

# ESRI RESEARCH NOTE

## *Comparing two recessions in Ireland: Global Financial Crisis vs COVID-19*

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# COMPARING TWO RECESSIONS IN IRELAND: GLOBAL FINANCIAL CRISIS VS COVID-19

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\* Matthew Allen-Coghlan and Petros Varthalitis<sup>1</sup>

## 1. INTRODUCTION

The rate at which the COVID-19 pandemic has spread across the globe and the damage it has caused to so many countries is unprecedented in modern times. Not since the spread of the Spanish Flu over 100 years ago has there been a global health crisis of this scale and severity. The economic impact of COVID-19 is also global and already the pandemic has had a significant adverse impact on the world economy. However, we do not have to go back a century to find a global economic shock of this scale. The Global Financial Crisis (GFC) was just over ten years ago and like the current economic crisis it spread throughout the world impacting advanced and developing economies alike.

The Irish economy was no exception and much has been written on the devastating impact of the resulting recession.<sup>2</sup> Given the severity of that recession and how recently it occurred, a natural question arises around the similarities and differences between the GFC and the one currently being experienced as a result of the pandemic.

Recently, other commentators have also compared the economic impact of the COVID-19 crisis with past major global crises. For example, De Grawe and Ji (2020) compare the COVID-19 crisis, the GFC and the 1933 Great Depression using indicators of the world economy. Buti (2020) compares the GFC with COVID-19 crisis for the EU economy and Wheelock (2020) compares the COVID-19 crisis with the Great Depression focusing on the US economy.

In this Research Note we explore how both crises impacted various aspects of the Irish economy. In order to do that we analyse key economic indicators across both periods comparing and contrasting the rapidity and the magnitude of the shock

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<sup>2</sup> For the various aspects of the Irish debt crisis and recovery see Whelan (2014), CESifo (2014) and McQuinn and Varthalitis (2020).

caused by each crisis. We focus on three types of indicators: hard indicators, which can be thought of as a measure of realised outcomes, soft indicators which can be thought of as a measure of expectations and policy responses, both at a national and EU level.

The rest of this Note is structured as follows: Section 2 provides an overview of the nature of the two shocks and the differences in the economy entering into both periods. Section 3 compares various hard indicators across both periods while Section 4 compares soft indicators. Section 5 discusses the different policy response to both crises, both at a national and EU level. Section 6 concludes.

## **2. NATURE OF THE SHOCKS**

Before examining the impact that both crises have had on the Irish economy, we first outline the nature of the two shocks and the differences in how they manifested themselves in the economy.

The initial trigger for the GFC started with the collapse of Lehman Brothers in the United States in 2008. Due to the interconnectedness of the global financial system, credit dried up globally and the lack of liquidity transmitted to European financial markets. The problem intensified in several Eurozone countries with the sovereign debt crisis.

While this initial trigger originated outside the Irish economy, it was endogenous structural distortions within the economy that magnified the shock through the Irish system. These distortions were in the form of the property market and credit bubbles that had emerged in the Irish economy over the prior decade. Banks and households were overleveraged in this regard and the Irish government had become increasingly reliant on revenues from the property sector. Thus, when these twin bubbles burst banks became insolvent, households fell into negative equity and the public finances collapsed.

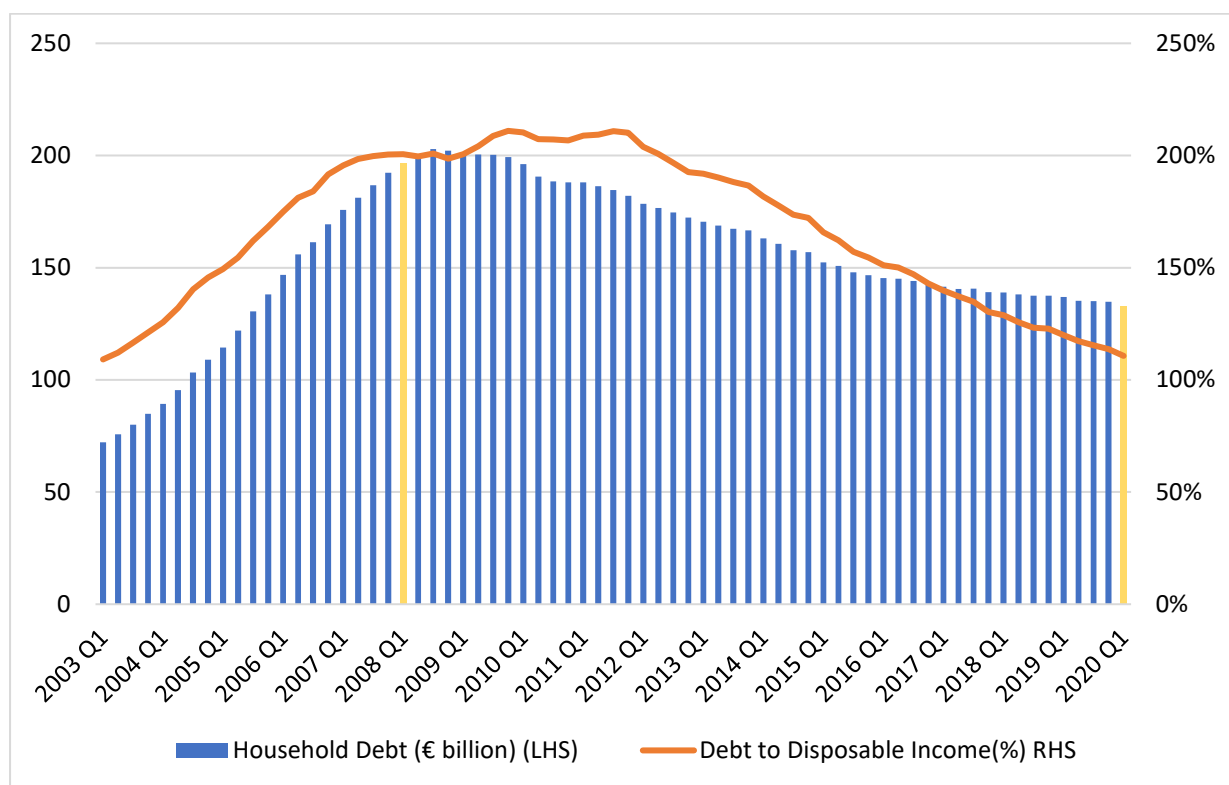
The COVID-19 crisis on the other hand is the definition of an exogenous shock.<sup>3</sup> This unpredictable health crisis emerged from outside the economic system and thus far has not been propagated by structural distortions in the economy in the same way the GFC was. One of the ways this is evidenced is by comparing the amount of leverage in the system across both periods.

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<sup>3</sup> See Danielsson et al. (2020).

Figure 1 shows the household debt in the country since 2003. Going into the previous recession the level of household debt had been increasing sharply and by Q1 2008 it was up over €200 billion. By comparison, in Q1 2020 the level of household debt was just over €130 billion following a decade in which household debt has been falling steadily. The difference between both periods is even more stark when taken relative to disposable income. In Q1 2008 household debt to disposable income was up over 200 per cent in comparison to just over 100 per cent in Q1 2020.

