Ireland accelerates its phased re-opening

Ireland's economy and financial system was in good health before onset of pandemic

June 2020

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Index

Summary

Ireland labour market and retail sales hit like rest of Europe; Ireland's structural advantages should help cushion the blow

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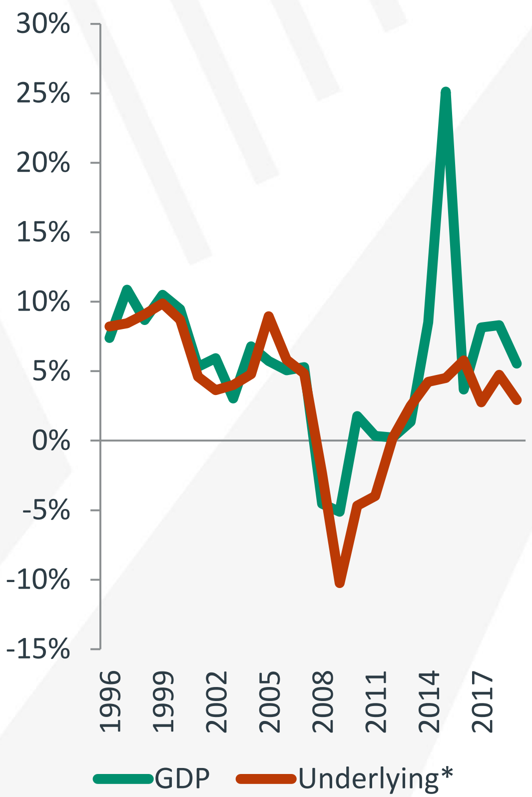
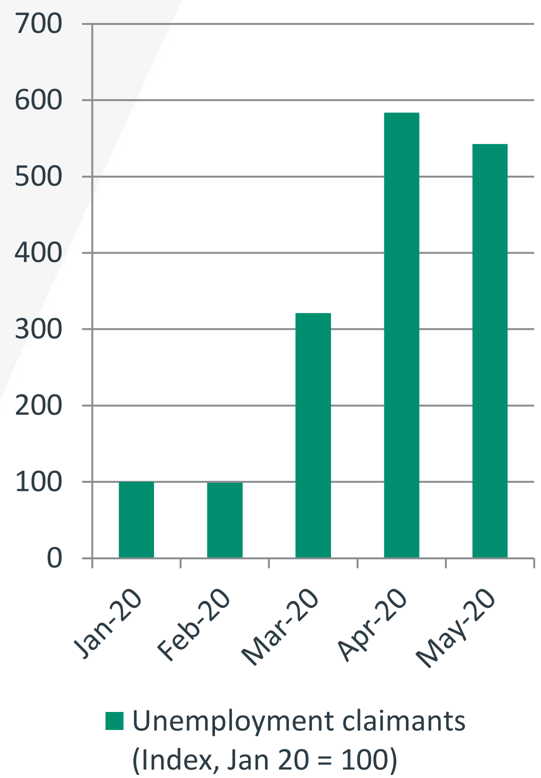
Economy grew strongly before Covid-19; unemployment may have peaked

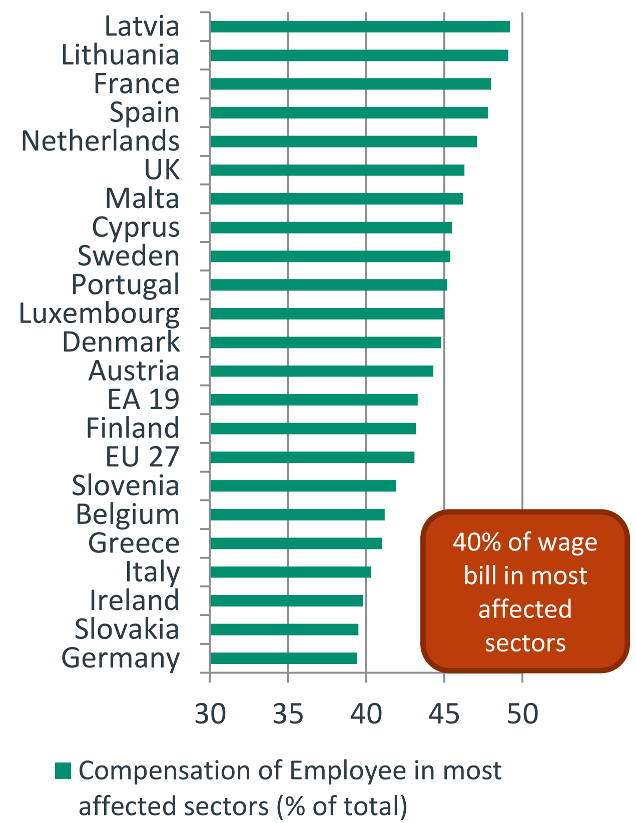
Robust growth in run up to lockdown



U rate uncertain**; more returning to work in June



Irish wage bill less impacted – ICT and Pharma help



Source: CSO

** Underlying series is modified final domestic demand (excludes inventories)*

*** There are definitional questions around whether those on government income supports are unemployed. Some will have left the labour force, others are just temporarily furloughed.*

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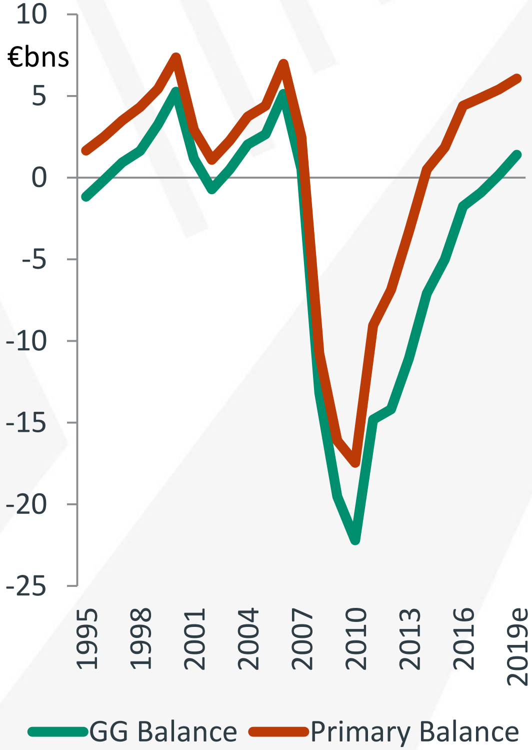
Ireland used 2014-19 growth to create fiscal room and improve debt sustainability; will be needed in years ahead

Six years of primary surplus; run to end in 2020



Improved debt position allows for fiscal policy to act

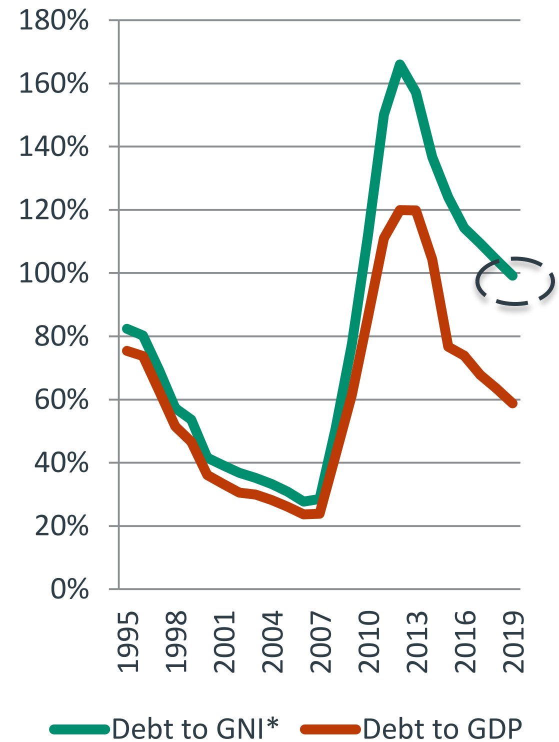
Debt-to-GNI*
(99% 2019f, from 166% peak)

Debt-to-GG Revenue
(233% 2019, from 353%)

Average interest rate
(2.2% 2019, from 5.1%)

Debt-to-GDP^
(59% 2019, from 120%)

Debt fell to 99% of national income but will reverse



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^ due to GDP distortions, Debt to GDP is not representative for Ireland, we suggest using other measures listed.

Covid-19 and Ireland outlook

Recession

Ireland is in recession. Key question is for how long?

This is a black swan event. The fan chart of outcomes is wide so forecasting is of little value.

Exposure

Ireland's domestic economy has been hit hard like others but internationally traded sectors (Pharma and ICT) will help weather the storm

Brexit risk in background

Policy

Irish fiscal response currently at 6.5% of GNI*, more could follow if needed.

ECB and Fed actions should cap interest costs and allow necessary fiscal room

NTMA has already funded €18.5bn of revised funding plan of €20-24bn for 2020

Flexibility

Ireland has large cash balances, the final 2020 redemption prefunded and a year free of maturing bonds in 2021

Funding can come from several sources. Bonds, Short Term paper and the Rainy Day Fund

10 years

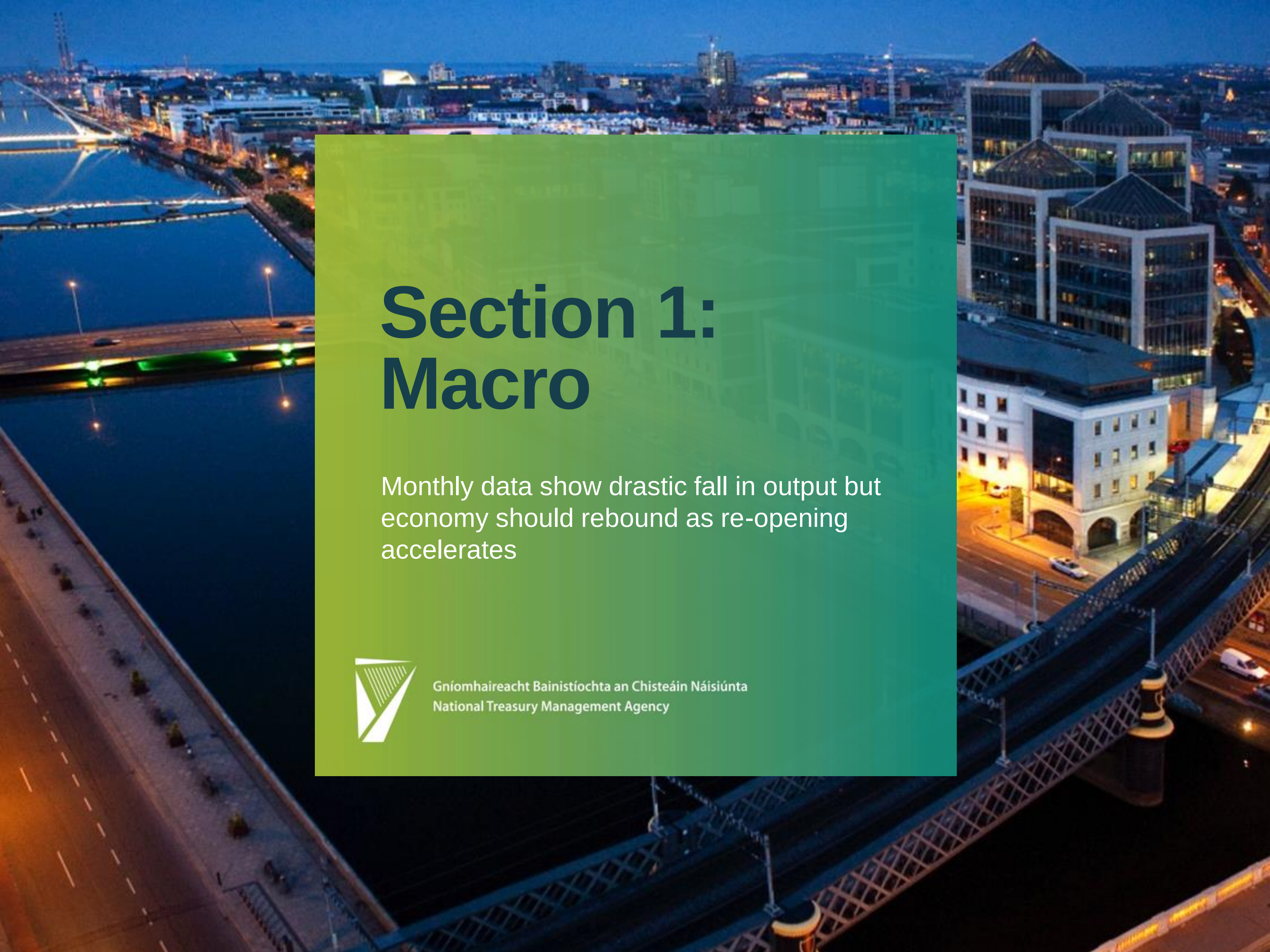
One of the longest weighted average maturities in Europe

The ECB's QE enabled NTMA to extend debt maturities, reduce interest cost and repay the IMF. Now ECB is buying aggressively again with few limitations

AA-

Ireland has been affirmed in AA space by S&P

On relative basis, hit to Ireland may be less than other countries given multinationals, relatively smaller domestic share of economy and tourism



Section 1: Macro

Monthly data show drastic fall in output but economy should rebound as re-opening accelerates

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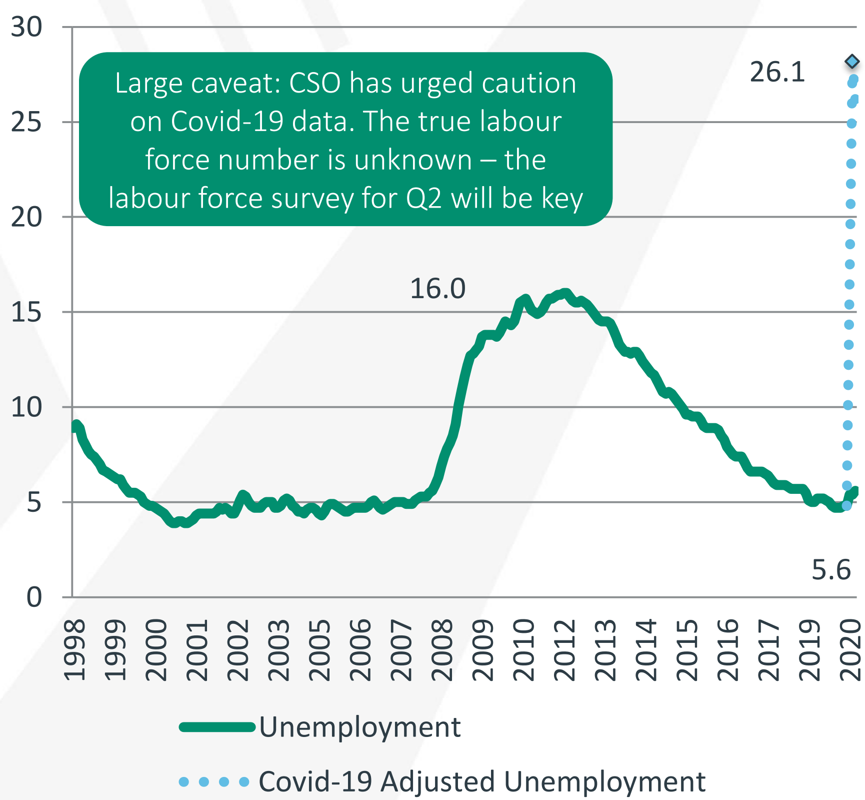
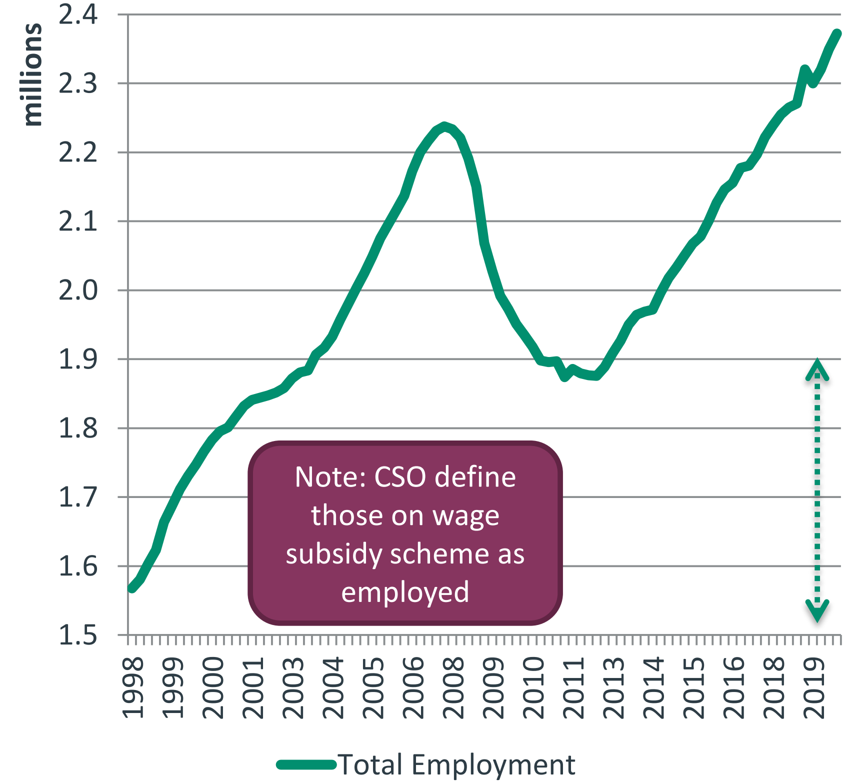
Labour market highlights the stark Covid-19 impact but uncertainty about exact numbers as of now

True unemployment rate is uncertain: Covid-19 adjusted rate 26.1%* down from 28.2%



A million getting income supports - unclear how many would be considered unemployed



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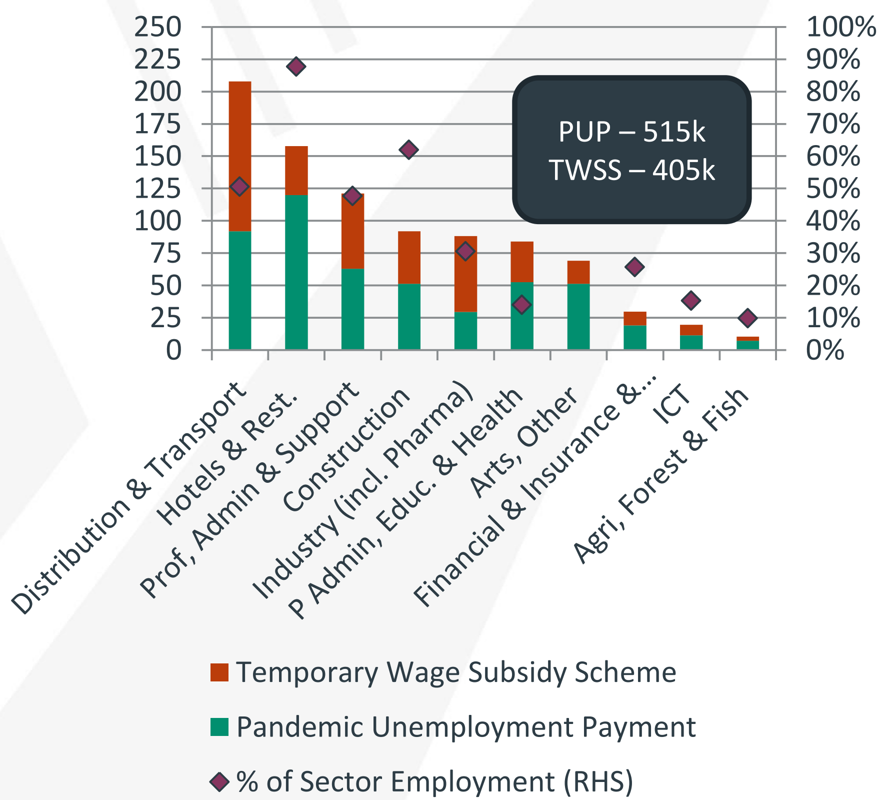
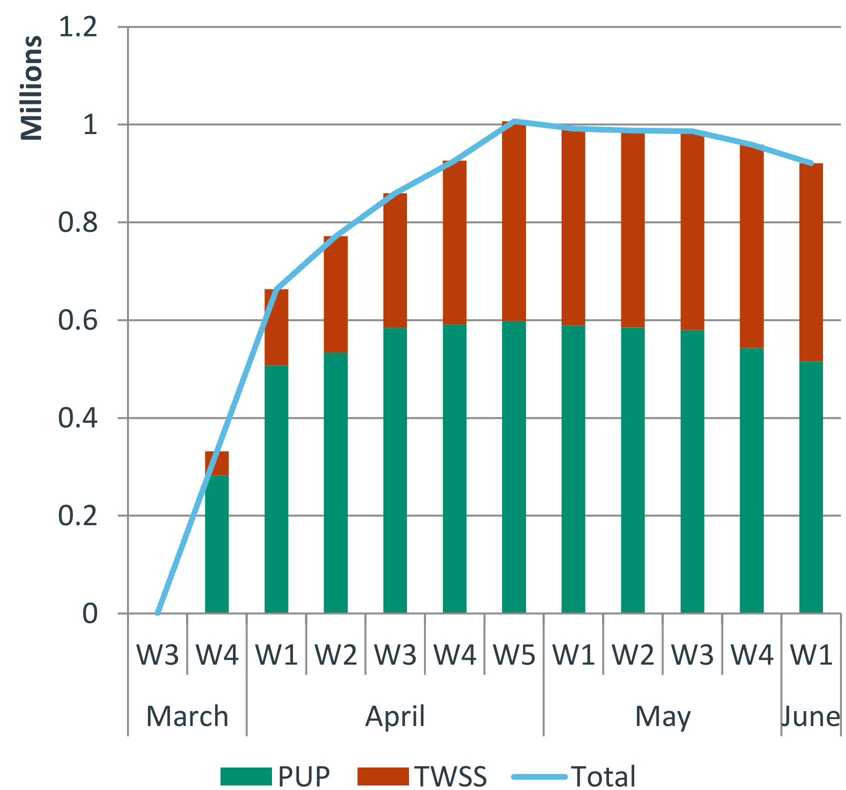
Source: CSO, Department of Social Protection, NTMA calculations
** The CSO have estimated the upper bound of the unemployment rate at 26.1%. There is no official data on how employment has been affected yet. The next labour force survey may answer questions about what constitutes being employed and whether those losing jobs will leave the labour market. Thus we give a range of outcomes, as we cannot be accurate now.*

Government's income supports have peaked: those on TWSS are still employed; PUP unemployed

Around 40% of workforce have received either one of two Covid-19 income supports



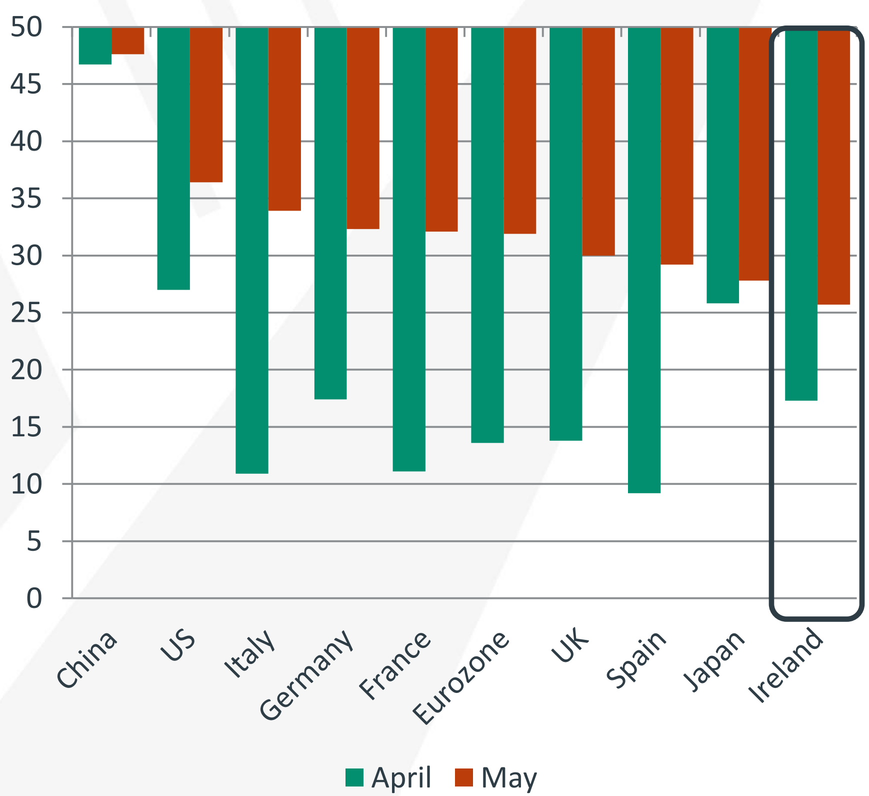
Those on supports peaked in April – numbers will fall as re-opening accelerates



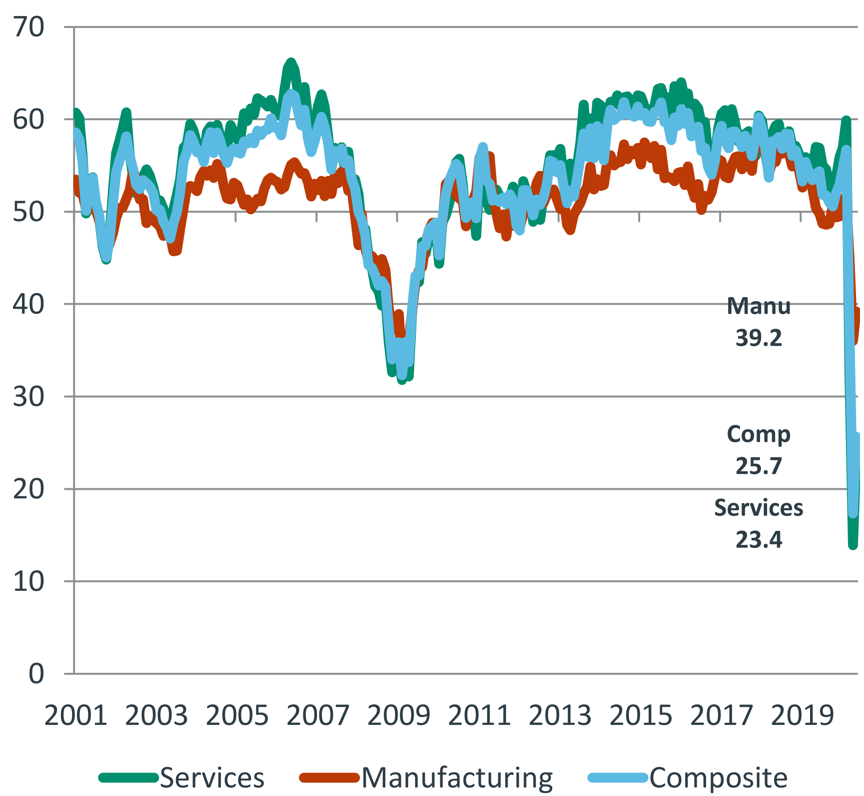
Source: Department of Social Protection (as of 8 June), Revenue(as of 11 June), CSO

