



Rialtas na hÉireann
Government of Ireland

Budget 2020

Economic & Fiscal Outlook

Budget 2020

Economic and Fiscal Outlook

(Incorporating the Department of Finance's Autumn Forecasts)

Le ceannach díreach ó FOILSEACHÁIN RIALTAIS
52 FAICHE STIABHNA, BAILE ÁTHA CLIATH 2
(Teil: 076 1106 834 nó Riomhphost: publications@opw.ie)
nó trí aon díoltóir leabhar

To be purchased from GOVERNMENT
PUBLICATIONS
52 ST. STEPHEN'S GREEN, DUBLIN 2
(Tel: 076 – 1106 834 or Email: publications@opw.ie)
or through any bookseller

Price €5.00

Contents

		Page
1	Overview and General Policy Strategy	1
1.1	Policy strategy	1
1.2	Short-term economic and budgetary outlook	2
2	Economic Outlook	5
2.1	Summary	5
2.2	Macroeconomic outturn 2019	5
2.3	Macroeconomic projections 2020	7
2.4	Balance of payments	14
2.5	The labour market	15
2.6	Price developments	18
2.7	Medium-term growth prospects 2021 to 2024	19
2.8	Comparison of forecasts	20
3	Exchequer Developments and Outlook	23
3.1	Summary	23
3.2	Exchequer outturn 2019	23
3.3	Exchequer outlook 2020	26
3.4	Fiscal outlook 2021-2024	27
4	General Government Developments and Outlook	30
4.1	Summary	30
4.2	General government balance in 2019	30
4.3	General government balance in 2020	30
4.4	Comparison of forecasts	31
5	General Government Debt	33
5.1	Summary	33
5.2	Debt developments	33
5.3	Debt composition	37
5.4	Funding developments	38
5.5	Comparison of forecasts	39
6	Risk and Sensitivity Analysis	40
6.1	Summary	40
6.2	Risks to the economic and fiscal forecasts	40
6.3	Sensitivity analysis	41
6.4	Monitoring imbalances in the Irish economy	43

Tables, Figures, Boxes and Annexes

Tables

Table 1	Summary table – main economic and fiscal variables	2
Table 2	External assumptions	7
Table 3	Macroeconomic prospects	11
Table 4	Deal Counterfactual Projection	12
Table 5	Savings, investment and the balance of payments	15
Table 6	Labour market prospects	16
Table 7	Price developments	18
Table 8	Range of forecasts	21
Table 9	Exchequer balance 2019-2024	25
Table 10	The impact of Budget 2020 on the Fiscal Position in 2020	28
Table 11	Alternative presentation of exchequer position	29
Table 12	Exchequer balance to GGB 2018 - 2024	31
Table 13	Comparison of budgetary forecasts	32
Table 14	General government debt developments	35
Table 15	Gross and net general government debt	37
Table 16	Irish sovereign credit ratings	38
Table 17	Sensitivity analysis	42
Table 18	Heatmap of exchequer spending 2009-2019	44
Table 19	Real time vs Current Estimates of the Structural Balance 2004-2018	44
Table 20	Heatmap of macroeconomic indicators 2002-2020	45
Table 21	Macro-economic risk assessment matrix	46
Table 22	Fiscal risk assessment matrix	48
Table 23	Macroeconomic developments	49
Table 24	Price developments	49
Table 25	Labour market developments	49
Table 26	Sectoral balances	49
Table 27	Glossary of terms used in Chapter 2	50
Table A1	Difference between Exchequer balance and GG balance	51
Table A2	General government balance 2018-2024	52
Table A3	Comparison of vintages of receipts and expenditures for 2019	53
Table A4	General government interest expenditure 2018-2024	54
Table A5	Projected movement in general government debt 2018-2024	54
Table A6	Breakdown of revenue	54
Table A7	Expenditure developments	55
Table A8	Application of expenditure benchmark	55
Table A9	Estimate of local government income and expenditure for 2020	56
Table A10	Contingent Liabilities	56
Table A11	Macroeconomic aggregates 2018-2024	57
Table A12	Exchequer and general government aggregates 2018-2024	58
Table A13	Previous GDP forecasts endorsed by the Irish Fiscal Advisory Council	59
Table A14	Previous general government balance forecasts	59
Table A15	Structural budget balance	60

Figures

Figure 1	2019 Q3 Nowcasts of modified domestic demand and private consumption	6
Figure 2	Change in external assumptions relative to spring forecasts	8
Figure 3	Euro-sterling bi-lateral exchange rate	9

Figure 4	Bonds trading at negative interest rates	10
Figure 5	Operational Sequencing	12
Figure 6	Employment and the Phillips curve	17
Figure 7	Path of the Output Gap	19
Figure 8	Contributions to changes in GDP	20
Figure 9	Comparison of autumn and spring 2019 GDP forecast	21
Figure 10	End-September cumulative tax receipts relative to profile	24
Figure 11	Comparison of autumn and spring 2019 GG balance forecast	32
Figure 12	General government debt-to-GDP and debt-to-GNI*	33
Figure 13	Debt interest to revenue ratio, per cent	34
Figure 14	Static public sector net worth	36
Figure 15	Composition of general government debt at end 2018	37
Figure 16	Maturity profile of long-term marketable and official debt	38
Figure 17	Comparison of autumn and spring 2019 GG debt forecast	39
Figure 18	Confidence bands for real GDP growth 2019-20	40
Boxes		
Box 1	‘Now-casting’ the Irish Economy – Where are we now?	6
Box 2	‘Brexit’ and the euro-sterling bi-lateral exchange rate	9
Box 3	Negative interest rates	10
Box 4	Constructing a disorderly exit economic forecast	12
Box 5	Applying macroeconomic models for short-run projections	13
Box 6	The wage Phillips curve in Ireland	17
Box 7	Brexit – some exchequer issues	27
Box 8	Public Sector Balance Sheet	36
Annexes		
Annex 1	IFAC endorsement of the macroeconomic forecast	48
Annex 2	Glossary of terms used in Chapter 2	50
Annex 3	Additional fiscal statistics and tables	51
Annex 4	Macroeconomic aggregates 2018 to 2024	57
Annex 5	Structural budget balance and MTO	60

Chapter 1

Overview and General Policy Strategy

1.1 Policy Strategy

The data-flow over the summer suggests that economic conditions in many of Ireland's export markets have taken a turn for the worse. The pace of expansion has slowed almost to a standstill in several regions and has even gone into reverse in some, with signs of distress now evident in some large emerging market economies. Moreover, forward-looking indicators suggest that this softness in the global economy may not be short-lived. All told, the external outlook has deteriorated since the Department's spring forecasts, with many of the risks identified at the time now coming to pass.

Several factors appear to be weighing on the global economy at present. Some of these are cyclical in nature, including a 'natural' end to what has been a prolonged cyclical upswing in many regions. More problematic, however, are several structural developments that are undermining growth prospects. For instance, the pace of global economic integration has slowed, with evidence that cross-border supply chains have begun to unravel, a phenomenon that pre-dates the economic tensions between the US and China. Heightened uncertainty – including that related to the rules-based multilateral trading framework – is weighing on investment in advanced economies, depressing demand in the short-term and holding back productivity in the medium-term. From an Irish perspective, any rolling back of globalisation is problematic, given the integration of Irish production in global value chains.

A more immediate concern is the United Kingdom's exit from the European Union which, for budgetary purposes, is assumed to occur without ratification of the *Withdrawal Agreement* at the end of October, i.e. a disorderly exit. This will involve a significant shock to the Irish economy, albeit one with considerable sectoral heterogeneity. UK-facing firms (especially Small and Medium Sized Enterprises (SMEs)) and the agri-food sector are among those sectors most exposed to a fall in demand, while parts of the retail sector – often characterised by just-in-time supply chains – are vulnerable to supply disruption.

The analysis presented in this document assumes a sharp slowdown in the pace of economic growth next year, with GDP projected to increase by just 0.7 per cent. While the economy is projected to expand, it is very much a "two-speed" economy: sectors dominated by multinational enterprises are assumed to step up a gear, while activity in UK-facing sectors will hit the brakes.

The export channel is the single-most important transmission mechanism through which a disorderly exit affects the Irish economy, with model simulations suggesting that aggregate exports could be around 5 percentage points below what would otherwise have been the case. Investment is also weaker, as firms postpone spending in order to assess future prospects. Consumers are assumed to build-up precautionary savings and, if confidence is worse than assumed, the increase in household savings could be even larger than currently projected.

Budget 2020 involves a net budgetary package of €2.9 billion, including a €0.8 billion increase in capital spending. The Government will allow budgetary policy support the economy by temporarily allowing a deficit to emerge in the event of a disorderly exit. In addition, the Government has committed to supporting viable enterprises in those sectors most exposed.

Prudent management of the public finances in recent years means that the Government is in a position to cushion the fall-out from a disorderly exit. For instance, the headline deficit has been eliminated – a surplus of 0.2 per cent of GDP is in prospect for this year; indeed, this surplus would have been in the region of 1-1¼ per cent of GDP had the Government not increased capital expenditure from levels prevailing in 2016; this additional investment is needed to underpin future improvements in living standards.

1.2 Short-term Economic and Budgetary Outlook

A confluence of factors is contributing to an increasingly fragile global economy at present. Rising trade tensions, fading fiscal stimulus in the US, a slowing Chinese economy, emissions-related difficulties in the German auto sector and uncertainty related to the timing and form of the UK's exit from the EU, are all dampening global economic activity. Many of these factors are inter-related and, at least at this stage, appear unlikely to subside in the near-term.

Table 1: summary – main economic and fiscal variables, per cent change (unless stated)

	2018	2019	2020	2021	2022	2023	2024
<i>Economic Activity</i>							
Real GDP	8.2	5.5	0.7	2.5	2.8	2.7	2.6
Real GNP	6.5	4.3	-0.1	2.4	2.5	2.4	2.3
<i>Prices</i>							
HICP	0.7	0.9	1.3	1.4	1.8	2.0	2.1
Core HICP [^]	0.2	1.0	1.5	1.6	1.8	2.0	2.1
GDP deflator	0.8	0.4	1.6	1.4	1.4	1.4	1.4
<i>Balance of Payments</i>							
Trade balance (per cent of GDP)	33.1	23.5	31.1	32.9	33.0	32.8	32.6
Current account (per cent of GDP)	10.6	0.1	7.0	8.7	8.5	8.1	7.5
<i>Labour Market</i>							
Total Employment ('000)	2,258	2,312	2,330	2,355	2,389	2,429	2,475
Employment	2.9	2.4	0.8	1.1	1.5	1.7	1.9
Unemployment (per cent)	5.8	5.2	5.7	5.9	5.9	5.7	5.5
<i>Public Finances (per cent of GDP)</i>							
General government balance	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Structural balance ^{^^}	0.2	-0.4	-0.4	-0.5	-0.7	-0.7	-0.5
Debt ratio (year-end)	63.5	59.3	56.5	56.4	54.4	53.8	53.0
Net debt position (year-end)*	54.9	51.4	51.2	50.1	49.5	48.8	47.9

[^] core inflation excludes energy and unprocessed food from the index.

^{^^} structural balance generated by output gap measures based on the Department of Finance's GDP-based methodology.

* net debt figures estimated based on a mechanical extrapolation of assets.

Source: CSO and Department of Finance.

An important side-effect of a deteriorating global outlook has been the increase in capital flows into sovereign debt at the expense of riskier assets ('flight to safety' – see box 3), with yields across most sovereign debt declining over the summer. While positive from a sovereign financing perspective, this raises other challenges (box 3).

On the domestic front, low frequency data point to some moderation in the pace of economic expansion in the second quarter of this year, while higher frequency data – both hard and soft – suggest that this

has continued into the third quarter. On the assumption of a disorderly 'Brexit' – the baseline scenario underpinning *Budget 2020* – economic activity could slow sharply in the final quarter. For this year as a whole, GDP growth is estimated at 5.5 per cent this year; growth in modified domestic demand (MDD) – a better barometer of economic conditions in Ireland – is estimated at 3.2 per cent. An increase of 2.4 per cent (54,000 jobs) in the level of employment is anticipated, leaving the unemployment rate at 5.2 per cent.

The assumed disorderly Brexit will weigh on Irish economic activity next year, with a decline in 'indigenous' sector exports in prospect. The analysis in this document assumes that exports in the broad multinational sector are less affected so that, in aggregate terms, modest export growth is projected. Heightened uncertainty will likely hold back investment, most notably in the SME sector, while the household sector is expected to adopt a cautious approach by increasing savings from disposable income. In overall terms, GDP growth of just 0.7 per cent is in prospect for next year, with MDD growth at 1.4 per cent. The pace of employment growth will slow to 0.8 per cent next year (an additional 19,000 jobs); this would be slower than the assumed increase in labour supply so that the unemployment rate is projected to rise to 5.7 per cent. These projections have been endorsed by the *Irish Fiscal Advisory Council*.¹ The Council has also pointed out the large uncertainty around this given the unprecedented nature of a disorderly Brexit, and the Department shares this assessment. The same is true for the forecast of the budgetary position next year. The Department is forecasting a deficit of -0.6 per cent, but in reality there is a wide margin around this given this unprecedented event.

Taxation receipts are projected at €58.6 billion for this year, an estimate which is €0.2 billion higher than at the time of the spring forecasts, and 5.5 per cent higher than last year. For next year, receipts are forecast at €61.1 billion, an increase of 4.3 per cent. However, when the distortionary impact of the increased Customs yield due a no-deal Brexit (explained in more detail in Table 11) is removed tax growth in 2020 is forecast at a modest 2.8 per cent.

On the expenditure side, voted expenditure is projected at €67.4 billion this year. The full-year voted expenditure figure is made up of a 5.2 per cent year-on-year increase in current expenditure and a 24.6 per cent increase in capital expenditure, consistent with the Government's strategy of boosting productive investment as set out in the *National Development Plan 2019-2027*. For next year, voted expenditure is set at €70 billion, a 5.1 per cent annual increase compared to 2019 allocations. Within this, capital investment will increase further as the Government continues to invest in the future.

In general government terms, a surplus of 0.2 per cent of GDP is assumed for this year. For next year, the headline balance is projected to move back into deficit on foot of weaker economic activity as well as the need for discretionary support for those sectors most exposed to a disorderly Brexit. Given the unprecedented nature of a disorderly exit, there is considerable uncertainty attached to any point estimate for the headline balance. Of course, if a disorderly exit does not materialise – either because of further deadline extensions or if the *Withdrawal Agreement* is ratified by the UK parliament – then economic activity would be stronger than in the central case, likely resulting in a general government surplus.

¹ The presentation provided by Department of Finance staff to the IFAC is available at: <https://assets.gov.ie/34856/7d7300227c4a4d418e62fb47a8a01dc2.pdf>

In the event of a disorderly Brexit, the Government will provide financial support to the economy, in the first instance through higher unemployment-related spending. The Government will also provide timely targeted support to viable firms and enterprises. This will build on existing supports, and will be designed to address transitional issues such as cash-flow problems and market diversification.

The exact economic impact of a disorderly Brexit is, quite simply, unknown. If the economic fallout is larger than assumed, the Government will allow a larger deficit to emerge - in other words, the Government will borrow additional funds in order to cushion the economic impact. If additional borrowing becomes counterproductive, then the Government is prepared to use the Rainy Day Fund in order to support the economy in a counter-cyclical manner.

An important milestone is in prospect for this year, namely that the ratio of debt-to-GDP is projected at below the 60 per cent threshold set out in the *Stability and Growth Pact*, for the first time in the post-crisis era. Having said that, and as set out in the Department of Finance's *Annual Report on Public Debt in Ireland 2019*, public indebtedness remains very high in Ireland, reaching an estimated 100.2 per cent of modified GNI (GNI*) this year. This is a vulnerability that must be addressed and is why reducing public indebtedness remains a key priority for Government. At the same time, it is important to highlight that as well as financial liabilities, Government has also accumulated financial assets equivalent to around 13 per cent of GNI*. Therefore, net public indebtedness is estimated at 87 per cent of GNI* for this year.

Chapter 2 Economic Outlook

2.1 Summary

Many of the risks previously identified have come to pass. The global economic backdrop is much less benign than assumed in the Department's spring forecasts and, for Budgetary planning purposes, the UK is assumed to exit the EU at the end of October this year. This will dent economic activity in the final quarter of this year and severely impact it next year. GDP growth of just 0.7 per cent is forecast for next year, although given the unprecedented nature of a Brexit shock, the uncertainty attached to this point-estimate is much higher than normal, with risks highly skewed to the downside.

2.2 Macroeconomic Outturn 2019

On the back of very strong export figures in the first half of the year, particularly on the services side, the Department has revised upwards its forecast for GDP growth this year to 5.5 per cent, an upward revision of just over 1½ percentage points. This projection would be closer to 6 per cent were it not for the assumed impact of a no-deal Brexit in the fourth quarter (see box 4). Growth in the domestic economy, as proxied by modified domestic demand (MDD – see glossary, annex 3), is somewhat softer than expected, mainly on foot of weaker-than-expected 'modified' investment.

A range of indicators, such as retail sales and vehicle licenses, as well as the Department's own *nowcast* models (see box 1) point to growth in consumer spending of 2.7 per cent this year, a moderation on growth rates recorded in recent years. Despite solid growth in employment and incomes, and continued muted inflation, consumption growth appears to be lagging somewhat, with an elevated savings rate as a result. Household consumption decisions appear to have been affected by heightened uncertainty associated with Brexit, as reflected in very weak consumer confidence in recent months.

Another expenditure aggregate that is also affected by uncertainty is investment, as this is spending that is costly to reverse. Modified investment is now expected to grow by only 3.2 per cent this year, about 4 percentage points below expectations in the spring forecasts. Private investment is being squeezed by the twin uncertainties of Brexit and the broader global downturn, with machinery and equipment investment (excluding aircraft) particularly weak as a result. As has been the case in recent years, 'headline' investment is distorted by the activities of the multinational sector: as a result of significant intellectual property (IP) on-shoring in the second quarter of the year, it is now expected to grow by 50 per cent, although the aggregate impact on GDP is neutral, as the assets were imported in their entirety. On the housing side, completions data for the year to date are indicative of a modest softening in the pace of expansion; 21,000 additional units are expected to be completed this year, a 17 per cent annual increase.

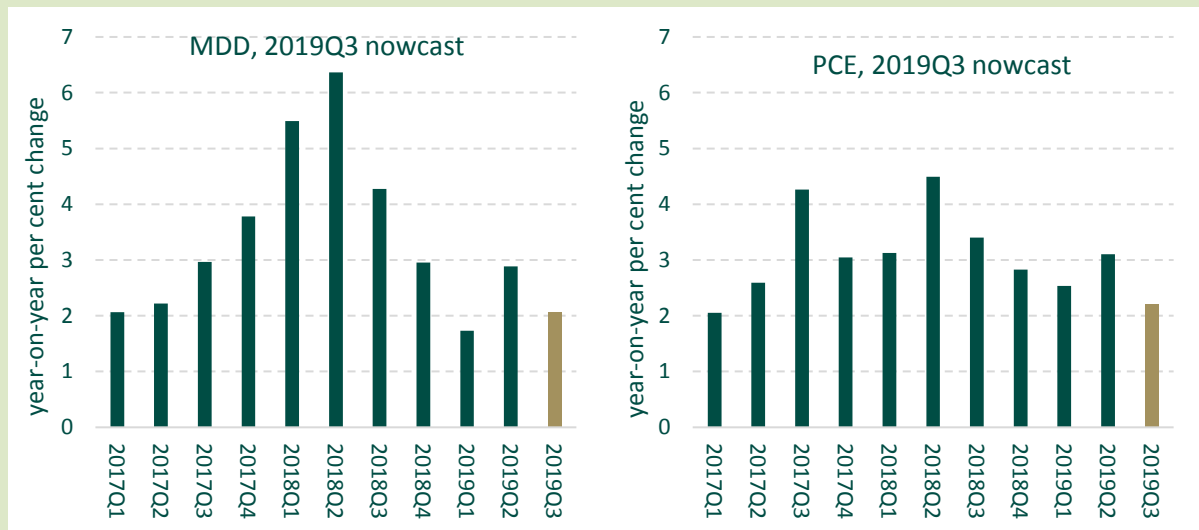
On the external front, a surge in exports of computer services this year has more than compensated for a moderation in goods exports. Services exports grew by just under 15 per cent in the first half of the year, with gross value-added in computer services up 30 per cent, an outcome which is probably not unrelated to recent on-shoring of IP assets. Exports are now projected to grow by 10.2 per cent, with imports up by 22.6 per cent, the latter figure inflated by the impact of IP on-shoring.

Box 1: 'Now-casting' the Irish Economy – where are we now?

Forecasting future economic developments is always challenging. However, there is also considerable uncertainty surrounding economic developments as they unfold, i.e. in 'real-time'. This uncertainty is partially explained by the unavoidable delay which often characterises the publication of macroeconomic data. For example, the estimate of Irish economic performance for the third quarter of 2019 will not be published until early-December 2019, around two months after the third quarter has ended. This delay means that the published data are (unavoidably) somewhat dated by the time of publication, limiting their usefulness in explaining Irish economic developments in real-time.

To overcome this unavoidable timing issue, economists typically make use of 'higher frequency' data – unemployment rate, retail sales, tax revenue, economic sentiment indicators, etc. – in order to obtain a more timely insight into the current performance of the economy. However, these higher frequency indicators are often volatile, making it difficult to distinguish between developments in underlying economic activity and from what is loosely termed 'noise'. To address this shortcoming, statistical methods are sometimes used to extract a common 'signal' from the large dataset of domestic high frequency indicators; this signal can then be used to produce real-time estimates of economic activity. This approach is commonly referred to as 'now-casting', and is widely used in economic institutions.

Figure 1: 2019 Q3 Nowcasts of modified domestic demand (MDD) and private consumption (PCE)



Source: Department of Finance calculations based on data from various sources including CSO

'Now-casting', defined as "*the prediction of the past, the very near future, and the very recent past*" (Banbura, Giannone and Reichlin 2011), is a useful procedure which provides early estimates of key economic variables, typically measured at quarterly frequency, by using information contained in higher frequency or monthly data. Initial application to Irish economic data focused on now-casting GDP; this, however, has fallen out-of-favour, given the inadequacy of GDP at capturing domestic economic developments.