**FIGURE 1 HOUSEHOLD DEBT**



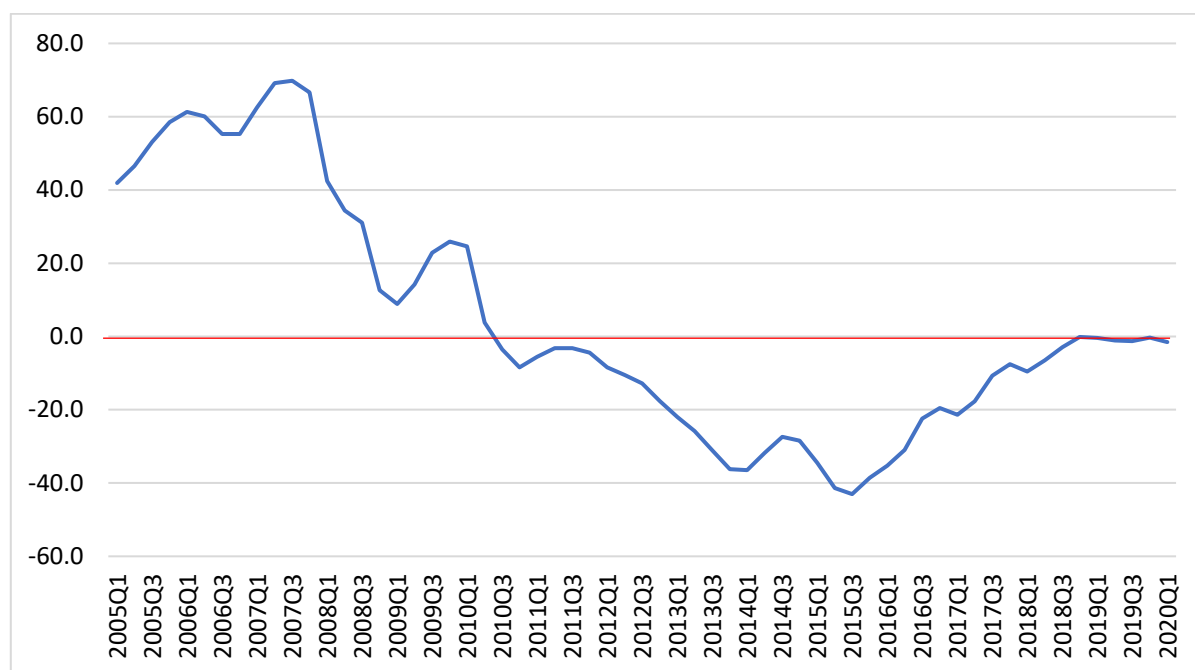
Source: Central Bank of Ireland.

Another metric of the amount of leverage in the system is the credit gap. The credit gap is a measure of the difference between the actual and long-run trend level of the credit-to-GDP ratio.<sup>4</sup> When the gap is positive, the current level of the ratio is greater than trend and when the gap is negative the current level of the ratio is less than trend. If the gap becomes significantly large, this may suggest that the level of credit in the economy is unsustainable. Going into the GFC the credit gap had peaked at just under 70 per cent. However, since then there has been a steady decline in the credit gap which hasn't been positive since 2009. Going into the

<sup>4</sup> For more on the measurement of the credit gap see O'Brien et al. (2018).

pandemic crisis the credit gap remained around 0 per cent indicating that the amount of credit in the economy was not at an unsustainable level.

**FIGURE 2 CREDIT GAP (%)**



Source: Central Bank of Ireland.

Both measures show that there was significantly less leverage in the system going into the COVID-19 crisis in comparison to the GFC. One of the reasons for this is likely a result of the introduction of a number of regulatory measures which were put in place post the GFC recession. These include the macroprudential rules and the counter-cyclical capital buffer which have been designed to reduce the amount of credit in the Irish economy.<sup>5</sup>

### 3. HARD INDICATORS

#### 3.1 Quarterly indicators

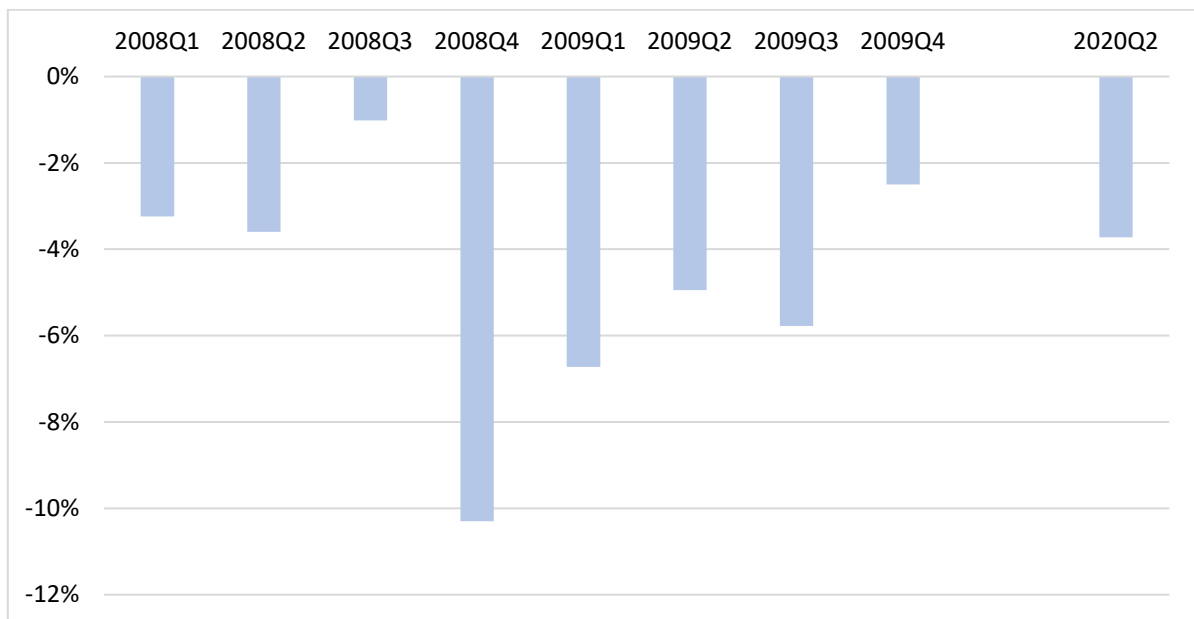
When the pandemic first took effect there was an expectation amongst most policy institutions and forecasters that there would be a decline in Ireland's output in 2020 greater than anything the country had experienced before.<sup>6</sup> The largest decline in output was expected to come in Q2, the period over which the strictest phases of the lockdown would be in place. However, National Account data shown

<sup>5</sup> For further discussion on the impact of these financial stability measures see: Lozej and O'Brien (2018) and Economides et al. (2019).

<sup>6</sup> See for example: McQuinn et al. (2020); IMF (2020); IFAC (2020).

in Figure 3 reveal that while the decline in output in Q2 was significant it was not unprecedented. In Q2 2020 real GDP growth fell by just under 4 per cent compared to the same quarter the previous year. During the previous recession we saw much greater declines in GDP over multiple quarters. In every quarter between 2008 and 2009 there was a decline in annual GDP growth and over four of these quarters the negative GDP growth was greater than that experienced in Q2 2020. The largest decline came in Q4 2008 when real GDP fell by over 10 per cent compared to the same period the previous year.

