Ireland: Recovery momentum meets external headwinds

NTMA Investor Presentation

April 2022

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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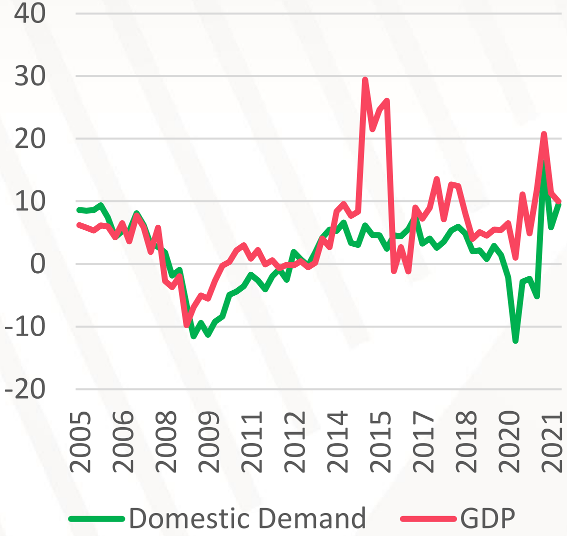
Summary

Irish economic resilience recognised in credit rating upgrades

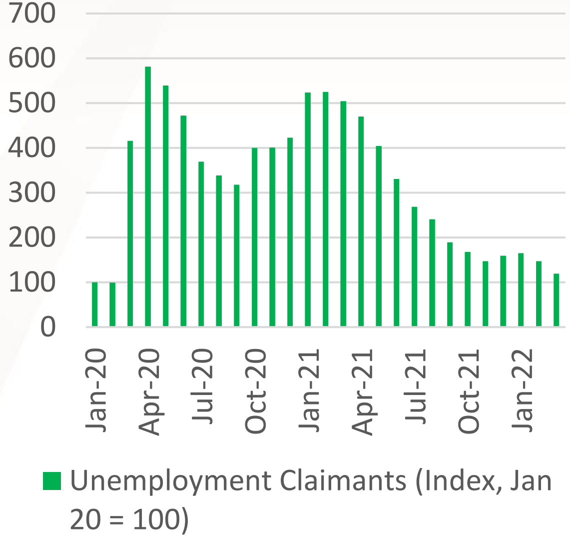
Domestic economic momentum strong

Covid restrictions removed but Ukraine conflict will likely slow recovery

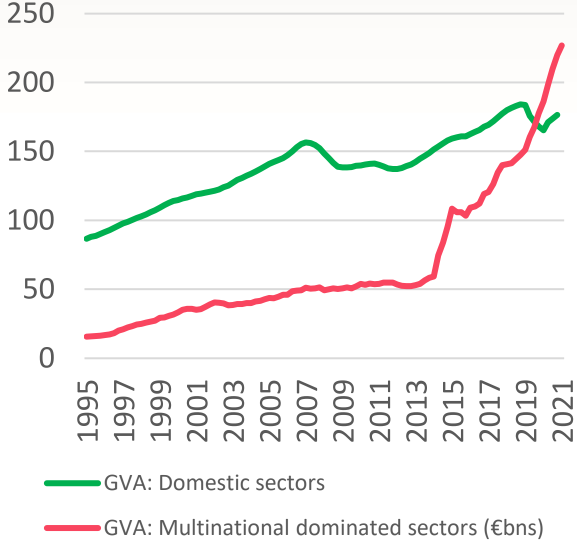
Domestic demand* gives better picture of Covid economic impact



Unemployment** resumes its decline following temporary uptick due to Omicron



Value added from ICT & pharma has given Ireland resilience



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Source: CSO, NTMA Analysis

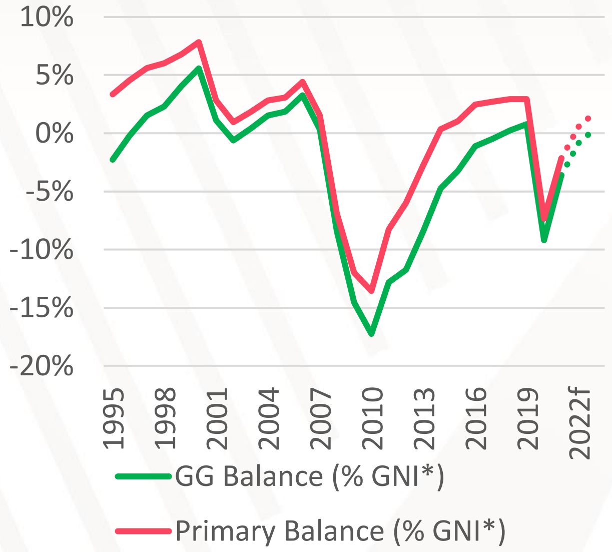
** Domestic demand series accounts for multinational activity and known as modified final domestic demand (excludes inventories)*

*** Covid-adjusted unemployment discontinued from March 2022 as PUP scheme ended.*

Debt to GNI* rose modestly in 2021

Large fiscal response to Covid but Government aims for primary surplus in 2022

2021 GG deficit estimated at €8.1bn (3.6% of GNI*)



Debt position reversed by Covid response

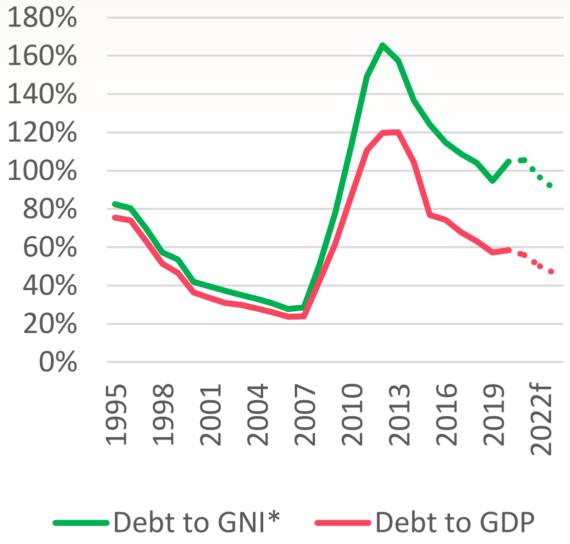
Debt-to-GNI*
(106% 2021; 95% in 2019)