Ireland's cautious lockdown contributed to lower May PMI; June's accelerated re-opening will help remedy this

Ireland's Composite PMI at 25.7 in May, Manufacturing held up at 39.2



Manu PMI has been less impacted – services recovering slowly given cautious re-opening



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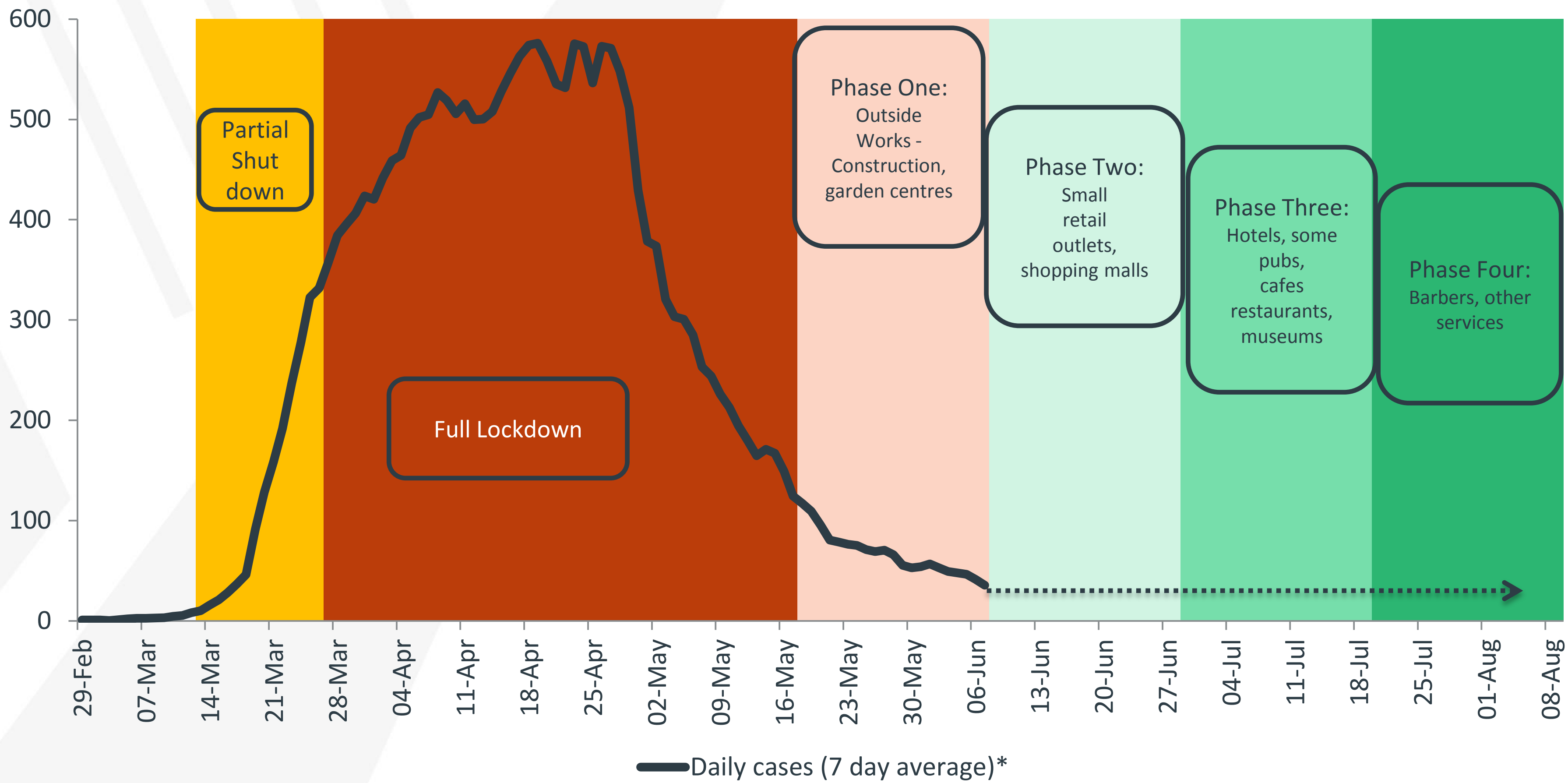
Source: Markit, Bloomberg

Roadmap for phased re-opening laid out by Government has been accelerated as new cases have dropped



Source: HSE, [Department of the Taoiseach](), NTMA analysis

**Daily cases are adjusted for backlog of testing. Main occurrence meant cases related to end-March/early April but were not confirmed until mid April.*

*** Roadmap subject to change. Arrows are illustrative. Covid-19 cases & other indicators will need be contained for Ireland to move through the proposed phases. Ultimately the re-opening will be guided by public health advice.*

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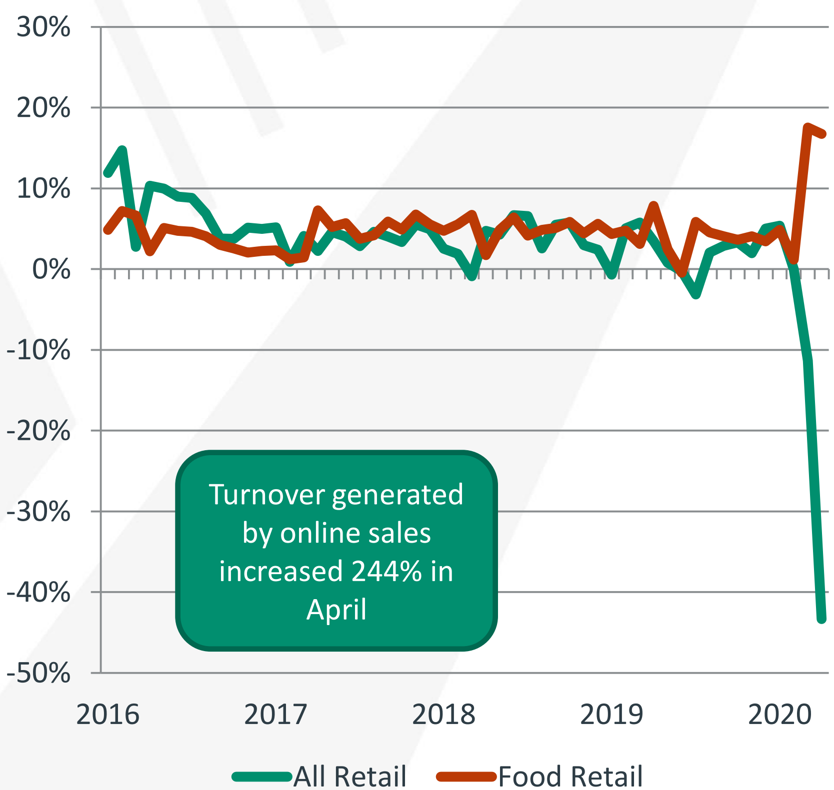
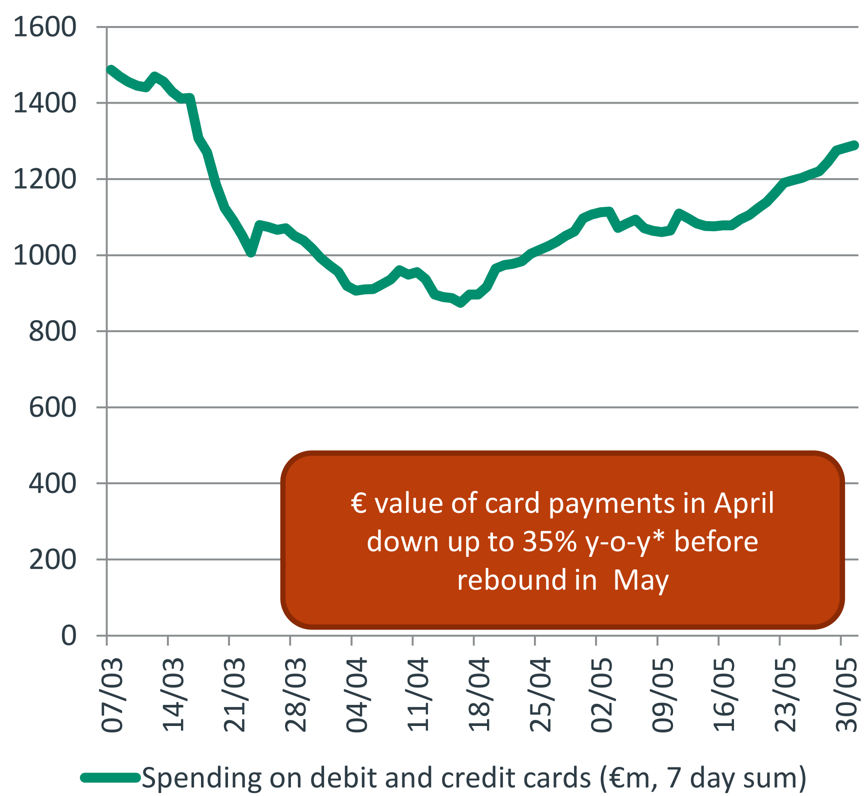
Consumption data shows drop in April; timely payment data shows rebound in May

Retail sales were as bad as expected in April – food & online sales helped cushion blow



Card data shows consumption fell sharply from mid-March & rebound in recent weeks



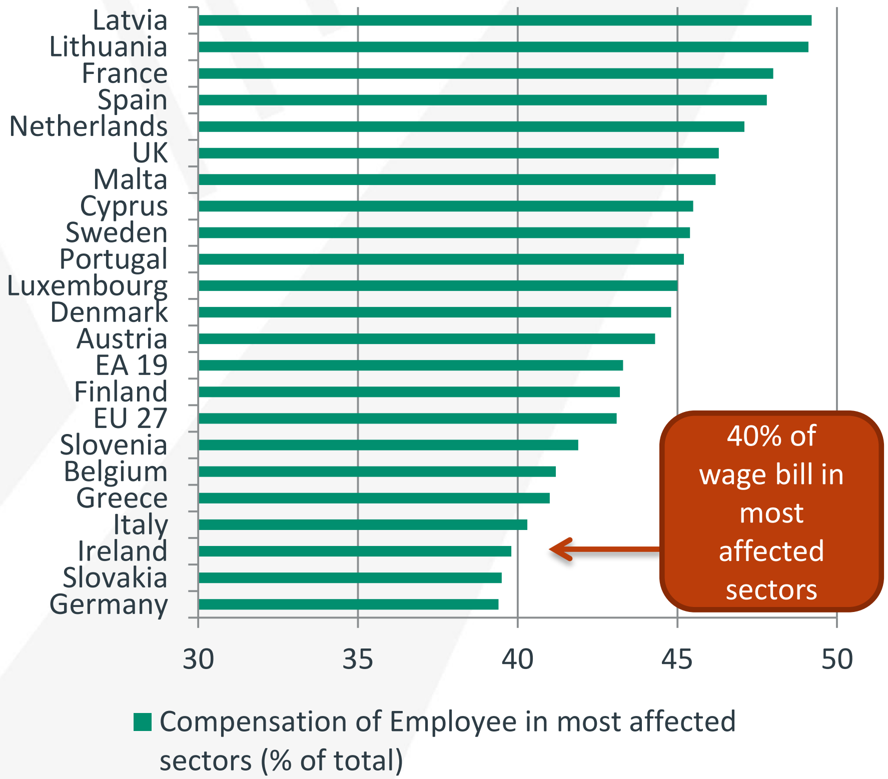
Source: CSO; DataStream; NTMA calculations; CBI

Using Household Budget survey data, we can estimate how much consumption of goods and services can still occur during the lockdown. We make allowances for extra grocery shopping and reduced housing costs given government moratorium policy.

** This can be seen as an upper bound, revisions may reduce this.*

On a relative basis Ireland could perform better than most EU peers – thanks to big tech/social media companies

The Irish wage bill is not going to be as impacted as other countries



ICT sector will be a bulwark in protecting incomes in Ireland

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Source: Eurostat (2019)
Note: Most affected sectors include construction, wholesale and retail trade, transport, accommodation and food service activities, real estate activities, professional, scientific and technical activities; administrative and support service activities, arts, entertainment and recreation

Initial fiscal response of €13bn (6.5% of GNI*) is considerable; more could be announced as needed

€4.8bn for income support measures (extended to August – cost will increase):

1. A temporary wage subsidy scheme (TWSS) has been introduced which pays 70-85% of an employee's income up to €410p/w. This equates to any salary below €38,000.
   - Subsidy is for businesses with >20% reduction in turnover and keeps employee on the books.
   - Most furloughed salaries are below €38,000; average payment close to €350 p/w more likely.
2. The pandemic unemployment payment (PUP) for employees (and self-employed) has been amended to €200 or €350 p/w depending on previous wage level. A sick leave payment for actual Covid-19 diagnosis or self isolation is available and is €350 p/w.

€2bn for increased health spending to combat Covid-19.

€6.5bn for business supports: Some of these supports need to be legislated for in coming weeks.

1. A €10,000 restart grant for micro and small businesses;
2. A three month commercial rates waiver for impacted businesses;
3. A €2 billion Pandemic Stabilisation and Recovery Fund within the Ireland Strategic Investment Fund (ISIF), which will make capital available to medium and large enterprises on commercial terms;
4. A €2 billion COVID-19 Credit Guarantee Scheme to support lending to SMEs;
5. The 'warehousing' of tax liabilities for a period of twelve months

Other measures enacted include support for bank borrowers, reducing the CBI's Countercyclical Capital Buffer, deferrals on tax payments including VAT & stamp duty, temporary rent freezes and temporary ban on evictions.

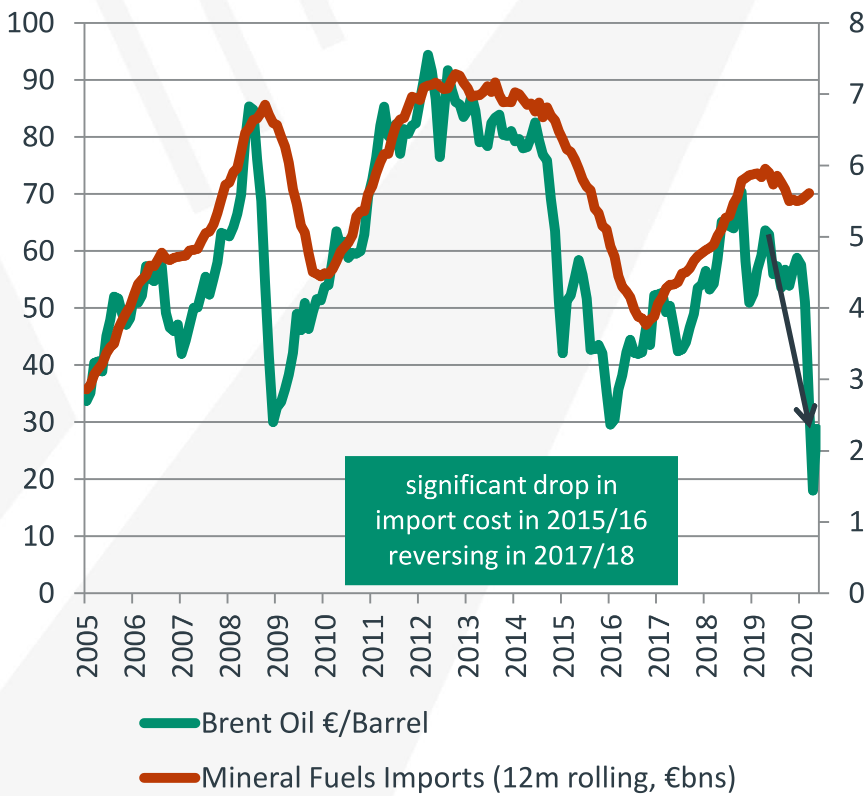
External environment – monetary policy and oil positives will partially offset exogenous shock that Ireland faced

	2019	2020
EA Monetary Policy	Accommodative in Q4	Maximum accommodative
EU Fiscal Policy	Minimal	Expansionary
US Monetary Policy	Easing	Maximum accommodative
US growth	YC inversion, but still growing	Covid-19 shock
Oil price	Flat y-o-y	Significantly down on demand despite rebound
UK growth	Brexit uncertainty headwind	Covid-19 shock; Brexit unresolved
Euro Growth	Sluggish	Covid-19 shock
Euro currency	No change y-o-y v. £; weaker v $	Neutral so far

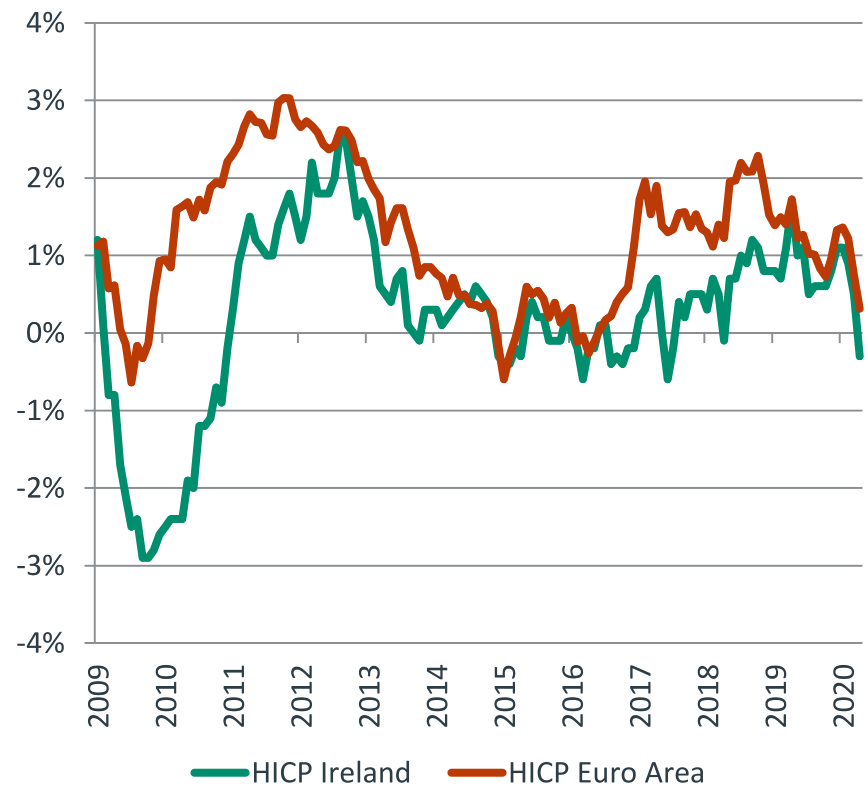
Source: NTMA analysis

Oil price drop is welcome boost for energy importer like Ireland

Oil price drop might boost the economy by 0.5-1% of GNI*



Ireland likely to experience deflation in 2020



Source: CSO; DataStream; NTMA calculations

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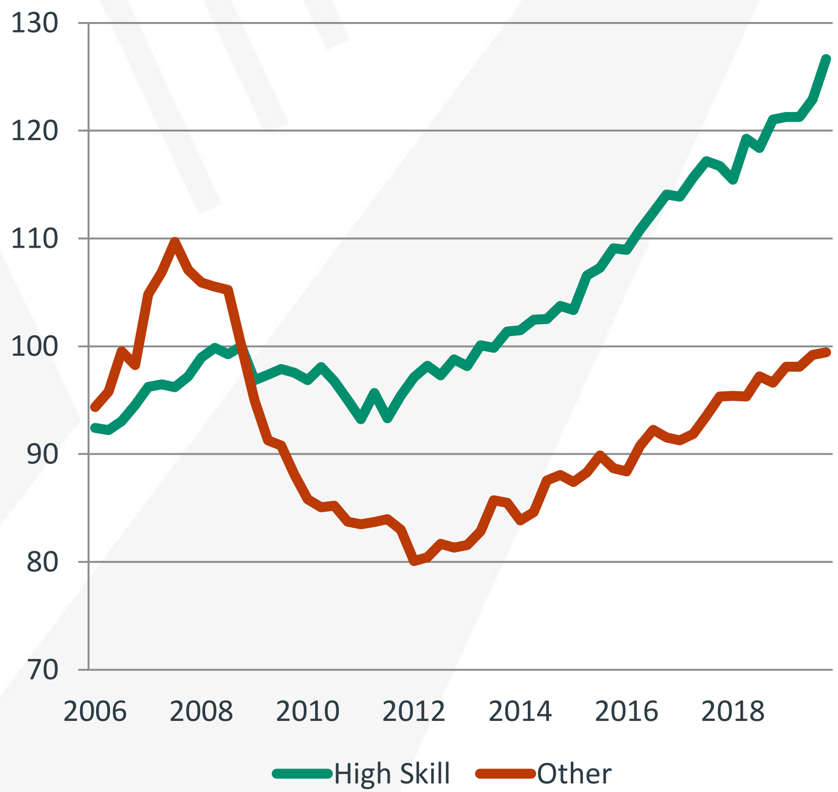
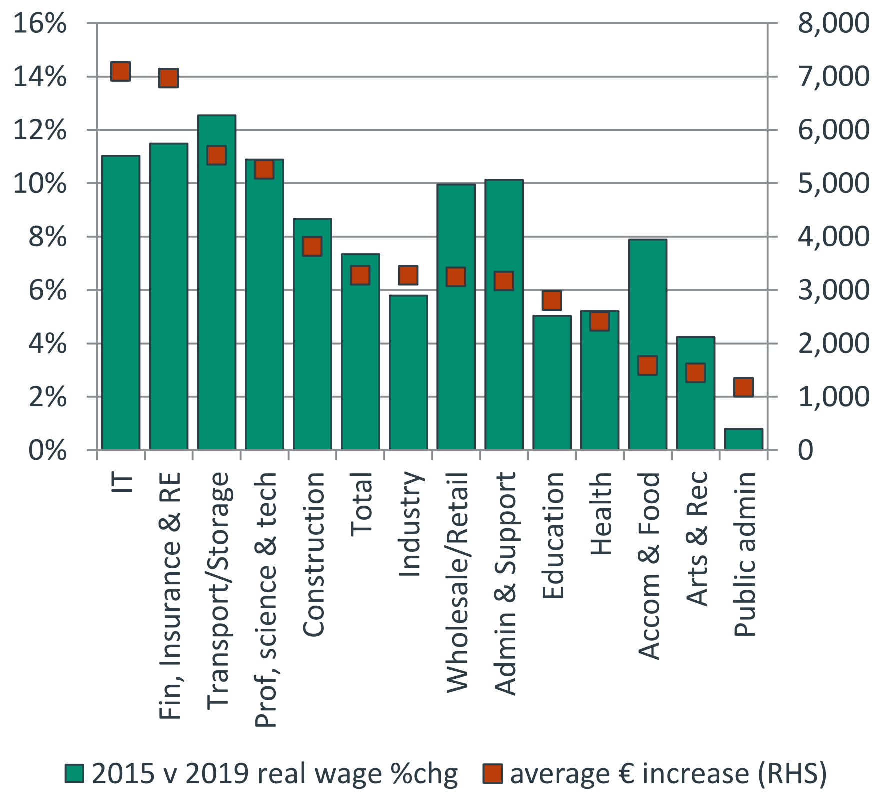
High-skill jobs were added in recovery; wage growth and low inflation pushed real wages up in the last five years

High-skill employment grew sharply in recovery period (index, 100 = end 2008)



Real wages increase helped HHs to repair balance sheets, increase living standards



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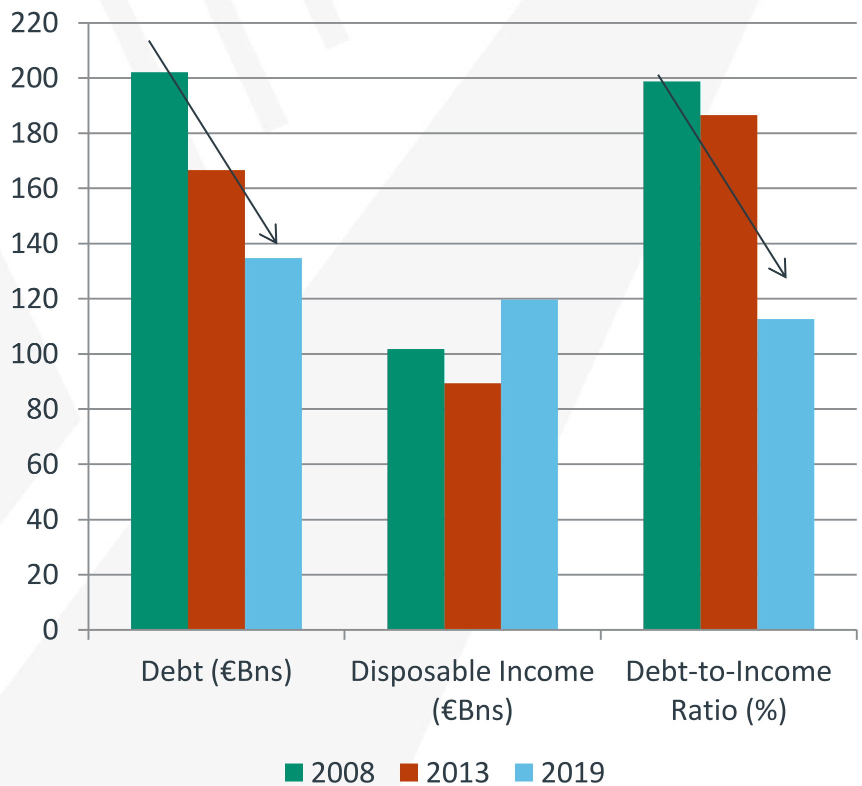
Source: Eurostat; CSO
High skill jobs include the ISCO08 defined groupings Managers, Professionals, Technicians and associate professionals