**FIGURE 3 REAL GDP GROWTH (YEAR-ON-YEAR)**



Source: Central Statistics Office.

Figure 4 also shows output growth for the Irish economy except here the economy is divided into the tradable and non-tradable sectors.<sup>7</sup> The impact of the pandemic crisis on the domestic sector is indeed unprecedented, with the decline in output in the non-tradable sector much greater than anything that was seen during the previous recession. The largest decline in real GVA in the non-tradable sector during the previous recession was in Q1 2009 when output declined by over 10 per cent compared to the same period the previous year. The annual decline in Q2 2020 was nearly double that, with a negative growth rate of just over 19 per cent. In contrast, the impact on the tradable sector during the current crisis has been

<sup>7</sup> The tradable and non-tradable GVA are defined as in Bergin et al. (2017). A sector is defined as tradable if at least 50 per cent of total final uses (excluding change in stocks) is exported. The tradable sectors (NACE classification): Industry (excl. Construction), Information and Communication, Financial and Insurance Activities, Professional, Admin and Support Services. Non-tradable sectors (NACE classification): Agriculture, Forestry and fishing, Construction, Distribution, Transport, Hotels and Restaurants, Real estate activities, Public admin, Education and Health, Arts, Entertainment and Other services.

much more benign than anything experienced during the GFC recession. In Q2 2020 the tradable sector actually experienced positive output growth, up over 2 per cent compared to the same period the previous year. This compares to sizeable declines in output growth in the tradable sector during the previous recession. The dichotomy between the performance of the tradable and non-tradable sectors is an example of how the current pandemic crisis is having very different impacts on different sectors of the economy. The fact that the overall decline in output in Q2 was relatively benign despite such an unprecedented decline in the non-tradable sector also highlights how important the tradable sector is to the fortunes of the Irish economy. Within the tradable sector, it was the strong performance of just a small number of sectors, namely pharmaceutical and computer services that accounted for the positive growth over this period.<sup>8</sup>

**FIGURE 4 REAL GVA GROWTH, TRADABLE AND NON-TRADABLE SECTORS (YEAR-ON-YEAR)**



Source: Central Statistics Office.

### 3.1.2 Monthly indicators

The following hard indicators have a monthly time frequency which has the advantage of giving us more up-to-date data points for the current pandemic which would not be available with quarterly data. Monthly data also allow us to see how the economic indicators react to sudden shifts in policy and sentiment which is especially important given the rapidly changing nature of the current health crisis. So as to compare and contrast the evolution of these indicators between the

<sup>8</sup> For further details see O’Toole (2020).

pandemic recession and the GFC we overlay the monthly data from both periods. In order to do this we first choose a turning point which marks the month prior to which the recession began in both periods. Choosing the month in which the recession began for the pandemic crisis is quite straightforward as the first lockdown restrictions were put in place in March 2020. Therefore, February 2020 is identified as the turning point for the pandemic crisis. Identifying the turning point for the GFC is not as straightforward as there is not a single month we can identify as to when the recession started over this period. We therefore base this turning point on retail sales. Retail sales are sensitive to both underlying economic conditions and economic sentiment and so this a reasonable economic indicator on which to base the turning point.<sup>9</sup> Based on the retail sales data we identify January 2008 as the turning point i.e. the month before we see a large decrease in retail sales volume over consecutive months. Overlaying the two periods based on these turning points we then compare the scale and rapidity of the shocks to these indicators across both periods.

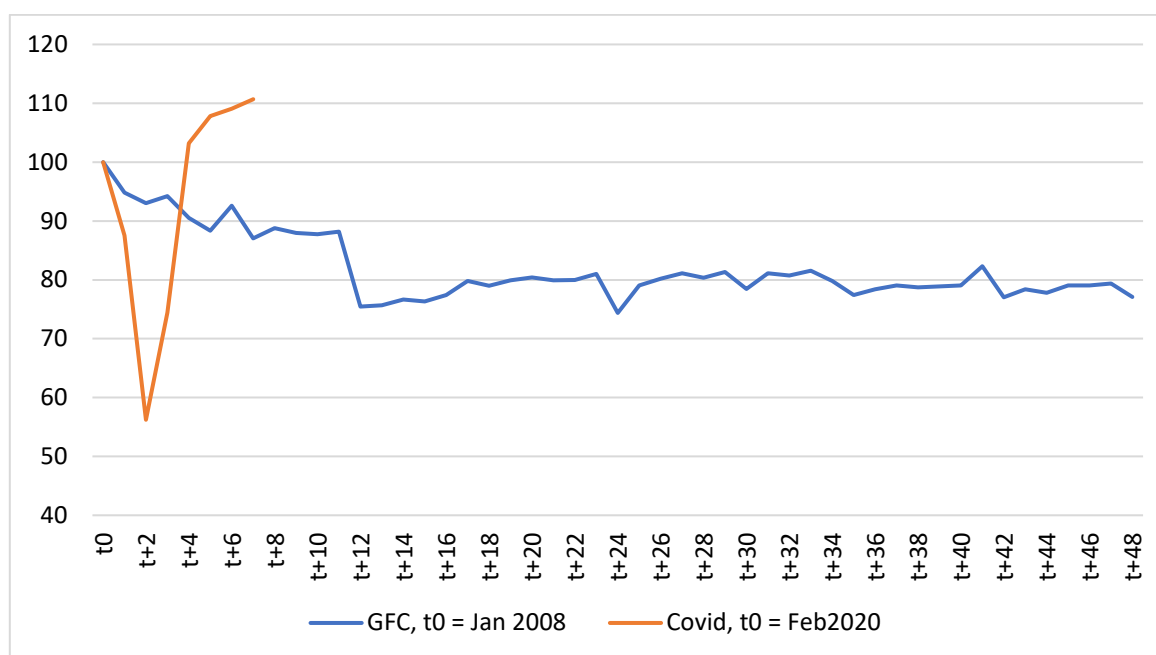
Figure 5 shows that after the initial lockdown restrictions were brought in in March retail sales collapsed. At this time, the country was in strictest phase of the lockdown when many retailers were forced to close their doors. By April, the total volume of retail sales was down nearly 50 per cent compared to the period immediately preceding the lockdown. However, the recovery in retail sales has been equally sharp with the volume of sales increasing above pre-lockdown levels just four months after the initial turning point. In contrast during the GFC the decline in retail sales was much more gradual. Over the 12 months after the GFC turning point, retail sales declined by around 20 per cent and remained at this lower level over the next three years. The V-shaped recovery of retail sales is likely a result of pent-up demand following the months in which consumers were unable to access retail stores as well as improved expectations for the future economic and policy outcomes (see Section 5).

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<sup>9</sup> Our key results do not change if we employ an alternative indicator so as to identify the turning point of the GFC.



