The Republic of Ireland's country risk analysis

This report aims to present a critical and forward-looking view on the Republic of Ireland to gauge if its main domestic risks can undermine its attractiveness.

Country risk challenges in the age of globalization

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Contents

Introduction

I - Brexit, the main undergoing political issue in Ireland

I. 1. An historically contentious border at the heart of Brexit's negotiations
a. A common history between the United Kingdom and the Republic of Ireland
b. Current Ireland – UK trade and investments relationships
I. 2. The Boris Johnson Brexit deal
a. What does this agreement consist of?
b. What could be the next outcomes?

II - Structural weaknesses of the Irish economy

II. 1. Openness and exposures to global markets
II. 2. Ireland's concentration risk
II. 3. Speculation and market bubbles

III - Irish Debt analysis up to 2018

III. 1. Debt relative to national output
III. 2. Irish Debt Developments compared to other EU member states and other advanced economies
III. 3. Irish Public Debt detailed

Conclusion

Appendix

Bibliography

Introduction

Since the mid-1990s, the Republic of Ireland's economic model has often impressed, both by its magnitude and its volatility. Highly dependent on foreign power and capital, the island, although populated by just five million inhabitants, is a remarkable instance of the diversity of risks an economy can bear.

October 31st should have been the end of the long standing issue of Brexit but the British parliament has decided otherwise. Even though the Republic of Ireland has not its say directly in the matter, the country is directly impacted by the process, given the common border it shares with the United Kingdom. In addition to potential Brexit's implications, potential risks could also be found in the fundamental characteristics of the Irish economy, based on high level of openness and debt. Thus, to assess the Republic of Ireland's country risk, one should consider the collateral implications of Brexit on this country (I), the structural weaknesses of the Irish economy (II) and undertake a complete debt analysis (III).

I - Brexit, the main undergoing political issue in Ireland

I. 1. An historically contentious border at the heart of Brexit's negotiations

a. A common history between the United Kingdom and the Republic of Ireland

One should first consider the long common history between the two countries in order to understand today's issues of the Brexit. Thus, in the early 1920s and after a long British rule in Ireland, Ireland became a free state and in 1949 a sovereign state. But the northeast of the island did not enter the independence agreement because the majority of the population of these lands were in favor of remaining in the United Kingdom mostly because of religious believes. Indeed, a majority of the Northern Ireland's population is traditionally protestant (60% protestant and almost 40% catholic in 2019), like in the United Kingdom whereas the Republic of Ireland's population is mainly catholic. This community difference will give rise to nearly 30 years of civil war in Northern Ireland, which ended in 1998 with the Good Friday agreement. In 2016, when the referendum led to the exit of the United Kingdom from the European Union, the Sinnfei, a political party presents in both Irelands, requested a referendum on the reunification of Ireland since 56% of the Northern Irish voted to keep Northern Ireland in the European Union. The Brexit could then affect the peace agreement between the British side and the Irish side.

b. Current Ireland – UK trade and investments relationships

UK is a very important partner for Ireland measured in terms of both trade and investments. This dependency is due to the many similarities between the Britons and the Irish people, whether economic or historical. Indeed, UK and Ireland both have been EU members since 1973. The common border between UK and Ireland plays a huge role for both countries because it is almost their only international border and explains the substantial synergies between both sides. First, Irish and British can commute and shop easily in each area. Then, the UK and Ireland have a common-law basis of legal systems and are often consider as a sole market for many companies and commercial contracts. The SME's across the border imports and exports only in the UK market or Irish market. Finally, the UK landbrige is a crucial asset for Irish trade for the EU. This landbrige is the most efficient and fastest routes to reach the EU.

The United Kingdom constitutes the main trade partner for the Republic of Ireland both in terms of exports ($18.7 billion) and imports ($27.5 billion), making it the highest trade deficit country for Ireland (-$8.8 billion). More than a third of its exports goes to the UK and in particular its agricultural products: 52% of Irish beef, 60% of its cheese and 84% of its poultry are exported to the neighboring island. Concerning the services exports, it amounted at 17% of the total Irish services. Nearly 200,000 jobs depend on trade with the United Kingdom, Ireland's third largest investor after the United States and Germany. The United Kingdom remains by far Ireland's main supplier with a 27% market share.
Concerning the foreign direct investment (FDI), Ireland and UK are also closely related. The proportion of firms owned by UK in Ireland is estimated at more than 40 billion € of the total stock of FDI and the Irish direct investments in UK is almost 90 billion €. Indeed, there is various of multinational companies installed in UK for purpose to serve EU or installed in Ireland to serve the UK.

The Brexit will certainly have a direct and instant impact on Ireland and more precisely on the companies and the population in their daily lives. Nevertheless, it would depend on how it will be acted upon.

I. 2. The Boris Johnson Brexit deal

On 17 October 2019, after five days of intense negotiations and two weeks before the deadline of 31th October, the European Union and the United Kingdom reached a new Brexit deal. The latest technical discussions have made it possible to find a compromise on the main stumbling block between the two sides over the past three years: the status of Northern Ireland. The objective for both parties is the same: to avoid the return of a hard border between the two countries (so as not to threaten the peace achieved through the Good Friday agreement of 1998) without creating a "breach" in the single market.

a. What does this agreement consist of?

This new agreement insures that Northern Ireland will remain aligned with the rules of the European Union market (legislation on goods, health rules, VAT, production and marketing rules) while remaining part of the United Kingdom's customs territory.
On the one hand, this means that products from the United Kingdom entering Northern Ireland will be subject to controls by the British (in Great Britain) to align the rules of the European Union. On the other hand, Northern Ireland will remain in the United Kingdom's customs territory, which will allow it to benefit from future free trade agreements concluded by London with third countries. Nevertheless, Northern Ireland will have to continue to apply EU customs duties for products entering the Single Market but no products moving only between Northern Ireland and Great Britain will be subject to customs duties. It will therefore be necessary to distinguish products going only to Northern Ireland or in the European Union.
Concerning the VAT, it is a necessity that there should be no differentiation of rates in the provinces of Northern Ireland and the Republic of Ireland. Therefore, the EU's rules about VAT on staple products will still be applied on Northern Ireland.

