Ireland: Risks reduced as economy looks to recovery in 2021

Vaccine roll-out and Brexit deal reduce long-term risks going into new year

January 2021

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Index

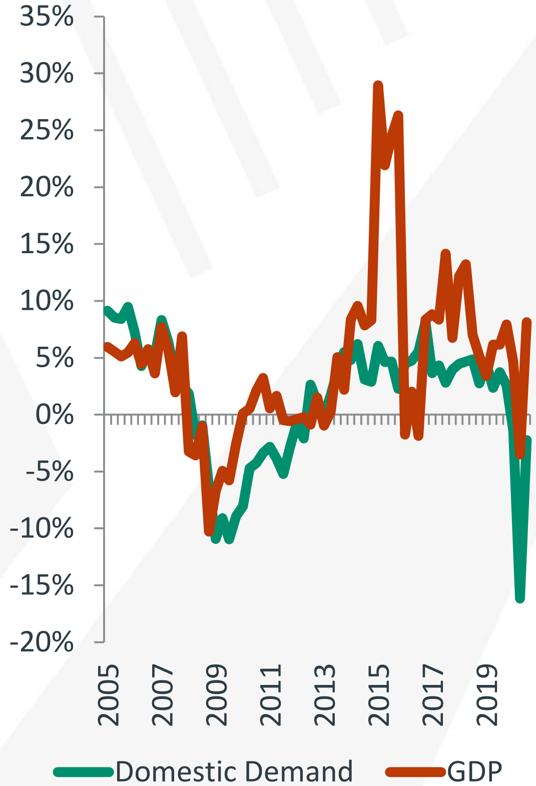
Summary

Considerable Covid shock cushioned by structure of economy and large fiscal response

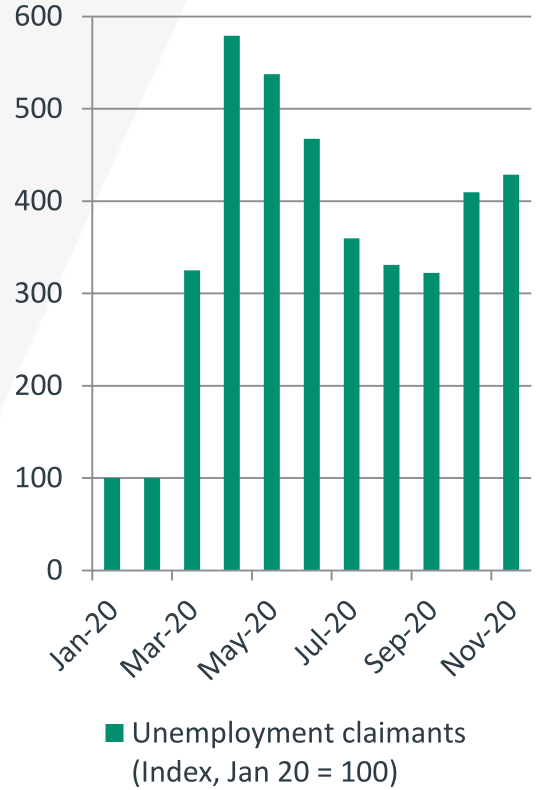
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

First steps to recovery along uneven road: Intermittent lockdowns expected before vaccine rollout is completed

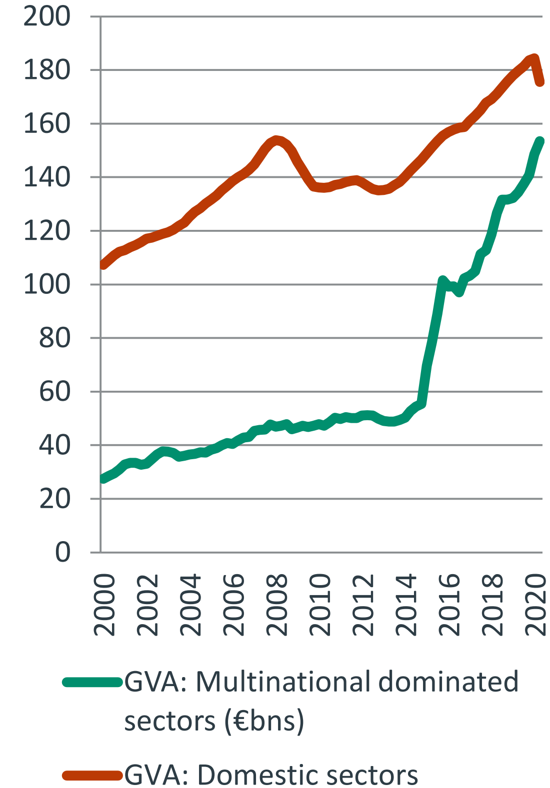
GDP strong in 2020 while domestic sectors hampered



U rate uncertain**; Lockdown impact Oct/Nov



Value added from ICT & pharma has given Ireland resilience



Source: CSO

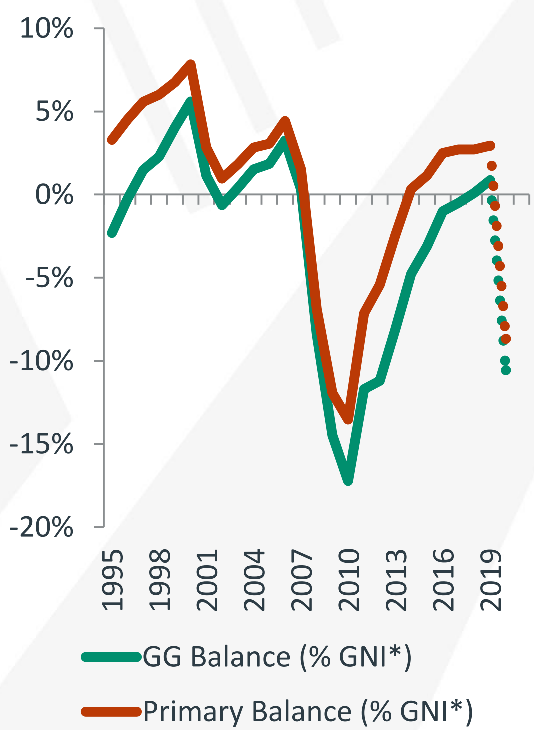
** Domestic demand series accounts for multinational activity and known as modified final domestic demand (excludes inventories)*

*** Whether those on government income supports are unemployed is statistically debatable. Some will have left the labour force, others are just temporarily furloughed.*

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Ireland used 2014-19 growth to improve debt sustainability; added fiscal room now needed to fight Covid

Primary surpluses to end; GG deficit forecast €21.6bn



Improved debt position created room for fiscal response

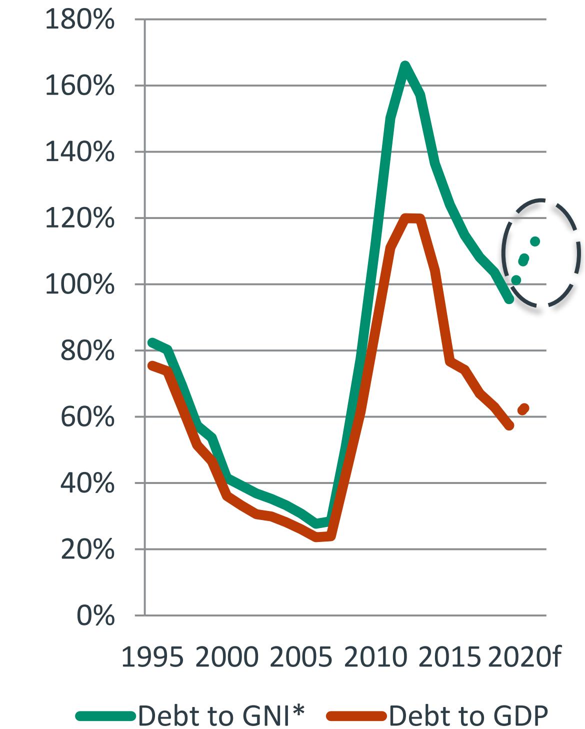
Debt-to-GNI*
(95% 2019, from 166% peak)

Debt-to-GG Revenue
(230% 2019, from 353%)

Average interest rate
(2.1% 2019, from 5.1%)

Debt-to-GDP^
(57% 2019, from 120%)

Debt will rise from pre-Covid level of 95% of national income



Source: CSO, Department of Finance

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

Covid-19 and Ireland: significant hit to domestic economy followed by powerful policy response

Recession

Ireland (ex. Multinationals) is in recession.

Economy has begun first steps to recovery along uneven road. Vaccine progress gives optimism for H2 2021 onwards.

Exposure

Ireland's domestic economy hit hard like others but internationally-traded sectors (Pharma/ICT) have thrived

The worst case scenarios for Brexit avoided by UK-EU FTA

Policy

Significant stimulus announced equivalent to 19% of GNI* over 2020 and 2021

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

NTMA has indicated a funding plan of €16-€20bn for 2021; €24bn funded in 2020 at record low rates

Flexibility

Ireland has large cash balances and a year free of maturing bonds in 2021

Funding will come from several sources. Bonds, short-term paper, EU Sure, and private placements.

10 years

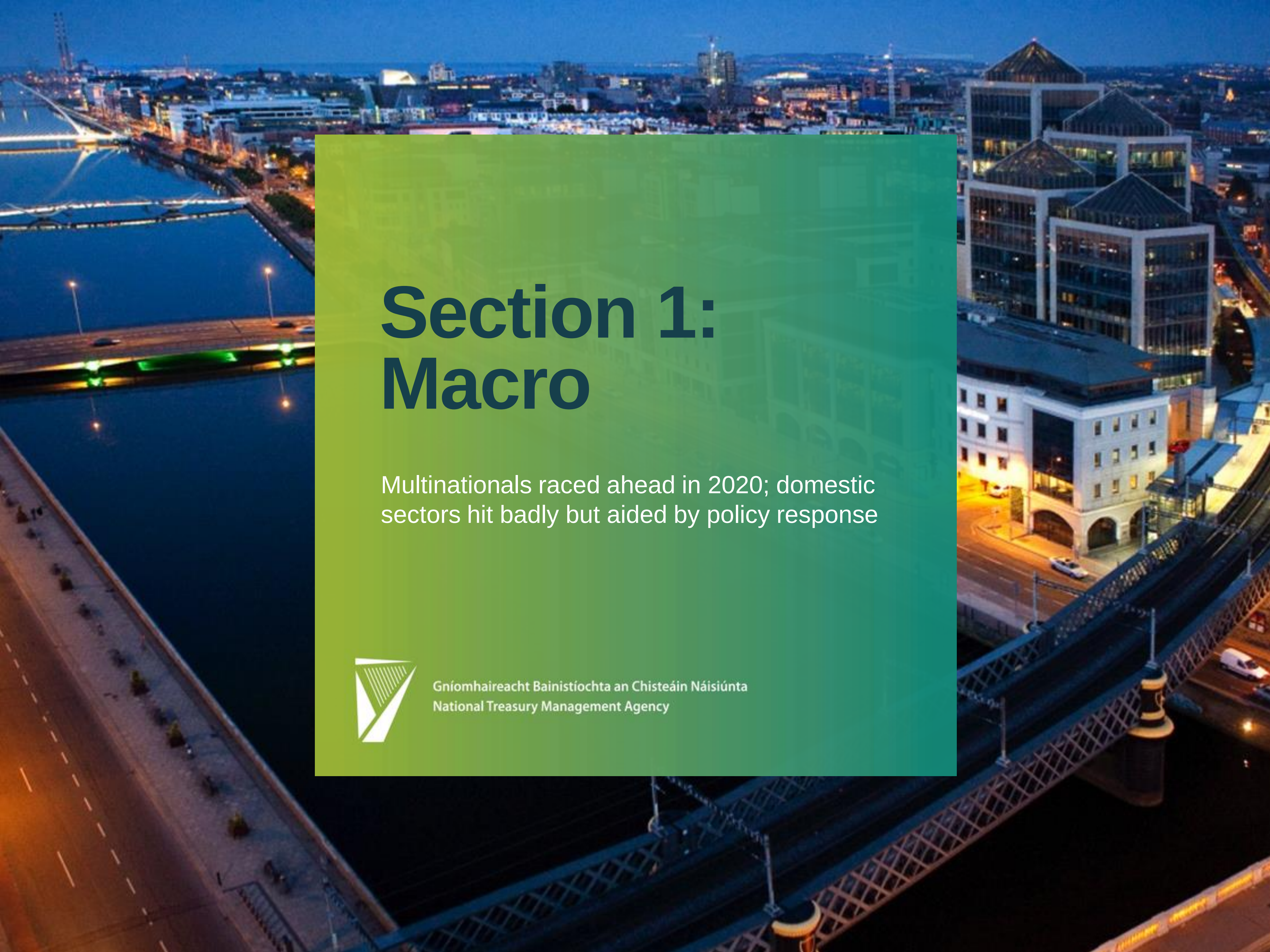
Weighted average maturity of debt one of longest in Europe

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 category by S&P

On relative basis, hit to Ireland less than for other countries. Reasons include multinationals, smaller tourism sector and smaller domestic economy



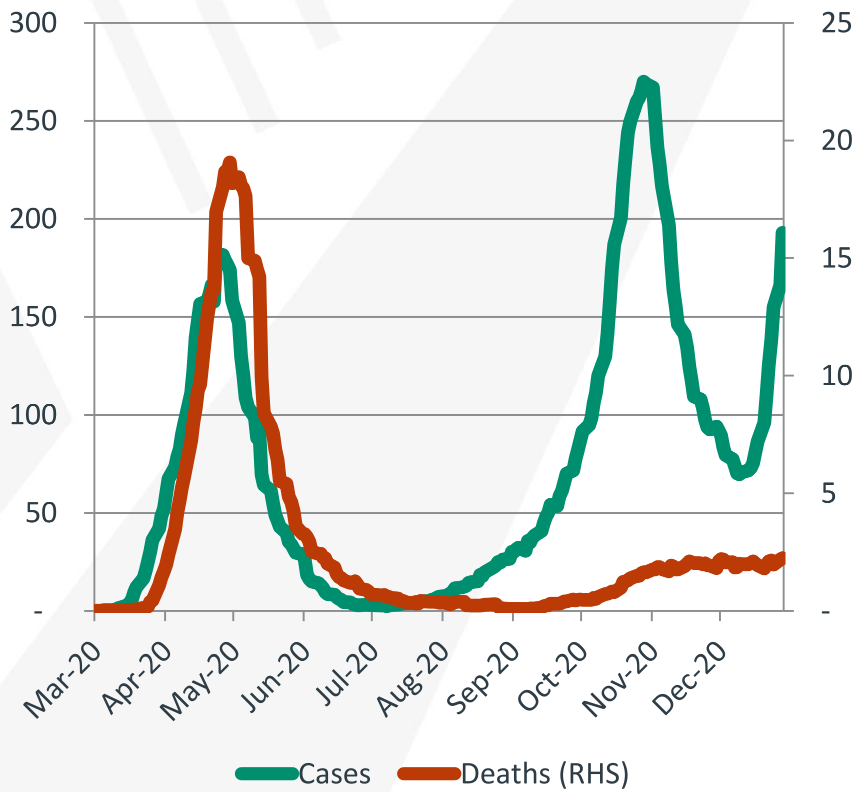
Section 1: Macro

Multinationals raced ahead in 2020; domestic sectors hit badly but aided by policy response

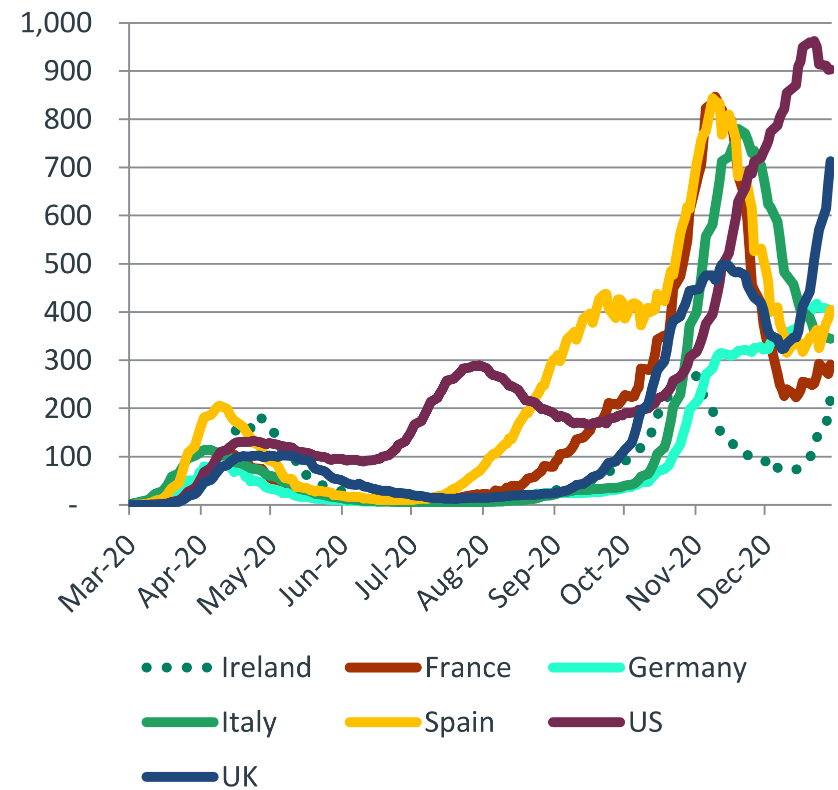
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Second wave subdued by Q4 lockdown; Case numbers spiked in December forcing another lockdown for January

14 day cumulative Covid-19 cases/deaths per 100k of population



Ireland case numbers versus other countries (per 100k of population)

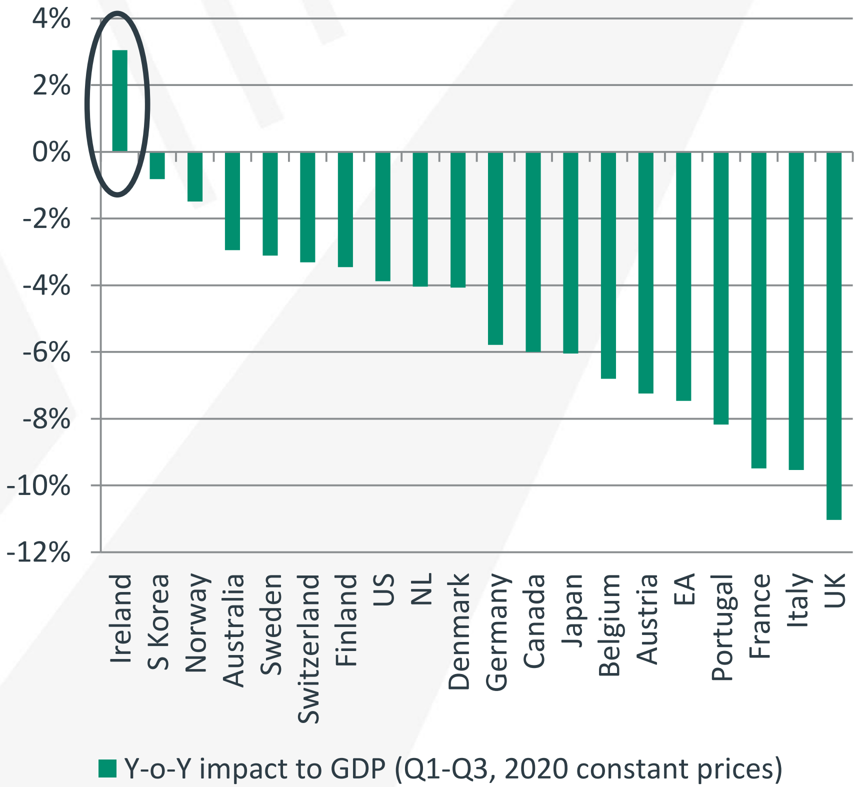


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

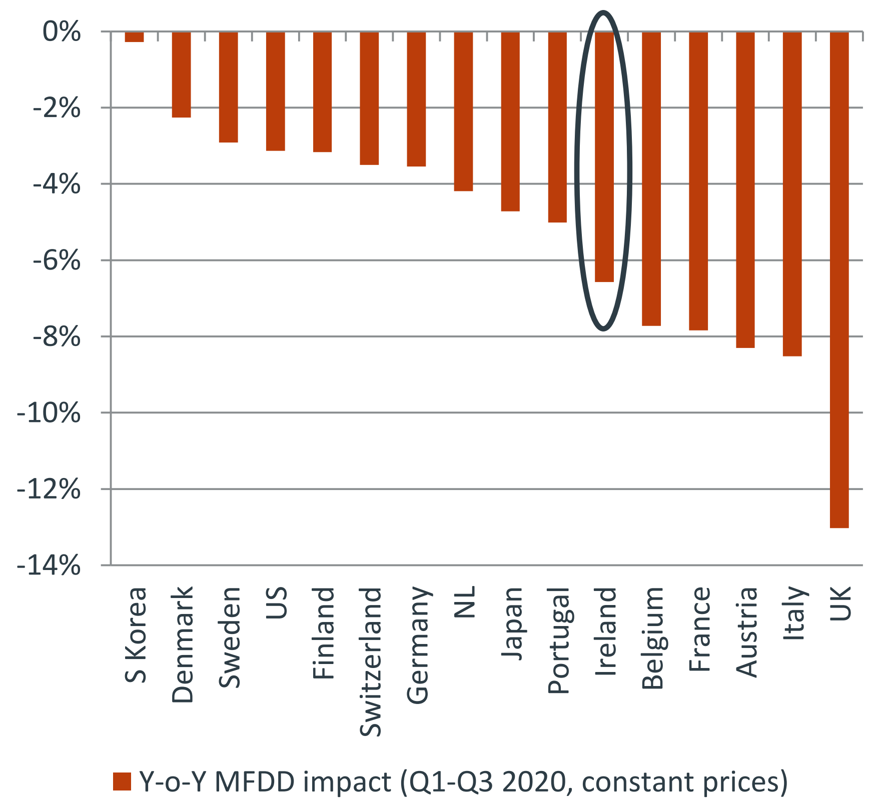
Source: DataStream

On a relative basis Ireland performed better economically than most EU peers in 2020 – thanks to tech/pharma firms

Real GDP up 3.0% Y-o-Y in 2020 for Ireland: GDP *overstates* impact of multinationals



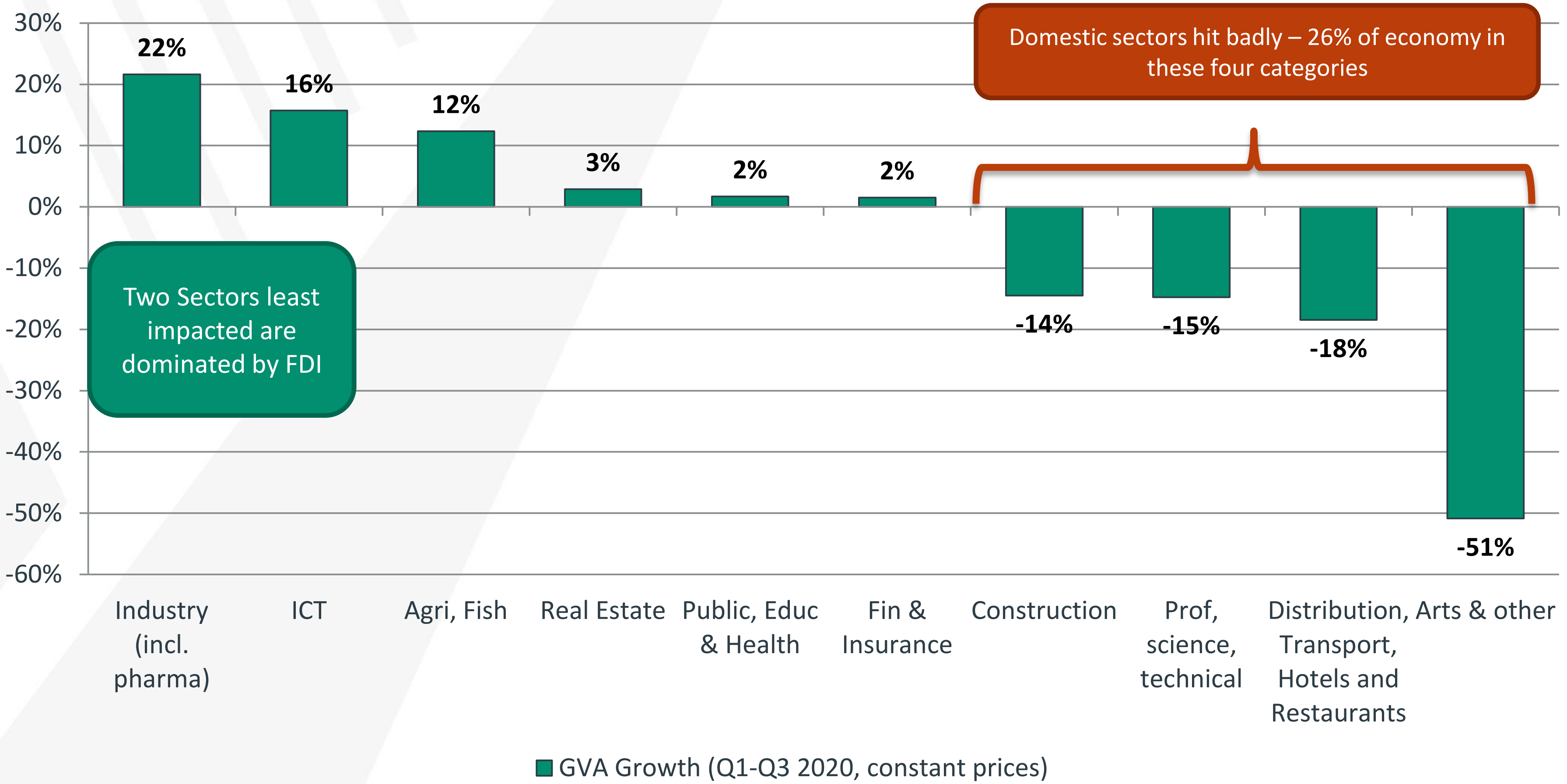
Real MFDD down 6.6% Y-o-Y in 2020: MFDD *understates* impact of multinationals



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: CSO, DataStream
Note: MFDD for Ireland is modified for multinational activity by Ireland's Central Statistics Office (CSO). For other countries MFDD = Domestic demand = Consumption + Government (current) spending + Investment

