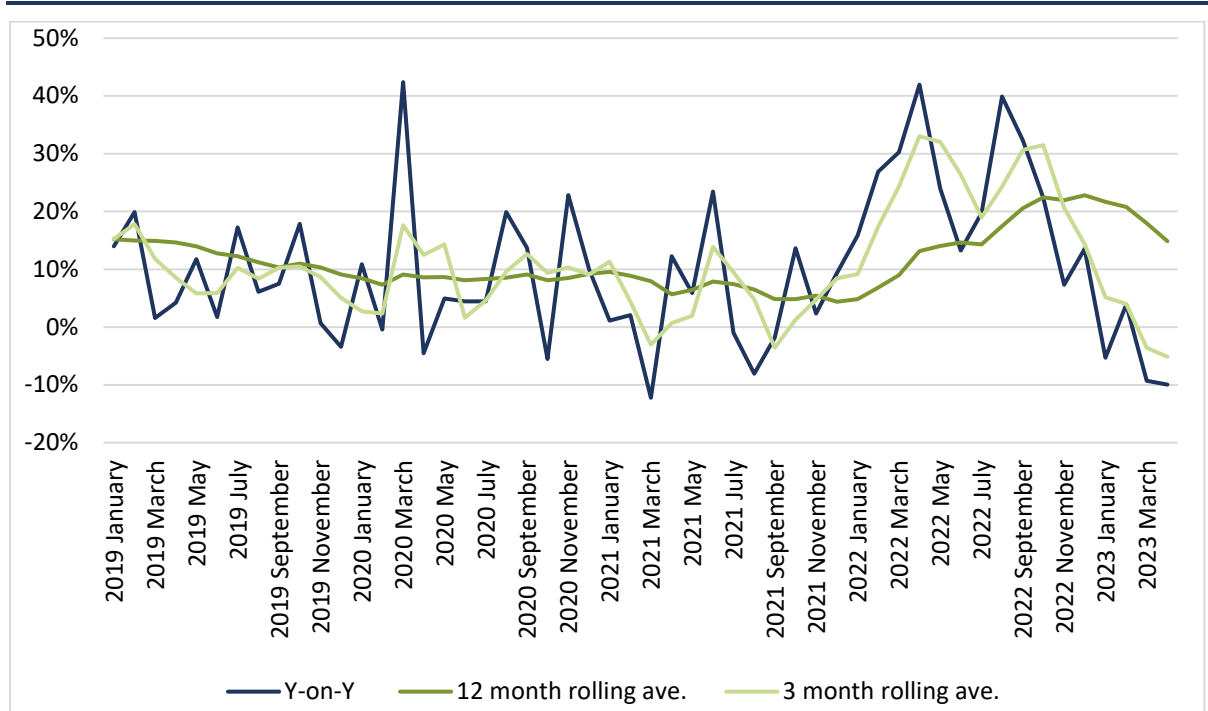
FIGURE 11 EXPORTS (VALUE)



Sources: Authors' calculations using Current Account and Merchandise Exports from the Central Statistics Office.

Looking more closely at goods exports, Figure 12 shows the growth in the volume of merchandise trade on a monthly basis. Particularly as evidenced from the rolling averages, we can see more clearly the significant moderation occurring in exports since the end of 2022. In the first three months of 2023, exports declined 3.6 per cent on an annual basis and declined a further 10 per cent year-on-year in April.

FIGURE 12 MERCHANDISE TRADE VOLUME INDEX (EXPORTS) (% CHANGE)



Source: Authors' calculations using data from the Central Statistics Office.

Table 1 shows developments in merchandise trade in the first few months of 2023 by commodity group. Growth in imports has significantly outpaced that of exports, increasing 11 per cent overall compared to a decline in exports of 5 per cent. Again, we can see the sector-specific impact on trade developments; chemicals and related products, which is largely dominated by the pharma sector, experienced a decline in exports of 6 per cent while imports of these products increased 24 per cent. Machinery and transport equipment, which accounts for the second largest share of merchandise exports, declined 14 per cent from the first four months of 2022 while imports increased.

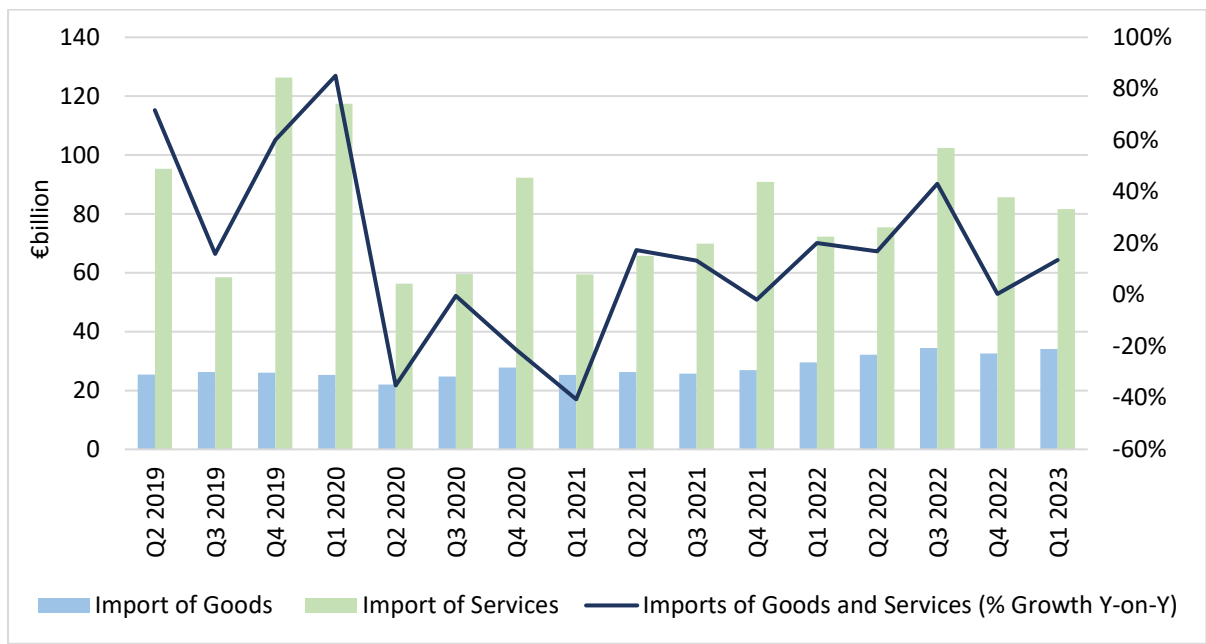
TABLE 1 **IMPORTS AND EXPORTS BY COMMODITY (VALUE)**

	Imports		Exports		Trade Balance €
	Jan–April annual growth %	Share 2022 %	Jan–April annual growth %	Share 2022 %	
Total food and live animals	12	7	12	7	1,356,740
Beverages and tobacco	14	1	-7	1	217,631
Crude materials, inedible, except fuels	-4	1	-27	1	166,290
Mineral fuels, lubricants and related materials	9	9	-34	1	-3,934,641
Animal and vegetable oils, fats and waxes	5	0	22	0	-122,108
Chemicals and related products, n.e.s.	24	27	-6	64	29,776,534
Manufactured goods classified chiefly by material	-4	7	1	2	-1,824,065
Machinery and transport equipment	7	37	-14	14	-8,803,750
Miscellaneous manufactured articles	6	11	8	10	2,555,703
Commodities and transactions n.e.s.	-42	0	25	0	120,702
Overall	11		-5		19,509,036

Source: Authors' calculations using data from the Central Statistics Office.

The recent National Accounts reveal the increase in imports; the volume of total imports registered growth of 13.6 per cent on an annual basis in Q1 2023 (Figure 13). It is important to note that Q1 2022 was the final quarter impacted by any pandemic-related restrictions; the first quarter of 2022 therefore represented the lowest level of imports for the year. From Q4 2022, total imports declined slightly in Q1 (-2.1 per cent).

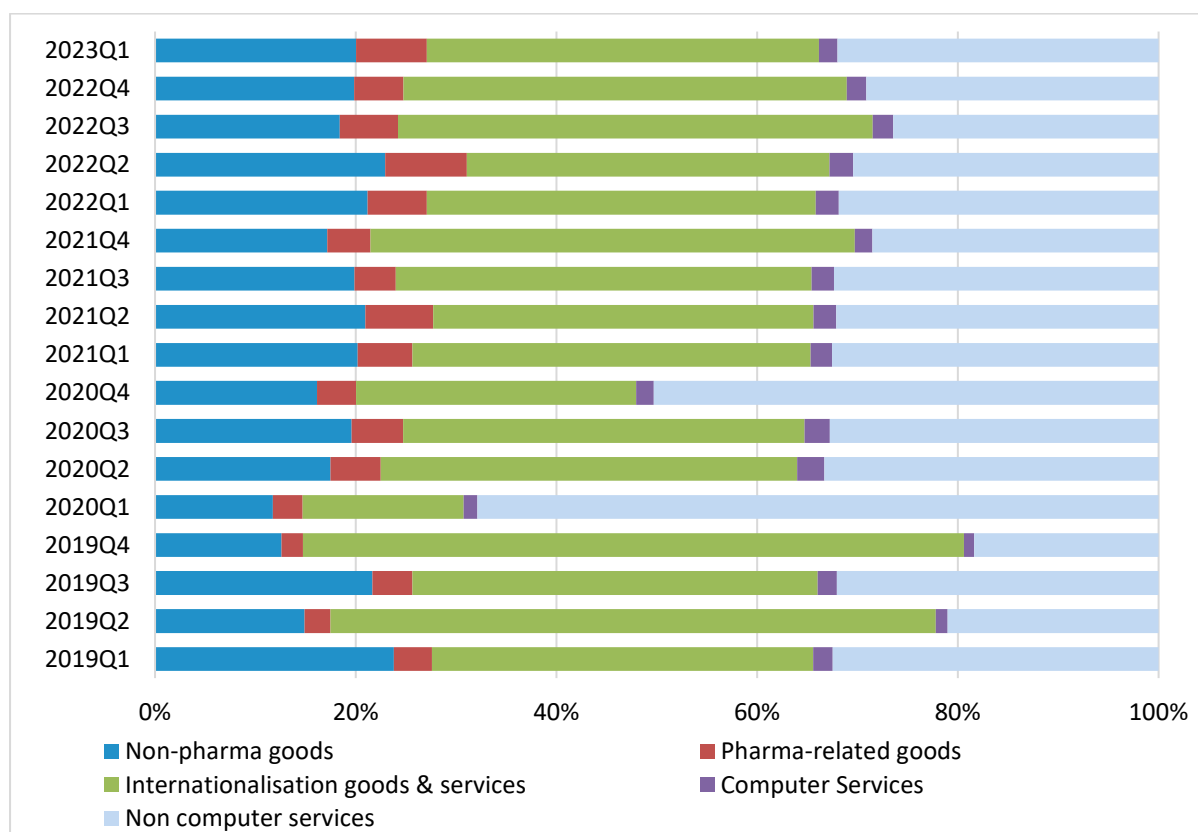
FIGURE 13 SEASONALLY-ADJUSTED IMPORTS (VOLUME, YEAR-ON-YEAR %)



Source: Central Statistics Office, Quarterly National Accounts.

Figure 14 presents the same categorical breakout of imports as shown in Figure 10. The drivers of imports are notably different from that of exports. In particular, the ICT and pharma sectors account for a much smaller share of imports (7 and 2 per cent, respectively) than of exports. Non-computer services account for about a third of total imports and increased 14.3 per cent in Q1 2023 on an annual basis. Non-pharma goods, largely dominated by machinery and transport equipment, account for 20 per cent of total imports and increased 7.7 per cent from Q1 2022 to Q1 2023.

Internationalisation activities are a much more significant driver of import activity than export activity, accounting for about 40 per cent of the value of total imports and increasing 14.8 per cent year-on-year in Q1 2023. Imports of royalties and licensing are a significant component of these imports and increased 28.5 per cent on an annual basis in Q1.

FIGURE 14 SHARE OF TOTAL IRISH IMPORTS (VALUE)

Sources: Authors' calculations using Current Account and Merchandise Exports from the Central Statistics Office.

Trade outlook

Growth in export activity has driven much of overall growth in the Irish economy in recent years. In 2021 and 2022, total exports increased 14.1 and 15 per cent, respectively. Continued growth of this nature seems unlikely to continue, in particular given international economic conditions; however we do anticipate exports to continue growing at a moderated pace in 2023 and 2024 with growth of 4.2 and 5.1 per cent, respectively. Developments in the ICT and pharma sector could present upside or downside risks to this outlook. We expect imports to increase 7.0 and 6.5 per cent in 2023 and 2024, driven by growth in investment and consumption.

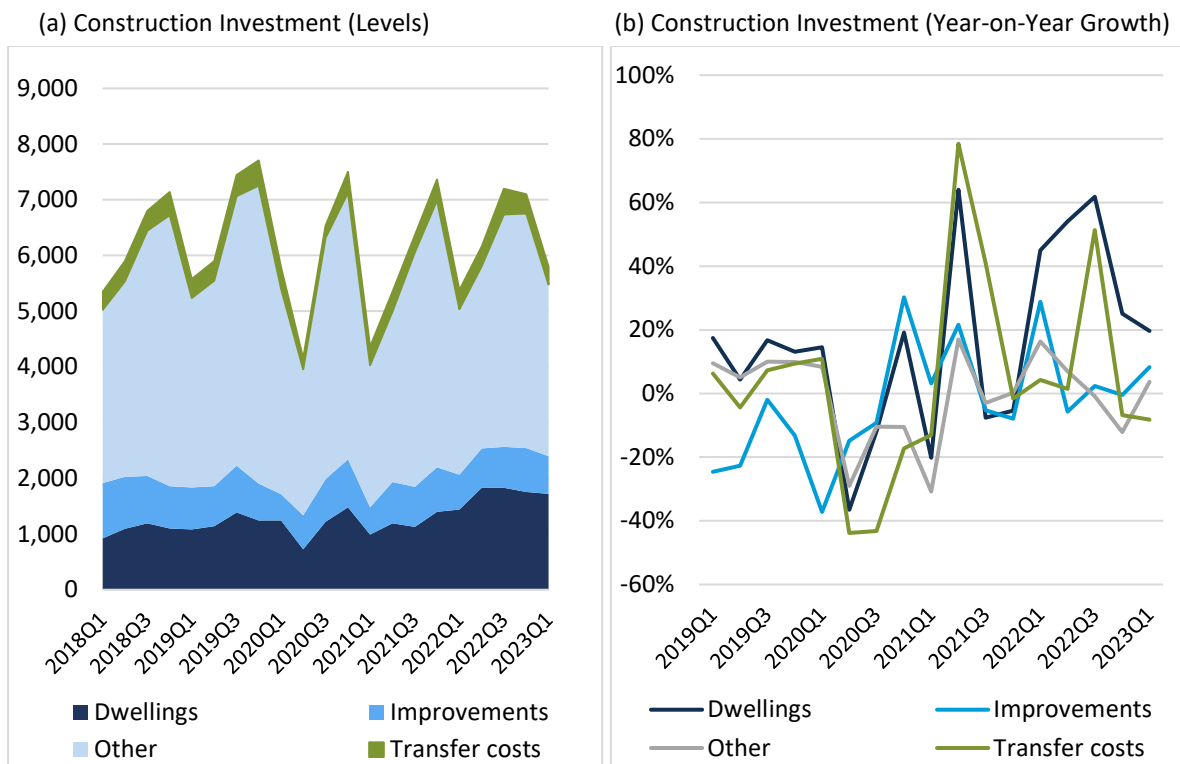
HOUSING OUTPUT NORMALISES BUT HOUSE PRICE GROWTH SLOWS

International material price pressures abate but cost of finance rises

Over the past number of years, there have been a range of headwinds and challenges which have affected the provision of housing output. The COVID-19 pandemic disrupted activity due to the public health measures, and the ensuing international supply chain bottlenecks caused inflationary pressure in terms of the cost of construction. The onset of the war in Ukraine further exacerbated inflationary pressures in the construction sector with many raw material prices

rising and supply chains becoming further strained. Despite these challenges, investment in construction has begun to recover (as shown in Figure 15(a) and (b)). Dwelling investment grew at 20 per cent year-on-year in Q1 2023 while other construction and home improvements are also on an upward trajectory on an annualised basis. The rising cost of financing is also likely to act as a drag on investment activity in construction. However, it is also likely to tighten credit demand for mortgage borrowers who face higher debt servicing costs and lower borrowing capacity.

FIGURE 15 HOUSING INVESTMENT AND OUTPUT



Sources: Central Statistics Office.

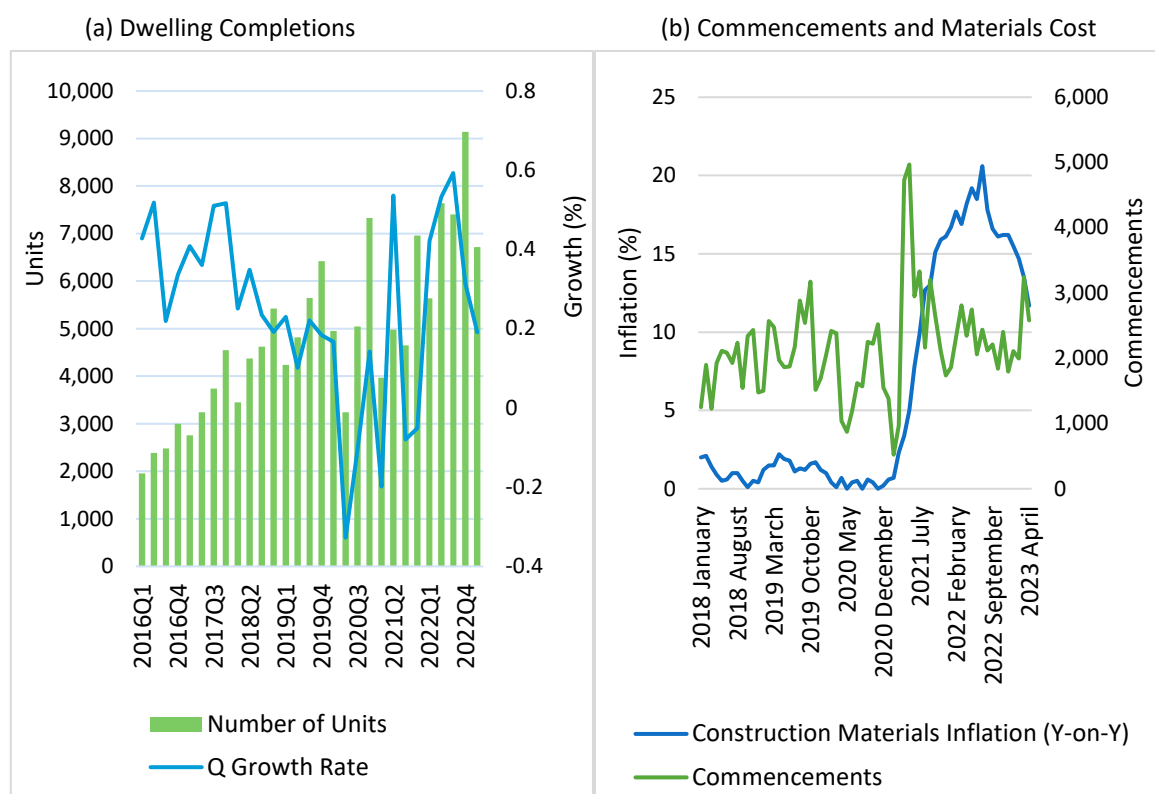
The well documented undersupply of housing in Ireland, by contributing to higher housing costs, is adversely impacting competitiveness and household formation in the domestic economy. Therefore, understanding the trends in dwelling completions is important. Figure 16 presents the trend in completions, commencements and materials costs. Commencements are typically a good leading indicator for future house completions with a 9-12 month lag.⁸ Dwelling completions are on an upward trajectory in level terms, despite the slowing growth rate. However, due to slower commencement activity in 2022, it is unlikely in 2023 that the level of completions will reach or surpass the almost 30,000 units achieved in 2022.

⁸ However, the COVID-19 pandemic related shutdowns have altered the typical seasonality in the data.

In Q1 2023 a total of 6,700 units were completed. In terms of commencements, the last number of months have seen a rise in the pace of activity. This is a good leading indicator for a pick-up in supply into the year ahead. Furthermore, it appears that price pressures are beginning to wane in terms of construction inputs. The series presented in Figure 15(b) is the overall construction materials index from the CSO. Over the past number of months, it is evident that the more acute inflationary pressures are waning.

Apart from the materials costs, the construction sector is likely to be operating at or close to capacity at present given the extremely low unemployment rate and tight labour market. This is likely to put upward pressure on wages in the period ahead and could dampen output.

FIGURE 16 HOUSING INVESTMENT AND OUTPUT



Sources: Central Statistics Office.

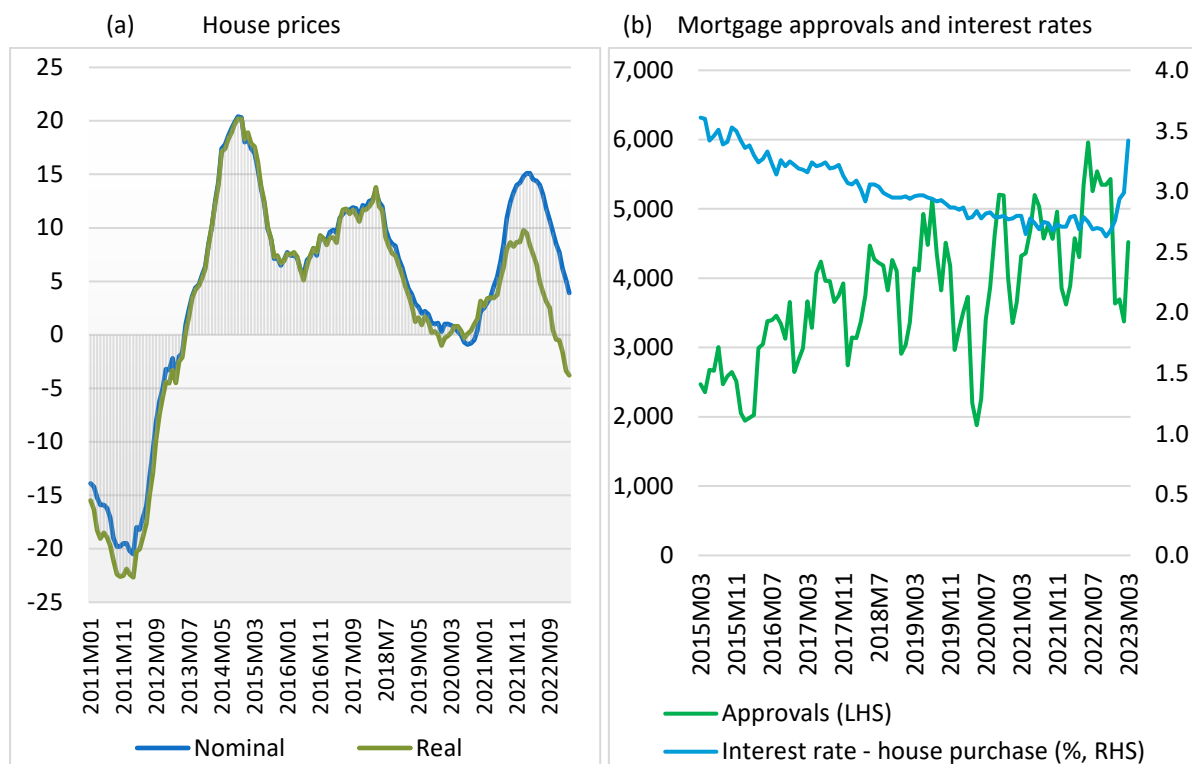
Given the balance of factors and the lower commencements in 2022, we expect housing completions to number approximately 27,000 in 2023, rising to 30,000 in 2024.