This deal must now be validated by the British Parliament, but they consider that the deadline is too short to examine the 110 pages of the deal before 31 October, the fateful date. Boris Johnson therefore, and reluctantly, asked for a new 3-month deadline, accepted by the EU's negotiators.

b. What could be the next outcomes?

In the event that the British parliament does not accept the deal, Boris Johnson could decide for a new additional deadline to the EU to find a new deal or leave the EU without a deal. By potentially causing

a return of the border between Northern Ireland and the Republic of Ireland, a no deal could disrupt two decades of peace, offering new targets to small paramilitary groups as it happened during the Troubles. A no-deal Brexit could deprive 55,000 Irish people of work and not to mention the difficulty for the 200,000 workers or students that commute at the borders. However, the consequences would also be economic. According to research by the Economic and Social Research Institute (ESRI), a Brexit without an agreement would result in a 5% loss of gross domestic product (GDP) for Ireland, half of it by 2020. Trades will be regulated by the WTO rules (it is important to note that under WTO rules the UK mustn't apply lower tariffs for a specific country without a trade agreement). The total trade cost could rise up by 32% due to customs costs or ending mutual recognition agreements. Additional transit cost for Irish exports will be also assumed due to the delays and challenges to use the UK landbridge or to go by the sea to reach the European continent. Ireland is then by far the European country with the most to lose from the UK's exit from the EU.

If the withdrawal agreement presented by Boris Johnson obtains a majority of votes in Parliament, the text is adopted and the United Kingdom will officially be able to leave the European Union. More specifically, London will enter a transition period and have until 31 December 2020 to negotiate a new trade agreement with Brussels.

The Irish government is in favor of this new deal but even in this case, the Irish economy will be impacted. This is why the Irish government will take a number of measure to mitigate the impact on the Irish economy no matter the outcome of the Brexit. Irish Finance Minister, Paschal Donohoe, announced a massive €1.2 billion plan to support his country's economy. In particular, the Minister said that €600 million would be injected to help key sectors of the Irish economy, such as agriculture and tourism. The 9% VAT rate implemented to foster the tourism sector is also expected to be maintained. Mary Mitchell O'Connor, the Minister for Jobs, Enterprise, and Innovation has stated that her department will give €500,000 extra to IDA Ireland to continue its efforts to attract FDI. Finally, the European Commission is preparing a multi-billion-euro aid program to help Ireland cope with the economic consequences of a divorce without an agreement between the United Kingdom and the European Union.

II - Structural weaknesses of the Irish economy

The economic growth of the Irish economy, sometimes referred to as the Celtic Tiger, has been exceptional with an astonishing +6.37% GDP growth on average between 2010 and 2019 in comparison to the average +1.35% in the Euro-zone on the same period. Nevertheless, the Business Confidence Index (BCI) for the Republic of Ireland has recently decreased sharply below the Euro-zone average (Chart I). To explain this recent rise of concerns, one should underline three structural features of the Irish economy: its openness (1), its high concentration (2) and its potential market bubbles (3).

II. 1. Openness and exposures to global markets

The main ratio to estimate the openness of an economy is the Trade-to-GDP ratio (or Trade openness ratio), which is calculated by dividing the aggregate value of national imports and exports by GDP. According to the World Bank, the **Irish Trade-to-GDP was 206% of GDP** in 2018 (after a peak at 226% in 2016), making it the fifth most globalized economy in the world after three city-states (Luxembourg, Singapore and Hong-Kong) and Malta as well as the first one by far among the large OECD countries. As a comparison, aggregate imports and exports only account for 63% of the French GDP and 61% of the British GDP.

As such, Irish economy is highly sensitive to global economic growth and economic cycles, which increases volatility, economic instability and potential downturns in case of global recession or escalated trade tensions.

For 20 years, free-trade and openness have boosted the Irish economy. The Republic of Ireland has indeed hugely benefited from FDI from other OECD countries (Chart II) with a **Total FDI Stock of 251% of GDP in 2018** which has to be compared with the average of 60% in the European Union and 44% in OECD countries. These FDI have been especially invested in services and technology companies, with $54billion investment in the latter in 2017 making Ireland the number one destination for US technology companies' FDI. Even if the lower corporate tax rate of 12,5% has been one of the main advantages to incorporate in Ireland, these FDI have boosted the real economy and a real network of more than 1000 companies have grown up around the main US tech companies (Timeline III).

These FDI have allowed the Irish economy to grow up at much faster pace but these FDI can be very volatile (Chart IV) and the Irish economy is now highly dependent of this presence in terms of corporate taxes, employment, real estate prices… For instance, more than 30% of students in third level institution are currently taking courses in science, technology, engineering and mathematics (STEM). A quick shift in the US tech strategies could make this new generation of engineers skilled but inadequate on the labor market.

Some concerns have also been raising about the real productive impact of the Irish FDI. In a recent IMF report, "*What Is Real and What Is Not in the Global FDI Network?*", Damgaard Jannick, Thomas Elkjaer, and Niels Johannesen have underlined the phenomenon of Phantom FDI in tax haven and explained some fiscal techniques such as the Double Irish with a Dutch sandwich which involves transfers of profits between subsidiaries in Ireland and the Netherlands with tax havens in the Caribbean as the typical final destination. They estimated the phantom FDI represent 40% of the world total FDI and 66% in some countries such as the Republic of Ireland. The corollary of this tax avoidance techniques is the lowered global corporate tax rate from 40% in 1990 to around 25% in 2017. Even if this strategy might have been successful for the Republic of Ireland, new European and American enquiries into GAFA companies about tax avoidance (potential $13 billion fine by the EU Commission against Apple in 2016) may hurt severely this model in the near future.

One sign of the phantom-ness of a large part of the Irish FDI is to look at some key figures. First, the net operating surplus as a percentage of net value added in non-financial corporations is significantly higher in Ireland (63%) than in the Euro-zone (26,3%) or in the United States (21,4%) which indicates unrealistic accounting operating surplus in Ireland incorporated companies. Second, the domestic value added equals to 58,3% of gross exports, making Ireland the second to last country of both the OECD and Euro-zone before Luxembourg only.