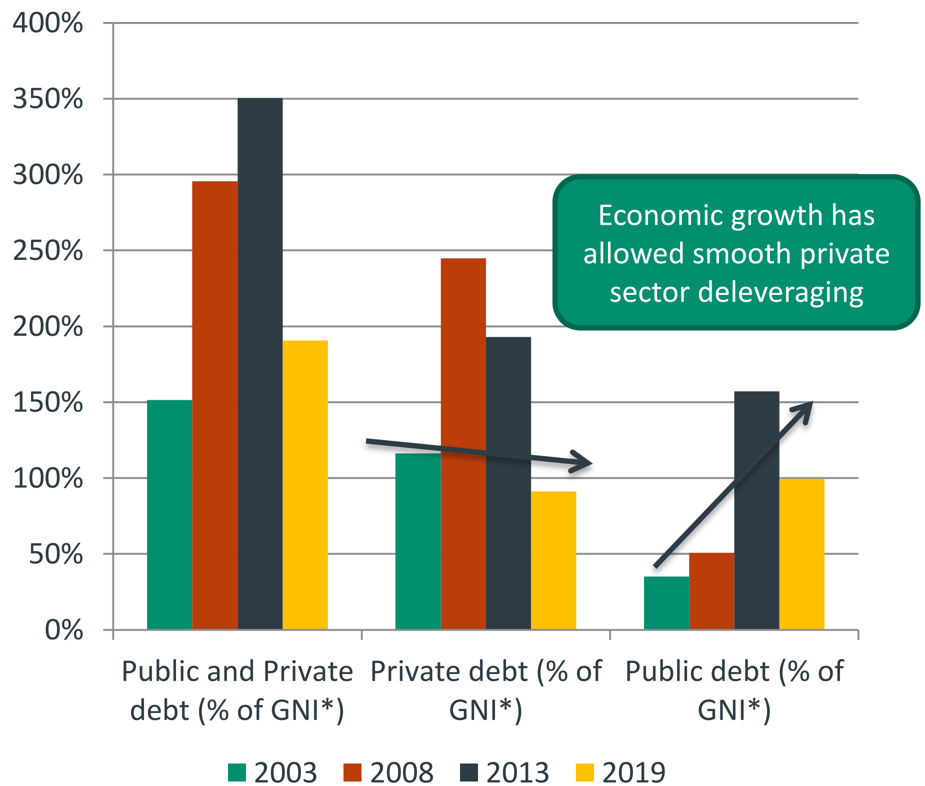
Ireland has used recovery period to repair private sector balance sheets – especially households

Household debt ratio has decreased due to deleveraging and increasing incomes



Source: CBI

Legacy of crisis is on the Government balance sheet not the private sector's



Source: CBI data, CSO

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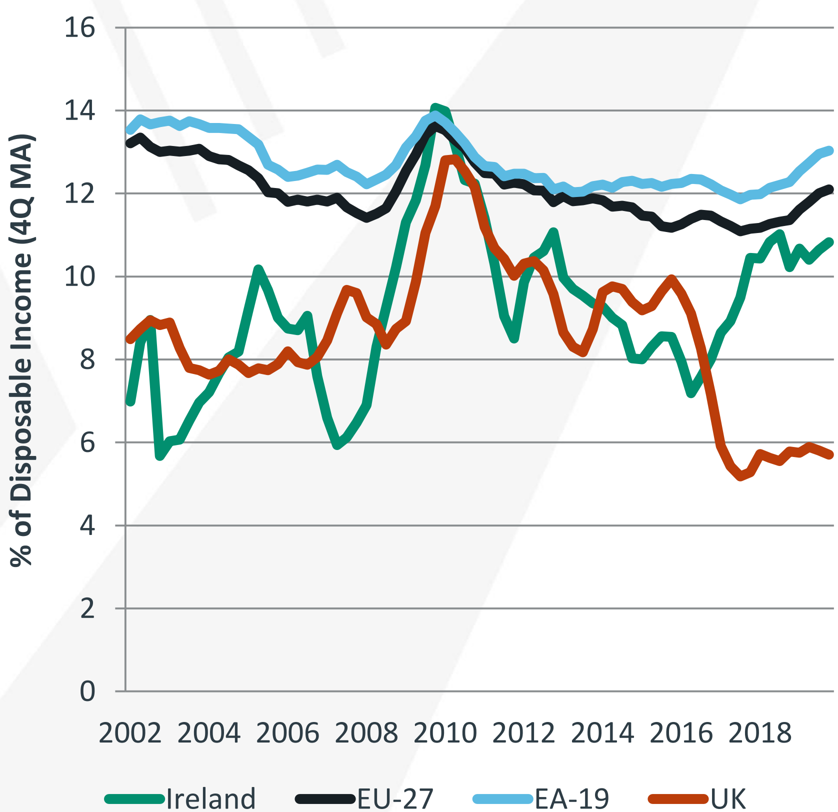
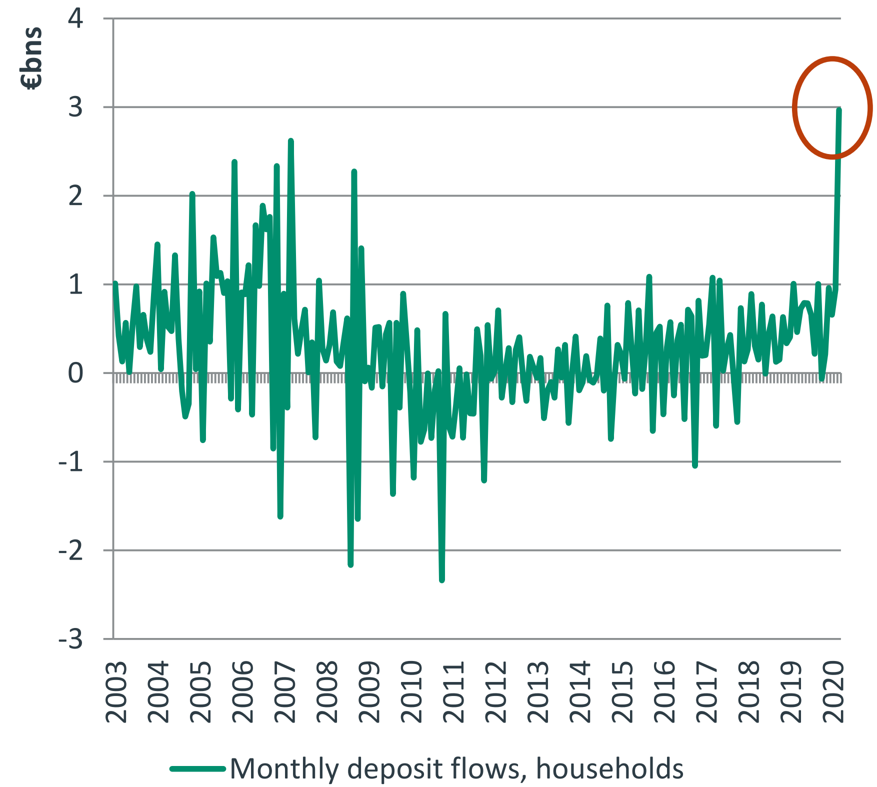
Note: Private debt includes household and Irish-resident enterprises (ex. financial intermediation) CBI quarterly financial accounts data used for household and CSO data for nominal government liabilities.

Savings rate trended towards EU-27 average – pointing towards households being more prudent

Gross household saving rate recovered in growth year - close to EU-27 average



Bank deposits data shows increased saving as households couldn't consume in April



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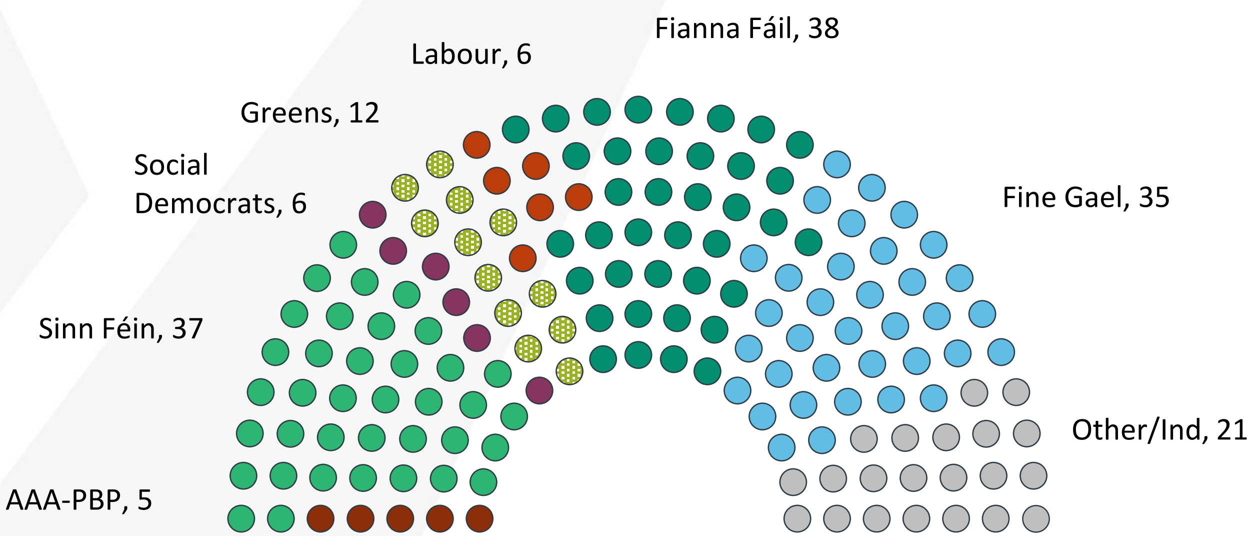
Source: Eurostat, ONS, CSO ; CBI, Eurostat; ECB NTMA calculations
Note: Gross Savings as calculated by the CSO has tended to be a volatile series in the past, some caution is warranted when interpreting this data

Recent general election was inconclusive but coalition likely in coming months

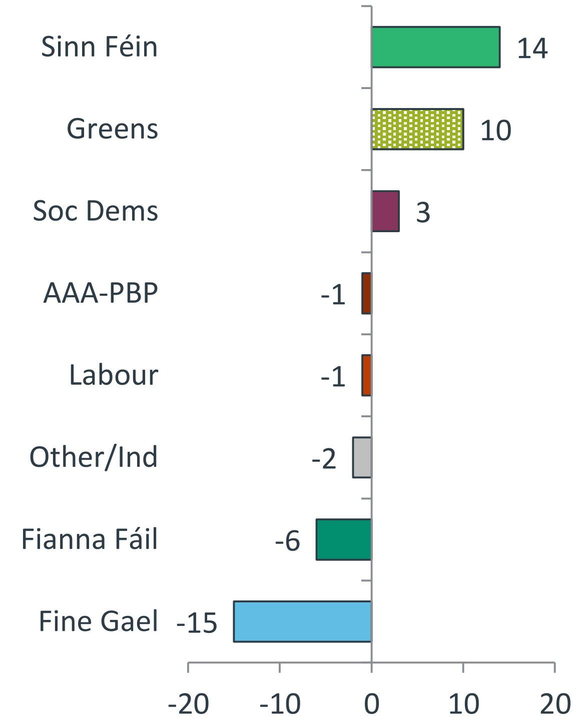
No two parties together can form govt. No new legislation can be passed without govt. formation which will force issue

Breakdown of seats in Dáil Éireann following 2020 General Election (160 Seats total)*



Sinn Féin the biggest winners of the GE but may not enter govt.

Change since GE 2016

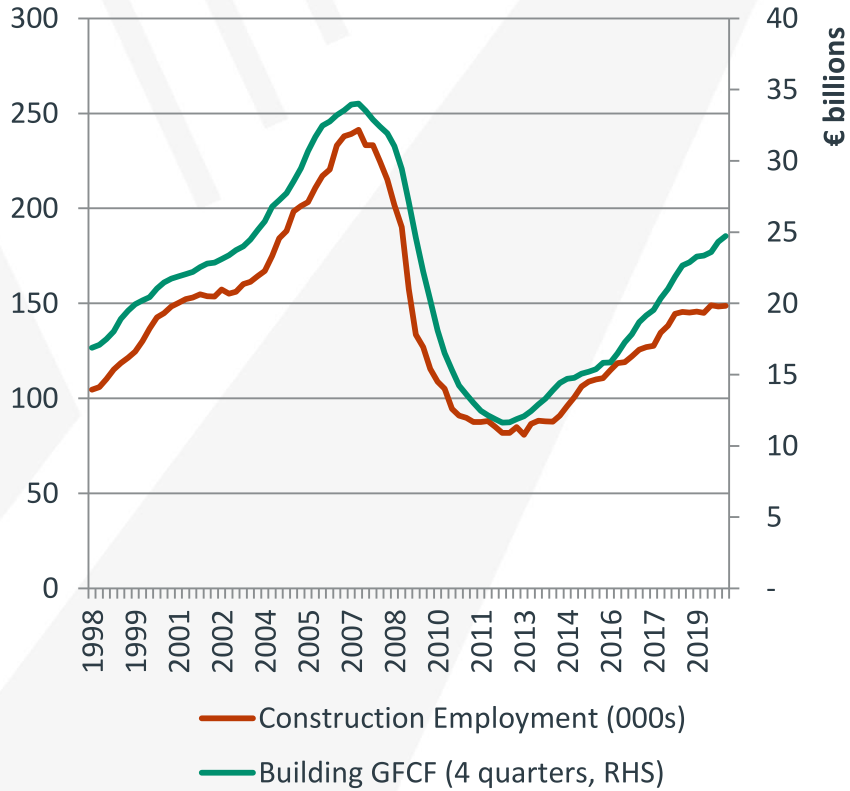


Source: NTMA analysis

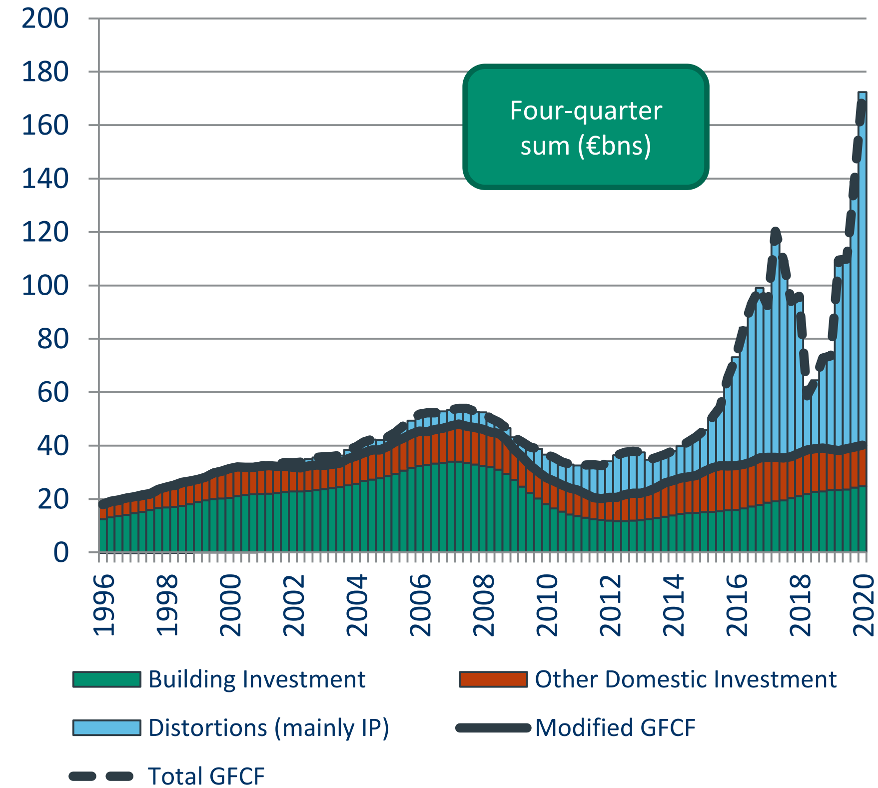
**Note: Number of seats increased by two to 160 in 2020 election.*

Construction sector was shuttered for six weeks before it restarted in mid-May

Building and construction investment will be hit in Q2 but can rebound quickly



Another surge of IP into Ireland in 2019-2020 – helps ICT but distorts investment picture



Source: CSO; NTMA calculations

Most foreign-owned multinationals are shielded but aircraft leasing is exposed (as are Irish-based airlines)

Timely CSO data on aircraft leasing in Ireland show a small but valuable sector

	2018
Assets (€ bn)	140
Persons Employed	1,971
Average Salary (€ 000s)	207.6
Total Compensation of Employee (€bn)	0.4
Profits (€ bn)	4.7
Industry % of GNI*	2.6

Covid-19 outlook – plummeting travel numbers will endanger leasing contracts

Estimated €250bn hit to global passenger revenues from Covid-19*

Impacts Ireland in two ways

- Hit to Irish- based airlines – Ryanair (Europe's biggest airline) and Aer Lingus
- Will have a knock impact on multinational aircraft leasing companies in Ireland.

- The 2008 crisis led to a fall in aircraft values of 19% on average. Implies hit to assets held in Ireland are likely.
- Support for airlines through fiscal packages in the US and China will alleviate some concerns
- Secondary impacts on retail given high value jobs could be lost. Dublin office market may lose a demand source. Main fiscal impact is lost taxes.

Source: CSO (2018);
**based on 70% reduction in Q2 travel numbers (CAPA forecast)*

Section 2: Fiscal & NTMA funding

Ireland was in relatively good shape fiscally before Covid-19

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NTMA has already funded €18.5bn of revised funding plan of €20-24bn for 2020

Flexibility

Ireland has large cash balances, the final 2020 redemption prefunded and a year free of maturing bonds in 2021

Funding can come from several sources. Bonds, Short Term paper and the Rainy Day Fund

10 years

One of the longest weighted average maturities in Europe

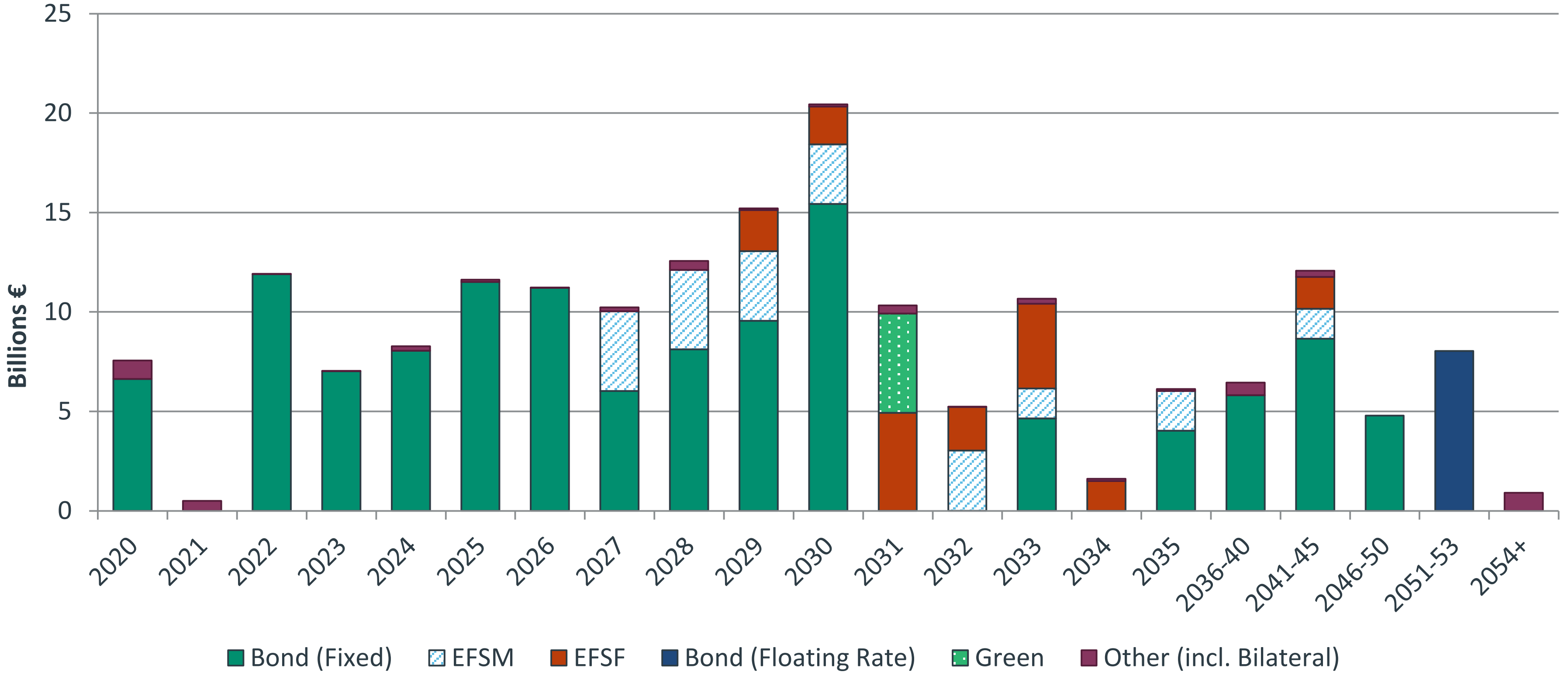
The ECB's QE enabled NTMA to extend debt maturities, reduce interest cost and repay the IMF. Now ECB is buying aggressively again with few limitations

AA-

Ireland has been affirmed in AA space by S&P

On relative basis, hit to Ireland may be less than other countries given multinationals, relatively smaller domestic share of economy and tourism

Two positives for Ireland: smoother maturity profile and no bond redemptions in 2021



Source: NTMA

Note: EFSM loans are subject to a 7-year extensions. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the pre-2027 EFSM loan maturity dates in the 2027-30 range although these may be subject to change.

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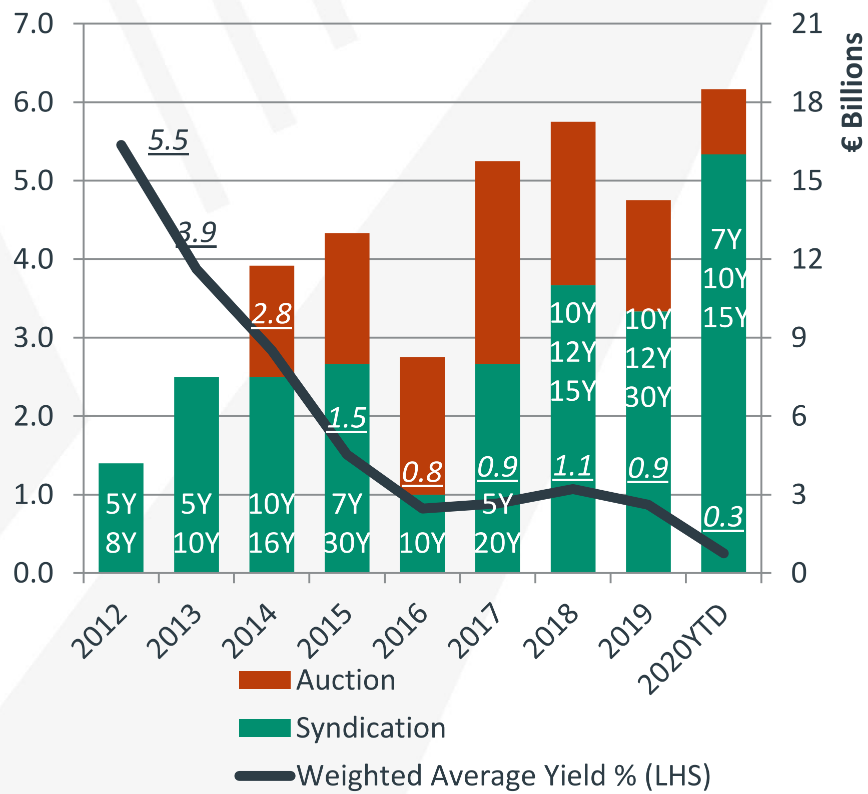
Near-term redemptions much lower than last five years; lower borrowing costs also provides NTMA with flexibility

NTMA issued €87bn MLT debt since 2015; 13.2 yr. weighted maturity; avg. rate of 0.89%



Even with extra Covid-19 borrowings, NTMA might not match supply since 2015

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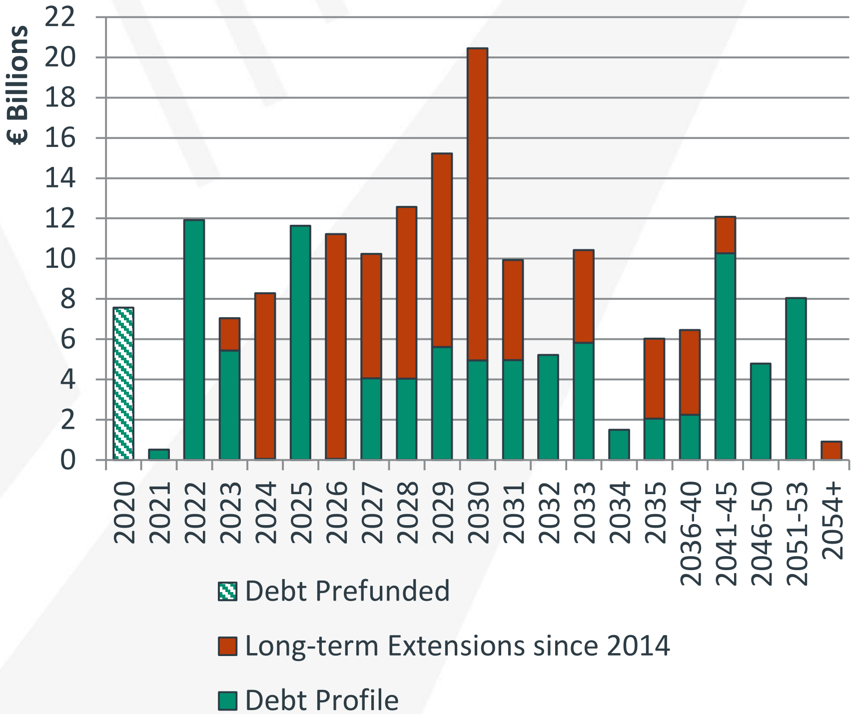
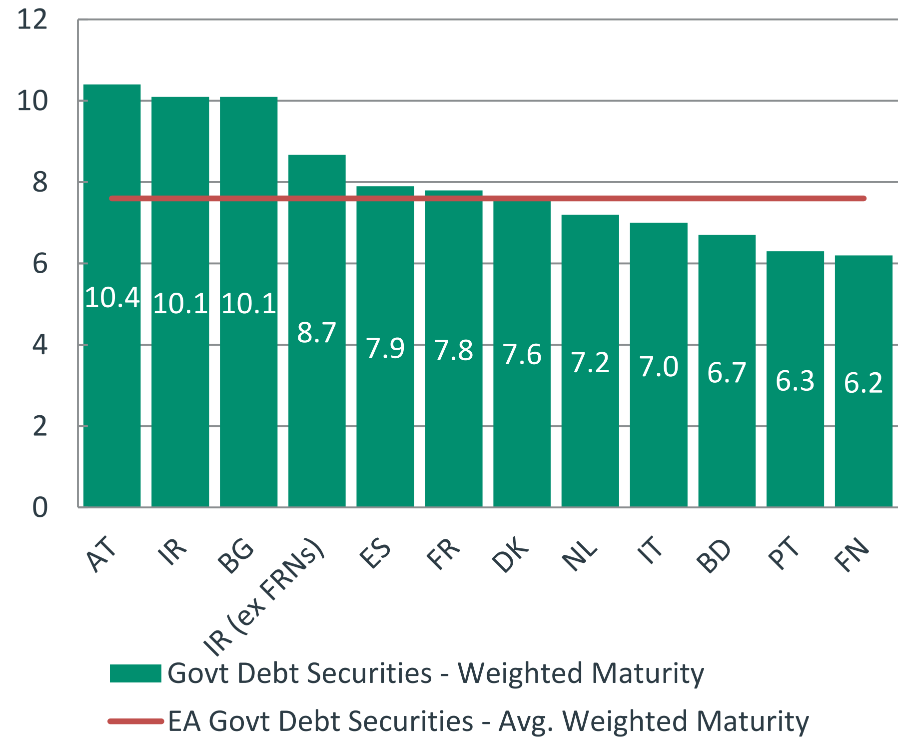
Source: NTMA, CSO, Department of Finance
Only showing marketable MLT debt (auctions and syndications). Other issuance such as inflation linked bonds, private placement and amortising bonds occurred but not shown.

