Macro Assessment

The economic recovery has been faster than projected

1. MACRO ASSESSMENT

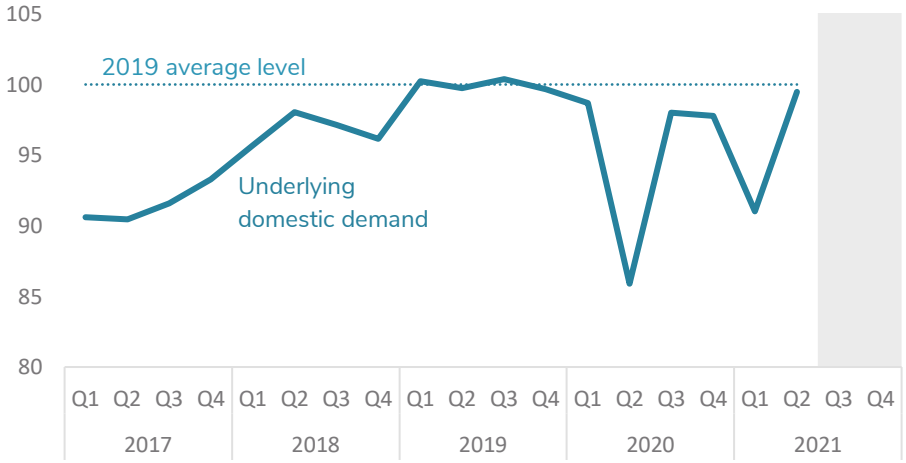
The economic recovery has been faster than projected

Domestic demand recovered to pre-pandemic levels over the summer

The Irish economy has recovered strongly from restrictions imposed due to Covid-19, both in 2020 and early 2021. Domestic demand returned to pre-pandemic levels in the second quarter, as vaccinations for Covid-19 progressed, and restrictions on activity were eased (Figure 1.1). This resilience has been driven by various factors. These include the significant fiscal support to households and firms provided by the Government, the relative strength of balance sheets prior to the pandemic, and continued strong growth in high-skill sectors throughout Covid-19.[1]

Figure 1.1: A rapid recovery in the domestic economy is ongoing in 2021

2019 = 100 (seasonally adjusted)



Sources: Central Statistics Office (CSO), and Fiscal Council workings.
Notes: Underlying (final) domestic demand is the sum of personal consumption expenditure, government net consumption, building and construction, and underlying machinery and equipment (excluding aircraft). Intangibles and aircraft are not included as they are distorted by the transactions of large multinational firms with a presence in Ireland (see Box C of the November 2018 *Fiscal Assessment Report*). Get the data.

High-frequency data since July suggest that the recovery has continued (Section 1.1). Economic growth is expected to remain robust over the medium term. As a result, official projections for the extent of lasting damage to the economy (or "scarring") from the pandemic are estimated to be modest (Section 1.2). While the outlook remains subject to a high degree of uncertainty, risks are deemed to be broadly balanced and are discussed in Section 1.3. The *Budget 2022* set of macroeconomic forecasts is assessed

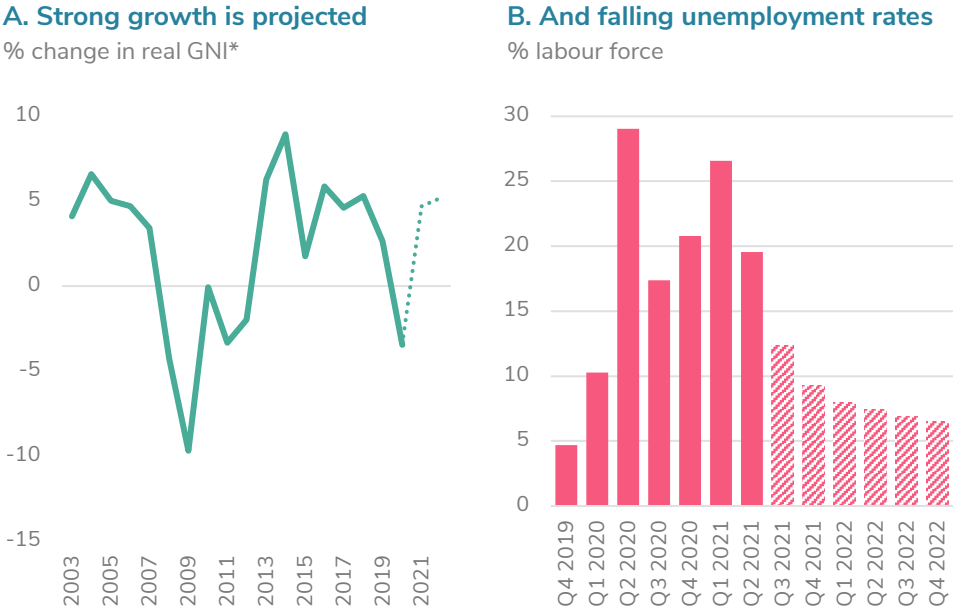
[1] These sectors include (but are not limited to) sectors with a significant presence of foreign-owned multinational firms, such as those in pharmaceuticals, and information and communication technology (ICT).

to be within an endorsable range. However, some matters arose as part of the Council's endorsement discussions with the Department of Finance, such as the implied effective tax rate on employees, and are reviewed in Section 1.4.

1.1 The short-term outlook

As noted above, the short-term outlook for the Irish economy is positive. Modified gross national income is projected to grow by 4.7 per cent in 2021 and by 5.2 per cent next year (Figure 1.2A). The CSO's upper-bound estimates suggest that unemployment rates have fallen to 7.9 per cent from a peak of 31.5 per cent in April 2020. The Department projects unemployment rates will decline to 6.5 per cent by Q4 2022 (Figure 1.2B).

Figure 1.2: The domestic economy is projected to recover



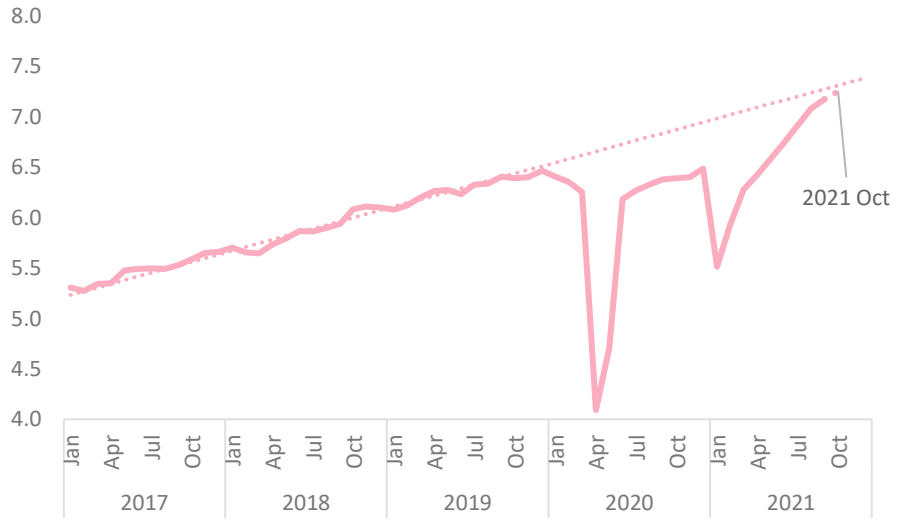
Sources: CSO; Department of Finance (*Budget 2022*) projections. Get the data.

Data for daily card spending and ATM withdrawals, deflated by consumer prices, have continued to recover in the third quarter, virtually closing the gap with the pre-crisis trend by October (Figure 1.3).

These real-time consumer spending data have provided forecasters of the Irish economy with a valuable and reliable indicator of economic performance since Covid-19 struck early in 2020. The data illustrate both the extent of the impact of Covid-19 shocks, and the swift speed of subsequent recoveries.