The Department of Finance now-casts several key macroeconomic variables, including Modified Domestic Demand (MDD) and Personal Consumption Expenditure (PCE). Estimates for the third quarter of 2019 are presented above. The now-cast for both variables suggests annual growth of approximately 2 per cent for the third quarter. For PCE, the estimates helped inform the estimate for the year as a whole: the average of the third quarter now-cast and the outturn data for the first half of the year is 2.6 per cent, broadly in line with the Department's forecast of 2.7 per cent for 2019. The results will be updated as more high frequency data are made available. A paper outlining the Department's now-casting approach will be published later this year.

2.3 Macroeconomic Projections 2020

2.3.1: External Assumptions

The external economic environment has become more challenging. Rising trade tensions, wider geopolitical developments and the prospect of a disorderly Brexit have raised uncertainty and, accordingly, dampened investment. In addition, growth in global trade has slowed considerably, partly because of the softening in investment (trade in investment goods is an important component of world trade). Country-specific developments are also contributing to the global slowdown: a fading fiscal stimulus in the US, difficulties in the auto sector in Germany and the slowing Chinese economy.

The year-long trend of softening growth is set to persist into 2020. In the euro area, incoming data have disappointed over the summer and have prompted a re-starting of the ‘Quantitative Easing’ programme by the European Central Bank.

Output in the UK economy contracted by 0.2 per cent in the second quarter, primarily due to a slowdown in manufacturing as well as some de-stocking (there is some evidence of stockpiling in the UK during the first quarter, prior to the original Brexit deadline). High frequency indicators point to continued softness in the third quarter, as uncertainty weighs on investment and consumer spending.

The US economy is now in its longest continuous expansion on record, although the pace of growth is set to slow in the short-term as the impact of fiscal stimulus fades. Indeed, forward-looking indicators, including an ‘inverted’ yield curve², are consistent with a maturing of the US economic cycle. The most recent data show a quarterly GDP growth rate of 0.5 per cent in the second quarter of this year, and high frequency data point to a further moderation in the second half of this year.

Table 2: external assumptions, per cent change (unless stated)

	2018	2019	2020	2021	2022	2023	2024
External import growth							
United States	4.6	2.9	2.2	3.5	2.8	2.6	2.1
Euro area	3.0	3.1	2.7	3.9	3.8	3.8	3.7
United Kingdom	0.7	2.7	1.0	1.7	1.8	1.8	1.8
Technical assumptions							
Euro-sterling exchange rate (€1=)	0.88	0.89	0.90	0.90	0.90	0.90	0.90
Euro-dollar exchange rate (€1=)	1.18	1.12	1.10	1.10	1.10	1.10	1.10
Brent crude (dollars per barrel)	71.6	63.1	57.5	56.5	56.5	56.5	56.5

Oil prices (futures) in 2019 – 2024 are calculated on the basis of futures markets as of mid-September 2019. Oil prices are held constant from 2021 onwards.

Exchange rate outturns as of mid-September 2019 and unchanged thereafter.

It is important to note that the economic forecasts outlined in this table are on the basis of an orderly exit of the UK from the EU. The Department of Finance forecasts are based on the assumption of a disorderly exit, necessitating an element of judgement when compiling the external demand assessment.

Source: IMF World Economic Outlook (April 2019 Update) with adjustments to 2019 and 2020 calculated based on OECD Economic Outlook (September 2019).

² See box 1 “The yield curve in the US – information content”, Stability Programme Update 2019, available at: <https://www.gov.ie/en/publication/e97b68-stability-programme-update-2019-april-2019/>

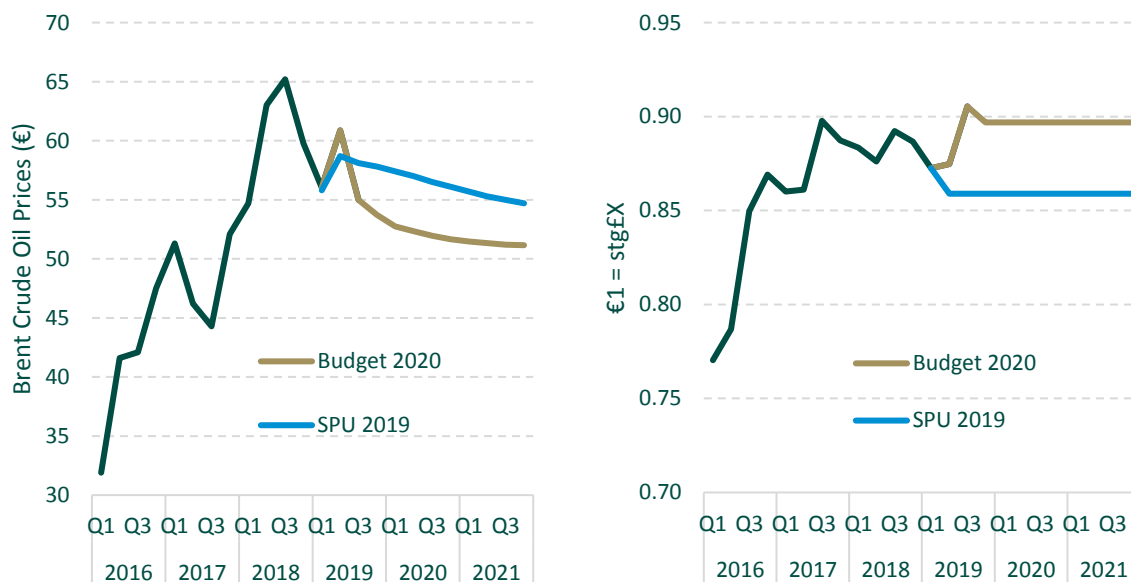
These three regions – the euro area, UK and US – are the destination for around three-fifths of Irish goods and services exports. Elsewhere, growth in the Chinese economy has moderated, in part due to higher tariffs, while in Japan, weaker external demand and a resumption of fiscal consolidation (2 pp. increase in the consumption tax rate) are weighing on activity. Finally, it is also worth noting developments in the Argentinian economy – while not a major trading partner for Ireland it is a G20 country – which has shown signs of severe distress of late, although there is little evidence yet of contagion effects.

Oil prices are currently lower than assumed in the Department’s spring forecasts *inter alia* reflecting the deterioration in the global outlook. Notwithstanding disruptions to Saudi Arabian supply, futures markets point to oil prices averaging \$57.5 (€52.2) per barrel next year, a decrease of 9 per cent (in dollar terms) relative to this year.

In terms of exchange rates, the euro-sterling bilateral rate averaged €1 = stg£0.90 in the first half of September, the cut-off point for compilation of the macroeconomic forecasts set out in this document (see box 2). On the basis of the purely technical assumption of no further change, this would imply a euro appreciation of around 1 per cent next year relative to this year (and an appreciation of 4.5 per cent relative to the technical assumption that was set out in the spring forecasts).

The euro-dollar bilateral rate averaged €1 = \$1.10 in the first half of September. Again on the basis of the purely technical assumption of no further change, this would imply a euro depreciation against the dollar of around 1.5 per cent next year relative to this year.

Figure 2: change in external assumptions relative to spring forecasts



SPU relates to Stability Programme Update, which incorporates the Department’s spring forecasts. In relation to exchange rates, the standard approach is to hold these constant at rates prevailing at a certain cut-off point (mid-March for the Department’s spring forecasts and mid-September for the Department’s autumn forecasts). Thus, given the appreciation of the euro against sterling since the spring, holding the exchange rate unchanged at mid-September levels would imply an appreciation of 1.6 per cent for 2019 relative to what had been assumed in the spring.

Source: Macrobond (for oil prices) and Central Bank of Ireland (for exchange rate data).

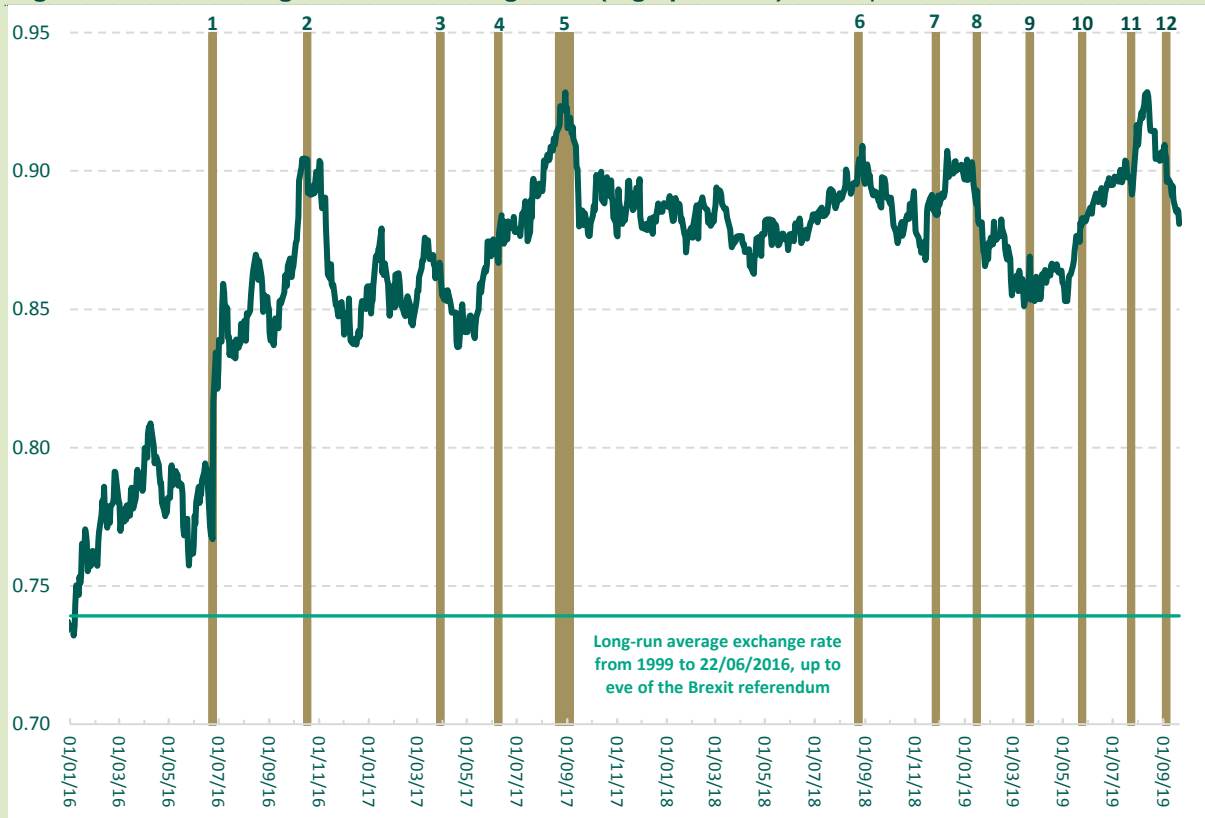
Box 2: 'Brexit' and the euro-sterling bilateral exchange rate

This box updates Box 5: 'Brexit through the prism of the euro-sterling bilateral exchange rate' set out in the *Stability Programme Update*, April 2019, which documented the evolution of the euro-sterling bilateral rate since the in-out referendum in the UK in June 2016 (the updating is necessitated given the importance of the euro-sterling exchange rate as a transmission mechanism for the Brexit 'shock').

As previously outlined, a disorderly exit would permanently damage UK growth prospects. This supply-side hit arises because of lower trade which, in turn, permanently lowers productivity, the latter being the key driver of living standards over the medium- and longer-term. Lower growth prospects, in turn, reduce the return on UK assets, prompting lower (net) capital inflows and, accordingly, sterling depreciation.

At end-March (the cut-off point for the Department's spring forecasts as set out in the SPU), the euro-sterling bilateral rate was €1 = stg£0.86. Since then, the probability of a UK exit from the European Union without ratification of the *Withdrawal Agreement* appears to have increased. This, in turn, has triggered a further depreciation of sterling. By mid-August, the bilateral rate reached €1 = stg£0.93 the highest since end-August 2017. The UK currency has regained some of its lost ground since then, although there remains the possibility of a significant sterling depreciation in the event of a disorderly exit.

Figure 3: Euro-sterling bilateral exchange rate (stg£ per euro), 2016-present



Source: Macrobond, Department of Finance.

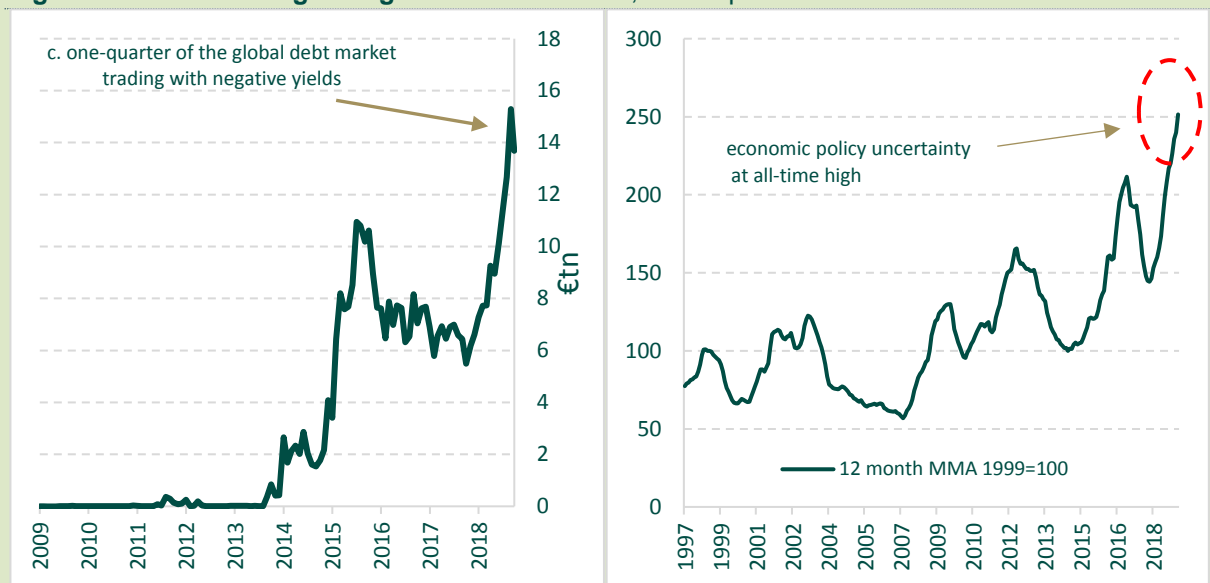
- | | |
|--|--|
| 1 UK referendum vote | 7 EU endorses withdrawal agreement |
| 2 Article 50 legal challenge | 8 MPs reject withdrawal agreement |
| 3 Article 50 triggered | 9 European Council agrees Article 50 extension options |
| 4 UK General Election | 10 May announces resignation |
| 5 Next round of talks begin | 11 Johnson elected PM |
| 6 UK publishes no-deal planning papers | 12 MPs back deal to block no-deal Brexit |

Box 3: Negative interest rates

The level of global uncertainty is exceptionally high at present (figure 4), with multiple factors – including a trade war, geopolitical developments in some regions, the UK’s future relationship with the EU – behind this. This uncertainty, together with a generalised downgrading of future growth prospects, has prompted a financial market ‘flight to safety’, with investors increasingly moving into sovereign and high-grade corporate debt in recent months.

Increased demand for risk-free assets, alongside reduced supply (as many sovereigns are now running surpluses) has pushed up the price and, accordingly, yields (which move in the opposite direction to prices) have fallen. In many cases, yields are in negative territory: if held to maturity, the holders of these debt instruments receive less than they paid for these assets. To put this into perspective, figures show that, at end-August, the value of global debt with negative yields amounted to c. €15 trillion (figure 4), roughly one-quarter of the value of all bonds outstanding.

Figure 4: Bonds trading at negative interest rates, 2009 - present



Source: Bloomberg, Macrobond, Department of Finance.

In terms of financing the sovereign, this trend is a positive one in that *ceteris paribus* it makes a given level of public indebtedness more sustainable. However, negative interest rates have important side-effects – including for financial stability – that cannot be ignored. A non-exhaustive list would include the sustainability of the banking system’s business model, which is based on ‘maturity transformation’, i.e. borrowing short and lending long; negative yields jeopardise this model (especially with an inverted yield curve). In addition, long-term investors (e.g. pension funds; insurers) require a certain return from fixed-income instruments in order to meet their long-term liabilities; this is increasingly difficult in an environment of negative yields. To date, retail deposits have been shielded from the direct impact of negative interest rates because European banks have not sought to pass on this cost. As the current interest rate cycle continues for longer than originally anticipated, it remains to be seen how sustainable this approach is.

While not tested or elaborated upon here, there is also the possibility that bond prices may have overshot. Asset price bubbles are characterised by cheap money fuelling a rise in price in excess of a level consistent with ‘fundamentals’. If this was indeed the case, a reversal of recent trends could entail a substantial correction in prices and, accordingly, a rise in the cost of borrowing, including for the sovereign.

Table 3: macroeconomic prospects

	2018	2019	2020	2021	2022	2023	2024
	<i>year-on-year per cent change</i>						
real GDP	8.2	5.5	0.7	2.5	2.8	2.7	2.6
nominal GDP	9.1	5.9	2.4	3.9	4.3	4.1	4.1
real GNP	6.5	4.3	-0.1	2.4	2.5	2.4	2.3
	<i>year-on-year per cent change (real)</i>						
components of GDP							
personal consumption	3.4	2.7	1.4	1.9	2.1	2.3	2.4
government consumption	4.4	4.5	3.5	2.0	2.0	2.0	2.0
investment	-21.1	50.4	-24.0	-3.6	3.9	3.9	3.9
<i>modified investment</i>	8.5	3.2	-0.2	3.4	3.9	4.2	4.2
stock changes [^]	-1.7	-0.1	0.0	0.0	0.0	0.0	0.0
exports	10.4	10.2	0.9	4.2	4.1	4.0	3.9
imports	-2.9	22.6	-6.5	2.9	4.4	4.6	4.5
	<i>annual percentage point contribution</i>						
contributions to growth							
modified domestic demand	2.7	1.8	0.8	1.3	1.4	1.5	1.5
modified net exports	7.8	3.8	-0.1	1.2	1.4	1.2	1.1
stocks changes	-1.7	-0.1	0.0	0.0	0.0	0.0	0.0
statistical discrepancy	-0.6	0.0	0.0	0.0	0.0	0.0	0.0
	<i>€ millions</i>						
current prices							
GDP (nearest €25m)	324,050	343,200	351,350	365,225	380,725	396,450	412,550
GNP (nearest €25m)	253,050	265,275	269,425	279,675	290,575	301,625	312,650
GNI* (nearest €25m) ^{^^}	197,450	203,275	203,700	210,675	218,125	225,550	232,750

Rounding can affect totals.

[^] contribution to GDP growth.

^{^^} based on GNI less depreciation of R&D-related service imports and trade in IP, depreciation of aircraft for leasing, and net factor income of re-domiciled PLCs.

Modified domestic demand = a measure of domestic demand that excludes investment in aircraft for leasing and investment in R&D from abroad.

Modified net exports = a measure of underlying net exports that excludes the imports associated with aircraft leasing and imports of R&D.

Source: 2018 - CSO; 2019 to 2024 - Department of Finance.

The macroeconomic projections in table 3, are based on an assumption of a disorderly no-deal Brexit in the fourth quarter of this year. As outlined in box 4, in order to construct a set of projections under a 'no-deal' scenario, a view must be taken on a *counterfactual* scenario, namely one where a deal is reached. The impact of model simulations that quantify the impact of a disorderly Brexit – as previously published by the Department based on joint work with the ESRI – is then applied to a 'deal' scenario in order to arrive at a 'no-deal' scenario.

Box 4: Constructing a disorderly exit economic forecast

The Government decided in September that *Budget 2020* will be based on the assumption of a disorderly Brexit in the final quarter of this year. This necessitates the production of macroeconomic forecasts based on a disorderly exit. Operationalising this involved a number of steps, set out in figure 5 below.

Figure 5: Operational sequencing



Source: Department of Finance

First, an updated assessment – incorporating new economic information – was made regarding the short-term outlook for the economy, based on the assumption that an orderly UK exit takes place. Since the Department’s spring forecasts, the outlook for the world economy has deteriorated, warranting a downward revision to the export growth forecast for next year. Implicit within this view is an assumption that the rapid expansion in computer services tapers in 2020. On the domestic front, a moderation in (modified) domestic demand has become evident, suggesting more modest growth, including in employment.

Table 4: Deal counterfactual projection

Growth rate (unless otherwise stated)	2018	2019	2020
GDP	8.2	5.9	3.1
Consumption	3.4	2.8	2.4
Modified investment	8.5	3.7	3.9
Modified domestic demand	4.7	3.3	3.0
Exports	10.4	11.0	4.2
Employment growth	2.9	2.4	1.7
Unemployment rate	5.8	5.2	5.1

Source: Department of Finance

The results of this ‘counterfactual’ deal scenario are presented in table 4. Once this counterfactual projection has been produced, the results of joint work by the Department of Finance and ESRI using the COSMO macroeconomic model are then applied to these projections in order to produce a disorderly exit forecast.³ In applying these results to construct a short-term forecast, it is important to note that these models are mainly anchored in the medium-term: the model results are primarily used to determine the level of output and employment in the medium-term (see box 5).

Accordingly, a number of adjustments are necessary. Firstly, expert judgement is used alongside the model predictions to calibrate the short-term impact and to assess the year-to-year trajectory. Secondly, an adjustment arises because of timing; the original modelling work assumed a Brexit shock in the first quarter of this year and this has now shifted to the fourth quarter. Finally, an assumption is required regarding the timing of increased FDI flows (relocation of existing investment from the UK and diversion of new investment from the UK). In the no-deal forecasts, the additional FDI flows are assumed to occur with a 2-year lag, i.e. there is no additional (Brexit-induced) inward FDI for 2 years.

³ ^ See Bergin et al (2019): Ireland and Brexit: modelling the impact of deal and no-deal scenarios. Available at: <https://www.gov.ie/en/publication/ca41b6-r/>

Box 5: Applying macroeconomic models to generate short-run projections

Notwithstanding important diversification in recent decades, Ireland retains strong trade, investment and labour market links with the UK, unsurprising given geographical proximity. The exit of the UK from the EU, therefore, constitutes a significant shock for the Irish economy. In the short-run, aggregate demand will be lower on foot of the UK's exit. However, it is important to stress that UK exit is more fundamentally a supply-side shock, i.e. it is a permanent hit with the loss of output not being recovered.