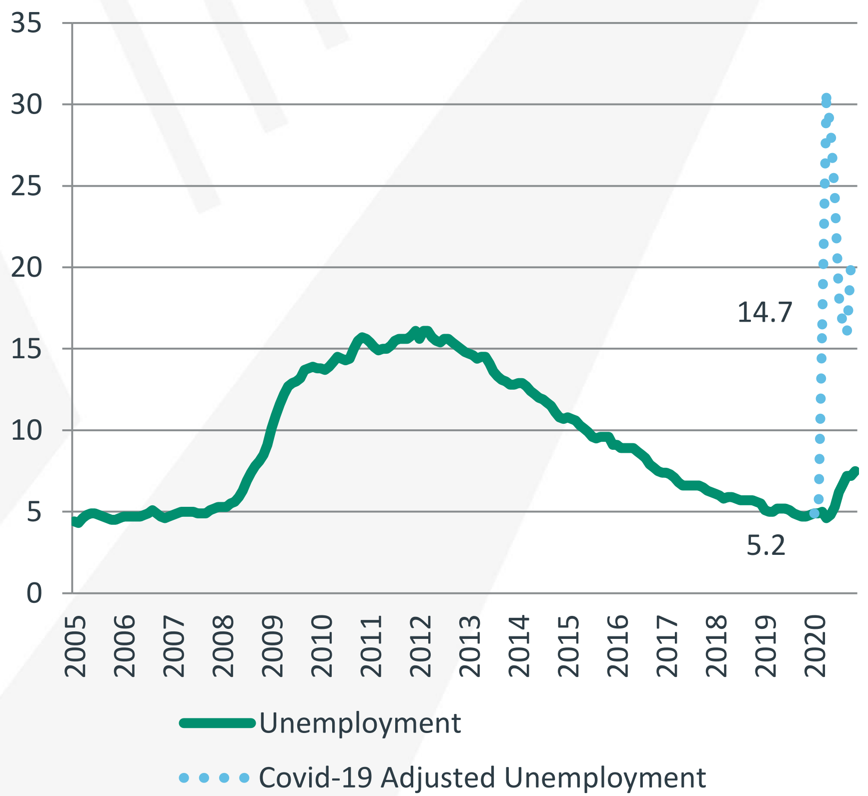
Sector breakdown for 2020 Q1-Q3 – Multinationals racing ahead, domestic side hit hard



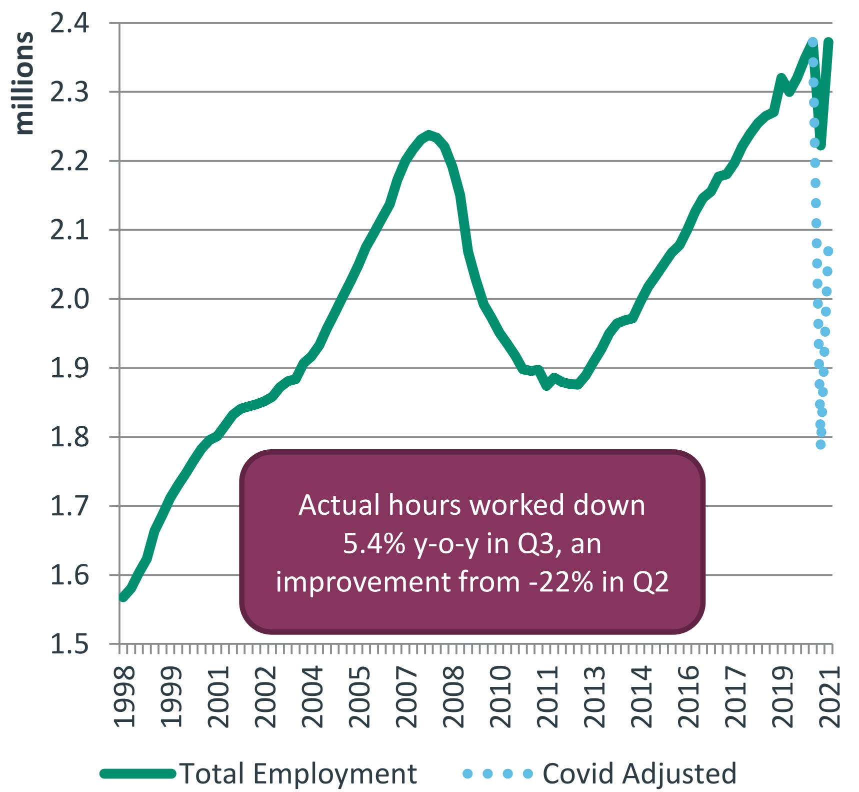
Source: CSO

Labour market data shows stark Covid-19 impact; Second lockdown has seen a reversal in unemployment rate

True unemployment rate is uncertain: Covid-19 adjusted rate 21%* in November



At end-Q3, adjusted employment was estimated just below 2.1m

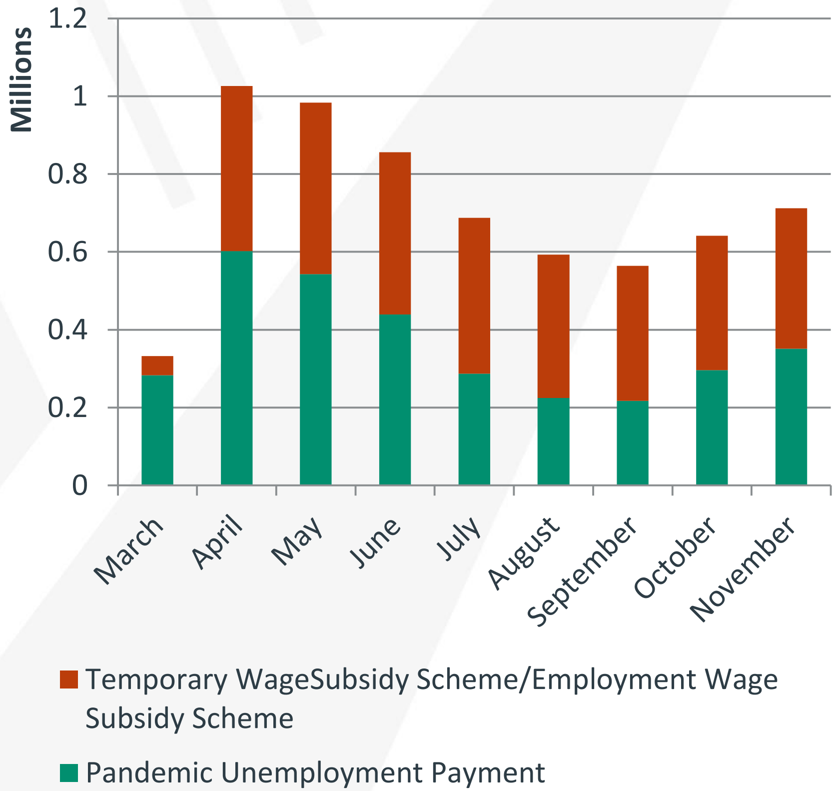


Source: CSO

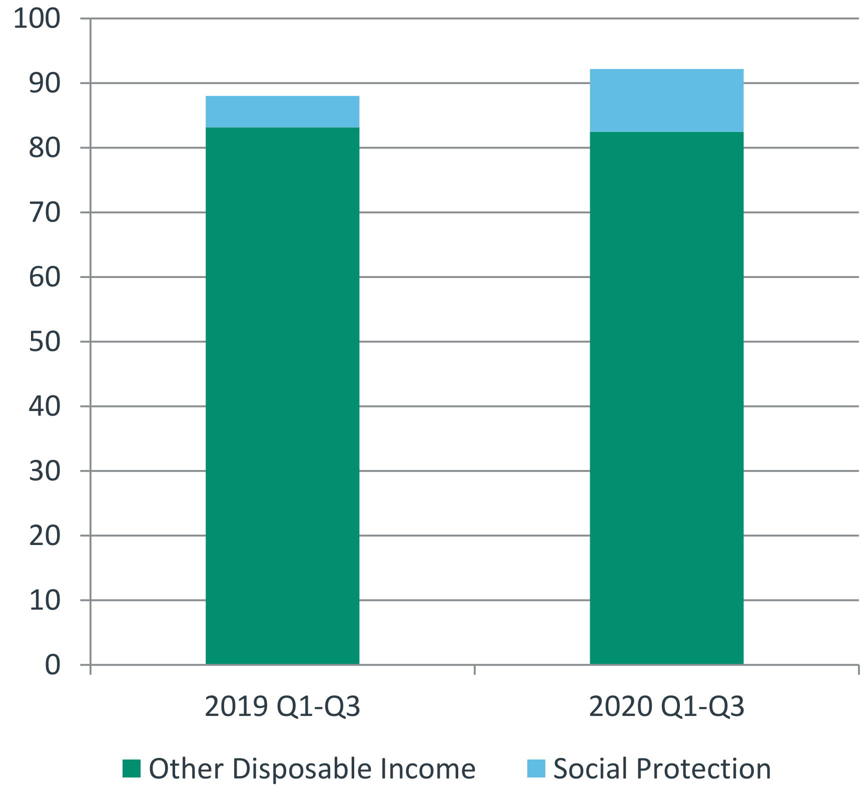
** The CSO have estimated the upper bound of the unemployment rate at 21% in November. The CSO have urged caution around labour market data given the likelihood of revisions and the unique nature of employment status for some people in the pandemic.*

Government income supports extended into 2021; have helped maintain aggregate household income

Oct/Nov numbers increased by lockdown; numbers will fluctuate in H1 2021



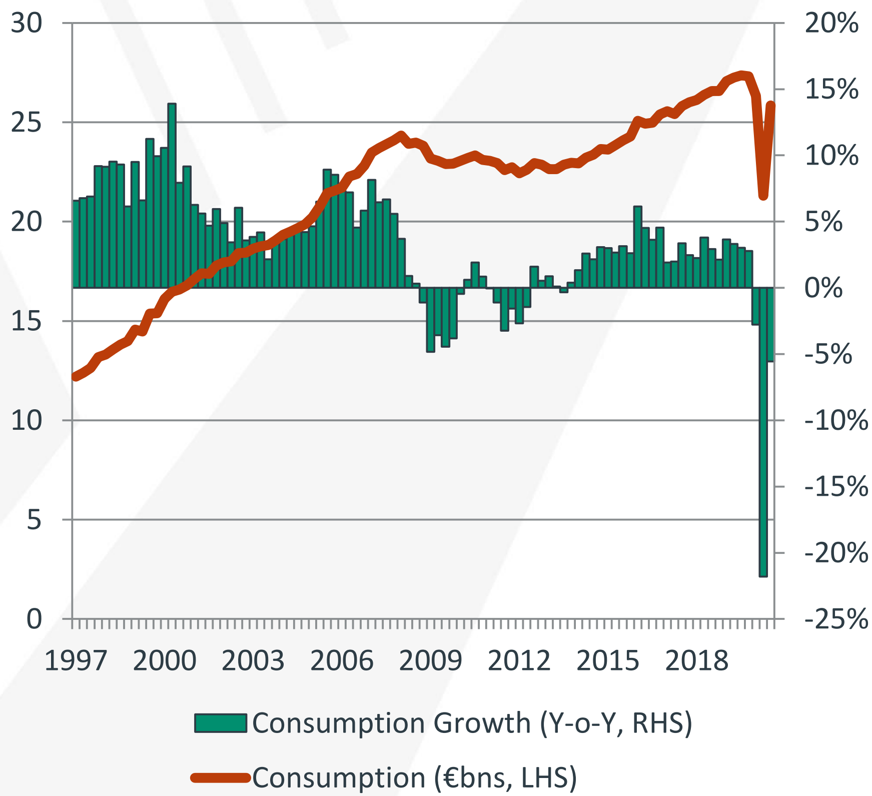
Supports have meant aggregate household income has been more than maintained



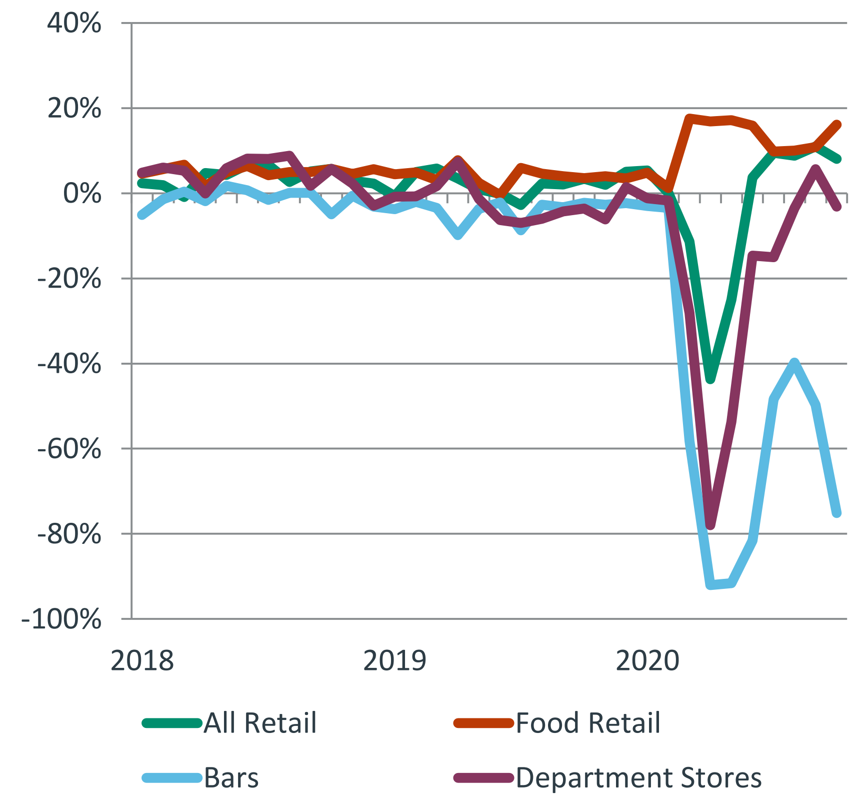
Source: Revenue, DEASP, CSO

Consumption fell sharply in Q2 despite incomes being maintained; the result is record savings rates

Consumption sharply hit in Q2 – down 22% y-o-y: Q3 saw rebound



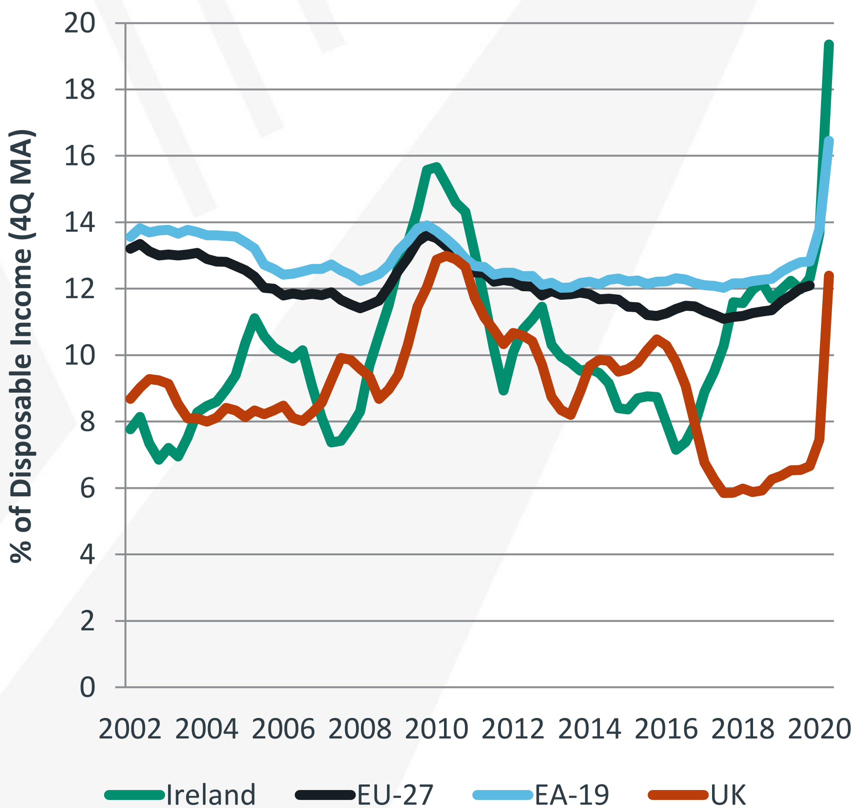
Retail sales rebounded in Q3; Q4 lockdown saw reversal for some sectors



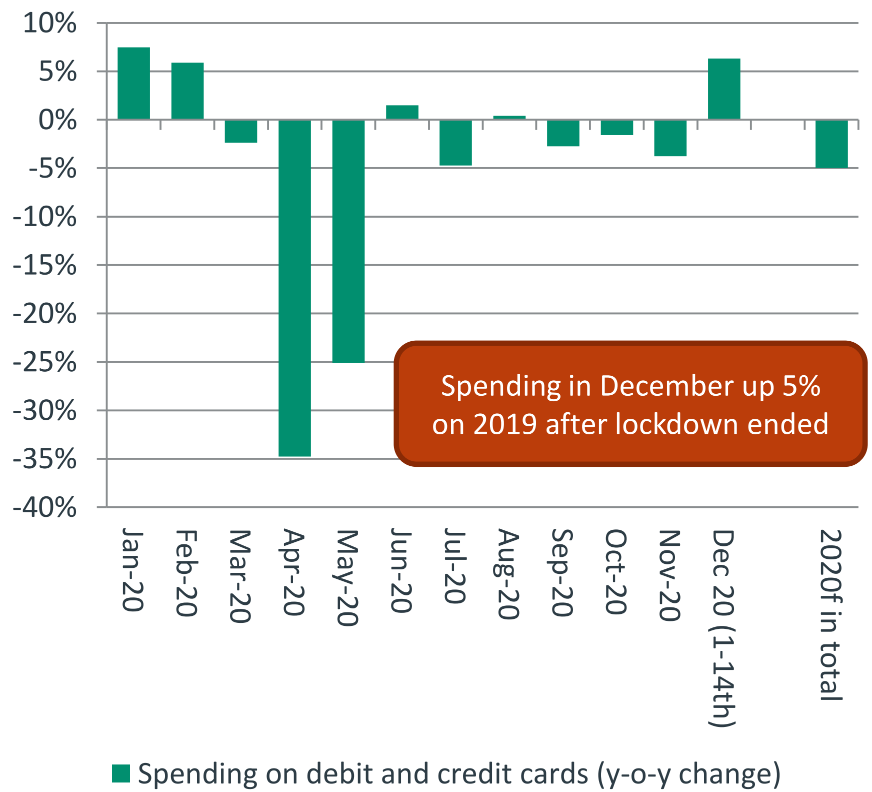
Source: CSO

Savings rate increased sharply in Q2 due to forced savings; H2 saw spending return close to 2019 levels

Gross household saving rates jump in Q2 – Ireland larger than most



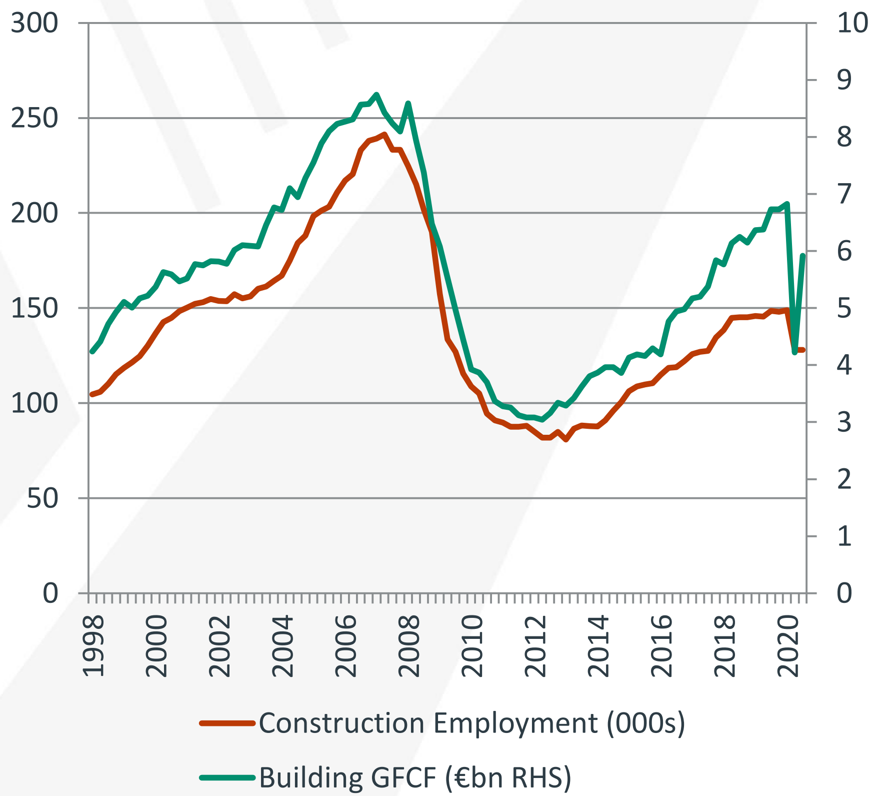
Card data shows Q3 consumption rebound; lockdown impacted Q4 so far but not like Q2



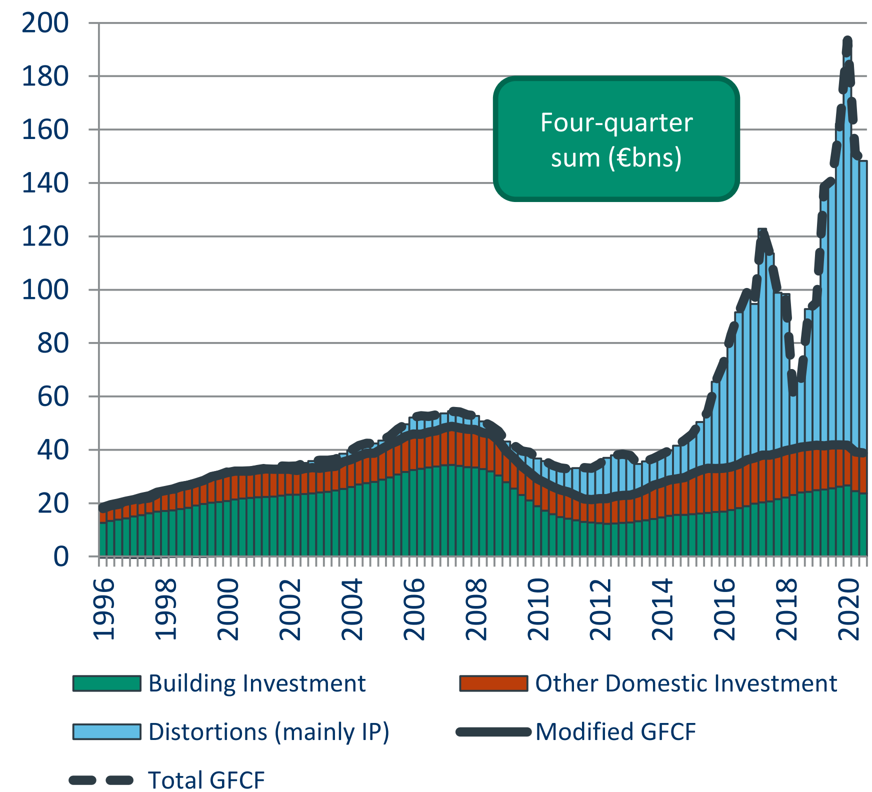
Source: Eurostat, ONS, CSO ; CBI, Eurostat; CBI
Note: Gross Savings as calculated by the CSO has tended to be a volatile series in the past, some caution is warranted when interpreting this data

Investment hit as construction sector was shuttered in Q2; Construction rebounded Q3, un-impacted by Q4 lockdown

Building and construction investment hit by 40% in Q2 but rebounded in Q3



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

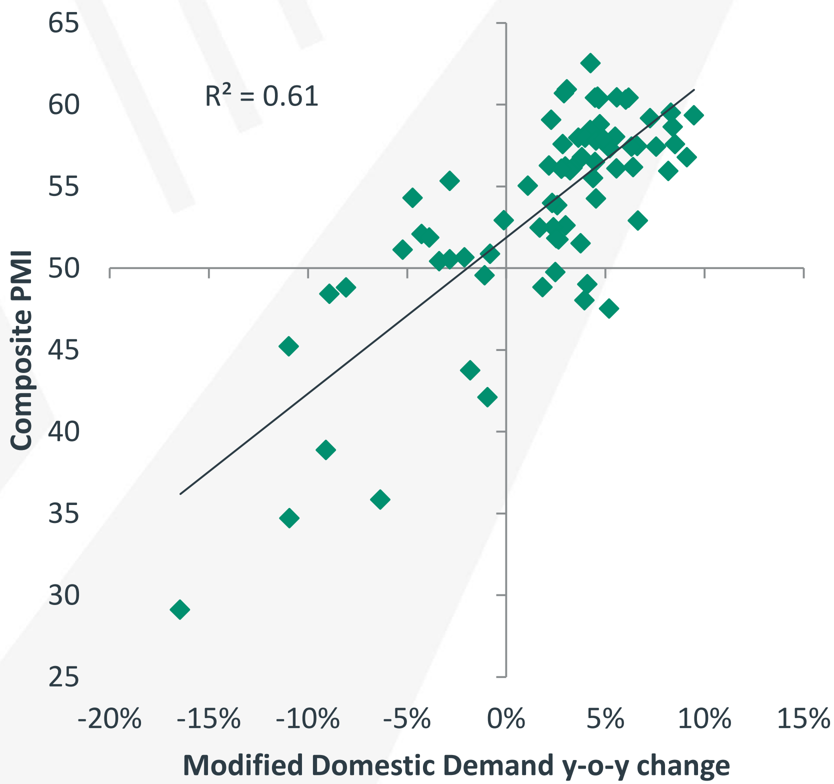


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

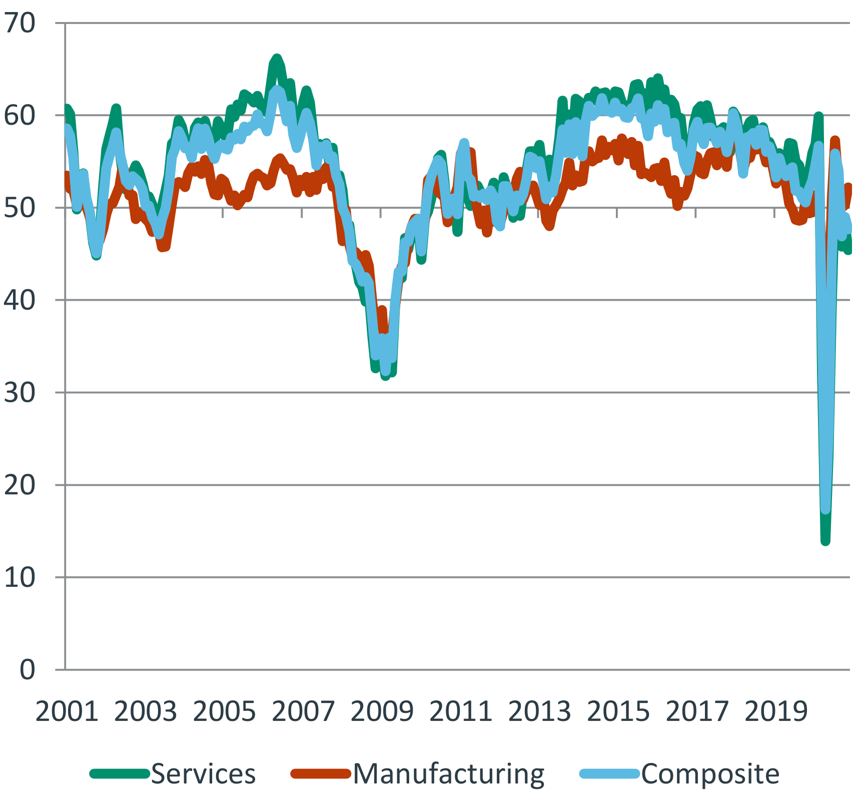
Source: CSO; NTMA calculations

PMI – Manufacturing holding up better than services; lockdown impact seen in Oct/Nov