**FIGURE 5 RETAIL SALES, VOLUME ADJUSTED (INDEX, T0=100)**



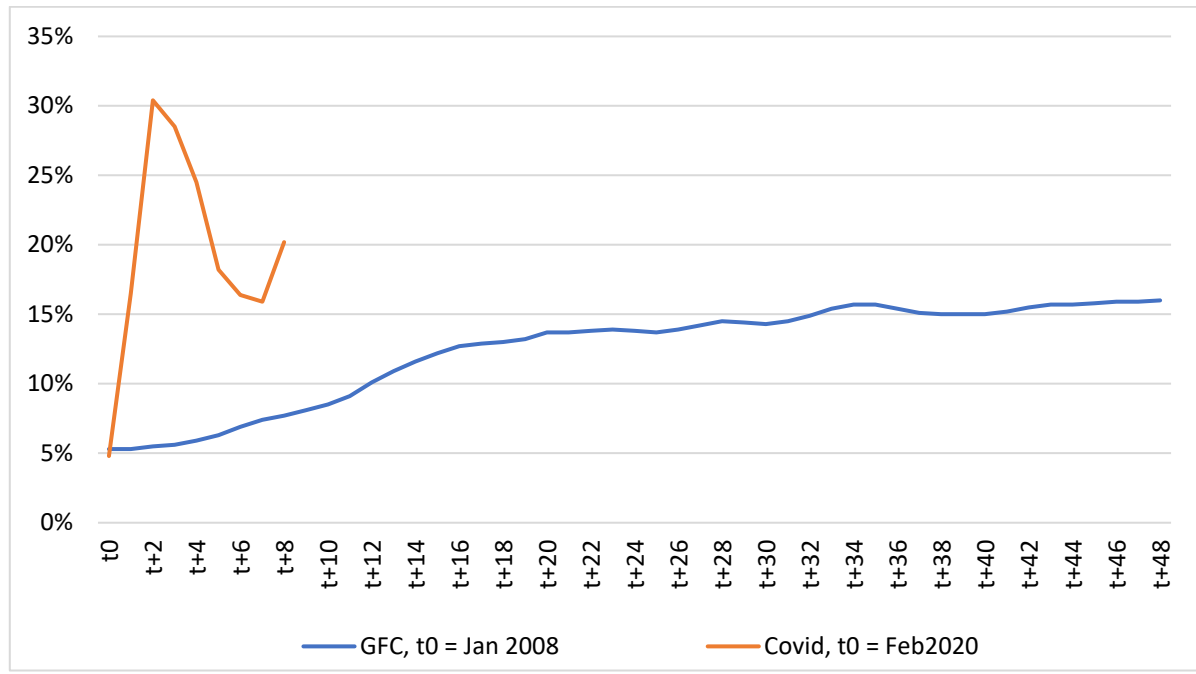
Source: Central Statistics Office.

Figure 6 shows the unemployment rate over the two recessions. During the GFC there was a gradual increase in the unemployment rate which continued to rise over a four-year period after the initial turning point, eventually peaking at just over 16 per cent. In contrast during the current recession the increase in the unemployment rate has been much sharper, peaking at over 30 per cent just two months after the turning point.<sup>10</sup> In the subsequent months, as the lockdown restrictions were eased, there was also a sharp recovery in the unemployment rate. However, the momentum of this recovery began to slow in Q3 and there has been a spike in the unemployment rate in the most recent data as a result of the Level 5 lockdown, though not as steep as that seen during the first lockdown. One of the main differences between the two periods in how Ireland deals with the shock to the labour market is the migration channel. Historically, outward migration has acted as a release valve for pressure in the Irish labour market with large levels of emigration synonymous with recessions in the country. For this reason, the unemployment rate during previous recessions such as the GFC was likely subdued by the thousands of Irish people who sought work outside the country. Given the current restrictions around international travel and the significant economic contraction being experienced by most of the world’s major economies, the ability of Irish workers to seek work outside the country has greatly reduced. While

<sup>10</sup> The unemployment rate referenced since March 2020 is what the CSO refers to as the upper-bound. This counts all those on the Pandemic Unemployment Programme as being unemployed. The unemployment rate according to the ILO definition is significantly lower. For further explanation of this see: <https://www.cso.ie/en/methods/labourmarket/monthlyunemployment/monthlyunemploymentandcovid-19adjustedestimatesaugust2020technicalnote>.

emigration would not act as a panacea to the pandemic unemployment crisis given the large estimates of people unemployed, the inability of people to emigrate for work is likely contributing to the elevated unemployment rate.

**FIGURE 6 UNEMPLOYMENT RATE**



Source: Central Statistics Office.

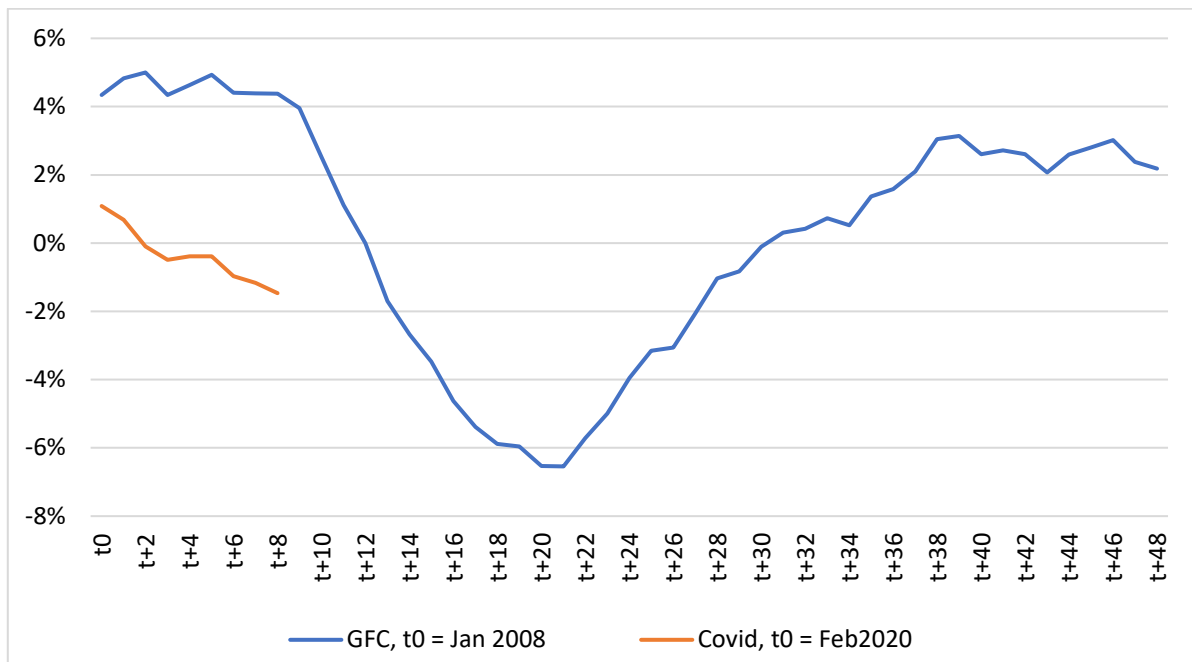
Note: The unemployment rate includes those on the Pandemic Unemployment Payment which is the upper bound of the CSO's unemployment data.