In order to advise Government, the Department has conducted a considerable volume of economic analysis, focussing on the main transmission channels, quantifying the impact and identifying the sectors most exposed. In order to quantify the potential costs, the Department, in conjunction with the ESRI, has published a range of scenarios using a structural model ('COSMO') of the Irish economy.

This model-based assessment of the impact of Brexit is in line with the approach taken by national and international agencies. Structural models are a powerful tool for providing insights into complex policy scenarios. The models self-equilibrate in the medium-term through price and wage adjustments which bring the economy back in line with its potential: put simply, the production of goods and services (demand) in the medium-term is consistent with the full utilisation of capital and labour (supply), with product and factor prices adjusting in order to achieve balance. Owing to this structure, and their wide-scale use internationally, there is a reasonable degree of confidence in their quantification of the medium- and long-term impact of shocks. Having said that, it must be recognised that even the medium- to long-term results have a margin for error, given the unprecedented nature of the current shock. For instance, there is particular uncertainty around the level of non-tariff barriers post-Brexit, while the impact of Brexit on productivity remains unclear.

These types of model are, however, less suited to assessing short-term impacts. Moreover, the short-term uncertainty is exacerbated by the nature of the Brexit-induced shock. Relative to other policy scenarios typically assessed, there are a very large array of channels through which Brexit could impact the Irish economy and a large degree of uncertainty about the quantification of these channels. The overriding issue is that the departure of the UK from the EU represents a G7 economy leaving a trading block that has been in a process of deepening economic integration for several decades. This is without historical precedent and there are simply no available comparisons.

For the short-term a further complicating factor is the issue of timing. In attempting to quantify the impact of Brexit on the Irish economy, it is assumed that there will be a negative impact on trade and a potential positive from foreign direct investment (FDI). However, the timing of when these two opposing factors – lower exports and higher investment – begin to offset each other is unclear. It is also difficult to model the dynamics of important short-term factors, such as uncertainty and exchange rates. In assessing the short-term impact, this necessitates an element of expert judgement that complements the model results.

The central forecast set out in this document is the Department's best assessment – combining model results with expert judgement – of the short-term prospects for the Irish economy. However, given the uncertainty associated with such an unprecedented event, the impacts could potentially be more severe, especially in the short-run. These could arise, for instance, if a disorderly exit was to have significant supply-chain disruption that inhibited the completion of final products, or if the impacts were to disproportionately fall on certain groups for whom reallocation to other activities was not feasible. Over the medium-term, output would be lower if the assumed uptick in foreign direct investment did not materialise.

The main channel through which a disorderly UK exit impacts the Irish economy is via trade, with tariff and non-tariff barriers weighing on exports. A disorderly exit also results in lower activity in the UK and elsewhere, further reducing the demand for Irish exports. The impact in the more traditional

manufacturing sectors could be severe, especially if tariff and non-tariff measures on their UK-sourced intermediate inputs led to production shortages. The impact on exports from the multinational sector is assumed to be fairly modest, as these are less reliant on the UK market and less responsive to short-term fluctuations in global demand – the current very strong growth in exports of computer services is a case-in-point. In aggregate terms, export growth of less than one per cent is expected next year, a sharp slowdown from the projected 2019 outturn of around 10 per cent.⁴

On top of the already muted outlook for investment arising from the increasingly uncertain external environment, the impact of a disorderly exit will lead to a decline in modified investment (-0.2 per cent) levels next year. This will be most evident in investment in machinery and equipment excluding aircraft, which is expected to be down sharply on the 2019 outturn, as the private sector holds back investment plans in the face of weaker external demand and heightened uncertainty. Construction investment will provide some support, with housing output expected to increase again, due to pent-up demand and other structural factors. The continued roll-out of the public capital programme will also provide support to investment. As a result, headline investment is expected to be down significantly next year (-24 per cent), impacted to a large extent by an assumption of a return to more normal levels of IP on-shoring (the ‘base effect’ associated with the large IP investment in the second quarter of this year).

While the initial impact of a disorderly exit will be felt in the traded sector, the impacts will likely quickly spread to the domestic economy, including the labour market. Households are assumed to increase precautionary saving which, when combined with more modest disposable income growth, will slow the pace of private consumption expenditure, which is forecast to increase by just 1.4 per cent next year, the lowest rate since 2013.

2.4 Balance of Payments

The external position is expected to be broadly balanced this year, a significant decline from the 10.6 per cent surplus recorded in 2018. The large downward shift is temporary, as it is driven almost entirely by large-scale on-shoring of intellectual property (IP) assets in the second quarter of this year. The impact of this on-shoring – an import – is to reduce the trade balance for this year, notwithstanding a continued strong export performance. For the year as a whole, the trade surplus is projected to fall to 23 per cent of GDP, an annual decline of around 10 percentage points. The income balance is also projected at 23 per cent of GDP, driven by the higher net profit outflows associated with the rapid export growth evident in the foreign-owned sectors. Profit outflows are tempered, however, by a rise in the depreciation bill due to the on-shoring of IP assets in the second quarter (profits are recorded net of depreciation, hence a higher depreciation charge reduces profit outflows).

For next year, a current account surplus of 7 per cent of GDP is in prospect. Whilst this is an improvement on 2019, it remains below the 2018 level. This is due to the impact of a no-deal Brexit on Irish trade, in particular with the UK, which reduces export growth substantially (and increases import prices). The impact on exports is greater than the impact on profit outflows as the shock is concentrated primarily in domestic rather than multinational firms, which leads to a lower current account balance.

⁴ It should be noted that in Bergin *et al* (2019) the long-term impacts of a no-deal Brexit are front-loaded, with half of the impacts taking place in the first year. Furthermore, an additional ‘disorderly’ impact is felt in the first year, through higher-than-assumed non-tariff measures, as a proxy for *inter alia* delays at ports, etc.

The headline current account in Ireland, however, is inflated by a variety of statistical factors related to globalisation, including the depreciation of Irish-based, foreign-owned capital assets (specifically, IP and aircraft related to leasing) and the profits of re-domiciled PLCs.⁵ The modified current account (see glossary) adjusts for some of these factors and, as such, is a better measure of the underlying current account position. A modified current account surplus of 5.2 per cent of GNI* (modified Gross National Income – see glossary) is forecast this year (which excludes the IP on-shoring bringing down the headline current account balance). This surplus is projected to fall to 2.4 per cent of GNI* next year and reduce gradually to zero over the medium-term, on foot of a moderation in export growth and an increase in output in the non-tradeable (i.e. construction) sector.

Table 5: savings, investment and the balance of payments, per cent of GDP (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Gross Savings	34.5	33.9	32.6	32.9	33.1	33.0	32.8
<i>of which:</i>							
- households	3.6	1.4	-1.0	-1.2	-1.2	-1.5	-2.4
- corporate	28.7	29.9	30.7	30.5	30.1	29.6	29.6
- government	2.3	2.7	3.0	3.6	4.2	4.9	5.6
Investment [^]	23.9	33.8	25.7	24.3	24.6	25.0	25.3
<i>of which:</i>							
- building and construction	7.5	7.8	8.2	8.5	8.8	9.1	9.4
- other investment	15.9	25.5	17.1	15.4	15.4	15.5	15.6
: investment in tangible assets	7.6	7.3	7.1	7.0	7.0	6.9	6.9
: investment in intangible assets	8.4	18.2	10.0	8.4	8.5	8.6	8.7
- change in stocks	-1.7	-0.1	0.0	0.0	0.0	0.0	0.0
- statistical discrepancy	2.2	0.6	0.4	0.4	0.4	0.4	0.3
Current account	10.6	0.1	7.0	8.7	8.5	8.1	7.5
<i>of which:</i>							
- trade balance	33.1	23.5	31.1	32.9	33.0	32.8	32.6
- income balance	22.6	23.4	24.1	24.2	24.5	24.7	25.0
Modified current account ^{^^}	6.6	5.2	2.4	2.2	1.9	1.2	0.1

Rounding can affect totals.

[^] More specifically, gross capital formation which is the sum of gross domestic fixed capital formation, changes in stocks and the statistical discrepancy.

^{^^} expressed as per cent of modified GNI.

Source: 2018 - CSO; 2019 to 2024 - Department of Finance.

2.5 The Labour Market

The level of employment grew by 63,000 over the first half of the year in annual terms, a 2.8 per cent increase, with the level of employment standing at 2.3 million at the end of the second quarter. While this represents a more rapid expansion than expected, most of the increase occurred in the first quarter.

The seasonally adjusted unemployment rate stood at 5.2 per cent at the end of the second quarter, a level close to what could reasonably be considered full-employment. Monthly unemployment rate data in the period since then suggest that the downward trend in the unemployment rate may have come to a stop; indeed, the rate over the summer ticked up slightly to 5.3 per cent. While this series is prone to

⁵ For a detailed analysis of both the headline and modified current accounts, see Department of Finance (2019), *The Balance of Payments in Ireland: Two Decades in EMU* Available at: <https://assets.gov.ie/27044/76703b33310041eaa98fa0c6052f3d1f.pdf>

regular revisions, the trend is indicative of a softening in the pace of expansion, with both demand- and supply-side factors likely at play. With the labour market close to full-employment, the main source of expansion has been through demographic factors, including net migration, with changes in the stock of unemployed playing a much smaller role.

For this year as a whole, an expansion in employment of 2.4 per cent is projected, an average year-on-year increase of 54,000 persons. This implies a moderation in the rate of growth over the second half of the year. Overall the unemployment rate is expected to average 5.2 per cent for the year.

The impact of the assumed disorderly UK exit in the fourth quarter of this year is not expected to have an immediate impact on the labour market, with some of the impact essentially already 'priced-in' to hiring decisions that have already taken place. However, the impact in 2020 will be very significant, as the initial shock to the traded sector feeds through to the rest of the economy. Employment growth of just 0.8 per cent is projected, the equivalent of 19,000 jobs. Employment gains will be concentrated in sectors least exposed to a disorderly exit while employment losses are assumed in UK-facing sectors. With the labour force also growing due to natural increase and net migration, the number of unemployed persons is projected to rise by about 15,000 in net terms, resulting in an average unemployment rate of 5.7 per cent for the year as a whole.

After a number of years of relatively modest wage growth, recent quarters have seen a pick-up in hourly earnings growth, as the labour market closes in on full-employment. For instance, average weekly earnings rose by 3.5 per cent in the second quarter this year, driven by an hourly earnings increase of 3.8 per cent alongside a modest decline in average hours worked. Hourly earnings grew by almost 4½ per cent in the private sector, indicative of labour shortages in certain sectors. Indeed, large variations in pay growth are evident across sectors, with some sectors such as ICT and Administrative and Support Services experiencing pay growth far in excess of the average.

Average pay growth of 3.5 per cent is expected for this year, a sharp pick-up on the 2018 outturn. While the impact of a no-deal Brexit will cause unemployment to rise next year, certain high-tech and/or multi-national dominated sectors will continue to experience robust pay growth due to the muted impact in these sectors and the already tight labour market. An increase of 3 per cent is projected for 2020.

Table 6: labour market prospects, per cent change (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Employment	2.9	2.4	0.8	1.1	1.5	1.7	1.9
Unemployment rate (LFS basis)	5.8	5.2	5.7	5.9	5.9	5.7	5.5
Labour productivity [^]	5.1	3.0	-0.1	1.4	1.4	1.0	0.7
Compensation of employees*	5.9	6.5	4.3	4.4	5.0	5.5	6.0
Compensation per employee*	1.9	3.5	3.0	3.2	3.4	3.7	3.9

[^] GDP per person employed.

*Non-agricultural sector.

Source: 2018 - CSO; 2019 to 2024 - Department of Finance.

Box 6: The wage Phillips curve in Ireland

One of the most widely known concepts in macroeconomics is the ‘Phillips curve’, which captures the hypothesised inverse relationship between unemployment and inflation. A variant of this curve can be used to examine wage growth and its relationship with unemployment. The basic premise is that the unemployment rate indicates the availability of labour supply relative to labour demand in the economy and that the price of labour – the wage – adjusts in line with the balance between demand and supply.

In recent years, wage growth in advanced economies has remained subdued, despite declines in unemployment rates following the financial crisis. This has led to some debate over whether the wage Phillips curve relationship has changed over time, or if it continues to exist at all. Several possible explanations for the apparent weakness of the relationship have been examined.⁶ These include persistently low inflation, low productivity growth, the effect of globalisation on labour markets, reductions in employees’ bargaining power through changes to labour market institutions, or ‘scarring’ effects of the financial crisis.⁷ There are also question-marks surrounding the ability of the unemployment rate to measure relevant aspects of labour market slack (such as underemployment or cohorts outside, but with high attachment to, the labour force). It is also possible that the relationship is non-linear with a pick-up only expected at very low rates of unemployment.⁸

Figure 6: Ireland’s wage Phillips curve, 2000 Q1–2019 Q1



Source: Department of Finance calculations based on CSO National Accounts and Labour Force Survey data.

Figure 6 shows the relationship between the unemployment rate and nominal wage growth in Ireland over the period 2000–2019 using quarterly data. While the curve appears flat over recent years (gold data points, 2015 Q1–2018 Q1) with unemployment falling but nominal wage growth appearing to hover around 2 per cent, growth has picked up in more recent quarters (blue data points, 2018 Q2–2019 Q1) as the unemployment rate has closed in on 5 per cent.

The available evidence suggests that, while its exact nature may be unclear, the wage Phillips curve relationship between wage inflation and unemployment remains alive in the Irish economy. As the labour market draws close to full-employment, and with the onset of a disorderly Brexit impact assumed, the evolution of the curve over the short-to-medium term will yield important insight into the health of the labour market, as well as the relationship between two key macroeconomic variables.

⁶ See Nickel *et al.* (2019): Understanding low wage growth in the euro area and European countries. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3447190

⁷ See Linehan *et al.* (2017): The labour market and wage growth after a crisis. Available at: [https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/quarterly-bulletin-signed-articles/the-labour-market-and-wage-growth-after-a-crisis-\(linehan-lydon-mcindoe-calder-reddan-and-smyth\).pdf?sfvrsn=4](https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/quarterly-bulletin-signed-articles/the-labour-market-and-wage-growth-after-a-crisis-(linehan-lydon-mcindoe-calder-reddan-and-smyth).pdf?sfvrsn=4)

⁸ See Byrne & Zekaite (2018): Missing wage growth in the euro area: is the wage Phillips curve non-linear? Available at: <https://www.centralbank.ie/news-media/press-releases/economic-letter-missing-wage-growth-euro-area-phillips-curve-6-November-2018>

2.6 Price Developments

Inflationary pressures in the euro area remain subdued, with ‘core’ inflation (the harmonised measure excluding the volatile components of unprocessed foods and energy) of just 1.1 per cent for the year to date. The equivalent figure in Ireland was 0.9 per cent over the same time period.

In Ireland, energy price inflation is expected to ease over the remainder of the year, notwithstanding recent developments in wholesale markets and the geopolitical uncertainty surrounding oil supply. The moderate appreciation of the euro-sterling bilateral exchange rate may result in a slight decrease in goods import prices. On the domestic front, some pick-up in services price inflation is expected *inter alia* reflecting reasonably strong domestic demand as well as increasing wage inflation. For the year as a whole, inflation in Ireland is forecast at 0.9 per cent, with ‘core’ inflation projected at 1.0 per cent.

A disorderly Brexit is expected to increase the rate of consumer price inflation, largely due to higher tariffs on imported goods. HICP inflation in Ireland next year is forecast at 1.3 per cent, with ‘core’ inflation projected at 1.5 per cent.

While previous research suggests that a no-deal Brexit will result in higher consumer prices in Ireland,⁹ a number of potentially offsetting factors may be at play. The first is that Brexit represents a negative shock to the economy which works to depress economic activity and apply downward pressure to prices. Secondly, higher import costs through tariffs and non-tariff measures may be partially offset by any further appreciation of the euro-sterling bilateral exchange rate. However, the range of substitutable goods or changes in preferences of consumers in response to higher prices will also have an impact on the overall rate of (measured) consumer price inflation in Ireland (noting that the basket of goods is fixed). If consumer preferences do not change or if relevant substitutes are not available, then the impact of a no deal Brexit on consumer prices may be larger than assumed. Furthermore, the current uncertainty surrounding oil price may have a negative impact on consumer prices in the future. As such, the impact of a disorderly Brexit on consumer prices in Ireland could potentially be higher than assumed.

Table 7: price developments, per cent change

	2018	2019	2020	2021	2022	2023	2024
GDP deflator	0.8	0.4	1.6	1.4	1.4	1.4	1.4
Personal consumption deflator	1.8	1.7	1.7	1.7	1.8	2.0	2.1
Harmonised index of consumer prices (HICP)	0.7	0.9	1.3	1.4	1.8	2.0	2.1
Core HICP inflation [^]	0.2	1.0	1.5	1.6	1.8	2.0	2.1
Export price deflator (goods and services)	-0.2	0.0	1.5	1.5	1.5	1.5	1.4
Import price deflator (goods and services)	1.2	0.6	1.5	1.5	1.5	1.5	1.5
Terms-of-trade (good and services)	-1.3	-0.6	0.0	0.0	0.0	-0.1	-0.1

[^] ‘Core’ inflation excludes the impact of energy and unprocessed food.

Source: 2018 - CSO; 2019 to 2024 - Department of Finance.

⁹ See Bergin et al. (2019): *Ireland and Brexit: modelling the impact of deal and no-deal scenarios*. Available at: <https://www.gov.ie/en/publication/ca41b6-r/> and Lawless and Morgenroth (2018): *Brexit and Irish Consumers*. Available at: https://www.esri.ie/system/files/media/file-uploads/2018-03/QEC2018SPR_SA_Lawless.pdf

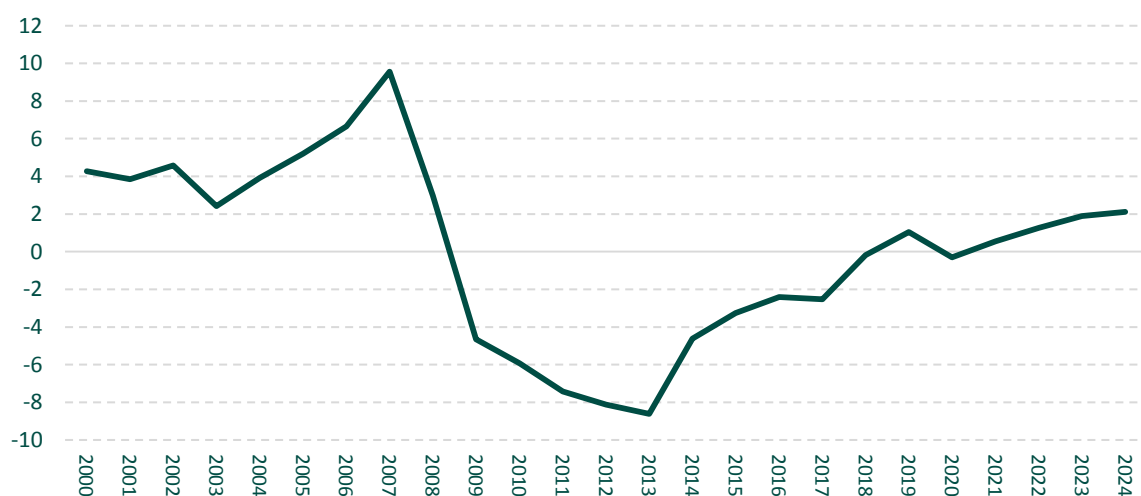
The GDP deflator – a wider measure of price changes in the economy – is forecast to increase by 1.6 per cent next year, driven by higher trade prices as a consequence of Brexit.

2.7 Medium-Term Growth Prospects: 2021-2024

Medium-term projections are typically based on an assumption that aggregate demand, i.e. measured GDP, grows in line with aggregate supply or ‘potential GDP’. In other words, any ‘output gap’ in the economy, whether positive or negative, is assumed to close in the medium-term, with the growth rate of the economy determined by the availability of factor inputs, namely capital and labour as well as the efficiency with which these are combined (total factor productivity) to produce output.

In the case of Ireland, measurement of potential output is especially difficult, given the levels of cross-border mobility of capital and labour, not to mention the various ‘statistical distortions’ that affect measured GDP. These and other factors mean that the harmonised approach (for the purposes of the Stability and Growth Pact) to calculating potential output is unsuited to the Irish economy.¹⁰ To address these shortcomings, the Department has developed its own estimation methods, based on multivariate statistical filters, which are more tailored to the Irish economy. These alternative methods, which have been welcomed by the *Irish Fiscal Advisory Council*, point towards an output gap of 1.0 per cent in 2019. As the impact of a disorderly UK exit from the EU takes hold, the output gap is expected to fall to -0.3 per cent in 2020, on the back of a sharp deceleration in GDP growth from 5.5 to 0.7 per cent.

Figure 7: Path of the output gap, per cent of GDP



Source: CSO and Department of Finance.

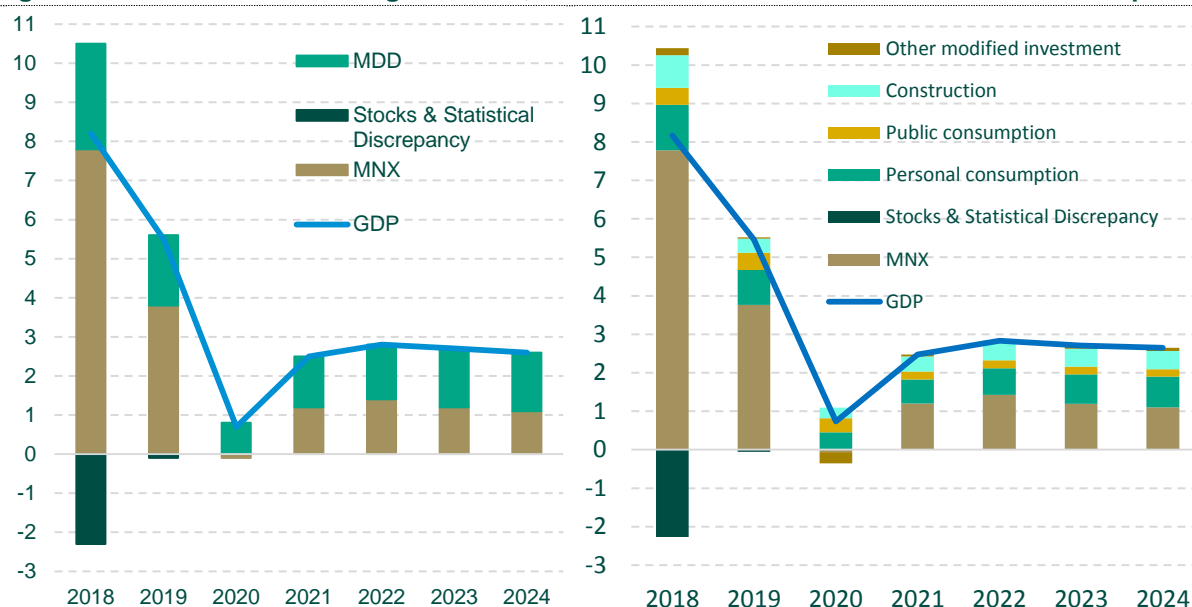
^ GDP based multivariate HP filtered output gap estimates, Department of Finance Methodology from Murphy et al (2018).