Debt-to-GG Revenue
(243% 2021; 232% in 2019)

Average interest rate
(1.4% 2021, from 2.2% in 2019)

Debt-to-GDP^
(56% 2021, from 57% in 2019)

Debt to GNI* likely to fall below 100% by end 2022



Source: CSO, Department of Finance forecasts
^ Debt to GDP is not an appropriate metric to use for Ireland

Medium term economic challenges

Recovery amid energy price shocks, deficit reduction and broadening inflation

Recovery

National accounts confirm strong 2021 recovery – 6.5% growth in MDD

Covid restrictions relaxed in 2022. Direct exposure to Ukraine conflict is limited but indirect impact on energy will be significant

Fiscal

Deficit improved in 2021 and set to fall again in 2022 as economic recovery buoys revenues

Public spending intended for Covid could now be re-assigned to humanitarian needs

Inflation

High inflation in Ireland similar to other developed economies

Inflation rates likely to ease in time but broad range of products seeing prices rise. Era of near zero inflation in Ireland likely over

2022 funding range is €10-14bn

NTMA funded €4.5bn so far this year

Cash

Improving fiscal position alongside NTMA's strategy of prefunding means Ireland has a strong cash position

This affords the NTMA a large degree of flexibility

>10 years

Weighted average maturity of debt one of longest in Europe

NTMA issuance since 2020 has a weighted average maturity of 12.6 years

AA-

Ireland rated in the AA category with nearly all major rating agencies

Despite Covid impact, Fitch and DBRS upgraded their rating for Ireland to AA space. Moody's at A+ but with positive outlook

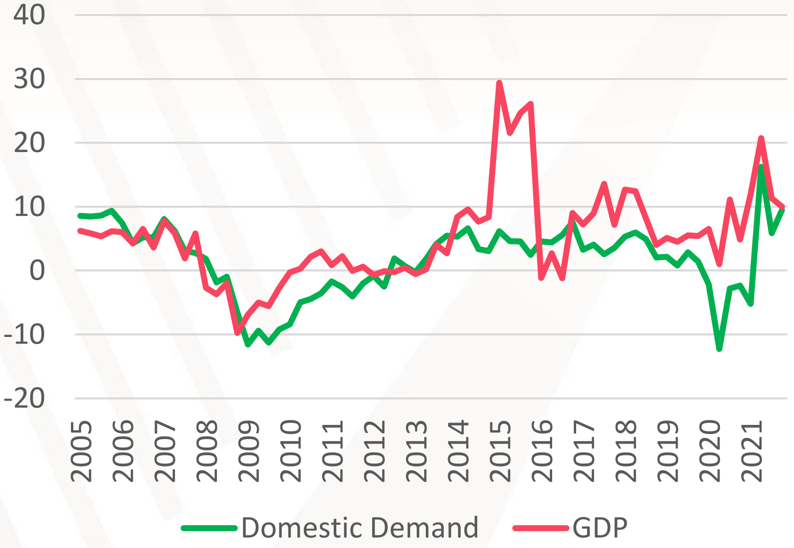
Macro

Data show domestic strength but energy prices are a headwind

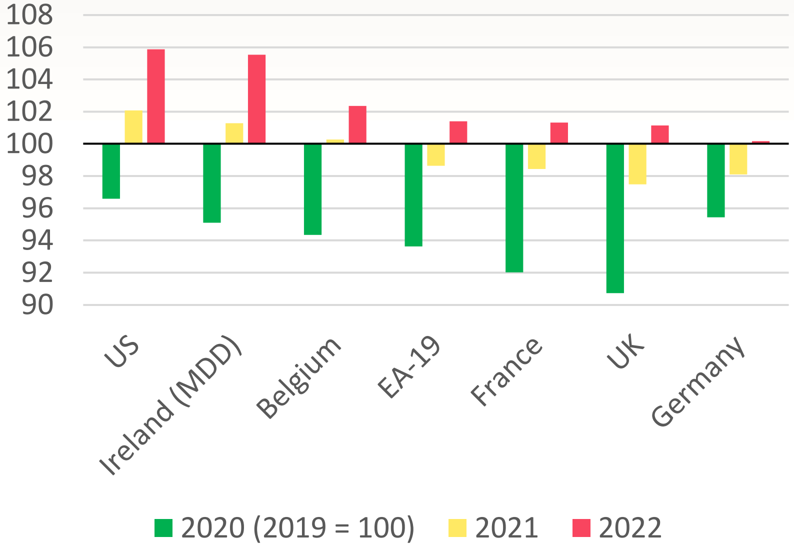
Ireland performed relatively well in 2021

GDP growth does not tell the appropriate story, domestic demand gives the best guide

Modified domestic demand grew by 6.5% and is now higher than levels seen in 2019



2020 Covid impact (-4.9%) smaller for Ireland than EA and UK and ensuing recovery proving stronger than others



Source: CSO, Department of Finance forecasts, IMF forecasts for other economies

Note: MDD for Ireland is modified for multinational activity by Ireland's Central Statistics Office (CSO). MDD = Consumption + Government (current) spending + Modified Investment