At the onset of COVID-19 it was uncertain what impact the pandemic would have on inflation due to the shock to both the supply and demand side of the economy. On the supply side many businesses have been forced to close and workers in some industries have been prevented from going to their jobs. Globally, supply chains have been significantly disrupted and international trade has been disturbed. On the demand side there have been significant declines in consumption and large increases in savings.<sup>11</sup> While both these effects should pull inflation in opposite directions, the initial data we have after the turning point shows that the country has entered a period of deflation, indicating that the pandemic might have a greater impact on the demand side of the economy. The inflation rate has gone from just over 1 per cent before the initial lockdown to about -1.5 per cent in September. Though the decline in energy prices has contributed to this deflation, core inflation which excludes energy prices and unprocessed foods is also negative (-0.6 per cent in September). Going into the previous recession the inflation rate was at a much higher rate of 5 per cent, a symptom of the economic boom that

<sup>11</sup> See Fitzgerald (2020).

the country was experiencing at that time. However, as the recession took effect there was large negative impact on prices which started to decline ten months after the turning point. The CPI continued to decline for another year with prices bottoming out at negative 6 per cent about 22 months after the initial turning point. It wasn't for another 12 months that price growth turned positive, showing that deflation in the economy can be quite persistent.

**FIGURE 7 CONSUMER PRICE INDEX (YEAR-ON-YEAR)**



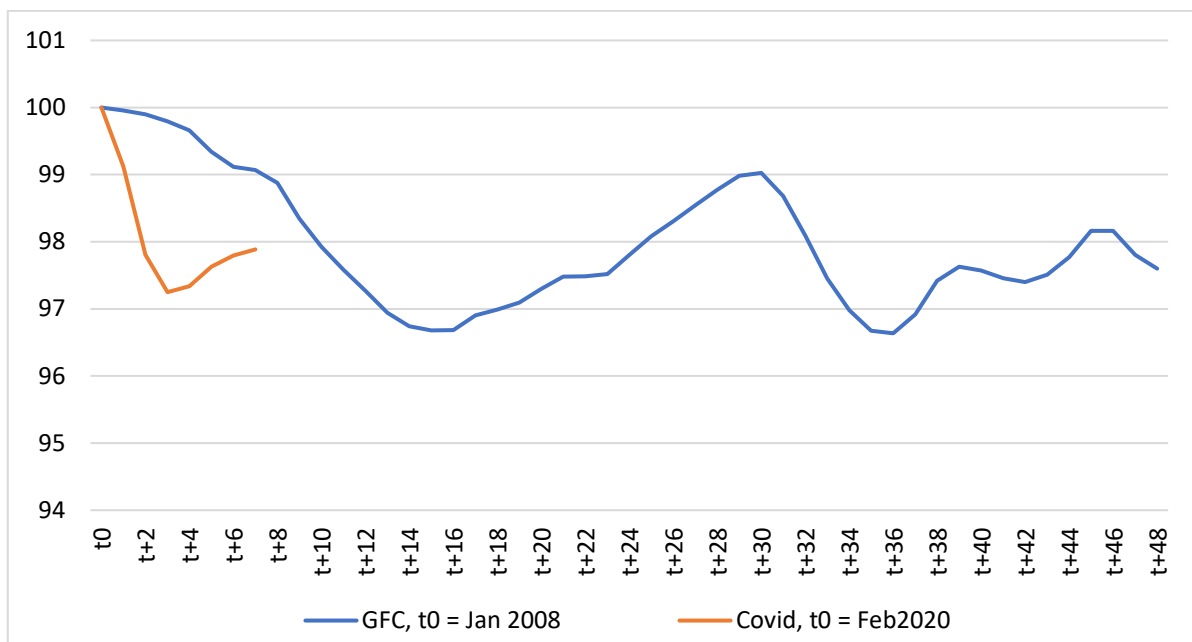
Source: Central Statistics Office.

#### 4. SOFT INDICATORS

In order to compare how expectations have differed over the two recessions we also draw on a number of soft indicators, the first of which is consumer confidence. In the first few months after the turning point of the COVID-19 pandemic there was a sharp decline in consumer confidence. By May 2020 consumer confidence had bottomed out at just over 97 index points. However, in recent months there has been some evidence of increased consumer optimism with the index rising in four consecutive months since May.

During the previous recession consumer confidence remained below its pre-turning point level for a number of years. The oscillating path of the Consumer Sentiment Index over this period shows that expectations can be quite volatile.

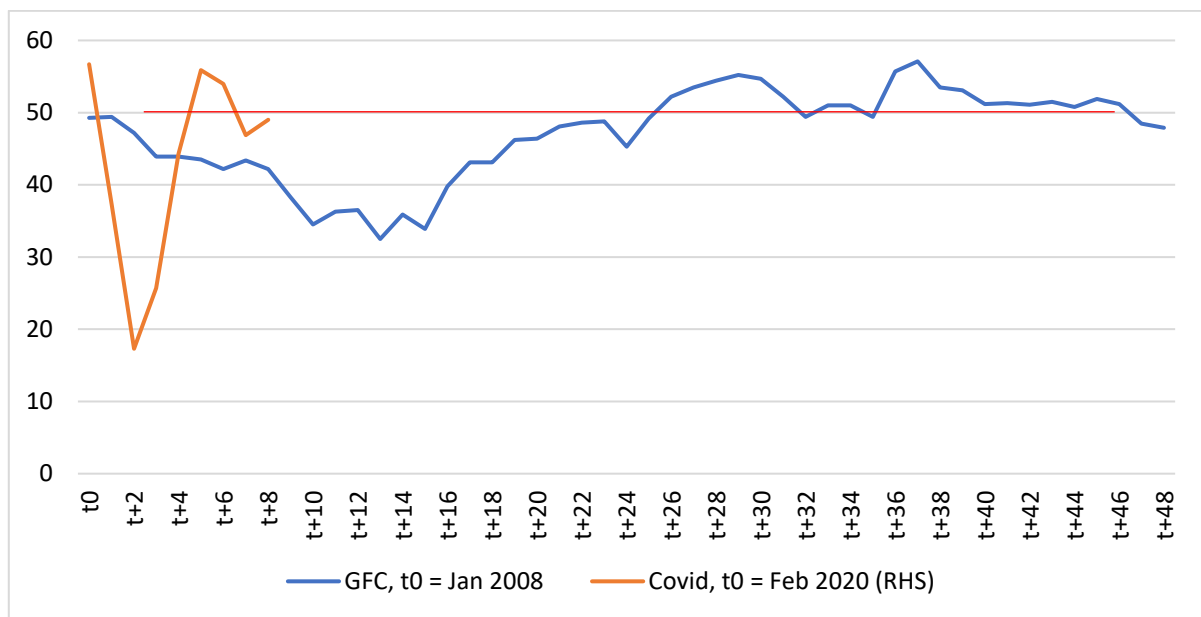
**FIGURE 8 CONSUMER SENTIMENT INDEX (T0=100)**



Source: OECD.

Figure 9 shows the composite Purchasing Managers Index (PMI) for the manufacturing and services sectors. The PMI is based on a monthly survey of senior executives at private market companies and gives an indication of underlying business conditions and sentiment. A value over 50 indicates that there is an expansion on the previous month while a value below 50 indicates there is a contraction. Like the Consumer Sentiment Index, there was an initial sharp decline in the PMI as the lockdown was brought in in March. The PMI fell below 20 in April which was a record low for the Index. Though the Index briefly rose above 50 in subsequent months, this is a month-on-month indicator and so the increase is relative to the very low point reached in April. Indeed, the most recent data are again below 50 indicating a contraction on previous months. During the GFC the PMI declined below 50 immediately after the turning point and remained below 50 for over two years thereafter, meaning that for 24 straight months, private market companies viewed underlying business conditions as being less favourable than the month before.