House prices face downward pressure as interest rates rise

While housing output continues to increase despite strong headwinds, a notable slowdown in house price growth is evident. Figure 17 presents house price growth from the CSO residential property price index in nominal terms as well as in real terms (nominal house prices adjusted for the level of the Consumer Price Index). It is clear that house price growth has been declining throughout 2022, likely a response to the inflationary pressures and the rising interest rates as well as due to the presence of overvaluation which emerged in Irish house prices during COVID-19.⁹ Adjusting for inflation, it is evident that real house prices have been declining in 2023 i.e. the growth in house prices is lower than the growth in consumer prices.

Figure 17(b) highlights the likely impact of increases in interest rates on the demand side of the market as mortgage approval levels have dropped off in recent times. While rising rates are not likely to be the only driver of demand-side pressures (with the general inflationary effects lowering real incomes), it is likely to weigh on prices and also activity in the period ahead.

FIGURE 17 HOUSE PRICE DEVELOPMENTS, MORTGAGE APPROVALS AND INTEREST RATES



Sources: Central Statistics Office; BPFi; Central Bank of Ireland.

⁹ See *Quarterly Economic Commentary 2022 Autumn* for more details.

LABOUR MARKET BUOYANCY GIVES RISE TO CAPACITY CHALLENGES

Employment growth continues

The first few months of 2023 have been marked by continued buoyancy in the labour market; the unemployment rate was 4.1 per cent in Q1 2023 (Figure 18). The unemployment rate in April and May was 3.9 and 3.8 per cent, respectively, its lowest rate since April 2001, when it stood at 3.9 per cent. At these rates, the Irish economy is likely operating at full employment. Employment levels also increased 4.0 per cent on an annual basis in Q1 2023, with over 2.6 million people in employment.

FIGURE 18 UNEMPLOYMENT RATE AND EMPLOYMENT LEVELS BY QUARTER (SA)



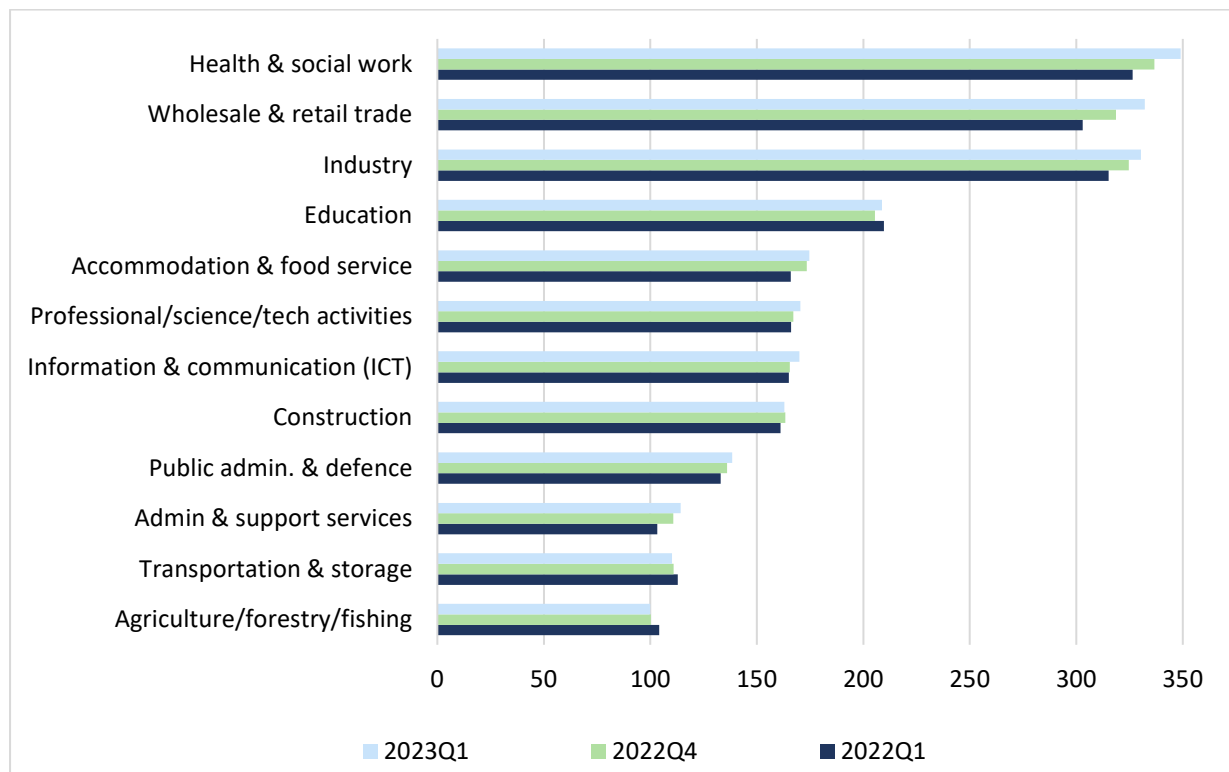
Source: Central Statistics Office.

Note: The COVID-19 Adjusted Monthly Unemployment Rate Series is used for the period March 2020 – February 2022.

Figure 19 shows the growth in employment levels by sector. The health and social work sector, which accounts for the largest share of overall employment, increased by 22,500 workers (+6.9 per cent) from Q1 2022 to Q1 2023. Over the same period, 29,000 workers joined the wholesale and retail trade sector (+9.6 per cent) and 15,000 workers (+4.8 per cent) joined the industry sector, which consists largely of manufacturing and pharma-related activity.

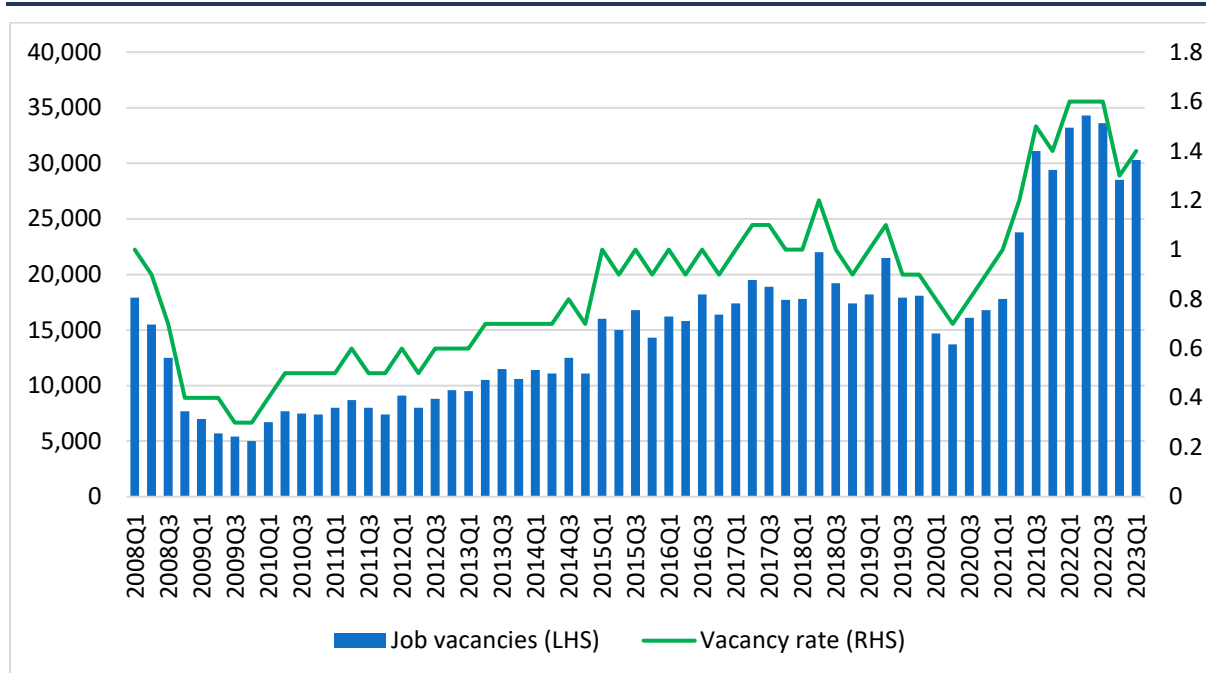
Despite some high-profile declines in employment in the ICT sector in Q2 and Q3 2022, employment in this sector increased 3.0 per cent on an annual basis in Q1 2023 and reached its highest historical level of employment (170,000 workers).

FIGURE 19 EMPLOYMENT BY SECTOR (PERSONS EMPLOYED, '000)



Sources: Labour Force Survey, Central Statistics Office.

Despite record low unemployment and increases in the participation rate, the unmet demand for labour (as indicated by the job vacancy rate) remains relatively high on a historical basis (Figure 20). In Q1 2023, there were 1,800 additional job vacancies (+6.3 per cent) from Q4 2022. While vacancies have declined on an annual basis, the vacancy rate across all sectors was 1.4 in the first quarter of the year. Prior to the pandemic, the average vacancy rate for the 2018-2019 period was 1.0. Sectors in which job vacancies have increased on both an annual and quarterly basis include health and social work; public administration and defence; and wholesale and retail trade.

FIGURE 20 JOB VACANCIES AND JOB VACANCY RATE (ALL SECTORS)

Sources: Labour Force Survey, Central Statistics Office.

The combination of historically low unemployment and higher than average job vacancies may contribute to capacity constraints across a number of sectors. For example, labour shortages in the construction sector have contributed to challenges in housing completions and overall output in the sector (Egan et al., 2022).¹⁰ The high demand for labour is also evident in trends related to employment permit applications by foreign workers, discussed in Box A.

¹⁰ Egan, P., E. Kenny and K. McQuinn (2022). 'Increasing future housing supply: What are the implications for the Irish economy?', *Quarterly Economic Commentary*: Winter 2022.

BOX A EMPLOYMENT PERMITS AND DEVELOPMENTS IN THE LABOUR MARKET*Background*

This Box uses unique data on applications for employment permits by non-EEA nationals to assess labour market developments in Ireland. The employment permit system underpins Ireland's economic migration policy and responds to labour and skills shortages in Ireland. Occupations that face a shortage of labour supply are reviewed bi-annually by the Department of Enterprise, Trade and Employment.

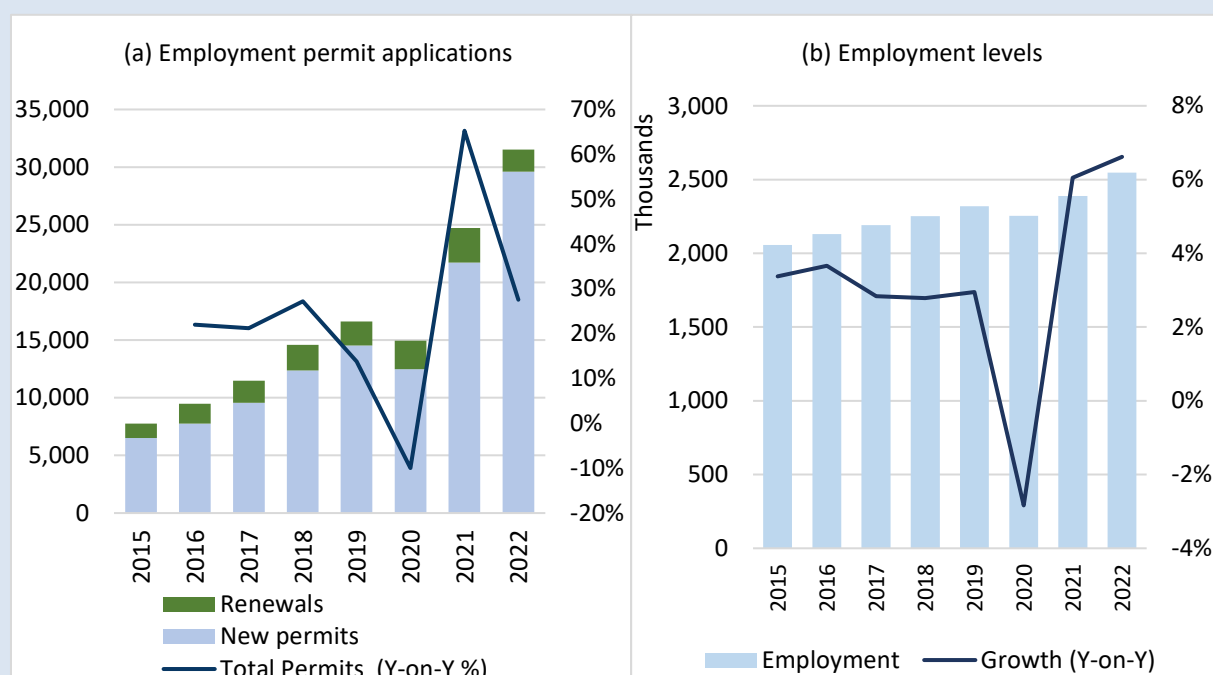
There are two main types of employment permits: the General Employment Permit (GEP) and the Critical Skills Employment Permit (CSEP).¹¹ The former operates under the assumption that all jobs are eligible for a GEP, save where they are listed on the 'Ineligible List of Occupations for Employment Permits'. This list contains occupations where it is assessed that demand can be filled by Irish and/or EEA labour supply. In turn, the CSEP seeks to attract highly skilled people to sectors of the economy deemed central to economic growth and encourage them to take up permanent residence. The 'Critical Skills Occupations List' sets out what occupations are eligible (e.g. ICT professionals). There have been regular amendments to the two lists, and in October 2022 reforms were proposed to make the system more flexible and responsive to labour market change.

Previous research has shown that non-Irish nationals were more affected by the 2008 Great Recession than Irish nationals, with significant job losses among migrants. This points to the economic vulnerability of migrant workers, but also a flexible labour supply adjustment (Barrett and Kelly, 2012). This Box explores how employment permits have changed in response to economic and policy changes.

Developments in employment permit applications since 2015

The number of new permit and renewal applications between 2015 and 2022 can be seen in panel (a) of Figure A.1. While these permits do not reflect the total employment levels of non-EEA nationals in Ireland, they provide a useful indication of marginal demand for labour in the economy. The pace of growth in employment permit applications is far more volatile than general employment levels and is generally responsive to changes in economic conditions. For instance, employment permit applications experienced a much steeper decline in 2020, during the COVID-19 pandemic, than overall employment levels (-10 per cent compared with -2 per cent) (Figure A.1(b)). Employment permits were likely affected by COVID-19 related reductions in international travel and restrictions on visa processing (Sheridan et al., 2022). In the subsequent recovery in the labour market in 2021, overall employment increased 6 per cent from 2020 while employment permit applications increased 65.3 per cent over the same period. Although employment permit applications represent a relatively small share of overall employment levels (1.2 per cent in 2022), they have increased considerably in recent years. The post-COVID recovery in the labour market is particularly noticeable in employment permit applications; applications in 2022 were 89.9 per cent above their level in 2019.

¹¹ Other types of employment permits, albeit less frequently used, include the Dependant/Partner/Spouse Employment Permit, Intra-Company Transfer Employment Permit, Contract for Services Employment Permit, Reactivation Employment Permit, Internship Employment Permit, Sport and Cultural Employment Permit and the Exchange Agreement Employment Permit.

FIGURE A.1 ANNUAL EMPLOYMENT LEVELS AND EMPLOYMENT PERMIT APPLICATIONS (2015-2022)

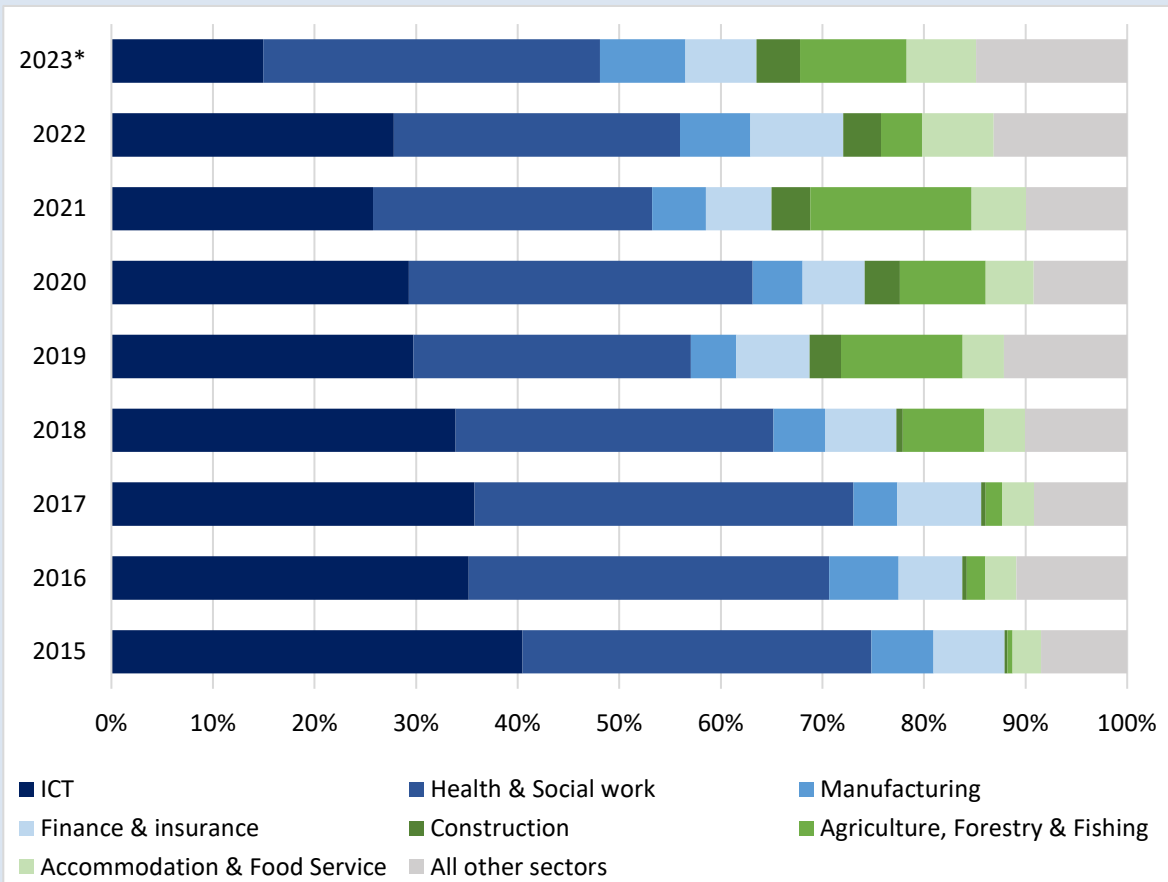
Source: Central Statistics Office and Department of Enterprise, Trade and Employment.

Note: Employment permit application figures are applications for permits that were subsequently issued. Applications that were refused or cancelled are not included.

Employment permit applications are highly concentrated in the healthcare and ICT sectors although the share of ICT has been declining over time (Figure A.2). In 2015, the ICT sector accounted for 40.5 per cent of all permit applications but by 2023, this had declined to just 15 per cent. Programmers and software developers have accounted for the largest share of ICT permits, while nurses, nursing assistants and medical practitioners accounted for over 90 per cent of permits in the healthcare sector in recent years. While the share of applications in finance and insurance has remained constant over time, there has been a notable rise in applications within the construction and food and accommodation sectors.

The changing composition of sectors over time is also indicative of the impact that policy changes have had on applications for permits. In December 2019, professional occupations in construction were made eligible for CESPs, and in October 2021 most other occupations in construction were removed from the ineligible list of occupations making them eligible for GEPs. There has been a corresponding increase in applications for permits for construction occupations, from just 37 applications in Q1 2019 to 331 in Q1 2023. Increases were seen between 2020 and 2022 for the occupations including carpenters, joiners, occupations in welding trades, bricklayers, masons, and plasterers. As discussed in Egan et al. (2022), allowing greater eligibility for occupations within the construction sector to access employment permits may assist in meeting labour demand shortages in this sector. Similarly, for the occupation of care worker, changes in late 2022 resulted in an increase from just nine applications for permits across 2022, to 60 in the first four months of 2023. For other occupations, however, such as social workers, positions have been slower to fill even when changes are made to eligibility. Despite changes in 2021, making social workers eligible for critical skills permits, only 12 applications were filed in 2022.