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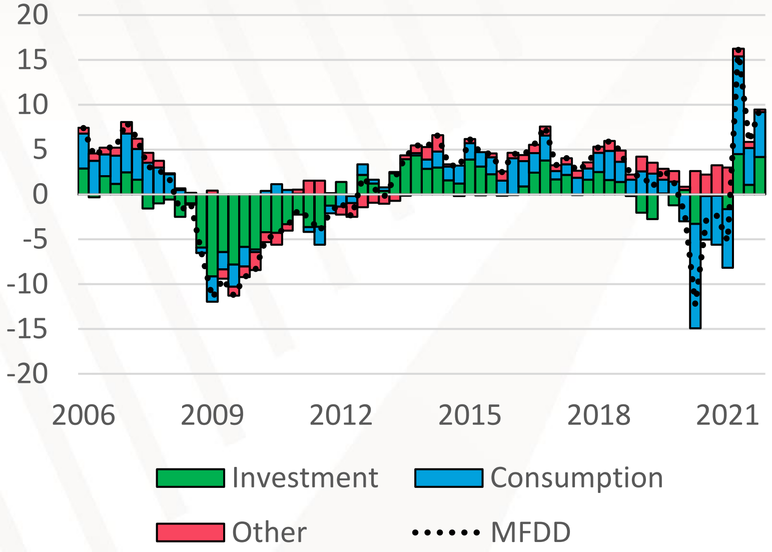
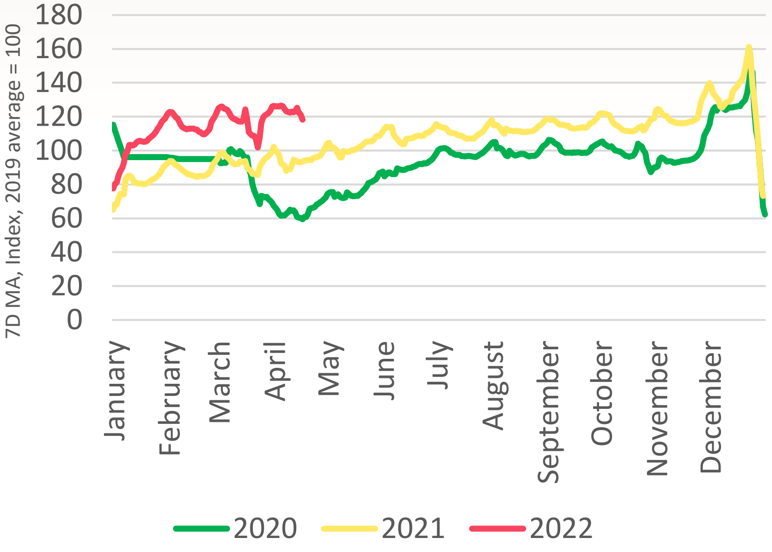
Consumption strength evident in early 2022

2022 saw Covid restrictions on business removed

Recovery in spending began in Q2 2021 (y-o-y growth) and continued into H2



Card spending data show a strong start in 2022 compared to average spending in 2019



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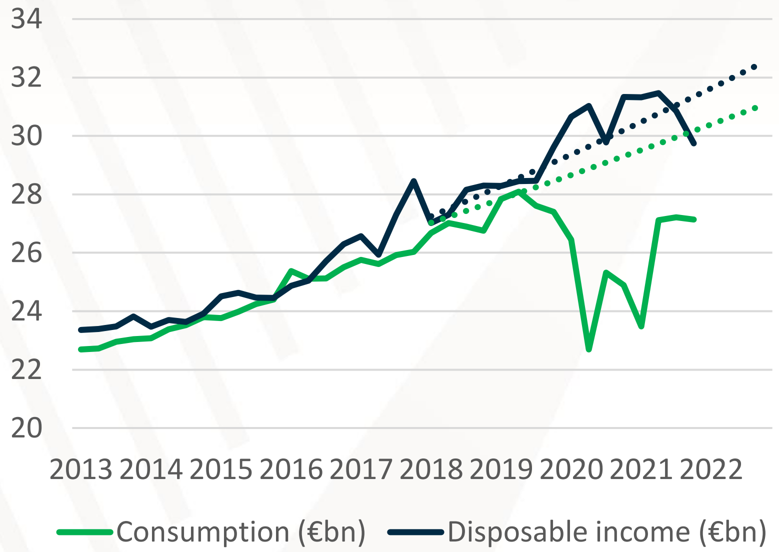
Source: CSO, CBI

** MFDD is a domestic demand series, it accounts for multinational activity and known technically as modified final domestic demand (excludes inventories) ** CBI spending data is nominal data and not seasonality adjusted*

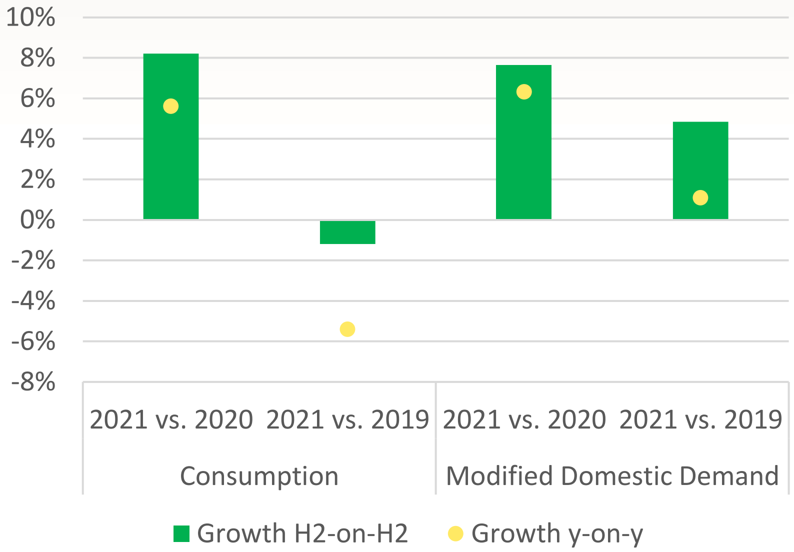
Disposable income close to pre-Covid trend

Consumption not fully recovered, but the second half of 2021 had strong momentum

Consumption below trend and real disposable income hit in Q4 by inflation



Consumption grew 8% in H2 2021 versus 2020



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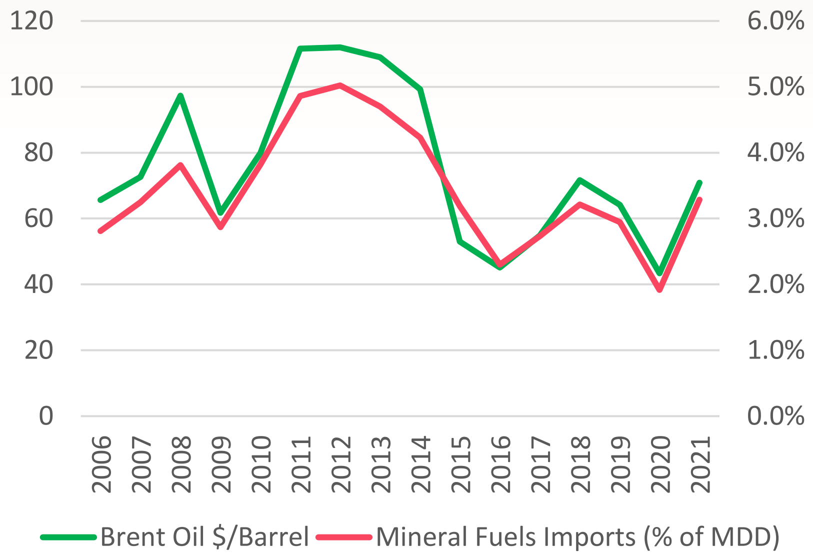
Source: CSO