In ‘normal’ circumstances, medium-term forecasts would converge towards the trend growth rate and evolve in line with this thereafter. However, certain factors at present are likely to result in some divergence from trend over the medium-term. Firstly, the economy is already very close to full employment, with price and wage pressures beginning to emerge in certain sectors. While a no-deal Brexit will slow the pace of economic growth, the impact is likely to be concentrated in certain sectors and regions. At the same time, following almost a decade of under-investment in the residential sector,

¹⁰ See Murphy, Nacheva, Daly (2018), ‘Estimating Ireland’s Output Gap: An Analysis Using Selected Statistical Filters’. Available at: <https://www.gov.ie/en/publication/65c119-estimating-irelands-output-gap/>

house completions are projected to increase further over the medium-term, exceeding equilibrium demand by the early part of the next decade and approaching 45,000 units by the end of the forecast horizon. While overshooting is necessary to meet significant un-met ('pent-up') demand, if realised this will lead to a re-allocation of capital and labour from the traded sector to the less productive non-traded sector, causing aggregate demand to exceed aggregate supply. These drivers are reflected in the Department's medium-term forecasts and give rise to a positive output gap in the medium-term.

Figure 8: Contributions to changes in GDP, modified domestic demand and modified net exports



Modified domestic demand represents the sum of private consumption, public consumption and investment excluding stocks, investment in aircraft by the leasing sector and net R&D imports. Modified net exports is net exports (exports less imports) excluding investments in aircraft by the leasing sector and net R&D imports. Other modified investment is machinery and equipment excluding investment in aircraft by the leasing sector, plus domestic R&D.

Source: CSO and Department of Finance.

Over the period 2021-2024 GDP is projected to grow by an average rate of just over 2 ½ per cent, though the level of GDP will be permanently below what would arise if a deal is reached between the UK and the EU. Following a sharp decrease in the contributions from modified net exports in 2020, the contributions from modified net exports and modified domestic demand are expected to be initially broadly balanced, as the economy recovers from the initial Brexit shock. Thereafter modified domestic demand will be the main driver of growth, contributing around 1 ½ percentage points annual to the average growth rate. Within modified domestic demand, the primary drivers will be private consumption and construction, with other modified investment (mainly machinery and equipment excluding aircraft for leasing) making a very small contribution.

2.8 Comparison of Forecasts

This section compares the Department's forecasts for 2019 and 2020 against other forecasting institutions. Direct comparisons are not as relevant as in 'normal times', given the different assumptions on Brexit, whereby the Department's projections are based on a no-deal exit with all others based on the assumption of a deal.

Table 8: range of forecasts, per cent change

2019	GDP	GNP	HICP	Employment
Department of Finance	5.5	4.3	0.9	2.4
Central Bank of Ireland	4.9	2.7	1.0	2.4
IMF	4.1	n.a.	1.2	n.a.
ESRI	4.9	4.1	1.1*	2.1
European Commission	4.0	n.a.	1.1	2.0
OECD	3.9	n.a.	1.3	n.a.
2020	GDP	GNP	HICP	Employment
Department of Finance (disorderly Brexit)	0.7	-0.1	1.3	0.8
Department of Finance (orderly Brexit) *	3.1	3.0	1.0	1.7
Central Bank of Ireland	4.1	2.6	1.2	1.7
IMF	3.4	n.a.	1.5	n.a.
ESRI	3.1	2.6	1.4*	1.9
European Commission	3.4	n.a.	1.3	1.8
OECD	3.3	n.a.	2.3	n.a.

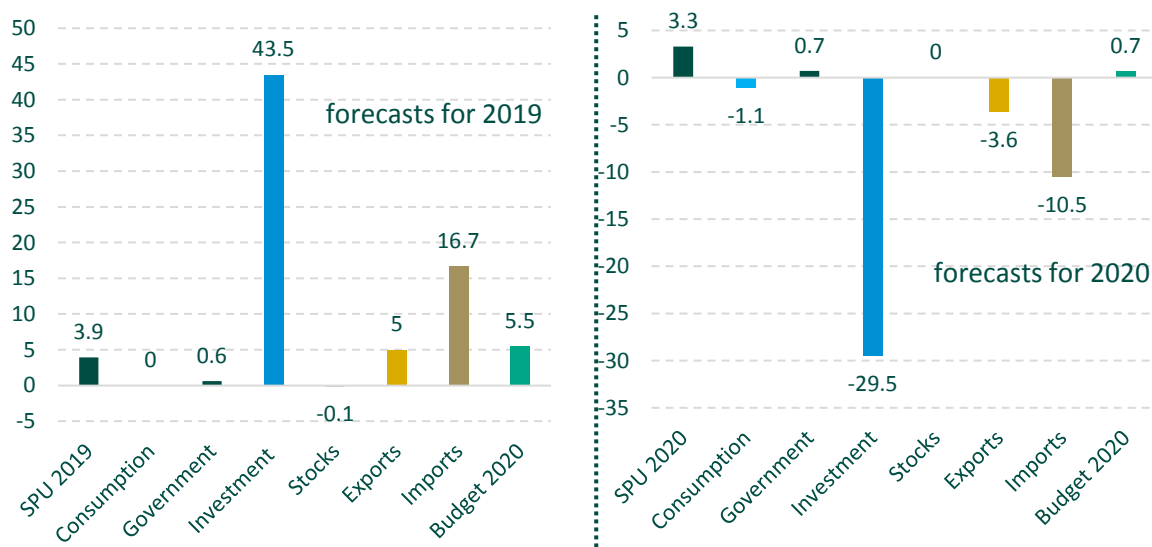
* Note: The Department has highlighted that GDP growth of the order 3.1 per cent would have been in prospect if a disorderly Brexit was not the central scenario.

*ESRI forecasts for CPI shown as HICP forecasts not published.

Source: latest forecasts from the institutions cited.

For this year, the Department's forecasts are at the top of the range, though others would be expected to revise upwards later in the year to take account of the stronger than expected intra-year export figures. For next year, the Department's forecasts are at the bottom of the range, a function of the Department's no-deal assumption. By way of comparison, the Department's counterfactual deal projection, see Box 4, of 3.1 per cent would put it alongside that of the ESRI, at bottom of the range of forecasts based on 'deal' assumptions. Part of the reason for this is that both the Department and the ESRI's projections take account of the worsening global outlook.

Figure 9: comparison of autumn and spring 2019 GDP forecast, per cent change



Source: Department of Finance.

Figure 9 compares the Department's current forecast with the spring forecast, published with the Stability Programme in April. GDP growth for this year is 1 $\frac{3}{4}$ percentage points higher, largely on foot of higher than expected exports. The additional investment and higher imports largely offset one another and are related to a large IP on-shoring event in the second quarter. There is a weaker contribution from modified investment, though its impact on headline investment is hidden by the impact of the IP. For next year, growth has been revised down by over 2 $\frac{1}{2}$ percentage points with revisions to private consumption (-1.1) and exports (-3.6) the driving forces. A large part of the revisions to investment and imports is a 'base effect' from the 2019 on-shoring event, though modified investment would be revised downwards even without this.

Chapter 3

Exchequer Developments and Outlook

3.1 Summary

An Exchequer deficit of €1.0 billion is estimated for this year. This would be a deterioration relative to last year, due to a ramping-up of capital expenditure under the *National Development Plan 2018-2027* (NDP), and a one-off payment from the Exchequer to *Irish Water* (neutral from a general government perspective).

An Exchequer deficit of €1.6 billion is projected for next year. This reflects the impact of Brexit on tax revenue (arising from modest economic growth) and on public expenditure (with higher spending on social welfare and targeted temporary supports).

3.2 Exchequer Outturn 2019

At the end of the third quarter, taxation receipts were 8.7 per cent (€3.3 billion) higher than in the year to end-September of last year. This was 1.7 per cent (€0.7 billion) ahead of expectations.¹¹ The ‘big four’ tax heads (income tax, VAT, corporation tax and excise account for over 90 per cent of the total exchequer tax-take) are each growing strongly. With the exception of corporation tax, which is well ahead, these main taxes are broadly in line with profile.

Income tax receipts, the single largest source of revenue for the State, performed solidly in the year to end-September, with annual growth of 8.4 per cent (€1.2 billion), a figure which is broadly in line with profile. The key PAYE income tax component (which accounts for about two-thirds of revenue under this heading), recorded solid growth, consistent with strong employment growth and increases in earnings per head. For this year as a whole, income tax receipts are projected at €22.9 billion.

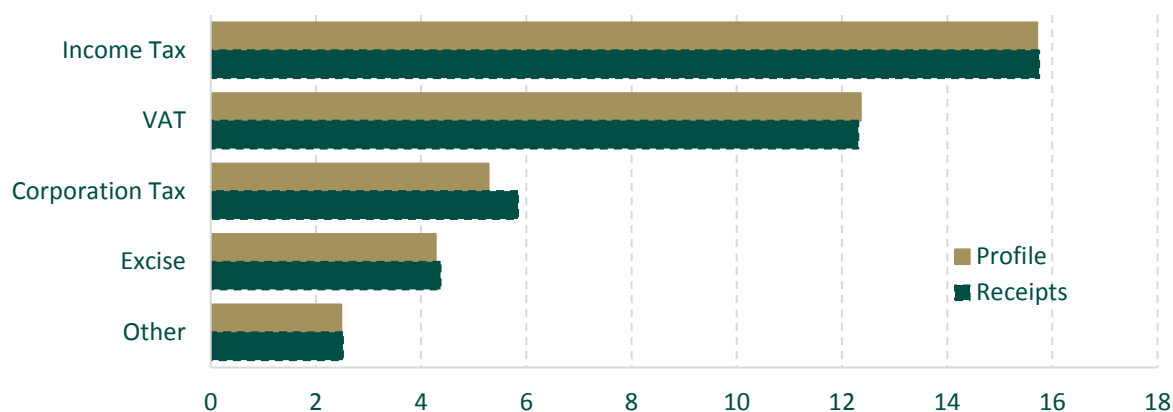
Corporation tax receipts continue to perform strongly, with annual growth of 13.2 per cent (€0.7 billion) in the year to end-September, consistent with increased corporate profitability. The Department’s spring forecasts, as set out in the *Stability Programme Update*, incorporated an upward revision of €0.5 billion to the corporation tax forecast for this year, mainly on foot of the very strong performance in the final quarter of last year. The forecasts in this document incorporate an additional upward revision of €0.3 billion, so that the projected yield for this year is now €10.3 billion,¹² a decrease of 1.0 per cent relative to last year.

Strong consumer spending over the course of the year has supported a solid increase in VAT receipts which, at end-September, were 6.4 per cent (€0.7 billion) higher than a year earlier. This was in line with expectations and, for the year as a whole, receipts are projected at €15.1 billion. This would represent an annual increase of 6.4 per cent.

¹¹ As set out in the Department’s taxation profile ‘Taxation Profiles, February 2019’, available at: <https://assets.gov.ie/6501/24b43b584f43452f90b4ee5e0861527e.pdf>

¹² As successively noted in the fiscal risk assessment, the volatility and unpredictability of Irish corporation tax (CT) revenues can be partially accounted for by the concentration of receipts among a small number of firms. This feature of CT tax base is widely recognised as creating a greater exposure to firm or sector-specific, idiosyncratic developments which, in turn, is manifest through this specific direct tax channel.

Figure 10: end-September cumulative tax receipts relative to profile, € billions



Source: Department of Finance.

Receipts from excise duties have been somewhat volatile in recent years, as the introduction of ‘plain packaging’ legislation for tobacco distorted payment profiles. This timing issue has now unwound, although it still affects annual comparisons. In the year to end-September, receipts were 12.5 per cent (€0.5 billion) ahead of the same period last year, and 2.1 per cent (€0.1 billion) ahead of initial expectations. The yield from this source is projected at €5.9 billion for this year, an annual increase of 0.8 per cent.

In aggregate terms, the remaining tax heads are performing broadly in line with original expectations, and this is broadly true at a disaggregated level also – for capital taxes, customs duties and for motor tax. The one exception is stamp duty receipts, which have underperformed relative to expectations.

Taking into account receipts in the year to end-September, as well as anticipated receipts in the final quarter of the year, tax revenue in 2019 is now projected at €58.6 billion, an annual increase of 5.5 per cent. The estimated outturn compares with an original forecast of €57.9 billion (an implied forecasting ‘error’ of just €0.7 billion or 1 per cent).

Table 9: exchequer balance 2019-2024, € million

	2019	2020	2021	2022	2023	2024
CURRENT BUDGET						
Expenditure						
Gross voted current expenditure	59,985	62,040	63,880	65,950	68,100	70,315
Non-voted current expenditure*	8,070	8,690	7,925	8,130	8,450	8,680
Gross current expenditure	68,055	70,730	71,805	74,085	76,550	78,990
less expenditure receipts and balances	12,950	13,315	13,510	13,705	13,900	14,095
Net current expenditure	55,105	57,415	58,300	60,380	62,650	64,900
Revenue						
Tax revenue	58,625	61,125	63,615	66,375	69,420	72,860
Non-tax revenue	3,100	2,080	1,355	1,255	1,090	975
Net current revenue	61,725	63,205	64,970	67,625	70,510	73,835
CURRENT BUDGET BALANCE	6,620	5,785	6,670	7,245	7,855	8,935
CAPITAL BUDGET						
Expenditure						
Gross voted capital expenditure	7,385	8,140	9,160	9,415	9,700	10,300
Non-voted capital expenditure*	2,065	1,175	1,685	1,710	1,745	1,760
Gross capital expenditure	9,450	9,310	10,845	11,125	11,445	12,060
Less capital receipts	35	30	30	30	30	30
Net capital expenditure	9,415	9,280	10,815	11,095	11,415	12,030
Revenue						
Capital resources	1,805	3,135	3,540	1,205	1,190	1,230
CAPITAL BUDGET BALANCE	-7,610	-6,145	-7,275	-9,890	-10,225	-10,800
Brexit Contingency		1,220	780	780	705	570
EXCHEQUER BALANCE	-985	-1,580	-1,380	-3,425	-3,075	-2,435
Government Expenditure Ceiling**	67,370	71,395	73,820	76,150	78,505	81,185

Rounded to nearest €5 million which may affect totals.

* Central Fund.

** GEC for years 2019 to 2022 as approved by Government. GEC for 2023 – 2024 is a technical assumption.

The tax revenue figures included in this table incorporate the assumption of a weak economy; the voted expenditure numbers do not assume an increase in the live register. The latter are included as a 'contingency' in table 2 in chapter 1

Source: Department of Finance and Department of Public Expenditure.

The projection for non-tax revenue, including capital resources, has increased by €0.5 billion from the spring forecasts. This is almost entirely due to another payment expected from the IBRC in November of this year (neutral from a general government perspective).

Projected total voted expenditure for this year, as provided for under the Government Expenditure Ceiling (GEC), is €67.4 billion. This is composed of €59.9 billion and €7.4 billion in voted current and voted capital expenditure, respectively. This represents a 3.8 per cent (€2.6 billion) increase to the level of central government expenditure relative to the spring projection.

Non-voted current expenditure is projected at €8.1 billion this year. This is €0.2 billion lower than assumed in the spring forecasts, and mainly reflects debt service savings due to *inter alia* the decline in sovereign borrowing costs this year. Non-voted capital expenditure is projected at €2.1 billion this year.

Aggregating all of these revenue and expenditure developments implies an Exchequer deficit of €985 million for this year, a modest improvement relative to the projection set out in the *Stability Programme Update* in April.

3.3 Exchequer Outlook 2020

Taxation revenues next year will increase at a much slower pace than in recent years, as the impact of slower economic growth takes its toll on tax receipts (nominal GDP is the tax base). Tax revenues are projected at €61.1 billion, an increase of 4.3 per cent¹³.

In terms of the main direct tax headings, income tax receipts are projected to increase by 4.2 per cent. While employment growth next year will be more modest than in recent years, wage growth is projected to remain reasonably solid, as many sectors of the economy will be largely unaffected by a disorderly Brexit. Corporation tax receipts are forecast at €10.5 billion next year, with higher corporate profitability in some sectors offsetting reduced profitability in UK-facing sectors.

In terms of the main indirect tax headings, VAT receipts are projected at €15.5 billion next year, an increase of just 2.1 per cent reflecting more modest growth in consumer spending. Receipts from excise duties are projected at €5.9 billion, an annual increase of 0.8 per cent.

Non-tax revenue for 2020, including capital resources, is projected at €5.2 billion, so that the overall revenue stream for the Exchequer is forecast at €66.3 billion for next year.

On the other side of the equation, voted expenditure for next year is projected at €70.0 billion. This represents an increase of €3.4 billion relative to this year, composed of an increase of €2.5 billion in voted current expenditure alongside an increase of €0.8 billion in voted capital expenditure, as investment spending under the NDP continues to ramp-up.

Non-voted expenditure is projected at €9.9 billion next year, consisting of €8.7 billion non-voted current expenditure and €1.2 billion non-voted capital expenditure.

Putting all of these components together results in an Exchequer deficit of €1.6 billion for next year. It must be recognised, however, that the uncertainty attached to this projection is higher than is usually the case, given the unprecedented nature of a disorderly UK exit from the EU.

¹³ Due to the distortionary impact on Customs Duties of the assumed no-deal Brexit the 2020 tax growth rate is inflated. The increase is purely technical in that the majority (80 per cent) of the increased revenue goes towards an increased EU Budget contribution.

3.4 Fiscal Outlook: 2021-2024

A disorderly Brexit involves a permanent shock to the economy: model simulations suggest that, over the medium-term, the level of economic activity would be around 4 percentage points below what it would have been in the absence of a UK exit. It follows that the shock to the public finances is also permanent: the underlying or structural fiscal position is worse than would otherwise have been the case.

Beyond next year, tax revenue is assumed to move in line with economic growth as is normally the case. Current expenditure growth is assumed to average 3.25 per cent per annum, with capital expenditure moving in line with that set out in the NDP. A transfer from the Exchequer to the RDF is assumed each year beyond 2020, although this will be a function of severity and length of the Brexit-related shock.

Box 7: Brexit – some Exchequer issues

(1) Rainy Day Fund

In 2016, the Government decided to establish a Rainy Day Fund (RDF). The rationale behind this policy decision was to accumulate funding that could be deployed in the event of an adverse shock to the economy. Given the small size and openness of the Irish economy, and without an independent monetary policy to help stabilise aggregate demand around aggregate supply, the accumulation of sufficient fiscal firepower is an important instrument to provide counter-cyclical support.

Legislation to establish a RDF was passed this year, with the President signing the *National Surplus (Reserve Fund for Exceptional Contingencies) Act* into law on 26th June 2019. The original intention was to transfer €500 million from the Exchequer this year to the RDF, with an additional €1.5 billion being transferred from the Ireland Strategic Investment Fund (ISIF).

Given that a disorderly Brexit is now the baseline scenario for budget planning purposes, and with a budget deficit in prospect, the Minister for Finance has decided that there will be no transfer of €500 million from the Exchequer this year. The €1.5 billion will be transferred from the ISIF; this is not money that will have to be borrowed as it is currently in the ISIF. Once in the RDF, it can be deployed in the event that the economic impact of a disorderly Brexit is larger than assumed.

(2) Mechanical impacts of UK exit on Exchequer position

The ‘shock’ of a disorderly UK exit from the European Union will clearly have an impact on the fiscal position, including through lower-than-assumed tax revenue. However, there are additional channels through which the Exchequer position will be affected.

Firstly, as the UK will be outside the Union, customs tariffs will apply to goods imported from the UK. Four-fifths of customs duties are paid into the EU budget, so most of the assumed additional Exchequer revenues are reflected in higher non-voted expenditure. In other words, the net impact is relatively small.

Given that conclusion on an EU-UK bilateral trade deal will likely take some time, it is assumed that these higher customs revenue and EU budget expenditure continue over the medium-term; this assumption will, of course, be reviewed on an ongoing basis.

Secondly, contingent Brexit expenditure is included in table 9. This is money that the Government will make available to the sectors most exposed to the economic fall-out from a disorderly Brexit, but which is not included in the ‘normal’ estimates process.

Finally, the public deficit associated with Brexit will have to be funded, including through borrowing in capital markets. While currently low, the cost of any borrowing could change rapidly, as Ireland’s recent experience shows.

Table 10: estimated impact of Budget 2020 on fiscal position in 2020, € million (unless stated)

	€m	€m
Tax reductions		-110
Revenue increases		450
Commercial Stamp Duty		140
Excise on tobacco		60
Other including compliance measures		250
Net Revenue change		340
New expenditure measures		
Current		861
Capital		70
<i>Impact of new measures on Budget 2020 forecast (=tax buoyancy)</i>		15%
	White Paper	Budget 2020
Current expenditure		
Net voted current expenditure	47,940	49,875
Non-voted current expenditure	8,685	8,690
Net current expenditure	56,625	58,565
Current revenue		
Tax revenue	60,870	61,125
Non-tax revenue	2,080	2,080
Net current revenue	62,950	63,205
CURRENT BUDGET BALANCE	6,320	4,635
Capital expenditure		
Net voted capital expenditure	8,245	8,176
Non-voted capital expenditure	1,175	1,175
Net capital expenditure	9,420	9,351
Capital resources	3,135	3,135
CAPITAL BUDGET BALANCE	-6,285	-6,215
EXCHEQUER BALANCE*	40	-1,580
General Government Balance	160	-2,020
per cent of GDP	0.0	-0.6

Rounded to nearest €5 million which affects totals.