Figure 1.3: Spending on cards and ATM withdrawals close to trend

€ billion, HICP-deflated card spending and ATM withdrawals, 2015 prices (seasonally adjusted)



Sources: Central Bank of Ireland, and Fiscal Council workings.
Notes: Monthly spending on cards and ATM withdrawals are seasonally adjusted with Tramo-Seats. The linear trend is based on a sample period of 2015–2019. October 2021 is based on daily card spending and ATM withdrawals, and subject to revision when full-month data become available. Get the data.

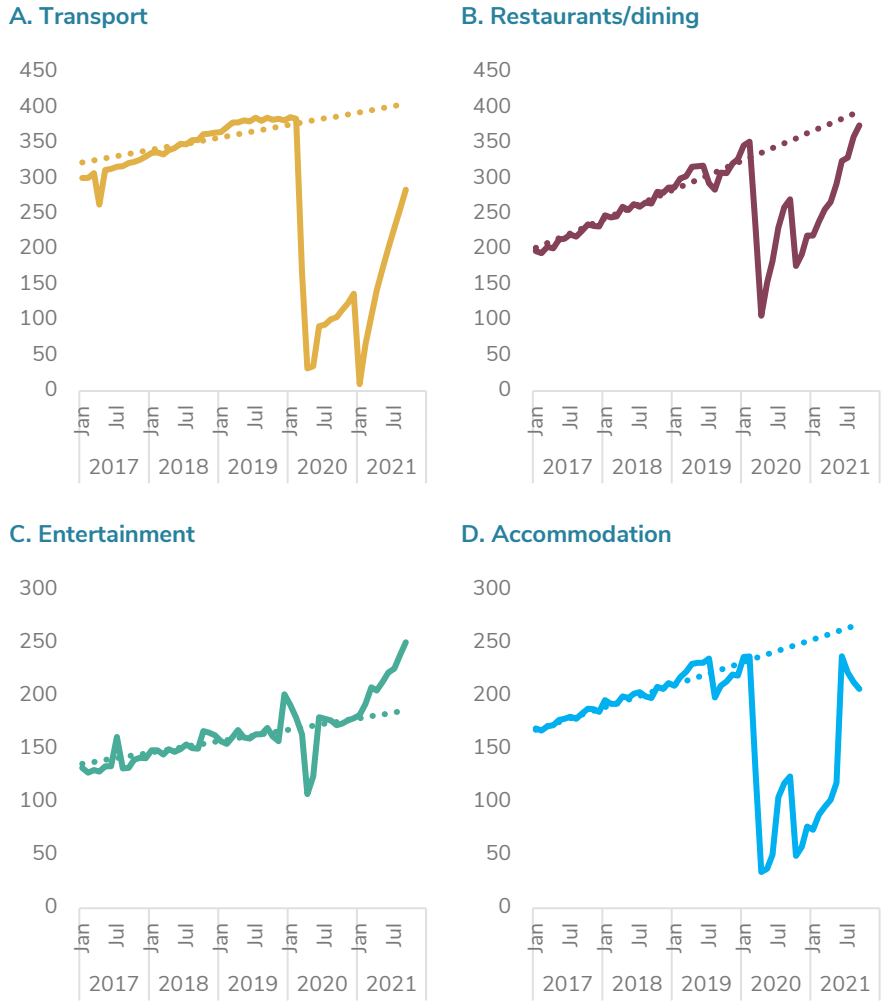
High-frequency indicators of consumer spending effectively recovered to trend by October

The credit and debit card data also show that some of the more vulnerable spending categories have regained significant activity in recent months. A caveat to note is that part of the activity for cards is also likely to be due to a shift to more card spending and less cash spending, accelerated by the pandemic. Spending on transport, accommodation, restaurants/dining, and entertainment collapsed when the pandemic hit (Figure 1.4). However, these areas of spending have since recovered substantially. Spending on entertainment now exceeds the pre-pandemic trend. Accommodation and restaurants spending almost recovered to its pre-pandemic trend in the late summer months. Transport remains well below pre-pandemic levels but has closed some of the gap in recent months. However, it is also not clear how far the pickup in spending will spread across the domestic economy as it would have in the past (for example, some spending on entertainment could be less for activities in Ireland and more for subscriptions to international media).

Some of the more vulnerable areas of spending have recovered

Figure 1.4: Heaviest affected areas of spending also recovering

€ million, monthly credit and debit card spending (seasonally adjusted)



Sources: Central Bank of Ireland, and Fiscal Council workings.
Notes: Monthly spending on debit and credit cards (available to end-September 2021) are seasonally adjusted with Tramo-Seats. The linear trend is based on a sample period of 2015–2019. A caveat to note is that part of the increase in activity for cards is also likely to be due to a shift to more card spending and less cash spending, accelerated by the pandemic. Get the data.

Table 1.1 presents *Budget* 2022 annual macroeconomic forecasts over the medium term. After a year of turbulence for the Irish economy due to the pandemic, the recovery beginning in 2021 is forecast to continue over coming years. A particularly rapid bounce-back in the labour market is expected in 2022, although the latest Covid-19 wave in Q4 2021 could delay a recovery for some of the worst-affected sectors.

Table 1.1: *Budget 2022* key macroeconomic forecasts

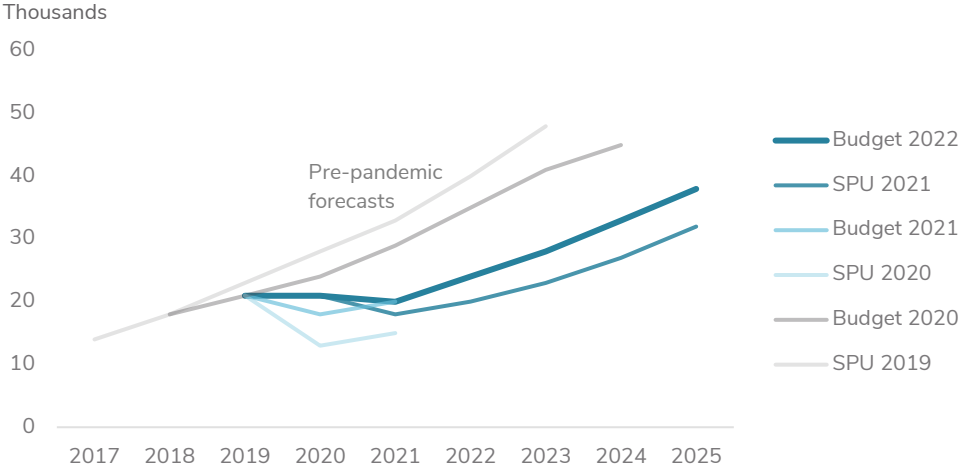
Year-on-year percentage change in volumes, unless otherwise stated

	2019	2020	2021	2022	2023	2024	2025
Modified gross national income (GNI*)	2.6	-3.5	4.7	5.2	3.5	3.3	3.2
Underlying domestic demand (UDD)	3.3	-4.9	5.2	6.3	4.0	3.8	3.6
Personal consumption	3.3	-10.4	6.8	9.6	3.6	3.4	3.2
Underlying investment	-0.4	-3.6	3.5	5.6	7.6	6.7	6.3
Compensation of employees (nominal)	7.1	0.5	6.9	6.0	5.6	5.8	5.9
Employment[a]	3.0	-16.7	7.8	13.2	2.7	2.6	2.2
Unemployment rate[a] (% labour force)	5.0	19.2	16.8	7.2	6.0	5.3	5.0
Inflation (HICP)	0.9	-0.5	2.3	2.2	1.9	2.1	2.2
Savings ratio (% disposable income)	10.3	25.4	20.5	12.5	10.9	10.4	10.1
Modified current account (% GNI*)	9.4	11.5	10.6	9.2	8.5	7.6	6.9
Output gap (% potential GDP)	2.1	-2.2	-0.7	-0.4	-0.2	-0.2	-0.1

Source: Department of Finance, and Fiscal Council workings.
Notes: [a] The unemployment rate and employment growth shown are based on the CSO's "upper bound" Covid-19 unemployment data.