This increasing FDI stocks and fiscal optimization techniques use led to **Ireland's "leprechaun economics" GDP growth rate of 26% in 2015** (later revised at 34%, the highest post-war GDP growth of any OECD country), that could be considered as the caricature of the Irish model. This year coincided both with the shift of the base erosion and profit shifting (BEPS) strategies from the now prohibited Double Irish to the Capital Allowances for Intangible Assets (or Green Jersey) and a new way to aggregate airlines activities into national GDP.

Thus, the FDI have artificially increased the Irish nominal GDP at an extent it could not describe accurately the country. The BEPS tools of US multinationals companies have so much inflated the Irish national GDP and GNP, the Central Bank of Ireland decided in 2017 to implement the modified gross national income (GNI*) to precisely describe Irish real economy. The **GDP/GNI* ratio** is each year increasing and reached **162% in 2017 which signifies the GDP is 62% overestimated.** In fact, Eurostat

proved the GNI* is still inflated with some BEPS tools on contract manufacturing so the "accurate" GDP of Ireland should be even lower.

These findings prove the growth rate and income levels of Ireland are hugely overestimated, as much as debt ratios using nominal GDP are underestimated.

II. 2. Ireland's concentration risk

As mentioned already, multinationals companies play a huge role in Irish local economy, accounting for 14% of the total work force in 2018 with some well established companies such as Facebook (5'000 workers) or Google (8'000 workers). Yet, the global Irish economy as a whole is highly concentrated in only a small number of industries given the small size of the country.

The main stock index of the country, the ISEQ 20, is highly concentrated with five companies totalizing 64% of the Index in 2019: CRH (Building Materials, 21.23%), Kerry Group (Food, 18.87%), Ryanair (Airline, 8.81%), Kingspan Group (Building Materials, 7.73%), Smurfit Kappa Group (Packaging, 7.57%). On average, Construction, Food and Travel & Leisure accounts each for about 25% of the Index whereas CRH total revenues in 2017 equals to 14.80% of Irish GNI*. One should wonder if Ryanair and CRH have not already reached critical size in comparison to the Irish GNI*, making them difficult to rescue in case of financial troubles and a potential threat as such for the economy as a whole.

The post-2008 Irish banking crisis well underlines the Irish concentration risk. The pre-2008 banking sector was over-developed (the total financial assets accounting for 14 times the national GDP) which led to the fall of the Irish Finance industry and to the recapitalization of the three main banks (AIB, Bank of Ireland and Anglo Irish Bank) but above all showed the fragility of the Irish state which required IMF assistance to overcome the crisis. As the 2019 "Ireland: Selected Issues" report of the IMF underlines, new risks in the Irish financial sector should be found in the non-bank financial sector. Indeed, the total assets managed by investment funds and other intermediaries grew up rapidly from €1,4 trillion in 2009 to €3.9 trillion (12 times the GDP) in 2018. Thus, to avoid a similar crisis, the IMF advocates the Irish government to enhance "macro-prudential-based surveillance of the sector" and to "pursue efforts to build internal risk analysis capacities". The large size of the financing sector increases even more the dependence on the International Trade of the Irish economy, given the large foreign exposures of the investment funds managed assets.

II. 3. Speculation and market bubbles

In the aftermath of the 2007-8 financial crisis, in a context of muted inflation, yield-hungry investors have increasingly considered real estate an attractive investment arena. Ultra-low and negative interest rates across developed economies have further encouraged investors to get indebted at virtually zero cost and invest into real estate assets, considered a close-to-risk-free investment. Pushed on the risk curve, these investors have greatly inflated housing prices.

As a consequence of rising housing prices, home ownership rate in Ireland decreased from 82% in 2004 to 69% in 2018, which represents a decrease of approximately 16% in private home ownership. Bubble-like housing prices in Ireland have forced households to rent homes rather than buy them, especially for millennials. According to a study conducted by UBS, commercial real estate is also considered in bubble territory.

Computed by the OECD, 2018 nominal housing prices are just shy of 30 points from their peak during the last financial crisis. Excessive valuations of real estate assets are mainly found in Dublin and other major Irish cities, with overvaluation often reaching up to 4x multiples. The International Housing

Affordability Survey, conducted by the Global Housing Agency, ranks Ireland as 'seriously unaffordable' (3.9 on a 5.0 scale), with Dublin dragging the largest skew.

The National Social Monitor 2018 Report has highlighted that 10% of private renters in Ireland are spending over 60% of their income on housing costs. Over-inflated housing prices in Ireland remain a structural issue since the Celtic Tiger era, where an overheating economy fueled by robust economic growth and abundant foreign direct investments caused a property bubble, which consequently resulted in a severe economic downturn. The Central Bank of Ireland recently expressed "deep concerns" about the overvaluation of the Irish property market and called for "social justice" to redistribute domestic wealth more equally.

III - Irish Debt analysis up to 2018

Even if Ireland recorded a consecutive year of growth in 2018, the public debt remains significant. At end-2018, the stock of public debt amounted to €206 billion, equivalent to €42,500 for every person resident in the State. **Relative to international peers, this level of per-capita debt ranks amongst the highest in the OECD.** Similarly, interest payments (at over €5 billion annually) remain elevated across a range of metrics. The servicing of debt represents a significant operating cost for the State, with last year's annual payment close to the capital budget for 2018. (Chart V & Chart VI)

III. 1. Debt relative to national output

GDP is not an accurate representation of Irish income levels and because GDP significantly overstates the size of the economy as it is inflated by the activities of parts of the multinational sector which, in some cases, can have little impact on actual domestic living standards. While Gross National Product (GNP) or Gross National Income (GNI*) are often suggested as alternative measures to assess underlying domestic activity and income as explained in part II.1.
In terms of the debt-to-income ratios, three distinct phases can be observed. (Chart VII)
First phase (1995-2007), the ratio declined steadily, with a peak-to trough decline of approximately 57 percentage points of GNI* recorded.
The second phase (2008-2012) covers the most acute years of the inter- related crises (banking, fiscal and economic – the so-called 'doom loop'). During this period, the debt- to-GNI* ratio rose by 138 percentage points (peaking at 166% of GNI* in 2012), an unprecedented pace of increase for an advanced economy. This reflected a combination of weak output growth, banking related costs and large underlying fiscal deficits.
Third phase, (2013 - 2018) Economic recovery and the improvement in the fiscal accounts ushered in a new phase from 2013 onwards. Since then, the ratio has fallen by 62 percentage points, reaching an estimated level of 104.4% of GNI* at the end of last year.
In summary, while the debt-to-GDP ratio continues to decline, from 67.8% in 2017 to 63.6% last year, analysis shows this reduction is purely due to strong nominal income growth, as the absolute level of debt increased over the same period. Indeed, when measured on a GNI* basis the debt ratio remains elevated at 104.4%. A consequence of this is that any shock to the denominator, i.e. nominal GDP or GNI*, would expose the high level of public indebtedness.