External environment concerning

Central banks removing extraordinary stimulus in 2022 amid Ukraine conflict

	2021	2022
EA Monetary Policy	Max accommodative	End of PEPP/APP; Rate hike in H2 likely
EU Fiscal Policy	Expansionary	Expansionary
US Monetary Policy	Max accommodative	Further rate increases expected
US growth	Rebound	Modest growth
Oil price	Rising	Elevated
UK growth	Rebound	Modest growth
Euro Growth	Rebound	Modest growth but could slow
Global Inflation	Rising	Elevated in 2022

Ireland has minimal trade links with RUS/UKR but is a price taker on energy imports – elevated prices are a headwind

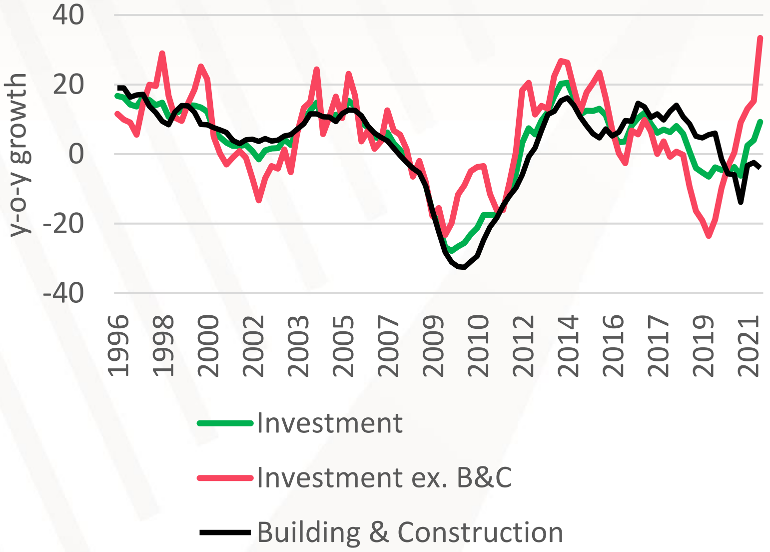


Source: NTMA analysis, CSO, DataStream

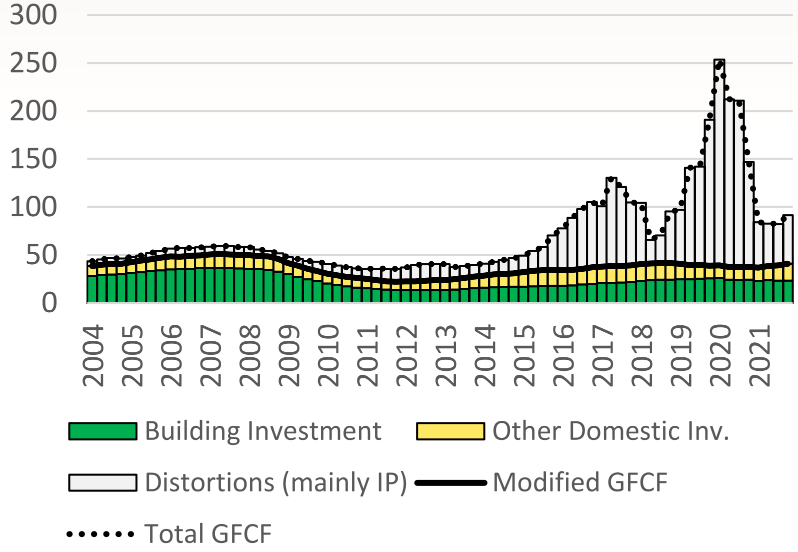
Investment is rebounding

Modified investment is now above pre-pandemic levels

Building and Construction hampered by previous lockdowns; other investment led by computer hardware rebounding



IP distortions less than in previous quarters – surge in 2020 likely tax regime related



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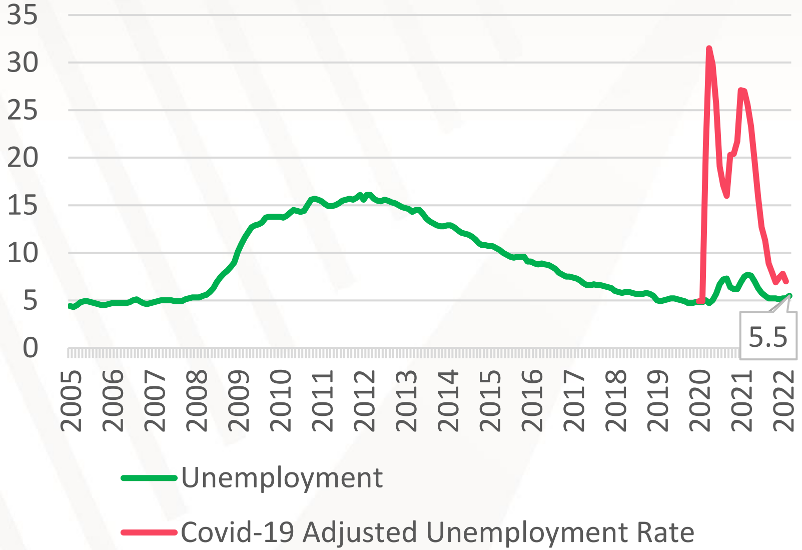
Source: CSO; NTMA calculations