Ireland's Composite PMI has tended to be a good guide for MDD



All three PMIs softened recently – Composite 47.7, Manu 52.2, Services 45.4



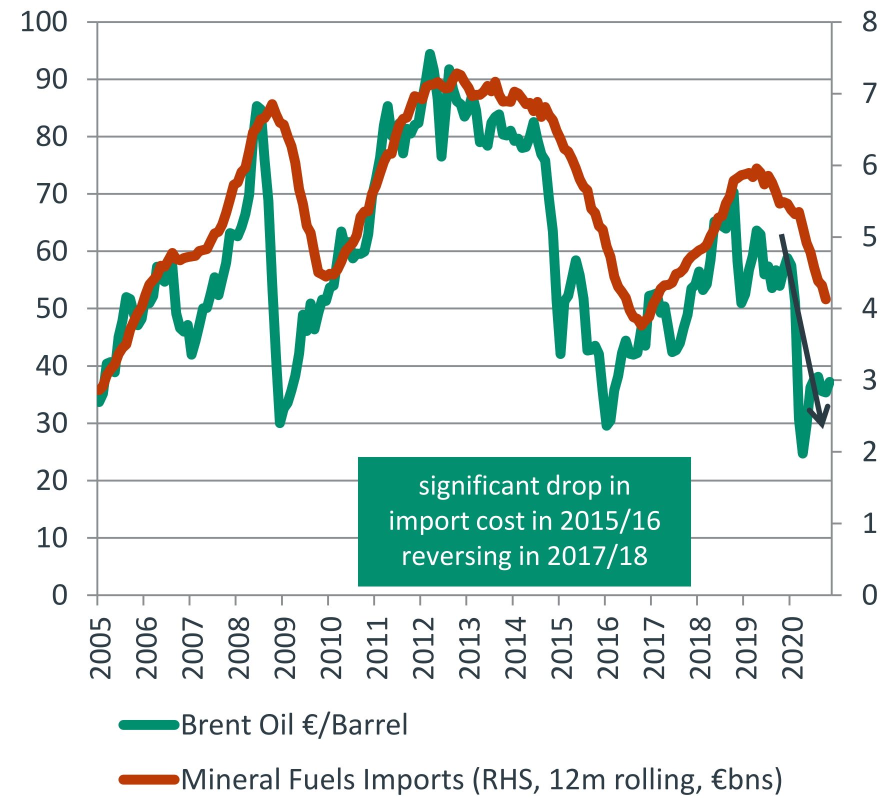
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: Markit, NTMA analysis

External environment supportive for Ireland – 2021 should see the global economy rebound given large stimulus

	2020	2021
EA Monetary Policy	Maximum accommodative	Maximum accommodative
EU Fiscal Policy	Expansionary	Expansionary
US Monetary Policy	Maximum accommodative	Maximum accommodative
US growth	Covid-19 shock	Rebound
Oil price	Significantly down despite rebound	Unclear
UK growth	Covid-19 shock; Brexit unresolved	Brexit resolved; Rebound
Euro Growth	Covid-19 shock	Rebound
Euro currency	Strengthening vs. Dollar	Unclear

Oil price drop might boost the economy by c.0.5% of GNI*

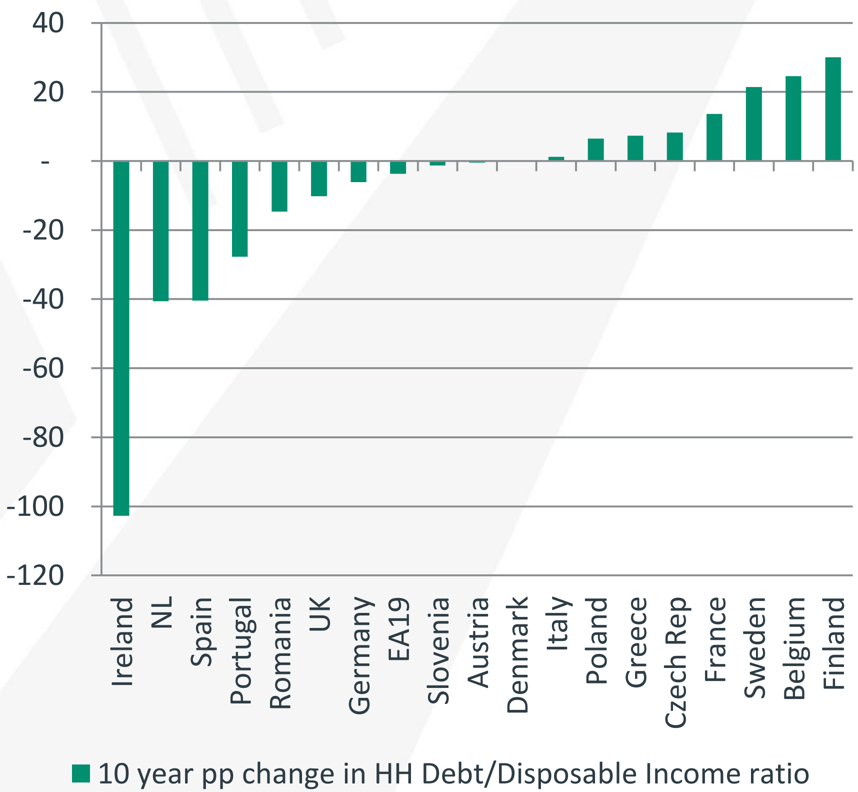


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA analysis, DataStream, CSO

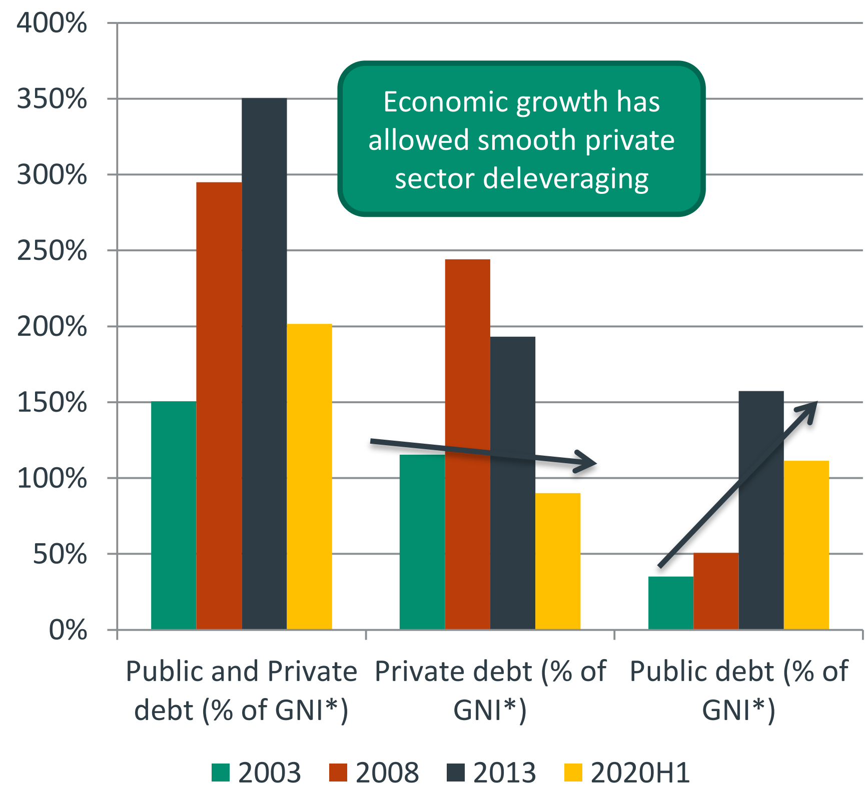
Ireland has used recovery period to repair private sector balance sheets – especially households

Household debt ratio has decreased due to deleveraging and increasing incomes



Source: Eurostat (2019 versus 2009)

Legacy of 2008-12 financial crisis is on the Government balance sheet



Source: CBI data, CSO

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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.

Section 2: Fiscal

Ireland’s economic structure has meant revenues have held up despite Covid-19

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Fiscal Policy response was large and swift in 2020; Budget 2021 set on conservative no vaccine/no Brexit deal basis

Response

Total fiscal response of €38bn over 2020 and 2021 (19% of GNI*) is large

Ireland has responded to Covid with first attempt at counter-cyclical fiscal policy in its 100 year history

Revenues

Ireland's economic structure has meant revenues have held up despite Covid-19

Strength of both Corporate and Income tax revenues from Multinational sectors has helped sustain government coffers

Debt

Debt ratios will reverse due to Covid.

Gross Government debt 57% of GDP at end-2019 but close to 95% of GNI*. Ireland will give back some hard won gains in the short term

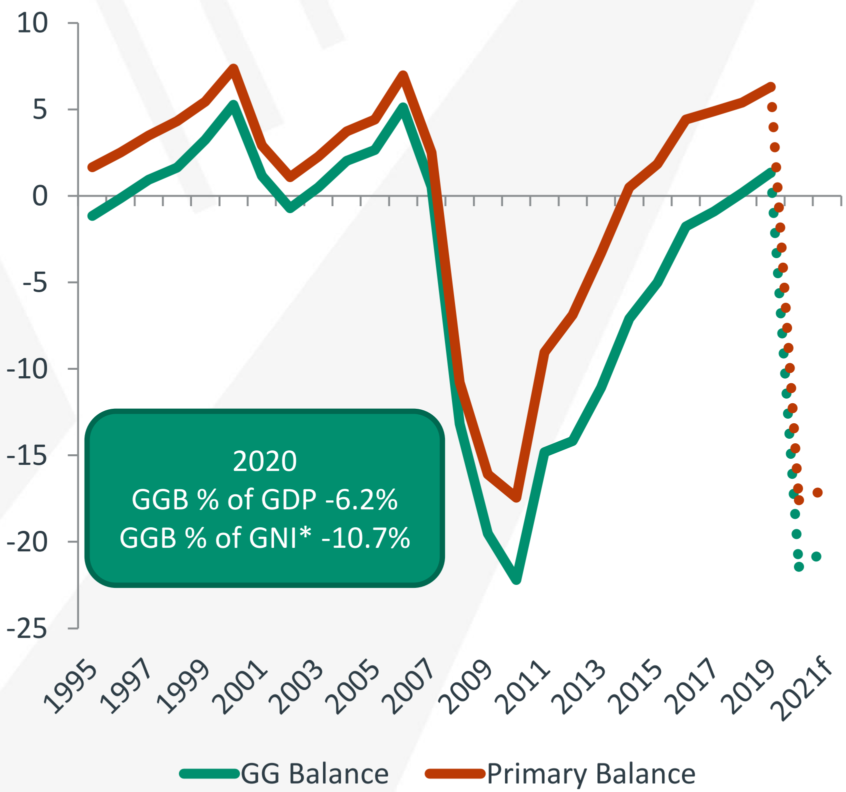
Total fiscal response of €38bn over 2020 & 2021 (19% of GNI*) is large; contingency may not be needed given Brexit

	€bn	2020	2021	% GNI*	Description
Taxation Measures	**4.1**	**3.4**	**0.7**	**2.1**	
• Warehousing/Deferrals	2.0	2.0	0.0	1.0	Corporate Tax, VAT, Stamp duty tax deferrals
• Other	2.1	1.4	0.7	1.1	Temporary VAT decrease; hospitality VAT decrease, CRSS
Expenditure Measures	**28.7**	**16.8**	**11.9**	**14.1**	
• Social Protection (income supports)	13.6	10.4	3.2	6.7	PUP/TWSS extended into 2021; TWSS transforming into EWSS
• Health	4.4	2.5	1.9	2.2	Covid-19 capacity expenditure
• Business Supports	1.0	0.9	0.1	0.5	Business supports, Grants, Education, Arts, Tourism and Transport
• Housing, Local Govt	1.2	1.1	0.1	0.6	Commercial Rates waivers
• Other	8.5	1.9	6.6	4.2	Help-to-Buy, other grants and aids, Recovery Fund, **Covid/Brexit contingency response**
Total Direct Supports	**32.8**	**20.2**	**12.6**	**16.2**	
Indirect supports	5.0	5.0	0.0	2.5	Credit Guarantee Scheme, Pandemic Stabilisation and Recovery Fund, other schemes
Total Supports	**37.8**	**25.2**	**12.6**	**18.7**	

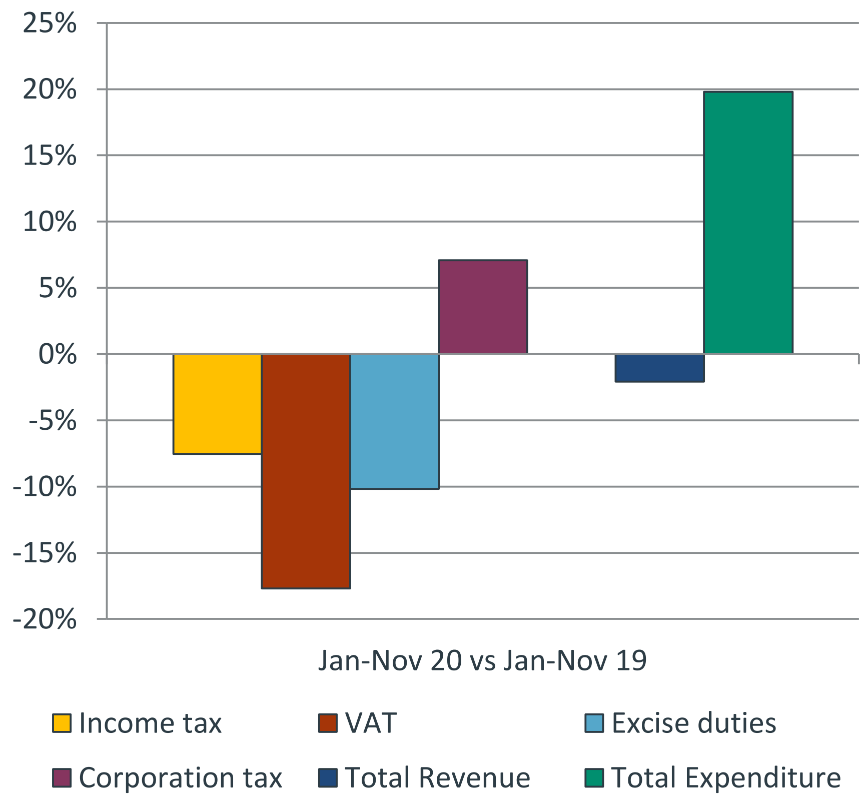
Source: Department of Finance

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

Gen. Govt. Balance (€bn) will be in significant deficit in 2020/21



Revenues holding up despite pandemic; expenditure is increasing (Central Govt.)

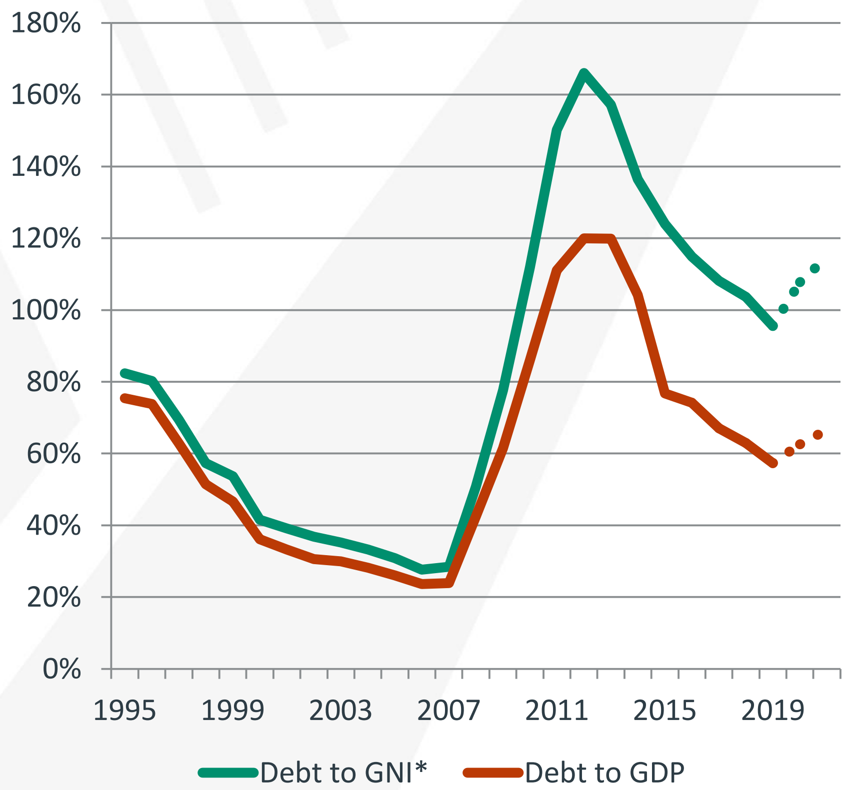


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

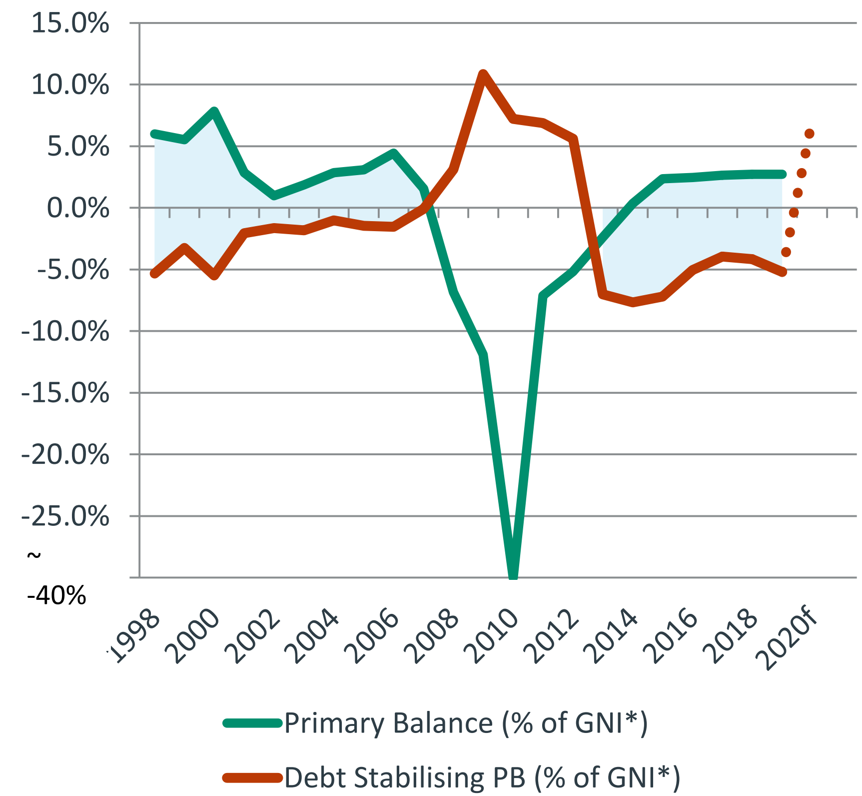
Source: CSO; Department of Finance

Gross Government debt 57% of GDP at end-2019 but close to 95% of GNI*; will give back some gains in the short term

Debt-to-GNI* had dropped since last crisis; could increase 20pp in coming years



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

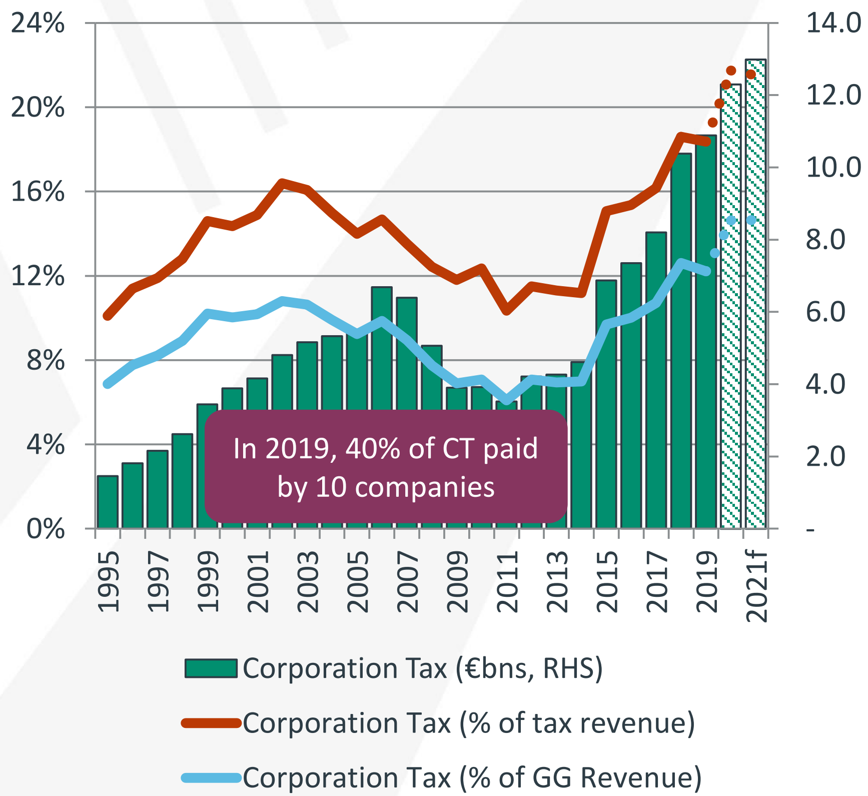


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

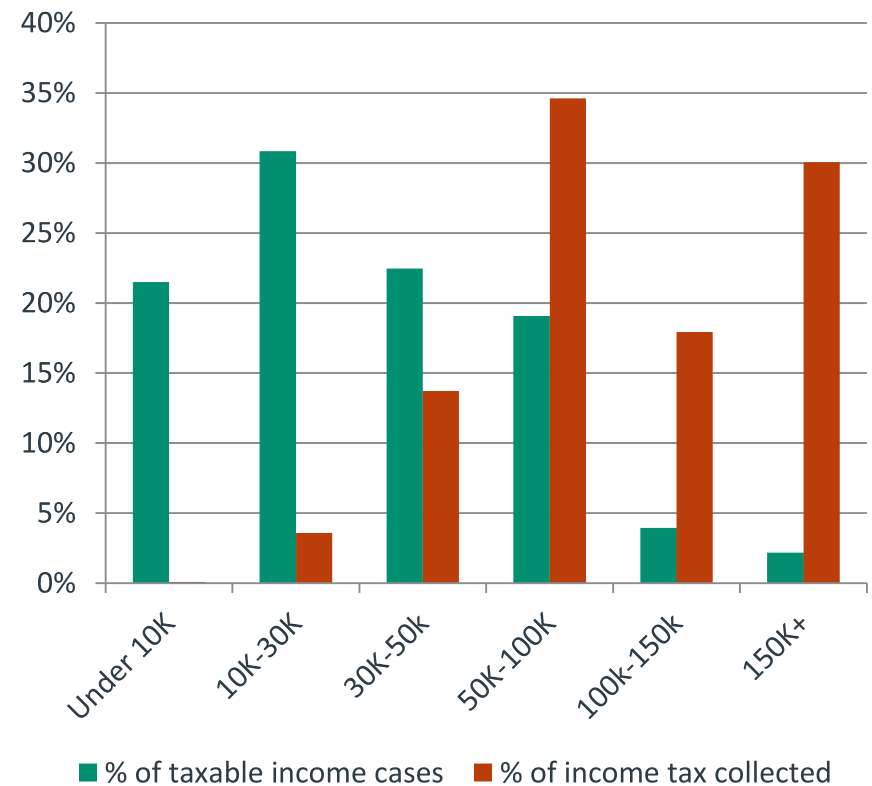
Source: CSO; Department of Finance, NTMA analysis

CT revenue cushioned by 2019 payments and defensive nature of Pharma and ICT; income tax protected also

Corporation tax (CT) receipts continue to rise – have nearly tripled in 6 years



Progressiveness of income tax system and sector mix limits hit to overall receipts