* includes Brexit contingency as set out in Table 10

Source: Department of Finance and the Department of Public Expenditure and Reform.

Table 11: alternative presentation of exchequer position, € million

	2019	2020	2021	2022	2023	2024
Revenue	73,115	75,710	78,065	81,000	84,130	87,725
: tax revenue	58,625	61,125	63,615	66,375	69,420	72,860
- Income tax	22,910	23,900	25,140	26,620	28,235	30,095
- VAT	15,140	15,465	16,020	16,645	17,370	18,225
- Corporation tax	10,280	10,535	10,915	11,350	11,750	12,135
- Excise duties	5,855	5,905	6,060	6,195	6,345	6,505
- Stamp duties	1,610	1,645	1,685	1,640	1,660	1,705
- Motor tax	965	925	920	920	925	940
- Customs* <i>of which:</i>	365	1,240	1,310	1,375	1,440	1,510
o <i>retained by Exchequer</i>	75	250	260	275	290	300
o <i>contributes to EU Budget</i>	295	995	1,050	1,100	1,150	1,210
- Capital gains tax	1,000	1,015	1,055	1,095	1,140	1,180
- Capital acquisitions tax	495	495	510	530	550	570
: A-in-As (inc. PRSI, NTF and balances)	12,985	13,345	13,540	13,735	13,930	14,125
: non-tax revenue	1,445	1,175	835	815	725	685
: capital resources	55	60	75	75	60	60
Expenditure	75,435	80,080	81,740	84,275	86,950	89,855
: of which Brexit contingency		1,220	780	780	705	570
Balance excl. transactions with no GG impact	-2,320	-4,375	-3,675	-3,275	-2,820	-2,130
Revenue transactions with no GG impact	3,405	3,975	3,985	1,565	1,495	1,460
: non-tax revenue	1,655	900	520	435	365	290
: capital resources	1,745	3,075	3,465	1,130	1,130	1,170
Expenditure transactions with no GG impact	2,070	1,180	1,690	1,715	1,750	1,765
: non-voted current expenditure	5	5	5	5	5	5
: non-voted capital expenditure	2,065	1,175	1,685	1,710	1,745	1,760
Balance of transactions with no GG impact	1,335	2,795	2,295	-150	-255	-305
Exchequer balance	-985	-1,580	-1,380	-3,425	-3,075	-2,435

Figures are rounded to the nearest €5 million and may affect totals.

Source: Department of Finance.

*The increased year-on-year growth in Customs is chiefly due to the no-deal Brexit impact on this particular heading, the increase is purely technical in that the majority (80%) of the increased figure goes towards an increased EU Budget contribution.

Chapter 4

General Government Developments and Outlook

4.1 Summary

A general government surplus of 0.2 per cent of GDP is projected for this year. A deterioration in the headline fiscal position is in prospect next year, as the Government will allow budgetary policy to help stabilise the economy on foot of the assumed disorderly Brexit. After adjusting for the impact of the cycle based on the Department's preferred methodology, the estimated structural balance next year is in line with achievement of the medium-term objective of a balanced budget in structural terms.

4.2 General Government Balance: 2019

General government revenue is projected at €86,365 million this year, an annual increase of 4.9 per cent. General government expenditure is projected at €85,695 million this year, 4.3 per cent higher than last year. As a result, a general government surplus of €670 million is projected for 2019, the equivalent of 0.2 per cent of GDP.

The increase in investment spending by Government is one of the main reasons for the increase in public expenditure in recent years: investment spending (gross fixed capital formation by the general government sector) has increased from €5.2 billion in 2016 to an estimated €7.9 billion this year. Put another way, if investment spending had simply remained at 2016 levels, then total general government spending this year would have amounted to €83.0 billion. This would be consistent with a surplus of c. 1.0 per cent of GDP rather than the estimated outturn of 0.2 per cent of GDP.¹⁴ Capital spending is a form of investment for the future.

4.3 General Government Balance: 2020

For next year, general government revenue is projected at €88,670 billion. This would represent an annual increase of 2.7 per cent, a relatively slow pace of growth arising from a more modest rate of tax revenue growth. General government primary expenditure is projected at €86,670 billion for next year. With projected interest expenditure amounting to €4.0 billion next year – an average interest rate of 2.0 per cent – this implies general government expenditure of €90.7 billion. As a result, a general government deficit of €2.0 billion, the equivalent of 0.6 per cent of GDP, is in prospect for 2020.

¹⁴ While this simplistic approach does not take 'second round' effects into account, it does give an indication as to the magnitude of government investment spending on the headline figure – this investment spending raises the growth capacity of the economy, paying dividends over the medium and longer term

Table 12: exchequer balance to GGB 2018-2024, € million (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Exchequer balance ¹	105	-985	-1,580	-1,380	-3,425	-3,075	-2,435
Walk ²	65	1,655	-445	650	3,620	4,565	5,515
General Government balance	170	670	-2,020	-730	195	1,490	3,080
of which:							
General Government revenue	82,340	86,365	88,670	92,065	95,930	100,275	104,965
Taxes on production and imports	25,470	26,615	27,240	28,075	28,780	29,725	30,785
Current taxes on income, wealth	34,570	36,245	37,490	39,050	41,015	43,085	45,385
Capital taxes	520	495	495	510	530	550	570
Social contributions	13,460	15,075	15,575	16,370	17,215	18,245	19,310
Property Income	1,315	1,685	1,250	1,235	1,240	1,285	1,255
Other	7,000	6,245	6,620	6,825	7,145	7,380	7,655
General Government expenditure	82,170	85,695	90,685	92,795	95,735	98,785	101,890
Compensation of employees	22,230	23,040	23,730	24,130	24,175	24,090	24,070
Intermediate consumption	10,985	13,215	14,210	14,510	15,965	17,630	19,625
Social payments	30,070	30,005	30,995	31,380	31,575	31,640	31,770
Interest expenditure	5,235	4,680	4,015	3,700	3,870	4,045	3,935
Subsidies	1,865	1,575	1,440	1,430	1,435	1,460	1,500
Gross fixed capital formation	6,330	7,935	8,815	9,065	9,385	10,025	10,695
Capital transfers	1,690	1,755	2,340	2,770	3,085	3,490	3,820
Other	3,760	3,495	3,915	3,935	3,970	4,105	4,245
Resources not allocated ¹	0	0	1,230	1,875	2,275	2,290	2,225
memo items							
GGB per cent GDP	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
GGB per cent GNI* ³	0.1	0.3	-1.0	-0.3	0.1	0.7	1.3
Total revenue per cent GDP	25.4	25.2	25.2	25.2	25.2	25.3	25.4
Total revenue, per cent GNI* ³	41.7	42.5	43.5	43.7	44.0	44.5	45.1
Total expenditure, per cent GDP	25.4	25.0	25.8	25.4	25.1	24.9	24.7
Total expenditure per cent GNI* ³	41.6	42.2	44.5	44.0	43.9	43.8	43.8

1. Includes Brexit contingency

2. The 'walk' from the exchequer balance to the general government balance is set out in table A1 in the appendix.

3. Forecast of modified GNI (GNI*) is a purely technical assumption, for illustrative purposes only, moving in line with GNI.

See Annex 4 for nominal GDP and GNI*.

Source: Department of Finance

4.4 Comparison of Forecasts

Table 13 shows how the Department's fiscal forecasts compare with those of other institutions. For the headline balance, there is some variation between the Department's projection for this year and that of other public sector organisations. This largely relates to timing – some of the forecasts presented are somewhat dated and, accordingly, do not incorporate the most up-to-date data. For next year, the most important source of forecast variation relates to difference in assumptions: the Department is assuming

a disorderly Brexit (with implications for economic growth and the public finances) while other organisations are assuming an orderly exit.

In terms of forecasts for general government debt, the range extends from 59.3 per cent of GDP to 62.4 per cent of GDP this year and from 53.9 per cent of GDP to 58.9 per cent of GDP for next year (debt dynamics are set out in more detail in chapter 5).

Table 13: comparison of budgetary forecasts, per cent of GDP

2019		GG debt	GG Balance
Department of Finance	Oct-19	59.3	0.2
IMF	Jun-19	62.4	0.0
ESRI	Sept-19	58.8	0.0
European Commission	May-19	61.3	0.0
OECD	May-19	61.4	0.2

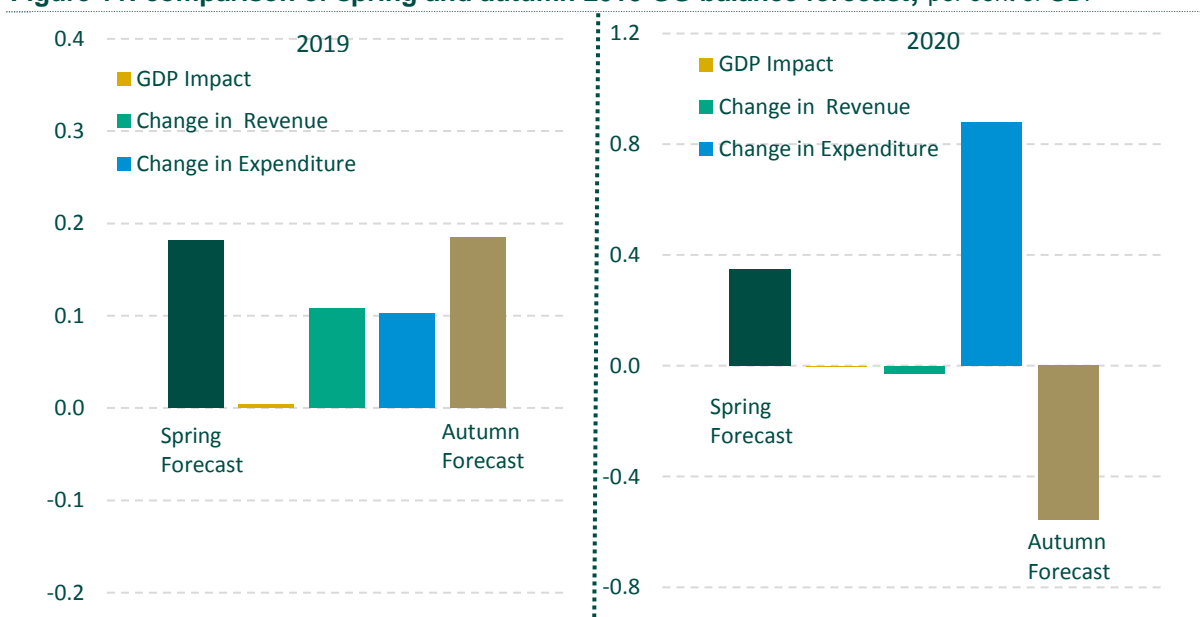
2020		GG debt	GG Balance
Department of Finance	Oct-19	56.5	-0.6
IMF	Jun-19	58.9	0.2
ESRI	Sept-19	53.9	0.3
European Commission	May-19	55.9	0.3
OECD	May-19	56.2	0.4

GG = general government.

Source: latest forecasts of institutions cited.

Figure 11 shows the evolution of the Department's autumn forecasts for the general government balance with its spring forecast published in the SPU at end-April. The forecast for the general government balance this year is largely unchanged, with slightly higher revenue offsetting slightly higher expenditure. For next year, the forecast for general government revenue is 1.0 percentage point lower than in the spring forecasts, due to the working assumption in the autumn forecasts that the UK exits the EU at the end of October without ratifying the *Withdrawal Agreement*.

Figure 11: comparison of spring and autumn 2019 GG balance forecast, per cent of GDP



Source: Department of Finance

Chapter 5 General Government Debt

5.1 Summary

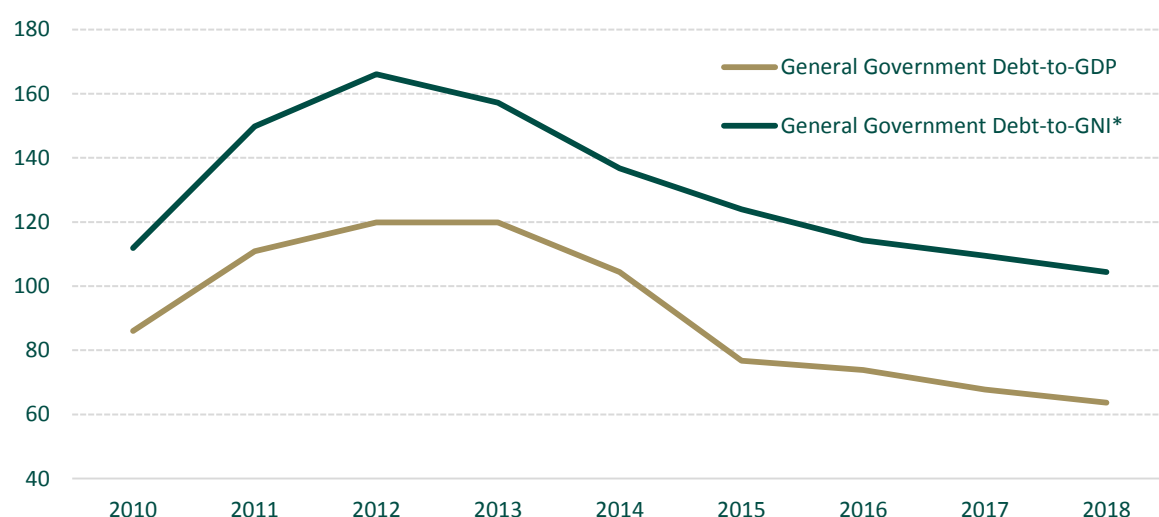
The debt-to-GDP ratio continues to decline, and is projected to move below the 60 per cent of GDP threshold set out in the *Stability and Growth Pact* at the end of this year. However, the bulk of the decline in the ratio reflects the ‘denominator effect’ – the surge in nominal output is mechanically suppressing the debt ratio, even though the outstanding volume of public indebtedness remains high. The debt-to-GNI* ratio, while also on a downward trajectory, remains elevated at an estimated 100.2 per cent at the end of this year. Other sustainability metrics show that, although declining, public indebtedness remains high in Ireland; these metrics include the absolute level of debt, debt interest payments as a share of revenue as well as standard per capita measures¹⁵.

5.2 Debt Developments

At end-2018, Ireland’s general government gross debt stood at just under €206 billion, or 63.5 per cent of GDP. The ratio is comfortably below the euro area average of 85 per cent. By end-2019, the absolute level of debt is expected to decrease slightly and the ratio is set to decline further to 59.3 per cent. The ratio has fallen considerably since the peak of just below 120 per cent in 2012/2013, particularly so in 2015.

Modified gross national income (GNI*) is a more accurate measure of repayment capacity in Ireland, as it excludes many of the factors that artificially inflate the level of GDP in Ireland. On this basis, the debt ratio is projected at 100.2 per cent at the end of this year. Therefore, while debt remains manageable in Ireland, it is crucial that the burden of debt is reduced further.

Figure 12: general government debt ratios, per cent

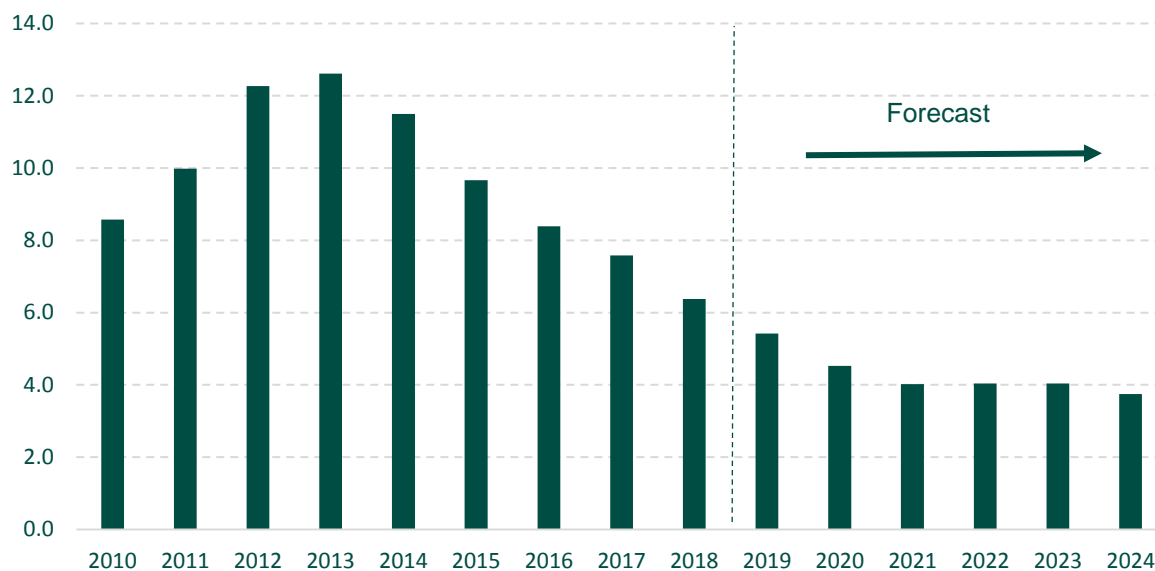


Source: CSO

¹⁵ A fuller assessment of debt dynamics is set out in the Department’s *Annual Report on Public Debt in Ireland, August 2019* available at: <http://www.gov.ie/en/publication/d45694-annual-report-on-public-debt-in-ireland-2019/>

An alternative metric to assess the burden of Irish public debt is the ratio of debt interest to revenue (figure 13). As this measure is more dependent on domestic revenue streams, it is less prone to distortion by the effects of globalisation on the Irish economy, although the revenue stream has become more dependent on corporation tax receipts in recent years. Accordingly, it provides a better insight into repayment capacity, than the debt-to-GDP measure.

Figure 13: debt interest to revenue ratio, per cent



Source: CSO, Department of Finance.

Figure 13 shows the portion of general government revenue absorbed by debt interest payments over the period 2010-2024. After peaking in 2013 at close to 13 per cent, this metric has subsequently been on a downward trajectory, reflecting the combination of higher general government revenue and lower interest payments. This year it will be just below 5.5 per cent.

While it is important to analyse debt dynamics using a wider set of variables, legal obligations – as set out in the *Stability and Growth Pact* – are set with reference to the movement in the debt-to-GDP ratio. The debt ratio is projected to fall to 59.3 per cent of GDP this year and to 56.5 per cent of GDP next year. The main factors driving the debt ratio lower are the projected primary surpluses, both this year and the next, as well as strong forecast nominal output growth. The forecast movements in debt levels and debt dynamics are set out in Table 14.

Table 14: general government debt developments, per cent of GDP (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Gross debt (€ billions)	205.9	203.6	198.5	205.8	207.1	213.2	218.5
Gross debt ratio	63.5	59.3	56.5	56.4	54.4	53.8	53.0
Change in gross debt ratio(=1+2+3)	-4.2	-4.2	-2.9	-0.1	-2.0	-0.6	-0.8
Contribution to Δ in debt ratio [^]							
GG deficit (1=1a+1b)	-0.1	-0.2	0.6	0.2	-0.1	-0.4	-0.7
: interest expenditure (1a)	1.6	1.4	1.1	1.0	1.0	1.0	1.0
: primary balance (1b)	-1.7	-1.6	-0.6	-0.8	-1.1	-1.4	-1.7
SFA (2=2a+2b+2c+2d+2e+2f+2g)	1.5	-0.5	-2.0	1.8	0.4	1.9	2.0
: change in liquid assets (2a)	1.4	-0.2	-2.4	1.4	-0.9	0.5	0.5
: interest adjustments (2b)	0.1	0.1	0.2	0.0	0.0	0.0	0.1
: equity transactions (2c)	-0.5	-0.4	-0.8	-0.8	-0.1	-0.1	0.0
: accrual adjustments (2d)	0.0	0.2	0.2	0.1	0.1	0.1	0.1
: impact of ISIF (2e)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
: collateral held (2f)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
: other (2g)	0.4	-0.4	0.7	1.0	1.1	1.3	1.4
Nominal GDP contribution (3)	-5.6	-3.5	-1.4	-2.1	-2.3	-2.2	-2.1
Memorandum items							
: average interest rate	2.6	2.3	2.0	1.9	1.9	2.0	1.8
: gross debt per cent of GNI* ^{^^}	104.3	100.2	97.4	97.7	94.9	94.5	93.9

Figures may not sum due to rounding.

[^] A positive sign indicates that a component is increasing the debt ratio and vice versa.

^{^^} Modified GNI (GNI*) is a purely technical assumption, for illustrative purposes only, moving in line with GNI. SFA = stock-flow adjustment

Nominal GNI* is presented in Annex 4.

Sources: CSO, Department of Finance and NTMA (National debt data provider).

Box 8: Expanding the toolkit for analysis – a Public Sector Balance Sheet

Public sector balance sheets (PSBS) provide the most comprehensive picture of public sector net wealth and are an additional tool to guide policy formulation. The public sector net worth measure takes account of all the accumulated assets and liabilities of the public sector, including public corporations and pension liabilities. They show the entirety of what the State owns and owes, offering a broader fiscal picture beyond debt and deficits.

A recent draft report by the OECD titled “Review of Financial Reporting in Ireland” highlights that: “the government should establish consolidated financial statements that would provide a complete picture of Ireland’s underlying fiscal position and allow a more comprehensive understanding of the level and composition of government spending and revenue and the related accumulation of government assets and liabilities, regardless of whether activities are carried out by a Vote, a fund or a state body”.

The Public Accounts Committee in its third Periodic Report 2018¹⁶ highlights that: “There is no report that gives a complete picture of the public sector’s net worth. This lack of clarity makes it difficult to follow the flow of public funds, and more impedes accountability”.