FIGURE A.2 ANNUAL EMPLOYMENT PERMIT APPLICATIONS BY SECTOR (2015-2023*)

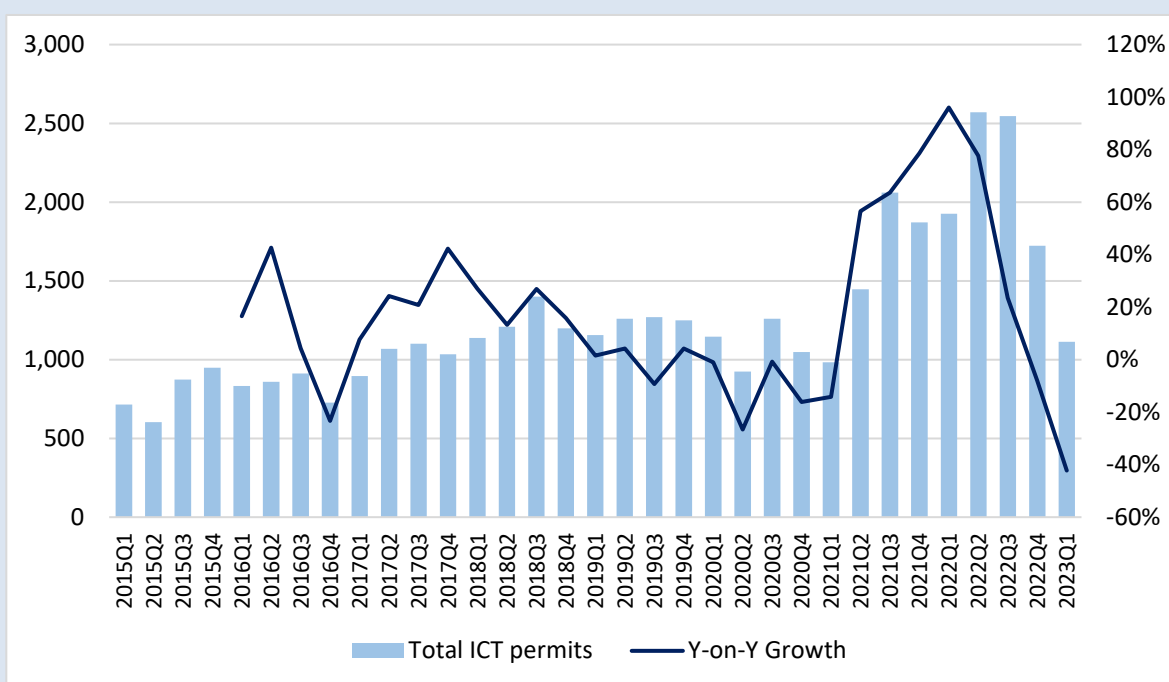


Source: Department of Enterprise, Trade and Employment.
 Note: 2023* data are inclusive of applications from January through April.

Developments in ICT sector

As highlighted in the *Spring Commentary*, developments in the ICT sector are of particular interest to the domestic economy. Given the high-profile job losses in the sector in Q3 (-10,900 jobs) and the subsequent increase in employment in Q4 2022 (+9,700 jobs), it is useful to examine how employment swings in this sector have impacted the demand for employment permits. Overall, total permit applications in the ICT sector increased 37.7 per cent from 2021 to 2022. While 2020 and 2021 applications may have been affected by COVID-19 and experienced a ‘bounce-back effect’, applications continued to increase on an annual basis for the first three quarters of 2022 before declining by 8 per cent in Q4 (Figure A.3). While employment in the sector increased modestly in Q1 2023,¹² further declines in permit applications in Q1 2023 (-42.2 per cent year-on-year) point to subdued demand for labour within the ICT sector.

¹² In Q1 2023, overall employment in ICT increased 2.7 per cent from Q4 2022 and 3.0 per cent from Q1 2022 (see data from the Central Statistics Office, Labour Force Survey here: <https://data.cso.ie/product/LFS>).

FIGURE A.3 ICT PERMIT APPLICATIONS

Source: Department of Enterprise, Trade and Employment.

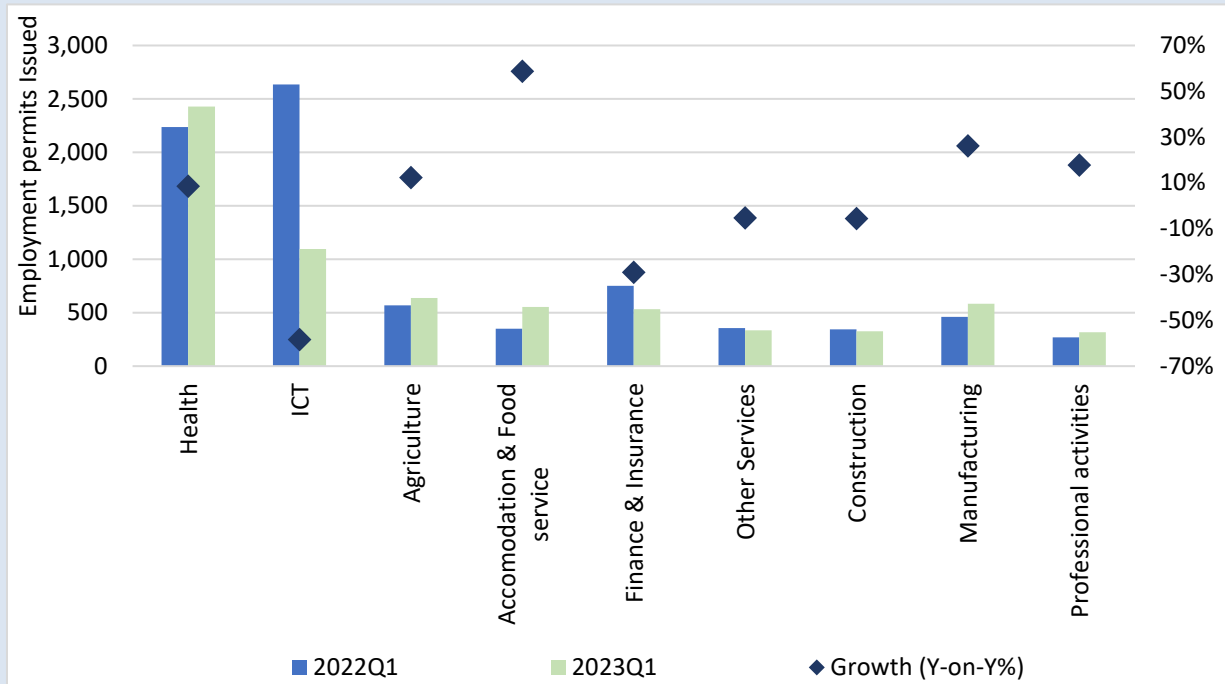
Developments in other sectors

Despite historically low unemployment levels and a tight labour market, the uncertainty related to the global economic outlook at the start of 2023 likely had an impact on employment expectations. Figure A.4 provides a breakdown of employment permits issued by sector in Q1 2022 and Q1 2023.¹³ In Q1 2023, the total number of issued employment permits declined 18.2 per cent from Q4 2022 and 12.2 per cent from Q1 2022. Despite the significant attention towards volatility in employment levels in the ICT sector, other sectors have continued to be in demand for labour through the start of 2023. Employment permits issued in health and social work activities increased 8 per cent on an annual basis in Q1 2023 and total employment in the sector increased 6.9 per cent over the same period.¹⁴ The number of employment permits issued from Q1 2022 to Q1 2023 also increased across the following sectors: accommodation and food services, agriculture, professional services and manufacturing. The strength of the pharma-related activities has also had an impact on employment permits; since Q1 2020, manufacturing of chemicals and pharmaceuticals has accounted for nearly half of all permits issued by the manufacturing sector.

¹³ As issued permits are available by sector on a quarterly basis, we use these data rather than permit applications.

¹⁴ See data from the Central Statistics Office, Labour Force Survey here: <https://data.cso.ie/product/LFS>.

FIGURE A.4 EMPLOYMENT PERMITS ISSUED BY SECTOR (Q1 2022-2023)



Source: Department of Enterprise, Trade and Employment.

Concluding comments

Employment permits for non-EEA nationals change over time and are relatively responsive to both economic and policy changes. There has been a general slowdown in employment permit applications in Q1 2023 compared to the surge seen in the post-COVID recovery. While the decline in employment permit applications in the ICT sector are indicative of high-level layoffs and uncertainty in this sector, other industries are still exhibiting significant demand for labour. Some specific occupations may see continued difficulties in meeting demand; however it is clear that sectors with skills shortages, such as construction, have experienced notable increases in applications for permits since policy changes in 2019 and 2021. Trends in employment permits, therefore, continue to provide a useful gauge of labour market responsiveness to policy change as well as the overall demand for labour across sectors.

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Sheridan, A., E. Cunniffe and E. McCullough (2022). *Annual Report on Migration and Asylum 2020: Ireland*, ESRI Survey and Statistical Report Series, No 114, <https://doi.org/10.26504/sustat114>.

This Box was prepared by Emily Cunniffe and Wendy Disch.

While we typically address labour market issues by sector in the *Commentary*, it is increasingly apparent that differences between foreign and domestically owned firms also play a significant role in labour market developments. The following Box by McQuinn therefore assesses the diverging trends in employment and earnings activities between foreign and Irish-owned enterprises.

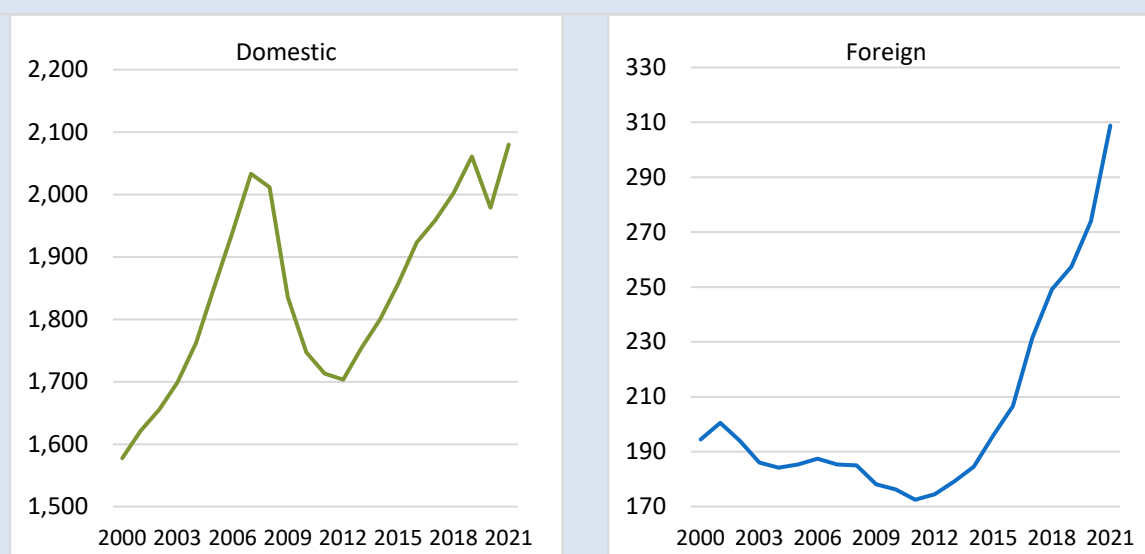
BOX B THE LABOUR MARKET ASPECT OF THE IRISH DUAL ECONOMY

Background

Recently a significant amount of commentary and analysis has centred on the concept of the Irish dual economy (see O’Toole, 2020, for example). The dual concept refers to the significant distinction in the case of the Irish economy between the performance of those sectors which are dominated by Irish owned enterprises and those sectors that are dominated by foreign owned ones. Related to this is the increasing amount of work seeking to generate headline economic indicators which more accurately reflect the performance of the domestic indigenous economy (for example see FitzGerald, 2018; 2020; Lane, 2017; and Kostarakos et al., 2022). This is required because of the distortionary impact of large transactions of certain multinationals on Irish headline macroeconomic data such as GDP, investment and trade.

In this Box, we draw on recently released data concerning the Irish and foreign dominated sectors in the Irish economy (Central Statistics Office, 2023) to look at the differing performance of the labour market in both sectors over the period 2000-2021. In particular, we exclude any indicators such as labour productivity which rely on gross value added so that the indicators examined are not in any way distorted by the sizeable increases in multinational related output values noted in previous *Commentaries* (see Disch et al., 2022).

FIGURE B.1 TOTAL EMPLOYMENT IN DOMESTICALLY AND FOREIGN DOMINATED SECTORS OF THE IRISH ECONOMY (‘000): 2000-2021



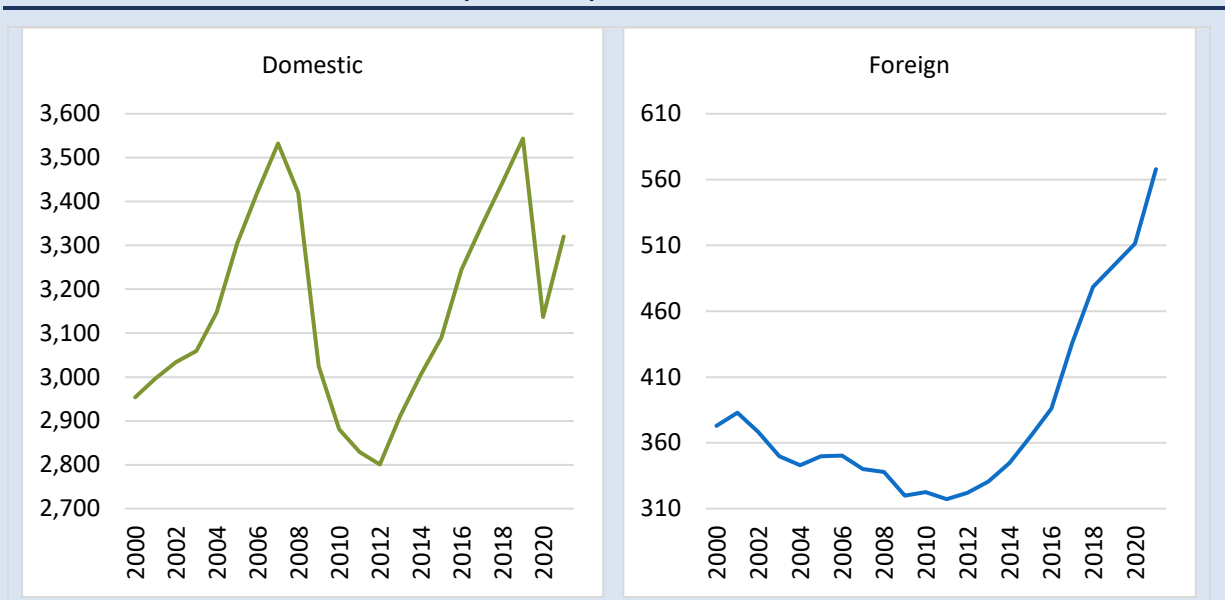
Source: Central Statistics Office (CSO).

Figure B.1 highlights the turbulent nature of the Irish economy over the period in question. For those sectors dominated by domestically owned firms, it is clear that employment grew substantially in the run-up to 2007 before falling sharply afterwards until 2012. Since 2013, the strength of the post-financial crisis recovery is evident, with a blip in 2020 due to the COVID-19 pandemic.

For those sectors dominated by foreign firms, it can be observed that employment levels actually fell from 2001 to 2011. This is somewhat surprising, as the initial part of that period (2000-2007) is associated with the Celtic Tiger era. The fall in employment highlights the substantial contribution of domestically related activity such as construction to the growth in the labour market at that time and the possible extent to which construction related activity may have crowded out activity in the foreign dominated sectors. From 2012 onwards the growth in employment in foreign dominated sectors has been substantial. From a low of just over 170,000 employees in 2011 (9.1 per cent of total employment) to just under 310,000 in 2021 (12.9 per cent of total employment).

A similar picture emerges when we look at total hours worked in the economy (Figure B.2). The only difference is that the total amount of hours worked in the domestically dominated sector in 2021 does not appear to have recovered to the pre-pandemic height in 2018.

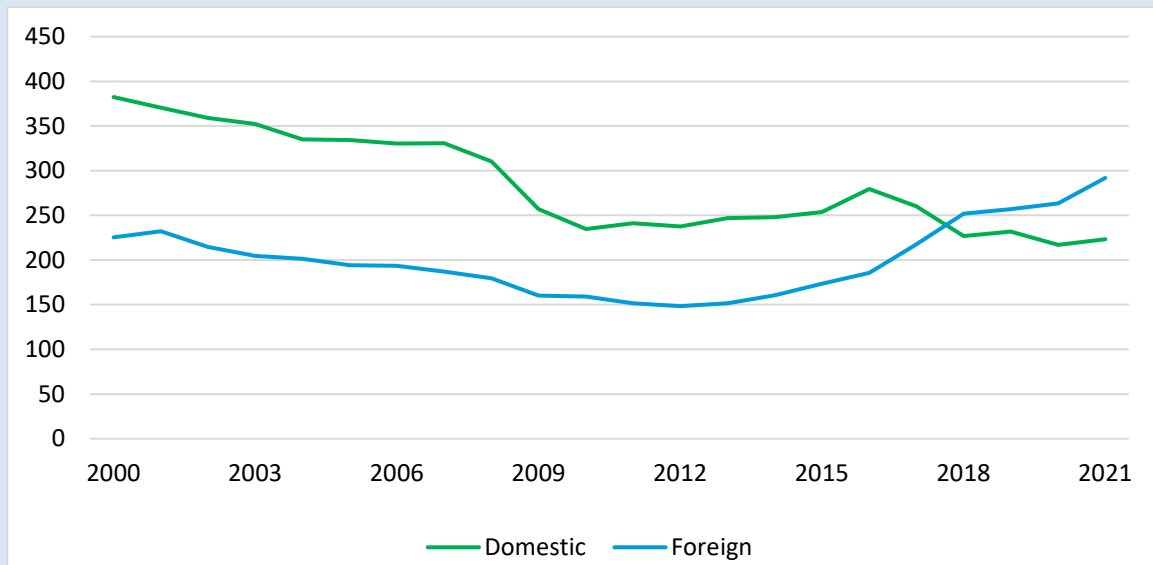
FIGURE B.2 TOTAL HOURS WORKED IN DOMESTICALLY AND FOREIGN DOMINATED SECTORS OF THE IRISH ECONOMY (MILLIONS): 2000-2021



Source: Central Statistics Office (CSO).

When we look at total hours worked in the manufacturing sector split out by domestic and foreign dominated firms, we can see that from 2018 onwards there are now more hours worked in those manufacturing sectors dominated by foreign firms as opposed to those dominated by domestically owned ones. In 2021, foreign firms accounted for over 55 per cent of total hours worked in the manufacturing sector.

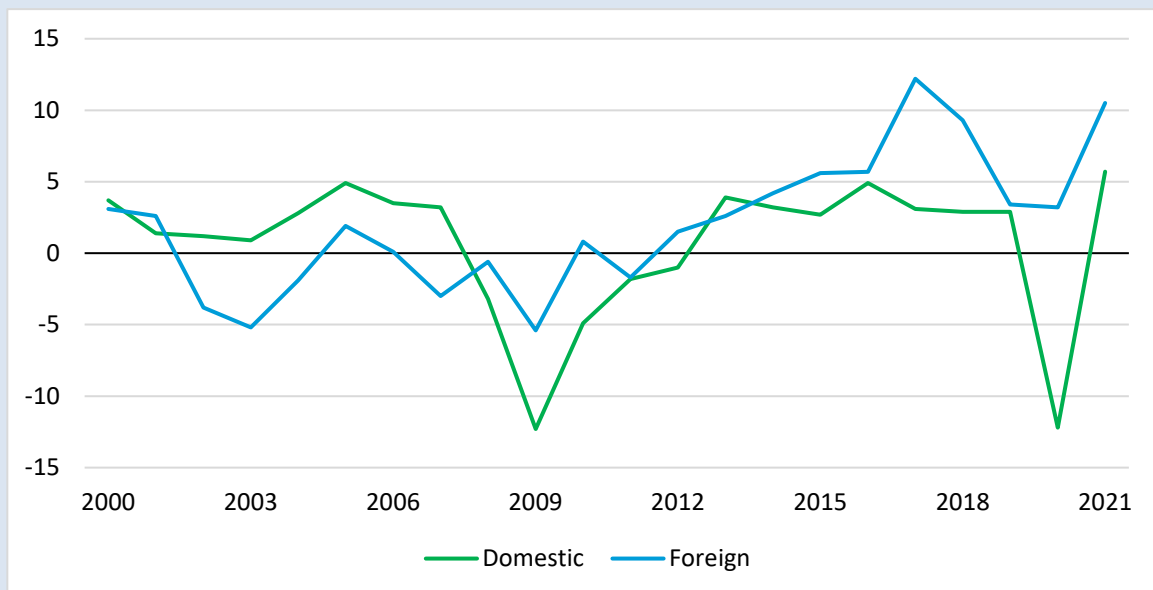
FIGURE B.3 TOTAL HOURS WORKED IN IRISH MANUFACTURING SECTORS DOMINATED BY DOMESTICALLY AND FOREIGN OWNED FIRMS (MILLIONS): 2000-2021



Source: Central Statistics Office (CSO).

In terms of employment growth (Figure B.4), it is noticeable that since 2015, employment growth in foreign dominated sectors of the economy tends to outstrip that of domestically dominated ones. This was particularly apparent during the pandemic where the domestically dominated sectors registered significantly negative growth, while foreign dominated sectors registered positive albeit muted increases.

FIGURE B.4 ANNUAL GROWTH IN HOURS WORKED IN DOMESTICALLY AND FOREIGN DOMINATED SECTORS OF THE IRISH ECONOMY (%): 2000-2021



Source: Central Statistics Office (CSO).

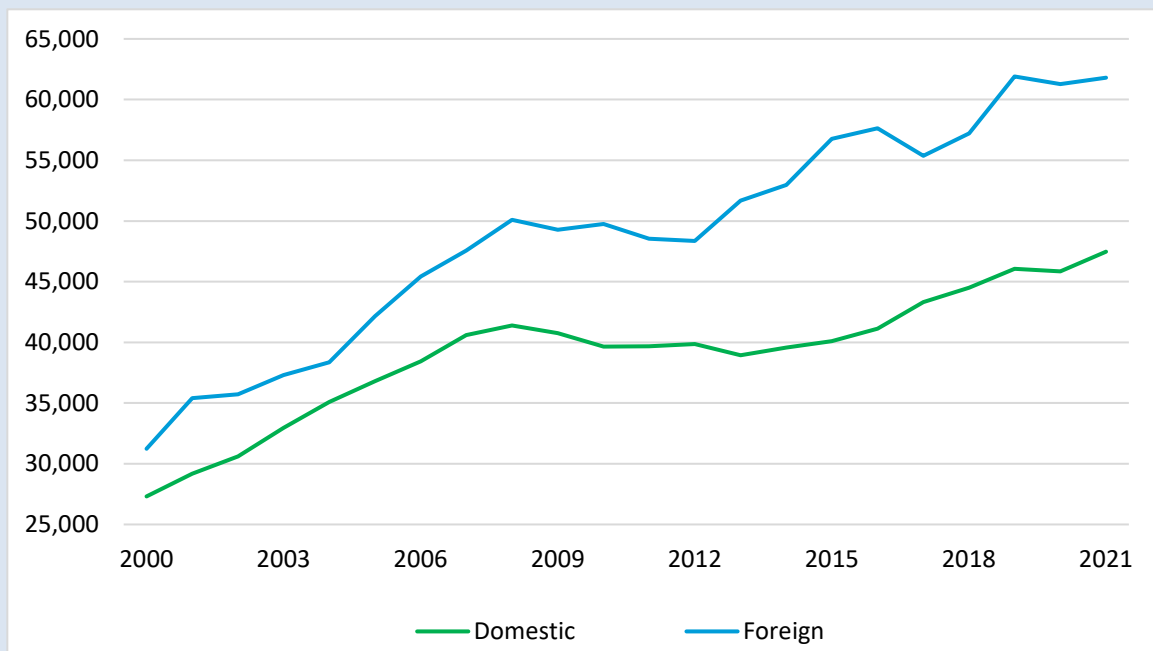
Earnings

Hand in hand with the significant increase in employment in foreign dominated sectors is the relatively high remuneration levels that these sectors enjoy. Figures B.5 and B.6 present labour compensation on both a per worker and a per hour basis for the two different sectors in the Irish economy. The pattern in both cases is somewhat similar; both sectors of the economy register strong income growth up to 2007, thereafter income levels remain stagnant for the Irish dominated sectors until 2016, when they start to increase again.