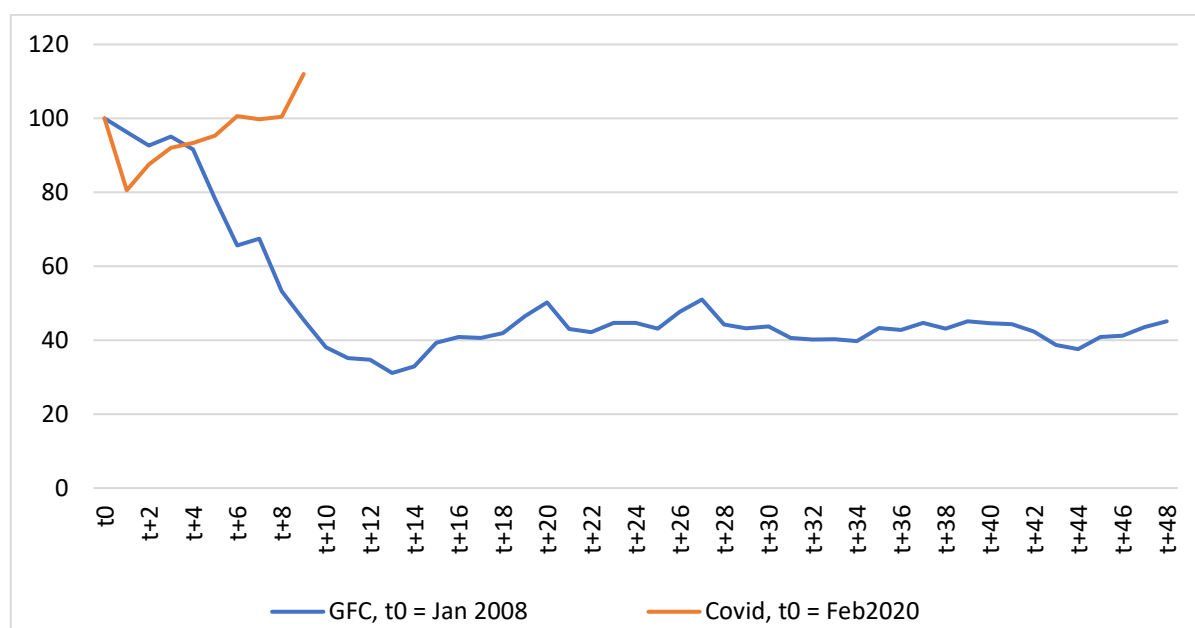
**FIGURE 9 PURCHASING MANAGERS INDEX**



Source: Central Statistics Office.

The final indicator compared between the two periods is the ISEQ Index which is benchmark stock index of the 20 largest companies that trade on the Irish stock market. This index captures investor sentiment about the future prospects of these Irish companies and thus is an indicator of the market’s expectations about future economic conditions. As with the other soft indicators there was an initial sharp decline in the index after the turning point March. However, unlike the other soft indicators the recovery has been rapid and the most recent data show that the index is at a greater value than it was entering into the lockdown. The relatively robust performance of the stock market may indicate that investors are optimistic about the future business conditions and that once the virus is brought under control there is an expectation that the economy will be able to pick back up where it left off. This is a stark contrast to the previous recession when stock prices plummeted by 70 per cent from their pre-lockdown levels and remained low for a number of years thereafter.

**FIGURE 10 ISEQ (INDEX, T0=100)**



Source: Central Statistics Office.

## 5. POLICY RESPONSE

The final comparison we draw between the two periods is in the area of the policy response. There has been a significant difference in how policymakers at both a national and European level have responded to both crises.

As the lockdown restrictions were brought in in March 2020, the Irish Government immediately launched a large fiscal stimulus package to mitigate the negative economic effect of the pandemic. Equally important has been the response of the ECB which, through its accommodative monetary policy, has facilitated the national fiscal expansion.

The combined national (fiscal) and ECB (monetary) policy responses during the COVID-19 pandemic are in sharp contrast with the associated responses during the GFC. At the time of the GFC, national fiscal policy was much more restrictive due to the multiannual fiscal consolidation programme implemented mostly via spending cuts. The ECB was also implementing tighter monetary policy during the initial phase of the GFC, partly a result of the asymmetric impact of the GFC on different Eurozone countries.

### 5.1 National fiscal policy

Regarding national fiscal expenditures, Table 1 shows the annual growth in government expenditure in 2008/2009 and 2020 (Budget 2021 forecasts).

Across nearly all headings a significant increase in expenditure is forecast for 2020 in comparison to the previous year. In percentage terms the largest increase is in the area of subsidies which are forecast to increase by 266 per cent (€4.5 billion) this year as a result of the implementation of various wage subsidy schemes and subsidies to firms impacted by the lockdowns. Social benefit payments are forecast to increase by about 28 per cent (€8.6 billion) as a result of the large increase in people receiving welfare payments including the Pandemic Unemployment Payment (PUP). The use of goods and services is also expected to increase substantially resulting from increased health-related expenditure. In total Irish government expenditure is expected to increase by 23 per cent (€19.0 billion) in 2020. Interest payments are the only expenditure heading that are forecast to experience a reduction in 2020 with respect to 2019, due to the fall in the cost of borrowing. In 2008/2009 interest payments increased partly due to the increased cost of borrowing over this period (see Section 5.2 for more).

**TABLE 1 EXPENDITURE GROWTH BY HEADING (YEAR-ON-YEAR)**

Expenditure Item	2008 %	2009 %	2020 %
Compensation of employees	7	-2	3
Use of goods and services	3	-1	40
Subsidies	7	-2	266
Interest	21	42	-14
Social benefits	13	10	28
<b>Total</b>	<b>10</b>	<b>7</b>	<b>23</b>

Source: Central Statistics Office and Budget 2021.

Note: 2020 figures on forecasts from Budget 2021.

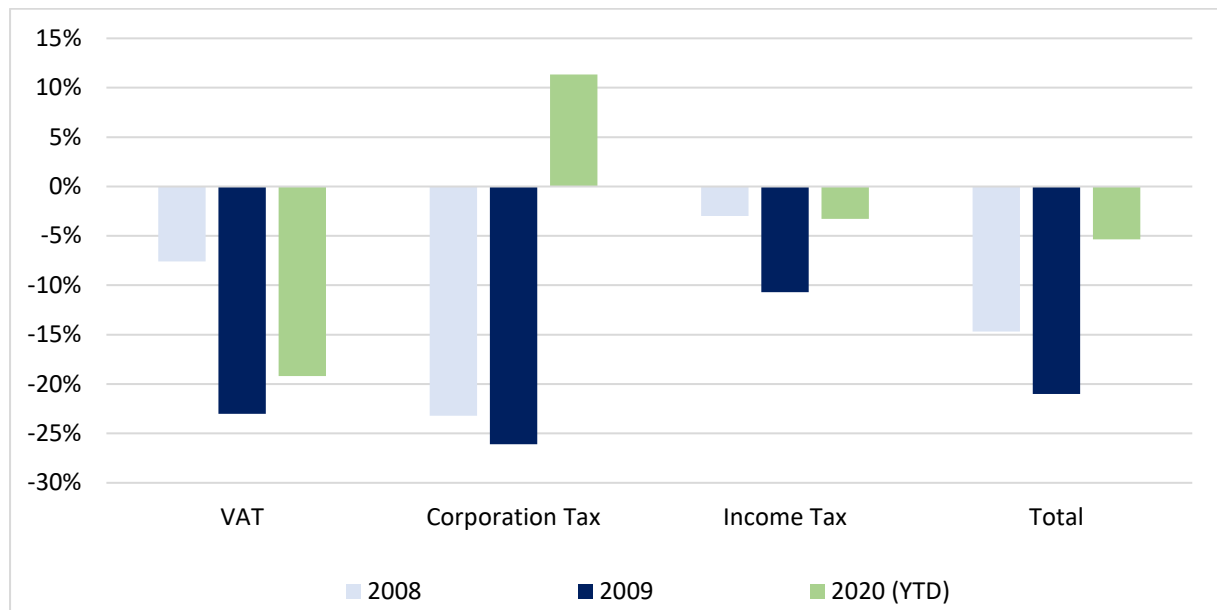
In terms of revenues, so far during the COVID-19 recession total tax receipts have experienced a relatively mild decrease compared to the sharp fall that was experienced over the years of the GFC. Figure 11 illustrates that this difference is mostly driven by two tax headings; corporation and income taxes.