Underlying investment is also expected to accelerate. New housing output is projected to ramp up over the medium term (Figure 1.5), nearly doubling by 2025. The pandemic's disruption to construction activity has slowed the expected expansion in housing, although the latest data for dwelling commencements indicate that this slowdown will prove temporary. With demand high and housing prices continuing to rise, it is possible that employment levels could return to pre-pandemic levels relatively quickly and boost output faster than is assumed by the Department. A possible downside risk could arise if demand for offices reduces amid greater levels of remote working leading to reduced construction in these areas.

Figure 1.5: *Budget 2022* forecasts a rapid increase in new dwelling completions, but less than was expected before the pandemic



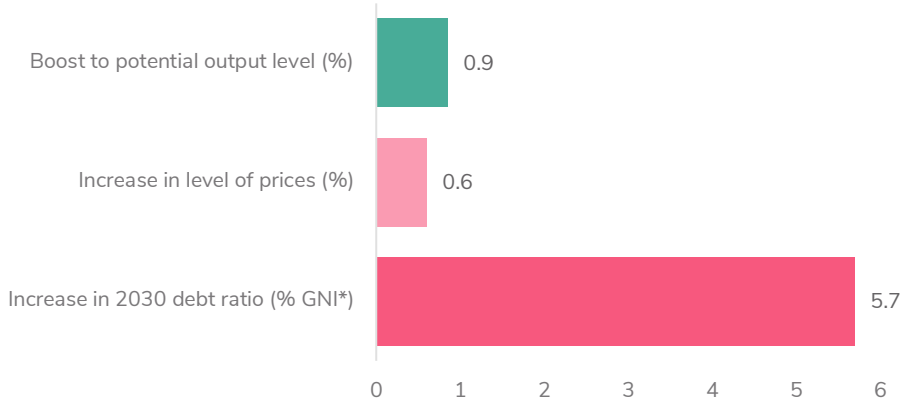
Sources: Department of Finance, Central Statistics Office, and Fiscal Council workings. Get the data.

The Government is planning a substantial increase in public investment in the coming years. The Government's plans are sizeable enough to drive up short-term activity through higher investment, but also to increase the total size of Ireland's capital stock — its equipment and infrastructure — such that it could have implications for overall economic activity over the long term. As shown in a new analytical note by Conroy, Casey and Jordan-Doak (2021), the additional public investment could boost the overall level of activity by around 1 per cent over the long run (Figure 1.6). But the additional activity would also add to inflation pressures. Prices across the economy would be expected to be higher by an estimated 0.6 per cent.

Higher public investment should boost economic activity

Figure 1.6: Public investment ramp-up to lift output, prices, and debt

Estimated impacts of additional public investment by 2030



Sources: Conroy, Casey and Jordan-Doak (2021). Get the data.
Notes: The estimated boost to real potential output shown is the median estimate from a variety of approaches. The increase in prices is for HICP levels by 2030. All estimates are compared to a scenario where public investment is held constant at its 2021 rate of 4.1 per cent of GNI*.

Furthermore, Conroy, Casey and Jordan-Doak (2021) find that 180,000 workers employed in construction would be required to achieve the Government's planned increases in public investment as set out in the National Development Plan. This would represent an increase of around 32,000 workers over 2019 levels. Getting to this level could be difficult, with limited numbers of unemployed construction workers domestically and risks that migration flows might not boost labour supply as it did in the past. There are risks that a tight labour market and low productivity in construction could reduce the benefits to growth and potentially undermine the value for money achieved in the Government's investments.

The pandemic has been an uneven shock. New analysis, presented in Box A, shows that earnings in sectors with below-average hourly earnings, such as tourism and hospitality, remained well below pre-pandemic trends as of the second quarter of 2021. By contrast, sectors with above-average hourly earnings, such as information and communication and financial services, have shown little disruption to strong growth in earnings visible before the pandemic.

The pandemic has been an uneven shock

The scarring effects of the crisis could be most relevant from a sectoral perspective. The worst-affected parts of the economy could see much-reduced levels of output for longer and could fail to reach their previous share of total activity.

As the Irish economy has re-opened in 2021, labour market conditions have improved but disparities between sectors have persisted. On the one hand, sectors less affected by the pandemic have continued to record growth in hours worked and wages. On the other hand, services sectors that require more face-to-face contact, such as hospitality and tourism, have witnessed a rapid increase in demand while the labour supply response has been sluggish. Firms in affected sectors have reported difficulty in sourcing sufficient staff, and private-sector vacancies have increased despite close to 78,000 recipients of Pandemic Unemployment Payments (PUP). This is similar to the experience in other countries and may be linked to a structural shift in people's willingness to work in certain areas of the economy, although the lasting effect and its impact on wages, particularly of lower-skilled workers, remains hard to assess.

Price inflation in the Irish economy and globally has been rising in recent months, largely reflecting the reopening of economies. Greater consumer demand, together with supply-chain constraints, have generated some pressures on prices. Given the strength of consumer demand and household incomes overall, firms that suffered lost revenue during lockdowns could be increasing prices in an effort to recover some of these losses. The restarting of economic activity has coincided with a surge in energy prices, which increases inflation both directly and through increased production costs for firms. This is reflected in the higher *Budget* 2022 projection for annual HICP inflation of 2.3 per cent for 2021 and 2.2 per cent for 2022. It follows a fall in HICP of -0.5 per cent in 2020, and a generally low-inflation period spanning 2013–2019, where price increases averaged just 0.3 per cent. See

Price inflation has been rising

Section 1.4 for a further discussion of how prices are forecast over the medium term.

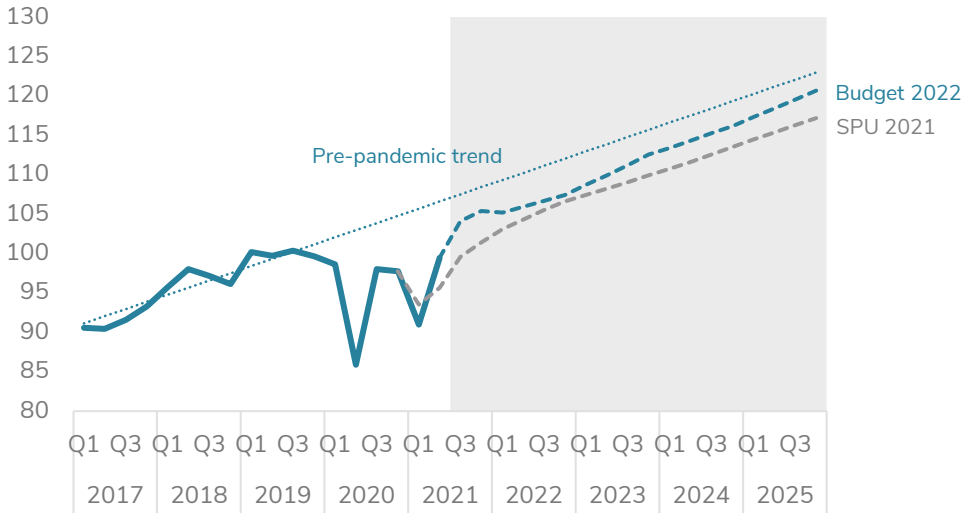
1.2 The medium-term outlook

A key question for the medium term is how much of a permanent loss in output and employment, labelled as "scarring", will result from changes brought about by the pandemic. Demand may switch between activities. For example, if people permanently switch to remote working, this will reduce the need for some travel, office space and city-centre facilities. Cashflow difficulties may force some firms to close. As a result, workers may lose their jobs and struggle to find new occupations, while business capital and know-how may be lost.

The Department of Finance's latest projections in *Budget 2022* are shown in Figure 1.7, and they forecast a stronger recovery in domestic demand compared to April's Stability Programme Update (*SPU 2021*). As a result, *Budget 2022* forecasts imply a lower level of scarring. This is driven by an increase to forecast levels of consumer spending over the medium term, which is partly related to the Department's more positive outlook for household incomes.

Figure 1.7: Less "scarring" is projected due to the pandemic

Underlying domestic demand, 2019 = 100 (seasonally adjusted)



Sources: Central Bank of Ireland, and Fiscal Council workings. Get the data.