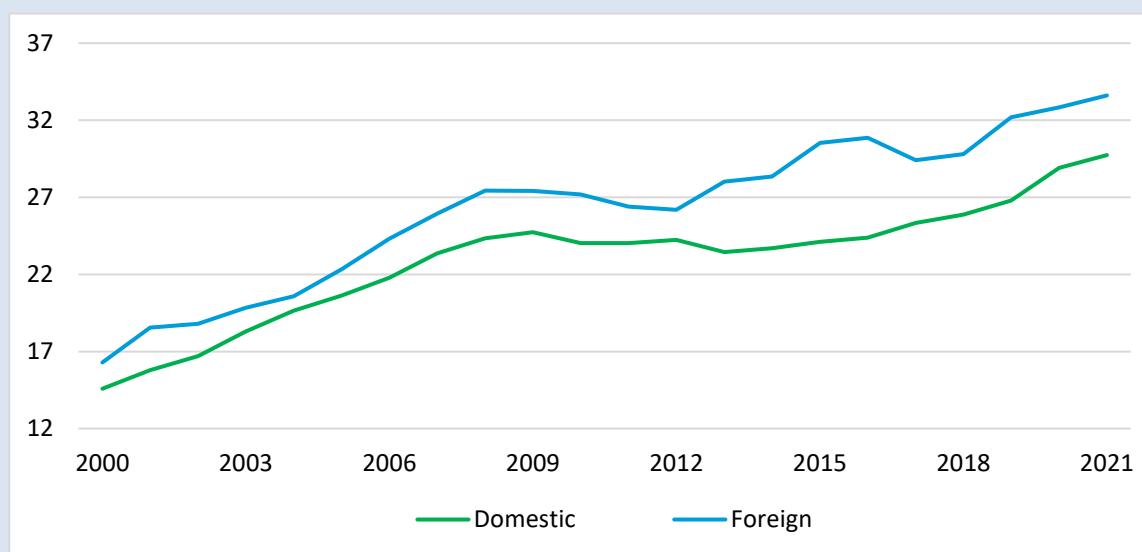
For the foreign dominated firms, income levels started to rise from 2012 and have been growing strongly since. Overall, the difference in income levels between both sections of the economy has been growing since the start of the economic recovery in 2012. In 2021, annual compensation per worker amongst foreign firms was 38 per cent higher than that of domestic firms, while compensation per hour worked was 20 per cent higher.

In summary, therefore, employment in the foreign dominated part of the Irish economy has been growing at a faster pace than that of the other sections of the economy and that employment in that sector, on average, is better remunerated than the rest of the economy as well.

FIGURE B.5 ANNUAL LABOUR COMPENSATION PER WORKER (€): 2000-2021



Source: Central Statistics Office (CSO) and Quarterly Economic Commentary (QEC) calculations.

FIGURE B.6 ANNUAL LABOUR COMPENSATION PER HOUR (€): 2000-2021

Source: Central Statistics Office (CSO) and *Quarterly Economic Commentary (QEC)* calculations.

Concluding comments

Owing to the difficulties associated with headline economic indicators, much discussion centres on the distortionary impact that certain multinational firms can have on domestic economic activity. However, analysis of labour related data highlights the substantial and real contribution the foreign dominated sectors have made to developments in the Irish labour market. This is particularly the case in the post-financial crisis era as noted in McQuinn and Varthalitis (2019). A substantial increase in employment has been experienced by these sectors and with relatively high remuneration levels when compared with wage levels in other parts of the Irish economy. Furthermore, growth in employment in these sectors continued during the COVID-19 pandemic at a time when most other parts of the domestic economy were experiencing downturns.

Finally, the difference in wage levels between the domestic and multinational sectors could have negative implications for the competitiveness of domestic firms. Increasingly, these indigenous firms are in competition with the multinational sector in attracting labour and so they will face increasing upward pressure on wage levels in order to maintain and increase their activity.

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This Box was prepared by Kieran McQuinn.

Labour outlook

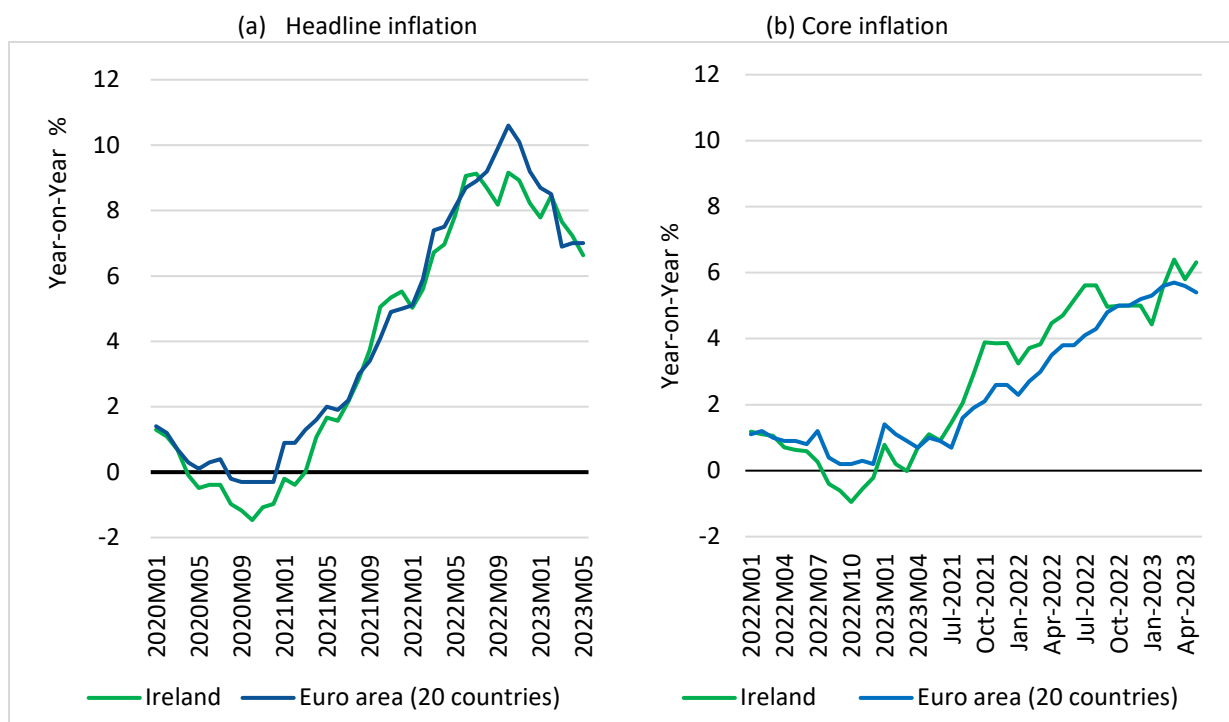
We expect the labour market to show continued resilience throughout this year and next, with the unemployment rate reaching 3.6 per cent by the end of 2024. As outlined in the risk assessment, downside risks to this forecast include a potential slowdown in certain domestic sectors as investment activity cools in 2023. Additional risks related to the labour market include capacity constraints across sectors struggling to meet their demand for labour and potential inflationary effects if wages increase above expectations.

INFLATIONARY PRESSURES REMAIN BUT DRIVERS SHIFT

One of the key risks to both the international and domestic economy is the persistence of inflationary pressures. Figure 21 depicts the annual rate in headline and core inflation in Ireland and the euro area. The significant increase since Russia’s invasion of Ukraine is evident. However, headline inflation rates have declined each month since October 2022 in Ireland and the euro area, when they peaked at 9.2 and 10.6 per cent, respectively. In Ireland inflation stood at 7.2 per cent in April 2023, falling further to 6.6 per cent in May. In the euro area, inflation was 7.0 per cent in April. Core inflation (which removes energy and food), however, has remained stubbornly high through the start of 2023 with a peak of 6.4 and 5.7 per cent in Ireland and the euro area, respectively. Core inflation declined slightly in the euro area between April and May, from 5.6 to 5.4 per cent. However, despite slowing in April, core inflation in Ireland increased again in May 2023 to 6.3 per cent. This divergence between core and headline is likely to be driven by a number of factors including the lagged effects of energy prices increases on up-stream markets (such as food production and services) where energy is a key input. The previous *Commentary* (Spring 2023), warned of a potential change in the

composition of inflationary factors from external, energy related pressures to domestic inflationary elements. A persistent divergence between core and headline as energy prices moderate is one of the areas in which this may begin to be observed.

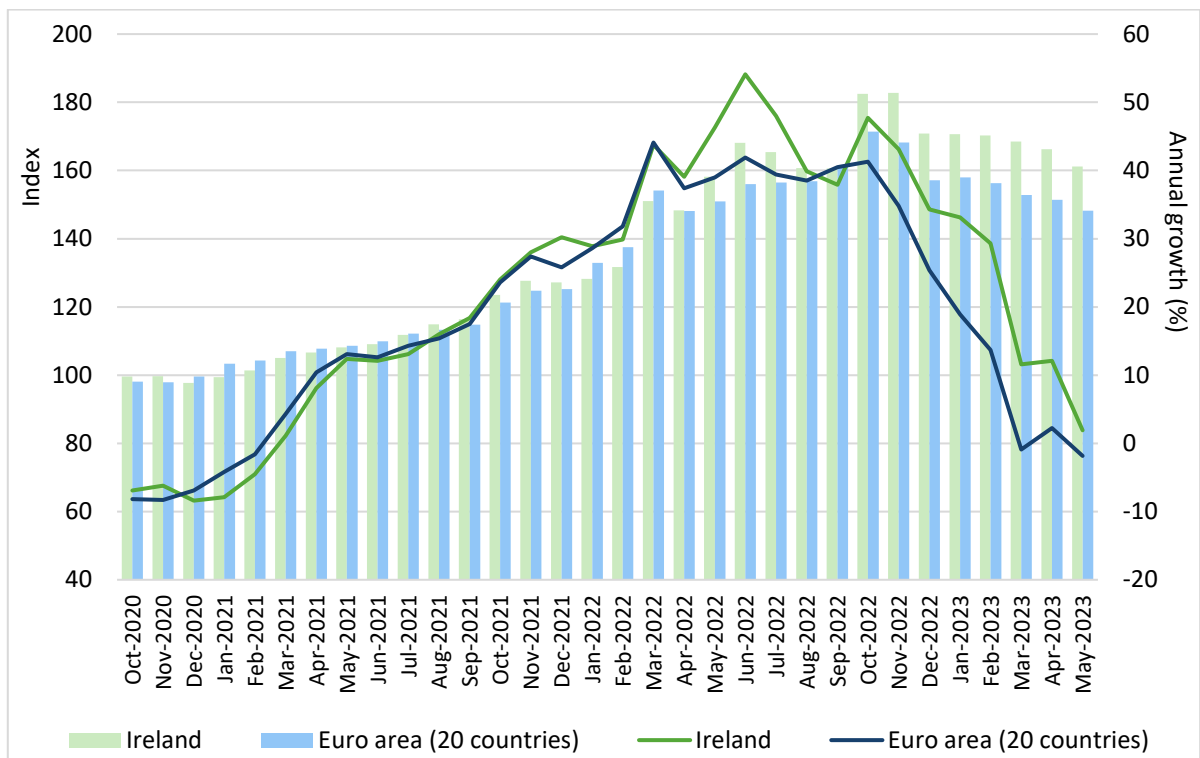
FIGURE 21 HEADLINE AND CORE INFLATION (CPI), IRELAND AND EURO



Source: OECD.

Much of the focus on inflation over the last year has been centred around the exceptional growth in energy prices driven by Russia's war in Ukraine. However, price levels in both Ireland and the euro area have been falling in recent months. In Ireland, the price level in May 2023 hit its lowest point in 12 months (Figure 22). In Box C, Kakkar et al. explore the pass-through between declines in wholesale energy prices to retail prices. While retail prices will continue to be a challenge in terms of cost of living pressures (Irish energy prices in May 2023 are still 49 per cent higher than in May 2021), we expect energy prices to decline gradually throughout the year and help ease overall inflation.

FIGURE 22 CPI: ENERGY, IRELAND AND EURO AREA

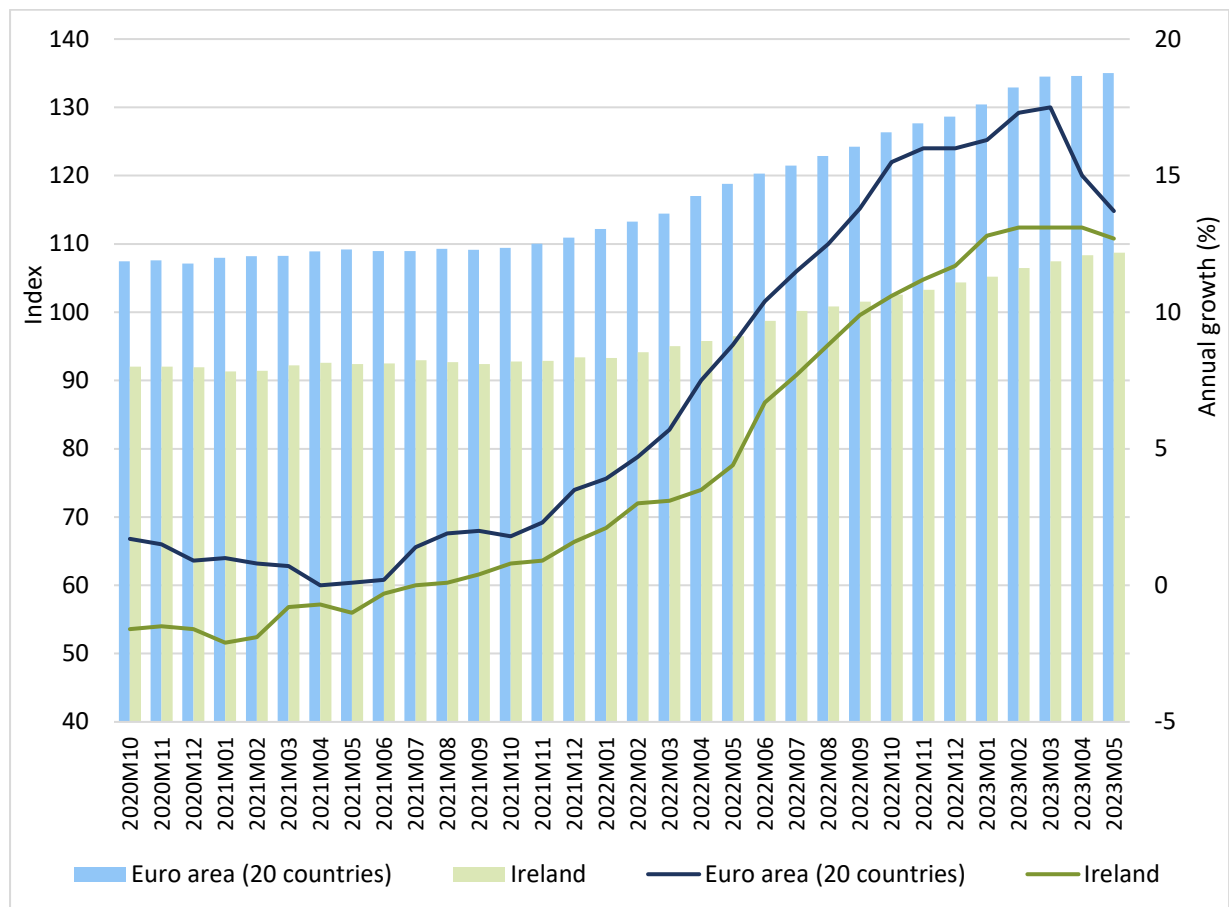


Source: OECD.

Developments in food prices are notably less optimistic. While energy prices have fallen, food prices have remained stubbornly high throughout the start of the year. Lags in adjusting to price changes along the food chain are partly to blame for the continued increase in food prices. Increases in agricultural prices are transmitted relatively slowly to retail prices; the increased cost of groceries through the start of 2023 is related to increases that occurred in agricultural prices in the latter half of 2022.¹⁵ Therefore, even if costs at the farm level begin to decline now, we can still expect retail food prices to remain elevated through most of this year. As of April 2023, food prices were 15 and 13.1 per cent higher in the euro area and Ireland and price levels have continued to increase on a monthly basis (Figure 23).

¹⁵ See Matthews, A. (March 2023). *Food price inflation gathers pace*. Available here: [Food price inflation gathers pace | CAP Reform](#).

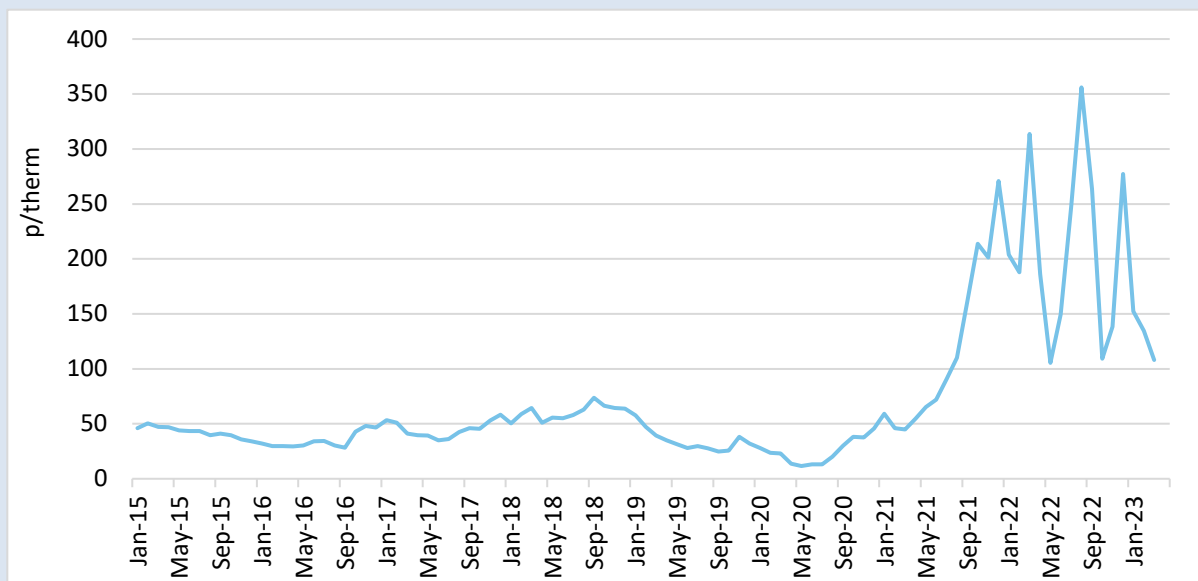
FIGURE 23 CPI: FOOD, IRELAND AND EURO AREA



Source: OECD.

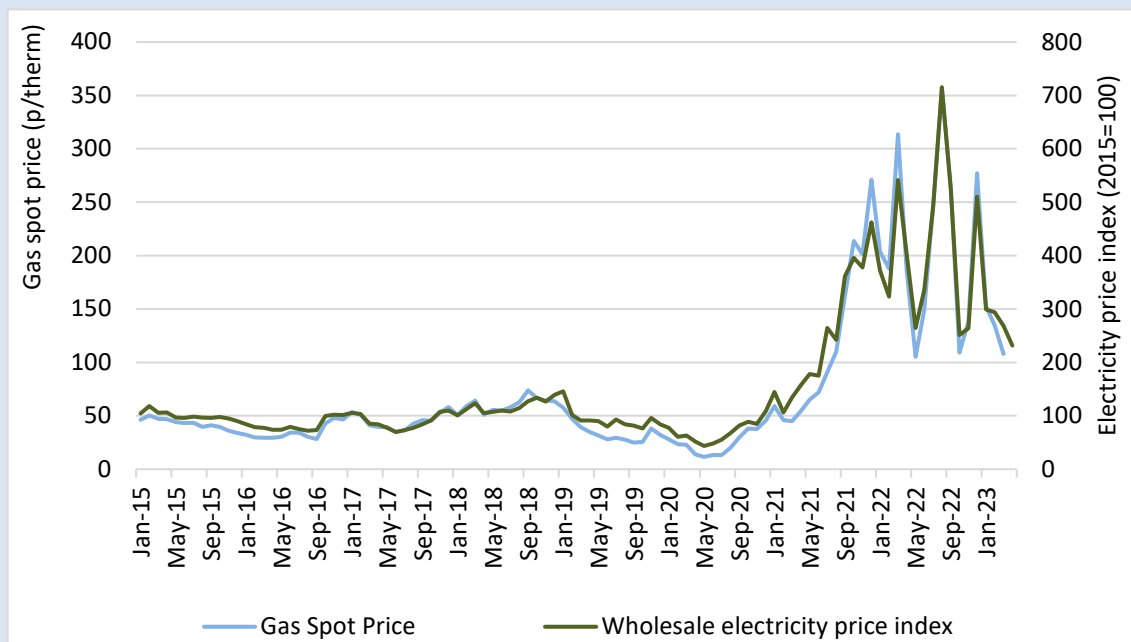
BOX C TRENDS IN RETAIL ELECTRICITY PRICES*Recent trends in wholesale and retail electricity prices*

Supply chain issues from the summer of 2021, followed by the energy crisis precipitated by the war in Ukraine, have caused energy prices to increase at an unprecedented rate. Figure C.1 shows the monthly average spot price on the gas market in Great Britain from January 2015 to March 2023 (source: Ofgem). The majority of Ireland's gas is sourced from Great Britain and so British gas prices dictate the Irish gas price. Gas prices began rising in the Autumn of 2021, with a further rise at the advent of the Ukrainian war in February 2022. While British gas prices have fallen from their peak in Summer 2022, they are still above their long-run average.