III. 2. Irish Debt Developments compared to other EU member states and other advanced economies

This section illustrates recent developments in Irish public debt in a wider international context. The following figures show changes in Irish indebtedness on both a GDP and GNI** basis.

While the financial crisis has had a pronounced negative effect on public finances across the EU, the impact and deterioration across Member States varied significantly. Countries such as Greece, Spain, Portugal and Ireland were particularly hardly hit. Chart VIII illustrates developments across Member States since 2007 and shows the dynamics of how debt has changed over the past decade. Since its peak in 2012, public indebtedness in Ireland has fallen from 120% to 64% of GDP and from 166% to 104% of GNI*. For the EU as a whole, debt has fallen from 88% in 2014 to 82% of GDP in 2018.

Relative to 2007, Ireland's debt to GDP ratio increased from 24% to 120% in 2012. This represented the largest increase in debt across the EU, reflecting the nature of the Irish crisis (declining nominal GDP, banking recapitalization costs and the collapse of transitory tax revenues).

While the peak levels of debt (relative to GDP) varied significantly across the EU over the period, continuing the trend from 2017, Ireland's debt-to-GDP ratio in 2018 remains lower than the average figure for the EU28 at 81.5% although once an allowance is made for GNI*, Ireland's debt ratio ranks 4th highest behind Greece, Italy and Portugal.

It is also interesting to compare Ireland's debt levels with other advanced economies, given that the global financial crisis affected many countries outside of the EU. Same currency and purchasing power adjustment have been used to do this chart (Chart IX).
Ireland's debt, at $58,200 per capita, is amongst the highest in the developed world, behind only that of Japan, the US, Italy and Belgium

III. 3. Irish Public Debt detailed

Aside from debt dynamics, a full assessment of Ireland's credit-worthiness also needs to factor in key structural features of indebtedness. These include the composition and ownership of government debt, interest rates, and credit ratings. These are detailed below.

The composition of public debt, an important factor in assessing creditworthiness, is shown in Chart X. At end-2018, government debt amounted to €206 billion. The bulk of this is accounted for by government bonds (€132 billion). The other main liability related to loans under the EU-IMF program (€45 billion). A large proportion of the latter were cleared in recent years, reflecting the decision to repay the IMF related component (€22.5 billion) as well as loans from Sweden (c. €0.6 billion) and Denmark (c. €0.4 billion).

A significant portion of debt (€11.5 billion) is accounted for by floating rate notes (FRNs). These were issued in 2013 to replace the promissory notes held by the Central Bank of Ireland (CBI). In 2018, the NTMA purchased, and subsequently cancelled, €4 billion of the FRNs from the CBI, thereby further reducing this liability. State savings, short-term paper and other debt instruments amounted to the remaining 14% of government debt (€29 billion).

Interest rates are a key determinant of debt servicing costs and sustainability (Chart XI). During the latter part of 2010 Ireland was effectively locked out of international bond markets, with yields reaching high levels due to fears over the State's creditworthiness. In recent years, yields have fallen markedly reflecting a range of factors. These include successful policy implementation, stronger economic growth and impacts arising from the euro-system's non-standard monetary policy ('quantitative easing' (QE)) measures. Interest costs have also come down due to the NTMA's debt management operations. In particular, the NTMA has taken advantage of QE to issue long-term debt at low yields. The weighted average maturity of Irish government bonds and EU program loans at end-2018 was 10.5 years. Furthermore, the net floating rate exposure of the Irish debt portfolio is minimal at close to 2%. As a result of these measures, the exposure of public debt to interest rate shocks is limited. If sovereign

bond yields were to suddenly rise, the incremental cost of any new debt issued would take some time to pass-through to the overall average cost of debt (the effective interest rate).
The effective interest rate improved further last year, declining to 2.6%. This rate has fallen by over 100 basis points over the past 5 years reflecting a marked improvement in funding costs and the early repayment of IMF debt.

The proportion of loans held by residents and non-residents is another important consideration in assessing indebtedness. If more loans are held by non-residents the risk of an abrupt withdrawal of funds (in the event of a shock) could result in higher financing costs. In Chart XII, a breakdown of long-term bonds by holders is shown. At end-2018, 57% of long-term debt (€75 billion) was held by non-residents, up approximately €4 billion year-on-year. Within the domestic share, credit institutions and the Central Bank accounted for the bulk of holdings at €52 billion, followed by the non-bank financial sector at €4 billion. Over half of all government debt (the bulk of which is accounted for by long-term bonds) is considered to be housed in relatively stable or sticky sources reflecting both euro-system holdings of debt and EU-IMF program related borrowings.

The Irish sovereign credit ratings are summarized below. Ratings remain strong at the "A" grade reflecting the improvement in the economy and the public finances. In January, the Kroll Bond Rating Agency (KBRA) gave Ireland its first ratings, with an "A+" long-term rating.

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
DBRS	A (high)	R-1 (middle)	Stable
R&I	A	A-1	Stable
KBRA	A+	K1+	Stable

Source: NTMA.

Conclusion

After conducting a thorough analysis of the Republic of Ireland's ongoing geopolitical developments (Brexit), the structural weaknesses of its economy (openness, concentration and potential asset bubbles) and the advancement of its debt problematics, we found that the Republic of Ireland is exposed to significant risks, both transitory and structural.

These geopolitical and economic risks threaten the already fragile post-Celtic Tiger era recovery, whose subsequent wealth was largely unequally redistributed across the Irish population. These deep-rooted risks also challenge the very engine of growth on which Ireland has developed (market openness, large budget deficit, expansionary fiscal policy, unsustainable indebtedness ratios, substantial reliance on foreign investments, etc.).