The NTMA took advantage of QE to extend debt profile

Various operations have extended the maturity of Government debt …



…Ireland (in years) now compares favourably to other EU countries



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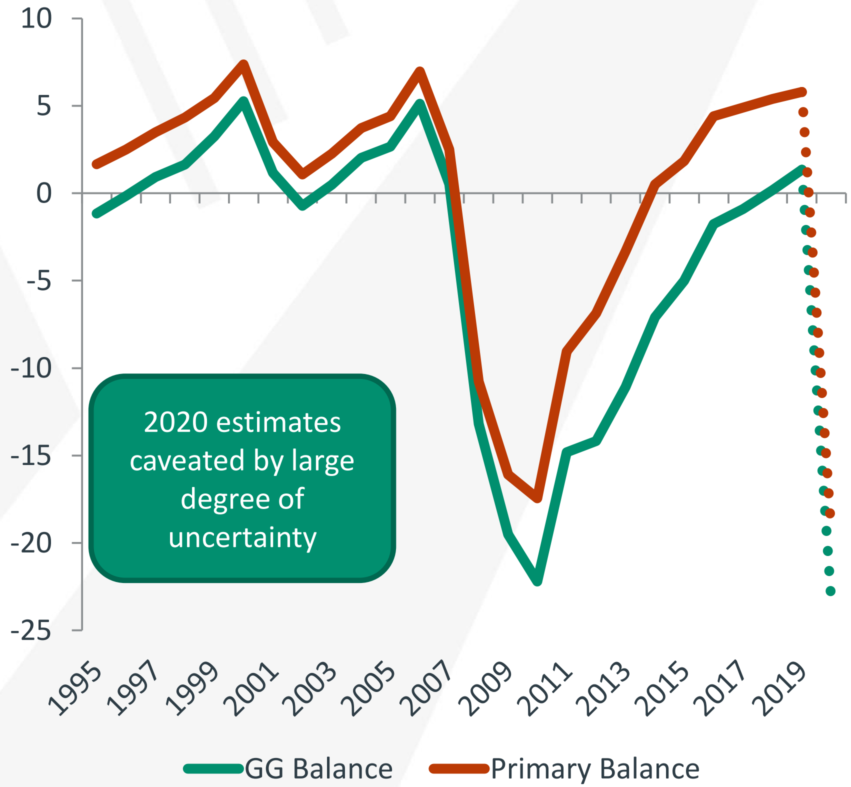
Source: NTMA; ECB

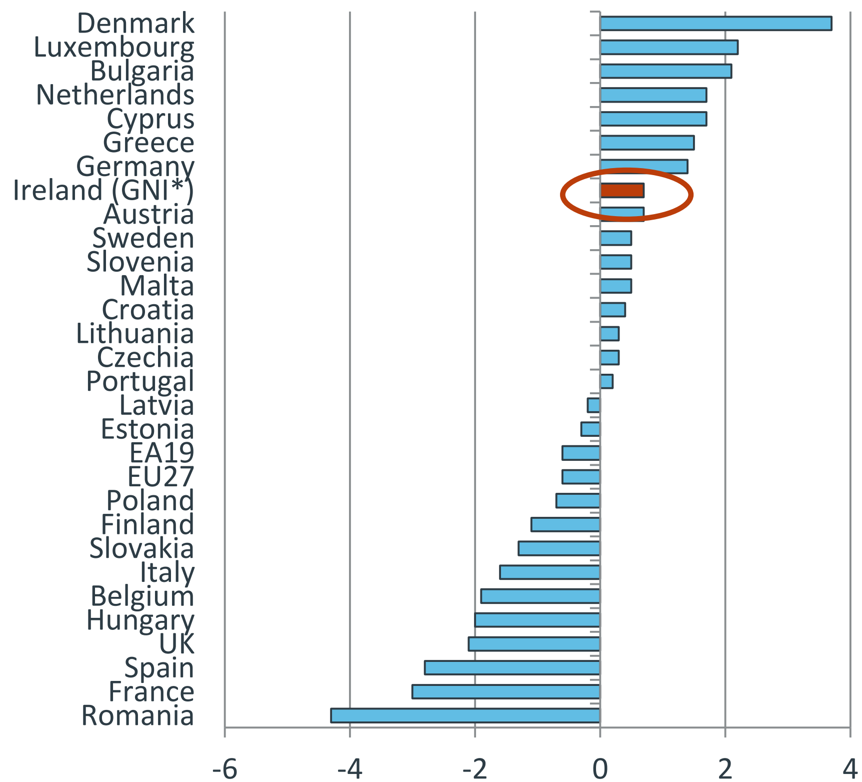
Note: Data excludes programme loans. Ireland's maturity including these loans is still similar

Fiscal discipline in evidence in last decade – after Covid-19 stimulus ends Ireland need to narrow its deficit again

Government worked to get Gen. Govt. Balance (€bn) to surplus before Covid-19



2019 GGB Deficit/Surplus (% of GDP): Ireland started in better shape than most



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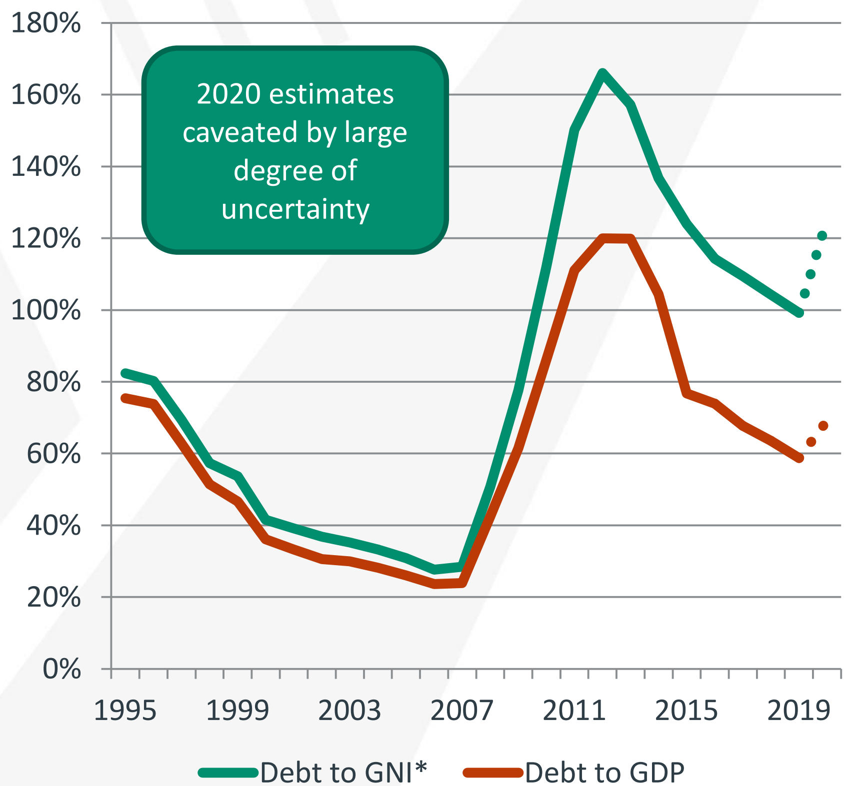
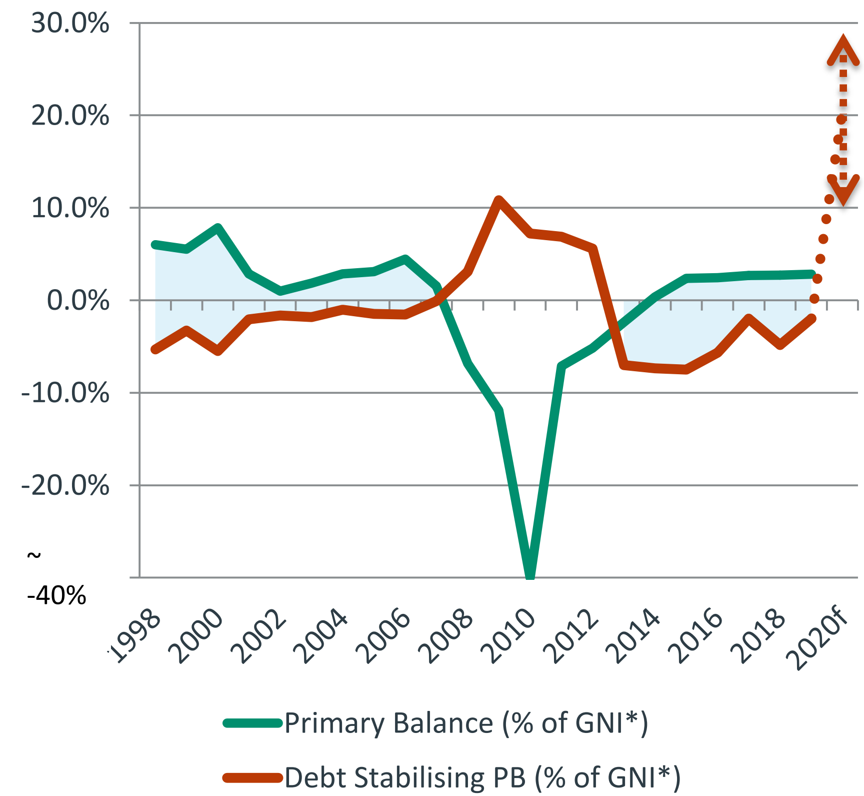
Source: CSO; Department of Finance Eurostat

Gross Government debt likely close to 59% of GDP at end-2019 but 100% of GNI*; will spike in the short term

Debt-to-GNI* had dropped since last crisis



No country will be running primary surplus necessary to keep debt ratio in check



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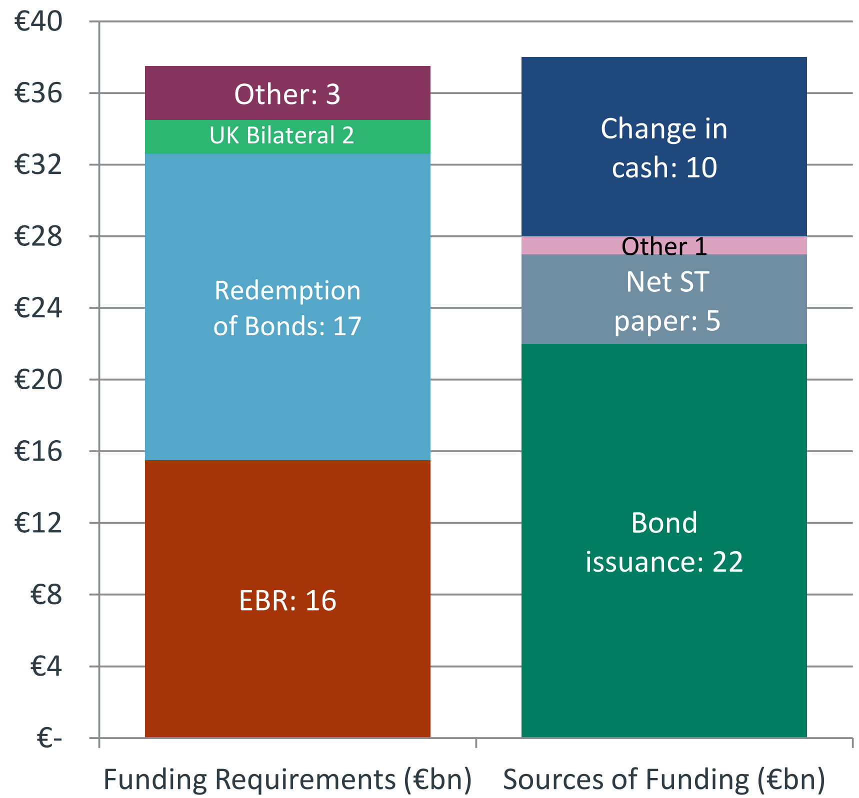
Source: CSO; Department of Finance, NTMA analysis

Various sources of funding will be used to meet Covid-19 borrowing requirements: cash balance and flexibility key

- Two bonds mature in 2020: the first matured in April and the second will mature in October.
- Four of the remaining five tranches of the UK bilateral loan mature in 2020.
- The Exchequer Borrowing Requirement (EBR) has been revised to €15.5bn up from €1.6bn. This is subject to change given the economic uncertainty.
- Existing cash balances will be run down to meet part of the 2020 funding requirement.
- Short term paper will also be an important funding source – one Ireland has not tapped in recent years.

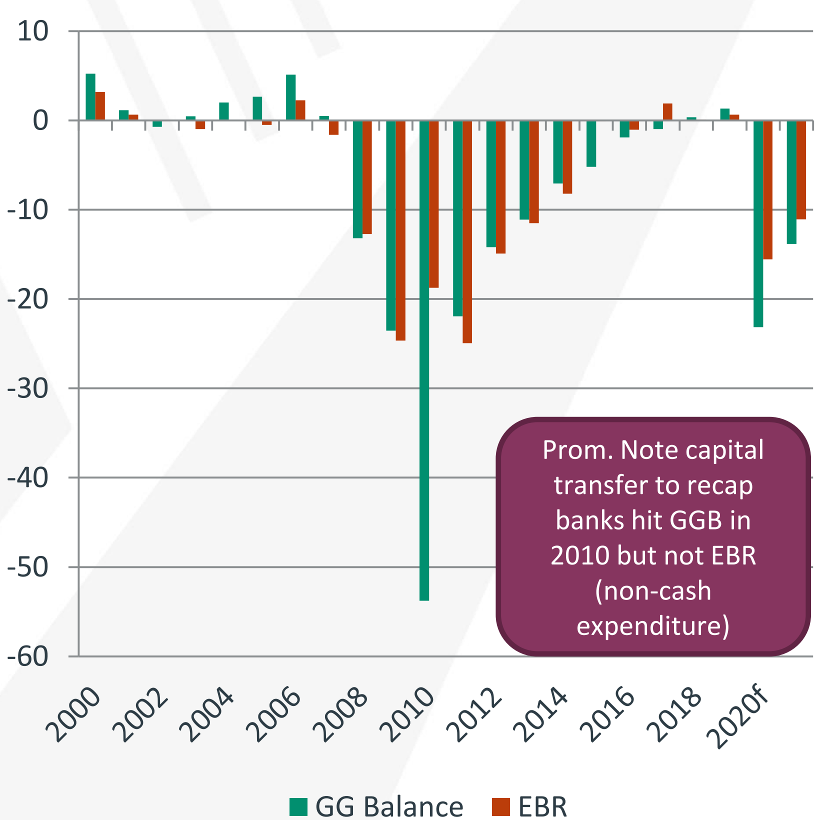


Source: NTMA
Notes:

Other funding: Includes general contingency provision including for potential FRN purchases
Bond issuance: Mid-point of €20-€24bn bond funding range.
Net ST paper: Forecast net growth in short-term paper.
Other Sources: Includes retail (State Savings), private placements and EIB loan drawdowns.

NTMA must finance EBR with cash but GG balance includes other revenue/costs; use GGB for deficit comps

Gap between EBR and GGB (€bns) usually minor - stark in 2020



Methodological Differences	EBR	GGB
Accounting basis	Cash (exchequer)	Accrual
Financial transactions	Included	Excluded
Scope	Subset of Central Govt.	Includes all of central + local
Intra-Government Consolidation	No	Yes

	2019	2020	2021	Comments
EBR	0.6	-15.6	-11.1	This is the deficit in cash terms that the NTMA must finance each year
Adjust for Accruals	0.9	1.4	0.8	Accruals can relate to interest, taxes, other expenditures
Exclude Equity & Loan Transactions	-2.5	-4.8	-2.4	Transactions between the Exchequer and NAMA, CBI and other govt. entities: **this benefits funding req.**
Social Insurance Fund	1.5	-2.1	-0.3	Archaic funding structure of social insurance in Ireland is outside Exchequer. Consolidated in GGB
Semi State, ISIF, other funds	1.2	-0.4	0.0	Dividends and profits from government entities
Local Govt.	-0.5	-1.7	-0.9	Local governments fund themselves
GGB	1.3	-23.1	-13.8	Most complete metric for fiscal position. Use this for deficit comparison with other nations

Source: CSO, Department of Finance

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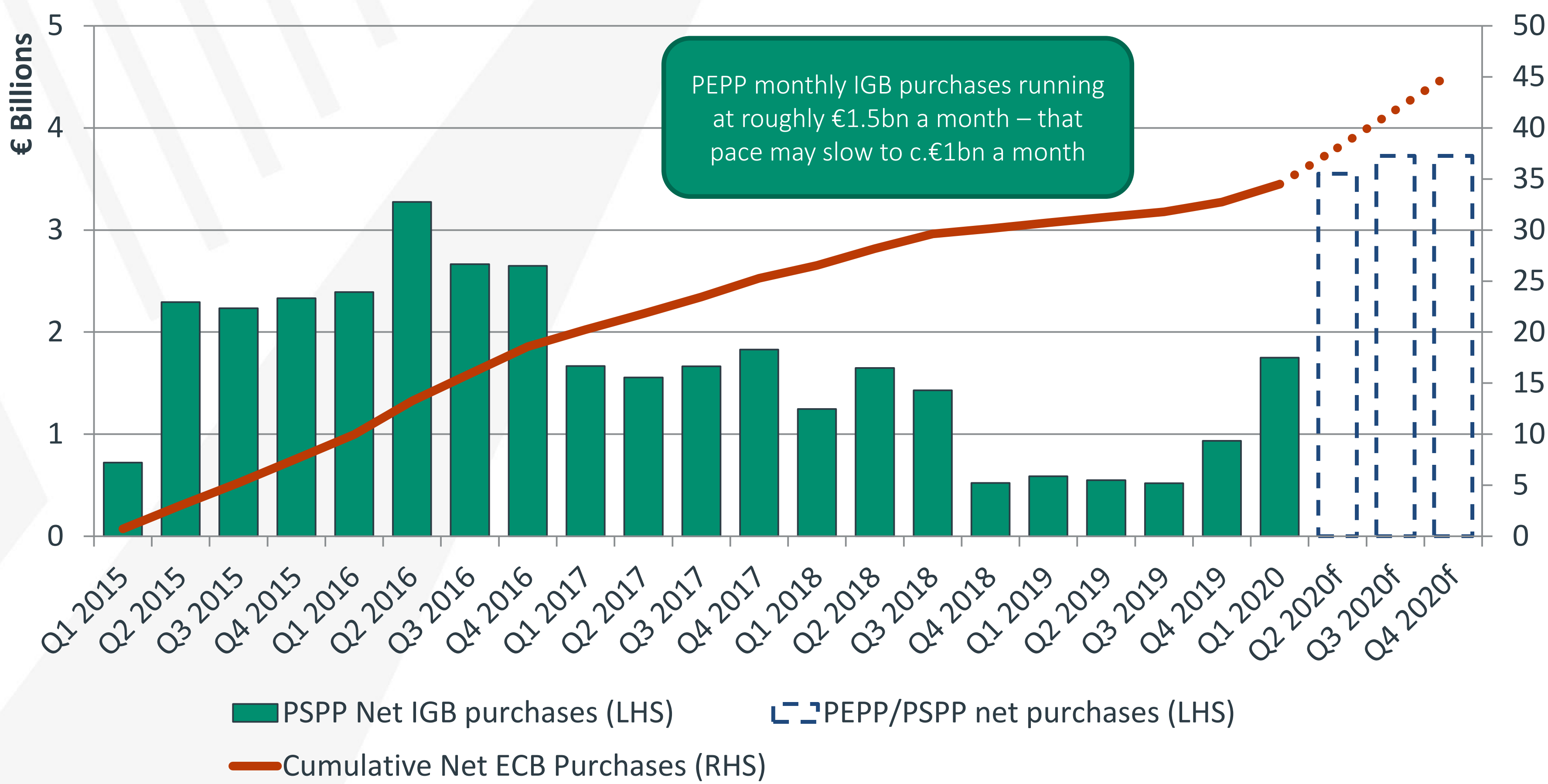
Debt metrics improved but debt stock is high and will increase; assess other metrics apart from debt to GDP too

2019	GG debt to GG revenue %	GG interest to GG rev %	GG debt to GDP %
Greece	370.0%	6.2%	176.6%
Italy	286.4%	7.2%	134.8%
Portugal	274.7%	7.0%	117.7%
Spain	244.2%	5.8%	95.5%
Ireland	*233.3%*	*5.1%*	*58.8%*
Cyprus	231.7%	6.1%	95.5%
UK	226.5%	5.6%	88.1%
Belgium	196.1%	3.9%	98.6%
France	186.6%	2.7%	98.1%
EA19	181.1%	3.5%	84.1%
Austria	143.7%	2.9%	70.4%
Germany	127.6%	1.7%	59.8%
Finland	113.8%	1.6%	59.4%
Netherlands	111.4%	1.8%	48.6%
Sweden	71.5%	0.8%	35.6%

Source: Eurostat
Ireland 99% Debt to GNI ratio in 2019*

In addition to PSPP, ECB's PEPP with its flexibility (no limits) & size (€1.35trn) can underpin IGB market



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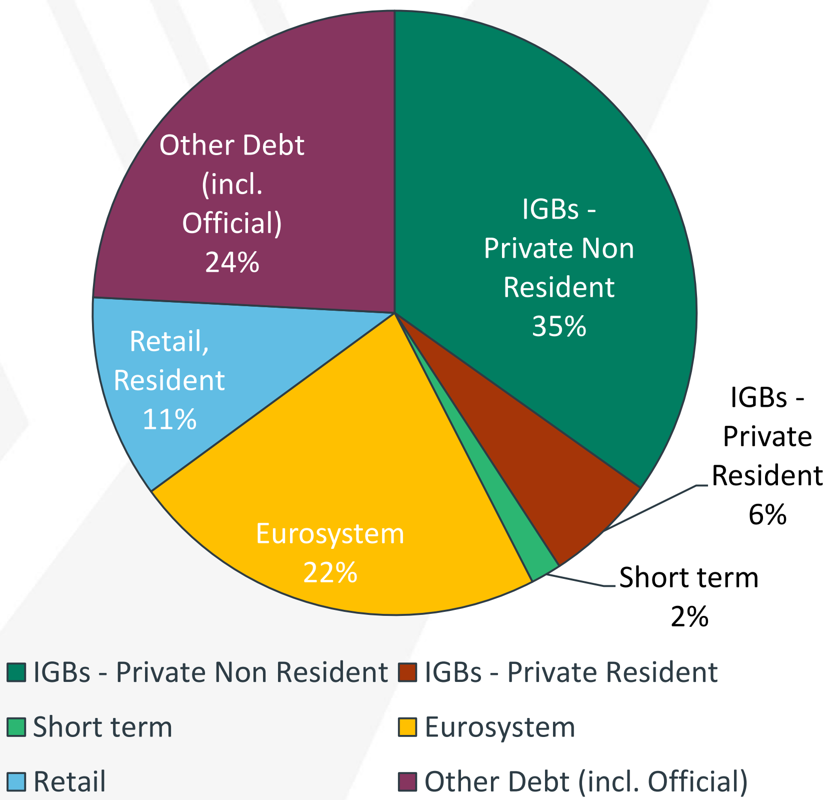
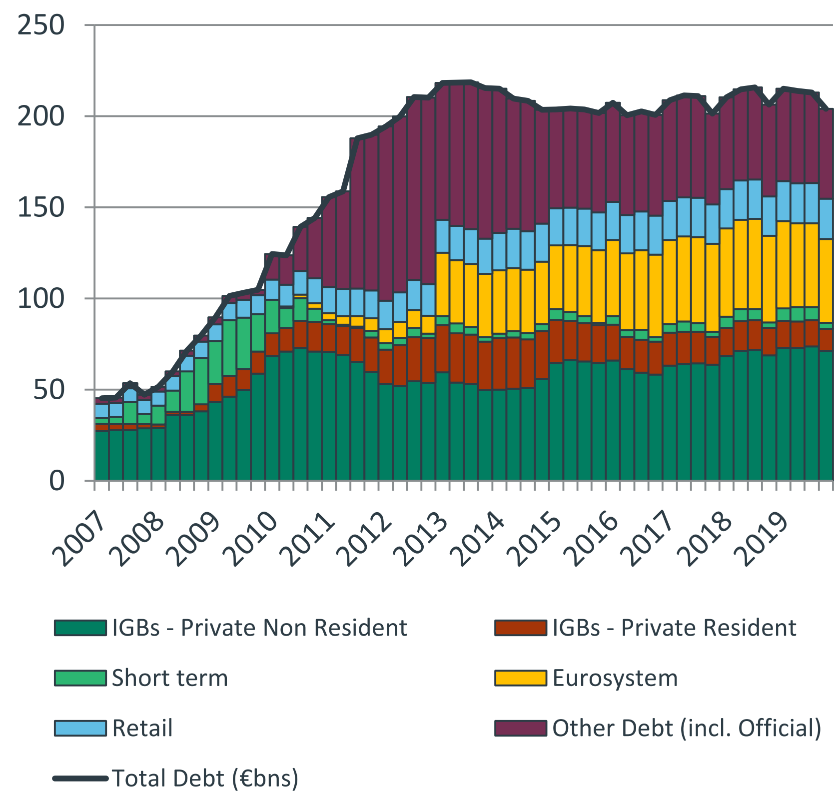
Source: ECB, NTMA Calculations
Notes:
Forecasts sees Ireland's capital key of 1.69% and assumes 80% of new purchases will be for public sector assets with 7% of public sectors assets being supranational issuers.