FIGURE C.1 WHOLESALE GAS SPOT PRICES

Source: Ofgem – Wholesale Price Indicators.

In 2022, gas accounted for 32 per cent of Ireland's primary energy requirement by fuel type, and 48 per cent of electricity generation. Furthermore, gas generators are often the marginal producer of electricity in the Irish market, which means Irish wholesale electricity prices are strongly linked to gas prices, as verified by previous research (Di Cosmo and Malaguzzi Valeri, 2018; O'Mahoney and Denny, 2013). Figure C.2 displays the relationship between gas spot prices and wholesale electricity prices from January 2015. There is a clear relationship between the two series, including a price rise seen from the summer of 2021. Furthermore, forward gas prices see a significant increase in volatility from the advent of the Ukrainian war, with this volatility also reflected in wholesale electricity prices. The strong link between gas spot prices and wholesale electricity prices suggests that wholesale electricity prices are driven by the short-run marginal cost of generation, which is a feature of all competitive markets.

FIGURE C.2 WHOLESALE GAS SPOT PRICES AND WHOLESALE ELECTRICITY PRICES

Source: Gas Spot Prices – Ofgem – Wholesale Price Indicators and WSP Index of electricity – CSO.

Figure C.2 also shows that wholesale electricity prices have fallen significantly from their peak in the summer of 2022. While these prices are still above their long-run average, the fall in wholesale electricity prices from their peak has not, to date, been reflected in any significant fall in retail electricity prices. There are several potential explanations for this. One is the possibility of anti-competitive behaviour, where firms fail to pass on a wholesale price decrease in order to boost profits. There are, however, other possible explanations, including new risk premia being attached to prices by supply firms, which would cause retail prices to settle higher than previously, relative to wholesale prices. Finally, the failure to pass through reductions in wholesale prices could also be driven by hedging strategies; given that supply firms generally fix their prices ahead of time, there is generally a lag between changes in wholesale prices and changes in retail prices.

The extent to which wholesale electricity prices pass through to retail prices has not received significant attention in the literature in Ireland to date. The evidence from the international literature, however, generally pre-dates the 2022 energy crisis, and the results are varied. The pass-through of wholesale prices to retail prices has been empirically studied in the British context (Ofgem, 2011), by Mulder and Willems (2019) in the Dutch markets, and collectively in Norway, Sweden, and Finland by Mirza and Bergland (2012) and Johnsen and Olsen (2008). In the US a similar study was carried out by Brown et al. (2020) and Hartley et al. (2019) for Texas. Burns and Mountain (2021) studied the problem in the context of Australia. Table C.1 summarises the results from these studies.

TABLE C.1 RATE AND DURATION OF PASS-THROUGH IN THE SHORT AND LONG RUN

Region	Rate of Pass-through (Increases)	Rate of Pass-through (Decreases)	Source
Dutch Markets	0.279	0.142	(Mulder and Willems, 2019)
United Kingdom	1.12 to 1.82	0.088 to 1.42	(Ofgem, 2011)
Region	Rate of Pass-through (long run)	Time of Pass-through	Source
Nordic Markets (Norway, Sweden, Finland)	0.85	0 and 0.2 per week	(Mirza and Bergland, 2012)
Norway	1.038 (more than pass-through)	1 to 3 months	(Johnsen and Olsen, 2008)
Sweden	1.39 (more than pass-through)	8 months	(Johnsen and Olsen, 2008)
Texas	0.0449 to 0.0722	-	(Hartley et al., 2019)

Note: Rate of pass-through (0.279) when in percentage (27.9 per cent), indicates the percentage of pass-through in the short run (typically one to three months).

Of those studies that consider both short-run and long-run effects, the empirical results broadly suggest that wholesale prices in time ‘t’ do not pass through to retail prices in the short run, but do so in the long run. In the context of Great Britain, Ofgem (2011) reinforces this broad finding, and adds that in the short run wholesale prices do not pass through either symmetrically or asymmetrically, but do so in the long run, asymmetrically – in other words, price rises and price falls pass through to different extents, and at different rates. The Nordic markets show similar findings. Studies from Texas (Brown et al., 2020 and Hartley et al., 2019), add more detail with respect to the industry organisation. Hartley et al. (2019) finds that pass-through happens in the same period in competitive markets (the pass-through evidence is weak, varying from 0.0449 to 0.0722) but not in the non-competitive segments of the electricity markets of Texas. Brown et al. (2020) finds an incomplete pass-through, thereby reinforcing the findings of Hartley et al. (2019), and further finds that pass-through depends on the size of retail firms, suggesting that large firms exploit markets.

The studies that only look at the short run broadly conclude that wholesale prices pass through in the short run, but in a slow and incomplete fashion. Mirza and Bergland (2012) finds that pass-through varies between 0 and 0.2 per week. Johnsen and Olsen (2008) study the Nordic electricity markets, accounting for short-run asymmetries, and find that wholesale pass-through ranges from one month to three months in Norway and eight months in Sweden. They add to the findings of Mirza and Bergland (2012) and find that pass-through is slow in the short run, fluctuating from 0.2 to 0.6.

While the broad finding is that wholesale prices pass through in the long run, the magnitude of pass-through and time varies. In the case of the Dutch markets Mulder and Willems (2019) report that reductions are passed on at a rate of 0.142 in the long run, while increases are passed on at a rate of 0.279. This finding supports the phenomenon of rockets and feathers: price increases pass through more quickly than price decreases.

Mirza and Bergland (2012) suggests that long-run pass-through is also incomplete and only 85 per cent of wholesale price change is passed on. In Texas, Hartley et al. (2019) estimate long-run pass-through in the competitive market from 0.0449 to 0.0722. In the UK, decreases in wholesale prices are passed through at rates of between 0.088 and 1.42 in the long run, while increases are passed through at rates between 1.12 and 1.82 (these rates are found to increase with the length of hedging positions 12, 18, and 24 months). In Norway, Johnsen and Olsen (2008) estimate a pass-through rate of 1.038 with a rate of 1.39 estimated in the case of Sweden.

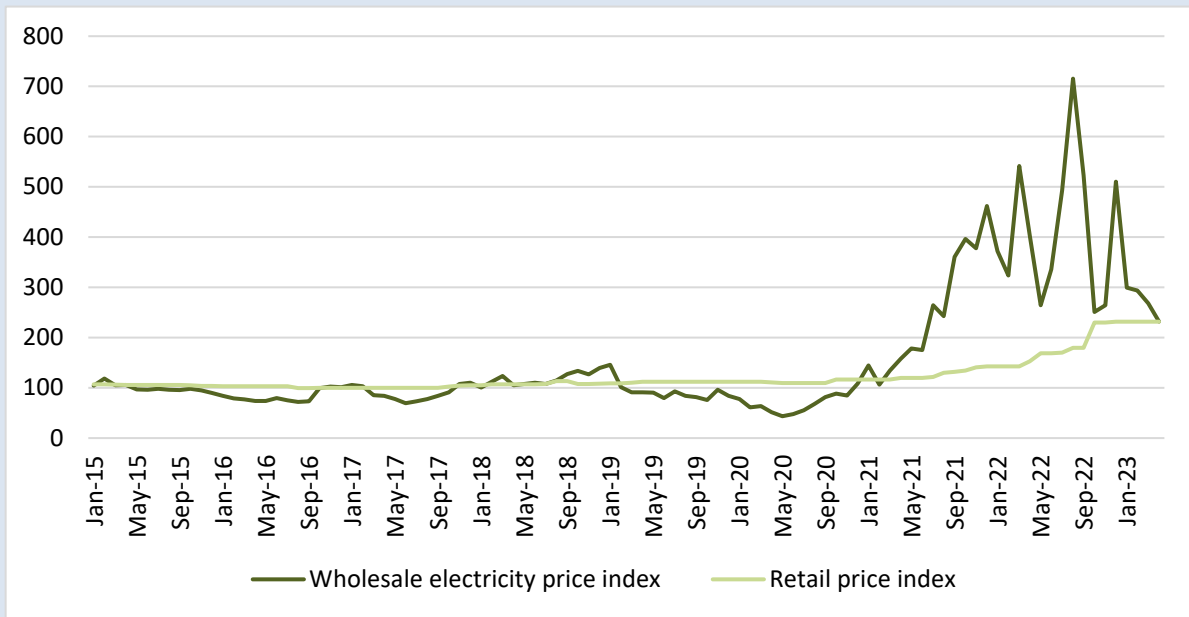
Regarding asymmetric pass-through, Ofgem (2011) finds customer bills in the UK responded more quickly to higher wholesale price changes in the long run compared to lower wholesale prices from 2004 to 2010. Mirza and Bergland (2012) found asymmetry in wholesale prices with respect to retail prices, which was also reported by Johnsen and Olsen (2008). However, a study by Mulder and Willems (2019) in contrast finds no evidence for asymmetric prices passing through in the long or short run, in retail Norway markets.

The case of Ireland

There has been no specific analysis of wholesale-retail pass-through of Irish electricity prices to date, but the international literature suggests pass-through is in general slow and incomplete, especially in the short run. If Irish firms hedge their prices more relative to firms in other countries, pass-through may be slower than that observed elsewhere. This aligns with the literature reviewed above; particularly from Great Britain: longer hedging positions result in slower pass-through. Thus, there are costs and benefits to higher degrees of hedging: hedging protects consumers from variability in pricing and increases security, but can lock consumers into higher prices for a longer period of time.

Figure C.3 displays the price index of wholesale and retail electricity prices. The relationship is fairly strong before the energy crisis, but the increased volatility in wholesale prices observed since spring 2022 does not manifest itself in the retail market. Instead, retail prices have generally increased throughout 2022, with a flattening of retail prices in 2023.

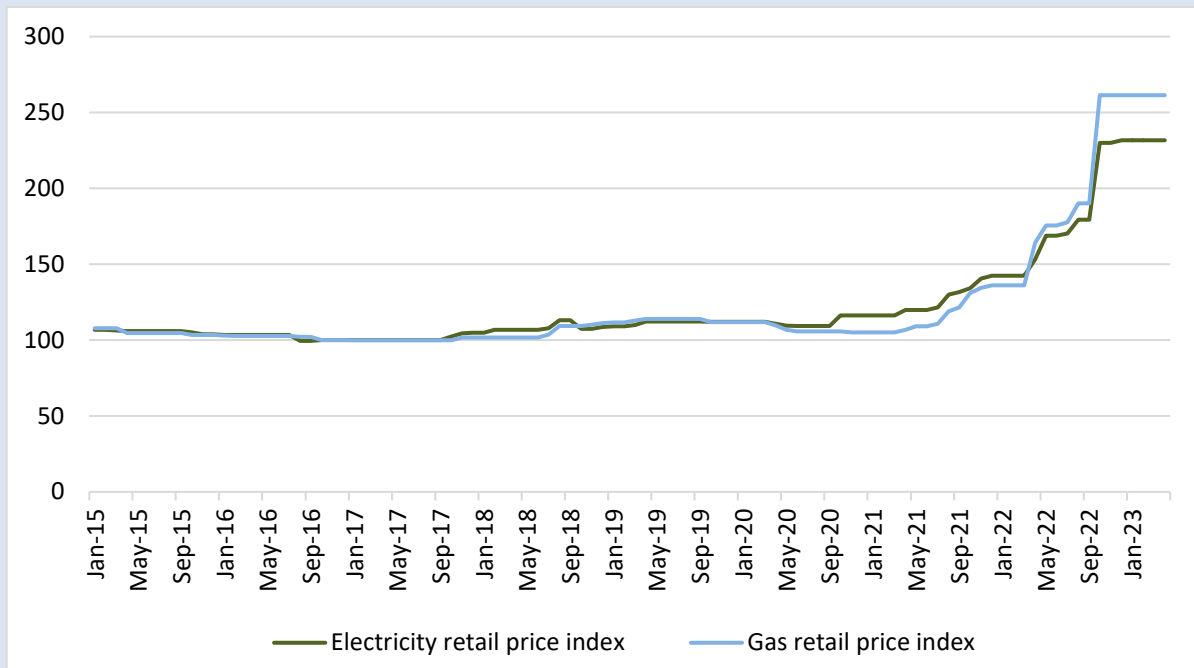
FIGURE C.3 WHOLESALE AND RETAIL ELECTRICITY PRICE INDICES



Source: Central Statistics Office (CSO).

The volatility of wholesale prices reflects the volatility of gas prices (Figure C.2). However, the relationship between gas retail prices and electricity retail prices, shown in Figure C.4, appears to be far stronger than that of wholesale and retail electricity prices.

FIGURE C.4 RETAIL ELECTRICITY AND GAS PRICE INDICES



Source: Central Statistics Office (CSO).

This stronger relationship suggests that electricity supply firms may employ identical hedging strategies for gas and electricity markets, with the most likely explanation that electricity retail firms hedge off wholesale gas markets rather than wholesale electricity markets. This may reflect the fact that liquidity on wholesale electricity markets is generally low. Low liquidity in forward electricity markets may cause firms to hedge their position via an alternative market. Given the strong correlation between gas and electricity markets, the gas market may have the liquidity required to allow firms to hedge their positions effectively.

Electricity spot markets are necessary in order to ensure the efficient dispatch of electricity generation technologies in real time. However, given that supply companies sell electricity at a fixed tariff, the hourly variation in wholesale prices does not feed through to retail tariffs (even smart tariffs are generally time-of-use rather than pricing directly off the wholesale market).

Conclusions

Several final points remain. First, if the stronger relationship between gas and electricity retail prices is explained by electricity firms hedging via the gas market, this means that forward gas prices may be a better predictor of retail prices than wholesale electricity prices. Wholesale gas and electricity prices alike should therefore be monitored when considering whether anti-competitive behaviours may be manifesting in the Irish market. Secondly, Figure C.3 suggests that there was a lag between increases in wholesale energy prices and retail prices. Thus, some lag can be expected in passing on wholesale price decreases on to retail prices. Finally, the indices for gas and electricity retail prices have diverged from the beginning of 2023 onwards, with gas prices settling at a higher level relative to the historical relationship between these time series. The relationship between these price series should therefore be monitored going forward.

Given the international literature, it may be that reductions in wholesale prices will not be passed through at the same rate as increases in wholesale prices. However, if this is the case, it would suggest anti-competitive behaviour from firms. Thus, a sustained decrease in wholesale gas prices that is not followed by a reduction in retail prices within six to twelve months should be investigated for evidence of anti-competitive behaviour.

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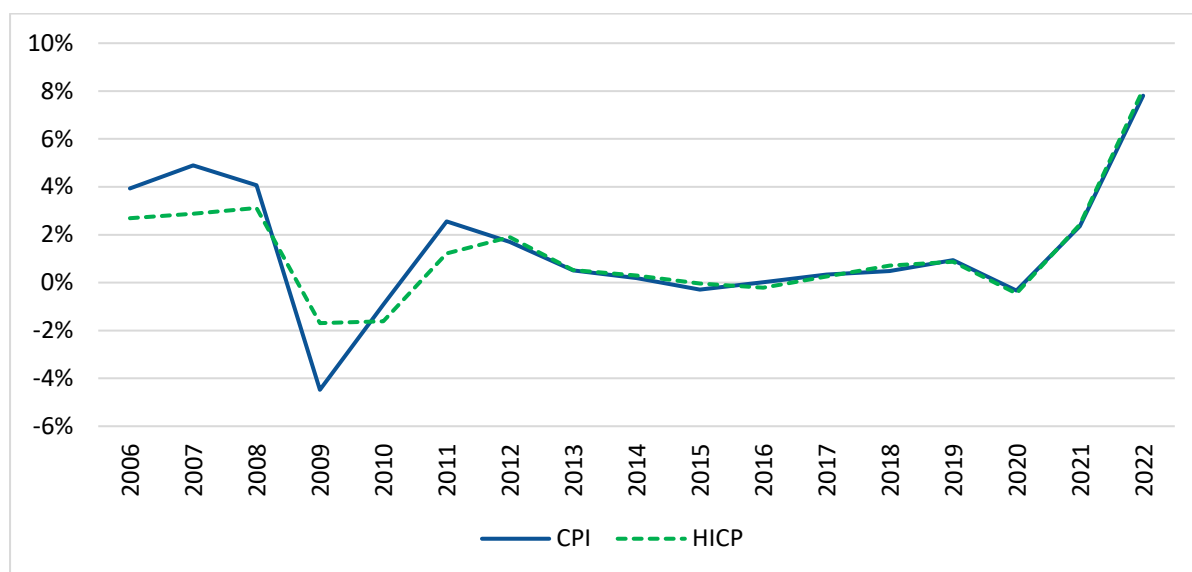
This Box was prepared by Pranav Kakkar, Muireann Lynch and Niall Farrell.

HICP vs CPI: impact of housing costs

One particular issue in measuring inflation rates is the treatment of costs related to owner-occupied housing. A user-cost approach is used by the CPI to measure owner-occupied housing costs, which includes measuring changes in average mortgage interest costs over time. In contrast, mortgage interest is excluded from the HICP.¹⁶ This difference in measurement has had little impact in recent years; the difference between the annual inflation rate measured by the CPI and HICP has been less than 0.3 per cent between 2012 and 2022. However, because of the large share of income typically spent on housing costs, significant changes in monetary policies can lead to diverging measures of inflation. This is particularly evident in the period from 2006 to 2011 (Figure 24).

¹⁶ See CSO background notes on differences between the CPI and HICP: <https://www.cso.ie/en/releasesandpublications/er/cpi/consumerpriceindexdecember2020/>.

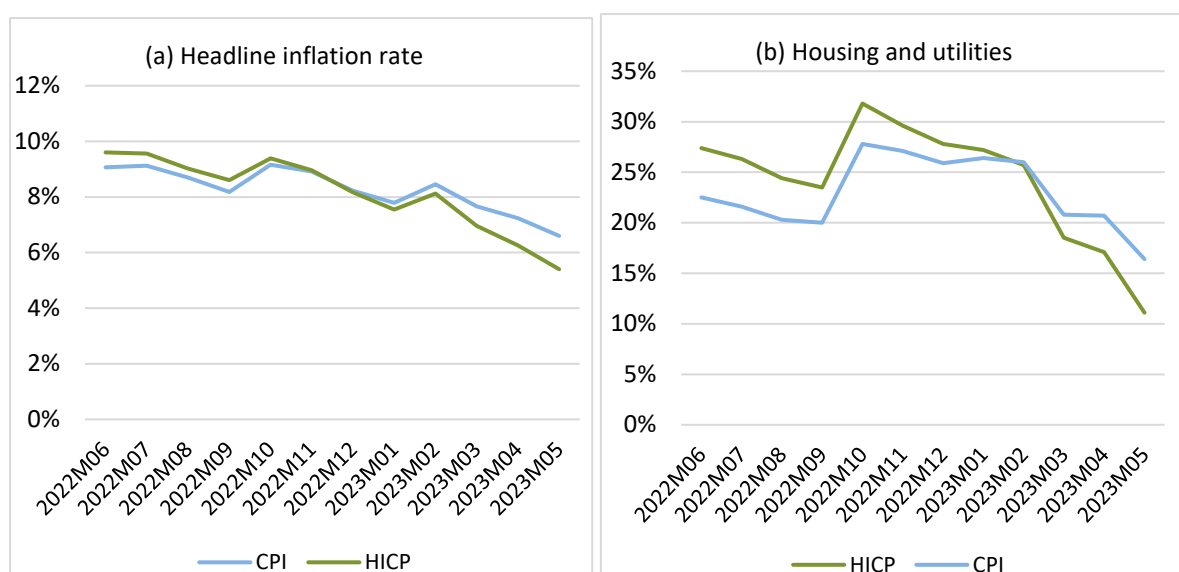
FIGURE 24 HICP AND CPI ANNUAL INFLATION RATE (2006-2022)



Source: Central Statistics Office.

Due to the recent tightening of monetary policy, we see a similar trend appearing in recent months. In May 2023, the inflation rate (CPI) was 6.6 per cent compared to an inflation rate of 5.4 per cent as measured by the HICP (Panel (a), Figure 25). We can see the differences between these headline rates most clearly in the housing and utilities subgroup. In May, inflation in this category was 5.3 per cent higher in the CPI compared to the HICP (Figure 25(b)). This is accompanied by a 44 per cent increase in mortgage interest, as measured by the CPI.

FIGURE 25 HICP AND CPI MONTHLY HEADLINE AND HOUSING AND UTILITIES INFLATION RATE



Source: Central Statistics Office.

Diverging trends in measurements of inflation can have significant repercussions for the direction of monetary policy. Given the elevated impact that the inclusion of mortgage interest is having on the CPI, this *Commentary* now presents forecasts of both the CPI and the HICP for 2023 and 2024.

Inflation outlook

Given the gradual declines in energy prices and slowdown in headline inflation, we have revised down our forecast for inflation in 2024. We now expect inflation (CPI) to be 5.0 and 3.0 per cent in 2023 and 2024. Given the increased pressure that mortgage rates are having on the CPI, we expect inflation as measured by the HICP to be slightly lower, at 4.3 and 2.8 per cent for the same period.