The most significant difference between the pandemic crisis and the GFC is in corporation taxes. Despite the deterioration in economic activity, corporation taxes have increased by over 11 per cent in 2020. By comparison corporation taxes fell by 23 and 26 per cent in 2008 and 2009, respectively. After years of significant growth,<sup>12</sup> corporation taxes also account for a larger share of total tax receipts than they did during the GFC. Their strong performance this year is the main reason why total receipts have held up reasonably well, declining by just 5 per cent compared to 15 and 21 per cent in 2008 and 2009. The decline in income taxes has also been

<sup>12</sup> See Varthalitis (2019) and IFAC (2019).

relatively muted in 2020 despite the large increase in unemployment. This is a result of those who have lost their jobs typically being in lower paid sectors, Ireland’s progressive taxation system and the various wage subsidy schemes that have kept workers on their employers’ payroll. The declines in VAT receipts are much more in line with what we saw during the previous recession, down by 19 per cent in 2020 compared to 8 per cent and 23 per cent in 2008 and 2009.<sup>13</sup>

**FIGURE 11 TAX RECEIPTS GROWTH BY HEADING (YEAR-ON-YEAR)**



Source: Fiscal Monitor.

## 5.2 Eurozone and EU policy

One of the most striking differences between COVID-19 and GFC is the policy response of EU institutions.

During the period of the GFC the Irish government was solely reliant on the international and domestic private markets to borrow and finance its national deficits. As the public finances deteriorated at this time the demand for Irish government debt from the private markets declined substantially while sovereign spreads rose significantly, rendering public debt unsustainable.

Since 2011 as the European Sovereign Debt Crisis took hold the ECB gradually began to directly intervene in the sovereign bond markets of Member States. This came in the form of various asset purchase programmes which greatly

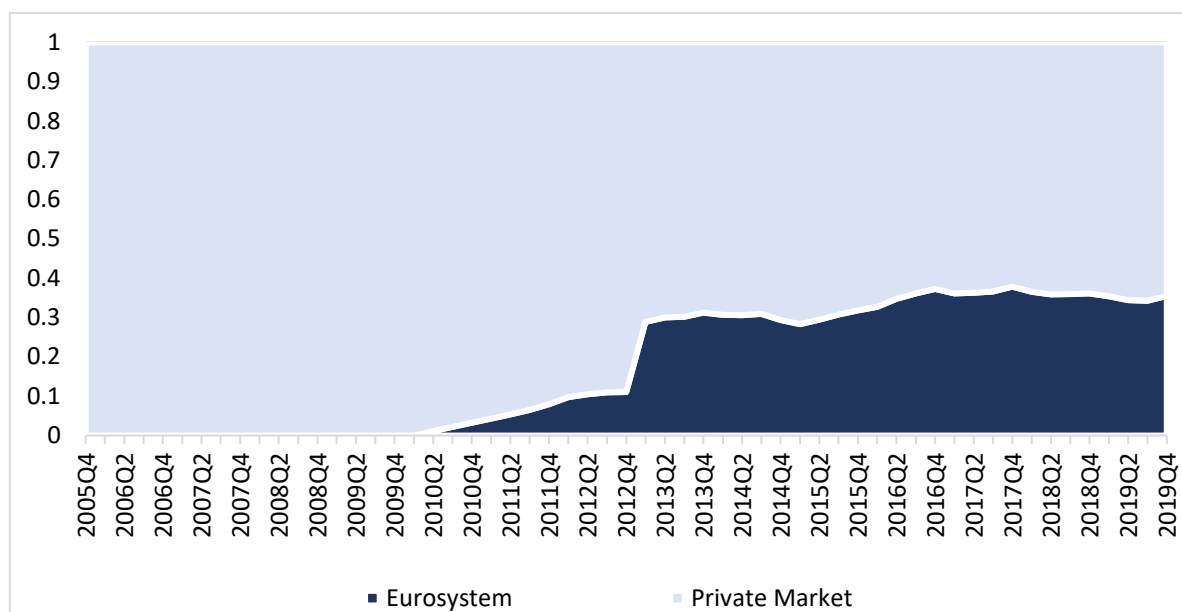
<sup>13</sup> See Coffey et al. (2020).



increased the amount of Irish sovereign debt held by the Eurosystem (see Figure 12).

In response to the COVID-19 pandemic the ECB has engaged in further sovereign bond purchases through the Pandemic Emergency Purchase Programme (PEPP).