Diverse holders of Irish debt – sticky sources account for over 50%; will increase further with Eurosystem's PEPP

Ireland roughly split 80/20 on non-resident versus resident holdings (Q4 '19)



"Sticky" sources - official loans, Eurosystem, retail - make up over 50% of Irish debt



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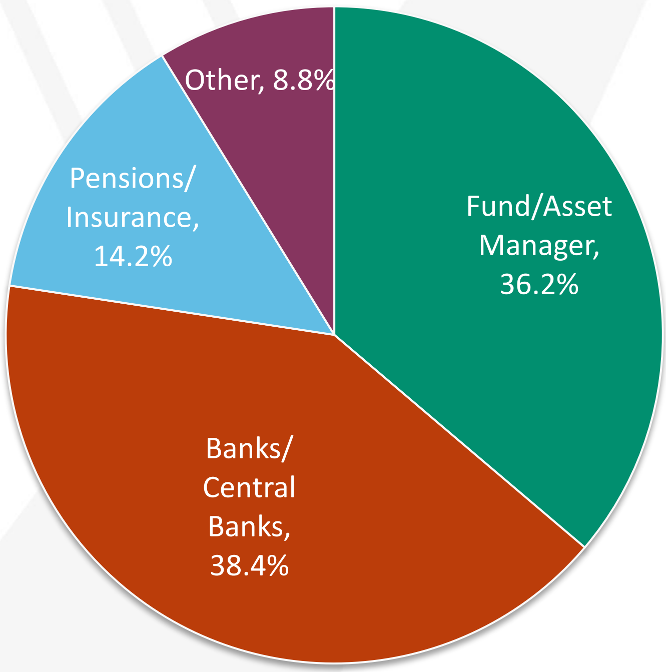
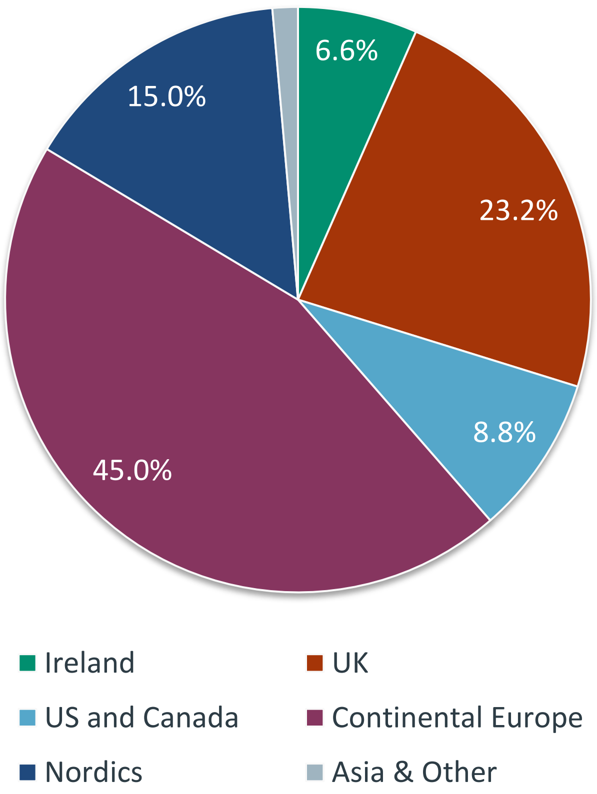
Source: CSO, Eurostat, CBI, ECB, NTMA Analysis
IGBs excludes those held by Eurosystem. Eurosystem holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA. Other debt Includes IMF, EFSF, EFSM, Bilateral as well as IBRC-related liabilities. Retail includes State Savings and other currency and deposits. The CSO series has been altered to exclude the impact of IBRC on the data.

Investor base for Government bonds is wide and varied

Investor breakdown:
Average over last five syndications



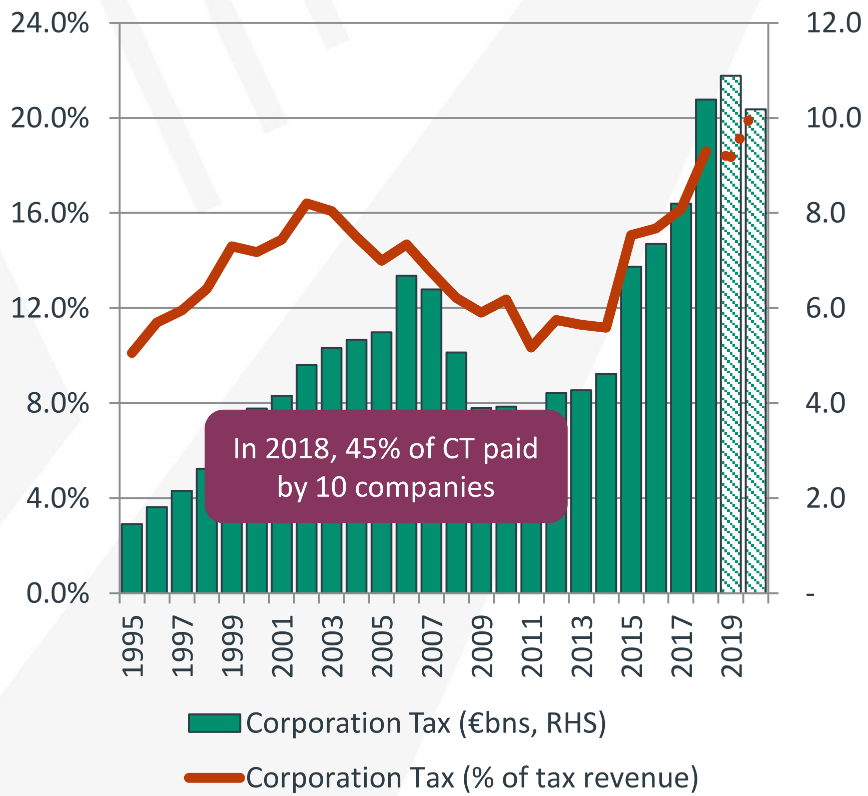
Country breakdown:
Average over last five syndications



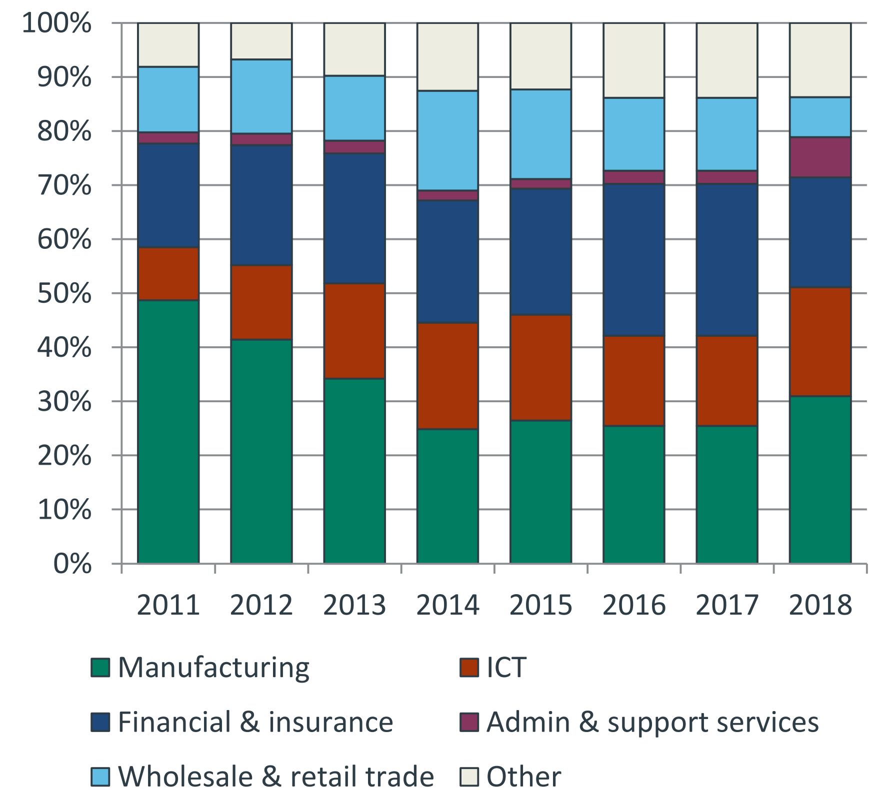
Source: NTMA
** Does not include ECB. ECB does not participate on primary market under its various asset purchasing programmes*

Corporation tax revenue to be cushioned by payments relating to 2019 and defensive nature of Pharma and ICT

Corporation tax (CT) receipts have more than doubled in four years



Sectors with large MNC presence dominate CT receipts (2018)



Source: Department of Finance, Revenue

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Ireland rated in "AA" category by Standard & Poor's

Rating Agency	Long-term	Short-term	Outlook/Trend	Date of last change
Standard & Poor's	AA-	A-1+	Stable	Nov 2019
Fitch Ratings	A+	F1+	Stable	Dec 2017
Moody's	A2	P-1	Stable	Sept 2017
DBRS	A(high)	R-1 (middle)	Positive	Jan 2020
R&I	A	a-1	Stable	Jan. 2017

Source: NTMA

Section 3: Long term fundamentals

Ireland's long run positives like demographics will reassert in time

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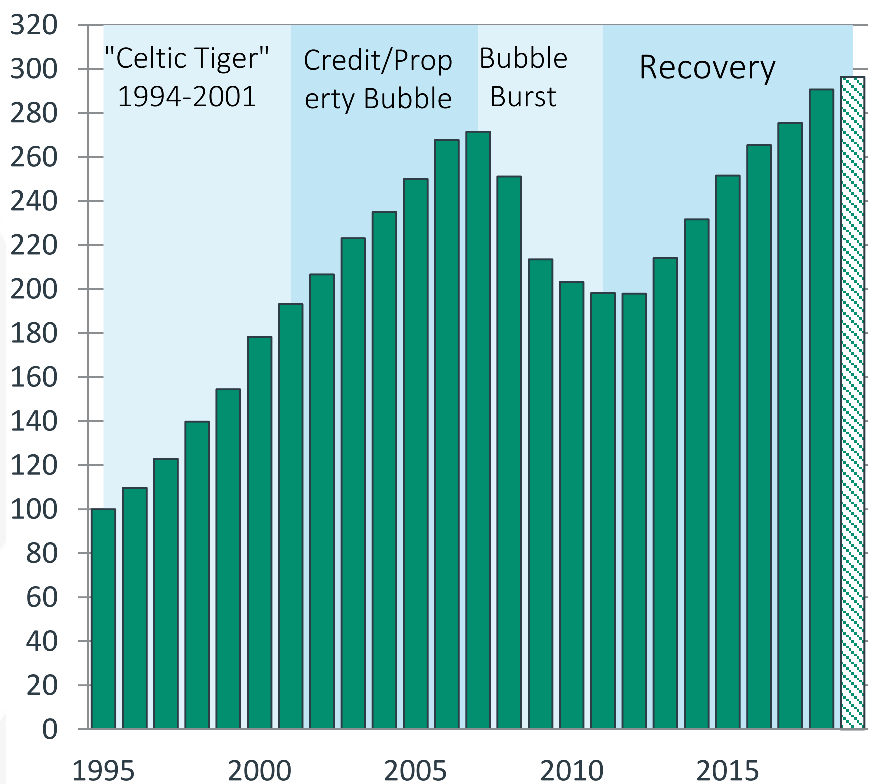
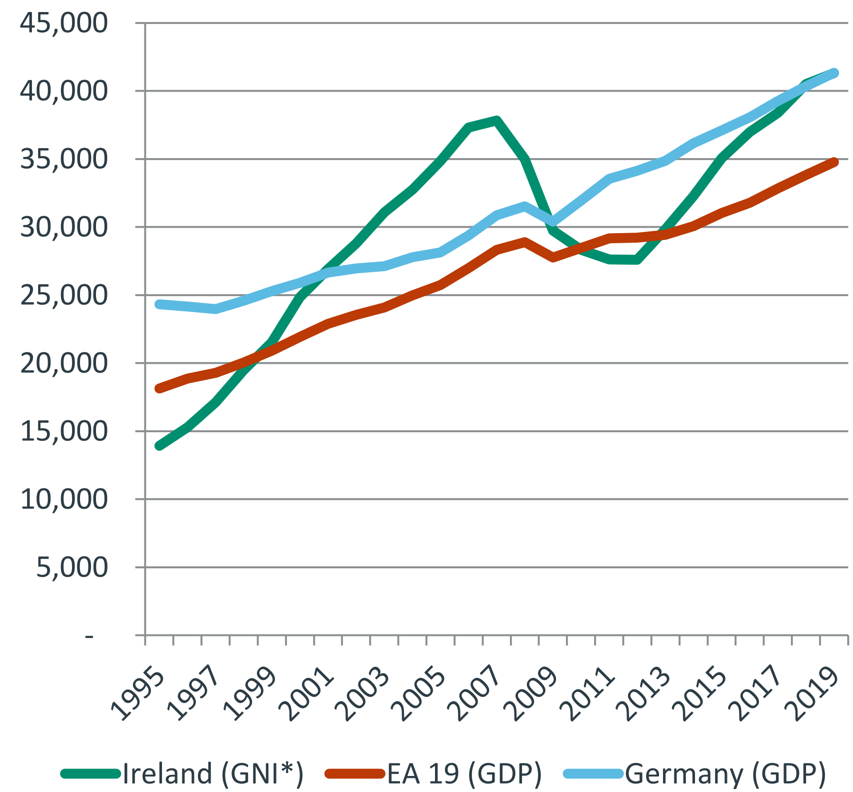
Ireland’s structural drivers of growth will reassert when crisis passes

Gross National Income* at current prices (1995=100)



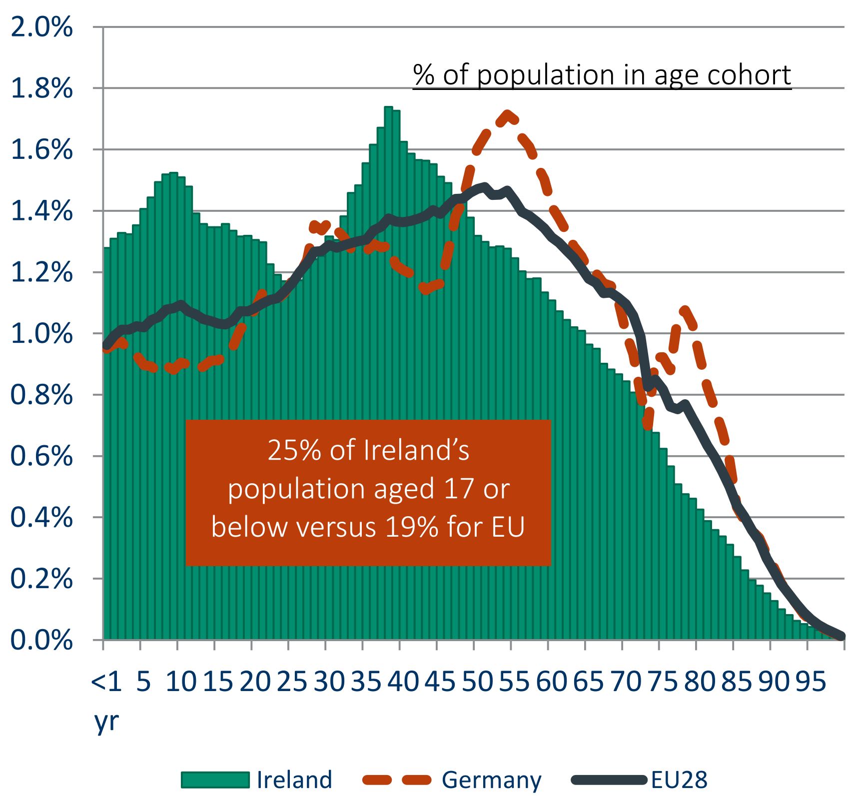
Ireland’s GNI* per capita above 2007 levels and compares favourably to EA



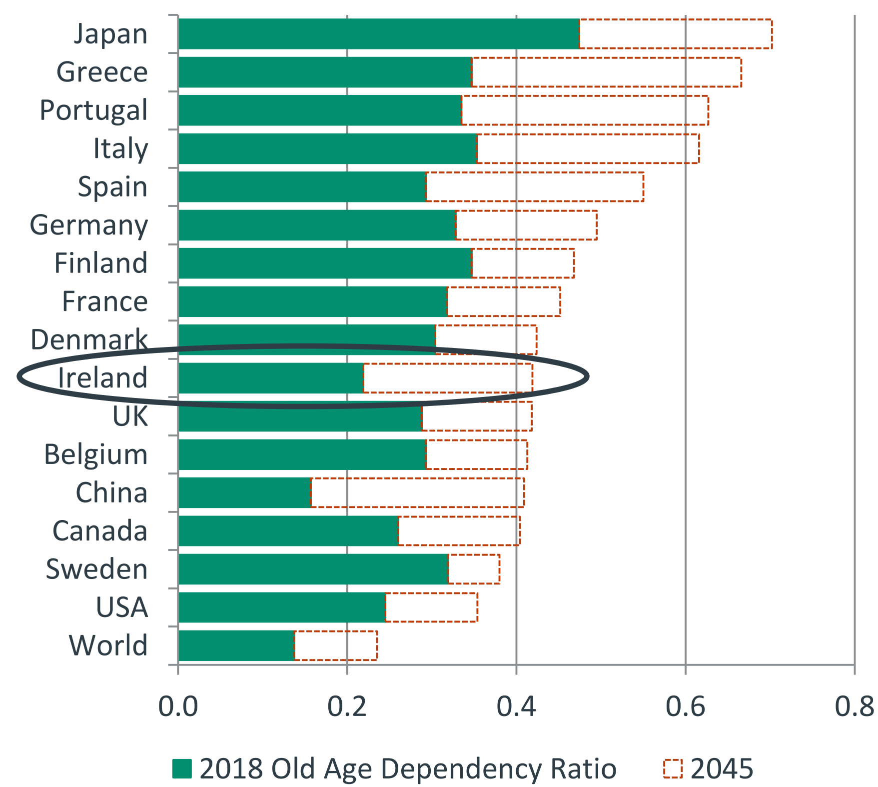
Source: CSO, Eurostat

Ireland's population profile younger than the EU average

Ireland's population was 4.92m in 2019 – over 200,000 more than 2011 Census



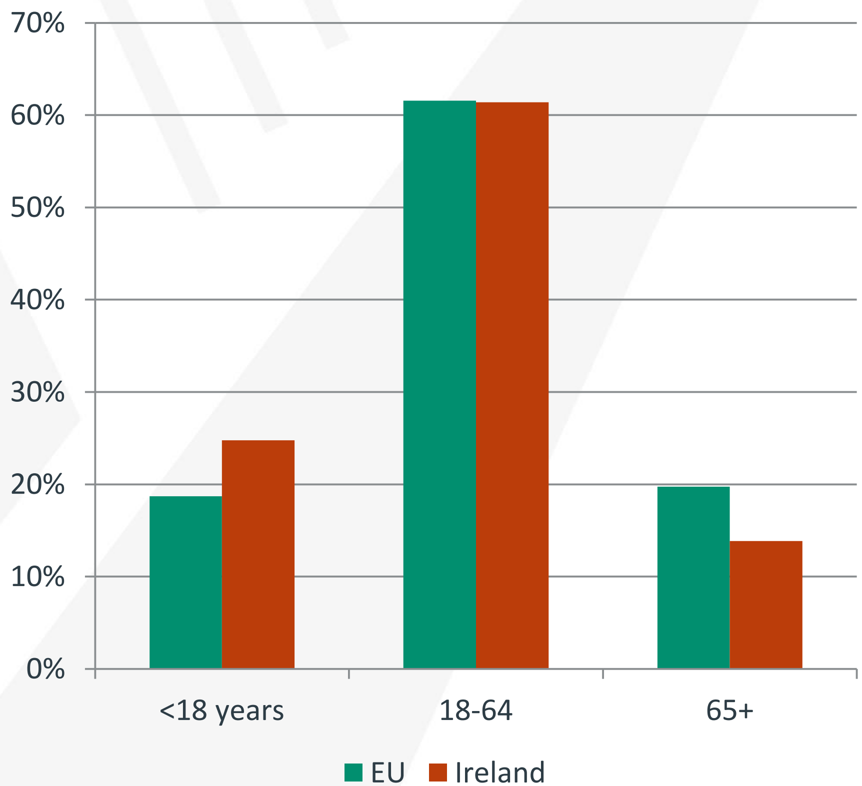
Ireland's population will remain younger than most of its EA counterparts



Source: Eurostat (2019) CSO; OECD

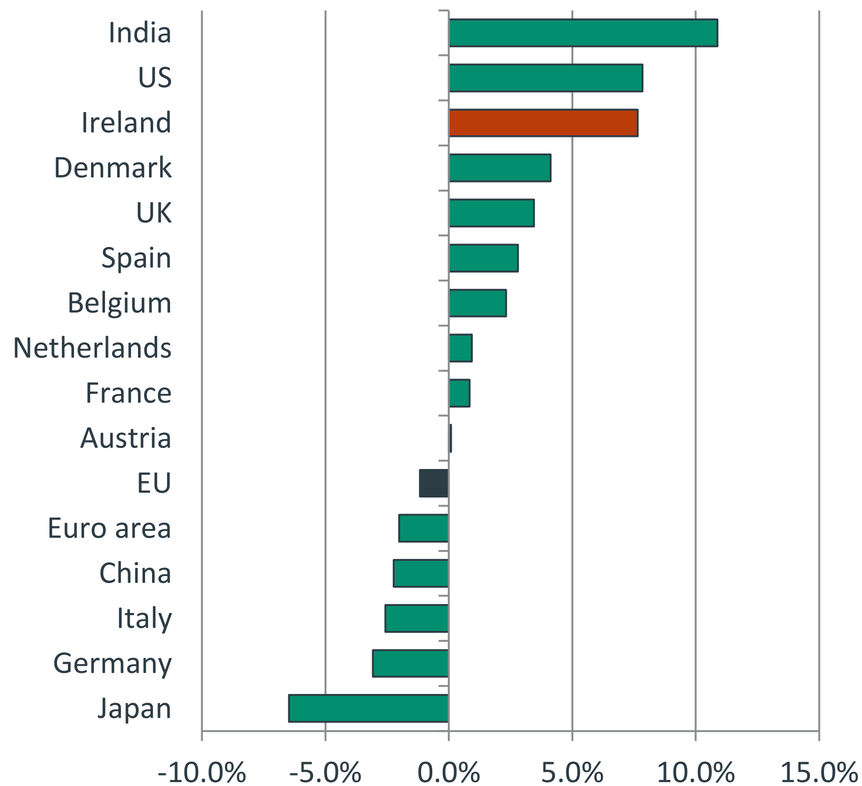
Favourable population characteristics underpin debt sustainability over longer term: next 10 years look healthy

Percentage of population: Ireland's has relatively more young people and fewer old



Source: Eurostat

The consequence is that working-age population expected to grow (2020-2029)