RHS Chart is 4Q sum in Euro billions

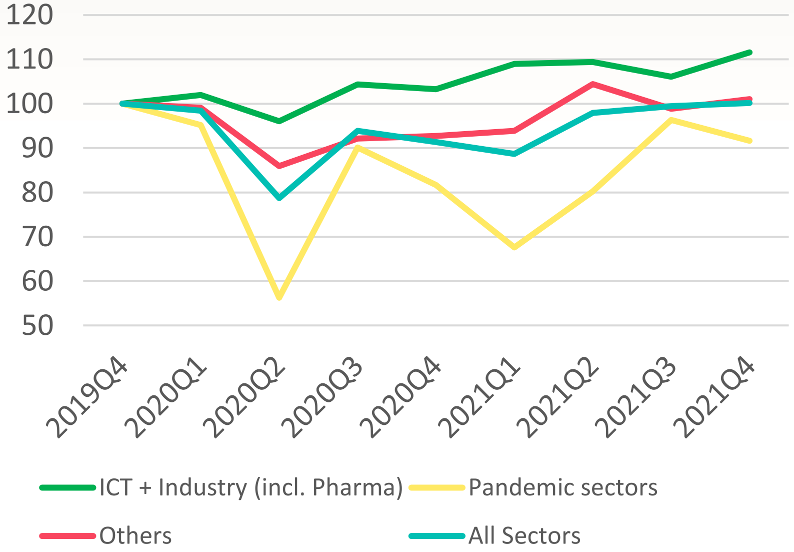
Labour market improves into 2022

Unemployment rate close to pre-pandemic levels

Unemployment rate at 5.5%* in March after temporary increase due to Omicron-related restrictions



Actual hours worked remains resilient for MNC firms while pandemic-affected sectors closer to "normal"

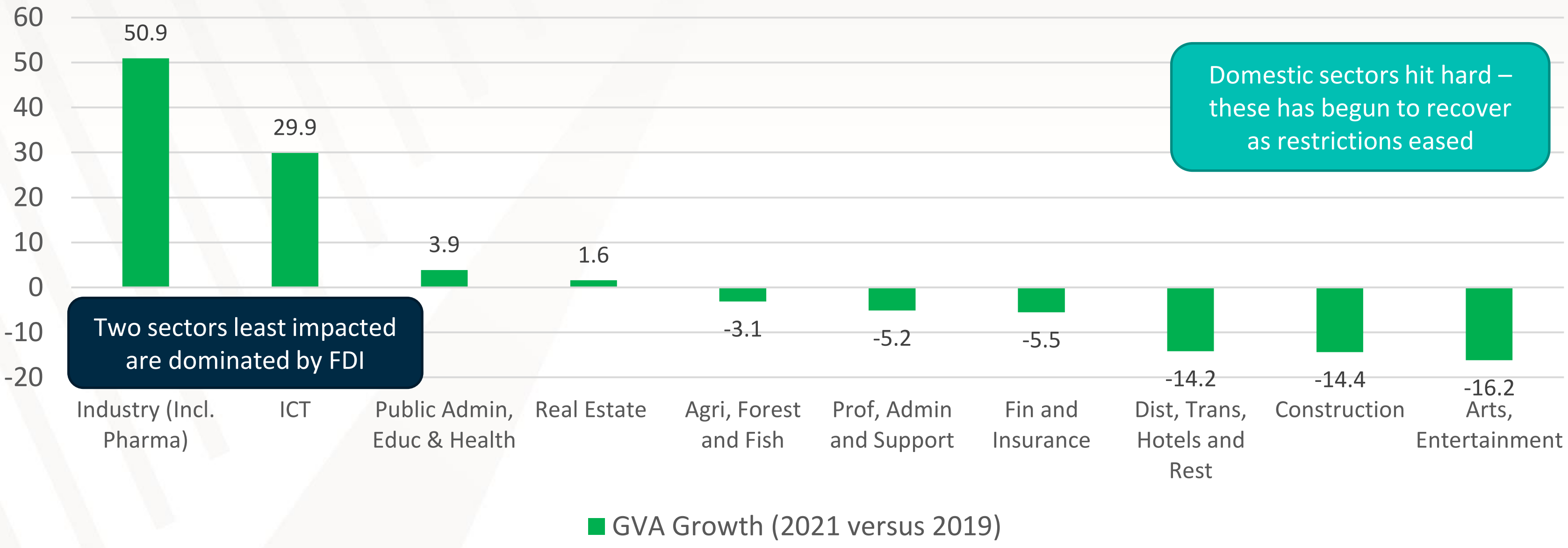


Source: CSO

** The CSO have discontinued the Covid-adjusted unemployment rate from March 2022 following the conclusion of the Pandemic Unemployment Payment scheme.*

Sector performance during Covid period

Multinationals outsized performance, domestic side hit hard



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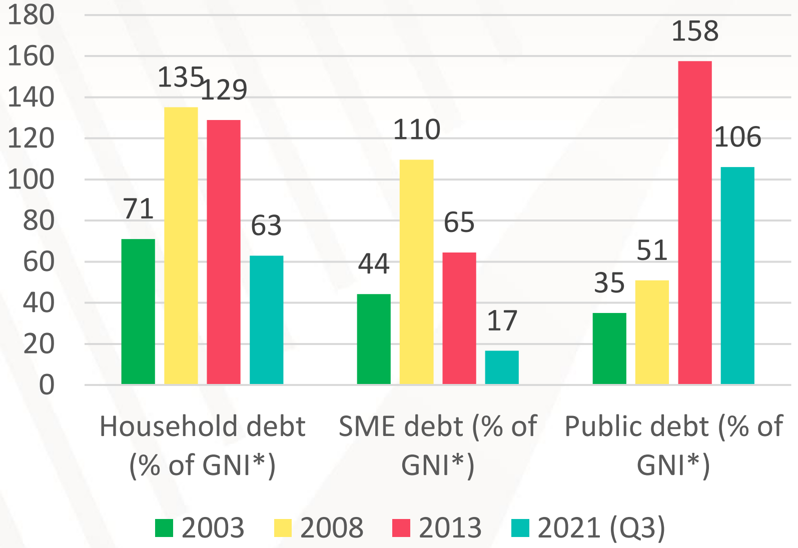
Source: CSO