However, Box A identifies upside risks to the Department's projections for aggregate employees' compensation, which is the key driver of household incomes. If the household savings ratio were to remain as projected in *Budget 2022*, this would in turn imply upside risk to consumer spending

over the medium term. In addition, the savings rate could fall more strongly towards pre-pandemic levels.[2]

From a supply-side perspective, scarring will depend to a large degree on how well workers and capital can shift from sectors where activity might be permanently lower, to sectors less affected by the pandemic. Government policies may have a role in how smoothly this adjustment takes places.

Scarring will depend on the transition from sectors where activity might be permanently lower

The Government can play an important role in minimising the short-run impact of disruptions due to both Covid-19 and Brexit. The sizeable budgetary supports introduced in 2020 and 2021 have helped to prevent disruptions to the economy from resulting in scarring effects that could become more significant again through lost investment and permanent exits from the labour force or "hysteresis". This could be most relevant from a sectoral perspective, as the worst-affected parts of the economy — especially tourism, hospitality, construction, and the arts — might fail to reach their previous share of total activity.

The transition will be helped by the fact that some sectors have continued to grow strongly. Growth in sectors less affected by the pandemic could offset, or possibly even exceed, lost output elsewhere. As Box A shows, sectors with above-average hourly earnings have remained close to pre-pandemic trend levels throughout 2020 and the first half of 2021. But sectors with below-average hourly earnings are still showing significant impacts from the pandemic. There are upside risks to the Department's forecasts of employee earnings, given 1) the strength of income tax revenues to date; and 2) the likelihood that wages overall will remain strong even if some permanent losses in sectors with below-average hourly earnings are assumed.

[2] It is important to note that the pre-pandemic level of the savings ratio was likely to have been affected by macroprudential rules regarding residential property purchases, and possible precautionary savings arising due to Brexit. As a result, it is difficult to assess what an equilibrium level of the savings ratio will resemble over the medium term, and this adds to uncertainty to forecasts of the level of consumer spending over the medium term.

Box A: The impact of the pandemic on the composition of the workforce and compensation of employees

The pandemic has been an uneven shock for the Irish economy. Sectors that rely heavily on face-to-face contact, such as hospitality, food, and arts, have been severely affected, with significant output and job losses. However, sectors with higher earnings, including more export-oriented and high-tech sectors, have recorded a strong performance in terms of both output and wages.

These compositional aspects resulted in a sharp increase in real average hourly earnings in 2020 compared to 2019, as hours worked fell sharply (-10 per cent), but real (HICP-deflated) aggregate employees' compensation was flat. However, *Budget 2022* projects a sharp fall in real average hourly earnings in 2022, and forecasts this to remain below its pre-pandemic trend over the medium term. This is in contrast to the implied projection for a broader measure of productivity — real GNI* per hour worked — which returns to its pre-pandemic trend over the medium term.

Lower real average hourly earnings would be consistent with lower activity in sectors with above-average hourly pay, alongside a strong and rapid recovery in sectors with below-average hourly pay. Given the strength of sectors with above-average hourly earnings since the pandemic began, and projections for broad productivity relative to its pre-pandemic trend, this box notes that there are upside risks to *Budget 2022* forecasts for aggregate employees' compensation over the short and medium term.

Comparing the earnings performance of different sectors during the pandemic

Box D in the Council's May 2021 *Fiscal Assessment Report* (Fiscal Council, 2021a) drew on figures published by the Revenue Commissioners (Collins and O'Rourke, 2021) to explain the resilience of PAYE income taxes in 2020, despite the pandemic. The broad finding was that sectors on which PAYE receipts are most reliant, were the same sectors whose earnings were least affected by the pandemic in 2020.

This finding is corroborated by considering the development of (implied) hourly earnings by sector.[3] Table A1 lists the sector-level earnings per actual hour worked prior to the pandemic.

Table A1: Ranking pre-pandemic earnings per actual hour worked

€ compensation of employees per actual hour worked in 2019

Financial, insurance, and real estate activities	43
Information and communication	36
Public administration, education, and health	32
Professional, administrative and support services	30
Average	28
Industry (excl. construction)	26
Distribution, transport, hotels, and restaurants	20
Construction	14
Arts, entertainment, and other services	12
Agriculture forestry and fishing	3

Sources: CSO, and Fiscal Council workings.

Notes: Some sectors are combined due to data availability; for example, compensation of employees is available separately for real estate services and financial and insurance services, but actual hours worked data groups these sectors together. Agricultural, forestry and fishing hourly earnings are strikingly low, in large part due to the classification of many persons engaged in the sector as self-employed workers, meaning their earnings are included separately in household income as gross operating surplus/mixed income.

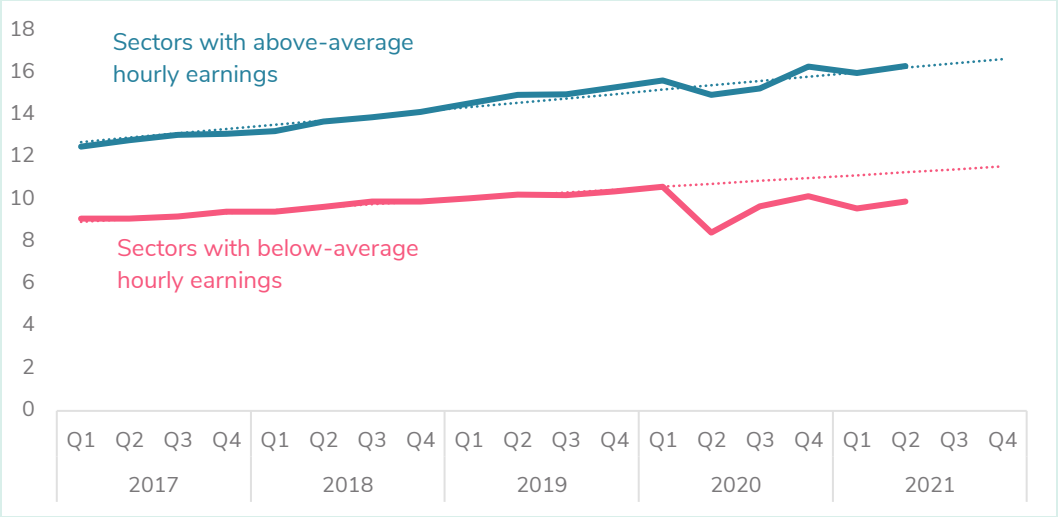
[3] This analysis uses the CSO's new data series on actual hours worked by sector, available here: https://data.cso.ie/table/QLF36

Four sectors had hourly earnings more than the weighted average of €28 per actual hour worked in 2019: financial, insurance, and real estate activities; information and communication services; public administration, education, and health; and professional, administrative and support services.

In Figure A1, sectors from Table A1 have been combined in two groups: those with above- and those with below-average hourly earnings. Comparing these two groups with their respective pre-pandemic (2014 Q1 – 2019 Q4) trends shows a limited impact from Covid-19 on the higher-paid sectors, where compensation continued to grow, with average hours worked broadly flat (-0.4 per cent) for 2020 and the first half of 2021 compared to 2019, and hourly earnings rising by 6.3 per cent for the same period. By contrast, an ongoing gap to trend is visible for sectors with lower hourly earnings, mainly reflecting a fall in hours worked of close to 16 per cent since 2019.[4]

Figure A1: Sectors with above-average hourly earnings have been resilient in terms of aggregate employees' compensation

€ billion values, seasonally adjusted



Sources: CSO, and Fiscal Council workings.
Notes: These sector groups are constructed based on the figures shown in Table A1. Trends shown are based on a sample of 2014 Q1–2019 Q4. Get the data.

Assessing the *Budget 2022* implied projections for real hourly earnings

Compensation of employees, total hours worked, and HICP inflation can be used to assess the implied *Budget* 2022 forecast for real hourly earnings.[5] This provides a consistency check for forecasts of aggregate employees' compensation.