Source: Oxford Economics forecasts

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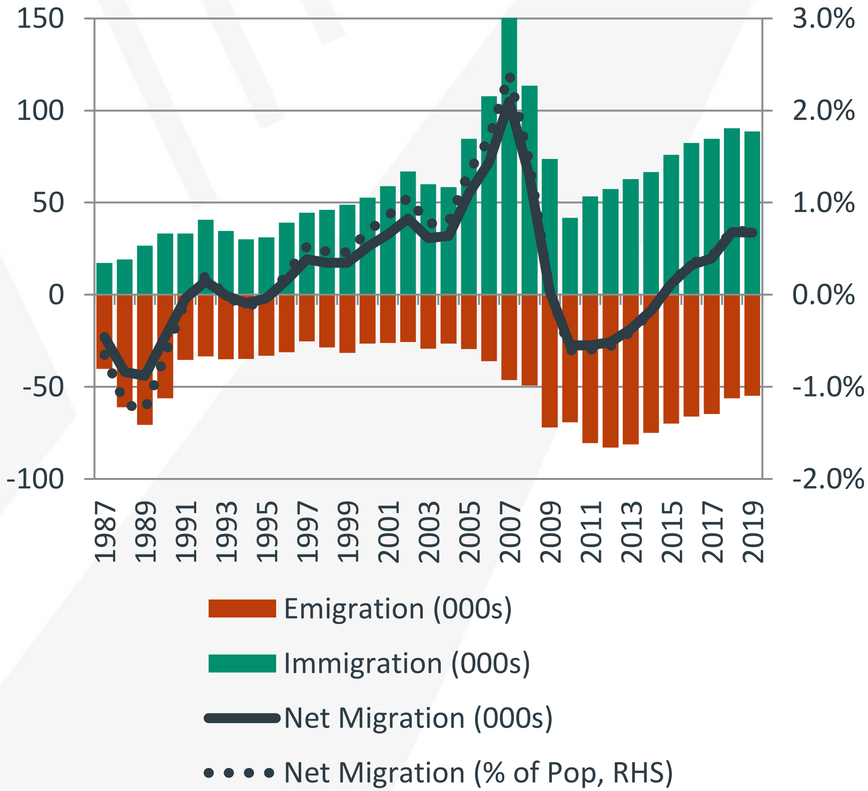
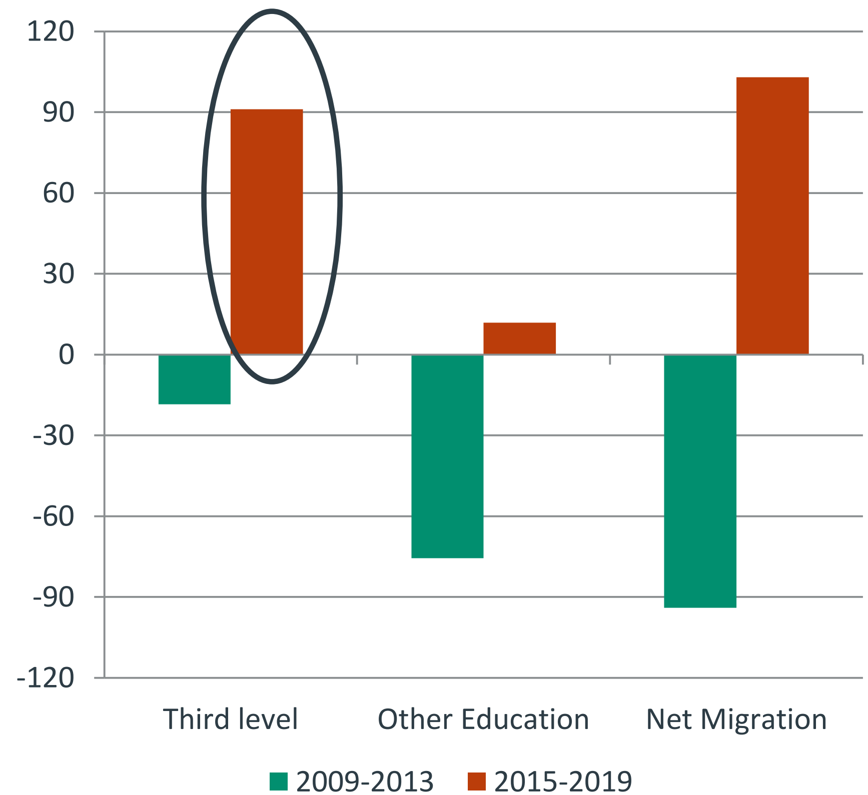
Openness to immigration has been beneficial to Ireland; migration in 2020 to be closer to zero given lack of travel

Latest Census data show net migration positive since 2015 – mirroring economy



Highly educated migrants moving to Ireland "Reverse Brain Drain"



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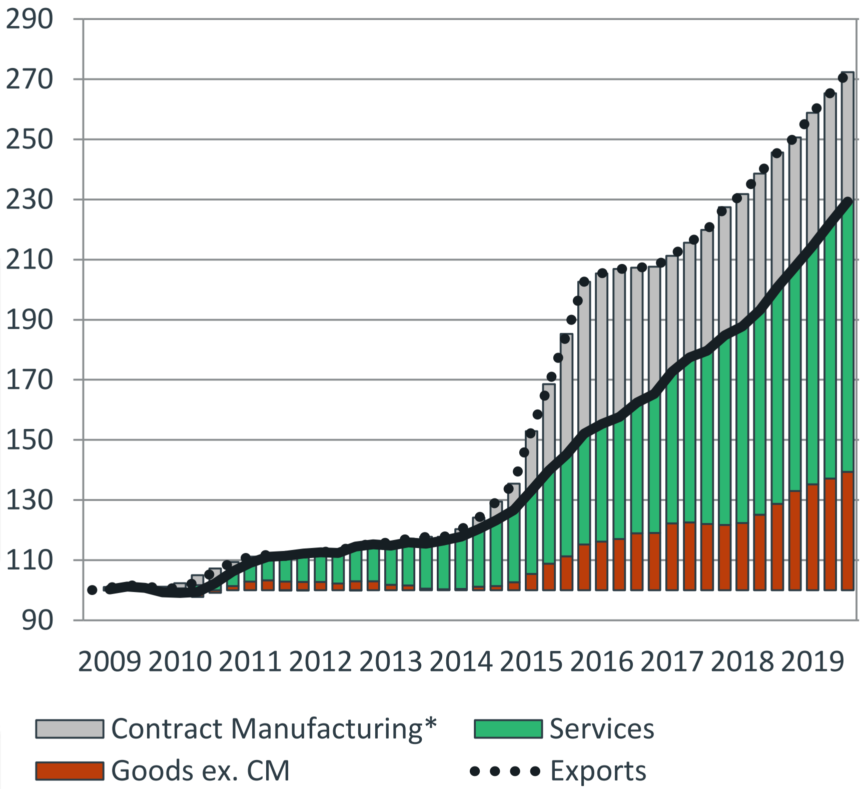
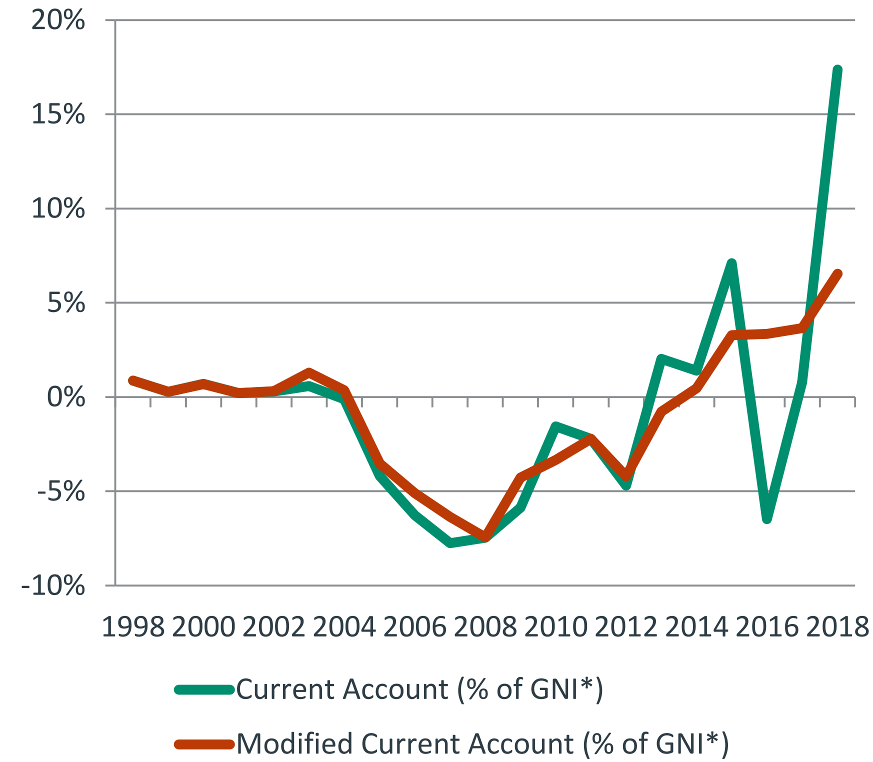
Source: CSO

Openness to trade is also central to Irish success – led by services exports; Ireland running current account surplus

Cumulative post-crisis total exports (4Q sum to end-2008 = 100, current prices)



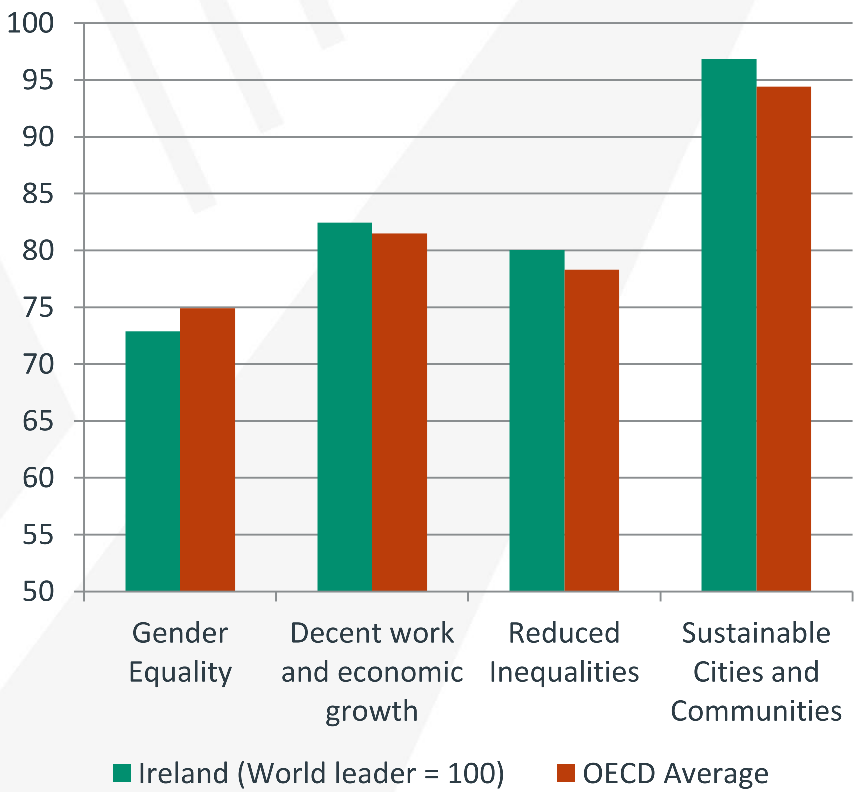
Current account is distorted heavily by MNEs: modified CA is consistent with GNI*



*Source: CSO, NTMA calculations * Contract manufacturing proxy*
Nominal values, exports excludes contract manufacturing.
Modified CA=CA less (IP Depreciation + Aircraft Leasing Depreciation + Redomiciled Incomes + R&D Services Exports) adding back (Imports of related to Leasing Aircraft + R&D related IP and services Imports). Significant caution should be exercised when viewing Ireland's current account data. MNC's action distort metrics heavily.

Ireland scores well on social issues and ability to do business

Ireland is close to OECD norms socially

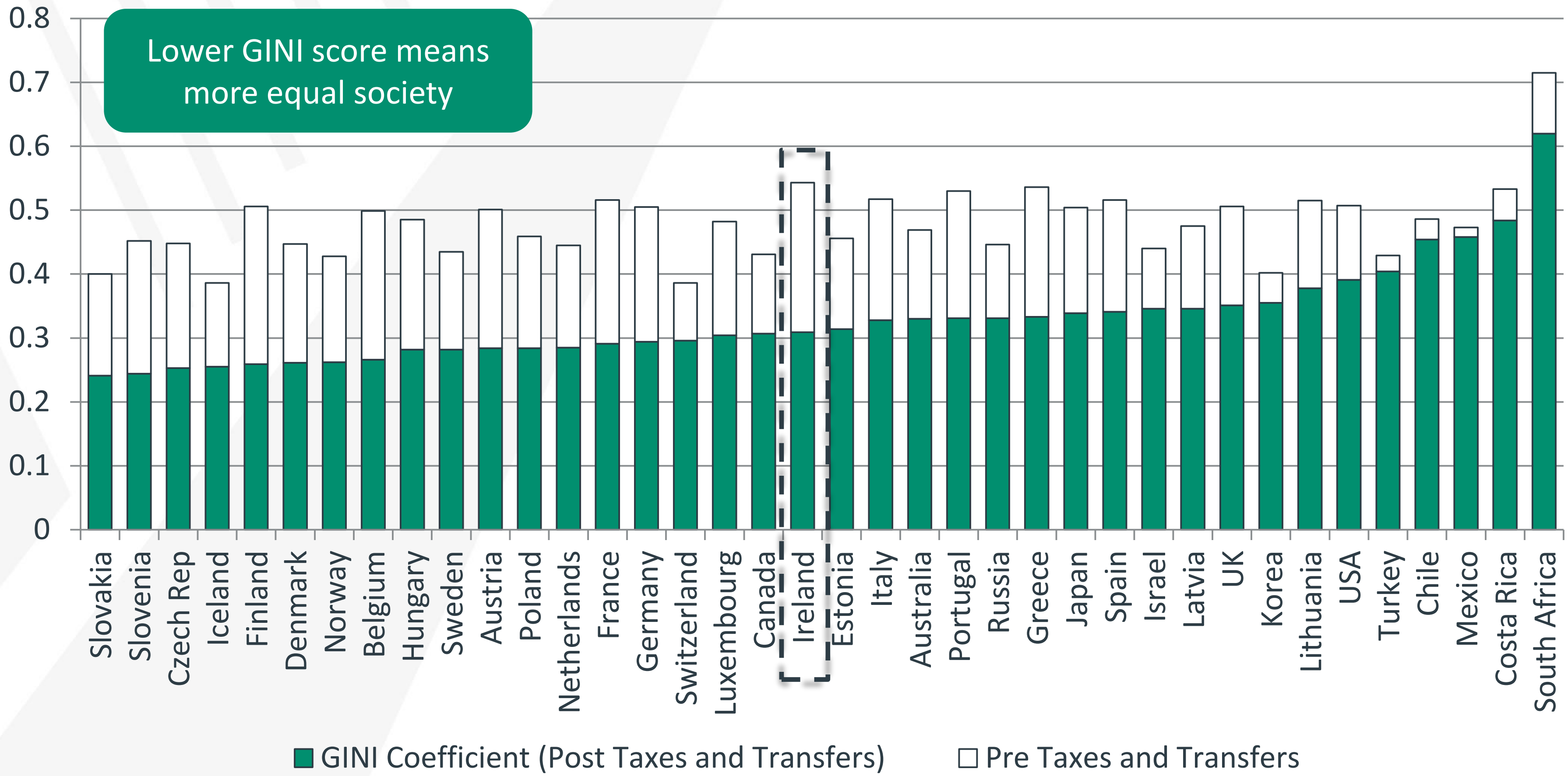


Favourable metrics on property rights and government efficiency

UN Goal – Peace, Justice and Strong institutions	Ireland Actual Figure	Ireland Normalised (world leader = 100)	OECD Average
Overall	-	87.5	75.8
Corruption Perception Index (0-100)	73.0	79.4	73.5
Government Efficiency (1-7)	4.8	**74.8**	**52.8**
Homicides (per 100,000 people)	1.1	97.8	96.1
Prison population (per 100,000 people)	80.0	87.8	74.6
Property Rights (1-7)	6.1	**94.8**	**73.1**
Population who feel safe walking alone at night (%)	75.0	73.7	67.4

Source: United Nations SDG project

Income equality: Ireland's progressive system means the country is around the OECD average after tax



Source: OECD

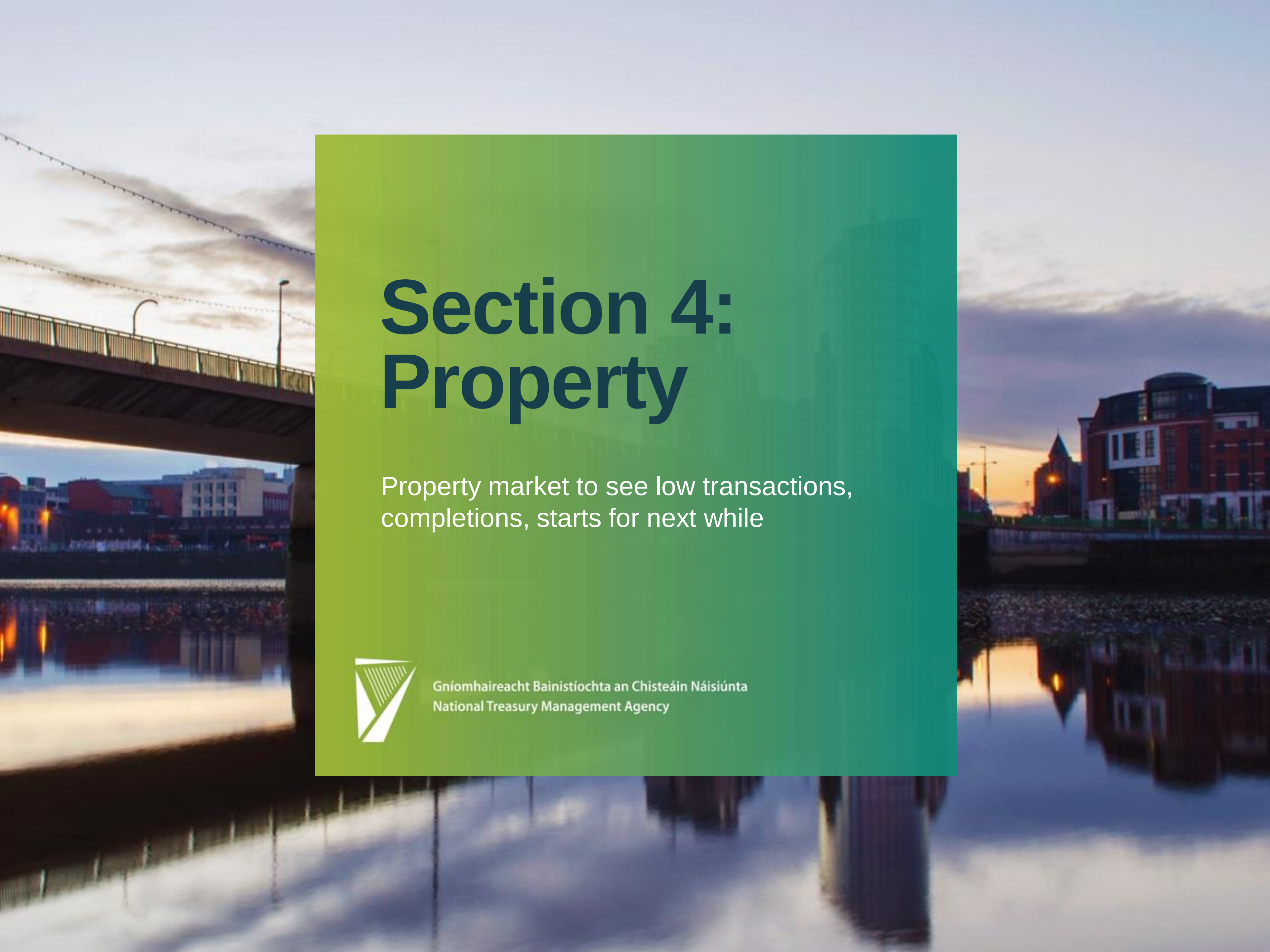
OECD's BEPS 2.0 process could impact the business tax landscape globally – agreement might be delayed to 2021

Pillar One : proposal to re-allocate taxing rights on non-routine profits

- The OECD has proposed further corporate tax reform - a BEPS 2.0.
- BEPS 2.0 looks at two pillars. The first pillar focuses on proposals that would re-allocate taxing rights between jurisdictions where assets are held and the markets where user/consumers are based. Non-routine profits could - to some - degree be taxed where customers reside.
- Under such a proposal, a proportion of profits would be re- allocated from small countries to large countries. Such a proposal will reduce Ireland's corporation tax base but it is impossible to predict the size of the impact.
- Nothing has been decided as of yet. OECD original deadline of end 2020 is likely to be delayed by the Covid-19 pandemic.

Pillar Two: proposal for minimum global tax

- Pillar Two - the basic idea is to introduce a minimum tax rate with the aim of reducing incentives to shift profits.
- Where income is not taxed to the minimum level, there would an "income inclusion rule" which operates as a 'top-up' to achieve the minimum rate of tax.
- The obvious questions arise:
  - what is the appropriate minimum tax rate?
  - who will get the 'top-up' payment?
  - Is the minimum rate taxed at a global (firm) level or on a country-by-country basis?
- These questions are as yet unanswered. If the minimum rate agreed is greater than the 12.5% rate that Ireland levies, it might erode this country's comparative advantage.



Section 4: Property

Property market to see low transactions, completions, starts for next while

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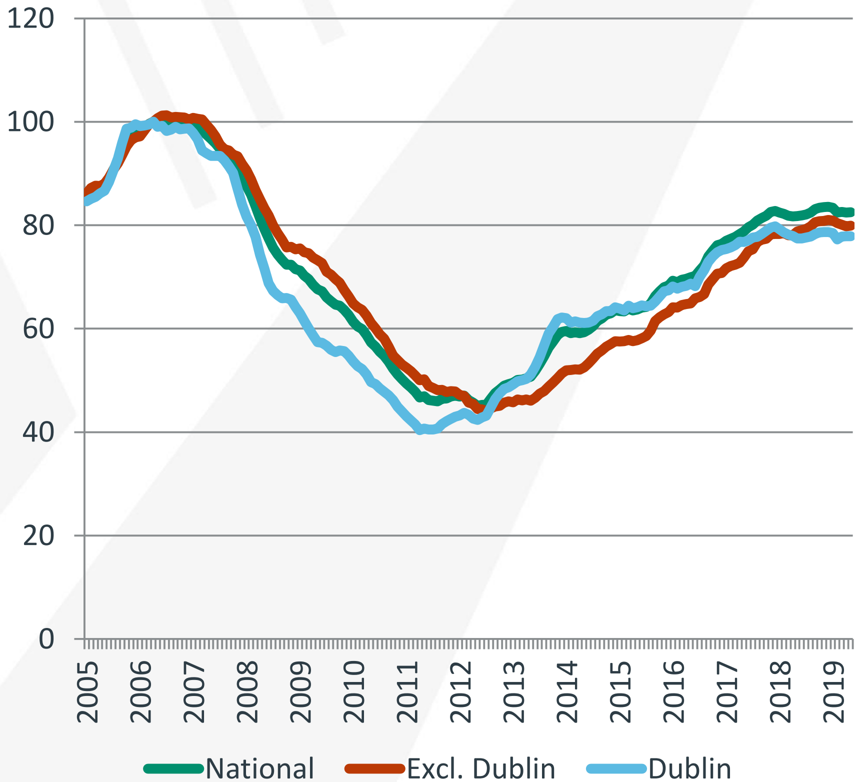
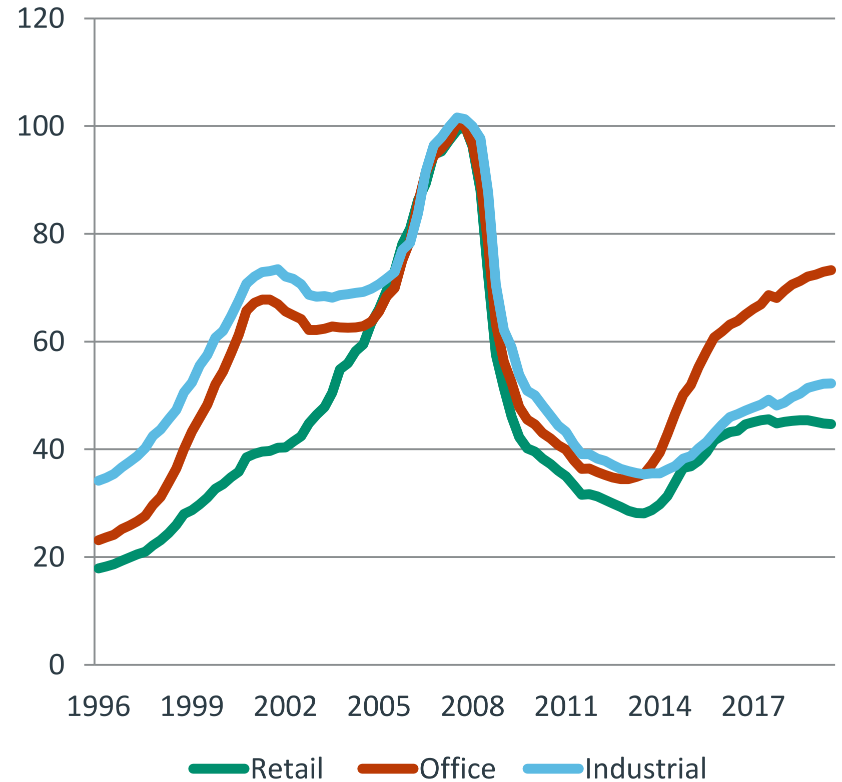
House prices had plateaued before the virus arrived

House prices have stabilised 20% below their peak (100 in 2007)



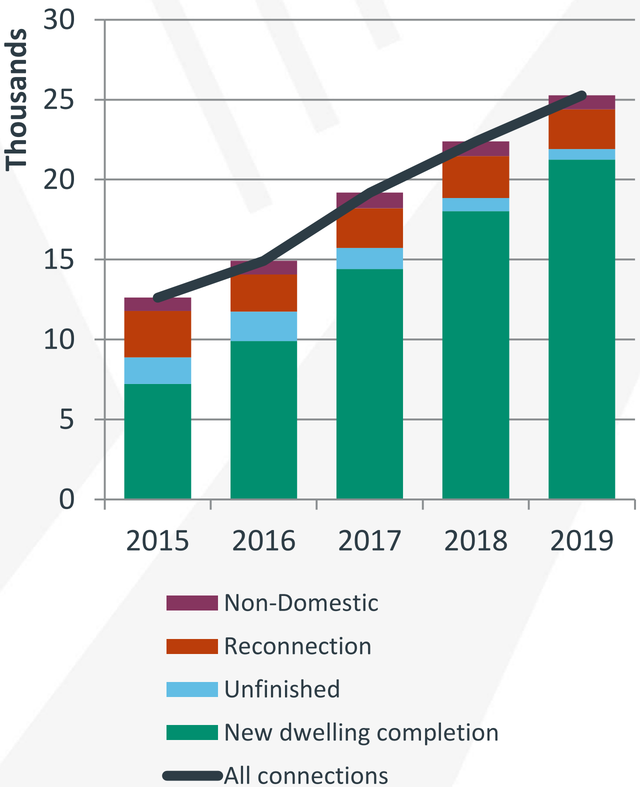
Office prices have diverged from retail and industrial (peak = 100)