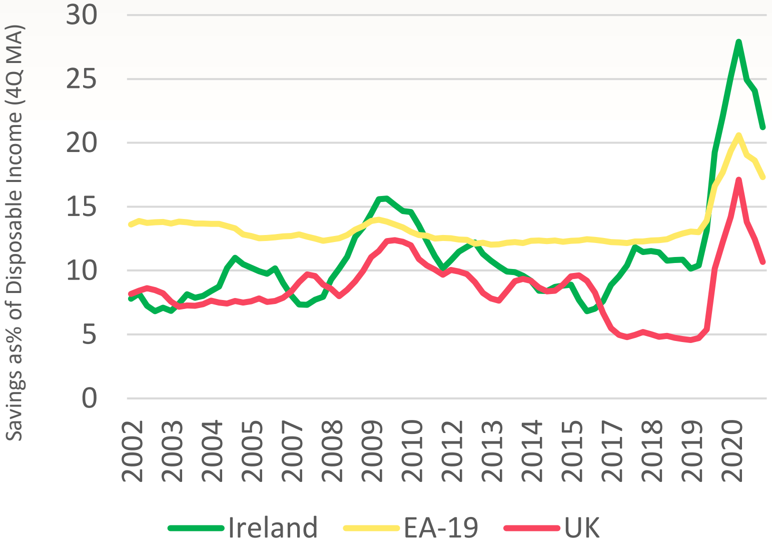
Households balance sheets improved

Debt levels much lower coming into pandemic + new Covid savings

Legacy of 2008-12 financial crisis and Covid is on Government not private balance sheets



Gross HH saving rates have jumped in Ireland more than in most countries due to forced savings/income supports



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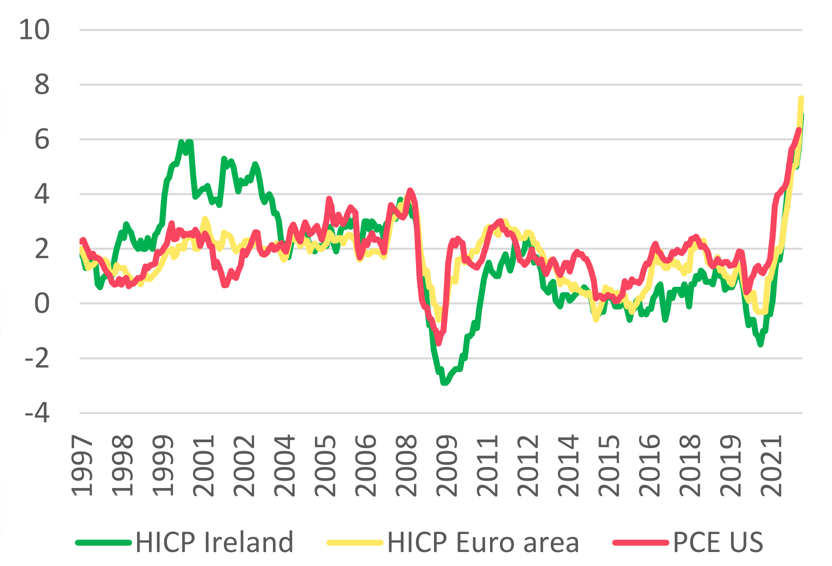
Source: Eurostat, ONS, CSO ; CBI

Note: Gross Savings as calculated by the CSO has tended to be a volatile series, some caution is warranted when interpreting this data

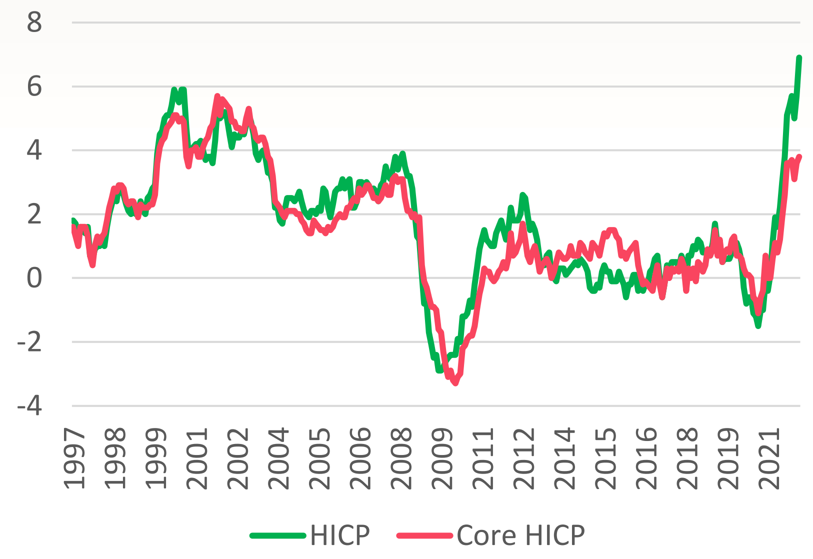
Inflation at 6.9% in Ireland

Energy and pandemic are big drivers but core inflation also elevated

Inflation has jumped after subdued decade and posted highest reading in series' history



Energy prices driving a proportion but core inflation also elevated



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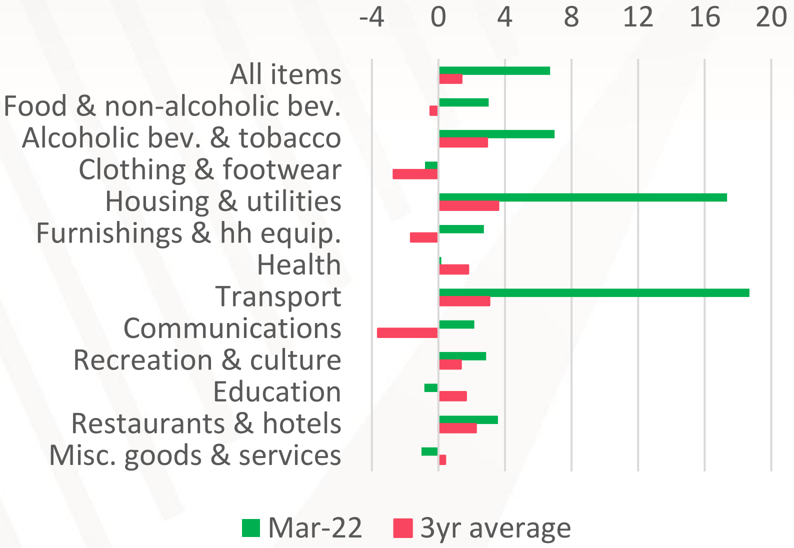
Source: CSO, DataStream