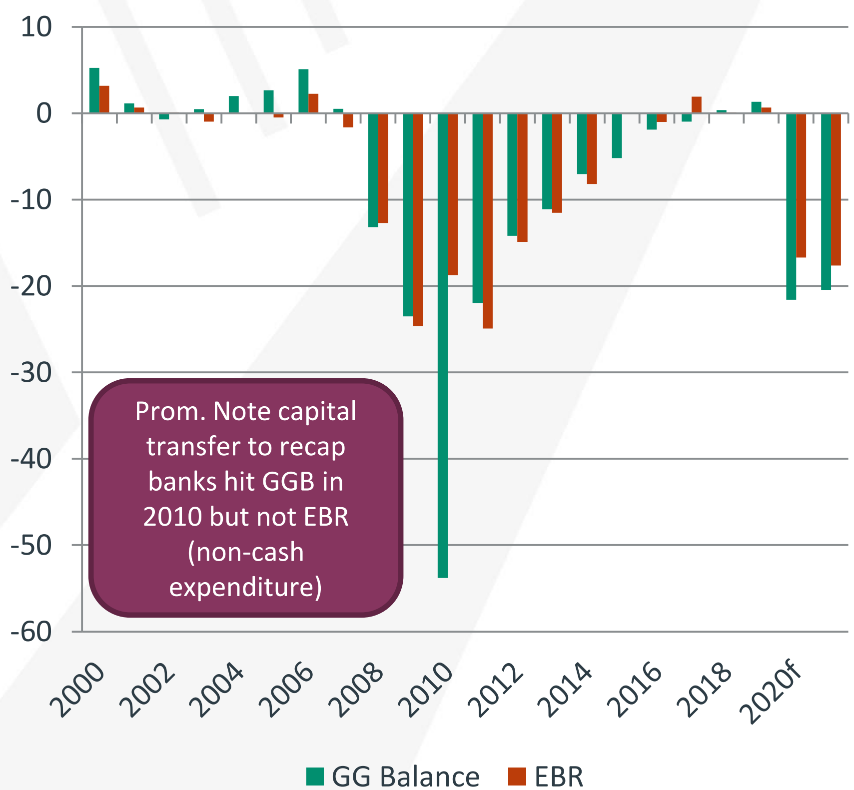


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: Department of Finance, Revenue, NTMA analysis
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

NTMA's job is to finance the cash deficit (EBR) but it's best to use accruals-based GGB for comparison to peers

EBR and GGB (€bns) usually minor – gap is larger currently



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

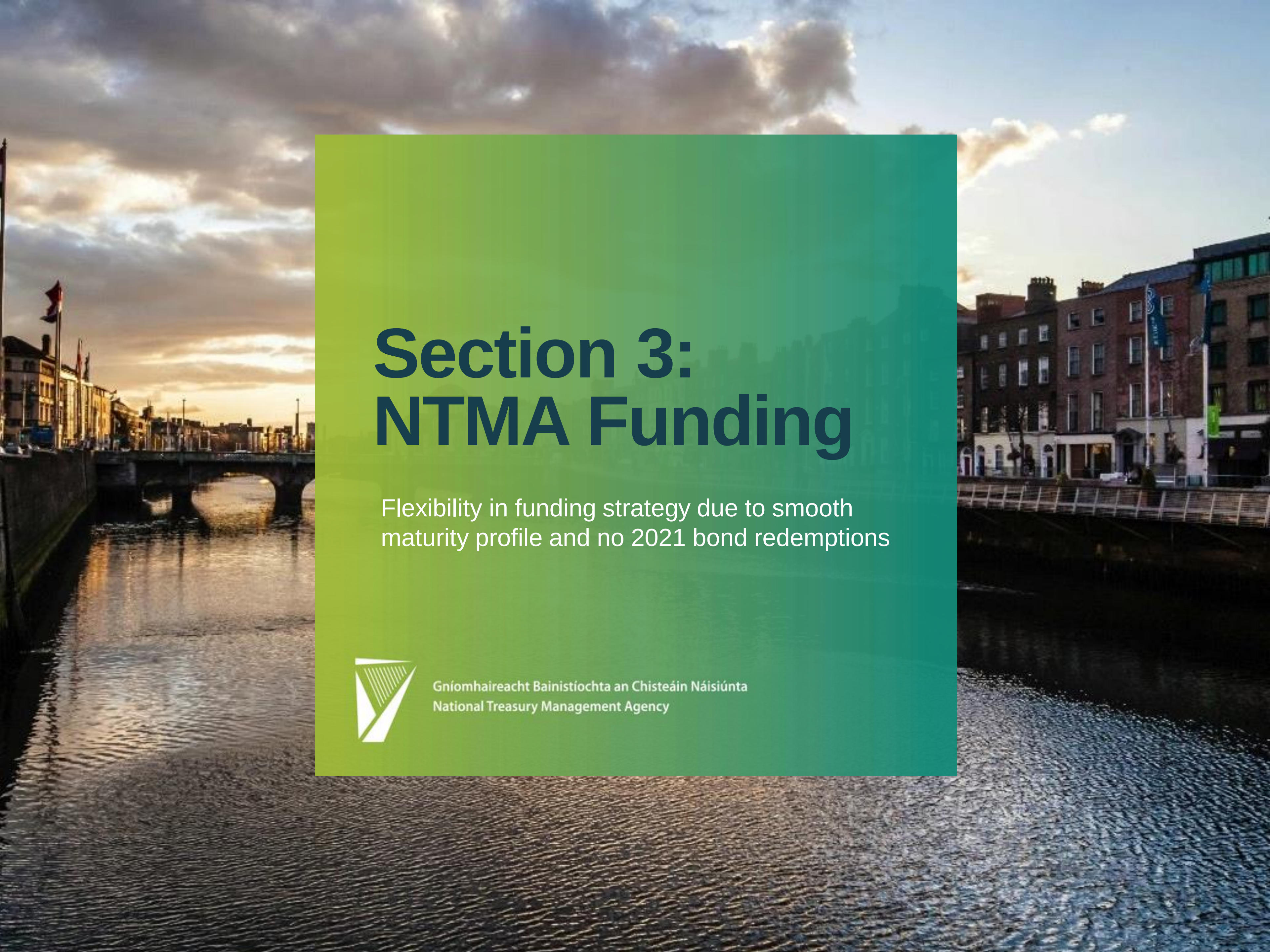
	2020	2021		Comments
EBR	**-16.7**	**-17.6**		This is the deficit in cash terms that the NTMA must finance each year
Adjust for Accruals	3.1	0.4		Accruals can relate to interest, taxes, other expenditures
Exclude Equity & Loan Transactions	-4.6	-1.5		Transactions between the Exchequer and NAMA, CBI and other govt. entities: **this benefits funding req.**
Social Insurance Fund	-2.2	-0.6		Archaic funding structure of social insurance in Ireland is outside Exchequer. Consolidated in GGB
Semi State, ISIF, other funds	-0.2	-0.2		Dividends and profits from government entities
Local Govt.	-1.0	-0.9		Local governments fund themselves
GGB	-21.6	-20.5		Most complete metric for fiscal position. Use this for deficit comparison with other nations

Source: CSO, Department of Finance, NTMA analysis

Need to assess other metrics apart from debt to GDP when analysing debt sustainability

	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%
Cyprus	231.6%	6.1%	95.5%
Ireland	***229.1%***	***5.0%***	***58.8%***
UK	227.3%	5.6%	85.4%
Belgium	196.1%	3.9%	98.6%
France	186.7%	2.7%	98.1%
EA19	181.0%	3.5%	84.1%
EU28	176.1%	3.7%	79.3%
Austria	143.7%	2.9%	70.4%
Germany	127.6%	1.7%	59.8%
Finland	113.2%	1.6%	59.4%
Netherlands	111.2%	1.8%	48.6%

Source: Eurostat
Ireland 95% Debt to GNI ratio in 2019*



Section 3: NTMA Funding

Flexibility in funding strategy due to smooth maturity profile and no 2021 bond redemptions

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

NTMA has indicated a funding plan of €16-€20bn for 2021; €24bn funded in 2020 at record low rates

Flexibility

Ireland has large cash balances and a year free of maturing bonds in 2021

Funding will come from several sources. Bonds, short-term paper, EU Sure, and private placements.

10 years

Weighted average maturity of debt one of longest in Europe

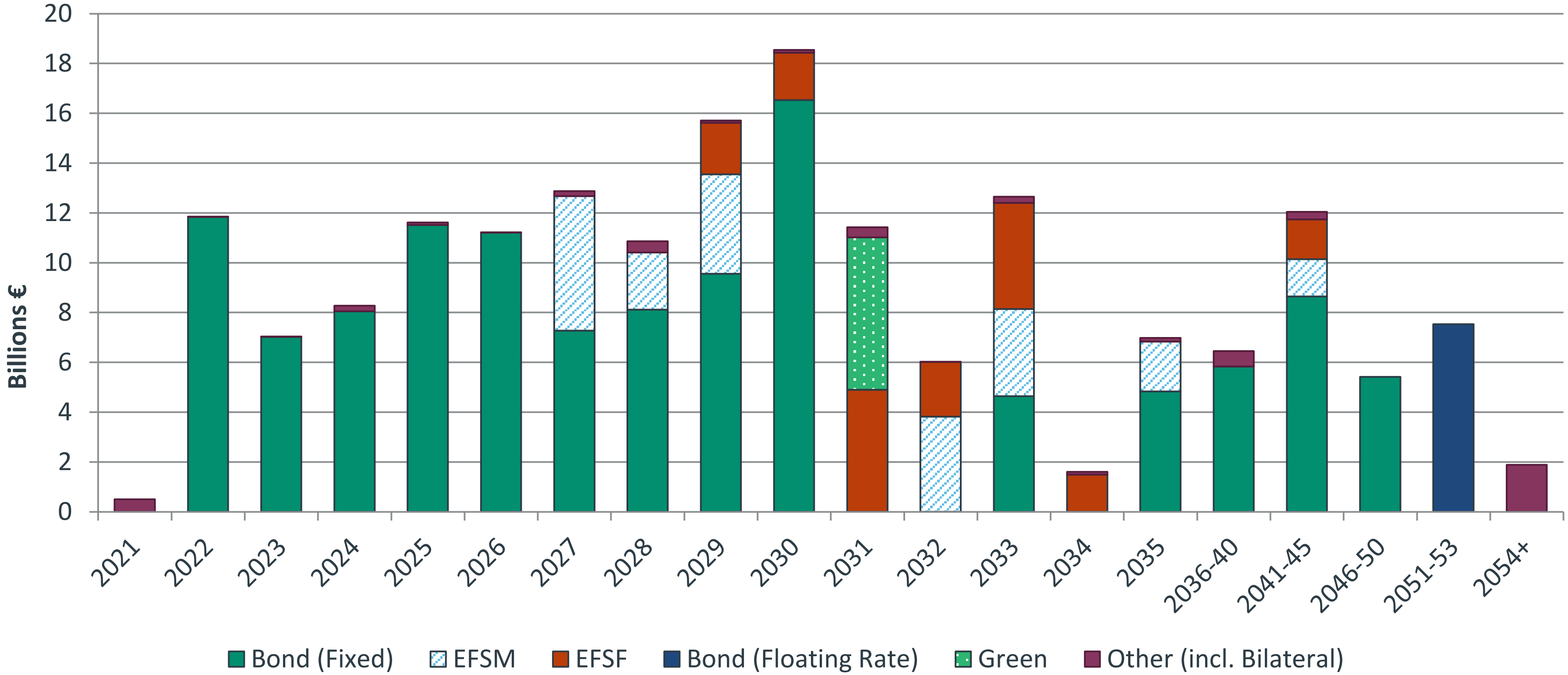
The ECB's QE enabled NTMA to extend debt maturities, reduce interest cost and repay the IMF. Now ECB is buying aggressively again with few limitations

AA-

Ireland has been affirmed in AA space by S&P

On relative basis, hit to Ireland less than for other countries. Reasons include multinationals, smaller tourism sector and smaller domestic economy

Flexibility helped by smoother maturity profile and no bond redemptions in 2021



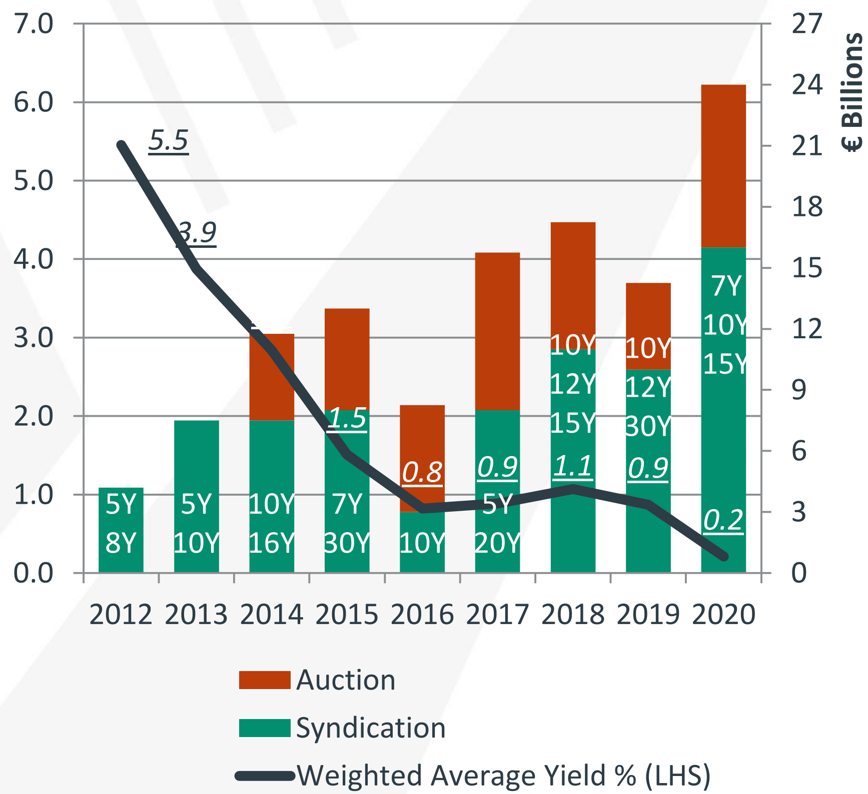
Source: NTMA

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 2027-33 range although these may be subject to change.

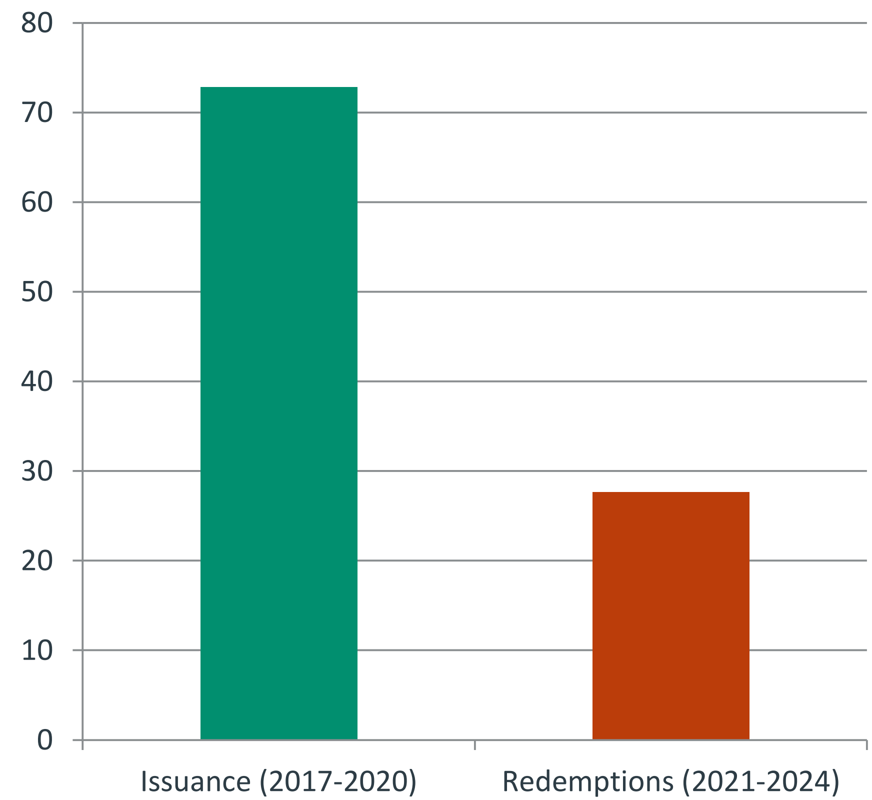
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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

NTMA issued €92.5bn MLT debt since 2015; 13.2 yr. weighted maturity; avg. rate 0.83%



Even with extra Covid-19 borrowings, NTMA might not match supply in 2017-2020 period

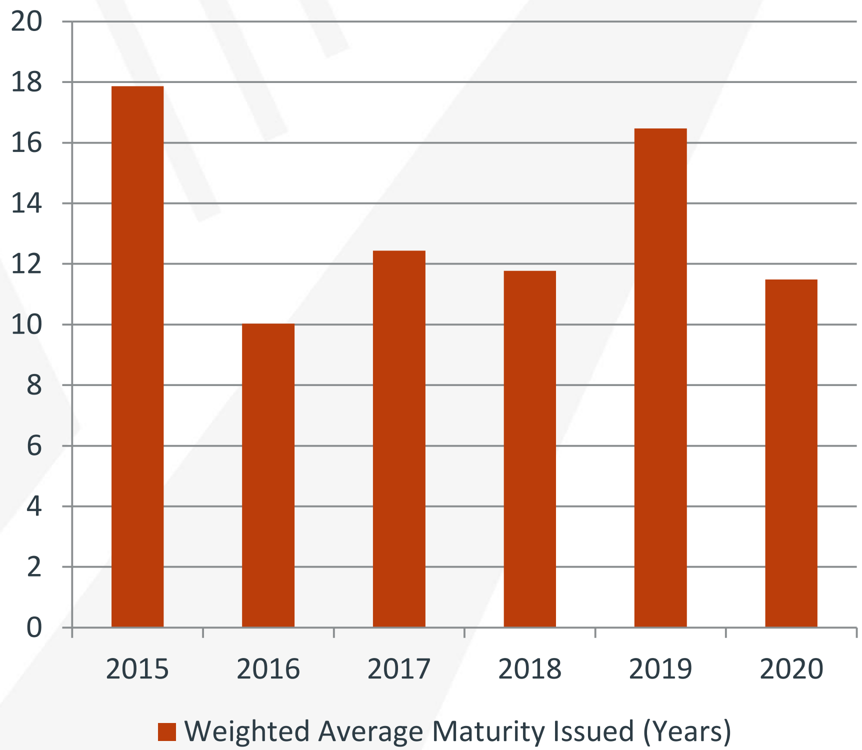


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA
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 …



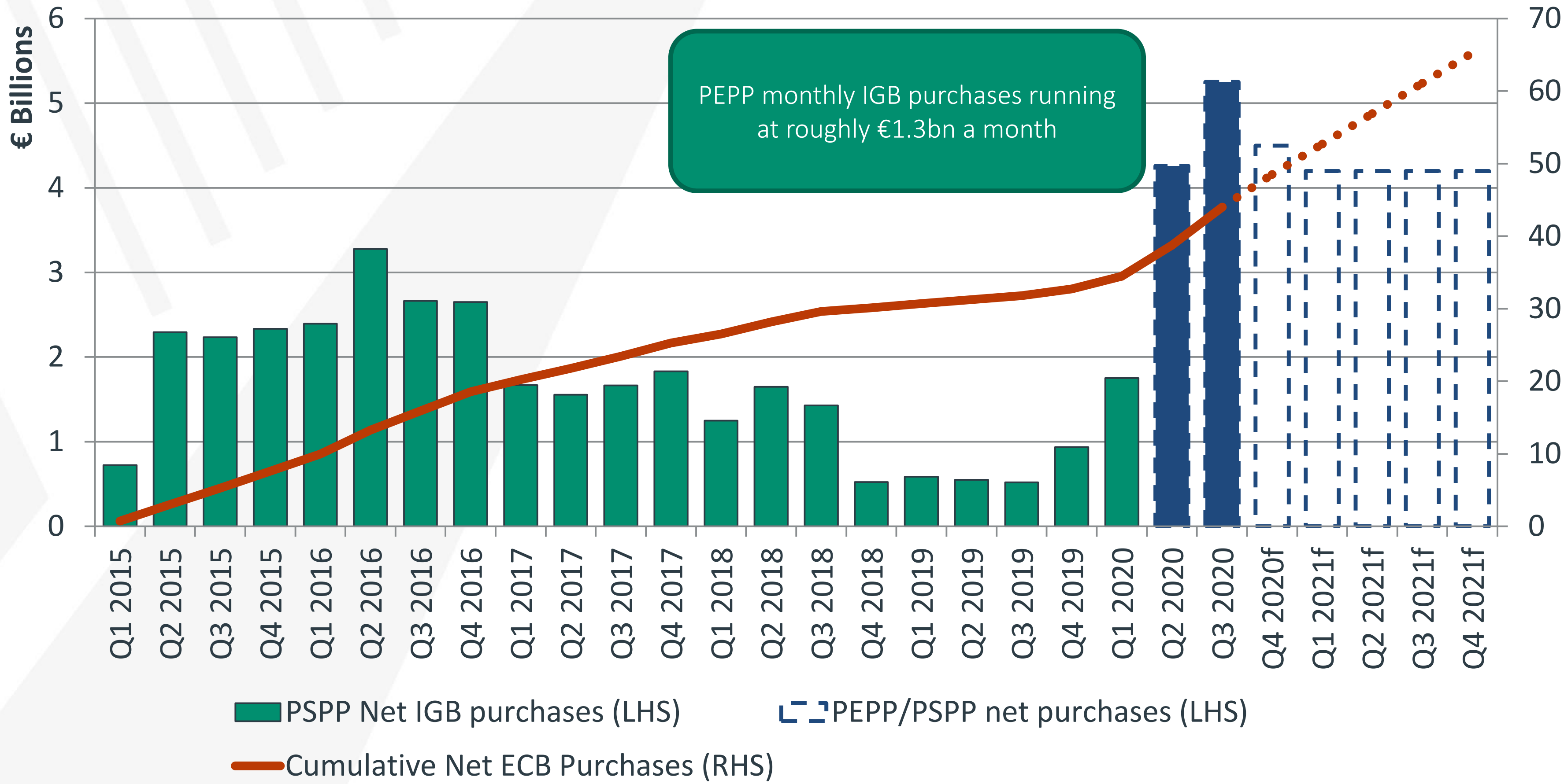
…Ireland (in years) now compares favourably to other EU countries

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA; ECB

Note: Data excludes programme loans.

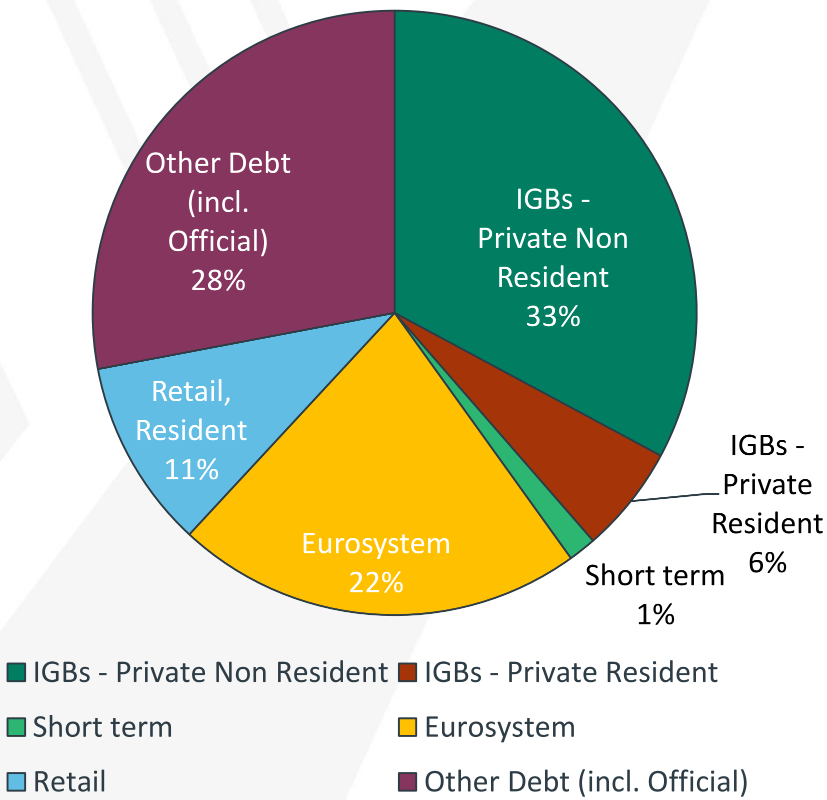
In addition to PSPP, ECB's PEPP with its flexibility (no limits) & size (€1.85trn) will underpin Irish bond market



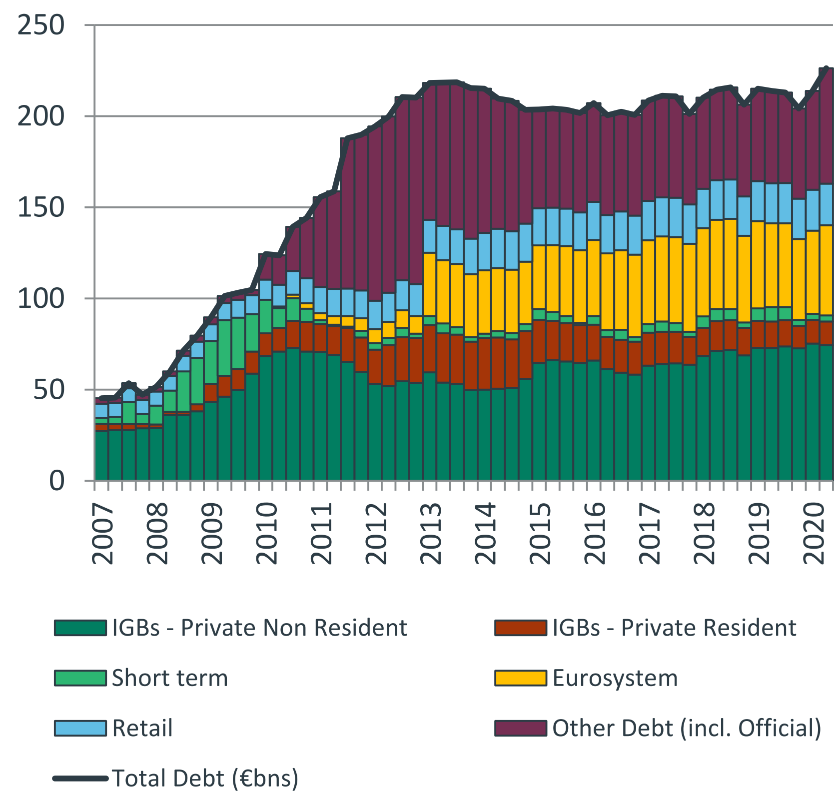
Source: ECB, NTMA Calculations
Notes:
Forecasts sees Ireland's capital key of 1.69% and assumes 90% of new purchases will be for public sector assets with 7% of public sectors assets being supranational issuers.