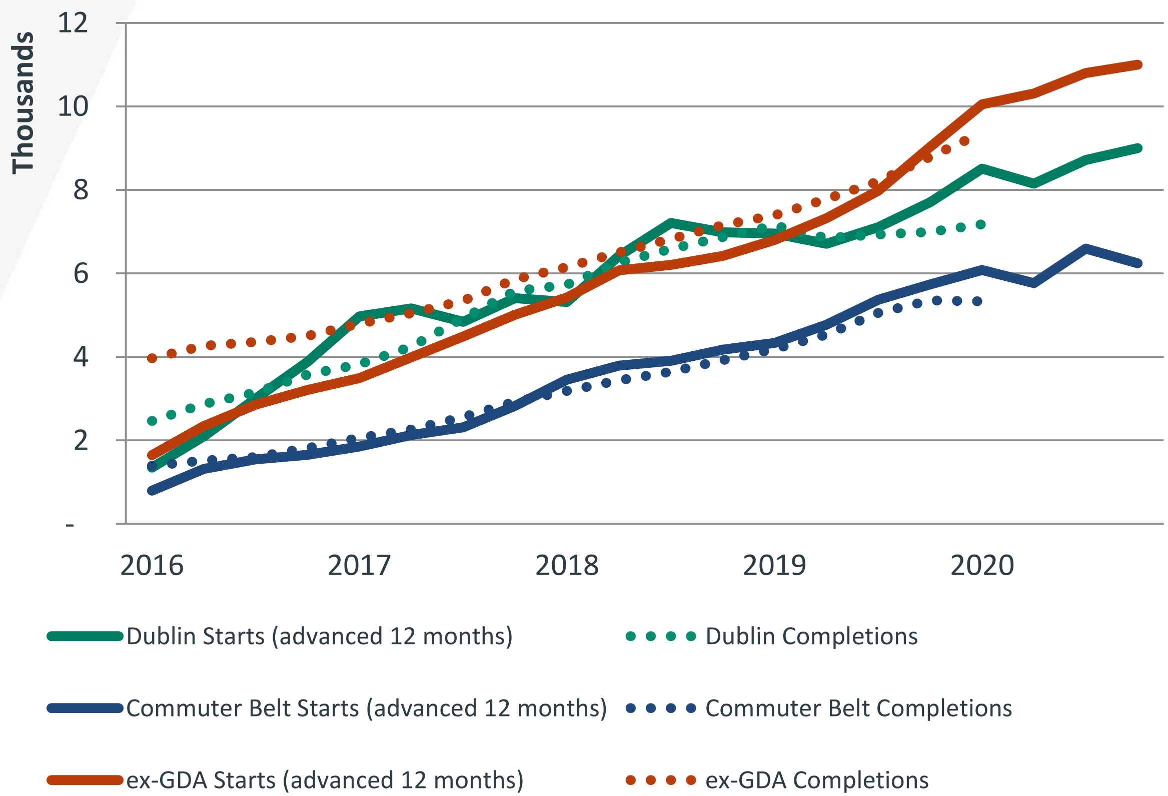
Source: CSO; MSCI data

Housing supply still below demand; supply was catching up before Covid-19 put the sector in hibernation

Housing Completions* above 25,000 in 2019



Housing supply picking up in a uniform fashion – coronavirus to hamper supply H2 2020



Source: DoHPCLG, CSO, NTMA Calculations

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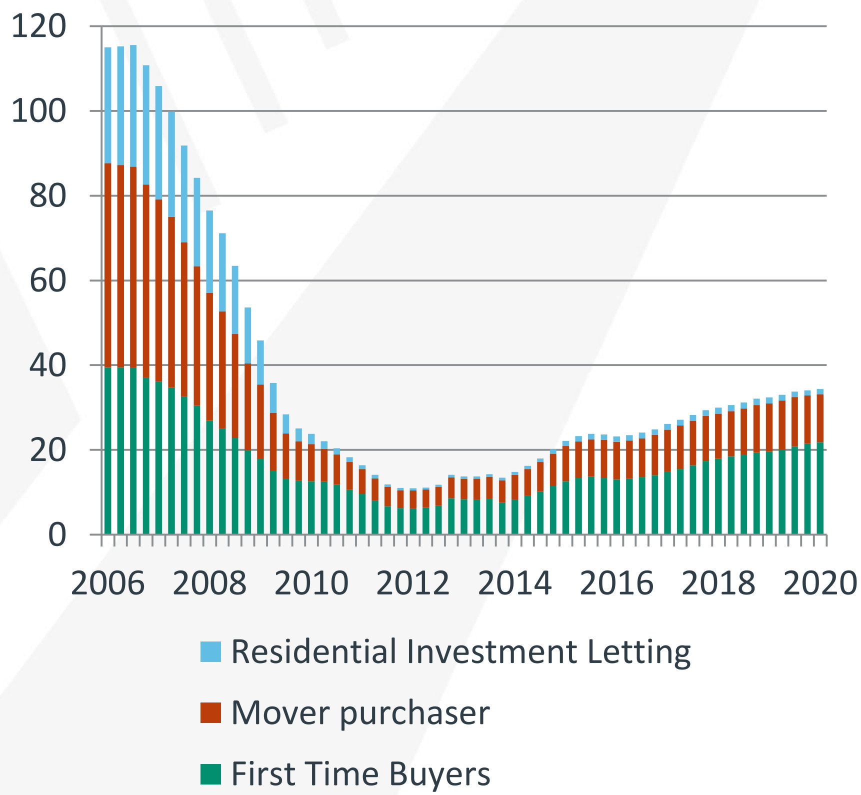
* Housing completions derived from electrical grid connection data for a property. Reconnections of old houses or connections from "ghost estates" overstate the annual run rate of new building.

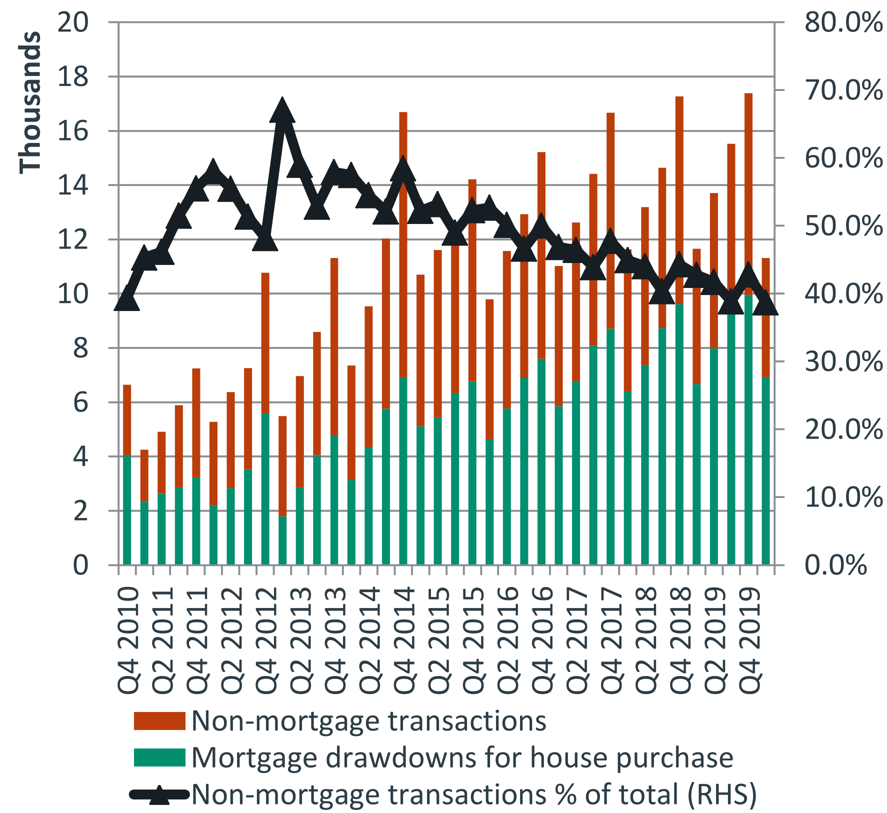
Demand will fall off given lower migration and rising unemployment – demand may drop below 30,000 in ST

Mortgage drawdowns (000s) rose from deep trough before Covid-19 impact



Source: BPFI (4 quarter sum used)

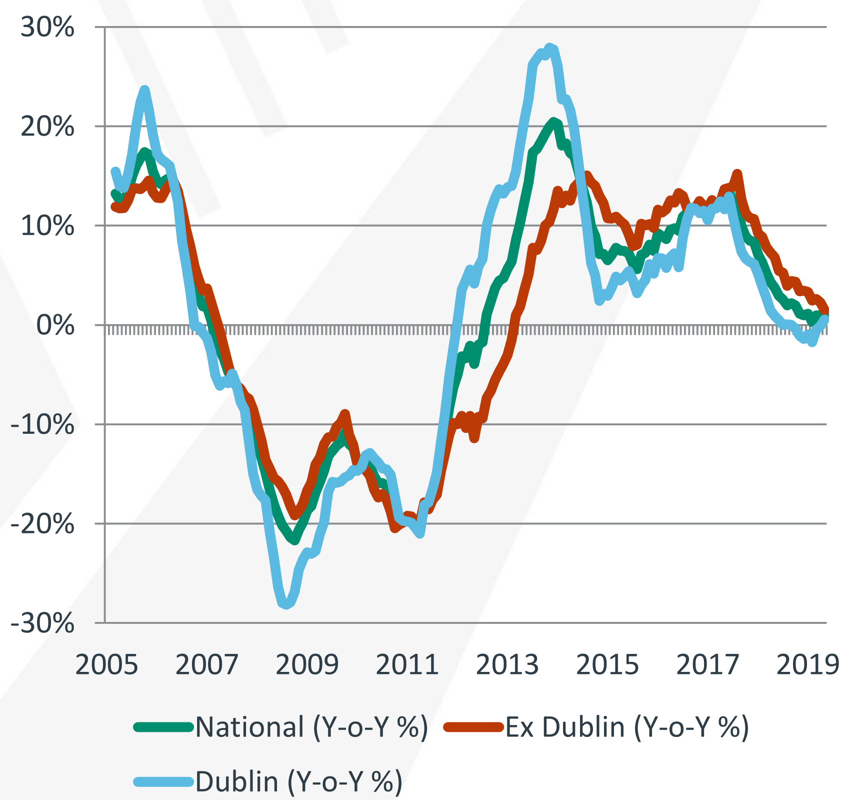
Non-mortgage transactions still important but closer to 40% of total



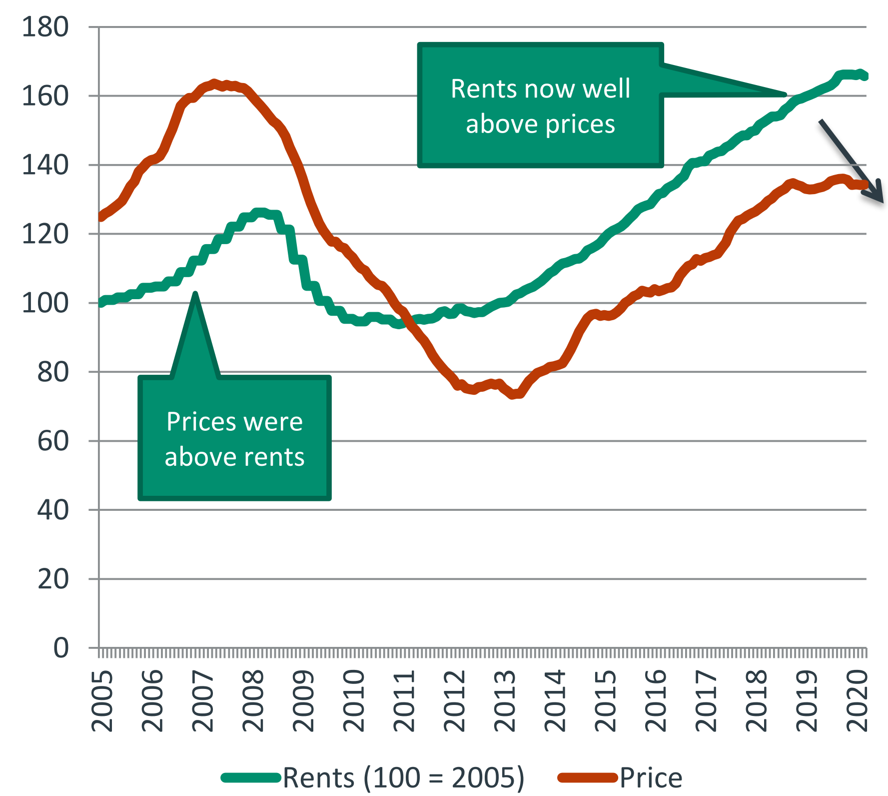
Source: BPFI; Residential Property Price Register

Covid-19 impact on prices unclear as both supply and demand impacted, but rents should come off highs

Dublin resi. property prices fell in 2019; higher end of the market most hit



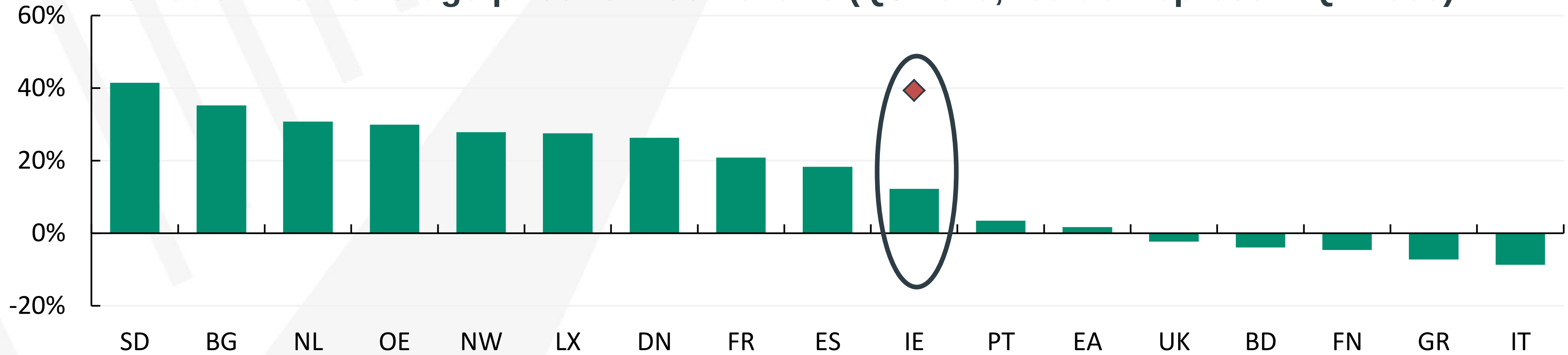
Rents are well above previous peak – out of line with prices



Source: CSO; RTB

Irish house price valuation metrics remained well below 2008 levels throughout last cycle

Deviation from average price-to-income ratio (Q3 2019, red dot represent Q1 2008)



Deviation from average price-to-rent ratio (Q3 2019, red dot represent Q1 2008)

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Source: OECD, NTMA Workings
Note: Measured as % over or under valuation relative to long term averages since 1980.

Section 5: Brexit

“Hard Brexit” risk is obvious: cliff edge at end 2020 a possibility

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National Treasury Management Agency

State of play: amid Covid-19, negotiations about trade agreement continue but not much progress

UK-EU Future trading relationship unresolved

- With the withdrawal agreement reached, the transition period started in 2020. It is slated to finish at the end of the year.
- The UK government has stated its intention to seek a free-trade arrangement for the long term. This is a more distant relationship than previously argued for by the UK side.
- The upshot is that the trading relationship will be diverging more, making negotiations difficult.
- Points of contention include:
    1. Level playing field
    2. "Fisheries for financial services"
    3. ECJ role in new relationship
- There is less than six months to negotiate what normally takes several years.
    - The transition period can be extended once by up to one to two years. Such a decision must be taken jointly by the EU and United Kingdom before *1 July 2020*.
- Hard Brexit estimates suggest the economic hit to Ireland would between 2-6% over the short term.
- *Risk of hard Brexit if the transition period is not extended.*

Withdrawal Agreement in 2019 helped to solve Northern Ireland border issue; economic issues remain

Main points of Withdrawal Agreement

- Northern Ireland will remain within the UK Customs Union but will abide by EU Customs Union rules – dual membership for NI.
- No hard border on the island of Ireland – customs border will be in the Irish sea. Goods crossing from ROI to NI will not require checks but goods going to UK will.
- Complex arrangements will be necessary to differentiate between goods going to NI and those travelling through NI to UK or vice versa. Customs checks at ports, VAT and tariff rebates and alignment of regulations will be needed.
- All of this is backed by a complex consent mechanism, which allows Stormont to opt-out under simple majority at certain times.

Negatives of hard Brexit outweigh positives in short-term, although opportunities may appear longer term

Cons

Short term

- Major trade disruption from tariffs, customs checks and documentation (red tape)
- Regions suffer severe recession in agriculture and UK-focused manufacturing; tourism might suffer
- Confidence shock to business and households
- Liquidity may dry up in property market
- Fiscal impacts are likely given need to support regions

Long term

- Lower consumer spending thanks to higher inflation when tariffs dominate the FX benefit
- Political economy cost (loss of ally in the EU)

Pros

Short term

- Cheaper domestic food prices

Long term

- Fiscal help from Europe is likely; selective temporary waiving of State Aid rules?
- FDI influx from UK, as multinationals avoid turmoil; UK's reputation might be tarnished
  - Financial services (passporting lost by UK)
  - Other multinationals - especially IT and business services
- Commercial property occupancy could rise; there may also be an influx of well paid workers
- Gradual partial trade recovery
  - Irish companies may steal EU market share from British ones (and finally diversify)
  - Import substitution (especially in food)

Whichever type of Brexit materialises, trade is likely to be negatively impacted

% of total	Goods (2018)		Services (2018)		Total (2018)	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	27.9	18.5	11.6	25.4	18.0	23.1
UK*	11.5	21.7	15.7	9.6	13.8	13.6
NI	1.6	1.6	n/a	n/a	n/a	n/a
EU-27	38.8	37.4	29.4	26.8	33.5	30.3
China	3.9	5.9	2.6	1.5	3.1	3.0
Other	21.8	22.4	43.3	38.3	30.7	31.1

Irish/UK trade linkages will suffer following Brexit

- The UK is the second largest single-country export destination for Ireland's goods and the largest for its services
- At the same time, Ireland imports c. 20% of its goods from the UK.

Ireland's trade with the UK is labour intensive

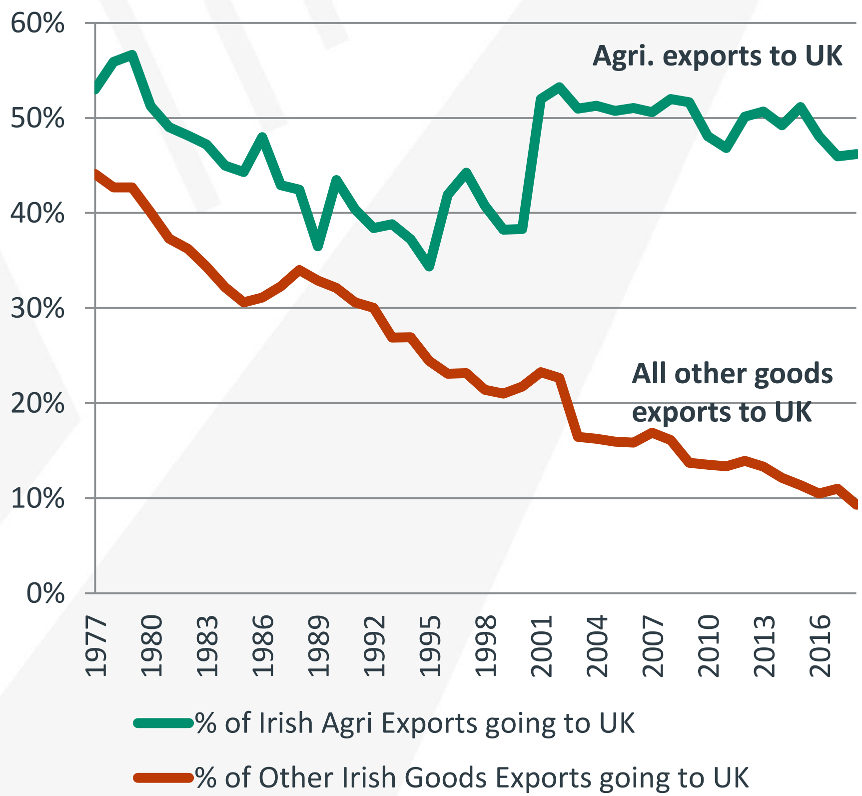
- The UK might only account for 14% of Ireland's total exports, but Ireland is more dependent than that because those UK-reliant sectors are labour intensive

SMEs account for over 55% of Irish exports to the UK. They are likely to be more adversely affected than larger companies by the introduction of tariffs and barriers to trade

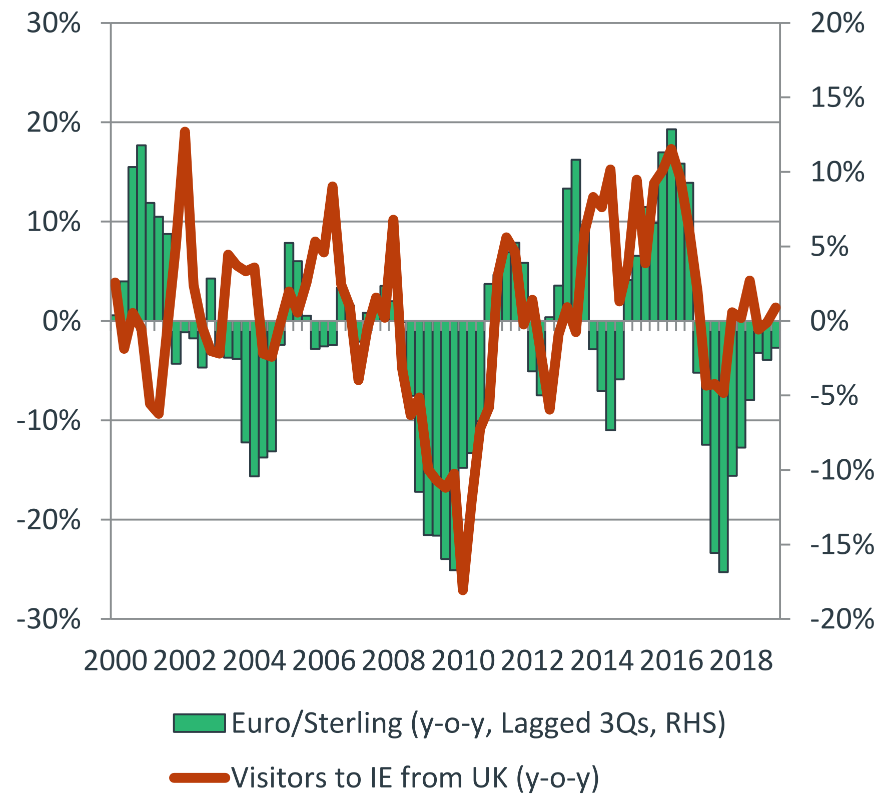
*Source: CSO 2018 * UK data includes Northern Ireland*
NTMA calculations; Data does not include contract manufacturing

Agri-food and tourism most at risk from trade barriers

Agriculture has not diversified from the UK



Tourism numbers linked to FX moves



Source: CSO, DataStream Eikon

Hard Brexit impact estimates all show similar story – return to WTO rules would be negative for Ireland

Forecast vs. no Brexit baseline	Short term (2 years)	Medium term (5 years)	Long term (10-15 years)
Department of Finance (ESRI)	-2.4%	-3.3%	-5.0%
Copenhagen Economics	-2.0 to 2.5%	-4.5%	-7.0% (of which -4.9pp is due to regulatory divergence)
Central Bank of Ireland	-4.0%	-	-6.0%
Bank of England "disruptive" (implied)	-5.0%	-6.2%	-6.2%
Bank of England "disorderly" (implied)	-6.3%	-8.2%	-8.2%
UK Treasury range (implied)	-	-	-5.0 to 7.2%

Source: ESRI, Copenhagen, Bank of England, UK treasury
Implied uses the impact on UK GDP and an elasticity measure of 0.8 to calculate the impact on Irish Growth

Many financial institutions have announced that they will expand or set up in Dublin

FDI: Ireland benefitting already

- Ireland could be a beneficiary from displaced FDI. The chief areas of interest are
  - Financial services
  - Business services
  - IT/ new media.
- Dublin is primarily competing with Frankfurt, Paris, Luxembourg and Amsterdam for financial services.
- Ireland's FDI opportunity will depend on the outcome of post-exit trade negotiations. The UK (City of London) is almost certain to lose its EU passporting rights on exit, so there may be more opportunities in time.