Elements of re-opening and energy evident

Inflation was set to subside before recent Ukraine conflict

Biggest pick-up in inflation concentrated in energy and Covid-hit sectors



Source: CSO

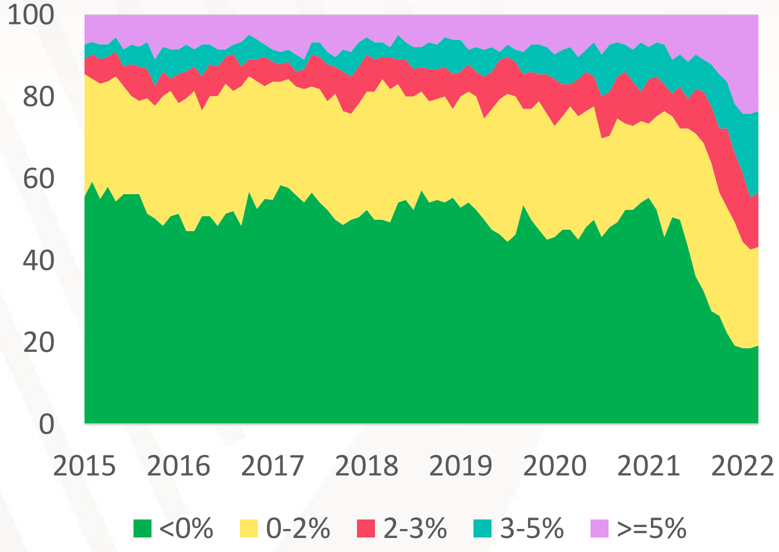
Energy seeing double-digit inflation and continuing pressure on "re-opening" areas and rents

Selected sub-indices inflation readings, Mar 2022 (y-o-y %)	
Liquid fuels (home heating oil)	126.6
Passenger transport by air	69.2
Diesel	46.0
Natural gas	29.4
Accommodation services	13.7
Beer - off licences	13.2
Passenger transport by sea and inland waterway	13.1
Flours and other cereals	10.0
Private rents	9.2

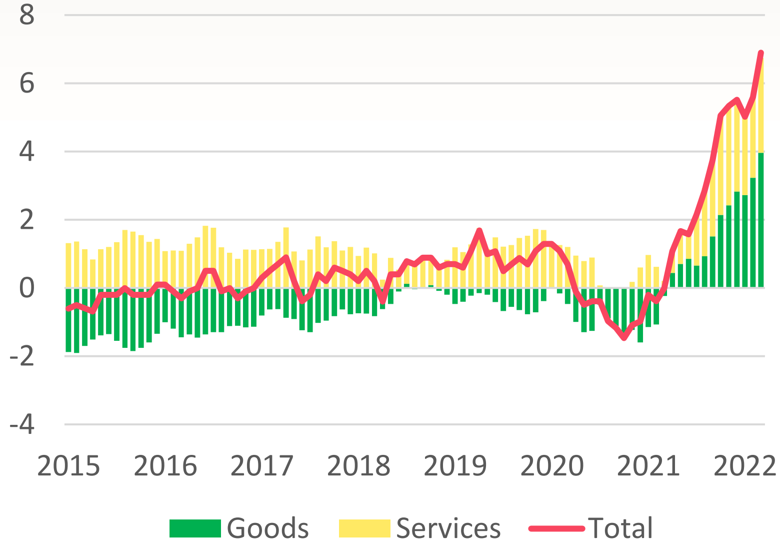
Inflationary pressure is now broader

Seeing inflationary pressure across many categories in CPI index

Only c. 20% products in CPI basket are seeing no price inflation down from c. 50% pre pandemic



Goods inflation impacted by energy prices – should taper off in 2022 but services inflation may be more sticky



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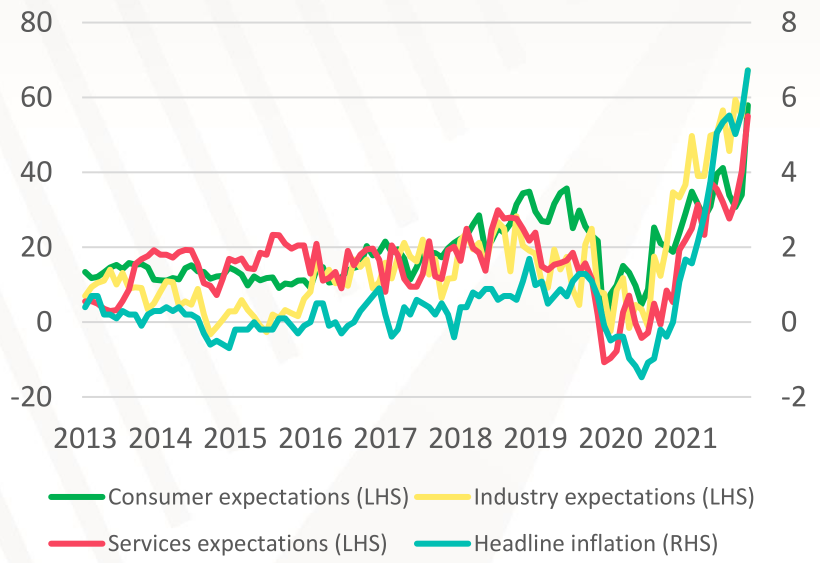
Source: CSO, NTMA Analysis

Note: LHS shows distribution of annual inflation rates across all CPI items (unweighted).