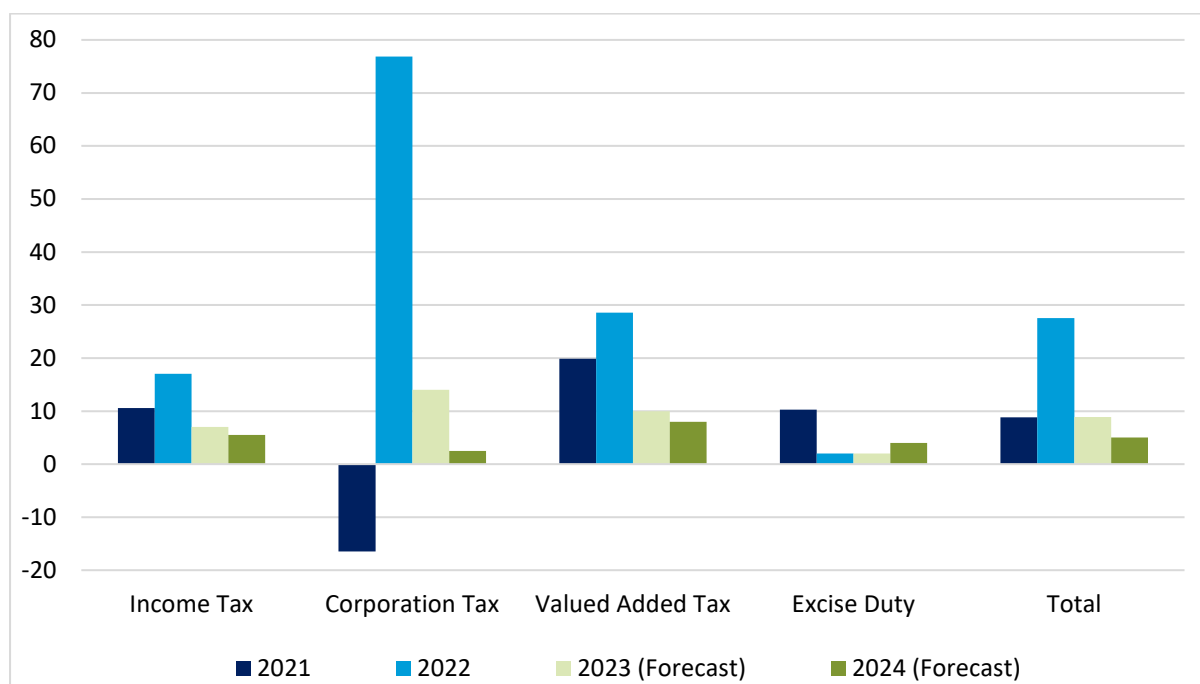
However, elevated price levels on everyday essentials such as food and energy continue to fuel cost of living pressures on households. Given the tightness of the labour market, these trends may likely accelerate wage growth in the near term and feed through to core inflation. Increases in core inflation, particularly through wage growth, may be harder to subdue and lead to upward revisions in our inflation outlook.

PUBLIC FINANCES CONTINUE TO IMPROVE BUT CONCENTRATION RISKS RISE

Growth in tax revenues continues

The surge in taxation revenues which had characterised returns in 2022 has continued into 2023. Taxation revenues in the first five months of 2023 amounted to €33.1 billion, which is a 10 per cent increase or €3.1 billion more than that period in 2022. Consequently, for the period from January to May, the State has a surplus of €3.6 billion. However, when the transfer of €4 billion to the National Reserve Fund is taken into account, the State records a deficit of €0.6 billion.

These increased tax revenues are due to the continuing improvements across the main tax headings. Income tax, corporation tax and VAT for January to May 2023 experienced annual growth of 9.4 per cent, 20.7 per cent, and 11.7 per cent, respectively. The annual growth rates as well as the forecasts for taxation across the main headings are shown below.

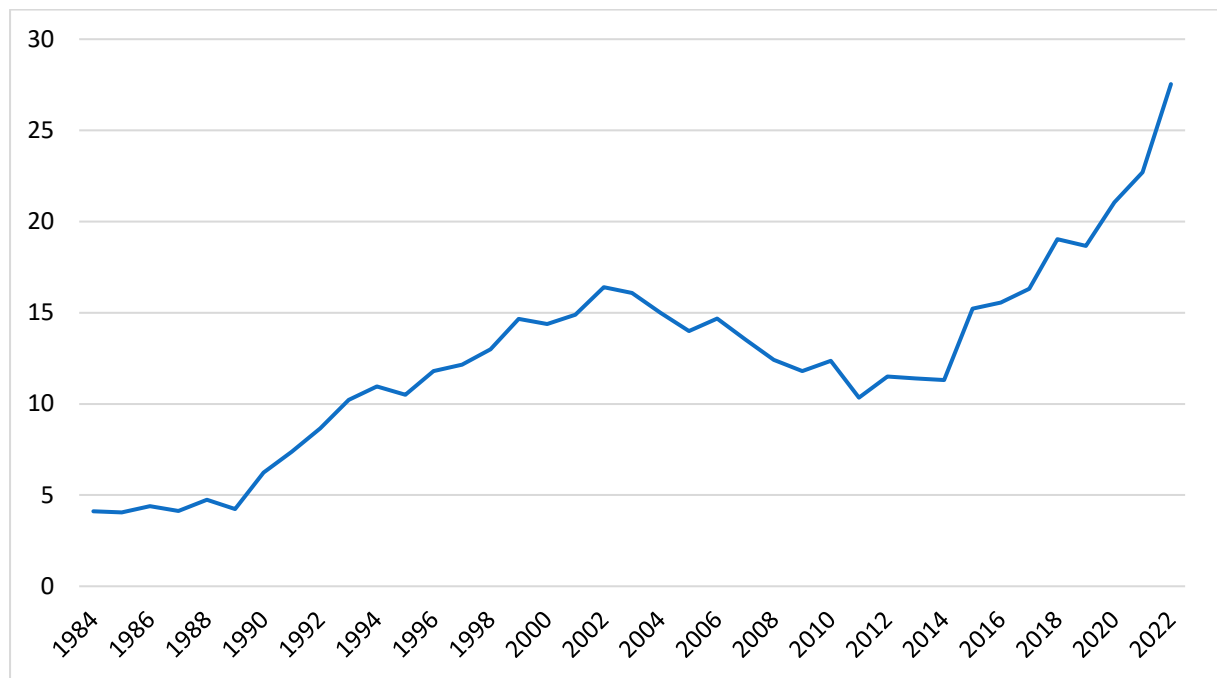
FIGURE 26 GROWTH RATE AND FORECASTS OF MAIN TAXATION HEADINGS

Source: Department of Finance and QEC calculations.

Increased earnings as well as continuing declines in unemployment have seen income tax revenues increase further this year. VAT increases can be attributed to the improvement in economic conditions as energy costs have subsided since this time last year, with some degree of certainty around the costs of energy being re-established. Growth in income tax and VAT receipts are also expected to continue into 2024.

Income tax and VAT are important elements in Ireland's increased tax revenues, but it is clear that the taxation heading registering the strongest pace of growth is corporation taxes. Already from January to May of this year, the State has collected an additional €1.1 billion in corporation taxes compared to last year. To put this in context, this is on top of an increase of €2.3 billion in 2022 compared to the first five months of 2021. In 2022 overall, corporation taxes amounted to €22.6 billion. These levels of corporation taxes are expected to continue and indeed increase further. In the latest Stability Programme Update,¹⁷ for example, the Department of Finance has forecast corporation tax receipts of €24.3 billion in 2023, rising to €27.2 billion by 2026. Figure 27 plots the contribution of the corporation tax heading to total receipts over the period 1984 to 2022.

¹⁷ See document at: gov.ie – Stability Programme Update 2023 (www.gov.ie).

FIGURE 27 CONTRIBUTION OF CORPORATION TAX RECEIPTS TO TOTAL (%)

Source: Department of Finance and QEC calculations.

The significant increase in the contribution of corporation tax receipts is particularly noticeable from the early 1990s. However, its contribution actually reached a peak in 2002 before falling consistently until 2011. From 2012 onwards though, its significance to total Exchequer receipts has grown sharply with a particularly pronounced increase apparent from 2019 onwards. In 2022 it accounted for almost 28 per cent of total taxation receipts.

Concentration risks and debate on the use of incoming revenues

The substantial increase in corporation tax revenues raises particular concerns about the sustainability of these returns to the Exchequer. These concerns are compounded by the increasingly concentrated nature of the returns amongst a relatively small number of multinational firms. Cronin (2023)¹⁸ estimates that three corporate groups accounted for around a third of all corporation tax revenues in 2021. In the same year, the corporation tax collected from the ICT and pharmaceutical sectors was over 90 per cent of the overall corporation tax receipts.

The establishment of the National Reserve Fund in Budget 2023 highlighted concerns amongst policymakers regarding the sustainability of the corporation

¹⁸ Cronin B. (2023). 'Understanding Ireland's top corporation taxpayers'. IFAC working paper No. 20, June. Available online at: <https://www.fiscalcouncil.ie/understanding-irelands-top-corporation-taxpayers/>.

returns with a certain amount of the receipts, deemed to be windfall in nature, being allocated to the fund. In 2022, €2 billion was allocated with €4 billion being assigned in 2023. Recently the Department of Finance (2023)¹⁹ outlined a variety of proposals for the fund. Three broad areas were proposed; the first was to establish a pension reserve fund, along the lines of one set up in 2001. The original fund was liquidated as part of the international financial package in 2010. The new fund would allocate resources from the SPF to deal with the increasing cost of pensions provision which is set to occur given demographic trends.

Another proposal in Department of Finance (2023) is the creation of a sovereign wealth fund such as the Government Pension Fund of Norway. This would see the State invest in foreign assets, with the aim of steady returns being provided to the Exchequer over the long term. The decision to invest in foreign assets would conform with the basic principle of risk-diversification so that even if the domestic economy were to underperform for a period, the Exchequer would still benefit from funds earned abroad.

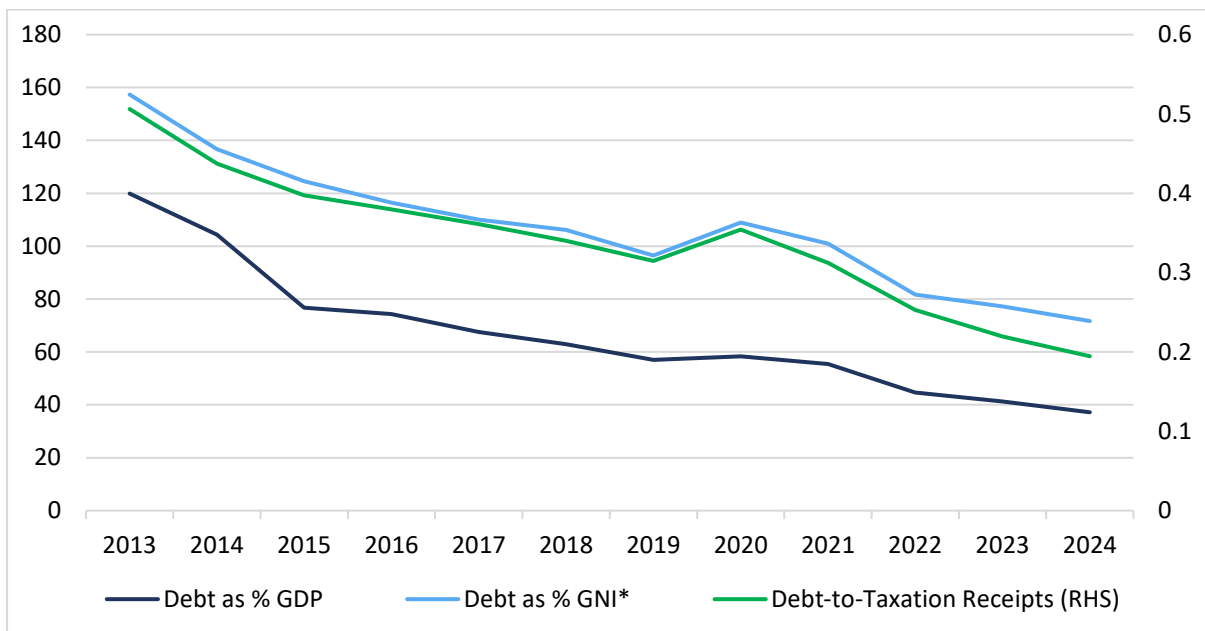
The final option discussed with less emphasis in Department of Finance (2023) is for the possibility of certain amount of the funds being diverted to capital-intensive domestic infrastructural projects.

We forecast General Government Balances (GGB) of €9.8 billion and €15.5 billion in 2023 and 2024 respectively. In Figure 27 the debt-to-output ratios for GDP and GNI* are presented for the historical period 2013 to 2022 and for the forecast period 2023 and 2024. Also included is the debt-to-Exchequer receipts indicator which was outlined in McQuinn 2021.²⁰ This latter indicator was preferred as a cross-country comparison indicator of debt sustainability. Overall, the decline in all ratios after the financial crisis is quite striking with the debt-to-GDP and debt-to-GNI* indicators reducing to 37.2 per cent and 71.6 per cent in 2024, respectively. The debt-to-Exchequer receipts decline from 5.1 in 2013 to 1.9 by 2024 (Figure 28). This would result in Ireland's debt position being mid-table in terms of sustainability amongst fellow EU countries.

¹⁹ Department of Finance (2023) *Future-proofing the public finances – the next steps*, May. Available online at: <https://www.gov.ie/en/publication/8a0a8-future-proofing-the-public-finances-the-next-steps/>.

²⁰ McQuinn K. (2021). 'Is Ireland a high debt country?', Box in *Quarterly Economic Commentary*, Autumn.

FIGURE 28 DEBT-TO-OUTPUT (%) AND DEBT-TO-TAXATION RECEIPTS (RHS) RATIOS



Source: Department of Finance and QEC calculations.

General Assessment

Current expected outlook?

The Irish economy looks set to continue to grow in a robust and resilient manner in 2023 and into 2024. While headline indicators such as GDP indicated a significant slowdown in the domestic economy in the opening quarter of 2023, the underlying pace of growth suggests a more resilient performance by the domestic economy; our forecast for modified domestic demand (MDD) indicates the economy will grow by 3.6 per cent in the current year and 4.0 per cent next year. The main driver of domestic growth is the buoyancy of the labour market and its impact on household consumption. Much of the reason for the decline in headline GDP in Q1 2023 was lower exports and investment in tangible assets as compared with 2022.

One of the significant aspects of the current strong economic performance is the strength of the Irish labour market. In Q1 2023 the Irish unemployment rate fell to a historically low rate of 4.1 per cent and is expected to fall further through the year. While that does present difficulties in terms of ensuring the domestic economy has the sufficient resources to continue to grow, the rate of job creation is quite remarkable, particularly given the disruption caused to employment by the COVID-19 pandemic.

A Box in the *Commentary* by Cunniffe and Disch avails of data on applications for employment permits by non-EEA nationals to assess the sectoral demand for labour in the Irish market. These trends confirm the slowdown evident in the ICT market but highlight the growth in employment prospects elsewhere, with the construction sector experiencing notable increases in applications for permits recently. This provides some evidence for the proposal in Egan et al. (2022)²¹ to use the permits system as a way of potentially offsetting constraints in the domestic economy.

Underlying economic activity and the contribution to the labour market by MNEs

The somewhat contradictory signals in the latest National Accounts concerning the trajectory of the domestic economy highlights the importance of ongoing attempts to more accurately assess the underlying pace of growth in the Irish economy. In that regard, the current *Commentary* contains another valuable contribution from FitzGerald (2023) in terms of comparing underlying performance with that

²¹ Egan P., K. McQuinn and E. Kenny (2022). 'Increasing future housing supply: What are the implications for the Irish economy?', Special Article, *Quarterly Economic Commentary*, Autumn, Dublin: The Economic and Social Research Institute, Winter 2022.

suggested by traditional headline indicators such as GDP. The paper draws upon relatively new information published by the Central Statistics Office (CSO) along with the traditional National Accounts to come up with a refined output estimate for the Irish economy.

A number of salient features emerge from the piece; the contribution of foreign multinational firms (MNEs) to the Irish economy increased from 22 per cent in 2013 to 29 per cent in 2021 while, by 2021, 33 per cent of the total wage bill in the Irish economy was from foreign MNEs. This reflected both an increase in employment and the wage bill for these firms. Taken with the Box in the *Commentary* by McQuinn on key labour market indicators of foreign MNEs, it highlights the real and substantial contribution to the Irish economy by such firms.

In terms of underlying economic growth, FitzGerald (2023) estimates that the Irish economy grew by an average of 4.4 per cent over the period 2013 to 2021, somewhat less than what headline GDP suggests but a significant growth performance nonetheless. This compares, for example, with 1.2 and 1.4 per cent average growth for the euro area and the European Union over the same period. If one were to exclude some of the windfall corporation tax receipts accumulated over the period, the growth rate would average 4.1 per cent. From a policy perspective, it is evident that both taxation and infrastructural policy, such as the provision of social and affordable housing, must continue to support inward FDI investment.

Energy prices in the Irish retail sector

Clearly, much of the recent increase in inflation is due to the energy crisis prompted by the war in Ukraine. While wholesale energy prices peaked in the final quarter of 2022, retail prices have been slow to fall ever since. In a Box to the *Commentary*, Kakkar et al. examine the issue of pass-through between wholesale and retail electricity prices. Across a number of cross-country studies, they find evidence of significant variation in estimates of this pass-through relationship. For example, amongst Nordic countries, full pass-through can occur in the case of Norway in one to three months, whereas it can take up to eight months in the Swedish market.

In Ireland while there was a close relationship between wholesale and retail electricity prices prior to the recent energy crisis, this link has broken down since then. Kakkar et al. note that in the Irish case, due possibly to hedging strategies, there is a strong relationship between retail electricity prices and gas prices. Therefore, both sets of prices (electricity and gas) should be monitored when

examining for anti-competitive behaviour in the Irish market, as gas prices may be a better predictor of retail electricity prices than wholesale electricity prices.

Interest rates, the housing market and demographics

The significant increase in European Central Bank (ECB) policy rates in response to the elevated inflationary pressures is having a significant impact in a number of different areas of the domestic economy. This is particularly the case in the housing market where higher interest rates have an instantaneous cooling impact on housing and mortgage demand; this comes at a time when previous *Commentaries* have talked about overvaluation in domestic high prices following the stimulatory impact of COVID-19 on domestic savings levels. The slowdown observed this year in house price increases is, therefore, mainly attributable to a combination of the overvaluation in the market and rising borrowing rates. However, this is all set against the backdrop of a continued imbalance between actual housing supply, which is forecast at 26,000 units in 2023, and the level of structural housing demand estimated by Bergin and Garcia-Rodriguez (2020)²² to be between 30,000 and 35,000 units per annum. Importantly, this work is set to be revised with the estimates likely to be greater than the previous levels due to the significant movements in demographics since the previous publication.

More generally, the relatively unprecedented changes in Irish demographic levels which will become apparent from the latest Census data are set to have a number of important policy impacts. In particular, they may lead to a number of the targets and commitments in the recent National Development Plan (NDP) having to be re-evaluated. It is likely that the overall spend on the plan may have to be revised upwards in light of these changes.

Public finances, windfall taxation receipts and the National Development Plan (NDP)

The significant increase in general Exchequer receipts and corporation revenues in particular has led to the establishment of a National Reserve Fund with significant receipts already having been committed to the fund. Forecasts in the *Commentary* indicate that the General Government Balance (GGB) will be 1.9 per cent in 2023 and 2.9 per cent in 2024.

²² Bergin A. and A. Garcia-Rodriguez (2020). *Regional demographics and structural housing demand at a county level*. Research series, Economic and Social Research Institute (ESRI), number RS111.

Recently, the Department of Finance published some proposals concerning future uses of such a fund.²³ In general, under a variety of different scenarios, three possible uses are outlined; (1) to meet the increasing liabilities associated with pension provision in the economy (2) the establishment of a sovereign wealth fund which would, on the basis of risk diversification, seek to invest a certain amount of funds abroad and (3) potential investment in domestic projects, particularly those of a capital-intensive nature. All three considerations are appropriate and worthy of such funds over the medium term.

While any increase in capital spending has to be cognisant of possibly additionally fuelling inflation, it may well be the case that some of the windfall revenues currently being accrued may be necessary to top-up various elements of the National Development Plan. This is due to the issue noted in the previous section where unanticipated demographic pressures may lead to a re-appraisal of the spending targets in the NDP. For example, initial results from Census 2022 released by the CSO confirm that the Irish population has increased by 361,000 or 8 per cent since 2016; the NDP in 2021 had envisaged that the domestic population would increase by 1 million between 2016 and 2040.

²³ Department of Finance (2023). *Future-proofing the public finances – the next steps*. Available online at <https://www.gov.ie/en/publication/213f9-future-proofing-the-public-finances-the-next-steps-summary/>.

Special Article

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UNDERSTANDING THE IRISH ECONOMY

John FitzGerald¹

ABSTRACT

The CSO Institutional Sector Accounts allow a decomposition of the separate contributions to the Irish economy since 2013 from the Multinational Enterprise (MNE) sector and the domestic sector. The share of national income arising from the MNE sector in 2021 amounted to 29 per cent, up from 22 per cent in 2013. By 2021 a third of the wages paid in the Irish economy came from MNEs. Using these data, the growth rate in real income over the period 2013 to 2021 at 4.4 per cent a year, is much higher than that experienced by other EU countries of 1.5 per cent. Using GNI* as a measure of national income, Ireland appears to have an above-average standard of living while, on the basis of household and public consumption, Ireland has somewhat lower standard of living, partly because of the high rate of saving in Ireland.

INTRODUCTION

Interpreting what is happening in the Irish economy has long been a challenge due to the growing role of foreign multinational enterprises (MNEs). As the profits of foreign MNEs arising in Ireland accrue to foreign owners, these profits are not available to finance consumption or investment by Irish households or the government. Using traditional national accounting measures, it has become ever more difficult to quantify the undoubted benefits accruing to those living in Ireland from the output of the economy, including the benefits from the operations of foreign MNEs.

Problems first surfaced in the early 1980s when it was realised that the National Accounts were not capturing MNEs' profit outflows, where the profits were temporarily retained in their Irish subsidiaries. While this lacuna was readily handled by including accrued profits in the outflows, more recent developments have proved much more difficult to understand. In particular, the movement to Ireland in 2015 of very large amounts of Intellectual Property (IP) owned by MNEs resulted in a massive increase in GDP, while having a limited impact on the economic welfare of those living in Ireland. Given the headline role played by GDP in international comparisons of standards of living and economic growth, this has

¹ The author would like to thank Kevin Timoney, Thomas Conefrey, Simon Barry and staff of the CSO, the ESRI, and the Department of Finance for helpful comments and corrections. The author remains solely responsible for the analysis in this paper.

made it very difficult to understand what is going on in the Irish economy for those unfamiliar with the complexities of the Irish National Accounts.

As discussed in an earlier Article in the *Quarterly Economic Commentary* (FitzGerald, 2020), since 2015, to deal with these problems, the CSO has provided detailed Institutional Sector Accounts that provide a much clearer explanation of recent developments in the Irish economy. In particular, these accounts now include additional data distinguishing between foreign MNEs and domestic firms.