Real average hourly earnings increased sharply in 2020, reflecting the composition effects of the pandemic. As discussed above, this was primarily due to sectors that were most adversely affected by Covid restrictions, where a sharp rise in hourly earnings took place. As employment and hours worked recover in such sectors, this composition effect should unwind, either in part or

[4] Compensation of employees in 2020 included about €4 billion of earnings supported by the Government's wage subsidy schemes, introduced last year due to Covid-19. Firms eligible for wage subsidy supports are more likely to be in sectors with below-average hourly earnings, especially tourism/hospitality, construction, and arts/entertainment sectors. As a result, the finding that sectors with above-average hourly earnings have been more resilient is unlikely to be as a direct result of wage subsidy schemes. For more on wage subsidy scheme supports, see: https://www.cso.ie/en/releasesandpublications/fp/fp-c19isar/covid-19incomesupports-ananalysisofrecipientsmarch2020tomay2021/employmentwagesubsidyscheme/

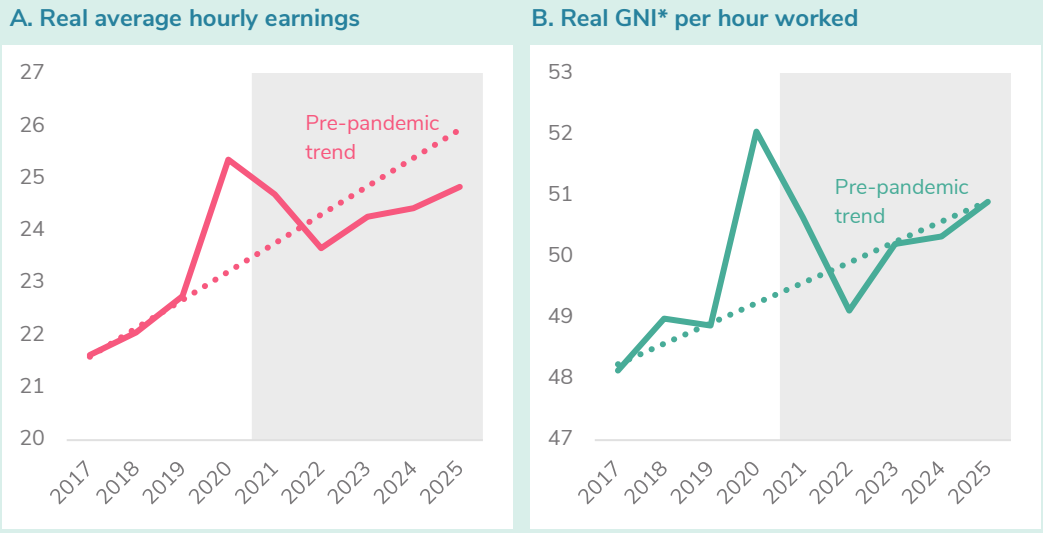
[5] Compensation of employees = real hourly earnings * hours worked * HICP deflator. Hours worked = employment * average weekly hours worked * number of weeks in a year.

in full. This could result in a return of real average hourly earnings toward their pre-pandemic trend from above.

However, as shown in Figure A2.A, *Budget* 2022 forecasts a sharp fall in real average hourly earnings below its pre-pandemic trend next year, remaining on a lower trajectory over the medium term. By 2025, *Budget* 2022 forecasts are over 4 per cent lower than the pre-pandemic trend.

By comparison, a broader measure of productivity in *Budget* 2022 projections, such as real GNI* per hour worked (Figure A2.B), shows no difference compared to its pre-pandemic trend by 2025. As the path for real hourly earnings could be expected to evolve in a similar manner relative to overall productivity in the real economy, this suggests a relatively weak trajectory in *Budget* 2022 for real hourly earnings.[6]

Figure A2: Budget 2022 projects a fall below trend for real hourly earnings, but not for broader productivity



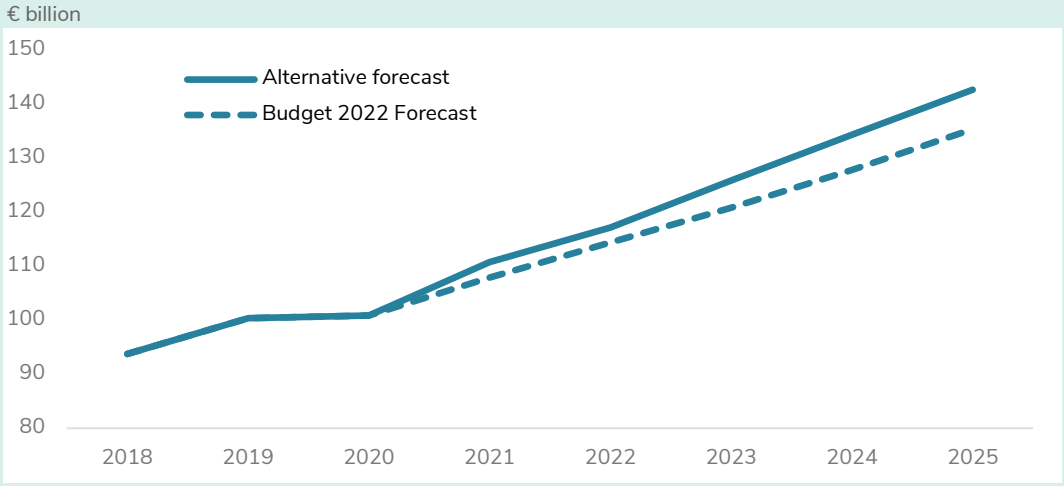
Sources: CSO, and Fiscal Council workings.
Notes: Pre-pandemic trends are based on a sample period of 2014–2019. Get the data.

Budget 2022 projections for real average hourly earnings effectively imply lower activity in sectors with above-average hourly earnings, alongside a strong and rapid recovery in sectors with below-average hourly earnings. As a result, the above analysis suggests upside risks to aggregate employees' compensation over both the short term and the medium term.

A higher path for real hourly earnings — for example, getting close to trend from 2022 onwards — would be more consistent with recent developments in the labour market and overall earnings by sector, as portrayed in Figure A1. Figure A3 shows the difference to *Budget* 2022 forecasts of aggregate employees' compensation as a result of this adjustment.

[6] See Box C in Fiscal Council (2021a) for further analysis of productivity during the pandemic. A strong performance for real average hourly earnings suggests a positive productivity shock has occurred, whereas a weak performance is more consistent with negative productivity developments.

Figure A3: Adjusting *Budget 2022* forecasts for aggregate employees' compensation



Sources: Department of Finance and Fiscal Council workings.
Notes: The alternative projection for compensation of employees takes the Department's *Budget 2022* forecasts for employment, average hours worked, HICP, and adjusts implied real hourly earnings such that they return to close to pre-pandemic trend. Get the data.

1.3 Risks to the outlook

The Council assesses that risks to the economy are broadly balanced. The Department also notes that risks are "two-sided and are assessed as being broadly balanced".

Risks are broadly balanced

On the positive side, there are a number of reasons why both short- and medium-term growth might be higher than assumed. For instance, the recovery of sectors severely affected by the pandemic might be more pronounced than is currently expected, or the transition out of unemployment to employment in those sectors with high demand for labour might happen more rapidly than foreseen, meaning less scarring. A faster and larger unwinding of savings owing to pent-up demand could provide a significant boost to consumption in 2022. Services that had been restricted, such as hospitality, are projected to see a rise in demand. These sectors tend to attract less imports and have higher domestic multiplier effects so that increases in consumer spending in these areas could lead to larger-than-usual growth impacts. Finally, compensation of employees could also be stronger than forecast in *Budget 2022* (Box A) boosting consumer spending. Unlike the unwinding of excess savings, this impact would likely persist into the medium term. Eventually, in later years, overheating could become a risk, though slack in the labour market and a large current account surplus suggests the immediate risks are low.

However, there is inherent uncertainty around Ireland's medium-term growth trajectory. As a small open economy, global risks, such as a financial shock, have the capacity to adversely affect the Irish economy.