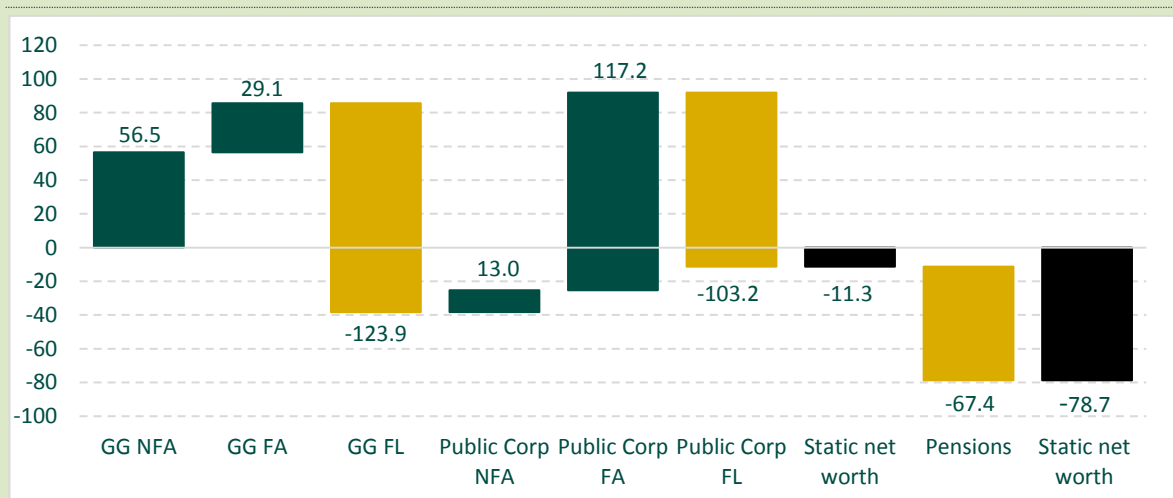
The Fiscal Monitor October 2018 – Managing Public Wealth by the IMF¹⁷, addresses a number of key concepts and puts forward a conceptual framework on this topic. The benefits of a PSBS include:

- greater fiscal transparency;
- improving the identification and management of risk;
- Improving fiscal policymaking.

Furthermore, empirical evidence suggests that investors are paying closer attention to countries’ PSBS net worth in their investment decisions. In addition, there is evidence to support the view that countries with a stronger PSBS net worth recovered faster after the global financial crisis.

For all of these reasons, the Department is working with the CSO in order to develop a PSBS for Ireland. A PSBS net worth metric can guide public policy on areas of efficiency in the use of state assets and add value to other metrics assessed for fiscal analysis. Figure 14 sets out the path of the PSBS net worth measure for 2017

Figure 14: Static Public Sector Net Worth 2017 per cent of GNI*,



NFA = Non-Financial Assets, FA = Financial Assets and FL= Financial Liabilities.

Figures are a work in progress.

Source: Department of Finance calculations.

Next Steps

The ongoing work in the Department will:

- (1) build on the General Government Balance Sheet provided by the Central Statistics Office (CSO)¹⁸,
- (2) building on the IMF framework to compile and publish these data
- (3) set out, by way of technical paper, the methodology, findings and implications in the first half of next year.

¹⁶<https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/committeeofpublicaccounts/report/2018/2018-07-11periodic-report-no-3-january-may-2018en.pdf>

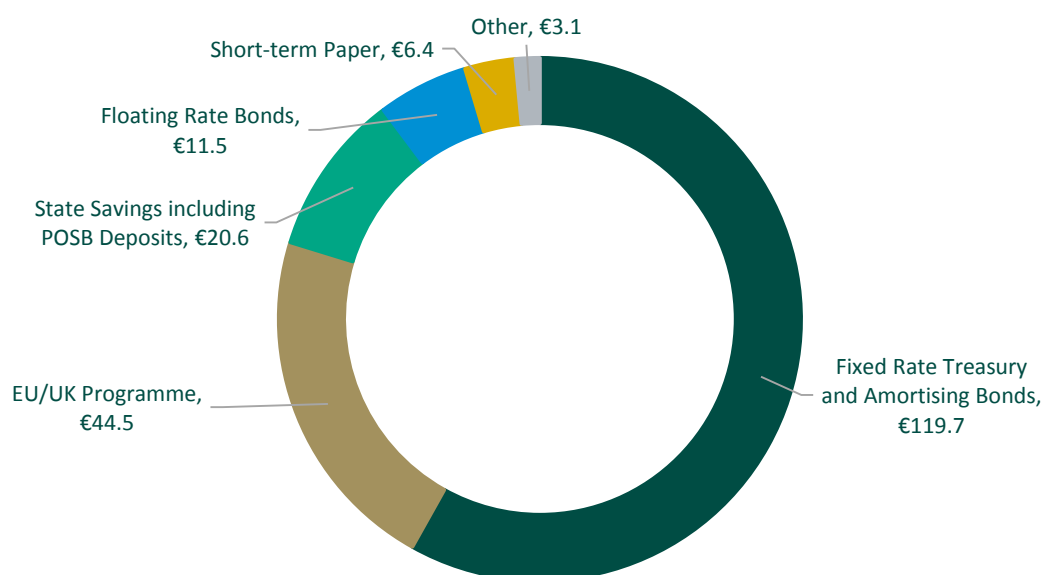
¹⁷ <https://www.imf.org/en/Publications/FM/issues/2018/10/04/fiscal-monitor-october-2018>

¹⁸ <https://www.cso.ie/en/releaseandpublications/er/gfsa/governmentfinancestatisticsoctober2018/>

5.3 Debt Composition

Figure 15 shows the compositional breakdown of the stock of general government debt at end-2018. The most notable changes in the composition from end-2017 are the increases in Fixed Rate Treasury Bonds and the decline in the Floating Rate Bonds issued to replace the IBRC promissory notes held by the Central Bank of Ireland (CBI).

Figure 15: composition of general government debt at end-2018, € billion



Source: CSO and NTMA (National Debt data provider).

Note: the "other category includes consolidation adjustments in respect of debt, including government bonds held by general government entities.

General government debt, as defined under the Excessive Deficit Procedure (EDP) regulation, is a gross measure of government liabilities. Net general government debt (obtained by deducting the value of the financial assets corresponding to the categories of financial liabilities which comprise Gross Debt) is reported in table 15. The assets deducted include:

- Exchequer cash
- Ireland Strategic Investment Fund (ISIF) cash and non-equity investments; and,
- Other cash and assets held by general government.¹⁹

Table 15: gross and net general government debt, per cent of GDP at end-year

	2018	2019	2020	2021	2022	2023	2024
General government debt (gross)	63.5	59.3	56.5	56.4	54.4	53.8	53.0
EDP debt instrument assets	8.7	7.9	5.3	6.2	4.9	4.9	5.1
Net debt position	54.9	51.4	51.2	50.1	49.5	48.8	47.9

Source: CSO, Department of Finance and NTMA (National Debt data provider)

¹⁹ For a broader discussion on government financial assets and liabilities, including cash balances, see Section 6 of the Department's *Annual Report on Public Debt in Ireland, August 2019* (op.cit).

Table 16: Irish sovereign credit ratings

Rating Agency	Long-term rating	Short-term rating	Outlook
Standard & Poor's	A+	A-1	Stable
Moody's	A2	P-1	Stable
Fitch Ratings	A+	F1+	Stable

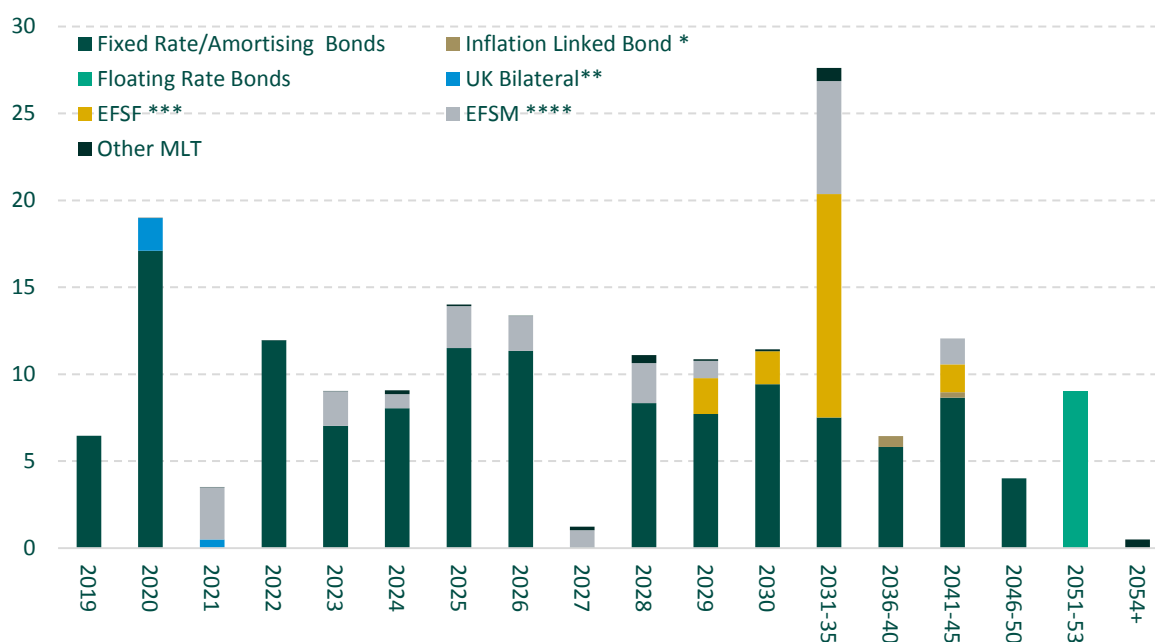
As at end-September 2019

Source: institutions cited and NTMA (National Debt data provider)

5.4 Funding Developments

The NTMA has so far this year issued close to €13 billion of medium/long-term (MLT) debt. This includes €12.4 billion of benchmark bond funding at a weighted average yield of 1 per cent and a weighted average maturity of just under 17 years. It also issued €0.3 billion in inflation linked bonds and €0.1 billion through a 100-year note.

Figure 16: maturity profile of long-term marketable and official debt, € billion at end-September



Note that the figures in the chart are unaudited figures. Rounding can affect totals.

*Inflation linked bonds adjusted for month-end-value.

** Includes effect of currency hedging transactions.

*** EFSF loans reflect the maturity extensions agreed in June 2013.

**** EFSM loans are also subject to extension, such that their original aggregated weighted average maturity will be a maximum of 19.5 years. It is not expected that Ireland will have to refinance any of its EFSM loans before 2027. However the revised maturity dates of individual EFSM loans will only be determined as they approach their original maturity dates. The chart reflect both the original and revised maturity dates of individual EFSM loans.

Source: NTMA (National Debt data provider).

A new 10-year benchmark bond issued in January raised €4 billion at a yield of 1.12 per cent, while a new 30-year benchmark bond issued in May raised a further €4 billion at a yield of 1.53 per cent. There have also been four bond auctions so far this year, with the sale of bonds maturing in 2029, 2033 and

2037 raising just over €4.4 billion. The NTMA plans to hold one further bond auction this year (November) and to issue more of its 2031 maturing Irish Sovereign Green Bond by way of a syndicated tap before year-end.

Turning to 2020, there are two more bond maturities, the first in April and the second in October. In addition, a further four tranches of the UK loan will mature next year. In total, there is some €19 billion of maturing MLT debt in 2020. The Exchequer is well positioned to meet these maturities as the NTMA has continued with its pre-funding strategy. Cash balances are expected to amount approximately to €15 billion at the end of 2019.

The maturity of debt is an important metric used in assessing the public finances. A notable feature for Ireland has been the elongation of debt maturities in recent years reflecting debt management activities and the extension of maturities on official loans. Much of this has been facilitated by more accommodative monetary conditions across the euro area.

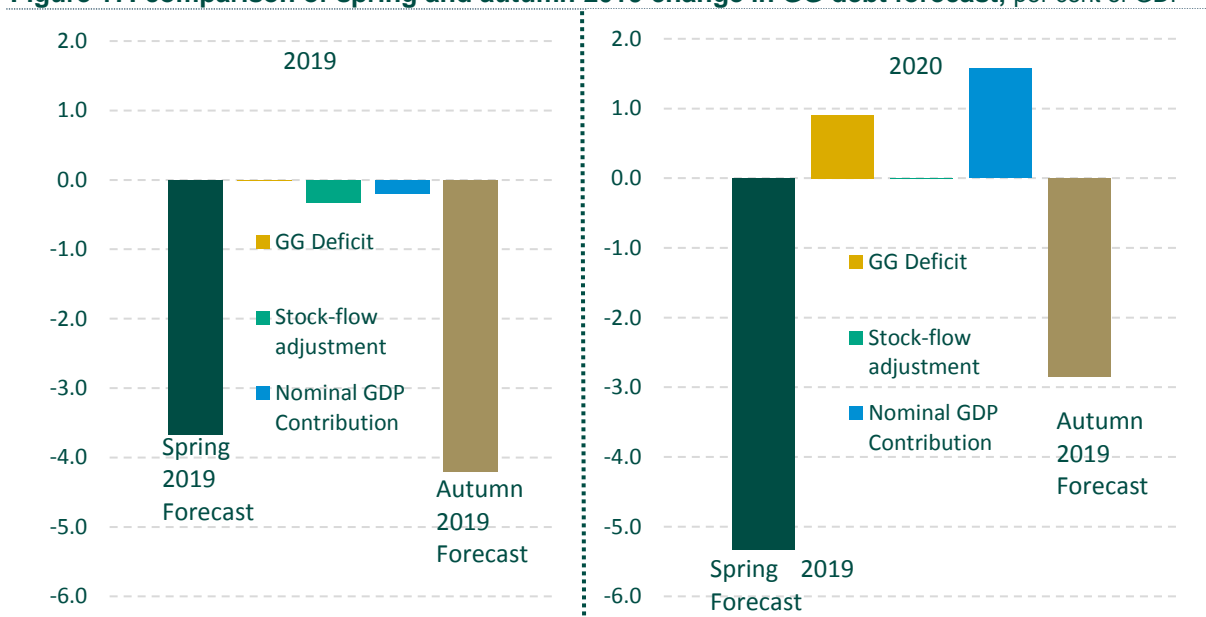
5.5 Comparison of Forecasts

Figure 17 below compares the Department's latest forecast change in the debt ratio in 2019 and 2020 against its previous forecasts published in the SPU in the spring.

For this year, the debt ratio is projected at 59.3 per cent, a 1.8 percentage point improvement from the spring forecasts, while next year the debt ratio of 56.5 per cent represents a 0.7 percentage point disimprovement.

The main reason underlying the improvement is the denominator effect along with a reduction in the nominal debt forecast – from €205.1 billion to €203.6 billion for this year; and a slight increase from €196.7 billion to €198.5 billion for next year reflects the increase in the debt ratio by less than one percentage point.

Figure 17: comparison of spring and autumn 2019 change in GG debt forecast, per cent of GDP



Source: Department of Finance

Chapter 6 Risk and Sensitivity Analysis

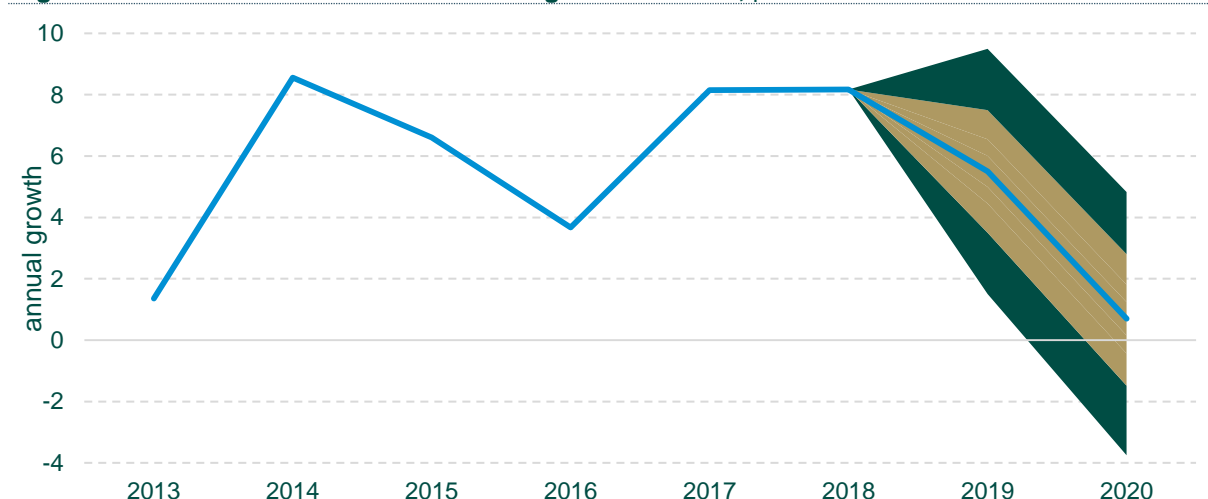
6.1 Summary

The purpose of this chapter is to set out the main identifiable risks which, if they were to materialise, could alter the economic and fiscal trajectory in Ireland over the short- and medium-term.²⁰ The assumption that the UK exits the EU without a deal is now the central scenario in the macroeconomic forecasts and is, accordingly, dealt with in detail in the macroeconomic outlook chapter. This chapter, therefore, focuses on other possible shocks to the economy and quantifies their likely impact using the ESRI's COSMO macroeconomic model.²¹

6.2 Risks to the Economic and Fiscal Forecasts

A risk assessment matrix – listing the principal identifiable economic risks along with an assessment of their relative likelihood and economic impact – is set out in Table 21. As noted in the macroeconomic outlook chapter, despite basing the macroeconomic forecasts on an assumption of a no-deal Brexit, a worse-than-expected impact cannot be ruled out (see Box 5), given the unprecedented nature of the shock. Other than 'Brexit', the main short-term risk relates to a sharper-than-assumed deterioration in the international environment *inter alia* through a further escalation of trade protectionism, including the potential for a spill-over to the EU. The possibility that the UK could still exit with a deal represents an upside risk, as does the sectoral concentration of Ireland's exports which have outperformed external demand drivers in recent quarters. Over the medium-term, international tax reform could affect the competitiveness of Ireland's corporate tax regime. The balance of risk is firmly tilted to the downside at present, both in the short-term and over the medium-term. A 'fan chart' of possible growth rates is set out below, centred around the Department's forecasts.

Figure 18: confidence bands for real GDP growth 2019-20, per cent of GDP



Confidence bands, centred around the Department of Finance's forecasts for 2019 and 2020, represent the areas one and two standard deviations from the growth forecast, based on historical forecast errors. 2015 forecast errors are excluded; the growth rate shown for 2015 is based on growth in modified domestic demand.

Source: Department of Finance calculations.

²⁰ The National Risk Assessment 2019, which was published in August 2019, represents a comprehensive cross-government assessment of the strategic risks that Ireland faces over the short, medium and long-term.

²¹ **Core Structural Model.**

6.3 Sensitivity Analysis

To assess the sensitivity of the forecasts to changes in baseline inputs, the ESRI COSMO macroeconomic model is used to simulate the impact of stylised shocks to the following four exogenous inputs:

- World demand shock (1 per cent deterioration in world demand);
- Competitiveness shock (1 per cent increase in average wages);
- Monetary policy shock (1 percentage point increase in the ECB interest rate); and,
- Sterling depreciation shock (10 per cent fall in sterling euro exchange rate).

Figures presented in Table 17 show the response, relative to baseline projections, for a range of key macro-fiscal variables to the simulated shocks to world demand, average wages, the ECB policy rate and the sterling-euro exchange rate. In each of the simulations presented, Government solvency/budget rules are not imposed; in other words, there is no fiscal policy response to the change in the economic environment. Therefore, the results give the full impact of the shock, free from the addition of policy changes. Each of the shocks are introduced in year 't'.

External shock (1 per cent deterioration in world demand)

An external demand shock is simulated by assuming a permanent reduction in the level demand for Irish exports of 1 per cent relative to baseline. This dampens Irish growth, with the effects transmitted primarily through the trade channel. In the traded sector, a decrease in external demand contributes to reductions in the demand for Irish output which, in turn, lead to a fall in investment, employment and wages in that sector. These effects in the traded sector result in lower domestic demand and, accordingly, reduced employment (relative to baseline) and a rise in the unemployment rate. Lower employment and wages decrease consumption which, in turn, negatively affect the tax base.

Overall, the level of output would be around 1.0 per cent lower after 5 years relative to baseline. The level of employment would be 0.6 per cent lower after 5 years, with the unemployment rate increasing by 0.4 percentage points. The deficit-to-GDP ratio worsens by 0.2 percentage points with the debt-to-GDP ratio rising by 1.3 percentage points due the cumulative impacts of weaker budget balances.

Competitiveness shock (1 per cent increase in average wages)

A shock to domestic competitiveness is simulated by assuming a 1 per cent increase in the domestic wage level (relative to baseline) that is not offset by higher productivity. Higher wages boost consumption but also lead to a loss in competitiveness which reduces exports and depresses output in the traded sector of the economy. The non-traded sector also sees a decline in production due to the impact of higher labour costs. The impact is to reduce employment over the medium- to long-run, with a slightly higher unemployment rate than under the baseline scenario.

Overall, the level of output would be 0.2 per cent below baseline after 5 years. Employment falls by 0.1 per cent lower below baseline after 5 years, with the unemployment rate increasing by 0.2 percentage points. After an initial modest improvement in the fiscal position, results show that the deficit to GDP ratio slightly worsens by 0.01 percentage points, and the debt to GDP ratio falls by 0.3 percentage points after 5 years.

Table 17: sensitivity analysis, relative to baseline

	T	T+1	T+2	T+3	T+4	T+5
1 per cent decrease in world demand						
<i>per cent deviation from baseline</i>						
GDP	-0.3	-0.5	-0.7	-0.8	-0.9	-1.0
Employment	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6
<i>percentage point deviation from baseline</i>						
General Government Balance, per cent GDP	0.0	-0.1	-0.1	-0.1	-0.2	-0.2
General Government Debt, per cent GDP	0.1	0.3	0.6	0.8	1.0	1.3
Unemployment Rate, per cent	0.0	0.1	0.2	0.3	0.3	0.4
1 per cent increase in average wages						
<i>per cent deviation from baseline</i>						
GDP	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Employment	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
<i>percentage point deviation from baseline</i>						
General Government Balance, per cent GDP	0.01	0.01	0.01	0.00	-0.01	-0.01
General Government Debt, per cent GDP	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3
Unemployment Rate, per cent	0.1	0.1	0.2	0.2	0.2	0.2
1 percentage point increase in interest rates						
<i>per cent deviation from baseline</i>						
GDP	-0.6	-1.1	-1.3	-1.3	-1.1	-0.8
Employment	-0.1	-0.4	-0.6	-0.7	-0.6	-0.4
<i>percentage point deviation from baseline</i>						
General Government Balance, per cent GDP	0.0	-0.2	-0.3	-0.3	-0.3	-0.2
General Government Debt, per cent GDP	0.3	1.0	1.5	1.8	2.1	2.2
Unemployment Rate, per cent	0.1	0.3	0.4	0.5	0.5	0.3
10 per cent fall in sterling euro exchange rate						
<i>per cent deviation from baseline</i>						
GDP		-0.1	-0.3	-0.4	-0.6	-0.7
Employment		0.0	0.0	0.0	-0.1	-0.2
<i>percentage point deviation from baseline</i>						
General Government Balance, per cent GDP		0.0	0.0	0.0	0.0	0.1
General Government Debt, per cent GDP		0.0	0.1	0.2	0.3	0.4
Unemployment Rate, per cent		0.0	0.0	0.0	0.0	0.1

Source: Results based on analysis by Department of Finance using COSMO, the ESRI macro-economic model.