**FIGURE 12 IRISH LONG-TERM DEBT HELD BY THE PRIVATE MARKET/EUROSYSTEM**

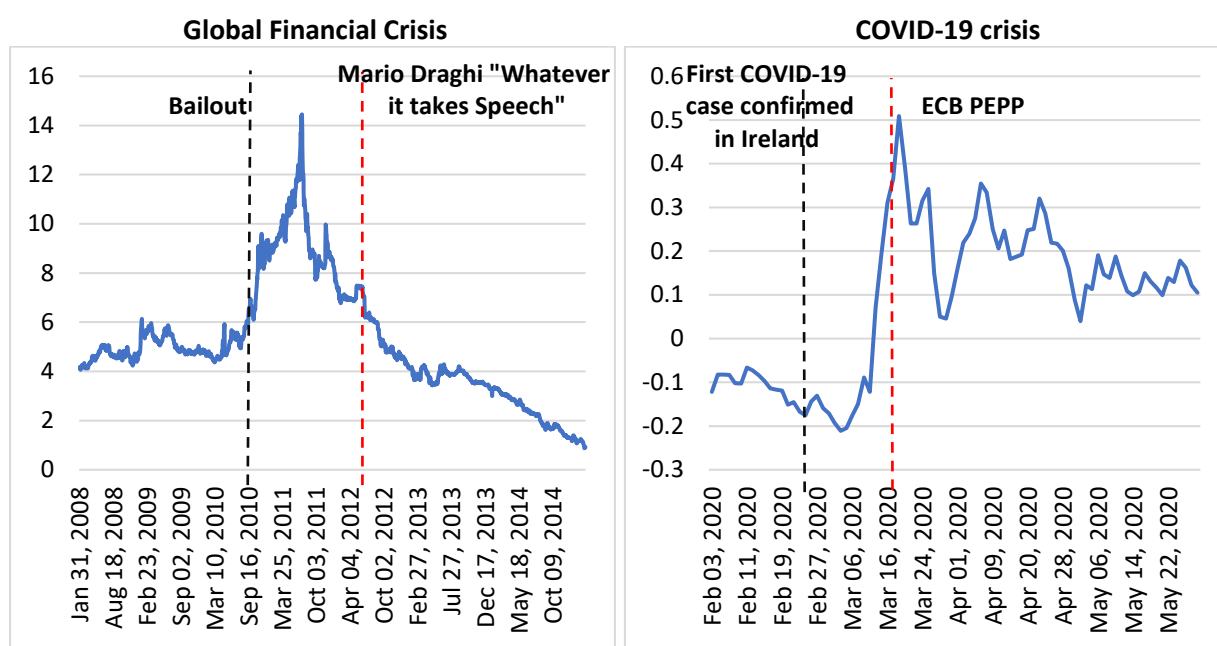


Source: National Treasury Management Agency.

The accommodative monetary policy implemented by the ECB has driven sovereign bond yields across the Eurozone to record lows. These low yields mean that the effective interest rates on Irish debt have lowered despite the increasing deficits. These lower borrowing costs have created additional fiscal space for the Irish Government to fund the large deficits that will be run in 2020 and 2021.<sup>14</sup> On the other hand, in the early phase of the GFC, the ECB’s monetary policy was much more conservative and the yields on Irish government debt were substantially higher, peaking at over 10 per cent as private markets shunned Irish debt. It was only through signals from the ECB that it would do ‘Whatever it takes’ to save the euro including the aforementioned direct intervention in the bond markets and the Irish public finances being brought back under control that interest payments on Irish government debt returned to more manageable levels.

<sup>14</sup> For a quantitative analysis see Allen-Coghlan et al. (2020).

**FIGURE 13 IRISH TEN-YEAR GOVERNMENT BOND YIELDS**



Source: Investing.com.

## 6. CONCLUSIONS

This Note has compared the evolution of key indicators of the Irish economy during the current COVID-19 pandemic crisis and the 2008 Global Financial Crisis.

The scale of the negative shock for most key indicators is much more severe during the COVID-19 crisis. However, thus far it seems that the economy bounces back much more rapidly than during the GFC where the downward movement was gradual and more prolonged.

One of the key differences between this time and then is the relative uniformity in how all European countries have been impacted by the virus. During the previous crisis the impact on Ireland and other Eurozone periphery countries was much different to other core Eurozone countries.

Partly resulting from this, the policy response at a European level has been fundamentally different during the two crises. National fiscal and Eurozone monetary policies (ECB) have coordinated in a timely manner to support the Irish and other Eurozone economies. The large spending programmes run by European countries in an attempt to mitigate the economic fallout have in turn been supported by the monetary policy that keeps sovereign spreads at low levels. Thus, the monetary-fiscal policy nexus is in contrast to the policies implemented during the early phase of the GFC in 2008.

## REFERENCES

- Allen-Coghlan, M., K. McQuinn and P. Varthalitis (2020). *Sovereign debt after COVID-19: How the involvement of the ECB can impact the recovery path of a Member State*. The Economic and Social Research Institute (ESRI).
- Bergin, A., N. Conroy, A. Garcia Rodriguez, D. Holland, N. McNerney, E. Morgenroth and D. Smith (2017). 'COSMO: A new COre Structural MOdel for Ireland', Papers WP553. The Economic and Social Research Institute (ESRI).
- Buti, M. (2020). 'A tale of two crises: Lessons from the Financial Crisis to Prevent the Great Fragmentation'. Voxeu.org [voxeu.org/article/lessons-financial-crisis-prevent-great-fragmentation](http://voxeu.org/article/lessons-financial-crisis-prevent-great-fragmentation).
- CESifo (2014). *Ireland's Recovery from Crisis*. CESifo Forum 2/2014, Ifo Institute.
- Coffey, C., K. Doorley, C. O'Toole and B. Roantree (2020). *The effect of the COVID-19 pandemic on consumption and indirect tax in Ireland*. ESRI Series Budget Perspectives 202103, The Economic and Social Research Institute (ESRI).
- Danielsson, J., D.M.R. Vayanos and J.P. Zigrand (2020). 'The Coronavirus Crisis is no 2008'. Voxeu.org, [voxeu.org/article/coronavirus-crisis-no-2008](http://voxeu.org/article/coronavirus-crisis-no-2008).
- De Grawe, P. and Y. Ji (2020). 'A Tale of Three Depressions'. Voxeu.org. [voxeu.org/article/tale-three-depressions](http://voxeu.org/article/tale-three-depressions).
- Economides, P., K. McQuinn and C. O'Toole (2019). 'Household savings constraints, uncertainty and macroprudential policy', Papers WP618, The Economic and Social Research Institute (ESRI).
- Fitzgerald, J. (2020). 'The Effects of Government Policy on Personal Savings', *Quarterly Economic Commentary*, Summer 2020. The Economic and Social Research Institute (ESRI).
- International Monetary Fund (2020). *World Economic Outlook: The Great Lockdown*. Washington, DC, April.
- Irish Fiscal Advisory Council (2019). *Dealing with the Economic and Fiscal Impact of Surging Corporation Tax Receipts*. June.
- Irish Fiscal Advisory Council (2020). *Fiscal Assessment Report: The Fiscal Impact of Covid-19*. May.
- Lozej, M. and M. O'Brien (2018). 'Using the Countercyclical Capital Buffer: Insights from a structural model', *Economic Letters* 7/EL/18, Central Bank of Ireland.
- McQuinn, K., C. O'Toole, M. Allen-Coghlan and C. Coffey (2020). *The Quarterly Economic Commentary*, Summer. The Economic and Social Research Institute (ESRI).
- McQuinn, K. and P. Varthalitis (2020). 'How openness to trade rescued the Irish economy', in Campos, N., P.D. Graw and Y. Ji (Eds), *Economic Growth and Structural Reforms in Europe*. Cambridge University Press.

- O'Brien, E., M. O'Brien and S. Velasco (2018). *Measuring and mitigating cyclical systemic risk in Ireland: The application of the countercyclical capital buffer*, Central Bank of Ireland Financial Stability Notes, 2018, 4.
- O'Toole, C. (2020). 'The lockdown tale of two economies in Ireland: How big tech and pharma bucked the trend'. *QEC Research Note*. The Economic and Social Research Institute (ESRI).
- Varthalitis, P. (2019). 'What Happens If There Is A Reduction In The Windfall Component Of Corporation Taxes?', *Quarterly Economic Commentary*, Winter 2019. The Economic and Social Research Institute (ESRI).
- Wheelock, D. (2020). 'Comparing the COVID-19 Recession with the Great Depression', *Economic Synopses*, No. 39, 2020. <https://doi.org/10.20955/es.2020.39>.
- Whelan, K. (2014). 'Ireland's Economic Crisis: The Good, the Bad and the Ugly', *Journal of Macroeconomics*, Vol. 39, pp. 424-440.