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 (Q2 2020)



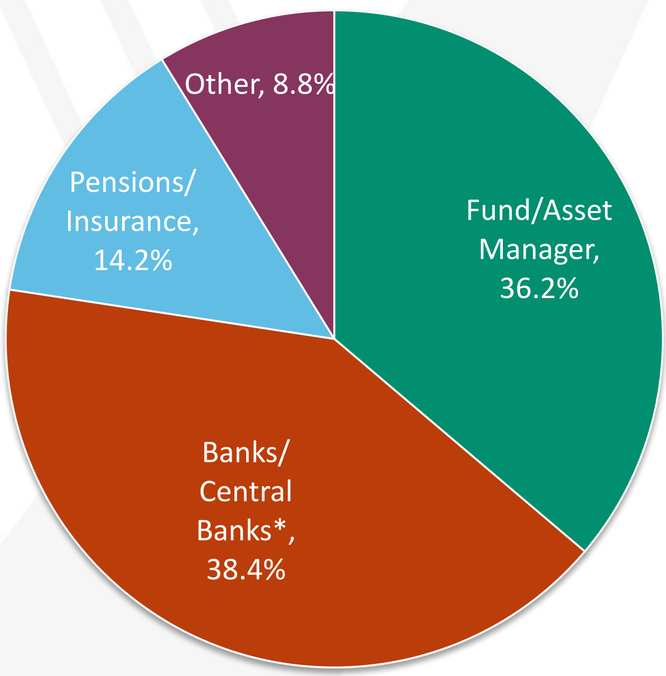
"Sticky" sources - official loans, Eurosystem, retail - make up over 50% of Irish debt



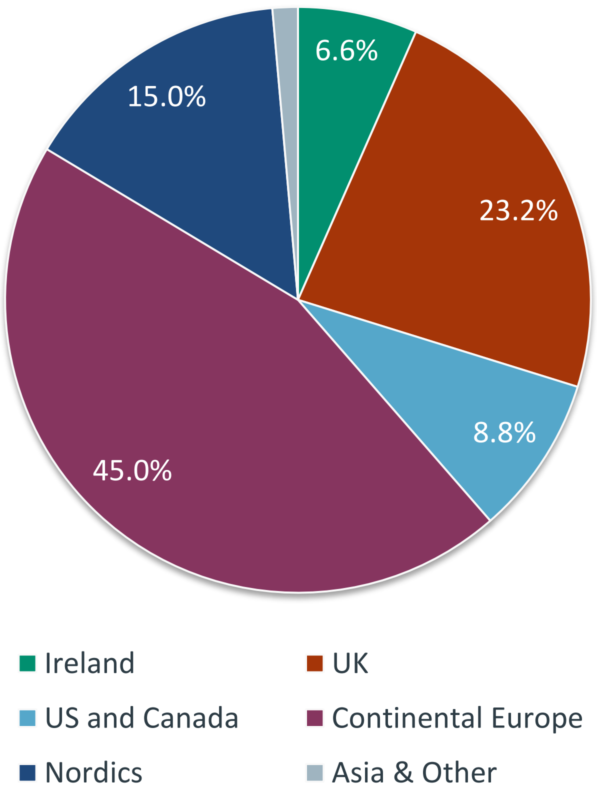
Source: CSO, Eurostat, CBI, ECB, NTMA Analysis
IGBs excludes those held by Eurosystem. Eurosystem holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA. Other debt Includes IMF, EFSF, EFSM, Bilateral as well as IBRC-related liabilities. Retail includes State Savings and other 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*

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 Morningstar	A(high)	R-1 (middle)	Stable	May 2020
R&I	A	a-1	Stable	Jan. 2017

Source: NTMA

Irish Sovereign Green Bonds (ISGB) - €6.1bn issued with €3.9bn allocated to green projects

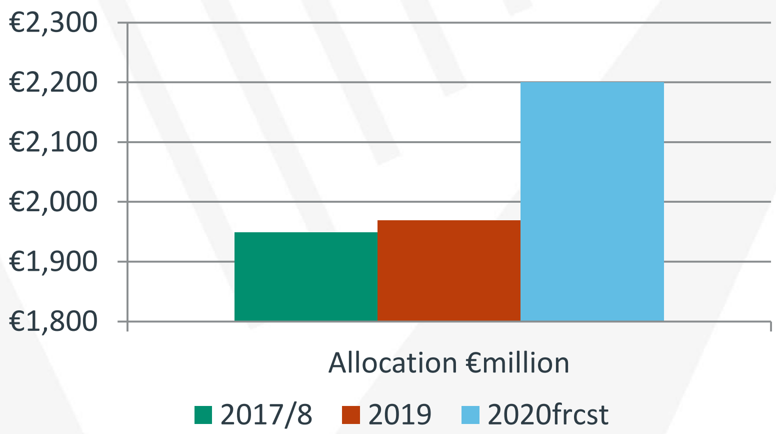
- Launched 2018
- Based on ICMA Green Bond Principles – Use of proceeds model
- Governed by a Working Group of government departments and managed by the NTMA
- Compliance reviews by Sustainalytics

Irish Rail train at Avoca on the Dublin to Rosslare route. Heavy rail was allocated some €400m from ISGBs in 2019

January 2021 Update

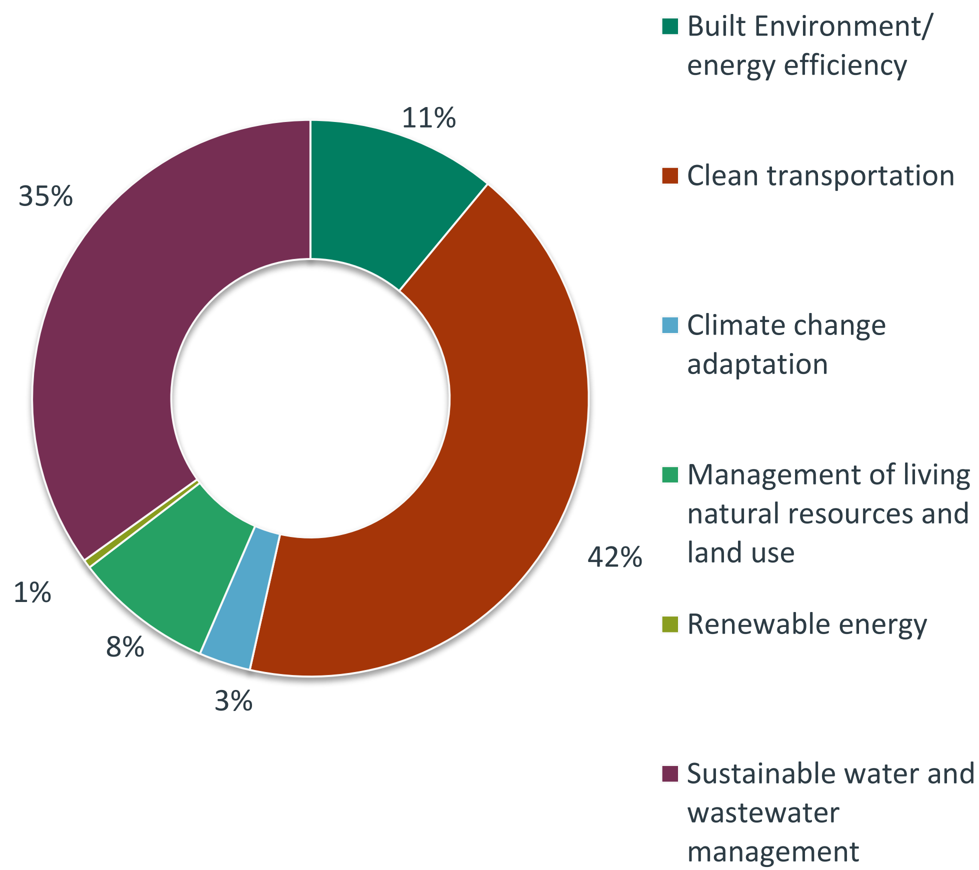
- €6.1bn nominal outstanding
- €3.9bn allocated to eligible green projects since inception
- €2.2bn remaining to be allocated to eligible expenditure in 2020
- Issuance through two syndicated sales and one auction
- Pipeline for eligible green expenditure remains strong
- ISGB 2019 Allocation Report
- ISGB 2017/2018 Impact Report

Allocation of ISGB funding has focussed on Water/Waste management and transportation



Construction of the new water treatment plant at Vartry (March 2020)

Allocation per eligible green category 2019



Irish Sovereign Green Bond Impact Report 2018: Some 50 Impact measures reported

Some highlights from Report*

- Built Environment/ Energy Efficiency
  - Energy saving (GigaWattHours) : 621.06
  - GHG emissions reduced/ avoided in tonnes of CO_2 : 150.5
  - Number of homes renovated : 27,549
- Clean Transportation
  - Number of public transport passenger journeys : 268.66 million
  - Additional km of cycling infrastructure works (feasibility/ design/ screening phase) : 85km
  - Take-up of Grant Schemes/ Tax foregone provided (number of vehicles) : 15,712
- Climate Change Adaptation (2017 and 2018)
  - Number of properties protecting from flooding on completion : 7,403
  - Amount of damages/ losses avoided on completion : €658 million

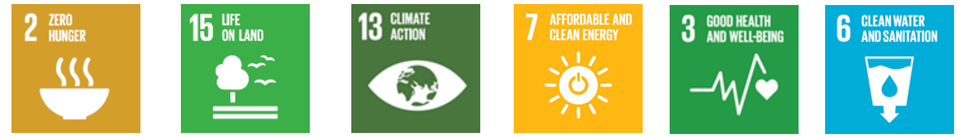
Waterford Greenway

**For a more detailed break-down please see the ISGB 2017/ 2018 Impact Report here*

Irish Sovereign Green Bond Impact Report 2018: Some 50 Impact measures reported

Some highlights from Report

- Environmentally Sustainable Management of Living Natural Resources and Land Use
  - Number of hectares of forest planted : 4,025
  - Number of hectares of peatlands restored : 203
- Renewable Energy
  - Number of companies (including public sector organisations) benefitting from SEAI Research & Innovation programmes as lead, partner or active collaborators : 68
  - Number of SEAI Research & Innovation awards benefitting research institutions : 52
- Sustainable water and wastewater management
  - Water savings (litres of water per day) : 79.1 million
  - New and upgraded water treatment plants : 10
  - New and upgraded wastewater treatment plants: 11
  - Length of water main laid (total) : 416km
  - Length of sewer laid (total) : 74km



Irish peatlands

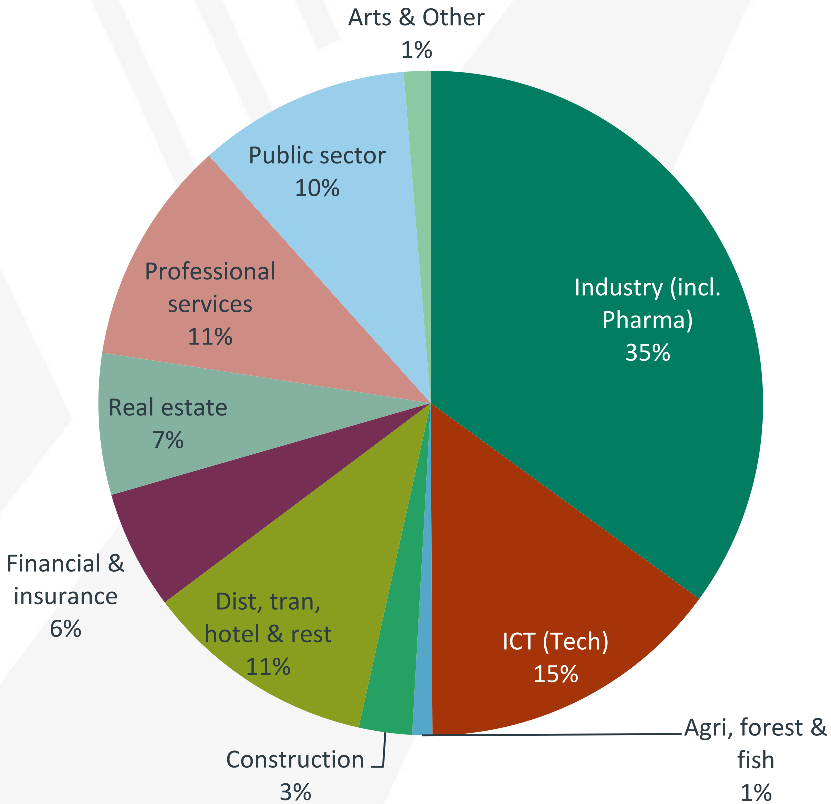
Section 4: Structure of Irish economy

Multinationals distort Irish economy picture but have added resilience during Covid-19

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Multinational activity has distorted Ireland's data; notwithstanding those issues, MNCs have real impact

Multinationals dominate GVA: profits are booked here but overstate Irish wealth generation



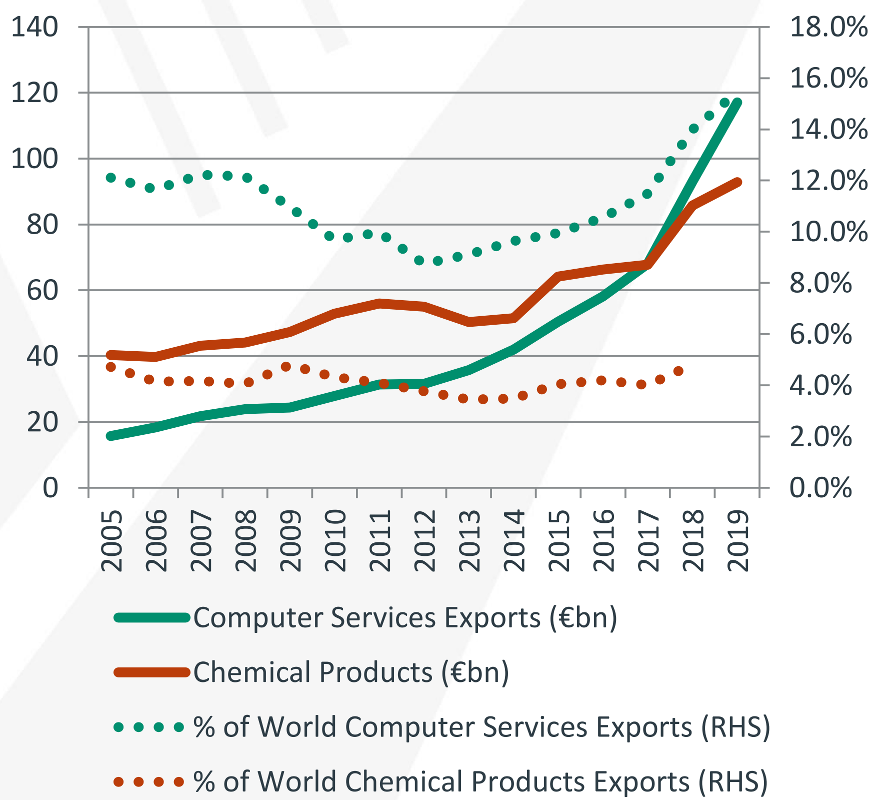
Domestic side of economy adds jobs; MNCs add GVA/high wages

	Share of Employment	Share of Wage Bill (2019)	Share of GVA (2019)	Gross Weekly Earnings € (Q4 2019)
Agriculture	4.5%	1%	1%	N/A
Industry (incl. Pharma.)	**12.2%**	**14%**	**35%**	**916**
Construction	6.2%	4%	3%	821
Dist., Tran, Hotel & Rest	25.4%	20%	11%	571
ICT (Tech)	**5.4%**	**8%**	**15%**	**1,241**
Financial	4.5%	8%	6%	1,235
Real Estate	0.4%	1%	7%	730
Professional	10.8%	13%	11%	810
Public Sector	25.6%	28%	10%	836
Arts & Other	5%	2%	1%	514

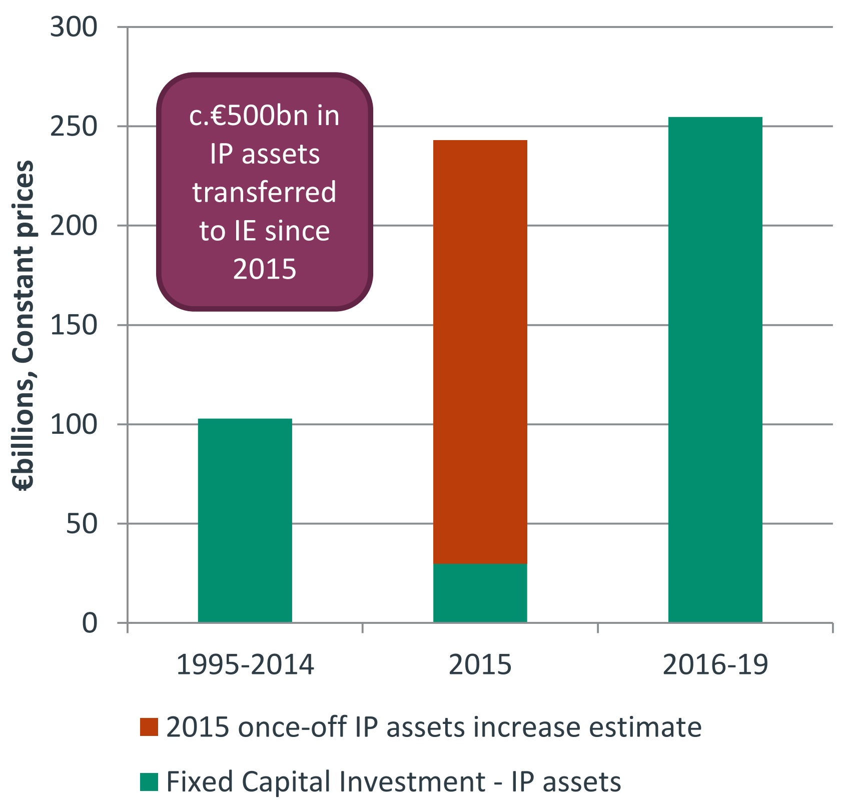
Source: CSO

Sizeable inflows of intellectual property into Ireland by tech. & pharma. in recent years: exports & jobs created

Ireland is a leader in Computer Services; Exports have trebled since 2014



Enormous inflows of IP assets into Ireland since 2015 on the back of BEPS reforms

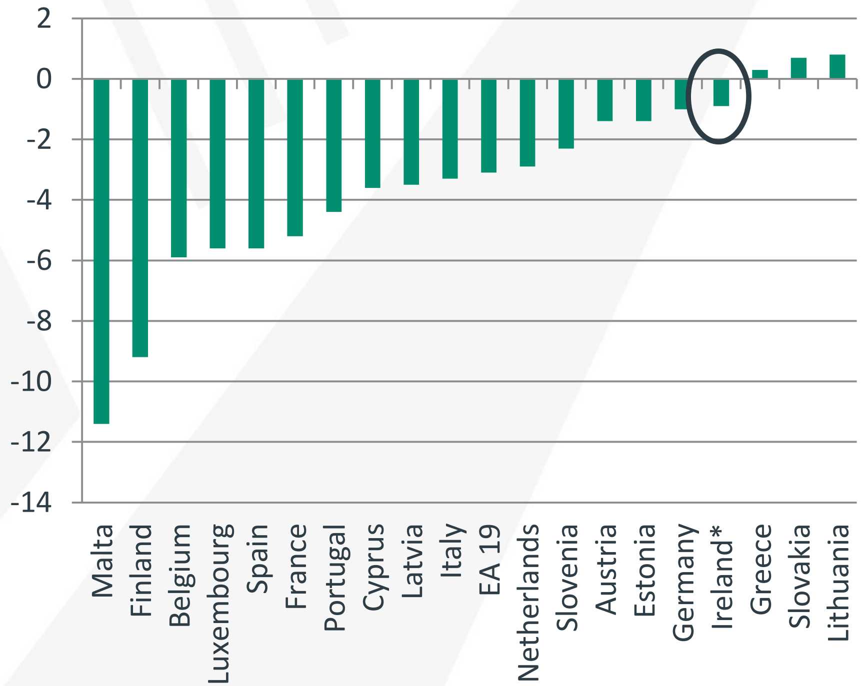


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: IMF, UN Comtrade, CSO, NTMA Economics Calculations

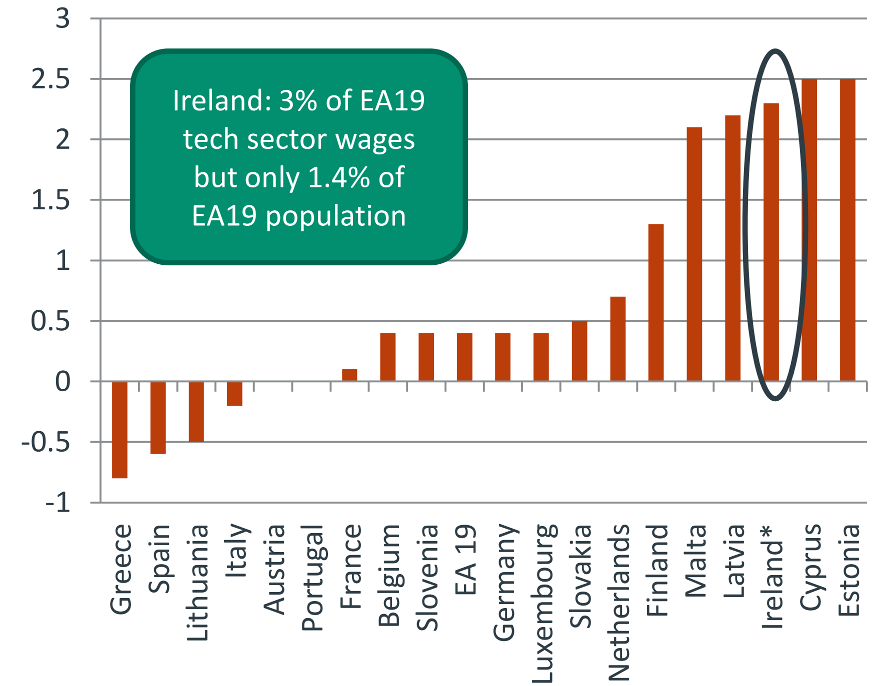
Ireland has deftly navigated the changing global economy landscape in this century (adjusted GVA for Ireland)

Euro Area manufacturing base hollowed out over time: Ireland less impacted than most



■ Manufacturing GVA: pp change in share of economy since 1999

The digitalisation of the economy: Ireland able to grow its tech sector in recent years



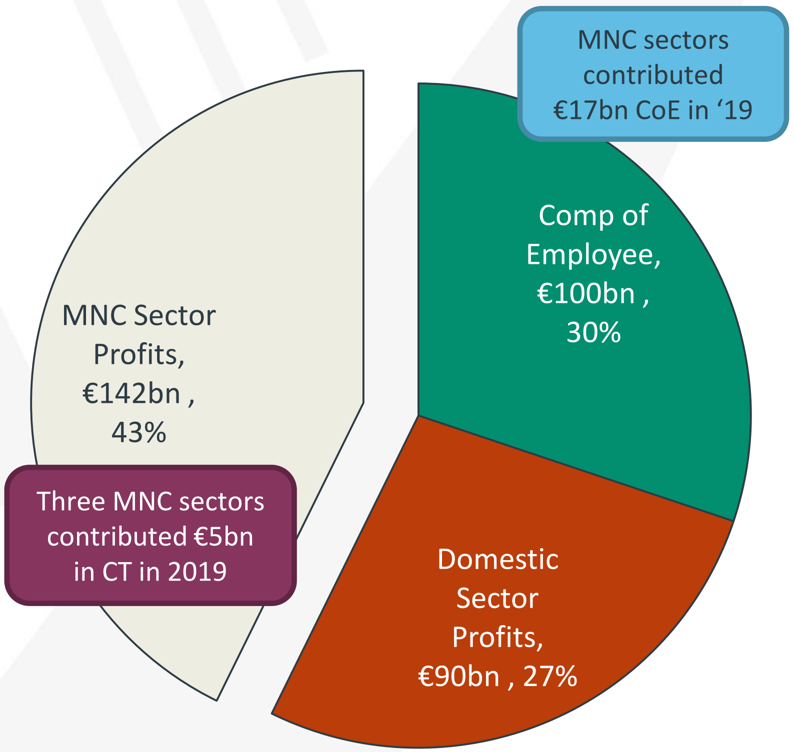
■ Tech Sector GVA: pp change in share of economy since 1999

Source: Eurostat, NTMA calculations

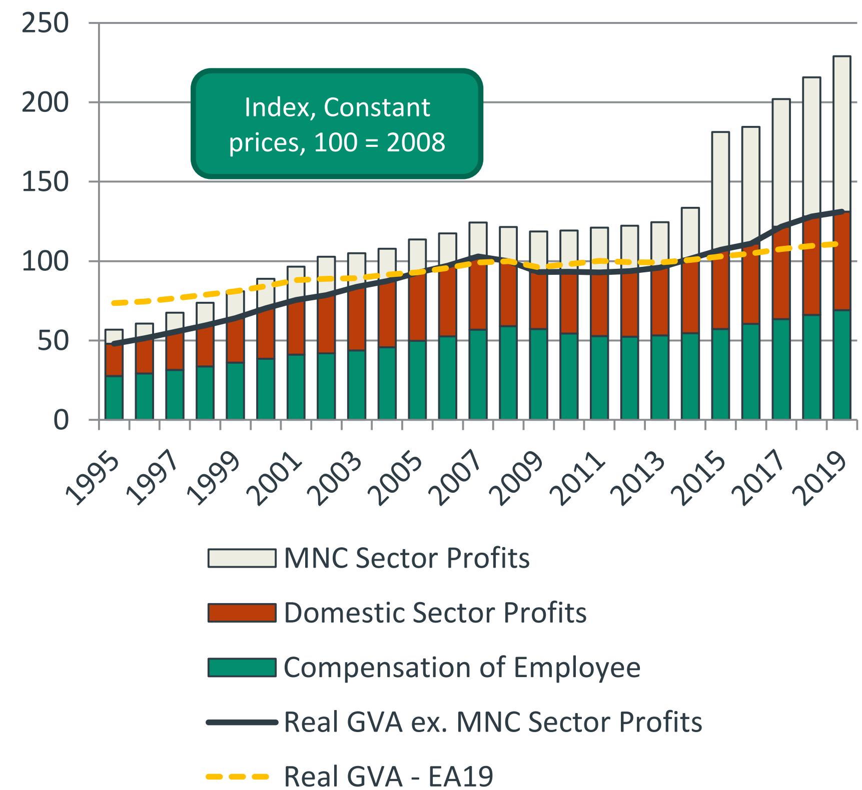
** Ireland's GVA data has been adjusted to strip out the distortionary effects of some of the multinational activity that occurs in Ireland. Specifically a profit proxy is removed from the GVA data for the sectors in which MNCs dominate (parts of Manufacturing, ICT, and renting and leasing services). Unadjusted Ireland's figures are +7.1pp (manufacturing) and +6.5pp (tech sector).*

Adjusting for MNC profits, underlying economy was robust pre-Covid: MNCs add real substance to IE economy

Ireland's income = wages (all sectors) + domestic sectors profits + tax on MNC profits



Pre-Covid, Ireland had a robust underlying economy; compared favourably to EA



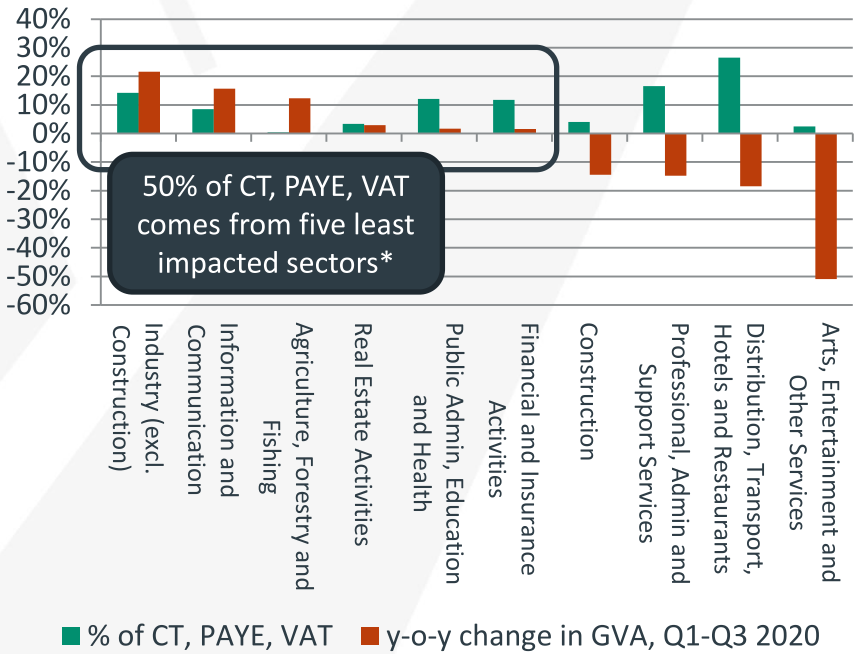
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: CSO, NTMA calculations (Nominal 2019 data used in left chart)
Ireland's GVA data has been adjusted to strip out the distortionary effects of some of the multinational activity that occurs in Ireland. Specifically a profit proxy is estimated for the sectors in which MNCs dominate (MNC sectors = part of Manufacturing, ICT, and renting and leasing services).