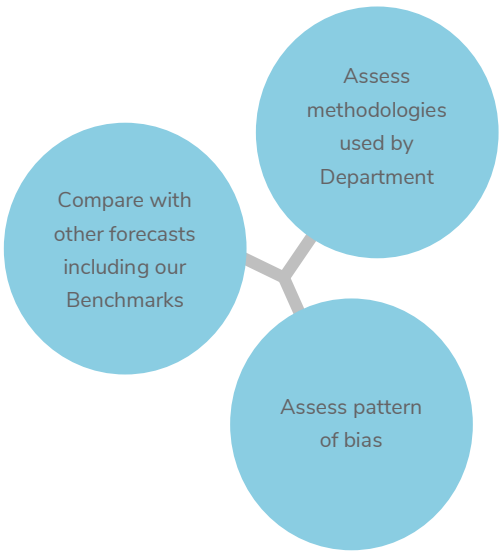
On the negative side, a key downside risk is the potential for additional restrictions (beyond those already announced in November) owing to a surge in cases or virus mutations, which could require new vaccine development, and necessitate further lockdowns. International tax reforms could reduce foreign direct investment and government tax revenues, which could slow or even lead to negative growth in earnings for high-pay sectors of the economy, with considerable negative risks for local enterprises. Parts of Brexit's current trading agreement between the UK and the EU related to Northern Ireland could unwind, leading to disruptions to trade (Northern Ireland has remained within the EU's customs union and single market), and more generally, the new free trade agreement's adverse effects could be larger than assumed. Higher price inflation, even if transient, could lead to

knock-on demands for higher wages, in turn reducing competitiveness and exports depending on relative changes in Ireland's trading partners. Capacity constraints could be an issue in the coming years, with the risk that these could constrain growth and raise price pressures. There are signs of tightness in areas such as construction, which the expanded public investment programme will most likely add to (Conroy, Casey and Jordan-Doak, 2021). While Ireland has often relied on inward flows of migration to respond to tightening labour market conditions, migration flows could respond more slowly to higher demand exacerbating risks.

1.4 Endorsement of the Department of Finance's macroeconomic projections

The Council's most recent endorsement exercise of the Department of Finance's macroeconomic forecasts was undertaken in September 2021.

The Council assessed that the Department's short-term forecasts for 2021 and 2022 were within an endorseable range, taking into account the methodology and plausibility of the judgments made.



However, there were some areas where issues were apparent under the Council's assessment of the 1) comparisons with the Council's Benchmark projections and other forecasts; 2) pattern of bias; and 3) the forecasting methodologies used by the Department. These mainly related to income taxes and compensation of employees. This section explores the key issues that arose in this latest endorsement exercise.

Background

The Department's provisional macroeconomic forecasts were completed on 17th September 2021 (see table S1a for details of the endorsement timeline). The Council and Secretariat discussed the forecasts with Department staff on 24th September 2021. On 29th September, the Department provided a final update of forecasts reflecting the estimated impact of policy changes envisaged in July's *Summer Economic Statement*, and no changes to the macroeconomic forecasts were made on Budget day (12th October).

The Department has in recent forecast rounds expanded its use of underlying economic measures that focus on the domestic economy. This is a welcome development, given the distortions that affect many headline indicators in Ireland reflecting the extensive role played by multinational enterprises. Unfortunately, many agencies and private bodies forecasting the Irish economy continue to focus on the largely irrelevant GDP measures. A wider move towards forecasting underlying measures would provide more meaningful and relevant projections and would help to strengthen the overall macroeconomic debate in Ireland.

Taxes-to-Income ratio

While the Council endorses the macroeconomic rather than the budgetary projections, there are some fiscal elements that enter the macroeconomic forecasts. Taxes on income and wealth are a key determinant of households' disposable income, which feeds into consumption and savings. The *Budget 2022* forecasts imply that income will grow considerably more slowly than the relevant income tax revenue in 2021.[7] This results in a sharp increase in the projected ratio of taxes to labour income, remaining elevated over the medium term (Figure 1.8).[8] This stretches the plausibility of the forecasts in the absence of any policy changes to raise tax rates, as normally income tax revenues would be expected to grow approximately in line with gross incomes (Conroy, 2020).

The Department's forecasts implied a sharp rise in effective tax rates, which stretched their plausibility

[7] Note that this measure is slightly broader than income tax examined in Section 2. The measure examined here includes not just income tax, but also capital gains tax, motor tax (on household cars) and the TV licence.

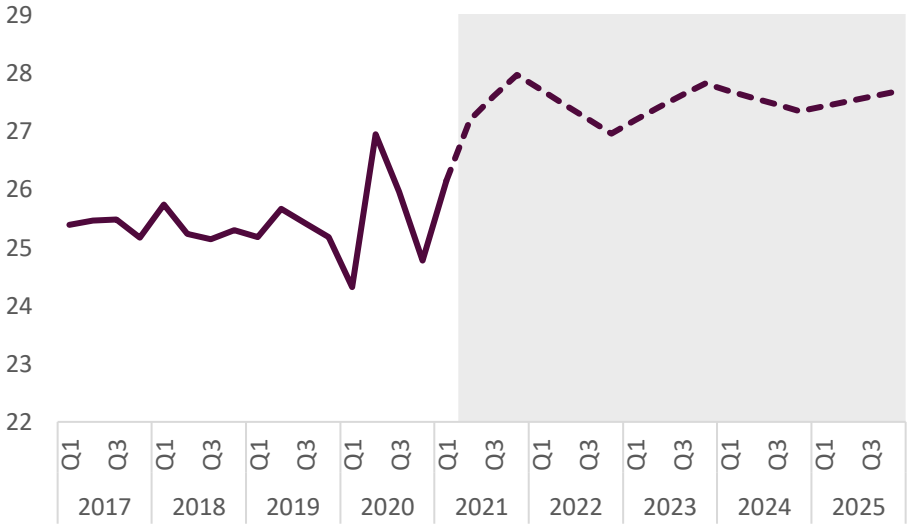
[8] Although *Institutional Sector Accounts* for Q2 2021 had not yet been published by the time of the endorsement decision, compensation of employees by sector has recently been included in the CSO's *Quarterly National Accounts*. While awaiting Q2 2021 data for taxes on income and wealth, the Council used data to end-August from the Department's monthly Fiscal Monitor as a proxy.

The level-shift implied for the ratio of income taxes to aggregate employees' compensation over the medium term was a key concern around the endorsement. There are a few potential explanations for such a forecast. As wages rise, less people may become exempt from income tax over time; more people might fall into the higher tax bracket; or a larger share of earnings could be taxed at the higher rate. However, these arguments did not seem to be driving the rationale for the Department's forecasts. The rise in the ratio also seemed inconsistent with the Government's commitment to index the tax system in later years, assuming the recovery takes hold as projected.

In addition, the use of quarterly forecast profiles for both incomes and tax revenues (as used in Figure 1.8) can provide a valuable tool for assessing the plausibility of a given full-year forecast.

Figure 1.8: *Budget 2022* weak compensation forecasts imply an unrealistic upwards shift in the ratio of household taxes to incomes

Taxes as a share of aggregate employees' compensation



Sources: CSO, Department of Finance, and Fiscal Council workings. Get the data.
Notes: The historical data are taxes on income and wealth (available until Q1 2021 at the time of the endorsement, and seasonally adjusted manually using Tramo-Seats), divided by aggregate employees' compensation (available until Q2 2021). For the forecast horizon, implied quarterly forecasts are constructed such that the total across quarters adds up to *Budget* 2022 annual forecasts, starting from the last available outturn. The measure of taxes on income and wealth is broader than just income tax, hence the ratio shown here is slightly higher than that shown in Figure 2.3.

Income taxes performed very strongly in 2021 in the first eight months of the year, reaching a level above their pre-pandemic trend (Figure 2.4). This strength underpins the Department's forecast for income taxes growth this year (+14.8 per cent). By contrast, the Department's forecasts for both aggregate employees' compensation (6.9 per cent) and capital income net of

depreciation (3.4 per cent) remains considerably slower.[9] Given strong tax revenues, household incomes appear likely to outperform the Department's projections for 2021 (as discussed in Box A). Figure A3 shows an alternative forecast for aggregate employees' compensation.