Although Ireland remains an appealing destination for foreign capital, the lack of visibility (due to Brexit negotiations and the volatile nature of foreign direct investments) could well undermine its attractiveness within the Eurozone. The main challenge for any Irish government would be to sustain the Republic's attractiveness for foreign investments while implementing structural domestic reforms.

Both these domestic and exterior risks carry exogenous grounds that appear to be beyond control of the consecutive Irish governments throughout the years. At times where central banks are recognizing the limitations of monetary policy and encouraging the implementation of state-level fiscal policy, Ireland seem short of ammunition, would a major economic downturn occur.

Appendix

Chart I - Business Confidence Index (BCI), OCDE

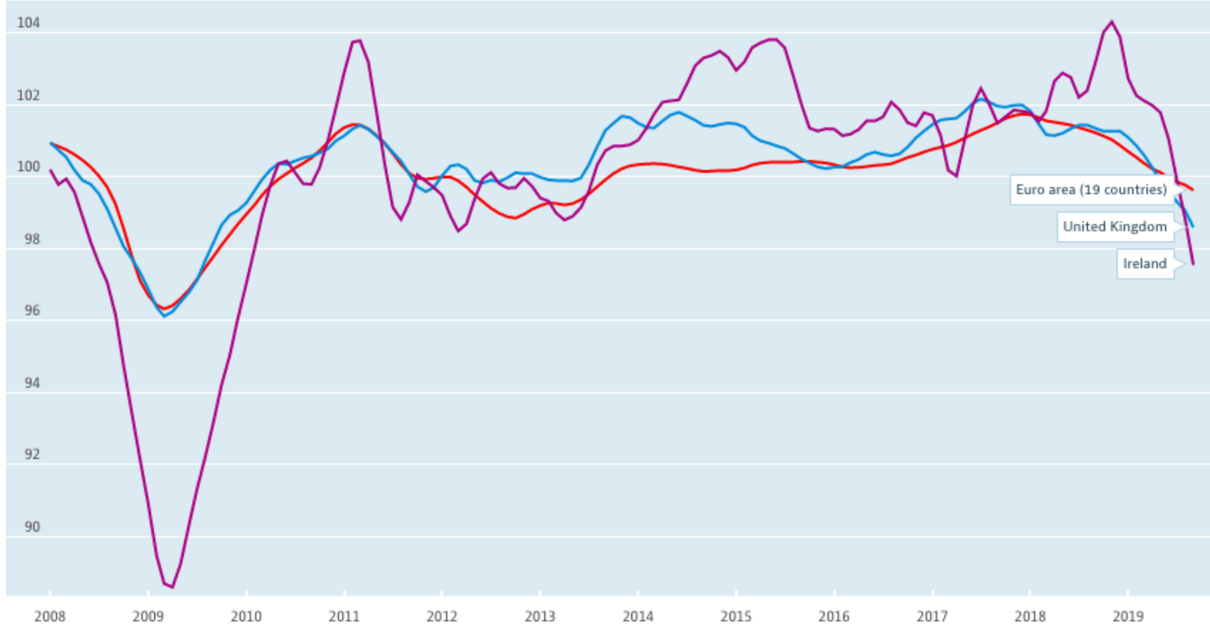
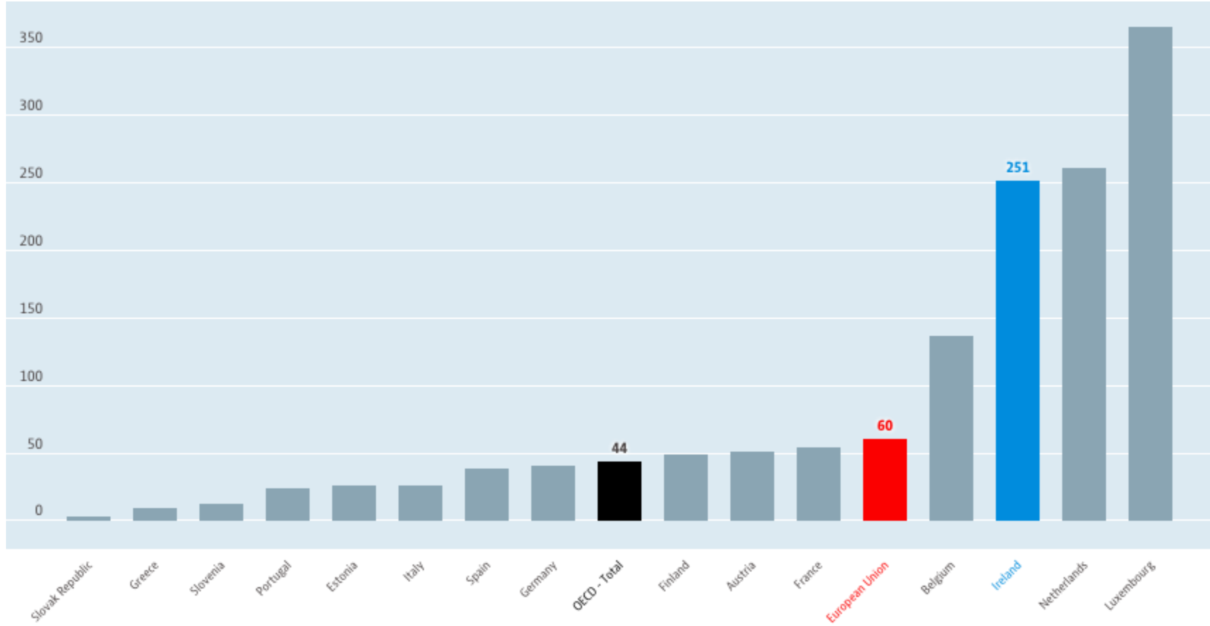