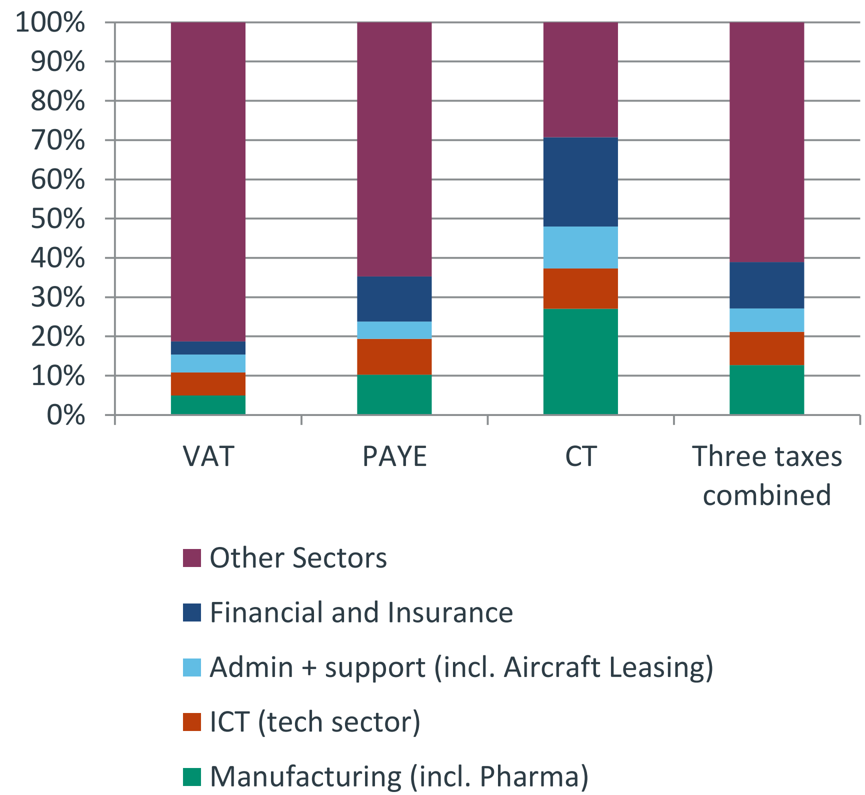
The result of high value MNC activity in Ireland: Economy less impacted by Covid - in particular the tax base

GDP overstates Ireland's progress but is still a good barometer for Revenue, in particular CT and IT

Elasticity	GG Revenue	Income Tax	Corporate Tax	Revenue Ex. CT
MDD	0.96	0.93	2.26	0.86
GDP	1.08	1.03	1.33	1.05



Multinational sectors critical for Income tax and Corporation tax: proven true in 2020

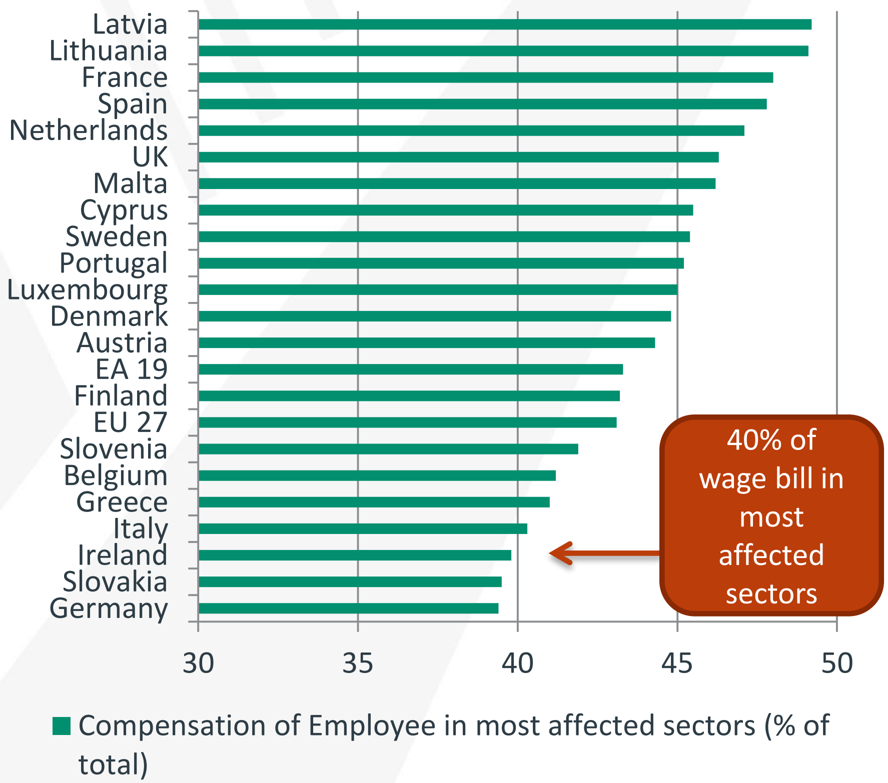


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

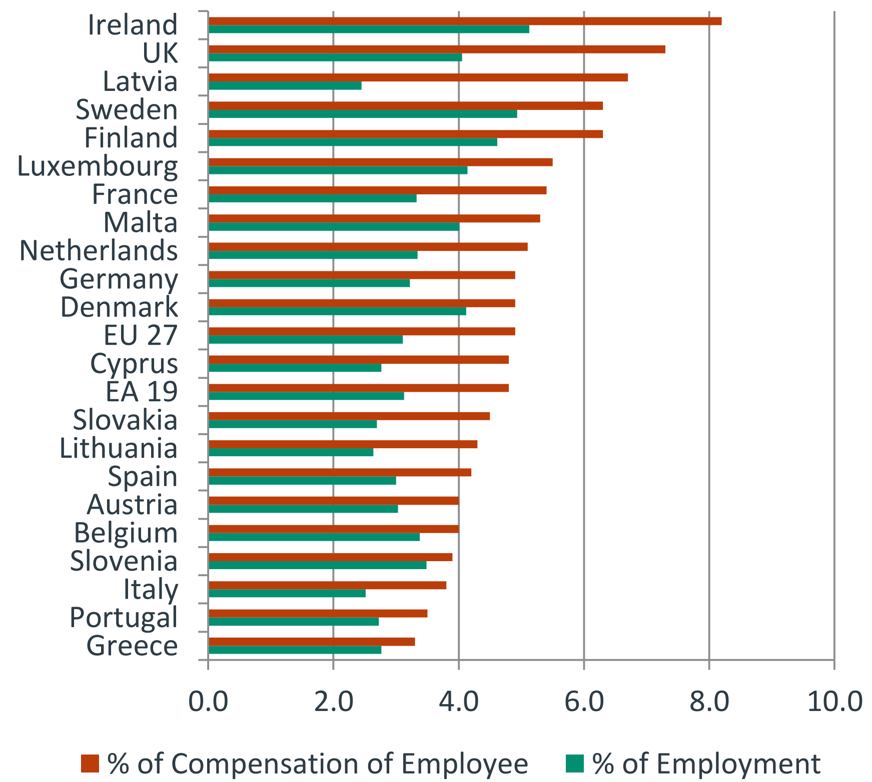
Source: CSO, Revenue, NTMA Calculations
** Agriculture sector pays minimal tax*
Elasticity based on 1995-2019 data.
E = (annual % change in tax)/(annual % change in growth variable)

On a relative basis Ireland could perform better than most EU peers during Covid - thanks to ICT and pharma firms

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



ICT sector has acted as a bulwark in protecting incomes in Ireland



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

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

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

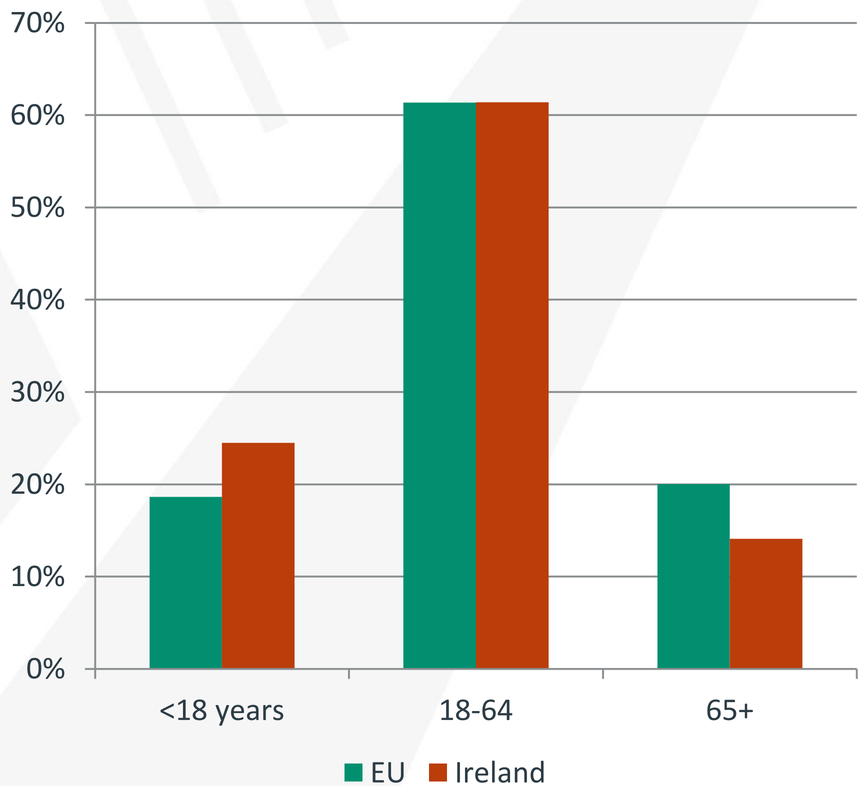
- The OECD has proposed further corporate tax reform - a BEPS 2.0.
- BEPS 2.0 looks at two pillars. The first pillar focuses on proposals that would re-allocate taxing rights between jurisdictions where assets are held and the markets where user/consumers are based. Non-routine profits could - to some - 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 would probably reduce Ireland's corporation tax base but it is impossible to predict the size of the impact.
- Nothing has been decided yet. There are disagreements across countries. OECD has revised the deadline to mid-2021.

Pillar Two: proposal for minimum global tax

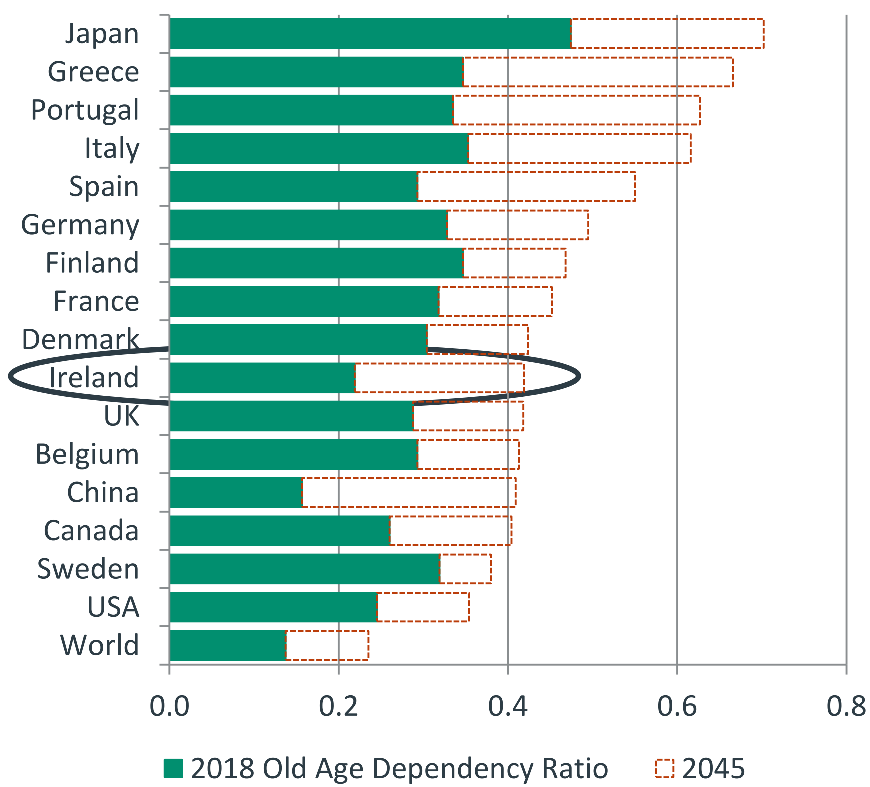
- Pillar Two - the basic idea is to introduce a minimum tax rate with the aim of reducing incentives to shift profits.
- Where income is not taxed to the minimum level, there would an "income inclusion rule" which operates as a 'top-up' to achieve the minimum rate of tax.
- The obvious questions arise:
  - 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.

Outside of sector makeup, Ireland's population helps growth potential: Age profile younger than the EU average

Ireland's population estimated at 4.98m in 2020: younger population than EU



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

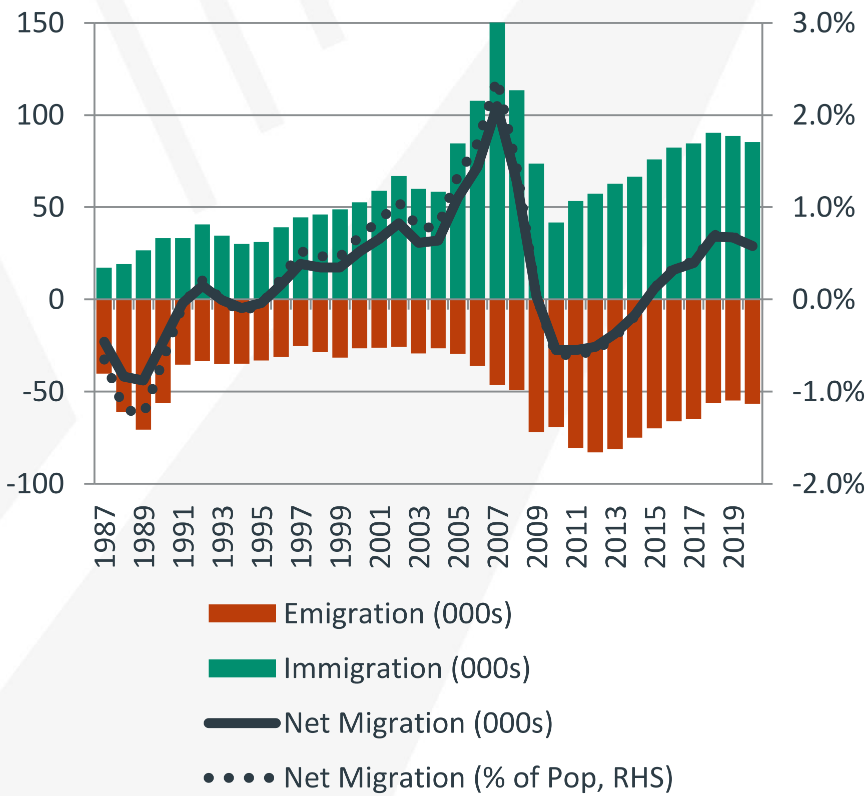


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

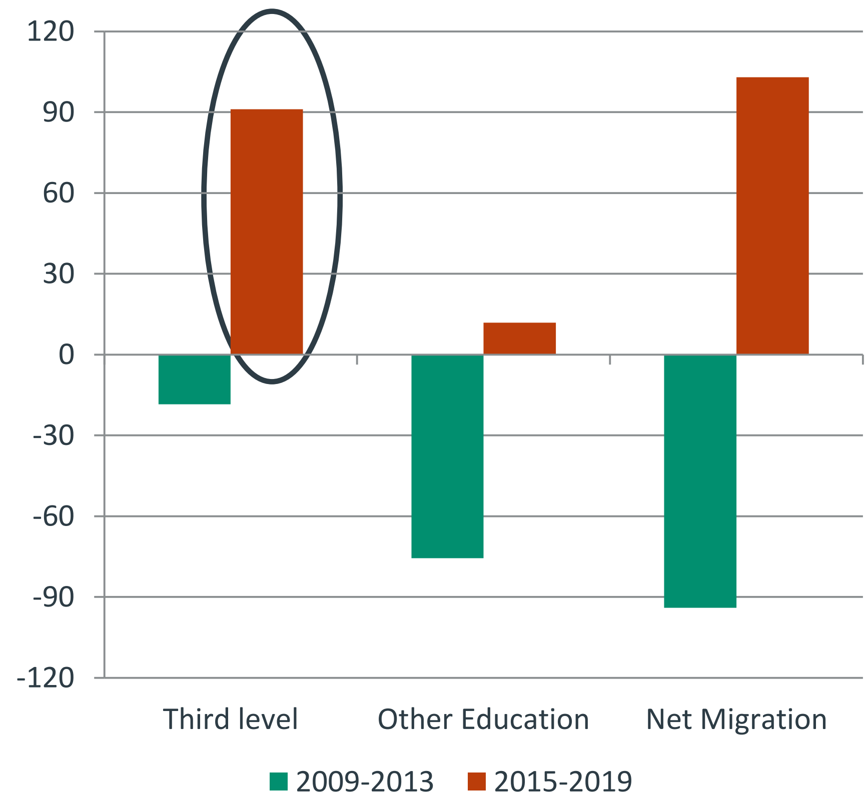
Source: Eurostat (2019) CSO; OECD

Migration has improved Ireland's human capital; post-Covid migration to be closer to zero given travel bans

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



Migration inflow particularly strong in highly educated cohort – work in MNCs attractive

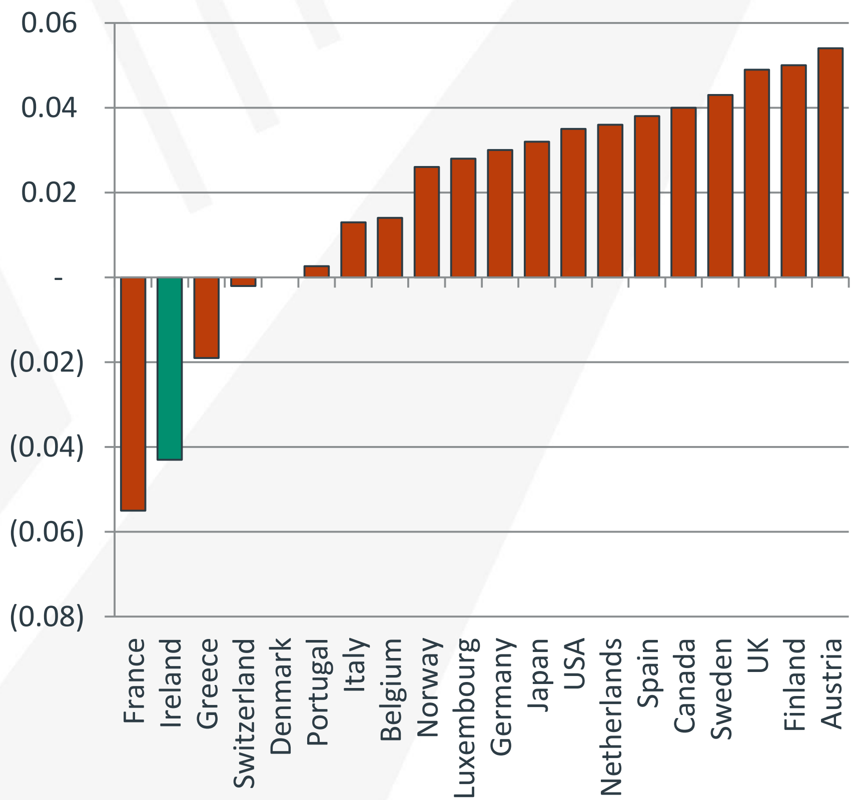


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

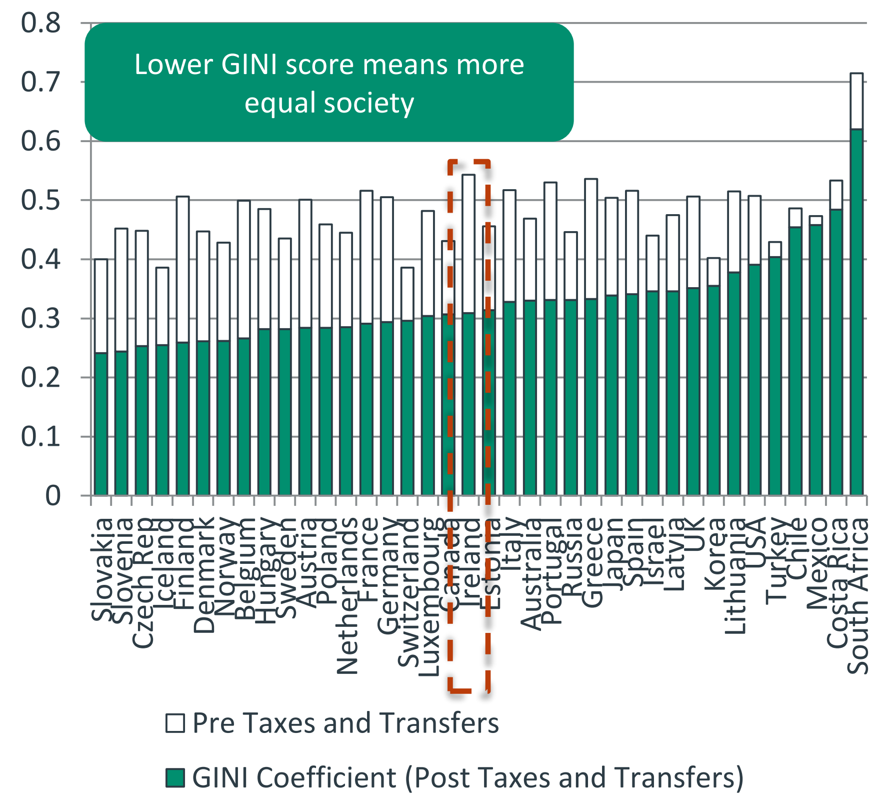
Source: CSO

Income equality has improved: Ireland's progressive system the main driver and cushioned the economy in 2020

Lower inequality (1985-2015): economic rise reduced GINI coefficient unlike others



Progressive system means Ireland is around the OECD average for GINI after tax



Source: IMF, OECD

Section 5: Brexit

Free Trade Agreement agreed at final hour. “Hard Brexit” risk eliminated leaving smaller long term impact

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

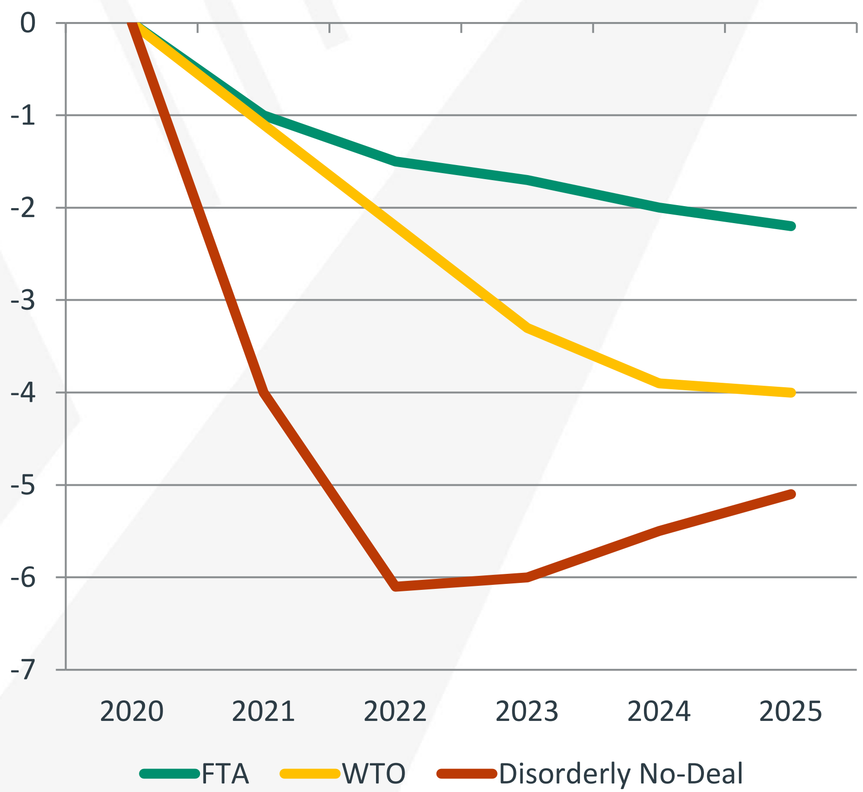
Following intense negotiations, a Free Trade Agreement was agreed in December 2020 allowing for tariff free trade

Main points of FTA

- From January 1, the UK becomes a "third country" outside the EU's single market and customs union. As such without a free trade agreement, trade would be subject to tariffs and quotas.
- Under the deal, goods trade between the two blocs will remain free of tariffs.
  - However, goods moving between the UK and the EU will be subject to customs and other controls, and extra paperwork is expected to cause disruptions.
  - Due to these non-tariff barriers, Brexit will likely result in less trade.
- Under the deal, services trade between the two blocs will continue but again could be hampered.
  - The Agreement provides for a significant level of openness for trade in services and investment.
  - But providing services could be hampered. For example, UK service suppliers no longer have a "passporting" right, something crucial for financial services. They may need to establish themselves in the EU to continue operating.
- The deal in conjunction with the Withdrawal Agreement signed in 2019 significantly reduces the risks concerning a physical border on the island. For more detail see pg. 55.
- Brexit is likely to result in less trade in the long run between the EU and the UK but the deal does avoid the worst case scenarios: Hard Brexit has been averted and the economic impact to Ireland will be modest.