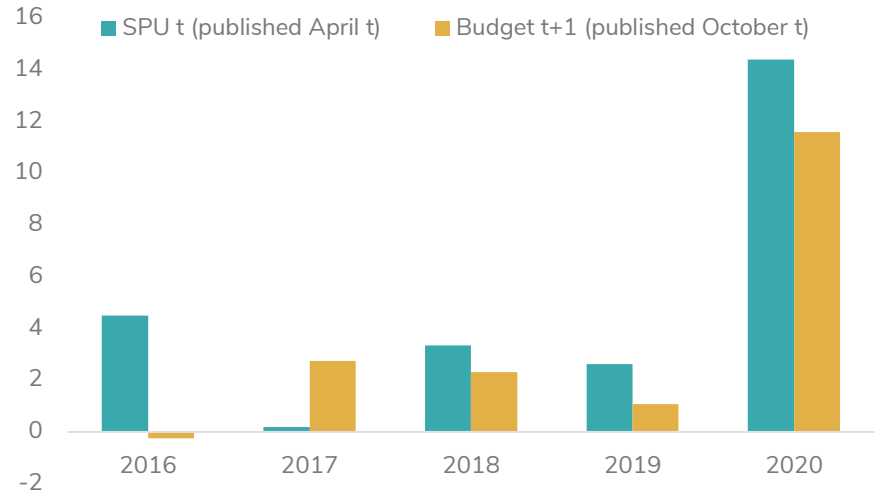
Taken together, this would imply that the tax-income ratio would be lower than suggested by Figure 1.8, which would align more closely with historical precedent. Figure 2.3 shows an alternative path for the ratio, incorporating the alternative forecast of aggregate employees' compensation shown in Figure A3.

As shown in Figure 1.9, the Department's projections for aggregate employees' compensation have often been significantly lower than outturns, even prior to the pandemic-affected 2020. This indicates a systematic pattern of downwards bias in the gross income projections (although 2020 was exceptional). A number of previous forecasts have shown rising tax-income ratios, although this ratio has been relatively stable over time. This suggests a tendency to underpredict both real personal disposable income and household consumption spending, or a disconnect between the forecasting methodologies for tax, income, and consumption of households. This can result in a downward bias to forecasts for levels of consumer spending and/or household savings. This is something that the Council will continue to monitor in subsequent assessments.

[9] The Department expected that the progressivity of income taxes explained the sharp increase in taxes as a share of labour income, and that some of the tax buoyancy reflected self-employed earnings that would not be included in labour income. However, the relative increase in the tax share is even larger in 2021 when using compensation of employees plus capital income as the denominator — this ratio grows 8.1 per cent, compared to 7.4 per cent for taxes as a share of just compensation of employees.

Figure 1.9: Official forecasts have tended to underestimate same-year aggregate employees' compensation

€ billion (positive figure = income greater than forecast)



Sources: CSO, Department of Finance, and Fiscal Council workings.
Notes: The chart shows the latest outturns for aggregate employees' compensation less the Department's in-year forecast. This does not correct for revisions to historical data that may have influenced the magnitude of forecast errors in some cases. Get the data.

Inflation risks

The outlook for inflation is a key area of uncertainty for the outlook, given tightness in energy markets and supply-chain bottlenecks post-Covid. The Department's short-term forecasts are informed by models on six sub-components of HICP, whereas its medium-term forecasts are judgement-based. The faster growth in prices observed in the months leading up to the endorsement was assumed to be a transitory feature of the economic recovery from the pandemic. This expectation was aligned with that of central banks, including the European Central Bank, the Bank of England, and the US Federal Reserve.

The 'Economic and Fiscal Outlook' for *Budget 2022* includes a scenario for higher inflation due to higher energy prices, prolonged global supply-chain disruption, and stronger short-term domestic demand. This results in an increase in HICP growth for 2021 of ¼ of a percentage point, and about 1¼ percentage points in 2022. For the expected impact of an inflation shock over the medium term, the Department uses the COSMO model of the Irish economy to analyse a 1 percentage-point shock to inflation, which is 50 per cent attributed to the price of oil. This results in lower consumer spending and non-traded output, higher unemployment, and a lower general government balance.

The modelled effects of inflation primarily reflect an impact of lower real household disposable income and lower demand for labour by firms. However, consumer price inflation in the Euro area has underperformed relative to central-bank targets for several years, with weaker anchoring since 2013 identified by Byrne and Zekaite (2019). In the context of a price level far below target, the effect of a temporary increase in inflation on consumer spending could be less than would be conventionally modelled. However, it is also possible that people might be surprised by the higher price level and assume that it is permanent, leading to lower consumption.

Of greater importance to the outlook is the possibility that demand might continue to exceed supply. This could lead to second-round effects, whereby higher wages are sought fuelling higher prices again. This could mean that the recent rise in prices could prove less transitory than expected.

While an increase in inflation has considerable macroeconomic implications, the fiscal implications could also be significant. Debt servicing costs have been repeatedly revised down in recent years. However, a significant increase in inflation would increase the probability that policy rates would be tightened, which, if it happens, would be expected to lead to a rise in government borrowing costs. Tax revenues may also rise in the short-term as higher prices generate more taxes. However, this could be offset by an increase in government spending, with the government facing rising costs for both current and capital spending and also pressures to compensate for reduced purchasing power.

Box B: Modelling inflation in Ireland

This box explores the use of a formal forecasting model for developing inflation projections for the medium term as compared to the *Budget* 2022 forecasts, which are largely based on judgement. Inflation is modelled on unemployment, external prices, and inflation expectations.

Figure B1 presents market-implied expectations for ten-year inflation in France, derived using benchmark and inflation-linked bond yields. France's inflation expectations are shown as its inflation-linked bond market is the most liquid for the Euro area. After a period of decline over much of the past decade, inflation expectations over the coming ten years have recently reached 2 per cent, the highest level since April 2014. Byrne and Zekaite (2019) present evidence of weaker anchoring of inflation expectations after 2013 and emphasise that well-anchored expectations are important to ensure against inflationary or deflationary spirals.

Figure B1: Inflation expectations have risen rapidly since the pandemic began

% (France implied ten-year breakeven inflation rate)

Sources: Refinitiv Eikon, and Fiscal Council workings. Get the data.

Notes: The chart shows France's implied ten-year breakeven inflation. It is calculated using the following formula: 100 * ((1 + nominal ten-year bond yield in %) / (1 + real ten-year bond yield in %) – 1). The real ten-year yield refers to the yield on a generic French HICP-linked government bond, whose coupon adjusts for the level of HICP. The breakeven is therefore the implied ten-year compound average rate of inflation for which a nominal government bond compensates an investor relative to the real yield on the inflation-linked bond.

Modelling medium-term inflation in the Irish economy

Galstyan (2021) conducts an empirical investigation into inflation determinants. Focusing on Ireland, it notes the significant role that domestic slack has in influencing price inflation over the medium term.

Based on Galstyan's findings, HICP inflation can be forecast in a quarterly error-correction model based on inflation expectations, and seasonally adjusted unemployment rates and price inflation on imports of goods and services.[10] The sample period used here covers the period Q1 1990 to Q2 2021.