Chart II - Total FDI Stock, OCDE



Timeline III - History of Foreign companies' implantation

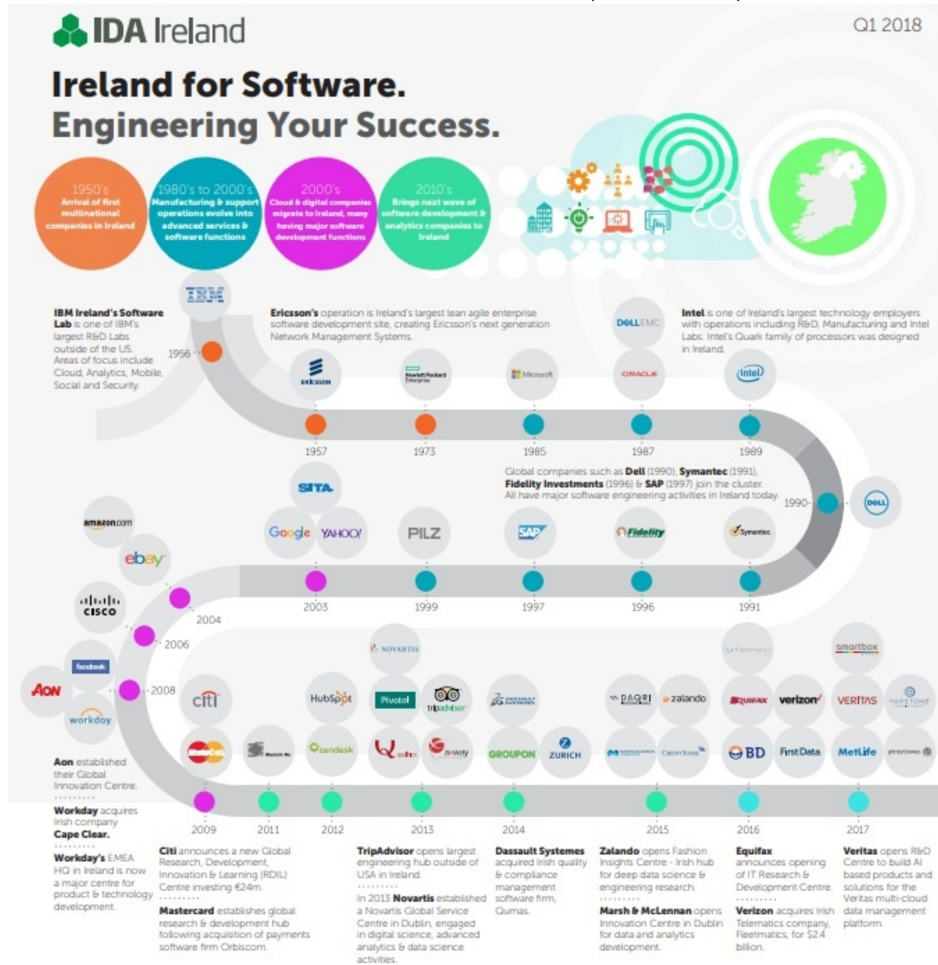


Chart IV - FDI quarterly FDI inflows, Central Statistics of Ireland

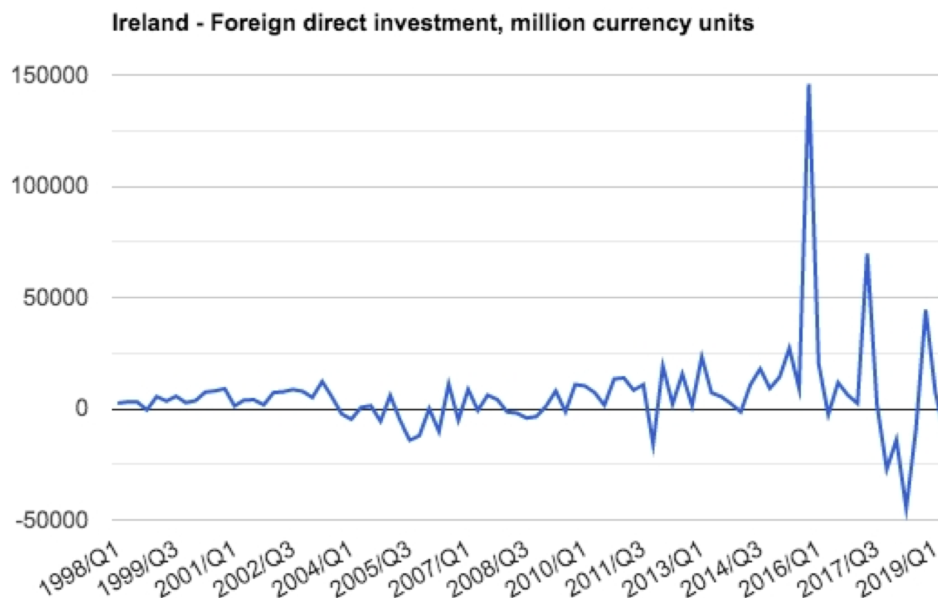
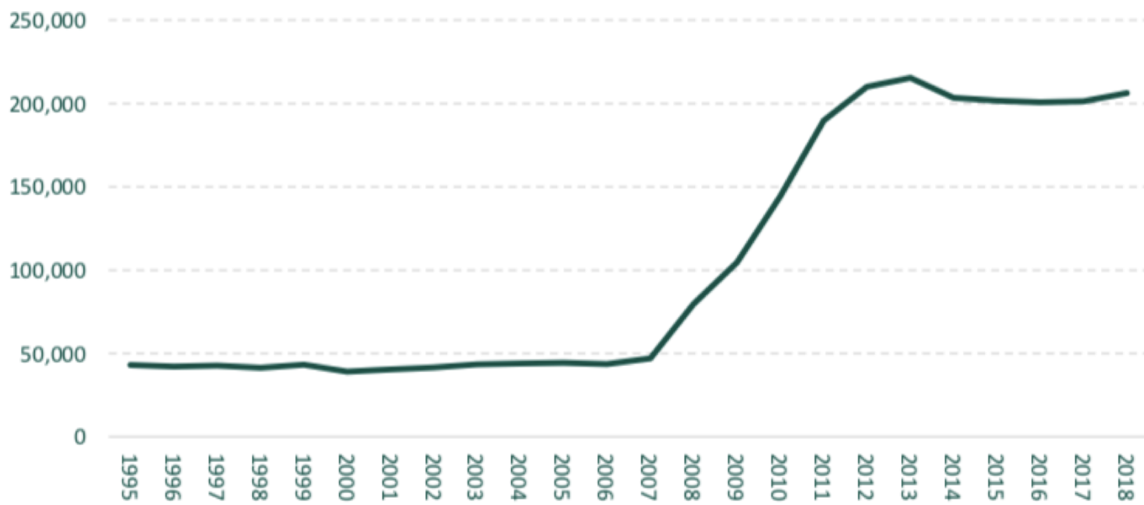