Impact of Brexit on Ireland will be net negative but deal means the shock is smaller and spread over long horizon

Modelled impact on output versus No Brexit baseline: FTA reduces impact significantly



IE trading partners: UK important for good imports (land bridge) & services exports

% of total	Goods (2019)		Services (2019)		Total (2019)	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	30.8	15.5	15.8	18.6	21.9	17.9
UK (ex NI)	8.9	20.6	15.8	6.9	13.5	10.6
NI	1.4	1.9	n/a	n/a	n/a	n/a
EU-27	37.1	36.7	29.8	19.8	32.8	23.8
China	5.9	5.8	2.8	1.3	4.0	2.3
Other	15.9	19.4	35.9	53.4	27.8	45.5

Source: CBI, NTMA analysis

One possible offset to Brexit impact is FDI inflows into IE; service suppliers in UK may need to re-establish in EU

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.
- The UK (City of London) has lost significant degree of access to EU market so there may be more opportunities in time.

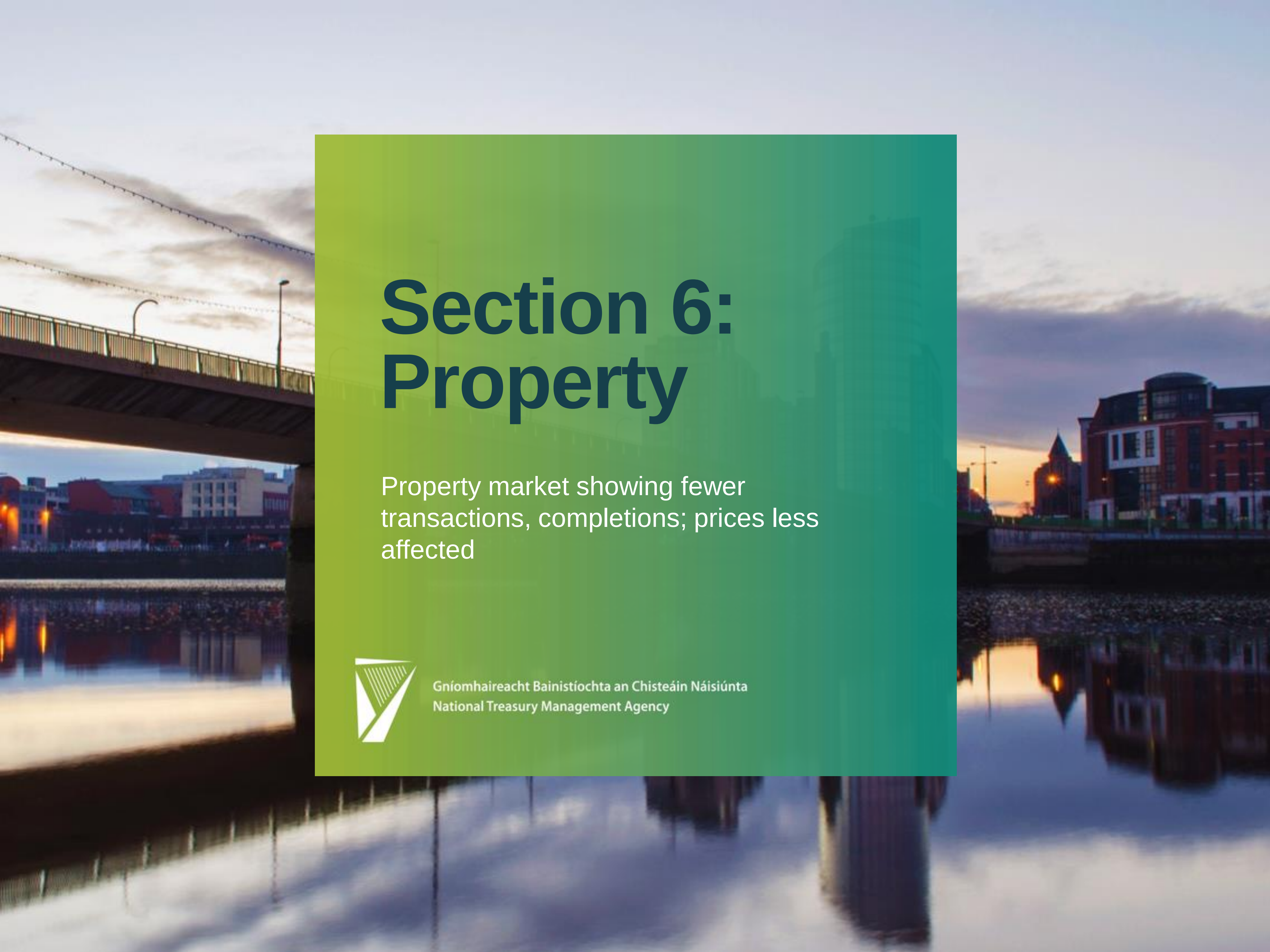
Companies that have indicated jobs have or will be moved to Ireland

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

Withdrawal Agreement in 2019 solves Northern Ireland border issues

Main points of Withdrawal Agreement

- The withdrawal agreement is a legally binding international treaty which works in tandem with the free trade 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: the customs border will be in the Irish sea. Goods crossing from Republic of Ireland to Northern Ireland will not require checks, but goods that are continuing on to the UK mainland 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 layered consent mechanism, which allows Stormont to opt-out under simple majority at certain times.



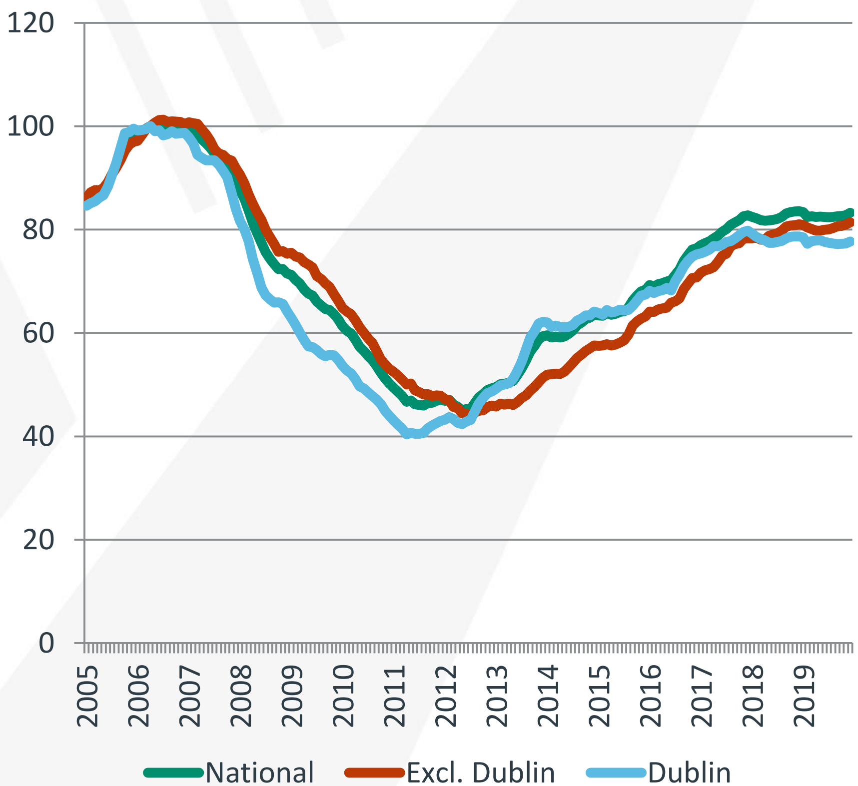
Section 6: Property

Property market showing fewer transactions, completions; prices less affected

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

House prices had plateaued before the virus arrived; Covid price impact minimal so far

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



Covid-19 impact: transactions, approvals down sharply initially; prices stable

Level (y-o-y % change)	Jun	Jul	Aug	Sep	Oct
# of transactions	2,988 (-31.1%)	3,327 (-39.7%)	2,927 (-42.1%)	4,227 (-17.2%)	5,463 (-1.8%)
# of mortgage approvals	2,263 (-49.5%)	3,397 (-33.8%)	3,875 (-11.0%)	4,621 (20.8%)	5,207 (15.4%)
Commencements	1,187 (-36.7%)	1,621 (-25.3%)	1,571 (-45.5%)		
Residential Property Price Index	134.2 (0.0%)	134.4 (-0.7%)	134.5 (-0.9%)	134.7 (-0.9%)	135.5 (-0.4%)
Private Rent Index	113.8 (-1.2%)	114.0 (-1.4%)	114.2 (-1.8%)	114.6 (-2.6%)	114.0 (-3.2%)

Source: CSO; BPFI, PPR, Department of Housing

Housing supply still below demand; supply was catching up before Covid-19 slowed market

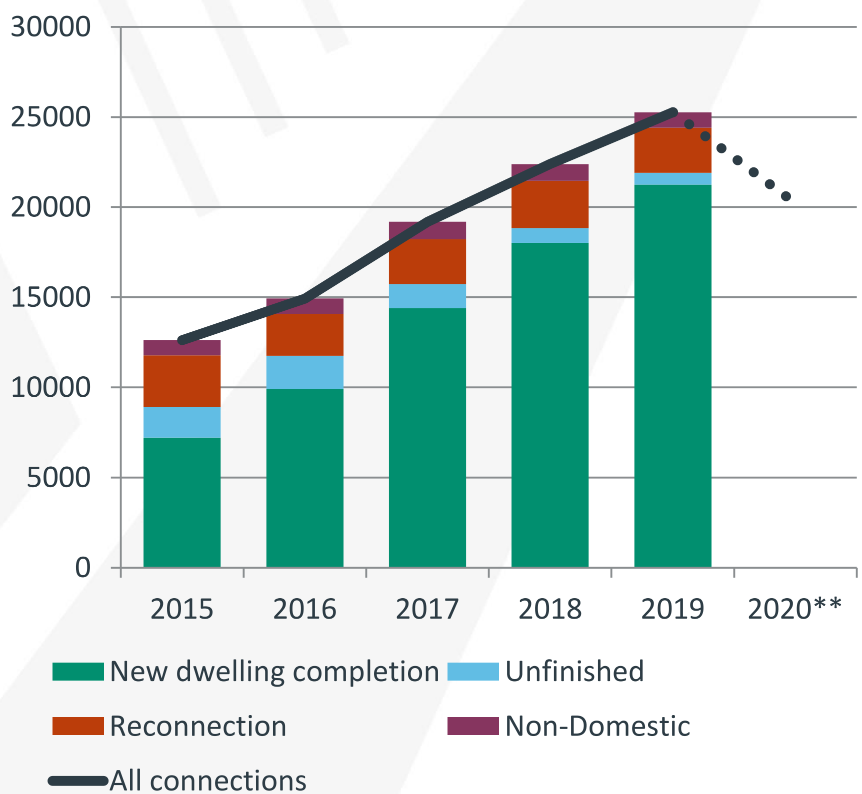
	Average annual housing demand (2020-2030)	New Dwelling Completions (last four quarters)
State	33.6	19.7
GDA	17.2	10.5
Ex-GDA	16.5	9.2

- Greater Dublin Area (Dublin + Mid East) requires the majority of needed dwellings.
- On average, 9,200 housing units are demanded a year in the regions that are not currently funded by markets.

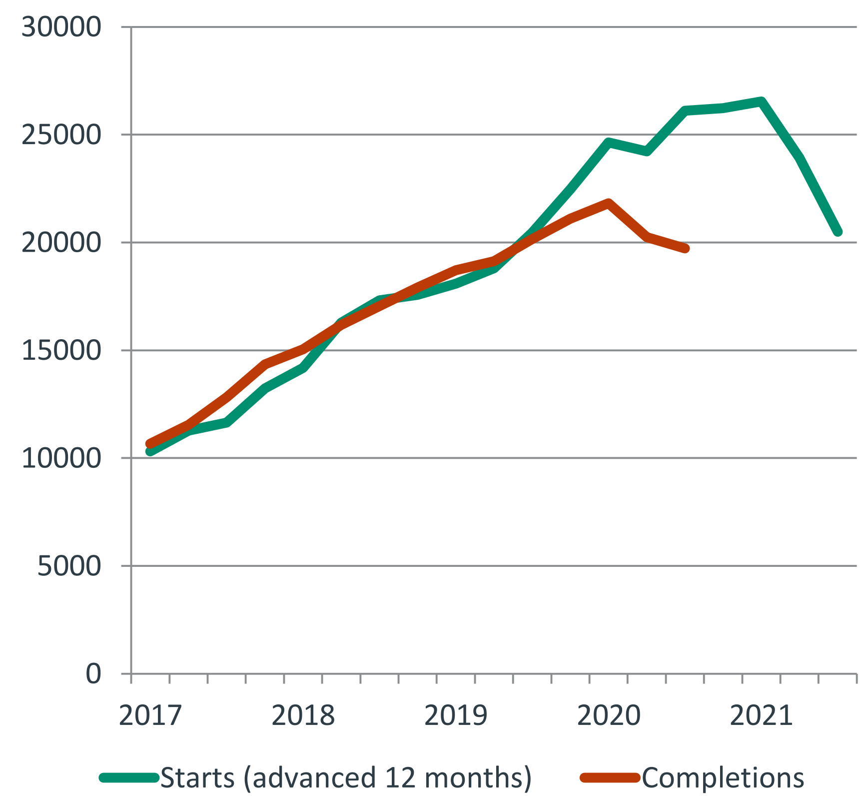
Source: CSO; NTMA analysis

Covid-19 has impacted supply for 2020 and 2021

Housing Completions* above 25,000 in 2019



Housing supply picked up pre-Covid: coronavirus to hamper supply for 2020/21



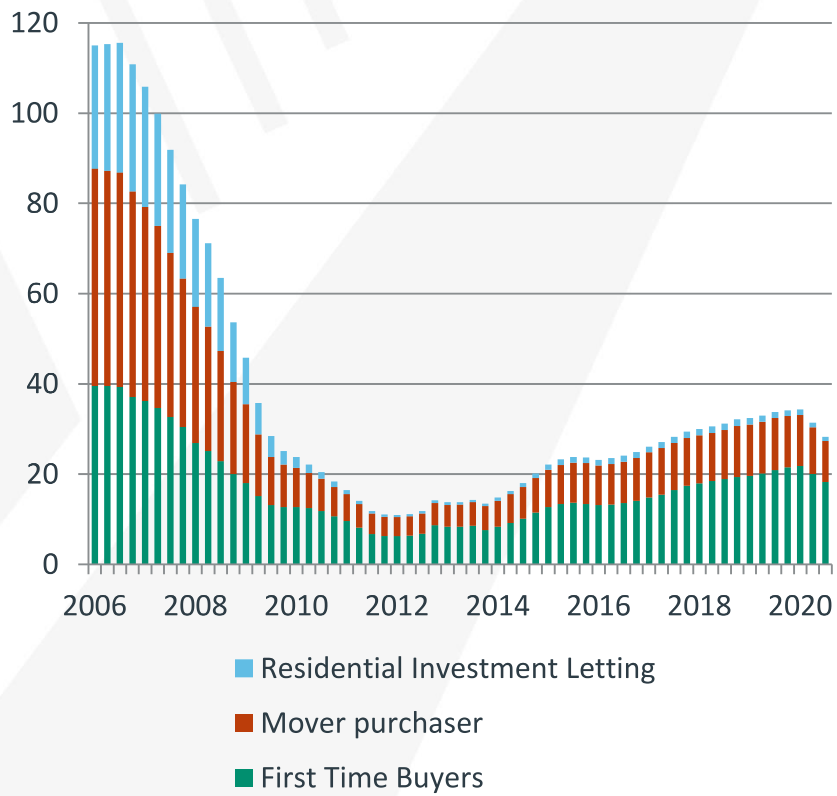
Source: DoHPCLG, CSO, NTMA Calculations

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

* 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.
**2020 completions forecasted down 20% on 2019

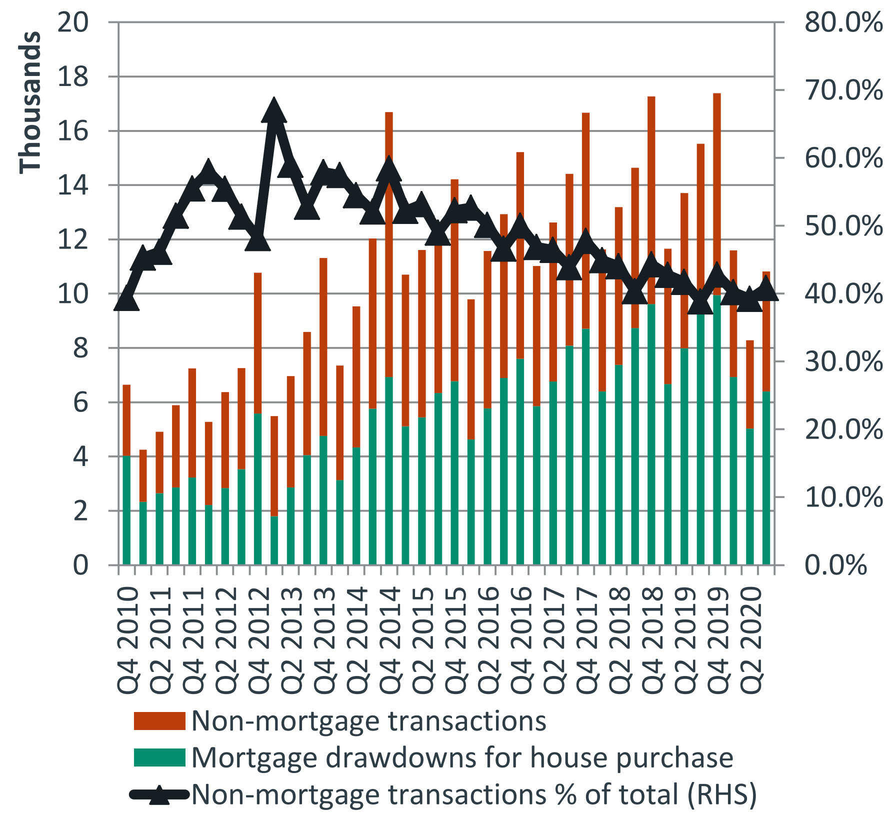
Demand will fall off given lower migration and rising unemployment – demand may drop below 30,000 in ST

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



Source: BPFI (4 quarter sum used)

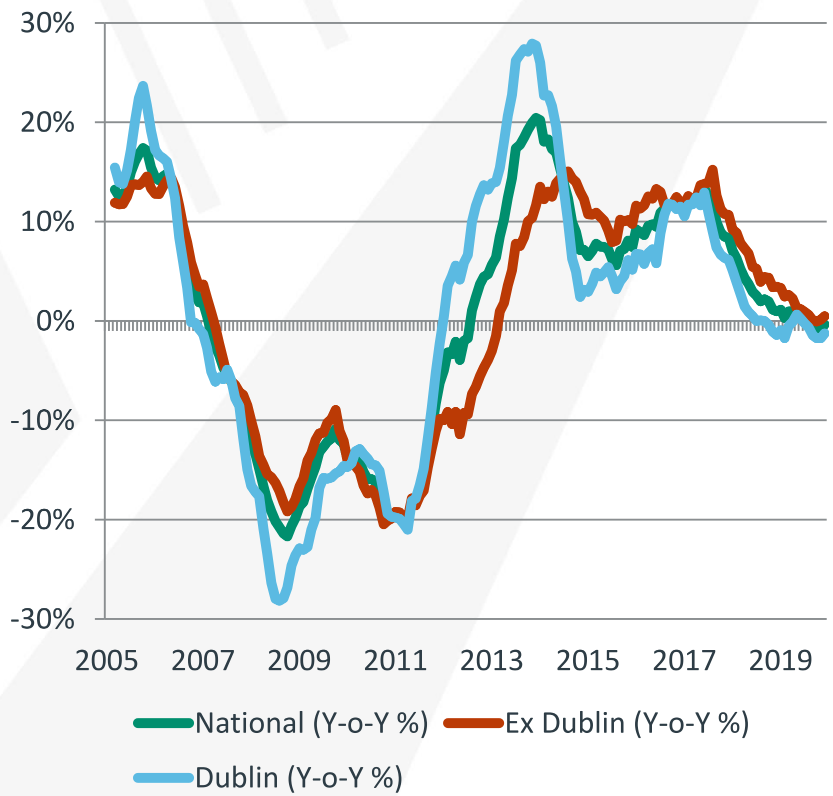
Non-mortgage transactions still important; transaction volume hit in Q2/Q3



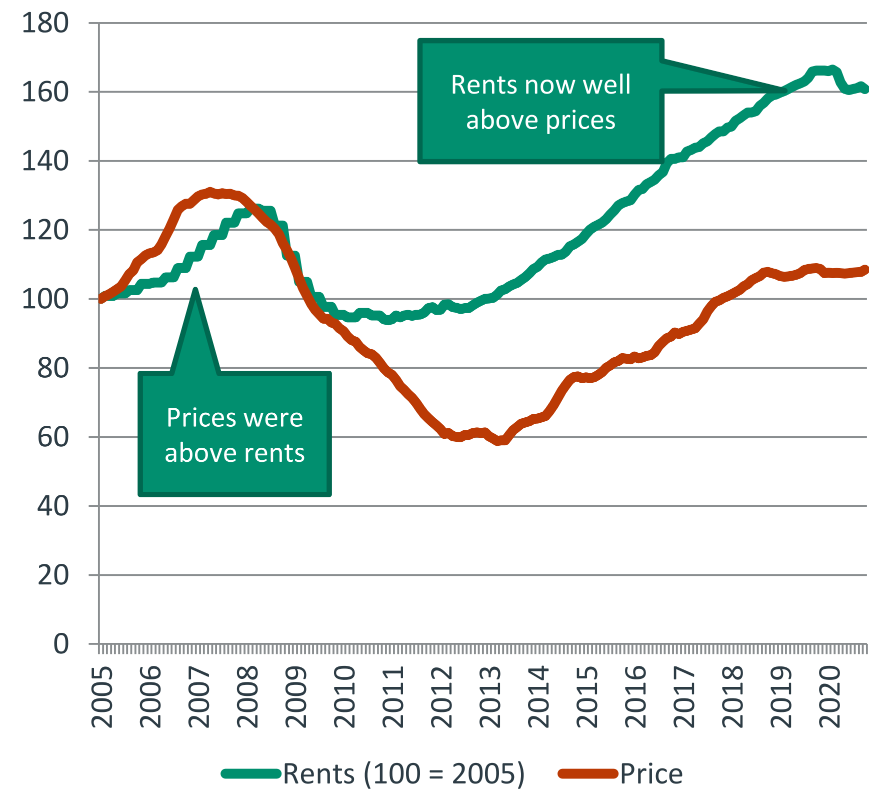
Source: BPFI; Residential Property Price Register

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

Dublin house prices unmoved in 2020



Rents are well above previous peak but have fallen in recent months

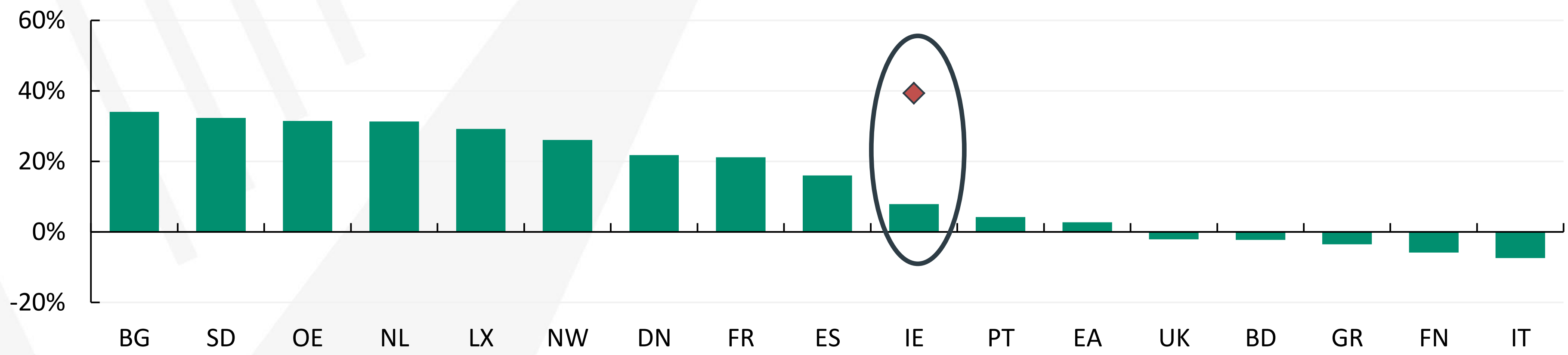


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

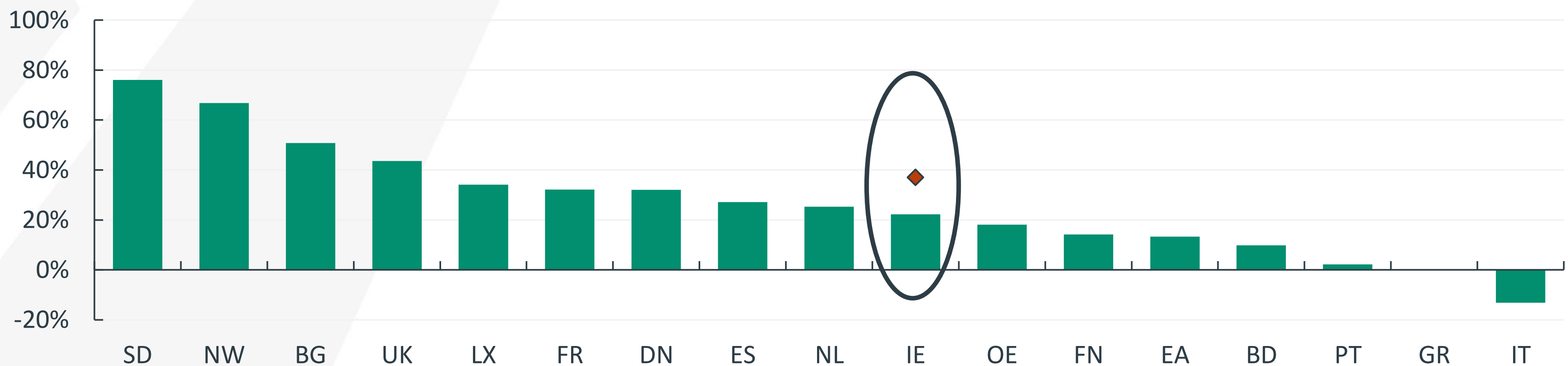
Source: CSO; RTB

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

Deviation from average price-to-income ratio (Q4 2019, red dot represent Q1 2008)



Deviation from average price-to-rent ratio (Q4 2019, red dot represent Q1 2008)



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: OECD, NTMA Workings

Note: Measured as % over or under valuation relative to long term averages since 1980.