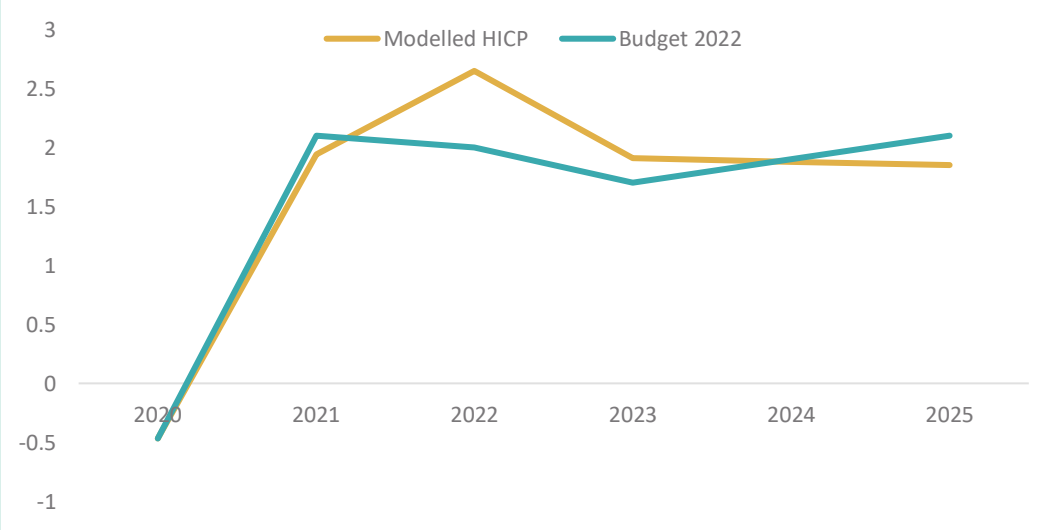
[10] Inflation expectations are taken as one-year-ahead inflation rates projected by the IMF (where spring forecasts are applied to Q1 and Q2 for year t+1, and autumn forecasts are applied to Q3 and Q4 for year t+1). Beyond 2022, the latest projections from autumn 2021 are used. The seasonally adjusted unemployment rate is mechanically extended quarterly back to 1990 using the annual labour force survey, while the import price deflator is also mechanically extended using the historical annual national income and expenditure data.

Figure B2 compares the modelled rates of HICP inflation with *Budget* 2022 projections. *Budget* 2022 forecasts are model-based for part of 2021 and 2022, and judgement-based thereafter. The rapid fall forecast for the unemployment rate in 2022 contributes to a rise in HICP inflation next year, whereas the *Budget* 2022 forecasts entail a slightly slower rate of inflation in 2022 compared to 2021. However, the projected growth rates for HICP are otherwise very similar, suggesting a return toward 2 per cent annual inflation. This is consistent with inflation expectations based on the recent ten-year French breakeven rates.

There are limits to using conventional models of inflation in unusual circumstances such as the current ones. For example, when unemployment rose rapidly in 2020, inflation did not fall in a corresponding manner. As a result, one might not expect falls in unemployment to fuel a significant acceleration in inflation. In fact, many of the factors that are likely to cause increases in inflation at present would not be typically captured by conventional models (supply-chain issues, energy price increases, temporary labour supply issues and pent-up demand).

Figure B2: Model-based forecasts broadly align with judgement-based forecasts

% growth year-on-year



Sources: Department of Finance, and Fiscal Council workings. Get the data.
Notes: The "Modelled HICP" forecasts are based on an error-correction model using inflation expectations, seasonally adjusted unemployment rates and price inflation on imports of goods and services.

While the model-based forecasts align well with those produced by the Department, there is scope to improve how medium-term inflation forecasts are founded. Inflation forecasts could be more usefully linked to developments in the domestic economy and its spare capacity. Factors like this and the role of expectations becoming entrenched could take on greater importance in the coming years.

Output gap issues

The Department of Finance has shifted to using alternative estimates of potential output and the output gap in recent years. For *Budget 2022* projections, the Department changed its approach slightly, making its "preferred" output gap estimate one that is based on potential growth in domestic gross value added (GVA) rather than GDP (Murphy, Nacheva and Daly, 2018).[11] The move to a better-founded domestic measure of the output gap has been welcomed by the Council.

The move to estimating output gaps based on domestic GVA is welcome, but needs some refinement

As an example, in 2021 the previous GDP-based method showed a positive output gap. This was deemed highly implausible as it implied output in the economy had exceeded its potential. At the same time, the Department estimated that the unemployment rate was 16.8 per cent. The use of the Department's other domestic GVA-based approach results in a relatively more plausible negative output gap of about 0.7 per cent.

The Council welcomed the Department's move to relying on domestic GVA rather than GDP for its preferred estimates of the output gap but notes some concerns. The way domestic GVA is forecast is an issue as it seems to be poorly aligned with growth in underlying domestic demand and real GNI*.[12] In addition, the approach — though it focuses on domestic GVA — still relies on total GVA in a way that results in distortions from the multinational sector influencing the estimates of potential.

First, estimates of the output gap based on domestic GVA are used in conjunction with actual total GVA to generate potential output growth rates. This results in very high estimates of potential output growth in years where large distortions to Ireland's GDP took place (such as in 2015). If domestic GVA is used instead as the basis for potential output, it would be possible to obtain a far more plausible estimate over time (Figure 1.10). Second, the output gap — although being focused on domestic GVA — is still defined in

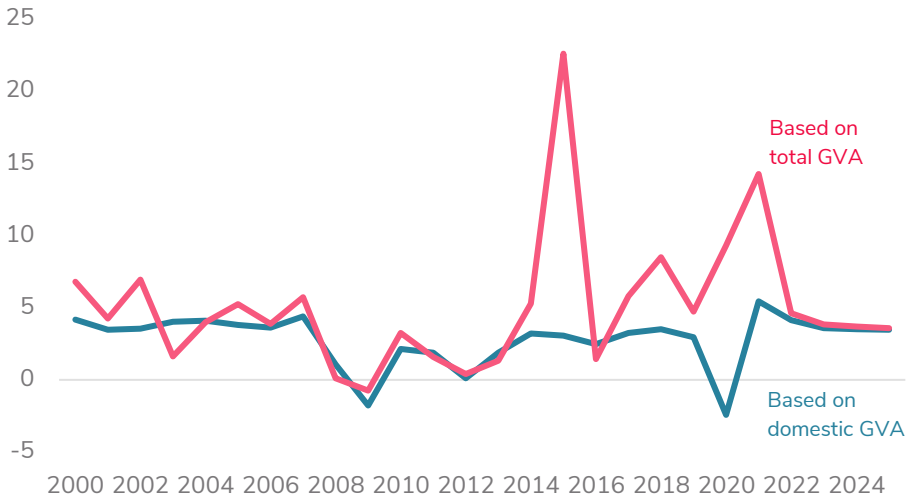
[11] "Domestic gross value added" refers to a series published quarterly by the CSO for GVA excluding sectors where over 85 per cent of turnover is accounted for by foreign-owned multinational firms. However, it is important to note that this measure excludes output that is relevant to GNI*, in particular compensation of employees from the excluded sectors. The Department had previously produced alternative estimates of potential output using Domestic GVA but its preferred measure was based on the GDP-based estimates.

[12] The forecasting approach for domestic GVA relies on a historical relationship with gross national product. However, as a result of the large fall in domestic GVA in 2020 (–9.8 per cent), but where gross national product actually grew by 2.6 per cent, this methodology results in a large permanent loss to domestic GVA. This loss is not shown in the Department's forecasts for other relevant variables for the domestic economy including GNI* and underlying domestic demand (UDD), which recover far closer to their pre-pandemic trend levels over time.

terms of total GVA. That is, whereas the numerator is calculated based on domestic GVA, total GVA is the denominator used. The Department's approach effectively assumes that foreign-owned multinational sectors (the "foreign" component of GVA) always operate at full potential. This approach will tend to underestimate the size of the output gap over time as GVA of foreign-owned multinational enterprises grows faster relative to domestic GVA. By contrast, the Council's models (Casey, 2019) are currently applied with domestic GVA as the denominator, which overcomes these risks.

Figure 1.10: The Department's estimates of potential output are based on total GVA, implying high potential growth rates in some years

% change year-on-year in potential output



Sources: Department of Finance, and Fiscal Council workings
Notes: The estimate based on domestic GVA uses the Department's inputs, but with an alternative forecast for domestic GVA (rising in line with the percentage gap to 2014–2019 trend for UDD from 2021–2025), and with faster growth in house prices (more aligned to growth in nominal GNI*). Get the data.