Chart V - General government debt Indicators (1995 - 2018)

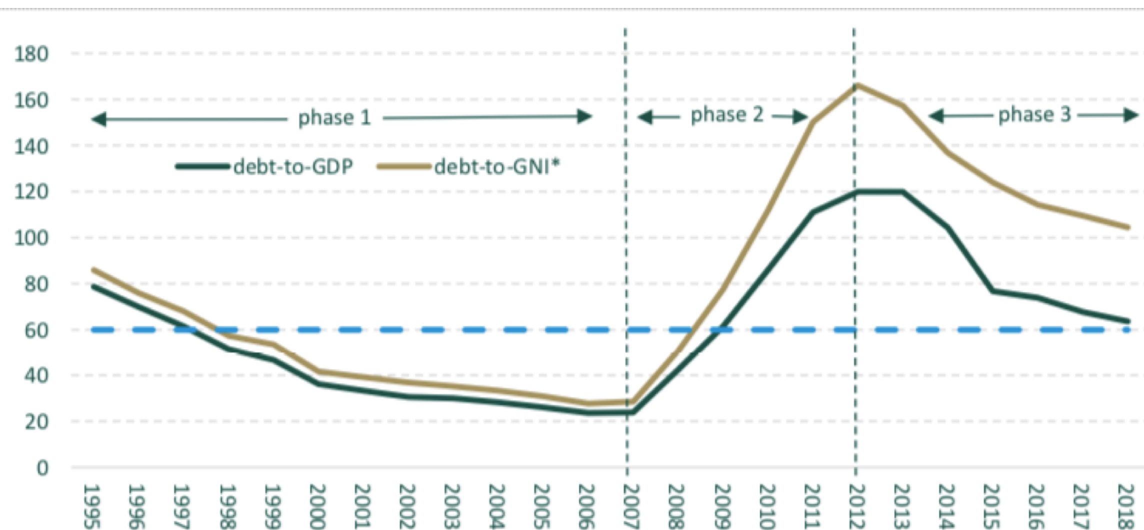
	1995	2000	2005	2010	2015	2018
Nominal amount (end-year), € billions	43.1	39.1	44.4	144.2	201.6	206.2
Percentage of GDP	78.6	36.1	26.1	86.0	76.7	63.6
Percentage of GNI	85.9	41.5	30.8	111.8	124.0	104.4
Percentage of revenue	203.2	100.9	74.6	260.4	284.3	251.4
Per capita, € '000s	11,968	10,317	10,736	31,665	43,013	42,457

Chart VI - Gross public debt, Millions €



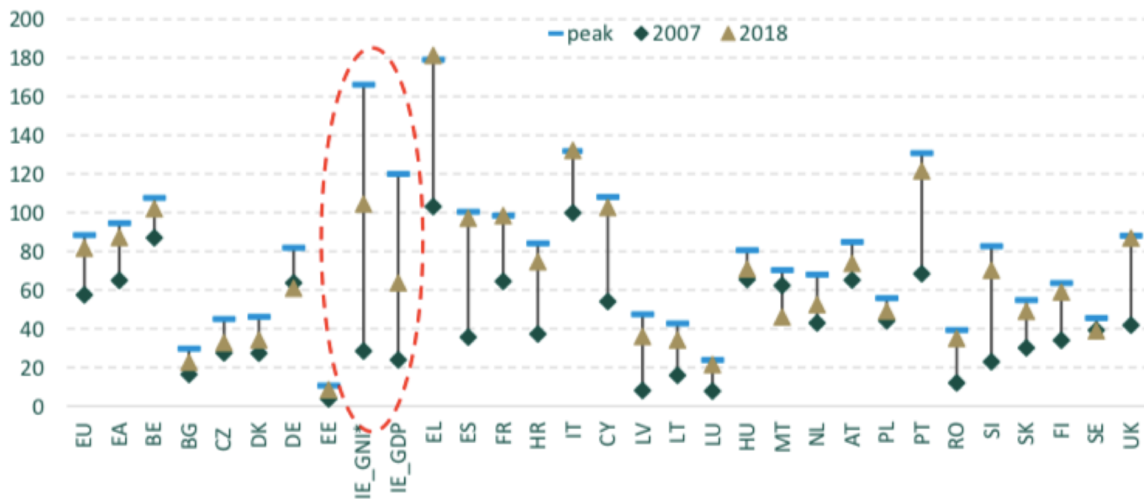
Source: CSO and European Commission (AMECO database).

Chart VII - Evolution of the debt to GDP and GNI ratio, per cent.



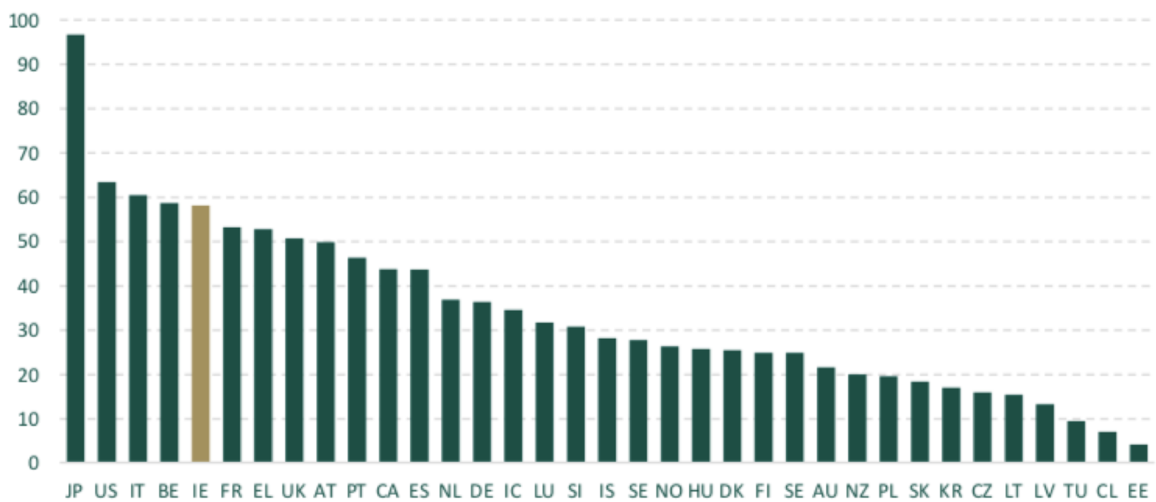
Source: Eurostat, CSO and Department of Finance calculations.