Companies that have indicated jobs have or will be moved to Ireland

BARCLAYS
Morgan Stanley
citi
J.P.Morgan
Goldman Sachs
TD
Bank of America Merrill Lynch
LEGG MASON GLOBAL ASSET MANAGEMENT
S&P Global Ratings
BARINGS

Section 6: Banks & other

Ireland’s banks now among strongest in Europe – complete reverse of late 2000s

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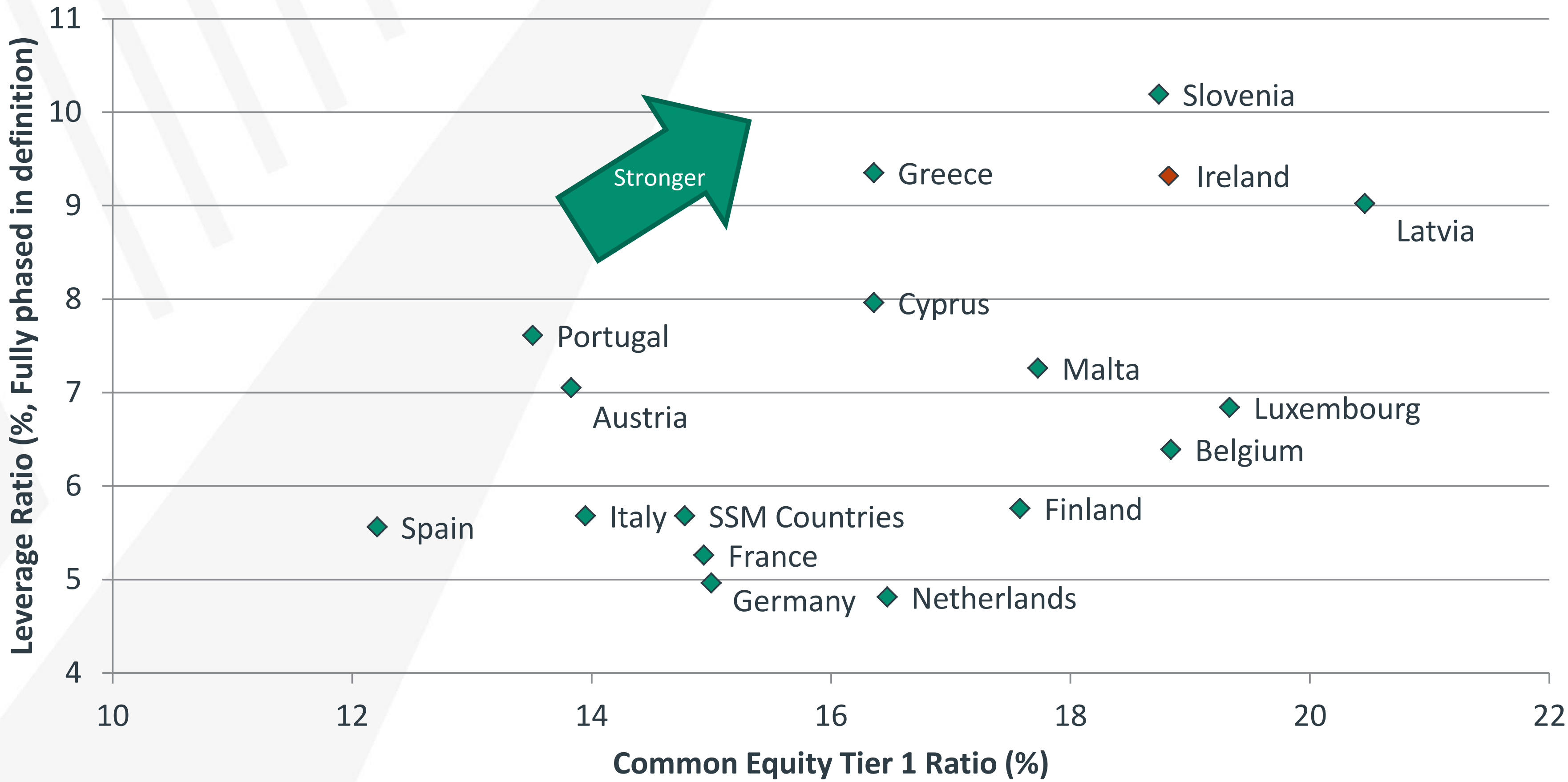
National Treasury Management Agency

Ireland's banks are among the best capitalised in Europe



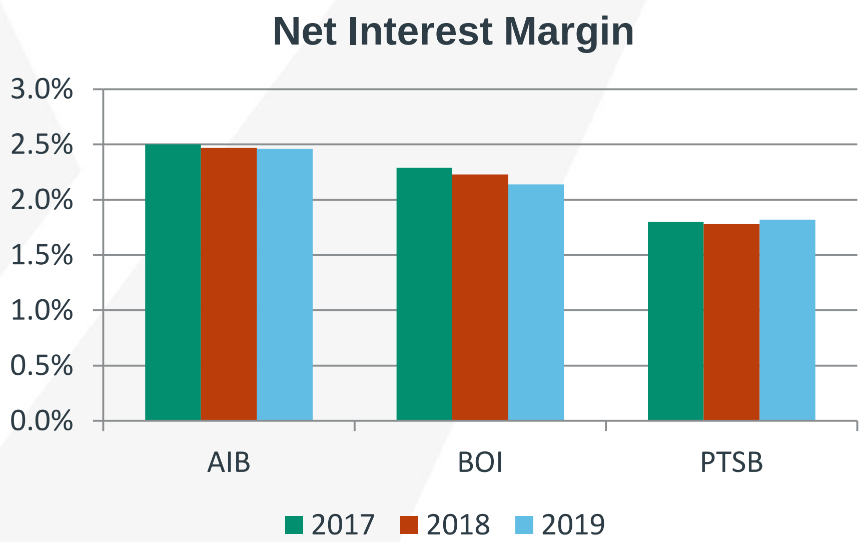
Source: ECB consolidated banking data (Q4 2019)

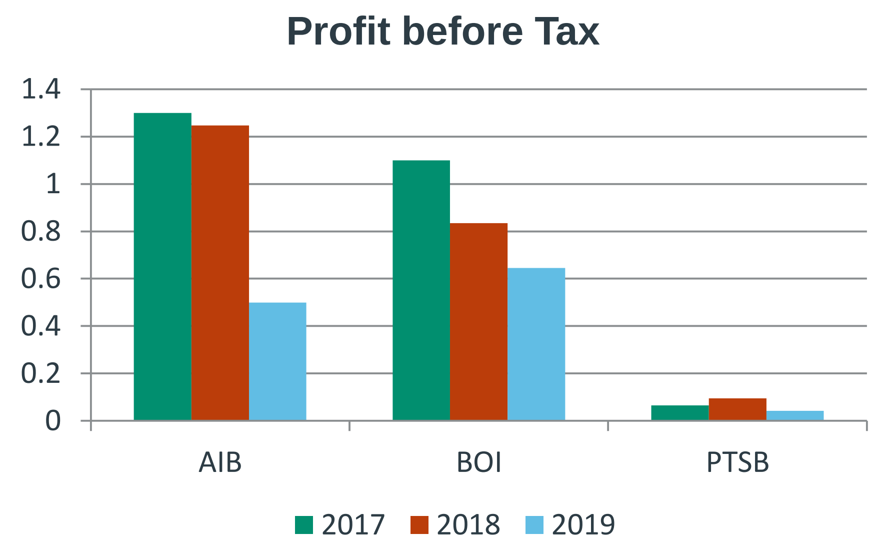
Note: Leverage Ratio = Tier 1 capital/Total leverage exposure; CET1 = Common tier 1 capital/total risk exposures. "Fully loaded" refers to the actual Basel III basis for CET1 ratios.

Ireland's pillar banks in relative good shape to weather Covid-19 storm

- Banks profitable before Covid-19: income, cost and balance sheet metrics much improved.
- Interest rates on mortgages and to SMEs are still high compared to EU thanks to legacy issues and the slow judicial process in accessing collateral.
- An IPO of AIB stock (28.8%) occurred in June 2017. This returned c. €3.4bn to the Irish Exchequer to be used for debt reduction. Further disposal of banking assets unlikely in the short term given valuations
- Irish banks had paid dividends in recent years.

All three pillar banks were profitable in recent years

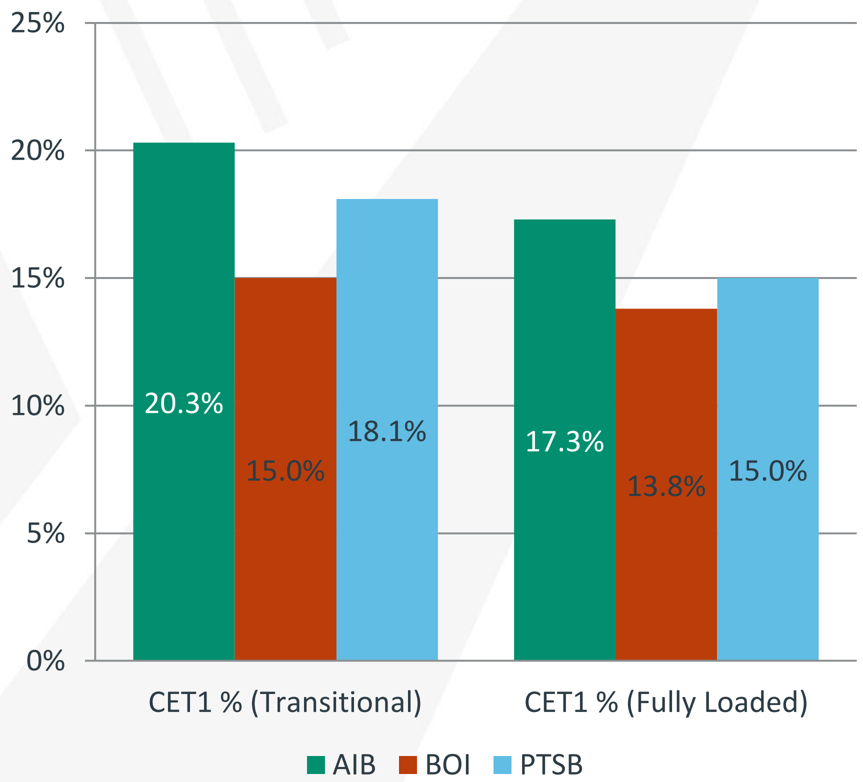




Source: Annual reports of banks - BOI, AIB, PTSB
Profit measures are before exceptional items

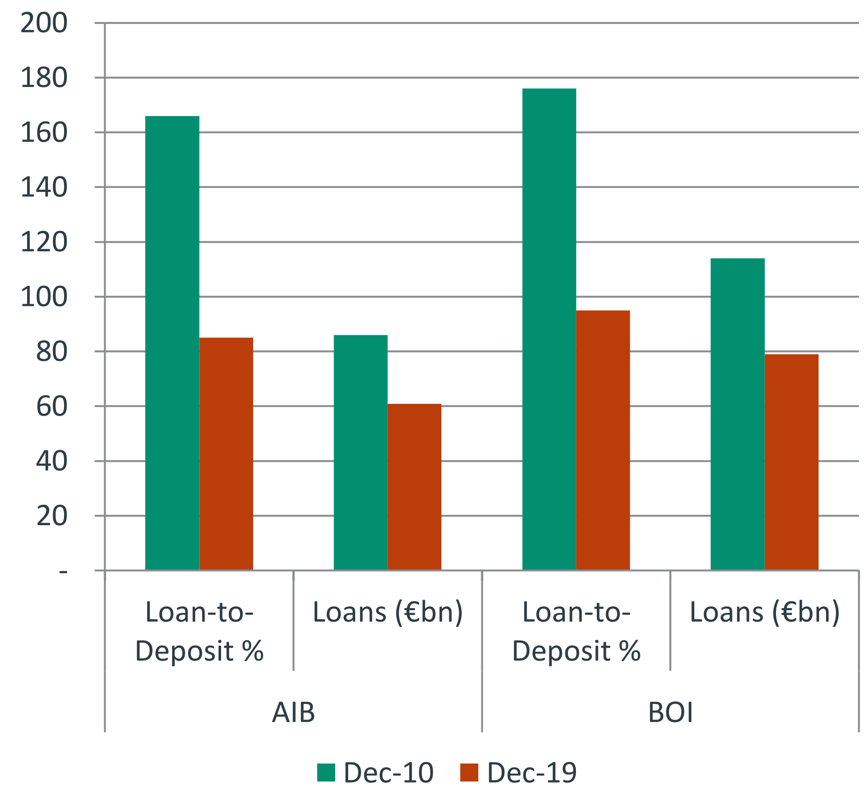
Capital ratios strengthened as banks shrunk and consolidated in last ten years

CET 1 capital ratios (Dec 2019) allow for amble forbearance in Q2



Source: Published bank accounts

Loan-to-deposit ratios have fallen significantly as loan books were slashed



Source: Published bank accounts

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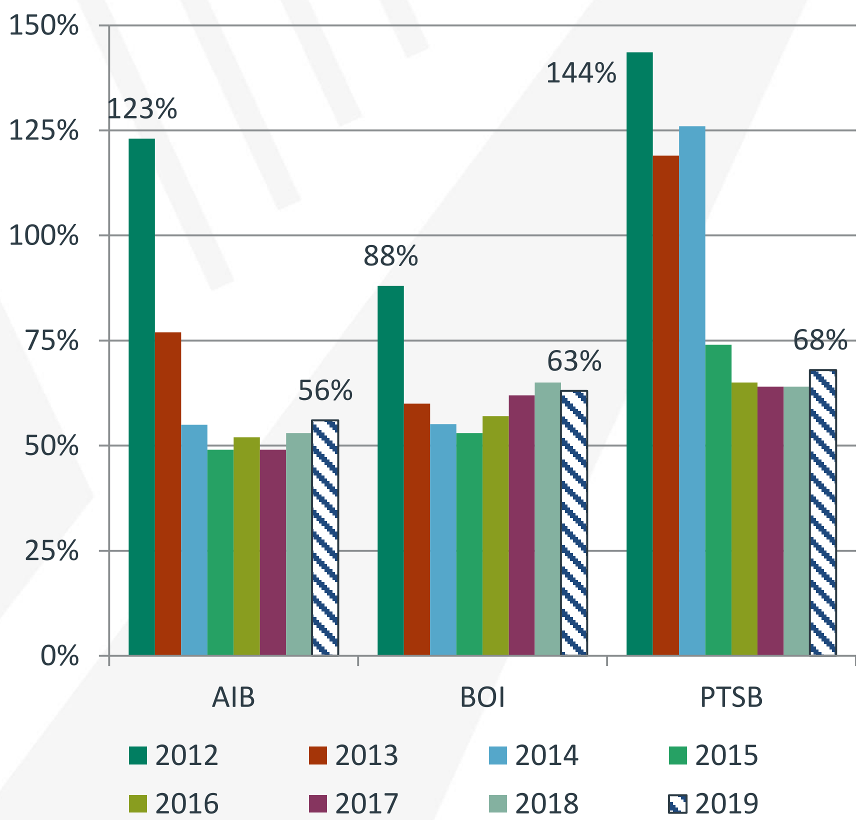
Note: “Transitional” refers to the transitional Basel III required for CET1 ratios
“Fully loaded” refers to the actual Basel III basis for CET1 ratios.

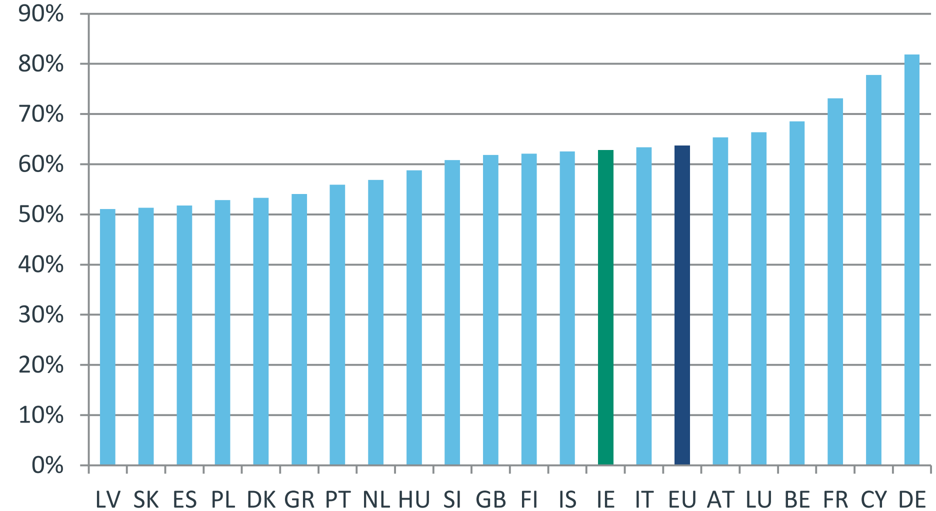
Domestic bank cost base has risen but marginally

Cost income ratios improve dramatically…

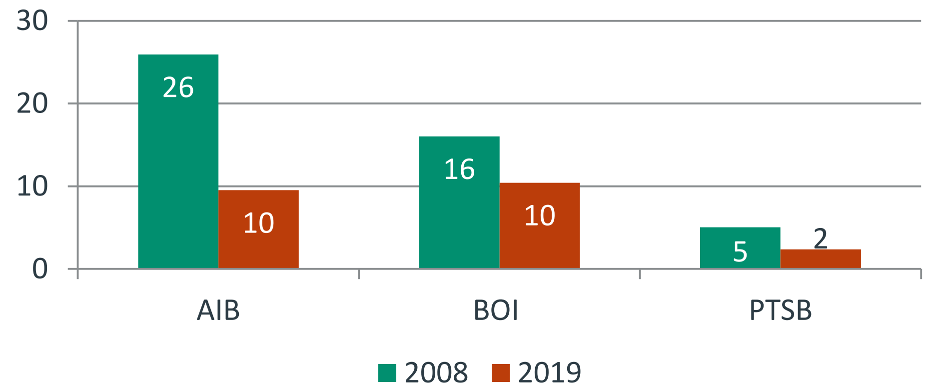


Source: Annual reports of Irish domestic banks

… and IE banks* below EU average



Staffing (000s) halved post crisis

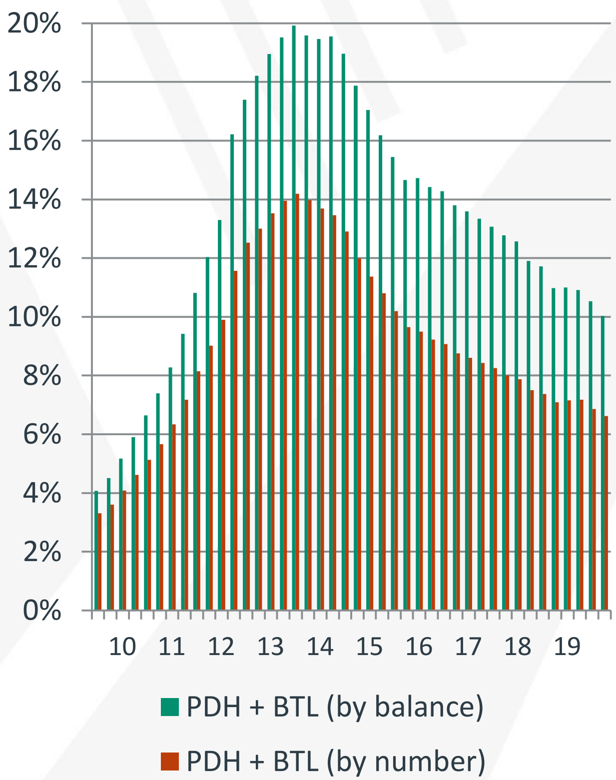


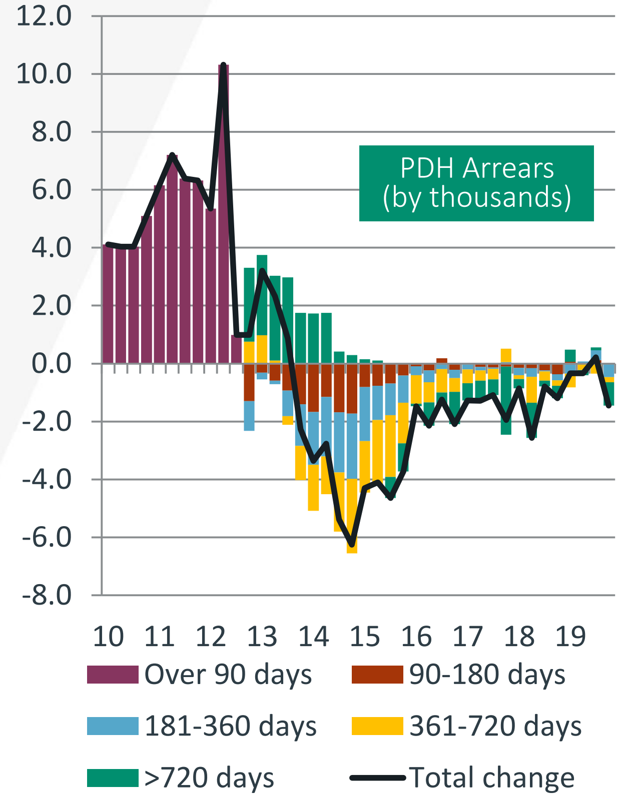
Source: Annual reports of Irish domestic banks, EBA

* EBA data includes three domestic banks as well as Ulster Bank, DEPFA & Citibank.

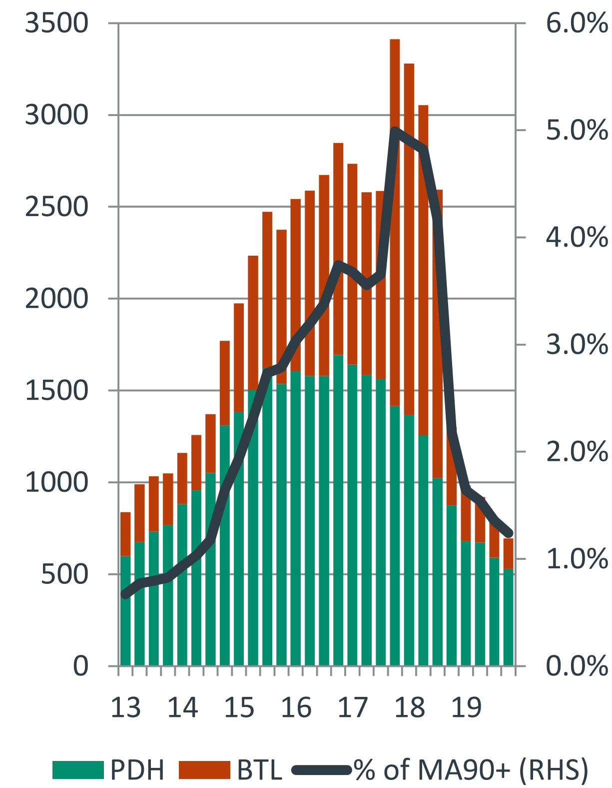
Irish residential mortgage arrears could reverse course in 2020 – moratorium will help

Mortgage arrears (90+ days)*





Repossessions**



Source: CBI

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* Over 40% of those cases in arrears > 720 days are also in arrears greater than five years.
** Four quarter sum of repossessions. Includes voluntary/abandoned dwellings as well as court ordered repossessions

The European Commission's ruling on Apple's tax affairs does not change the NTMA's funding plans

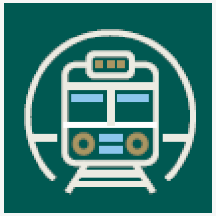
- The EC has ruled that Ireland illegally provided State aid of up to €13bn, plus interest to Apple. This figure is based on the tax foregone as a result of a historic provision in Ireland's tax code. This was closed on December 31st 2014.
- **This case has nothing to do with Ireland's corporate tax rate.** In its press release the EC stated: "This decision does not call into question Ireland's general tax system or its corporate tax rate".
- **Apple is appealing the ruling, as is the Irish Government.** This process could be lengthy. Pending the outcome of the appeal, Apple has paid approximately €13bn plus EU interest (c. €2bn) into an escrow fund.
- Bank of New York Mellon has been selected for the provision of escrow agency and custodian services to hold and administer the fund.
- Amundi, BlackRock Investment Management (UK) Limited and Goldman Sachs Asset Management International have been selected for the provision of investment management services for the fund.
- As the funds will be held in escrow pending the outcome of the appeal, **the NTMA has made no allowance for these funds.**

Government's NDP outlines green projects; aim to cut CO_2 emissions by at least 80% by 2050

1 in 5 euros in the National Development Plan (NDP) to be spent on green projects

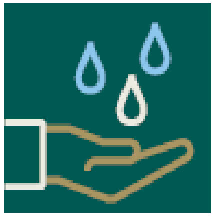
Sustainable Mobility

€8.6 billion



Sustainable Management of Water and Environmental Resources

€6.8 billion



Transition to a Low carbon and Climate Resilient Society

€7.6 billion

Total:€23 billion (13% of GNI*)

Further details are available at ntma.ie

Source: National Development Plan 2018-2027

GNI* is a better measure of underlying economic activity than GDP/GNP; best as a level rather than a growth metric

- GDP headline numbers do not reflect the "true" growth of Ireland's income due to MNCs.
- Reasons for 2015-18 MNC distortions:
  - Re-domiciling/inversions of several multinational companies
  - The "onshoring" of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in Ireland.
- By modifying GNI to take account of these factors, GNI* gives us a better understanding of the underlying economy.

National Account – Current Prices (€, y-o-y growth rates)	**2015**	**2016**	2017	2018
Gross Domestic Product (GDP)	262.8bn (34.9%)	271.7bn (3.4%)	297.1bn (9.4%)	324.0bn (9.4%)
minus Net Factor Income from rest of the world				
= Gross National Product (GNP)	200.8bn (22.9%)	220.6bn (9.9%)	234.9bn (6.5%)	253.1bn (7.7%)
add EU subsidies minus EU taxes	1.2bn	1.0bn	1.1bn	1.1bn
= Gross National Income (GNI)	202.0bn (22.9%)	221.6bn (9.7%)	236.0bn (6.5%)	254.2bn (7.7%)
minus retained earnings of re-domiciled firms	-4.7bn	-5.8bn	-4.5bn	-5.0bn
minus depreciation on foreign owned IP assets	-30.1bn	-35.3bn	-42.5bn	-46.3bn
minus depreciation on aircraft leasing	-4.6bn	-4.9bn	-5.1bn	-5.4bn
= GNI*	162.7bn (9.4%)	175.6bn (8.0%)	184.0bn (4.7%)	197.5bn (7.3%)

Source: CSO

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