Monetary policy shock (1 percentage point interest rate increase)

A monetary policy shock is simulated by assuming that the ECB policy rate increases by 1 percentage point over a 5-year horizon. The impact of the higher interest rate adversely affects the level of Irish economic activity over the medium term. In the model, the main transmission mechanism is the trade channel - lower output in the euro area as a result of higher interest rates leads to a reduction in external demand for Irish exports. In addition to this, the assumed exchange rate appreciation depresses exports further relative to baseline.

Overall, the impact reduces the level of GDP by 0.8 per cent relative to baseline after 5 years. Employment falls by 0.4 per cent relative to baseline and the deficit-to-GDP ratio worsens by 0.2 percentage points after 5 years, with the debt-to-GDP ratio 2.2 percentage points higher at that stage. The world demand and interest rate shocks have a similarly negative impact on the economy and so the general government balance. Debt dynamics differ in the two scenarios as the interest rate shock directly raises the cost of servicing the existing stock of government debt.

Sterling depreciation shock (10 per cent fall sterling euro exchange rate)

A sterling depreciation shock is simulated by assuming a 10 per cent permanent fall in the value of sterling vis-à-vis the euro. This shock is transmitted to the Irish economy through two channels, lower world demand, though to a lesser extent than the direct shock to world demand above, and the competitiveness of Irish exports via higher relative prices. Whilst the overall impact of a 10 per cent depreciation in sterling is lower than a 1 per cent fall in world demand, the mechanisms by which the Irish economy is affected are similar. Initially the shock affects the traded sector, with less demand for labour as a result, feeding through to the non-traded sector through lower domestic demand.

Overall, the level of output would be 0.7 per cent below baseline after 5 years. Overall, this is about two-thirds of the direct impact on a world demand shock, with the other variables broadly scaled by this amount. The level of employment would be 0.2 per cent lower after 5 years, with the unemployment rate increasing by 0.1 percentage points. The annual deficit-to-GDP ratio rises towards 0.1 per cent over the medium term, with the debt-to-GDP ratio rising by 0.4 percentage as a result.

6.4 Monitoring imbalances in the Irish economy

The use of a heat map to identify and monitor macroeconomic imbalances in the Irish economy was introduced in Budget 2019, focusing on the variables included in the European Commission's Macroeconomic Imbalance Procedure 'scoreboard'.²²

The heat-map can be used to trace the imbalances that emerged in the Irish economy both in the build-up to and aftermath of the financial crisis, with overheating followed by severe recession. Darker colours suggest imbalances (whether dark red or dark green, with green imbalances generally less harmful), while light yellow shading represents values broadly in line with the long-run average for each indicator. The most recent data points can also be examined to assess whether imbalances are present (the latest available data are used, or the Department's forecasts for 2019 and 2020 where available).

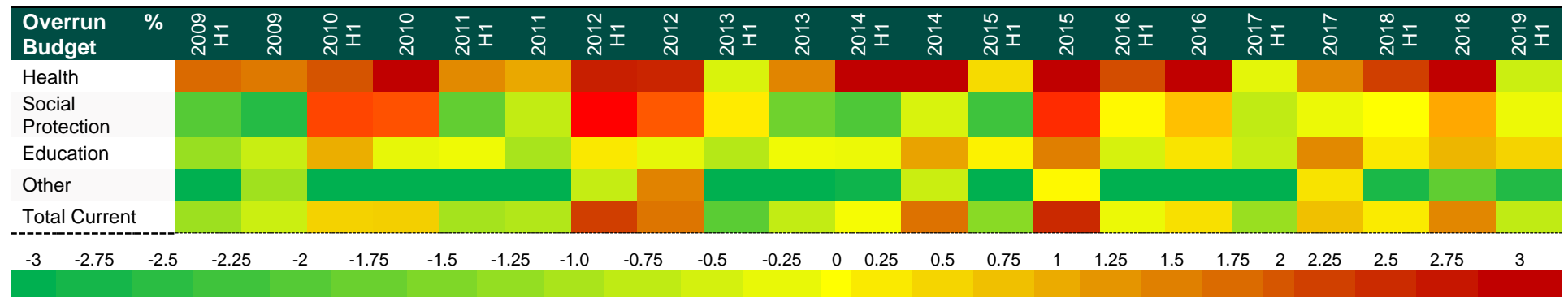
The heat map points to the large current account surplus, the negative net international investment position and negative private sector credit flow (i.e. deleveraging) as potential imbalances. All three of these, however, are distorted by the activities of multinationals in Ireland, with underlying indicators suggesting the imbalances may be much less significant. For instance, as stated in the Economic Outlook chapter, the modified current account (CA*) as a percentage of modified GNI (GNI*) is a more appropriate measure of the current account surplus.²³ The heat map also highlights the improvement in Ireland's export market share, though this is somewhat distorted by contract manufacturing exports.

It is also important to note that such visualisation tools, given their high-level nature, are limited in the extent to which they can predict future imbalances, and as such should be assessed in conjunction with other tools.

²²https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/macroeconomic-imbalance-procedure_en

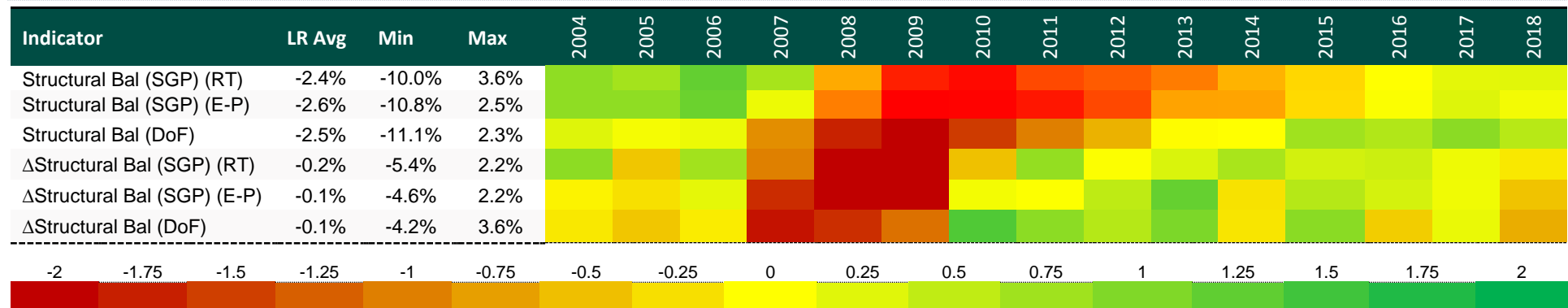
²³ For a discussion of estimates of an underlying current account and net international investment position, see The Balance of Payments in Ireland: Two decades in EMU (2019): <https://assets.gov.ie/27044/76703b33310041eaa98fa0c6052f3d1f.pdf>. For an explanation of the distortions to private sector debt, see Analysis of Private Sector Debt in Ireland (2019): <https://assets.gov.ie/7079/dc2b93dbcf1d40af9e01c2920c90acd3.pdf>

Table 18: Exchequer Spending: 2009-2019 H1: Plans v Outturns



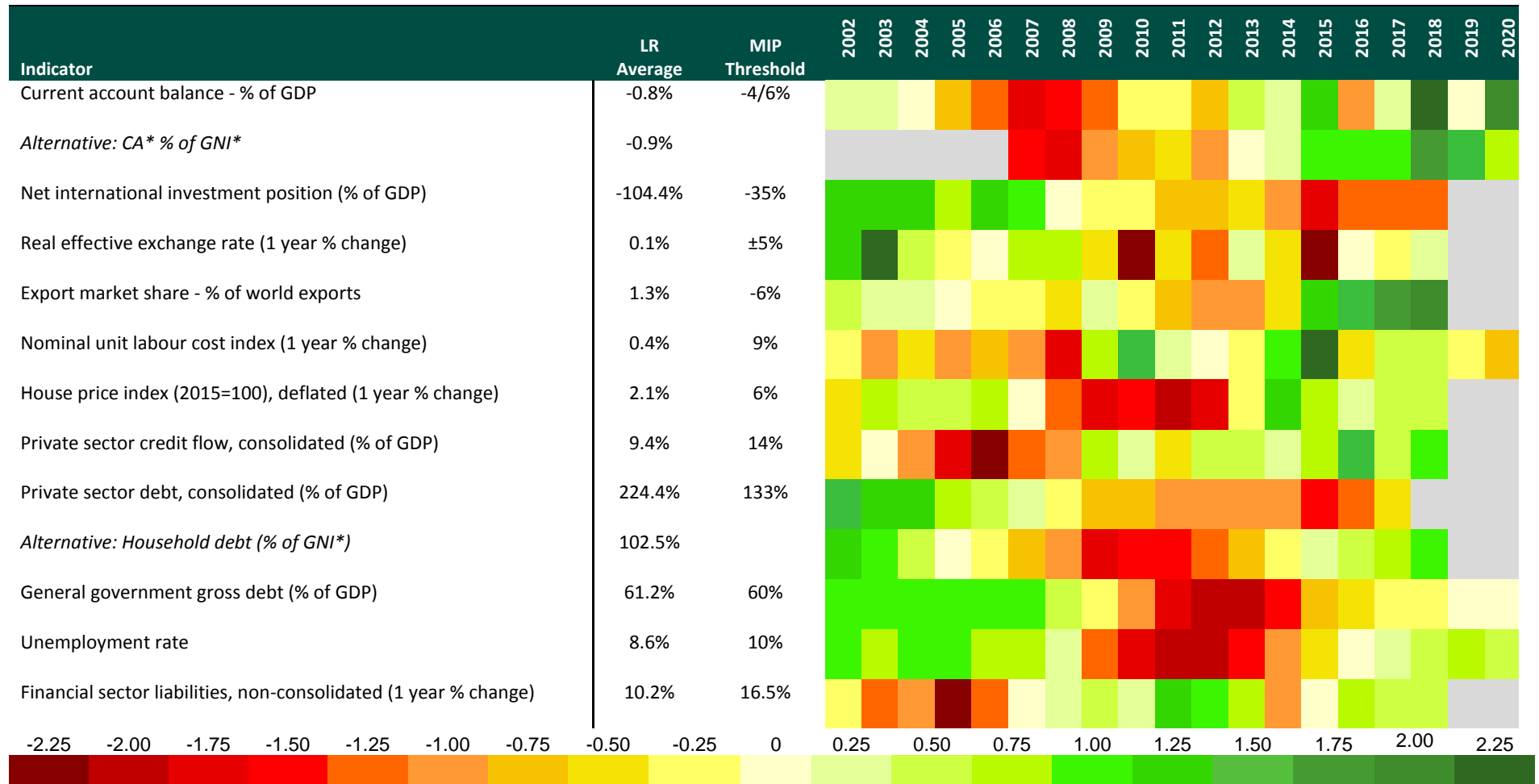
Source: Department of Finance. For more information see Box 6 of the Stability Programme Update 2019.

Table 19: Real-time v Current Estimates of the Structural Balance 2004-2018



Source: Department of Finance. RT= Real Time, E-P= ex-post. For more information see Box 6 of the Stability Programme Update 2019.

Table 20: Heat-map of Macroeconomic Indicators, 2002-2020



Source: Department of Finance calculations, Eurostat, CSO, Central Bank. Note: the indicators for unit labour costs, private sector credit and debt, household debt, government debt, unemployment and financial sector liabilities have been inverted such that red represents a value above the long-run average, and vice versa. The three additional employment indicators in the MIP scoreboard are not shown here.

Table 21: macro-economic risk assessment matrix

Risk	Likelihood	Impact and main transmission channel
External		
Deeper global downturn	High	High – the slowdown in global growth has persisted, with the international institutions further revising down their forecasts, and what was initially identified as a temporary slowdown is now becoming more prolonged.
Geopolitical factors	Medium	High – continued and increasing geopolitical uncertainty has the potential to disrupt growth in key regions and generate headwinds for output and employment in Ireland.
Disruption to world trade	High	High – the Irish economy is deeply embedded in the international economy and has benefited enormously from globalisation, so that any increase in protectionism, including additional tariffs on EU-US trade, could potentially have a detrimental impact on living standards.
Larger impacts of disorderly Brexit	High	High – The risk of the UK leaving without an agreement on 31 st October has increased substantially and the Budget has been prepared on this basis. While detailed assessments of the impact have been undertaken there is a risk that the negative effects could be greater than assessed. Against this, the possibility of the UK leaving the EU with a withdrawal agreement represents an upside risk (although this would raise the risk of an overheating economy and a loss in competitiveness).
Domestic		
Concentrated production base	Low	High – Ireland’s production base is highly concentrated in a small number of high-tech sectors, with the result that output and employment are exposed to firm- and sector-specific shocks. This is both an upside and downside risk.
Loss of competitiveness	Medium	High – as a small and open economy, Ireland’s business model is very much geared towards export-led growth, which, in turn, is sensitive to the evolution of cost competitiveness.
Housing supply pressures	High	Medium – supply constraints in the housing sector can adversely impact on competitiveness by <i>inter alia</i> restricting the mobility of labour.
Overheating economy	Medium	Medium – With the labour market approaching full employment, stronger than assumed growth could lead to overheating pressures.

Source: Department of Finance

Table 22: fiscal risk assessment matrix

Risk	Likelihood	Impact and main transmission channel
Budgetary pressures	Medium	High – potential downside risk arising from excessive public expectations regarding budgetary policy. Indeed, significant outlays (current and capital) are needed simply to address changes in the structure of the population.
Corporation tax concentration risks	High	High – corporation tax revenue has increased significantly in recent years and the ‘Top 10’ payers contribute around 40 per cent of this tax, leaving this component of the public finances exposed to idiosyncratic shocks creating a concentration risk.
Dividend payments	Low	Medium – lower-than-expected dividend payment arising from the State’s shareholdings in banks or commercial semi-state companies.
Receipts from resolution of financial sector crisis	Low	Medium – budgetary projections prudently exclude any assumptions around the State’s disposal of shareholding in a number of financial institutions. These represent a likely upside risk to the baseline scenario.
EU Budget Contributions	Medium	Medium – stronger-than-expected growth in national income (or statistical changes) can increase the Irish contribution to the EU budget, while there is no clarity on how the UK’s exit will impact upon the EU Budget.
Contingent liabilities	Low	Medium – contingent liabilities continue to decline although the public finances would be adversely affected in the event these liabilities were ‘called’ (table A12 provides more detail).
External		
Bond market conditions	Low	Medium – government financing has benefitted from supportive bond market conditions. Any change to this environment could lead to an unanticipated rise in debt interest costs. However, as the bulk of outstanding public debt is at fixed rates, this helps to mitigate this risk.
Changes to tax ‘drivers’	Medium	Medium – macroeconomic ‘drivers’ are used to forecast taxation receipts and changes in the composition of economic activity can impact upon the public finances.
Statistical classifications	Medium	Low – Ireland’s compliance with the EU fiscal rules is measured under the ESA 2010 statistical framework. Therefore statistical revisions, updated guidance and classification decisions, including by Eurostat, represent a fiscal risk with both down and upside potential.
Climate change and renewable energy targets	High	High – Ireland is obliged to reduce greenhouse gas emissions by 20 per cent on 2005 levels by 2020. Separately, Ireland has a binding 2020 target that 16 per cent of all energy be from renewable sources. Failure to meet these targets will imply financial costs or sanctions.
Litigation Risk	Low	Low – An adverse or unexpected outcome of litigation against the State which resulted in additional expenditure over and above that provided could pose a risk to the achievement of budgetary targets.

Source: Department of Finance

Annex 1

Irish Fiscal Advisory Council's Endorsement of the Macroeconomic Forecasts



www.fiscalcouncil.ie | admin@fiscalcouncil.ie | (+353) 1 863 2003
Whitaker Square, Sir John Rogerson's Quay, Dublin D02 K138, Ireland.

30th September 2019

Dear Secretary General Moran,

The Council has a statutory obligation to endorse, as appropriate, the macroeconomic forecasts prepared by the Department of Finance on which *Budget 2020* will be based.¹ The Department provided its *Budget 2020* forecasts—which cover a five-year-ahead forecast horizon—to the Council on 23rd September 2019. The Council discussed these forecasts with Department of Finance staff on 27th September 2019, ahead of the Council's endorsement meeting.

The Council's approach to endorsing the Department's macroeconomic forecasts has three elements:

- a comparison of the Department of Finance's macroeconomic forecasts to the Council's Benchmark projections;
- a consideration of the methodology used to produce the forecasts; and
- a review of past forecast errors for evidence of systematic bias.

The Irish Fiscal Advisory Council endorses as within the range of appropriate forecasts the set of macroeconomic projections prepared by the Department of Finance for *Budget 2020* for the years 2019 and 2020.

The Council is satisfied that the forecasts are within an endorsable range, taking into account the methodology and the plausibility of the judgements made.

This endorsement comes at a time of exceptional uncertainty for the Irish economy. The endorsement decision covers a set of forecasts that assume a scenario in which the UK makes a disorderly exit from the EU. Although the Department of Finance has taken on board the impacts of a disorderly Brexit in its forecasts, the potential impacts from such a scenario could be more severe, especially in the short run.

¹ The Fiscal Responsibility Act 2012, as amended by the Ministers and Secretaries (Amendment) Act 2013, states that: "The Fiscal Council shall— (a) endorse, as it considers appropriate, the macroeconomic forecasts prepared by the Department of Finance on which the Budget and stability programme will be based".



www.fiscalcouncil.ie | admin@fiscalcouncil.ie | (+353) 1 863 2003
Whitaker Square, Sir John Rogerson's Quay, Dublin D02 K138, Ireland.

The Council verified the Department's mechanical application of the CAM to estimate trend supply-side variables.²

The Council will discuss the endorsement process and assess the macroeconomic projections in its forthcoming Fiscal Assessment Report, due in November 2019.

Yours sincerely,

Seamus Coffey, Chairperson.

² The CAM is primarily a tool used for fiscal surveillance by the European Commission. As highlighted by the Council in previous Fiscal Assessment Reports and on numerous occasions by the Department of Finance, the CAM is not well equipped to estimate the supply side of the Irish economy. Furthermore, the results do not reflect the Department's own views regarding the cyclical position of the economy. The Department will continue to report CAM estimates in an annex for compliance purposes.

Fiscal Council-endorsed and final macroeconomic forecasts

Table 23: Macroeconomic developments, per cent change (unless stated)

	2019 <i>final</i>	2020 <i>final</i>	2020 <i>endorsed</i>	Difference (pp)
Real GDP	5.5	0.7	0.7	-
<i>Components of real GDP</i>				
Personal consumption	2.7	1.4	1.4	-
Government consumption	4.5	3.5	3.5	-
Gross fixed capital formation	50.4	-24.0	-24.0	-
Stocks	-0.1	0.0	0.0	-
Exports of goods and services	10.2	0.9	0.9	-
Imports of goods and services	22.6	-6.5	-6.5	-

All numbers in this table are subject to rounding.

Source: Department of Finance forecasts

Table 24: Price developments, per cent change (unless stated)

	2019 <i>final</i>	2020 <i>final</i>	2020 <i>endorsed</i>	Difference (pp)
GDP deflator	0.4	1.6	1.6	-
Personal consumption deflator	1.7	1.7	1.6	0.1
HICP	0.9	1.3	1.1	0.2
Export price deflator	0.01	1.5	1.5	-
Import price deflator	0.6	1.5	1.5	-

All numbers in this table are subject to rounding.

Source: Department of Finance forecasts

Table 25: Labour market developments, per cent change (unless stated)

	2019 <i>final</i>	2020 <i>final</i>	2020 <i>endorsed</i>	Difference (pp)
Unemployment rate	5.2	5.7	5.7	-
Labour productivity, persons [^]	3.0	-0.1	-0.1	-
Compensation of employees*	6.5	4.3	4.3	-
Compensation per employee	3.5	3.0	3.0	-
Employment, persons (´000)	2,312	2,330	2,330	-

[^] GDP per person employed.

*Non-agricultural sector.

All numbers in this table are subject to rounding.

Source: Department of Finance forecasts

Table 26: Sectoral balances, per cent of GDP

	2019 <i>final</i>	2020 <i>final</i>	2020 <i>endorsed</i>	Difference (pp)
Current account	0.1	7.0	7.0	-

All numbers in this table are subject to rounding.

Source: Department of Finance forecasts

Annex 2

Glossary of terms used in Chapter 2

Table 27: glossary of terms used in Chapter 2 – Economic Outlook

'Core' inflation	A measure of consumer price inflation (harmonised across the EU) that excludes the unprocessed foods and energy components; the rationale is that these components are highly volatile and excluding them from any analysis gives a better indication of underlying price dynamics.
Headline investment	Represents the sum of overall investment, comprising of the sum of building and construction, machinery and equipment spending as well as spending on intangible assets.
Intangible asset	A productive asset that is not physical in nature, which can comprise of brand recognition, goodwill and intellectual property, such as patents, trademarks and copyrights. Intangible assets were included in national accounting under the changes introduced by the 2010 <i>European System of Accounts</i> (ESA2010).
Intellectual Property (IP)	A category of property that includes intangible creations of human intellect. It includes copyrights, patents, and trademarks.
Modified current account	The current account balance excluding net factor income of re-domiciled PLCs, depreciation of R&D imports, traded intellectual property, and leased aircraft. Included are the cost of imported investment in net aircraft related to leasing, R&D-related intellectual property, and imports of R&D services.
Modified domestic demand	A proxy for the domestic economy, comprising of the sum of personal and government consumption and investment, excluding investment in imported IP and aircraft for leasing purposes. It also excludes changes in the value of inventories.
Modified GNI (or GNI*)	Defined as GNI less the effects of the profits of re-domiciled companies and the depreciation of intellectual property products and aircraft leasing companies.
Modified investment	Total of investment excluding investment in imported IP and aircraft for leasing purposes. It also excludes changes in the value of inventories.
Modified net exports	A measure of net exports (exports less imports) excluding investments in aircraft by the leasing sector and net R&D imports. Other modified investment is machinery and equipment excluding investment in aircraft by the leasing sector, plus domestic R&D.
Now-cast	A prediction of the past, the very near future, and the very recent past. Not to be confused with a forecast which is an estimate prior to the period of interest, a now-cast is an estimate made during the period of interest.
Output gap	Represents the difference between the actual output of an economy and the maximum potential output of an economy expressed as a percentage of Gross Domestic Product (GDP).
Potential (GDP)	The level of output that an economy can produce at a stable inflation rate.