Chart VIII - Debt dynamics in the EU during the crisis, per cent of GDP



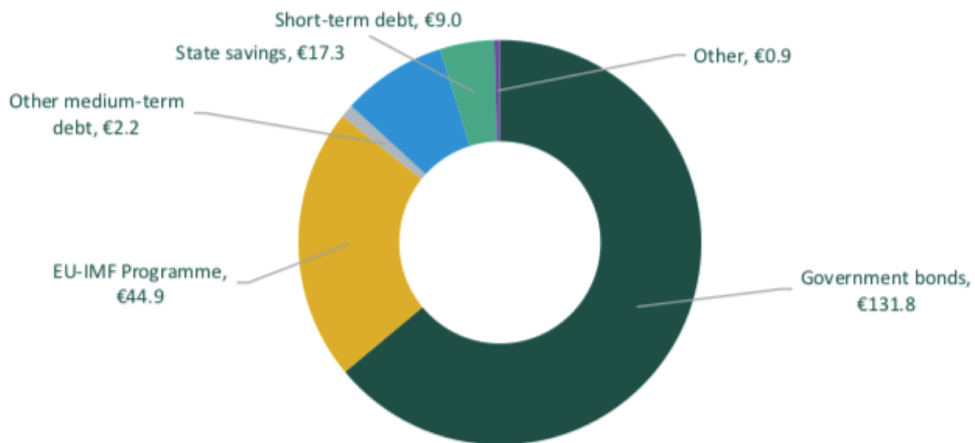
Source: Department of Finance calculations based on European Commission (AMECO) data.

Chart IX - General government debt in 2017, thousands of US dollars, per capita



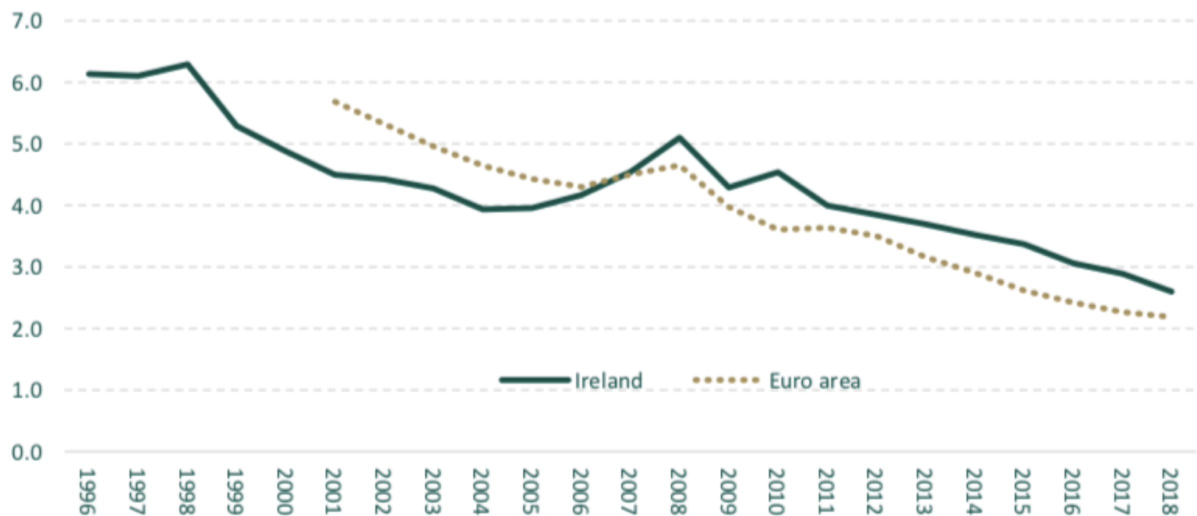
Source: OECD and Department of Finance calculations.

Chart X - Composition of Irish debt at end-2018, € billions



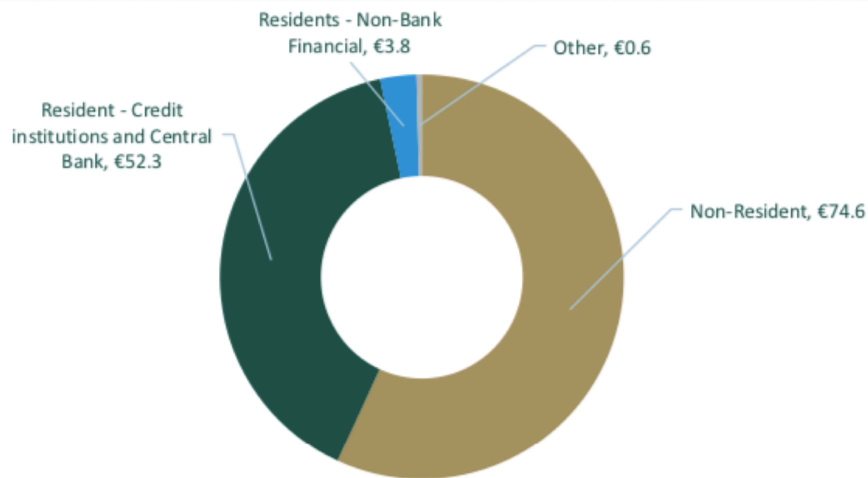
Source: NTMA.

Chart XI - Effective Interest rate on general government debt, per cent



Source: Department of Finance calculations.

Chart XII - Holders of Irish Government long-term bonds - ends 2018, € billions



Source: Central Bank of Ireland.

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