This paper updates and extends FitzGerald, 2020. Section 2 describes how the information in the Institutional Sector Accounts is used, together with the traditional National Accounts, to build up a comprehensive picture of the output side of the Irish economy. Section 3 uses these data to examine the changing structure of the Irish economy in recent years, and the relative contribution to output of foreign MNEs and the domestic sector. Section 4 analyses the growth rate over the period of economic recovery from the financial crisis, 2013-2021, and the contribution to rising living standards from different industrial sectors and from foreign MNEs and domestic firms. Section 5 looks at the development of the standard of living in Ireland in a comparative international context, using the improved insights available from the more extensive national accounting data available for Ireland. Section 6 concludes.

A separate paper, FitzGerald, 2023, looks at the new challenges for National Accounts arising from the growing importance of intellectual property and the increasing complexity of international supply chains.

DATA

This Article makes extensive use of the Annual National Accounts and the Institutional Sector Accounts produced by the CSO. Data used in Section 5 on Purchasing Power Standard (PPS) are taken from Eurostat.

Because of the ready availability in the past of timely data on trade and consumption, much attention in economic forecasting was focused on the expenditure side of the National Accounts. However this Article concentrates on the output and income side of the National Accounts. This reflects the fact that, ultimately, the productive capacity rather than national expenditure of an economy drives its standard of living.²

² See, for example, Bergin et al., 2017.

New data sources are also illuminating the most recent developments on the output and income side of the National Accounts in a timelier manner, allowing more up-to-date forecasts of output. Meanwhile, the complexities of the trade and investment data make interpreting the current indicators of what is happening on the expenditure side of the National Accounts increasingly difficult. In response to recommendations in a report published by the CSO in 2017, the CSO developed the modified Gross National Income (GNI*) aggregate to provide more relevant information on developments in the Irish economy than is provided by GDP. However, it is only available at an annual frequency published six months after the end of a year, leaving a significant lacuna in our understanding of current economic developments.

The way the very comprehensive data are presented in the CSO Institutional Accounts makes it difficult to identify the precise role of foreign MNEs.³ This Article rearranges the data to paint a clearer picture of the Irish economy, separately identifying the contribution of foreign MNEs. The resulting analysis is consistent with the published National Accounts aggregates.

With some limited additional imputation, it is now possible to decompose the output and income of the Irish economy at current prices by industrial sector and by ownership. This makes it possible to estimate the growth in the welfare of those living in Ireland, as measured by Net National Product (NNP), and identify the industrial sectors where that growth is occurring. NNP is preferred over GNI because it excludes depreciation, which has been responsible for a significant part of the distortions in the National Accounts. It is also preferred to GNI* because the contributions to NNP by individual industrial sectors can be separately identified, and it is also, increasingly, being published for other economies. More detailed information on how this analysis is undertaken is given in FitzGerald (2020).

The latest issue of the Institutional Sector Accounts for Ireland, consistent with the Annual National Accounts, 2021,⁴ contains important information for both the financial and the non-financial corporations sectors, broken down by foreign-owned MNEs and domestic firms. In addition, the CSO includes data on Gross Value Added (GVA), compensation of employees (COE) and Gross Operating Surplus (GOS) for each industrial sector, also cross-classified by institutional sector. All of these data are available for the period 2013 to 2021.

³ This paper uses the CSO's classification of firms into foreign MNEs and domestic. They use a different classification system than the Revenue Commissioners, so the two sets of data are not directly comparable.

⁴ The publication was previously known as National Income and Expenditure.

As described in FitzGerald, 2020, the analysis undertaken here requires some imputation, breaking down depreciation and corporation tax for each industrial sector into the part attributable to foreign MNEs and domestic firms.⁵ In the case of corporation tax, there is a further complication as the Institutional Sector Accounts appear to attribute too high a share of corporation tax revenue to the financial sector,⁶ resulting in an underestimate of corporation tax paid by the rest of the industrial sectors. This must be taken into account when interpreting the results.

This paper focuses on NNP arising in the different industrial sectors, as this allows a full understanding of the importance of different sectors to the economy. It also allows the contribution of the foreign MNE firms to be properly accounted for in terms of their contribution to NNP and, ultimately, GNI*.

The growth in the volume of NNP is built up from estimates of the growth in real output by industrial sector. The deflator for each industrial sector is derived from the National Accounts. In each case the deflator for NNP implicit in the National Accounts⁷ is used to deflate the output of both the foreign MNE and the domestic sector output. As discussed later, the CSO has the detailed data to do this at the individual firm level, giving rise to more accurate data at constant prices.⁸ Also, as discussed in Section 4, when the estimates for each industrial sector of the volume of output at constant prices are aggregated, the implied overall growth rate for NNP is rather different from that shown in the National Accounts for individual years. However, when averaged over the period 2013-2021, the results are very similar.

A range of national accounting identities is used in this Article and the definitions are shown in Box A.

⁵ It would be helpful if the CSO could estimate the depreciation and corporation tax directly in the accounts.

⁶ This is reflected in an exceptionally high average corporation tax rate for the financial sector shown in the accounts, which is not consistent with the headline rate of 12.5 per cent. The Revenue Commissioners' data attribute an even bigger share of tax revenue to the financial sector.

⁷ For each industrial sector the value of GVA, less depreciation, is divided by the volume of GVA, less the volume of depreciation, to arrive at a sectoral deflator for NVA.

⁸ As an alternative, the implicit deflator for GVA in each industrial sector is also used but it does not dramatically change the rate of growth at the economy level.

BOX A NATIONAL ACCOUNTING DEFINITIONS

$\text{GNP at market prices} = \text{GDP at market prices} - \text{Factor income}$

$\text{GNI at market prices} = \text{GDP at market prices} - \text{Factor income} - \text{EU subsidies} + \text{EU taxes}$

$\text{GNI}^* \text{ at market prices} = \text{GNI at market prices} - \text{Depreciation on R\&D service imports and trade in Intellectual Property and aircraft leasing} - \text{Factor income of redomiciled companies}$

$\text{NNI at market prices} = \text{GNI at market prices} - \text{depreciation}$

$\text{NNP at factor cost} = \text{NNI at market prices} - \text{National indirect taxes} + \text{national subsidies}$

$\text{NVA at factor cost} = \text{NNP at factor cost} + \text{Factor income (net outflows)}$

$\text{GVA} = \text{Net Value Added (NVA)} + \text{depreciation}$

The different aggregates can also be expressed at ‘basic prices’, ‘factor cost’ and ‘market prices’

$\text{Market prices} = \text{Factor cost} + \text{national indirect taxes} - \text{national subsidies}$

$\text{Market prices} = \text{Basic prices} + \text{Product taxes} - \text{Product subsidies}$

STRUCTURE OF THE ECONOMY

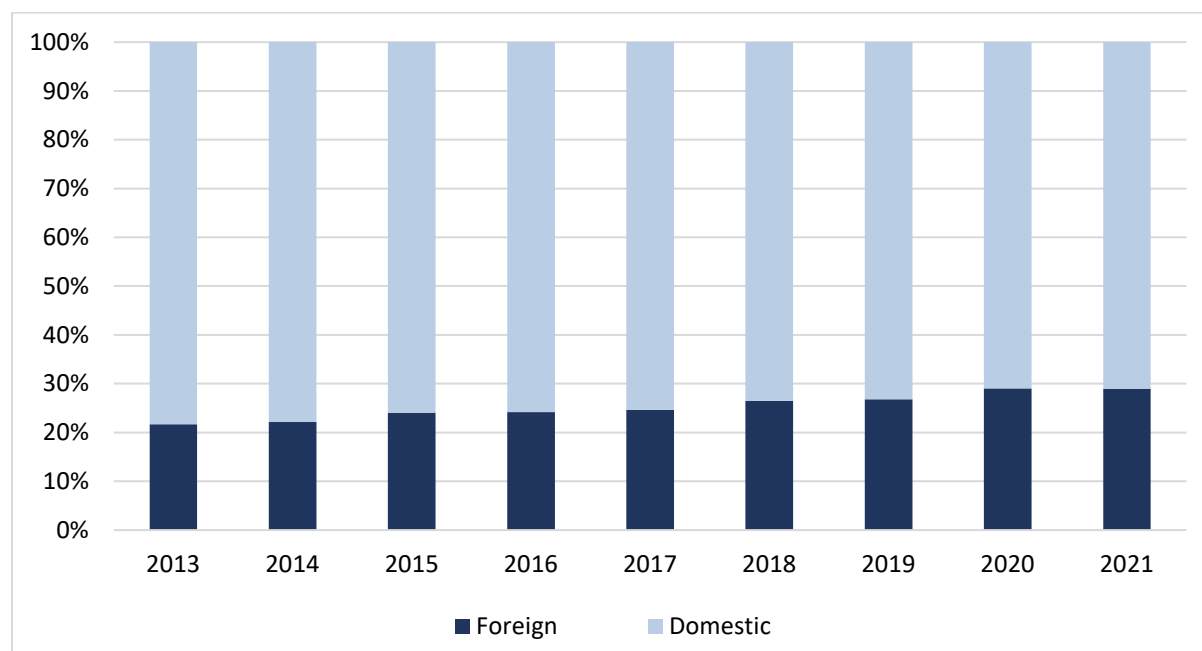
Using the data from the Institutional Sector Accounts, the contribution to NNP for the economy from the different industrial sectors is also broken down by foreign MNEs and domestic firms. These data are available for the years 2013 to 2021 for an 11-way industrial sector breakdown.

For domestic firms, the contribution to NNP arising in the sector is identical to Net Value Added (NVA), that is Gross Value Added (GVA) after deducting depreciation.⁹ Net Value Added is made up of the net operating surplus (NOS) or profits of firms in the sector, and the wage bill. For foreign MNEs the contribution to NNP is the wage bill and the corporation tax paid by firms in the sector out of their net operating surplus. For foreign MNE firms the rest of the profits (NOS), after tax, flow out of the country as factor income.

⁹ Domestic firms also receive profits from abroad, which are included in net factor income. However, in the analysis in this paper these profits received from abroad are not attributed to individual industrial sectors but are added back in to reach the national total for NNI.

Figure 1 shows how the breakdown of NNP between domestic and foreign MNE sectors has evolved over that time period, and the detailed composition by industrial sectors is shown for the first and last years of the period in Table 1.¹⁰

FIGURE 1 DOMESTIC AND FOREIGN FIRMS, SHARE OF NNP AT CURRENT PRICES,%



Source: Institutional Sector Accounts.

TABLE 1 STRUCTURE OF ECONOMY, 2013 AND 2021, SHARE OF NNP AT CURRENT PRICES,%

	2013			2021		
	Total	Foreign	Domestic	Total	Foreign	Domestic
Agriculture	1	0	1	2	0	2
Manufacturing	11	6	6	13	8	5
Electricity, gas, and water	2	0	2	1	0	1
Construction	3	0	3	5	1	4
Distribution, transport, etc.	21	5	17	16	5	11
Information & communication	6	3	3	9	6	3
Financial	10	5	5	8	4	4
Real estate	8	0	8	10	0	10
Professional, admin etc.	10	2	8	15	4	11
Public Sector	24	0	24	20	0	20
Arts, etc.	3	0	3	2	0	2
Total	100	22	78	100	29	71

Source: Institutional Sector Accounts.

¹⁰ The annual figures are available, on request, from the author.

In 2013, 78 per cent of NNP arose from activity in domestic businesses, including the public sector, with the remaining 22 per cent arising in foreign MNEs. However, by 2021, the foreign MNE share of NNP had risen to 29 per cent and the domestic share had fallen to 71 per cent. About half of the increase in the foreign share was due to the more rapid rise in the wage bill in that sector than in domestic firms, and the other half to the very rapid rise in corporation tax revenues. Overall, this indicates that the recovery benefited from very rapid growth in the output of foreign MNEs.

In 2021 five sectors accounted for almost all of the contribution of foreign MNEs to NNP. In manufacturing foreign MNEs accounted for two-thirds of the NNP in that sector – around 8 per cent of NNP in the economy as a whole. The next biggest sector, in terms of the foreign MNE contribution to NNP, was the information and communications sector, where foreign MNEs also accounted for two-thirds of the NNP arising in that sector, that is 6 per cent of NNP in the economy.

The other industrial sectors where foreign MNEs accounted for at least 4 per cent of the NNP arising in the economy were distribution, professional services, and financial services. In the case of the first two of these sectors, domestic firms still accounted for over two-thirds of NNP in 2021. In the financial services sector these data suggest that foreign firms accounted for half of NNP. However, as mentioned earlier, this may be an overestimate because of the attribution of an exceptional share of corporation tax to the financial sector in the Institutional Sector Accounts. The contribution to NNP for the economy from foreign MNEs in the financial services sector actually fell between 2013 and 2021, despite the movement of quite a number of firms from London to Dublin as a result of Brexit. This suggests that, while the number of individual firms relocating was significant, individually they did not bring major value added to the Irish economy.

Table 2 shows that the wage bill in foreign MNEs accounted for 27 per cent of total wages in the economy in 2013. However, by 2021 this had risen to 33 per cent. This is a higher share than that of the NNP attributable to foreign owned MNEs in 2021 of 29 per cent, shown in Table 1. The bigger share of the wage bill arising in foreign MNEs is partly due to the fact that average pay rates in foreign MNEs are well above rates elsewhere in the economy.

TABLE 2 SHARE OF WAGE BILL BY INDUSTRIAL SECTOR, 2013 AND 2021, %

	2013			2021		
	Total	Foreign	Domestic	Total	Foreign	Domestic
Agriculture, forestry and fishing	0.9	0.1	0.8	0.8	0.1	0.7
Manufacturing	11.9	6.5	5.5	12.7	8.3	4.5
Electricity, gas, and water	1.3	0.1	1.2	1.2	0.2	1.1
Construction	2.9	0.5	2.4	4.2	0.8	3.5
Distribution, transport, hotels and restaurants	20.8	6.3	14.5	17.4	5.7	11.7
Information and communication	6.4	3.5	2.9	9.7	7.1	2.6
Financial and insurance activities	9.8	5.9	3.9	8.2	5.1	3.1
Real estate activities	0.7	0.2	0.5	0.9	0.3	0.6
Professional, admin and support services	10.1	3.4	6.6	13.7	5.0	8.7
Public admin, education and health	32.7	0.5	32.2	29.3	0.7	28.6
Arts, entertainment and other services	2.5	0.3	2.1	1.9	0.2	1.7
Total	100.0	27.3	72.7	100.0	33.4	66.6

Source: Institutional Sector Accounts

Unfortunately, employment data, on a comparable basis to the wage bill data from the Institutional Sector Accounts, are not available.¹¹ However, for the economy as a whole, average earnings in 2020 were €52,000 while Eurostat data¹² indicate that average earnings in foreign MNE firms were €56,000, and over €73,000 in US-owned firms. The same data source suggests that over the period 2012 to 2020¹³ wage rates in US-owned firms rose slightly slower than in the economy as a whole. This indicates that the primary reason for the growth in the MNE wage bill over that period was a more rapid increase in employment than in the economy as a whole.¹⁴ This highlights the importance of the growth of foreign-owned MNEs in the economic recovery from the financial crisis.

An important factor in the higher wages paid in foreign-owned firms is that a much bigger share of their workforce has third-level qualifications than for the economy as a whole.¹⁵ Given that the public sector also has a high share of graduate employment, the lower pay in domestic firms can be partly attributed to the lower qualifications of their workforce.

¹¹ While the Revenue Commissioners do give a figure for employment in foreign MNEs, the data are not comparable to the classifications used by the CSO.

¹² Eurostat Structural Business Statistics.

¹³ Data are not available for 2013 and 2021.

¹⁴ The Eurostat data suggest that employment in foreign MNEs rose by 7.4 per cent a year between 2012 and 2020 whereas employment growth in the economy as a whole averaged 2.3 per cent a year. For US-owned firms the average annual increase was 5.7 per cent.

¹⁵ CSO: Census 2016.

Between 2013 and 2021 receipts of corporation tax from domestic firms doubled from around €1.3 billion to €3 billion in 2021. In 2022 they were €3.1 billion. However, the rise in corporation tax receipts from foreign MNEs was much more dramatic, increasing from around €3 billion in 2013 to over €12 billion in 2021 and €19.6 billion in 2022. As indicated earlier, this has been an important factor in the increased contribution to NNP from foreign MNEs over the period 2013-2021. The Department of Finance estimates that that up to €11 billion of the over €23 billion in corporation tax revenue in 2022 was ‘revenue-at-risk’ (Department of Finance, 2023, p. 3). This implies that over half of the rise in corporation tax revenue since 2012, that has contributed significantly to growth, could be put at risk by unexpected developments in the foreign MNE sector or in US legislation on corporation tax.¹⁶

MEASURING REAL GROWTH IN THE ECONOMY

In understanding what is happening in the economy it is vital to be able to measure the real growth in output (and expenditure) which benefits those living in Ireland, rather than the growth in profits (or depreciation) accruing to the benefit of the foreign owners of MNEs. The growth in real national income is a key indicator of the resources permanently available to meet the needs of the population. To deal with the distortions in the National Accounts, the CSO has developed two measures of real growth (at constant prices) that provide an appropriate and consistent treatment of the activity of MNEs – modified Gross National Income (GNI*) and Net National Income (NNI).

The growth in real value added in individual industrial sectors is determined by subtracting the volume of inputs from the volume of gross output. This is straightforward in the case of some businesses. For example, for a firm producing butter the volume of output of butter is easily measured by weight, and the milk used as an input can also be determined by volume. The deflator is then obtained by dividing the value of both output and inputs by the relevant volume measures.

However, measuring the volume or, alternatively, the price of outputs and inputs, can be much more difficult in many other sectors, especially service sectors such as healthcare and IT services. Nonetheless, this is the procedure implemented in determining the volume of GVA, and hence of GDP, on the output side of the National Accounts.

¹⁶ The bulk of this revenue comes from US-owned firms, as shown by country-by-country reporting. There is also significant concentration risk as the proportion of Corporation Tax paid by the top ten firms has risen from 36 per cent in 2013 to 57 per cent in 2022. <https://revenue.ie/en/corporate/documents/research/ct-analysis-2023.pdf>.

In principle, the volume of GDP on the expenditure side of the accounts is determined in a consistent manner by subtracting the volume of imports – the inputs from abroad into the economy – from total expenditure.¹⁷ Because of the difficulties in determining deflators for the very large trade flows, especially trade in services, ensuring consistency between the output and the expenditure side measures is not easy. Subject to a statistical discrepancy this is implemented by the CSO in the National Accounts.

The result on the output side of the National Accounts is a measure of the volume of GVA by industrial sector. To derive NNP by industrial sector at constant prices from GVA, depreciation must be subtracted, reflecting the capital stock used up in the production of output in an individual year. The deflator for depreciation in each industrial sector is different from the deflator for GVA in that sector, reflecting the price of the capital stock used up in producing the output. In turn, when the depreciation at constant prices is subtracted from the GVA, a measure of the industrial sector's contribution to the growth in NNP is derived, and from that the implicit deflator for NNP arising in a particular sector is determined.

In this paper the value added in domestic firms' output and in foreign MNE firms' output is deflated by the aggregate deflator for NNP in each individual industrial sector, as described above (including both foreign-owned MNEs and Irish owned firms). This differs from the approach used by the CSO, where specific deflators are used for individual firms, be they foreign MNEs or domestic. This may give rise to some difference from the CSO measure of the growth in the volume of NNI if the deflators are very different for foreign and domestic firms.

This paper also deflates the profits repatriated by foreign MNEs by the same deflator for NNP arising in the relevant industrial sector. This ensures consistency between the volume measure of the profits included in the sector's NVA and the outflow of the same profits.

However, the CSO adopt a different treatment, deflating the outflow of profits by an implied price index for exports of goods and non-factor services (CSO, 2014). This means that the volume of the profits flowing out of the country is generally different from the volume of the same profits when they are included in GVA. This does not appear consistent. Because of the size of these profit outflows, this could give rise to significant differences in the resulting measure of NNI and GNI* for the economy.

¹⁷ In principle flows from one Irish-based firm to another should net out.

Table 3 compares the growth rate for NNP and NNI derived from the analysis in this paper with the published growth rates from the CSO National Accounts for a range of aggregates. When the growth rates are averaged over the eight years 2014-2021, the estimate for real NNI derived from the analysis in this paper of 4.4 per cent is very close to that shown by the CSO in National Income and Expenditure, 2021 for NNI of 4.2 per cent. In turn, the CSO estimate for the average growth in GNI* is also very similar at 4.1 per cent.

TABLE 3 ANNUAL GROWTH RATE OF DIFFERENT MEASURES OF NATIONAL INCOME AT CONSTANT PRICES, %

	2014	2015	2016	2017	2018	2019	2020	2021	Average Annual 2013-2021
Source: this Paper									
NNP before other factor income	3.8	2.7	4.8	2.9	6.5	4.8	-2.9	9.3	3.9
NNI	7.4	2.1	5.2	0.8	7.1	5.0	-8.3	17.5	4.4
Source: CSO Annual National Accounts (ANA)									
NNI from ANA	9.3	-4.5	5.2	3.7	4.5	2.5	-5.6	20.4	4.2
GNI* from ANA	8.7	-1.8	4.8	4.7	4.4	2.8	-4.6	15.4	4.1
GNI from ANA	8.8	12.7	7.3	6.0	6.0	5.2	2.7	14.6	7.8
GDP from ANA	8.6	24.4	2.0	9.0	8.5	5.4	6.2	13.6	9.5
Modified Total Domestic Demand	6.2	5.5	5.6	2.9	2.8	3.4	-4.7	6.2	3.4
Employment	2.6	3.4	3.7	2.8	2.8	2.9	-2.8	6.0	2.7

Sources: Author's calculations and Central Statistics Office (Annual National Accounts).

These estimates for the average growth in the volume of NNI and GNI* look much more realistic than the growth rates for unadjusted GNI and GDP, giving a better representation of the experience of the growth in the economy for those living in Ireland. The growth in Modified Domestic Demand was somewhat slower at 3.4 per cent a year. As Lennon (2022) shows, the difference between the Modified Domestic Demand and the GNI* measures of output reflects the growing current account surplus in the modified Balance of Payments.

In Table 3, the growth rates for individual years, derived in this paper, are compared with the growth rates for individual years from the CSO Annual National Accounts. The fall in output in 2015 in the CSO measures looks really surprising, given the very high rate of growth in employment and Modified Domestic Demand for that year.¹⁸ By contrast, while still low relative to these other measures, the growth rate for NNI in 2015 of 2.1 per cent, derived in this paper, looks more realistic. However, the estimated growth in NNI in 2017 in this paper of 0.8 per

¹⁸ GVA at constant prices in the domestic sector also grew by almost 6 per cent in 2015.

cent looks low relative to the growth in employment and Modified Domestic Demand, and is lower than the CSO estimate of 3.7 per cent.