Source: Department of Finance

Annex 3

Additional Fiscal Statistics and Tables

Table A1: Difference between Exchequer balance and general government balance, € millions (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Exchequer balance	105	-985	-1,580	-1,380	-3,425	-3,075	-2,435
Exclude equity and loan transactions	-1,700	-1,420	-2,780	-2,840	-365	-260	-200
Adjust for interest accrual	450	385	615	135	115	100	230
Adjust for tax accruals	290	230	305	215	225	235	225
Adjust for other accruals	-240	485	245	195	165	155	150
Net lending of non-commercial State bodies	105	-100	-460	-300	-480	-505	-590
Impact of ISIF	375	470	420	380	360	340	330
Net surplus of Social Insurance Funds	1,065	1,955	2,070	2,440	3,120	3,760	4,545
Net surplus of other EBFs	-275	-115	-345	-130	20	15	15
Net lending/borrowing of Local Government (incl. AHBs)	-5	-235	-515	60	-35	220	310
Rainy Day Fund	0	0	0	500	500	500	500
General government balance (GGB)	170	670	-2,020	-730	195	1,490	3,080
per cent of GGB	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Nominal GDP	324,050	343,200	351,350	365,225	380,725	396,450	412,550

Rounding may affect totals. GDP is rounded to nearest €25m

Source: Department of Finance, Department of Public Expenditure and Reform, Central Statistics Office (CSO) and National Treasury Management Agency (NTMA) estimates.

Table A2: general government balance 2018-2024, per cent of GDP (unless stated)

	2018 (€m)	2018	2019	2020	2021	2022	2023	2024
Net lending by sub-sector								
General government balance	170	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Central government	170	0.1	0.3	-0.4	-0.2	0.1	0.3	0.7
Local government	-5	0.0	-0.1	-0.1	0.0	0.0	0.1	0.1
General government								
Total Revenue	82,340	25.4	25.2	25.2	25.2	25.2	25.3	25.4
Total Expenditure	82,170	25.4	25.0	25.8	25.4	25.1	24.9	24.7
Net lending/borrowing	170	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Interest expenditure	5,235	1.6	1.4	1.1	1.0	1.0	1.0	1.0
Primary balance	5,405	1.7	1.6	0.6	0.8	1.1	1.4	1.7
One-off / other temporary measures	-210	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Main components of revenue								
Total taxes	60,560	18.7	18.5	18.6	18.5	18.5	18.5	18.6
<i>Taxes on production and imports</i>	<i>25,470</i>	<i>7.9</i>	<i>7.8</i>	<i>7.8</i>	<i>7.7</i>	<i>7.6</i>	<i>7.5</i>	<i>7.5</i>
<i>Current taxes on income, wealth etc.</i>	<i>34,570</i>	<i>10.7</i>	<i>10.6</i>	<i>10.7</i>	<i>10.7</i>	<i>10.8</i>	<i>10.9</i>	<i>11.0</i>
<i>Capital taxes</i>	<i>520</i>	<i>0.2</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>
Social contributions	13,460	4.2	4.4	4.4	4.5	4.5	4.6	4.7
Property Income	1,315	0.4	0.5	0.4	0.3	0.3	0.3	0.3
Other	7,000	2.2	1.8	1.9	1.9	1.9	1.9	1.9
Total revenue	82,340	25.4	25.2	25.2	25.2	25.2	25.3	25.4
p.m.: Tax burden	74,725	23.1	23.0	23.4	23.4	23.4	23.5	23.7
Main components of expenditure								
Compensation of employees	22,230	6.9	6.7	6.8	6.6	6.3	6.1	5.8
Intermediate consumption	10,985	3.4	3.9	4.0	4.0	4.2	4.4	4.8
Social payments	30,070	9.3	8.7	8.8	8.6	8.3	8.0	7.7
<i>Social transfers in kind via market producers</i>	<i>6,700</i>	<i>2.1</i>	<i>2.0</i>	<i>2.0</i>	<i>2.0</i>	<i>1.9</i>	<i>1.8</i>	<i>1.8</i>
<i>Social transfers other than in kind</i>	<i>23,375</i>	<i>7.2</i>	<i>6.7</i>	<i>6.8</i>	<i>6.6</i>	<i>6.4</i>	<i>6.2</i>	<i>5.9</i>
Interest expenditure	5,235	1.6	1.4	1.1	1.0	1.0	1.0	1.0
Subsidies	1,865	0.6	0.5	0.4	0.4	0.4	0.4	0.4
Gross fixed capital formation	6,330	2.0	2.3	2.5	2.5	2.5	2.5	2.6
Capital Transfers	1,690	0.5	0.5	0.7	0.8	0.8	0.9	0.9
Other	3,760	1.2	1.0	1.1	1.1	1.0	1.0	1.0
Resources to be allocated	0	0.0	0.0	0.3	0.5	0.6	0.6	0.5
Total expenditure	82,170	25.4	25.0	25.8	25.4	25.1	24.9	24.7
p.m. : Government consumption	38,890	12.0	12.3	12.7	12.4	12.2	11.7	11.2
GDP at current market prices	324,050	324,050	343,200	351,350	365,225	380,725	396,450	412,550

Rounding may affect totals.

Source: Department of Finance, Department of Public Expenditure and Reform, CSO and NTMA estimates

Table A3: comparison of vintages of receipts and expenditures for 2019, € millions

	SPU 2019	Budget 2020	Total Δ	New Data ¹
General Government Revenue				
Taxes on production and imports	26,790	26,615	-175	-175
Current taxes on income, wealth	35,925	36,245	320	320
Capital taxes	495	495	0	0
Social contributions	14,835	15,075	240	240
Property Income	1,730	1,685	-45	-45
Other	6,175	6,245	70	70
Total revenue	85,955	86,365	410	410
General Government Expenditure				
Compensation of employees	23,015	23,040	25	25
Intermediate consumption	13,000	13,215	215	215
Social payments	29,880	30,005	125	125
Interest expenditure	4,760	4,680	-80	-80
Subsidies	1,635	1,575	-60	-60
Gross fixed capital formation	7,740	7,935	195	195
Capital transfers	1,945	1,755	-190	-190
Other	3,375	3,495	120	120
Total expenditure	85,345	85,695	350	350
General government balance	610	670	60	

Rounding may affect totals

1. Reflects more up to date data since the SPU 2019 estimates.

Source: Department of Finance.

Table A4: general government interest expenditure 2018-2024, € millions

	2018	2019	2020	2021	2022	2023	2024
National Debt Cash Interest	5,798	5,075	4,665	3,803	3,939	4,065	4,074
per cent tax revenue	10.4	8.7	7.6	6.0	5.9	5.9	5.6
per cent of GDP	1.8	1.5	1.3	1.0	1.0	1.0	1.0
National Debt Cash Interest Accruals	-251	-245	-533	-108	-106	-95	-228
Consolidation and Grossing Adjustments	-58	-40	-72	-25	-25	1	4
Other	-255	-111	-42	29	61	76	86
Total Interest on ESA2010 basis	5,234	4,678	4,017	3,700	3,869	4,047	3,936
per cent of total general government revenue	6.4	5.4	4.5	4.0	4.0	4.0	3.8
per cent of GDP	1.6	1.4	1.1	1.0	1.0	1.0	1.0

Rounding may affect totals

Source: Department of Finance, CSO and NTMA (National Debt data provider)

Table A5: projected movement in general government debt 2018-2024, € billions

	2018	2019	2020	2021	2022	2023	2024
Opening general government debt	201.4	205.9	203.6	198.5	205.8	207.1	213.2
Exchequer borrowing requirement	-0.1	1.0	1.6	1.4	3.4	3.1	2.4
Change in Exchequer Deposits	4.4	-0.6	-8.3	5.1	-3.4	1.9	2.0
Net lending of NCSSBs [†]	-0.2	-0.3	0.6	0.3	0.4	0.5	0.5
Net lending of local government	0.1	0.2	0.5	-0.1	0.0	-0.2	-0.3
Change in collateral held	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.3	-2.5	0.4	0.7	0.8	0.8	0.7
Closing general government debt	205.9	203.6	198.5	205.8	207.1	213.2	218.5
General government debt to GDP ratio	63.5	59.3	56.5	56.4	54.4	53.8	53.0

[†]NCSSBs = Non-commercial semi-state bodies

Source: Department of Finance, CSO and NTMA.

Table A6: breakdown of revenue, per cent of GDP (unless stated)

	2018	2018	2019	2020	2021	2022	2023	2024
	€ million							
Total Revenue at Unchanged Policies	81,488	25.1	24.9	24.9	25.2	25.2	25.3	25.4
Discretionary revenue	852	0.3	0.3	0.3	0.0	0.0	0.0	0.0

Source: Department of Finance

Table A7: expenditure developments, per cent of GDP (unless stated)

	2018	2018	2019	2020	2021	2022	2023	2024
	€ billions							
Exp. on EU Programmes matched by revenue from EU funds	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Expenditure fully matched by mandated revenue increases	0	0	0	0	0	0	0	0
Non-discretionary changes in unemployment benefit expenditure	-0.4	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1

Rounding may affect totals.

Source: Department of Finance and Department of Public Expenditure and Reform

Table A8: Application of Expenditure Benchmark, € billions (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Fiscal Developments							
General Government Expenditure	82.2	85.7	90.7	92.8	95.7	98.8	101.9
Interest Expenditure	5.2	4.7	4.0	3.7	3.9	4.0	3.9
Expenditure co-financed by EU	0.6	0.7	0.7	0.7	0.8	0.8	0.8
Gross Fixed Capital Formation (GFCF)	6.3	7.9	8.8	9.1	9.4	10.0	10.7
Annual Average GFCF (t-3 to t)	5.4	6.2	7.1	8.0	8.8	9.3	9.8
Cyclical Unemployment Expenditure	-0.4	-0.4	-0.1	0.0	-0.1	-0.2	-0.3
Discretionary Revenue Measures (DRM)	0.9	1.0	1.1	0.0	-0.1	0.0	0.0
Corrected Expenditure Aggregate	75.6	79.0	84.3	87.3	90.6	93.4	96.6
Corrected Expenditure Aggregate net of DRMs	74.8	78.1	83.2	87.4	90.7	93.4	95.6
Macro-Economic Developments¹							
Net Public Expenditure Annual Growth per cent	5.4	3.2	5.3	3.7	3.9	3.1	3.4
GDP Deflator (per cent change)	1.3	1.3	1.9	1.4	1.4	1.4	1.4
Expenditure Aggregate, Annual Growth in per cent (real)	4.1	1.9	3.3	2.2	2.4	1.7	2.0
Expenditure Benchmark growth rate per cent	1.2	4.0	1.8	4.4	4.2	3.9	3.3
Deviation in year t (Negative = breach of EB)²	-2.1	1.6	-1.2	1.8	1.5	2.0	1.2
Deviation in year t per cent GDP (Negative = breach of EB)²	-0.6	0.5	-0.3	0.5	0.4	0.5	0.3
Average deviation in t-1 and t per cent of GDP²	-0.5	-0.1	0.1	0.1	0.4	0.5	0.4

Rounding may affect totals.

1. Reference rate values using an interpolated linear average for 2015 (not the c.25 per cent potential growth figure).

2. Rainy Day Fund contributions do not impact on compliance.

Source: Department of Finance.

Table A9: estimate of local government income and expenditure for 2020, € millions

	2020
General government revenues/inflows	9,418
Rates / NPPR (net of bad debt provision for rates)	1,589
Property income	1,512
Other receipts	698
Inflows from central government ¹	5,490
Inflows from operations in financial instruments ²	130
General government expenditure / outflows	9,934
Compensation of employees ³	2,037
Interest paid to non-government ⁴	21
Social benefits (transfers in kind to households)	912
Capital transfers (capital grants paid)	3,797
Other expenditure (net of bad debt provision for rates)	3,068
Outflows to central government ⁵	56
Outflows from operations in financial instruments ⁶	43
Local government balance	-515

Figures may not sum due to rounding.

1. Grants and subsidies.
2. Loans.
3. Including pensions.
4. Interest paid other than to the HFA, OPW or NTMA.
5. Interest and principal paid to the HFA, OPW and NTMA.
6. Principal repaid, other than to the HFA, OPW or NTMA.

Source: Department of Finance

Table A10: contingent liabilities, per cent of GDP at end-year

	2016	2017	2018
Public guarantees	1.5	0.1	0.0
<i>of which:</i>			
Eligible Liabilities Guarantee (ELG)	0.5	0.1	0.0
National Asset Management Agency	1.0	0.0	0.0
Other	0.0	0.0	0.0

Note: Rounding may affect totals.

Source: Department of Finance, CSO.

Annex 4

Table A11: macroeconomic aggregates, 2018 - 2024

	2018	2019	2020	2021	2022	2023	2024
<i>Economic activity</i>	year-on-year change (unless stated)						
Real GNP	6.5	4.3	-0.1	2.4	2.5	2.4	2.3
Real GDP	8.2	5.5	0.7	2.5	2.8	2.7	2.6
Nominal GDP (nearest €25m)	324,050	343,200	351,350	365,225	380,725	396,450	412,550
Nominal GNP (nearest €25m)	253,050	265,275	269,425	279,675	290,575	301,625	312,650
Nominal GNI* (nearest €25m)	197,450	203,275	203,700	210,675	218,125	225,550	232,750
<i>Components of GDP</i>							
Personal consumption	3.4	2.7	1.4	1.9	2.1	2.3	2.4
Government consumption	4.4	4.5	3.5	2.0	2.0	2.0	2.0
Investment	-21.1	50.4	-24.0	-3.6	3.9	3.9	3.9
<i>Modified domestic demand</i>	4.7	3.2	1.4	2.3	2.5	2.7	2.8
<i>Modified investment</i>	8.5	3.2	-0.2	3.4	3.9	4.2	4.2
Exports	10.4	10.2	0.9	4.2	4.1	4.0	3.9
Imports	-2.9	22.6	-6.5	2.9	4.4	4.6	4.5
<i>Contributions to real GDP growth</i>	percentage point						
Domestic demand (excl. stocks)	-5.0	13.2	-7.2	-0.07	1.8	1.91	1.96
Net exports	15.4	-7.6	7.9	2.54	1.0	0.8	0.69
Stock changes	-1.65	-0.1	0.0	0.0	0.0	0.0	0.0
statistical discrepancy	-0.6	0.0	0.0	0.0	0.0	0.0	0.0
<i>Price developments</i>	year-on-year change						
HICP	0.7	0.9	1.3	1.4	1.8	2.0	2.1
GDP deflator	0.8	0.4	1.6	1.4	1.4	1.4	1.4
Personal Consumption Deflator	1.8	1.7	1.7	1.7	1.8	2.0	2.1
<i>Labour market</i>	year-on-year change						
Employment	2.9	2.4	0.8	1.1	1.5	1.7	1.9
Unemployment	5.8	5.2	5.7	5.9	5.9	5.7	5.5
Labour Productivity	5.1	3.0	-0.1	1.4	1.4	1.0	0.7
Compensation of Employees	5.9	6.5	4.3	4.4	5.0	5.5	6.0
Compensation per Employee	1.9	3.5	3.0	3.2	3.4	3.7	3.9
<i>External</i>	per cent of GDP						
Trade balance	33.1	23.5	31.1	32.9	33.0	32.8	32.6
Current Account	10.6	0.1	7.0	8.7	8.5	8.1	7.5
<i>Cyclical Developments</i>							
Output Gap Estimate	-0.2	1.0	-0.3	0.5	1.3	1.9	2.1

Source: CSO (for 2018) and Department of Finance for 2019-2024

Table A12: exchequer & general government aggregates, 2018 - 2024

	2018	2019	2020	2021	2022	2023	2024
Exchequer (€ millions)							
Exchequer Balance	105	-985	-1,580	-1,380	-3,425	-3,075	-2,435
Tax Revenue	55,555	58,625	61,125	63,615	66,375	69,420	72,860
General government (€ millions)							
Total Revenue	82,340	86,365	88,670	92,065	95,930	100,275	104,965
Total Expenditure	82,170	85,695	90,685	92,795	95,735	98,785	101,890
General government balance	170	670	-2,020	-730	195	1,490	3,080
<i>per cent of GDP</i>							
Total Revenue	25.4	25.2	25.2	25.2	25.2	25.3	25.4
Total Expenditure	25.4	25.0	25.8	25.4	25.1	24.9	24.7
General government balance	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Interest expenditure	1.6	1.4	1.1	1.0	1.0	1.0	1.0
Primary balance	1.7	1.6	0.6	0.8	1.1	1.4	1.7
Gross fixed capital formation	2.0	2.3	2.5	2.5	2.5	2.5	2.6
Structural balance	0.2	-0.4	-0.4	-0.5	-0.7	-0.7	-0.5
Primary structural balance	1.8	0.9	0.7	0.5	0.3	0.3	0.5
Gross debt	63.5	59.3	56.5	56.4	54.4	53.8	53.0
Net debt	54.9	51.4	51.2	50.1	49.5	48.8	47.9
<i>per cent of GNI*</i>							
Gross debt	104.3	100.2	97.4	97.7	94.9	94.5	93.9
Net debt	90.0	86.8	88.3	86.9	86.5	85.8	84.9

Rounding may affect totals.

Source: CSO (for 2018) and Department of Finance for 2019-2024

Table A13: Previous GDP forecasts endorsed by the Irish Fiscal Advisory Council, per cent

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Autumn 2013	0.2	2.0	2.3	2.8								
Spring 2014		2.1	2.7	3.0	3.5	3.5						
Autumn 2014		4.7	3.9	3.4	3.4	3.4						
Spring 2015			4.0	3.8	3.2	3.2	3.0	3.0				
Autumn 2015			6.2	4.3	3.5	3.2	3.1	3.0	2.9			
Spring 2016				4.9	3.9	3.9	3.3	3.1	2.9			
Autumn 2016				4.2	3.5	3.4	3.2	2.8	2.6			
Spring 2017					4.3	3.7	3.1	2.7	2.5			
Autumn 2017					4.3	3.5	3.2	2.8	2.6			
Spring 2018						5.6	4.0	3.4	2.8			
Autumn 2018						7.5	4.2	3.6	2.5	2.6	2.7	
Spring 2019						6.7	3.9	3.3	2.4	2.5	2.6	
Autumn 2019						8.2	5.5	0.7	2.5	2.8	2.7	2.6
Outturn	1.4	8.6	25.2	3.7	8.1	8.2						

Source: Department of Finance Forecasts

Note: Autumn forecasts refer to the Draft Budgetary Plans.

Spring forecasts refer to the Stability Programme Updates.

Table A14: Previous general government balance forecasts, per cent of GDP

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Autumn 2013	-7.3	-4.8	-3	-2.4								
Spring 2014		-4.8	-3	-2.2	-1.2	0.0						
Autumn 2014		-3.7	-2.7	-1.9	-0.9	0.3						
Spring 2015			-2.3	-1.7	-0.9	-0.1	0.7	1.7				
Autumn 2015			-2.1	-1.2	-0.5	0.2	1.0	1.8	2.5			
Spring 2016				-1.1	-0.4	0.4	1.2	2.0	2.8			
Autumn 2016				-0.9	-0.4	-0.3	0.2	0.7	1.1			
Spring 2017					-0.4	-0.1	0.1	0.6	1.0			
Autumn 2017					-0.3	-0.2	-0.1	0.3	0.8			
Spring 2018						-0.2	-0.1	0.3	0.4			
Autumn 2018						-0.1	0.0	0.3	0.4	1.1	1.4	
Spring 2019							0.2	0.4	0.7	1.0	1.3	
Autumn 2019						0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
Outturn	-6.1	-3.6	-1.9	-0.5	-0.2	0.1						

Source: Department of Finance Forecasts, CSO (for outturn)

Note: Autumn forecasts refer to the Draft Budgetary Plans.

Spring forecasts refer to the Stability Programme Updates.

Annex 5

Structural Budget Balance and Medium Term Budgetary Objective (MTO)

The Medium Term (Budgetary) Objective (MTO) is the cornerstone of the preventative arm of the Stability and Growth Pact (SGP). Ireland's MTO is a structural deficit of 0.5 per cent of GDP. The table below shows the evolution of the structural balance over 2018 – 2024; output gap estimates are based on the harmonised methodology required under the SGP.

Table A15: structural budget balance, per cent of GDP (unless stated)

	2018	2019	2020	2021	2022	2023	2024
Headline fiscal developments							
General government balance	0.1	0.2	-0.6	-0.2	0.1	0.4	0.7
One-off / temporary measures	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenditure	1.6	1.4	1.1	1.0	1.0	1.0	1.0
General government primary balance	1.7	1.6	0.6	0.8	1.1	1.4	1.7
Economic cycle							
GDP growth rate	8.2	5.5	0.7	2.5	2.3	2.3	2.4
Potential GDP growth (%)	7.3	4.9	3.2	2.6	2.3	2.4	2.5
- contribution from labour	2.4	1.9	1.3	0.9	0.5	0.5	0.5
- contribution from capital accumulation	-0.1	1.3	0.2	0.0	0.1	0.2	0.2
- contribution from total factor productivity	5.0	1.67	1.6	1.7	1.7	1.7	1.8
Output gap	2.3	2.8	0.4	0.2	0.2	0.1	0.0
Structural fiscal development							
Cyclical budgetary component	1.2	1.5	0.2	0.1	0.1	0.0	0.0
Structural budget balance	-1.1	-1.3	-0.8	-0.3	0.0	0.3	0.7
Structural primary balance	0.5	0.1	0.4	0.7	1.0	1.4	1.7

Estimates of output gap based on harmonised methodology.

Figures may not sum due to rounding.

Source: Department of Finance.