Section 7: Banks & other

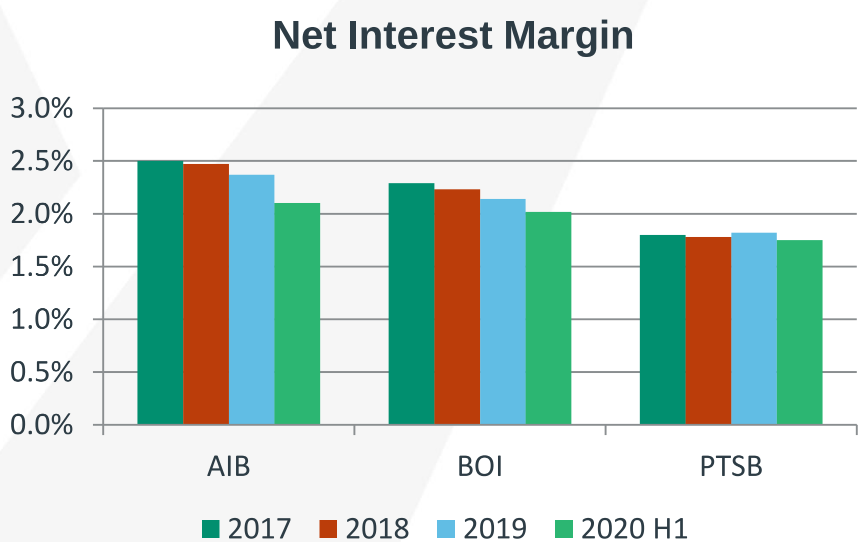
Ireland’s banks now among best capitalised in Europe – complete reverse of late 2000s

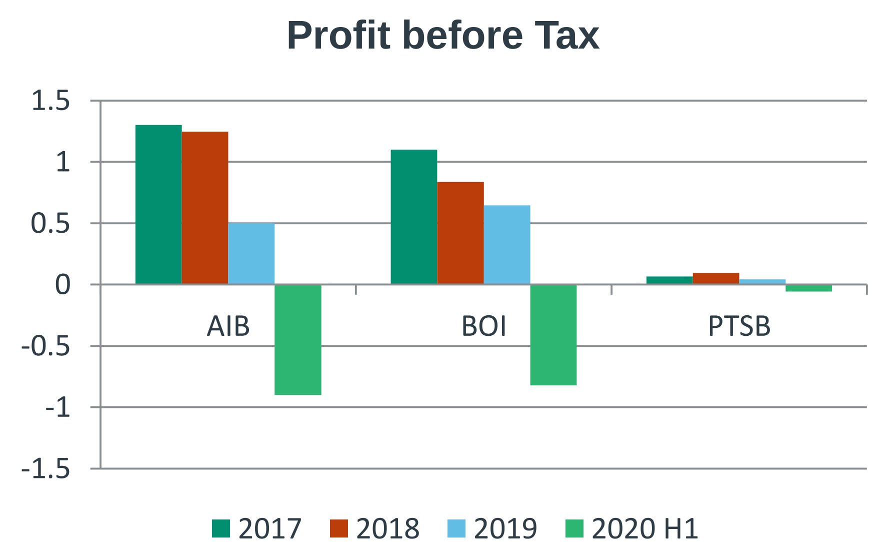
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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: used for debt reduction. Further disposal of banking assets unlikely in the short term given low valuations
- Irish banks had paid dividends in recent years.

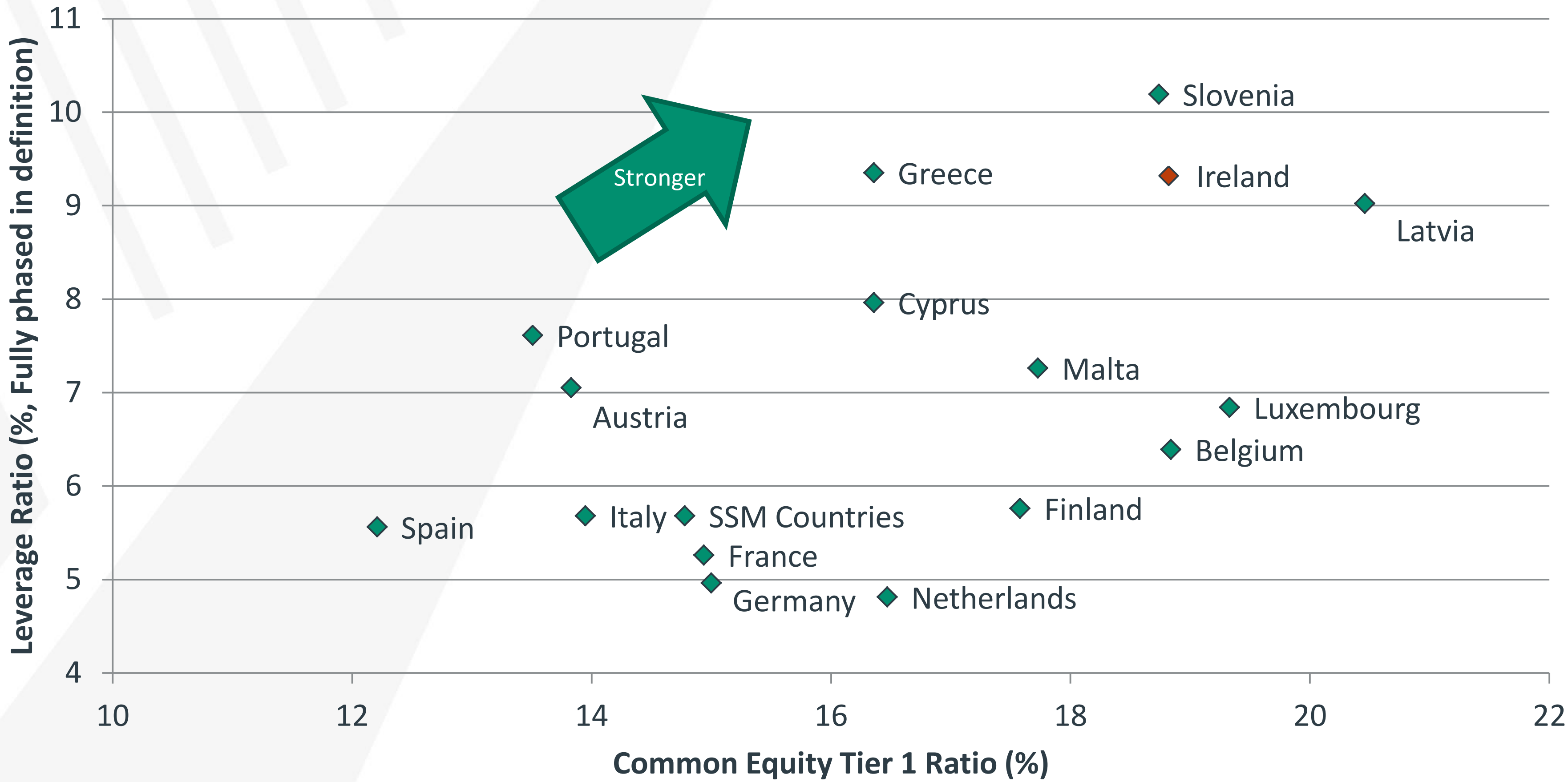
All three pillar banks were profitable in recent years, Covid impact in H1





Source: Annual reports of banks - BOI, AIB, PTSB

Ireland’s banks are among the best capitalised in Europe



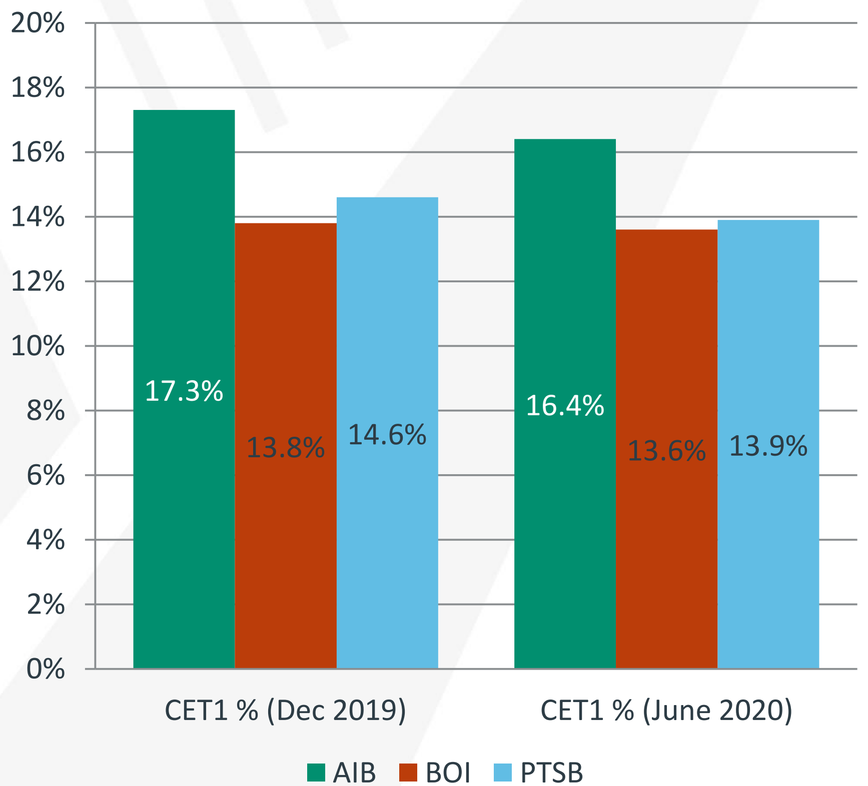
Source: ECB consolidated banking data (Q4 2019)

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.

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

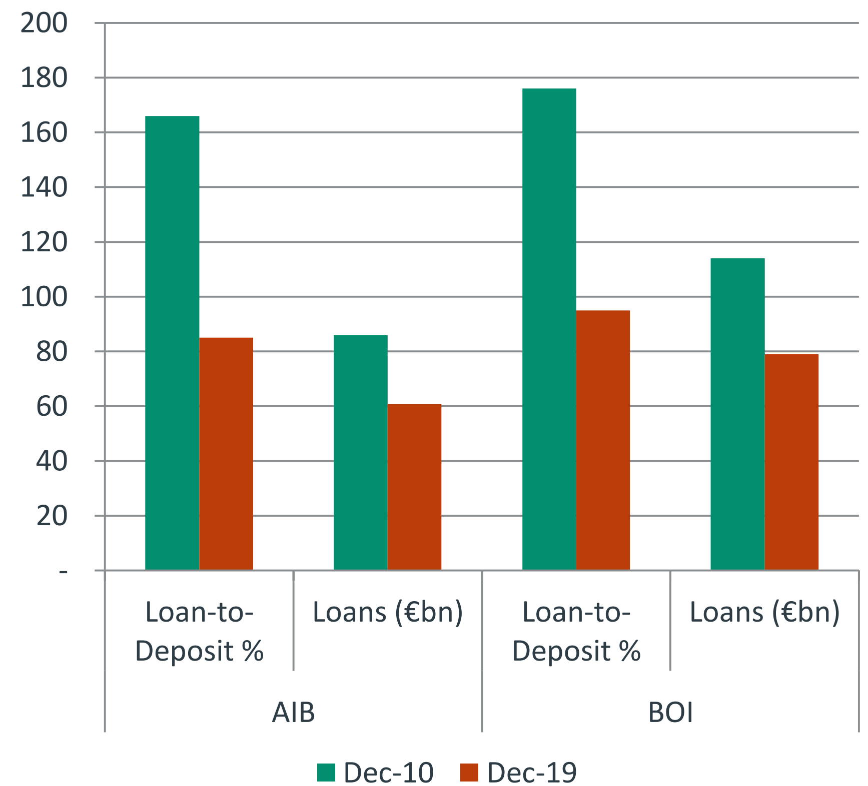
Capital ratios strengthened as banks shrunk and consolidated in last ten years

CET 1 capital ratios allow for amble forbearance in Q2



Source: Published bank accounts

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

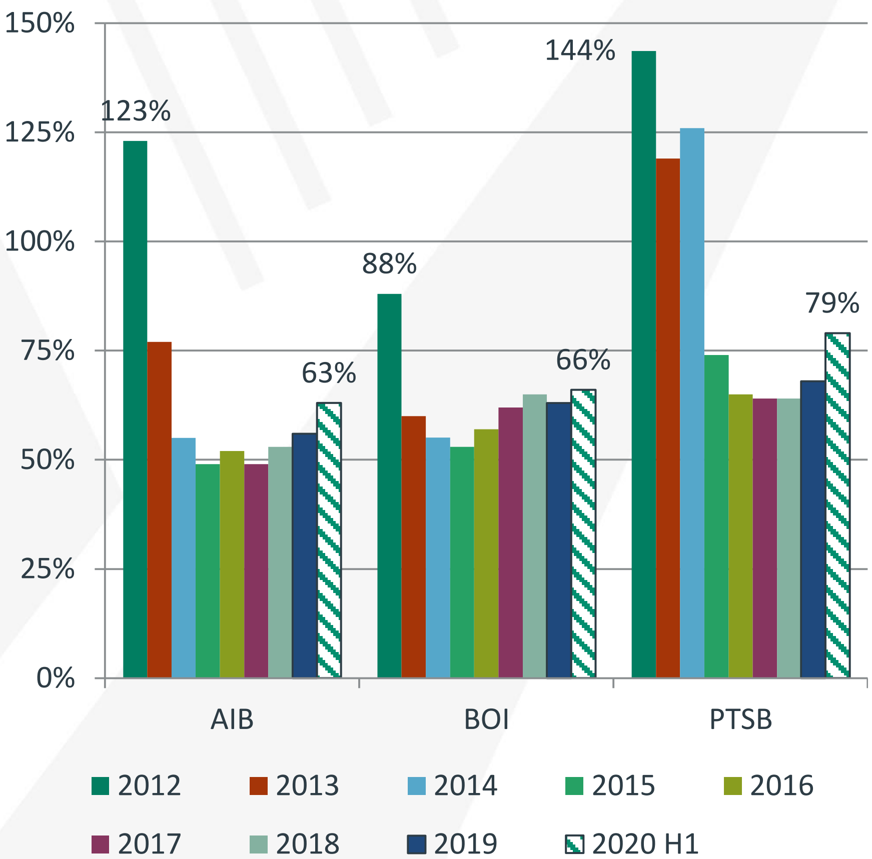


Source: Published bank accounts

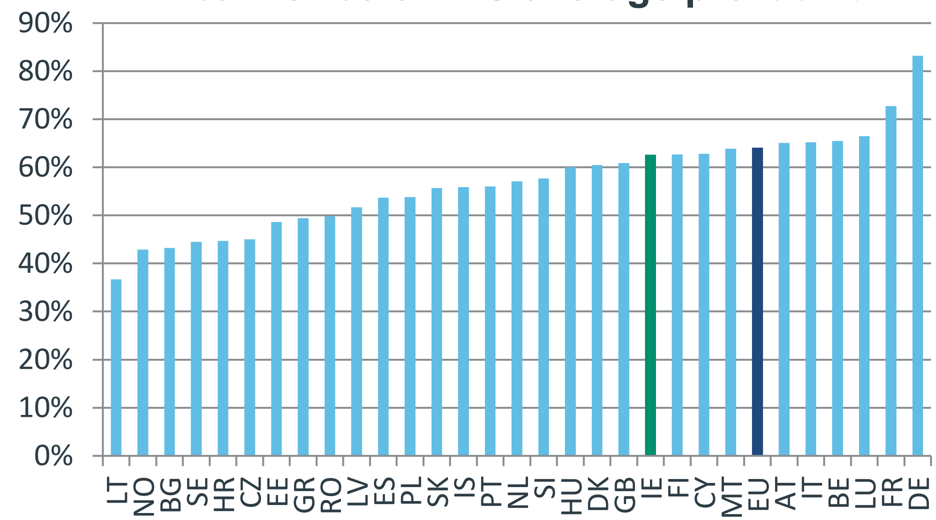
Note: "Transitional" refers to the transitional Basel III required for CET1 ratios
"Fully loaded" refers to the actual Basel III basis for CET1 ratios.

Domestic bank cost base has risen due to Covid

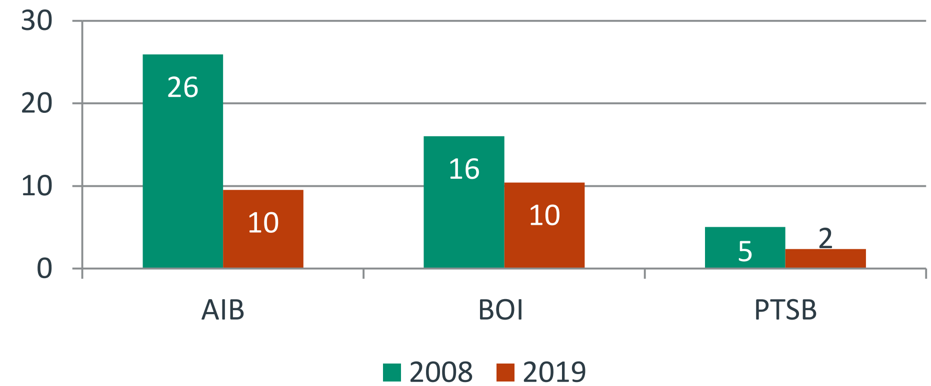
Cost income ratios increased …



… IE banks* below EU average pre-Covid



Staffing (000s) halved post crisis

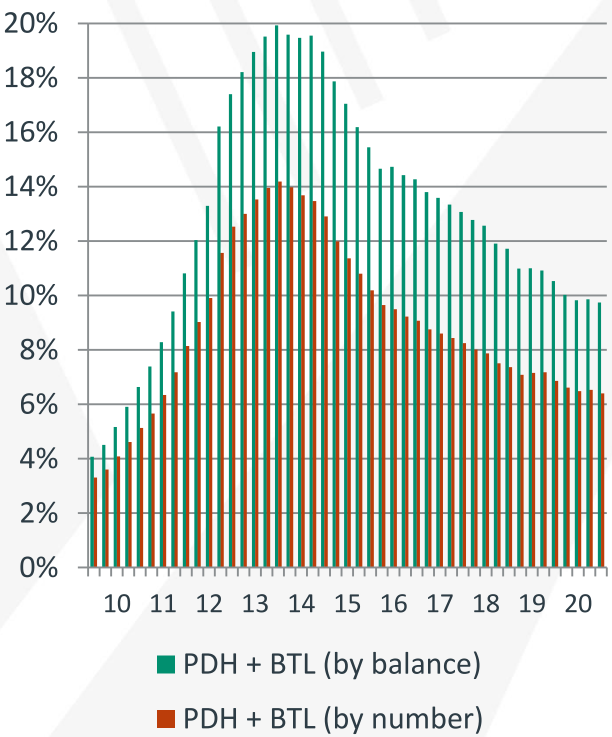


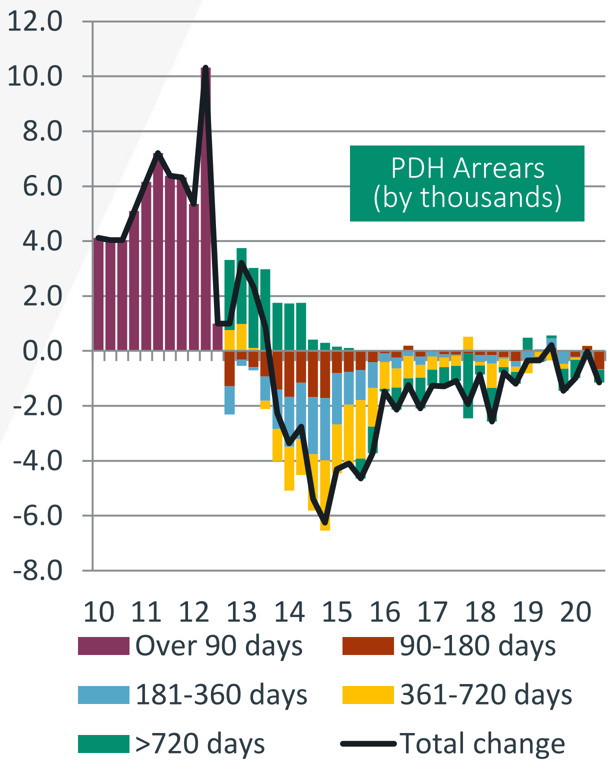
Source: Annual reports of Irish domestic banks, EBA

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

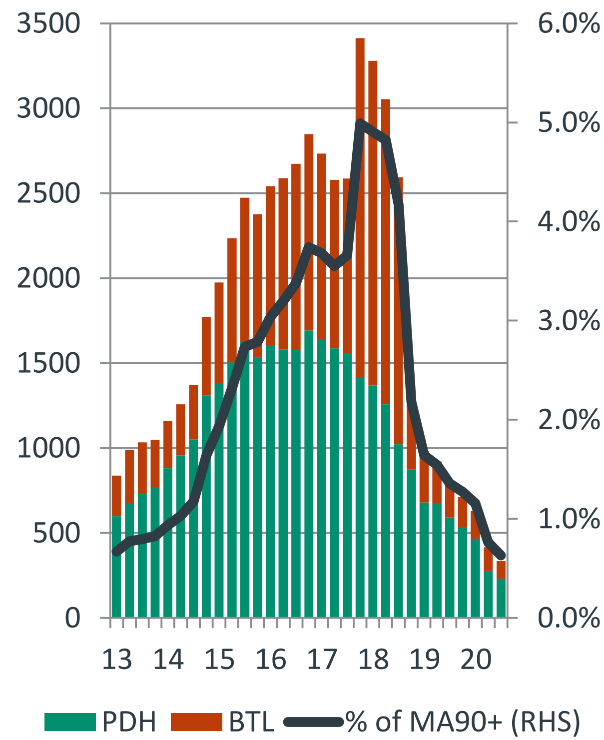
Irish residential mortgage arrears may reverse course in 2020

Mortgage arrears (90+ days)





Repossessions*



Source: CBI

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

* Four quarter sum of repossessions. Includes voluntary/abandoned dwellings as well as court ordered repossessions

The European Commission's ruling on Apple annulled in court; further appeal by EC means case continues

- Back in 2016, the EC had 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. The Irish Government closed this provision on December 31st 2014.
- Apple appealed the ruling, as did the Irish Government. <u>The General Court granted the appeal in July, annulling the EC's ruling.</u>
- This case had nothing to do with Ireland's corporate tax rate. It related to whether Ireland gave unfair advantage to Apple with its tax dealings. <u>The General Court has judged no such advantage occurred.</u>
- The Commission has decided to appeal to a higher court: the European Court of Justice. This process could still be lengthy. Pending the outcome of the second appeal, the €13bn plus EU interest will remain in an escrow fund.
- The NTMA has made no allowance for these funds in any of its planning throughout the whole process. <u>There is no need to adjust funding plans given the decision by the General Court in July or by the Commission's decision to appeal.</u>

Disclaimer

The information in this presentation is issued by the National Treasury Management Agency (NTMA) for informational purposes. The contents of the presentation do not constitute investment advice and should not be read as such. The presentation does not constitute and is not an invitation or offer to buy or sell securities.

The NTMA makes no warranty, express or implied, nor assumes any liability or responsibility for the accuracy, correctness, completeness, availability, fitness for purpose or use of any information that is available in this presentation nor represents that its use would not infringe other proprietary rights. The information contained in this presentation speaks only as of the particular date or dates included in the accompanying slides. The NTMA undertakes no obligation to, and disclaims any duty to, update any of the information provided. Nothing contained in this presentation is, or may be relied on as a promise or representation (past or future) of the Irish State or the NTMA.

The contents of this presentation should not be construed as legal, business or tax advice.