Thus, while the average growth rate for NNI over the eight years, derived from the analysis in this paper, is very similar to that using published CSO figures, there are significant differences in the growth rate for individual years. It is not clear whether this is due to the CSO using more detailed deflators at a firm level, or whether it is due to the adoption in this paper of a consistent approach to deflating profits of foreign MNEs: the same deflator is used when they are included in NVA and when they flow out of the country in factor income. Preliminary analysis suggests a significant part of the difference is due to the alternative approaches to deflating profit outflows.

As can be seen from Table 4, while the volume of NNP arising in the foreign MNE sector rose by an average of 8 per cent a year, that in the domestic sector rose by only 2.6 per cent, highlighting the important contribution of the foreign sector to the overall success of the economy.

The most rapid growth was experienced in the information and communication sector. While the foreign MNE firms in the sector grew at an exceptional rate of 15.9 per cent a year, the NNP arising in domestic firms in the sector also grew rapidly at 5.6 per cent a year, showing that domestic firms in that sector remain a significant contributor to growth in the economy.

TABLE 4 AVERAGE ANNUAL GROWTH RATE BY INDUSTRIAL SECTOR, CONSTANT PRICES, 2013-2021, %

	All Sectors	Foreign MNEs	Domestic
Agriculture, forestry and fishing	11.1	4.3	11.4
Manufacturing	5.5	8.4	1.8
Electricity, gas, and water	3.4	16.3	2.4
Construction	3.4	2.8	3.5
Distribution, transport, hotels and restaurants	2.2	7.1	0.4
Information and communication	11.8	15.9	5.6
Financial and insurance activities	-0.5	0.2	-1.2
Real estate activities	2.2	2.3	2.2
Professional, admin and support services	8.0	10.9	7.1
Public Admin, Education and Health	2.4	8.5	2.3
Arts, entertainment and other services	1.4	-1.5	1.7
Total	3.9	7.9	2.6

Source: Institutional Sector Accounts and author's analysis.

The other two sectors, which grew very rapidly over the eight years, were agriculture and the professional and admin sectors. In the case of agriculture, the ending of the milk quota regime in 2015 allowed the sector to expand, though the sector remains a small contributor to national value added. In the case of the professional and admin sector, the rapid growth was experienced by both foreign and domestic firms. In manufacturing, which grew at 5.5 per cent a year, it was the foreign sector that grew rapidly, with domestic firms growing at only 1.8 per cent a year on average.

Table 5 shows the contribution to the overall growth in the economy by industrial sector, consistent with the data shown in Table 4. Half the growth in the economy over the period 2013-2021 was attributable to foreign owned MNEs. The three industrial sectors that accounted for almost 60 per cent of the growth in the economy were manufacturing (primarily the foreign owned firms), information and communication, and professional and admin services. While still recovering from the financial crisis, the public sector contributed under an eighth of the growth in the economy, highlighting the importance of the contribution from the private sector.

TABLE 5 CONTRIBUTION TO GROWTH, BY INDUSTRIAL SECTOR, CONSTANT PRICES 2013-2021, %

	Total	Foreign	Domestic
Agriculture, forestry and fishing	2.8	0.0	2.8
Manufacturing	16.4	14.0	2.3
Electricity, gas, and water	1.0	0.3	0.7
Construction	3.5	0.3	3.1
Distribution, transport, hotels and restaurants	8.1	6.8	1.2
Information and communication	18.5	15.2	3.3
Financial and insurance activities	-1.2	0.2	-1.4
Real estate activities	5.2	0.1	5.1
Professional, admin and support services	23.5	8.1	15.4
Public admin, education and health	11.8	0.8	11.1
Arts, entertainment and other services	0.7	0.0	0.7
Total	90.3	46.0	44.3
Other Factor Income	-9.7	-2.9	-6.8
NNP	100.0	48.9	51.1

Source: Institutional Sector Accounts and author's analysis.

Over the eight years 2013 to 2021, NNP (before other factor income) rose by around 4.4 per cent a year, while employment grew by 2.7 per cent a year. This implies a growth in productivity of around 1.7 per cent a year. While lower than in the Celtic Tiger years, this growth in productivity has sustained a significant increase in real incomes in Ireland over the period.

In the Stability Programme Update, the Department of Finance estimates that around half of the corporation tax revenue in 2022, amounting to 4 per cent of GNI*, is ‘exceptional’ and could prove to be ephemeral. For 2021 the ‘exceptional’ revenue was estimated at around 2 per cent of GNI*. This growth in exceptional corporation tax revenue has occurred since 2013, especially since 2015, with the relocation of foreign-owned IP to Ireland. If this growth in exceptional tax revenue had not occurred, the growth rate of the economy, as shown by the measures in Table 5, would have been lower, averaging 4.1 per cent a year. In turn, the growth in productivity would have been closer to 1.4 per cent a year.¹⁹ This is very similar to the growth in productivity assumed in the Department of Finance *Stability Programme Update* for the period 2025-2030 when the corporation tax ‘bonus’ for growth is likely to have run out, even if the current exceptional revenue is sustained. Thus, if this rate of productivity growth were to persist, it would be broadly consistent with the medium-term growth in the economy that the Department of Finance currently anticipates.

RELATIVE STANDARD OF LIVING

Comparing the standard of living across countries using National Accounts data is, of necessity, an imprecise art. To undertake this task, it is first necessary to establish the price of identical products and services across countries, and then the analysis must take account of differences in national consumer preferences to establish how much of the desired goods and services national income per head can purchase. However, this is difficult to establish. Even with a fairly homogeneous product, like spaghetti, the brands differ across countries, as does the quality.

While it is possible, with some difficulty, to obtain representative prices for the bundle of goods and services that households buy, it is much more difficult to do this for investment, and especially for government expenditure on goods and services, where these goods and services are not freely traded on an open market. Finally, in determining a comparable price level for GDP, appropriate prices for exports and imports need to be established.

Having prepared a set of representative prices, account must then be taken of the differences in the composition of the bundle of goods and services that are bought in each country. For example, In Ireland the preference is for a higher share of clothing expenditure to go on relatively cheap clothes sold in stores like Penneys,

¹⁹ CSO estimates that productivity during this period was 1.1 per cent per annum for Domestic Companies <https://www.cso.ie/en/releasesandpublications/ep/p-pii/productivityinireland2021/labourproductivity/sourcesoflabourproductivitygrowth/>.

Dunnes and H&M. By contrast, in France more expenditure goes on clothes sold in specialist shops, involving a higher retail margin (FitzGerald and Knipper, 1993). This difference in expenditure patterns probably reflects differences in preferences more than choices driven by differences in relative prices.

There are different approaches to comparing the standard of living in terms of the components of national income considered. One approach, advocated in Honohan (2021), and implemented for Ireland, Northern Ireland, and the UK by FitzGerald and Morgenroth (2020), compares consumption per head, including public consumption,²⁰ across countries. Bergin and McGuinness (2021) prefer a measure based on disposable income per head, as this includes household savings. Another approach, more frequently used in international comparisons, and also used by Bergin and McGuinness (2021), compares the level of GDP per head, adjusted for price differences.

The consumption-based approach gives a better approximation to the current standard of living at a point in time, concentrating on the goods and services being enjoyed by the population in a particular year. The GDP-wide measure includes investment and the current account of the Balance of Payments (excess or deficit in national savings), in addition to consumption. This gives a better measure of the sustainable standard of living in the longer term. If a country invests more per head (and saves more) than another country, the standard of living is likely to be higher in the longer term.

Of course, none of these measures takes account of the unpriced natural resources being consumed (biodiversity, raw materials etc.) or of the environmental costs, in particular in terms of climate change, that are associated with the level of economic activity in an economy. As a result, when comparing living standards, broadly defined, across countries it is appropriate to use a much wider range of indicators.

In the standardised approach to comparing living standards, implemented by Eurostat and national statistical agencies such as the CSO, the prices for a range of goods and services collected across EU members are weighted by the observed composition of final demand to arrive at a composite price adjustment for GDP. This single price-level adjustment is then applied to the different components of GDP. The adjusted components of GDP are aggregated to give a summary measure of GDP per head on a comparable price basis.

²⁰ Public consumption includes the provision of public services, such as health, education and security.

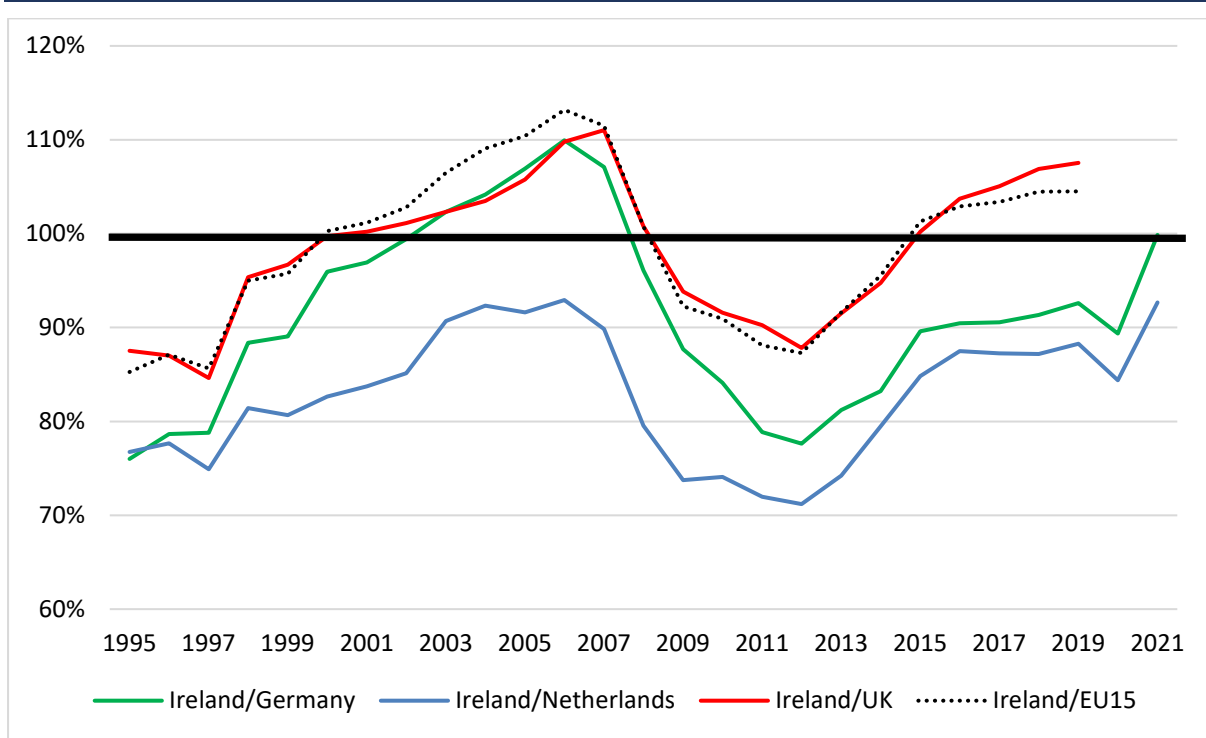
While this approach works for many other countries, the inappropriate nature of GDP as a measure of the standard of living in Ireland has been addressed earlier in this paper. As Lennon, 2022 shows, GNI* can be decomposed into final consumption (of households and government), modified investment and the modified Balance of Payments.²¹ In this paper these components are then deflated by the Eurostat deflator for GDP to adjust for PPS and this measure is compared to the figures for GDP per head for other countries, with appropriate adjustment for differences in price level.

A problem with this approach is that the PPS adjustment is based on the composition of Irish GDP, rather than the composition of GNI*. While the CSO might be able to produce a suitably reweighted price adjustment for GNI*, this is not currently available. Therefore we are comparing GNI* per head, adjusted for PPS using the GDP PPS price, with GDP per head, suitably adjusted for prices, for a range of other countries.

Figure 2 shows that, based on GNI* per head, the Irish standard of living approached that of Germany, the UK and the EU15 in the early 2000s. By 2007 the Irish standard of living was up to 10 per cent higher than in these countries, but the financial crash had a dramatic effect. By 2011 the Irish standard of living was 10 per cent below that of the UK and the EU15, and around 20 per cent below that of Germany. The economic recovery since 2012, documented earlier in this paper, reversed the effects of the financial crisis, so that these data suggest that by 2019 the Irish standard of living was 8 per cent above the UK, and by 2021 it had once again reached German levels, though still lower than in the Netherlands.

²¹ As Lennon sets out, net current transfers and the statistical discrepancy account for the remaining small difference between modified GNI, GNI*, and its modified components.

FIGURE 2 IRISH GNI* PER HEAD RELATIVE TO GDP PER HEAD FOR OTHER COUNTRIES, ADJUSTED FOR PPS



Source: Eurostat and CSO.

Table 6 decomposes the difference in GNI*/GDP per head between Ireland, the UK, Germany and the Netherlands into consumption (public and private), investment, and the Balance of Payments. As can be seen from the table, in Ireland consumption per head is significantly lower than in the other three countries. While modified investment per head was significantly higher than investment in the UK in 2019, it was lower than in Germany and the Netherlands. However, it is the surplus on the current account of the modified Balance of Payments that makes a big difference compared to the UK, with a smaller difference compared to Germany.

TABLE 6 EXPENDITURE PER HEAD, (000) EUROS ADJUSTED FOR PPS (EU27), 2019

	Ireland	UK	Germany	Netherlands
Consumption	24.5	27.1	27.4	27.1
Investment	7.3	6.0	8.4	8.8
Balance of Payments	3.3	-0.4	2.1	3.9
GNI*/GDP	35.1	32.6	37.9	39.7

Source: Eurostat and CSO.

Data for the UK post-Brexit are not available for 2021. The data for the other countries show that the gap in living standards between Ireland and Germany, measured using GNI* and GDP, had closed because of some narrowing in the gap

in consumption per head, but also because of the increase in the modified current account surplus for Ireland.

The pandemic saw the personal savings rate rise to exceptional levels across all developed countries, including among most EU members. However, the increase in the savings rate in Ireland was higher than in most other countries, and has remained high for much longer. Timoney (2022) questions whether this may be due to problems with the data, and suggests that the level of consumption may be higher than suggested by the preliminary CSO figures, an issue which will be clarified when the National Accounts figures for 2022 are published in July 2023.²²

The Department of Finance considered the ‘revenue-at-risk’ from corporation tax in 2021 to amount to between €4 billion and €6 billion.²³ This accounted for only a small part of the modified current account surplus for the year of €26 billion. Even if some allowance were made for a possible overestimate of personal savings, as suggested by Timoney, 2022, the surplus still reflects a very high rate of domestic saving. It is this element which substantially accounts for the higher standard of living in Ireland relative to the UK in 2021, and also for the catch-up on the German standard of living in 2021.

The approach advocated by Honohan (2021) and implemented in FitzGerald and Morgenroth (2020) considers consumption per head, adjusted for prices, across countries. The price level adjustment used in Figure 1 and Table 6 is the Eurostat price adjustment for GDP. However, they also estimate a separate price adjustment for final consumption, which is rather different from the GDP adjustment. Presumably this adjustment for the price of consumption is consistent with the GDP deflator, implying a different price adjustment for the rest of GDP/GNI* than the aggregate adjustment used above for GDP.

In the Irish case the separate price adjustment for consumption is much bigger than that implied by the GDP adjustment, suggesting that consumption prices in Ireland are even higher relative to other countries than is the case for the rest of GNI*, implying a different (lower) relative deflator for investment and the current account of the Balance of Payments.

Using this approach, Figure 3 shows final consumption (public and private) per head for Ireland, the EU27 and a range of individual countries. Compared to

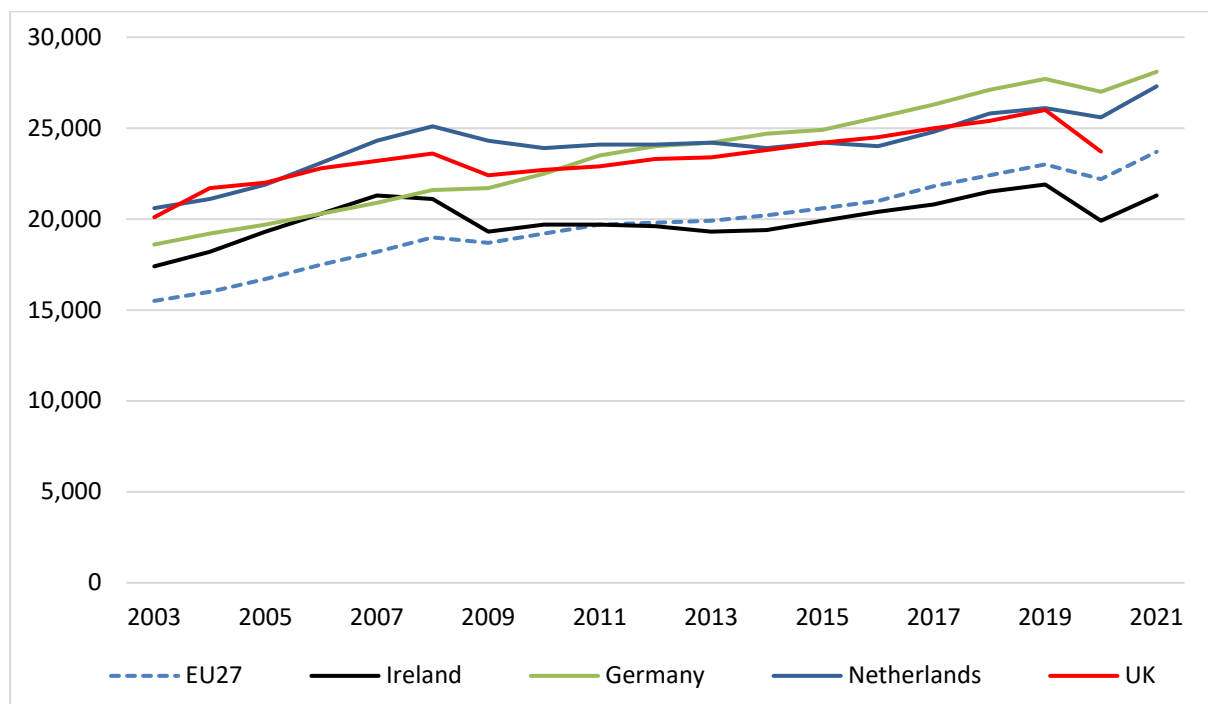
²² These numbers will include revisions for earlier years taking account of additional information that has become available since the annual publication of *Annual National Accounts* last year.

²³ <https://www.gov.ie/en/publication/b838d-de-risking-the-public-finances-assessing-corporation-tax-receipts/>.

Figure 1, this Figure uses the specific deflator for final consumption rather than the GDP deflator. These data suggest that, on the basis of final consumption per head, the living standard in Ireland in 2021 was below that for the EU27 and for the individual countries identified here.

However, Coffey, 2019, raises significant issues about the comparability of these data.²⁴ While Irish house prices are undoubtedly very high, for 2018 the Eurostat data implied that Ireland had the lowest consumption of housing services per head of any of the 28 EU members. This is despite the fact that the average number of rooms per person was among the highest and the rate of ‘overcrowding’ was also low.

FIGURE 3 FINAL CONSUMPTION EXPENDITURE, REAL EXPENDITURE PER CAPITA (IN PPS EU27)



Source: Eurostat.

In line with the suggestion of Bergin and McGuinness (2020), if allowance were made for a higher savings rate in Ireland, and the standard of living were based on real personal disposable income per head, Ireland would be positioned above the EU average. It would still be significantly below Germany and the Netherlands, which also had a high personal savings rate in 2020 and 2021.

²⁴ <http://economic-incentives.blogspot.com/2019/06/does-ireland-really-have-lowest-per.html>.

As Coffey suggests, the very much lower level of real consumption per head in Ireland relative to the countries identified here remains slightly surprising, and the full reasons for the size of the gap merit further research.

CONCLUSIONS

The analysis that is made possible by the additional data in the CSO Institutional Sector Accounts provides a much more coherent picture of developments in the Irish economy over the last decade than is possible from just using the standard National Accounts. Instead of exceptional and erratic growth rates, as seen in *Annual National Accounts*,²⁵ the pattern shown in this paper is smoother and more plausible. When averaged over the eight years 2013-2021, they suggest quite rapid growth in the economy, consistent with the CSO's measures, and also consistent with other data on developments in the economy, such as employment.

The contribution of the foreign MNE sector to the Irish economy rose from 22 per cent in 2013 to 29 per cent in 2021. A major reason for the increase was the growth in foreign MNE firms operating in the manufacturing and IT sectors. By 2021, 33 per cent of the wage bill in the economy was earned by those working for foreign MNEs. The magnitude of this contribution reflects both the rapid rise in employment in that sector and the fact that average earnings in the sector are much higher than elsewhere in the economy. The higher-than-average pay rates, in turn, partly reflect the higher levels of educational attainment of those employed by foreign firms.

The data indicate that around half of the growth in the economy over the period 2013-2021 of 4.4 per cent a year was due to the exceptional performance of the foreign MNE sector. However, the data also show significant growth in domestic enterprises over the same period. If the exceptional nature of a significant part of the rise in corporation tax revenue is excluded, the average growth rate was closer to 4.1 per cent a year. With employment growth averaging 2.7 per cent a year, this would suggest a growth in productivity of just over 1.4 per cent a year, lower than in the Celtic Tiger years but higher than in most of our European neighbours. A significant factor in this high rate of productivity growth has been the rising average educational attainment of the population (FitzGerald, 2019). However, over the coming decade this rise in average educational attainment is expected to slow.

When Ireland is compared with our European neighbours using GNI*, and its appropriately modified components, it is clear that living standards, which had

²⁵ Formerly known as *National Income and Expenditure*.

been very badly hit by the financial crisis, have recovered. On this measure Ireland has one of the highest levels of real income per head in the EU.

A significant factor in Ireland's above average standard of living is its current high level of savings. The fact that Irish savings are so high, reflected in the large (modified) current account surplus on the Balance of Payments, holds out the prospect of significant growth in the future, as these savings are suitably invested (or even consumed). Even if the exceptional corporation tax were to eventually disappear over the coming decade, it would still leave Ireland with a high standard of living. In the short term a better measure of living standards is consumption per head (public and private). On this measure Ireland may lie below a number of European neighbours, partly due to our current high level of savings.

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