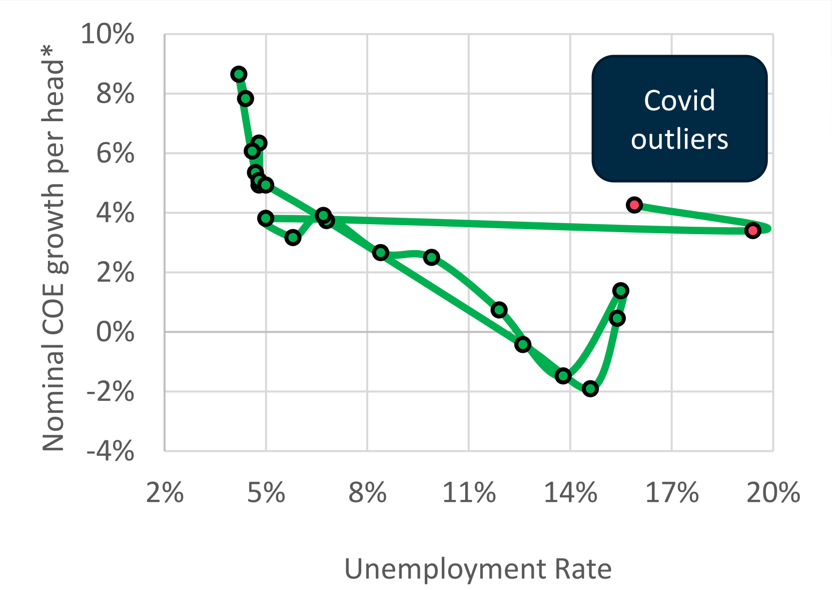
Sustained inflation an obvious risk

Phillips curve historically has held in Ireland

Inflation expectations picking up for consumers and businesses



Wage pressure not prevalent across all sectors but Philips curve has held in Ireland in recent past



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Source: Eurostat, CSO, Department of Finance, NTMA analysis

** Excludes agriculture incomes*

OECD's BEPS process may impact FDI offering

Ireland signs up to agreement; implementation still in progress

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

- Over 130 countries have signed on for the BEPS 2.0 two-pillar set of reforms.
- The first pillar focuses on proposals that would re-allocate some taxing rights between jurisdictions where companies reside and the markets where user/consumers are based.
- Under such a proposal, a proportion of profits would be re-allocated from small countries to large countries.
- Pillar 1 will reduce Ireland's corporation tax base. Some estimates place the hit at up to €2bn per annum by the middle of the decade.
- Ireland has always been fully supportive of Pillar One despite the implied cost to the Exchequer.

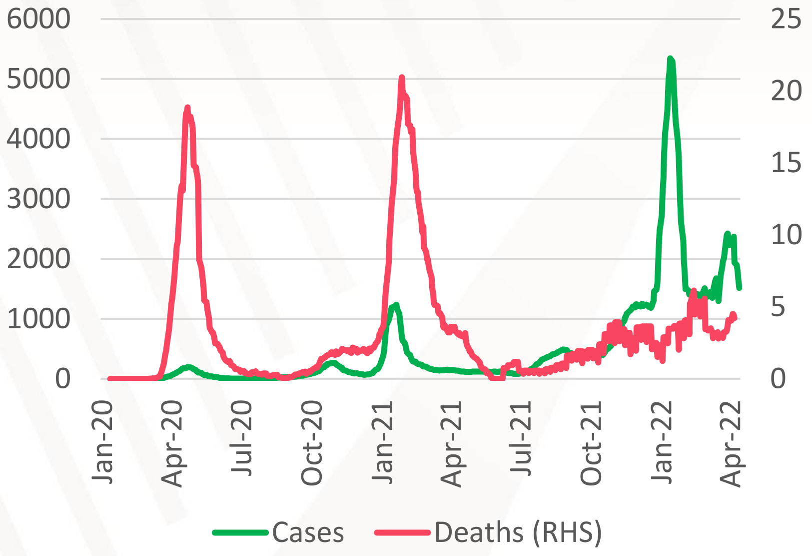
Pillar Two: 15% minimum effective global tax rate

- Countries will introduce a minimum effective tax rate with the aim of reducing incentives to shift profits.
- Where income is not taxed to the minimum level, there will be a 'top-up' to achieve the minimum rate of tax.
- Ireland had reservations on the minimum tax rate proposal but signed up after further clarity was given.
- The minimum rate is greater than the 12.5% rate that Ireland levies and thus some of Ireland's comparative advantage in attracting FDI will be lost.
- Ireland can lean on other positives; educated and young workforce, English speaking, EU access, and ease of doing business
- At 15% corporate tax rate, Ireland's rate remains one of the lowest in the EU.

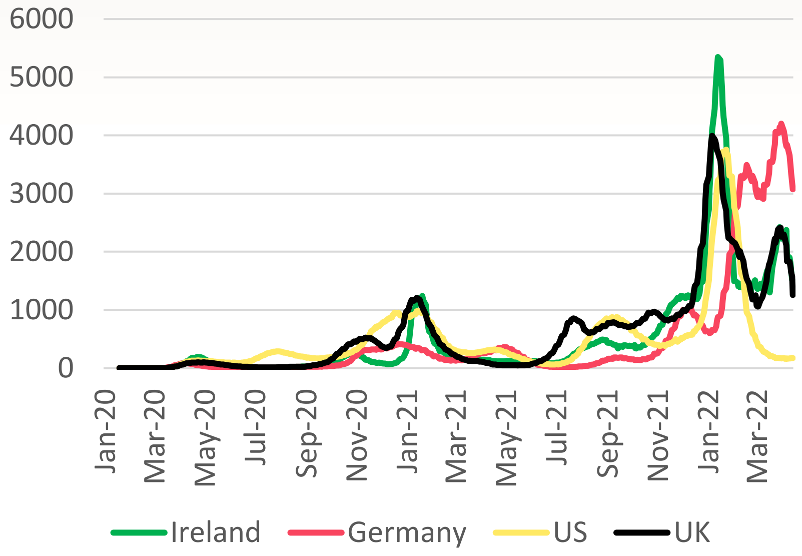
Omicron-driven case numbers peaked in Jan

Most restrictions removed in mid-January as severity of wave lower than previous

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



Ireland case numbers versus other countries (14 day cases per 100k of population)



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Source: DataStream

Fiscal

Deficit narrowing on strong revenue growth

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Fiscal response to Covid worked

Deficit lower than expected in 2021 and expected to fall again in 2022

Response

Direct pandemic fiscal response of €32.5bn (c. 16% of GNI*) in 2020/21

Deficit was large in 2020 at €18.4bn but fell to €8.1bn in 2021. Govt. forecasts deficit to fall again to €2bn in 2022

Revenues

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

Strength of both Corporate and Income tax revenues from multinational sectors has helped grow government finances

Debt

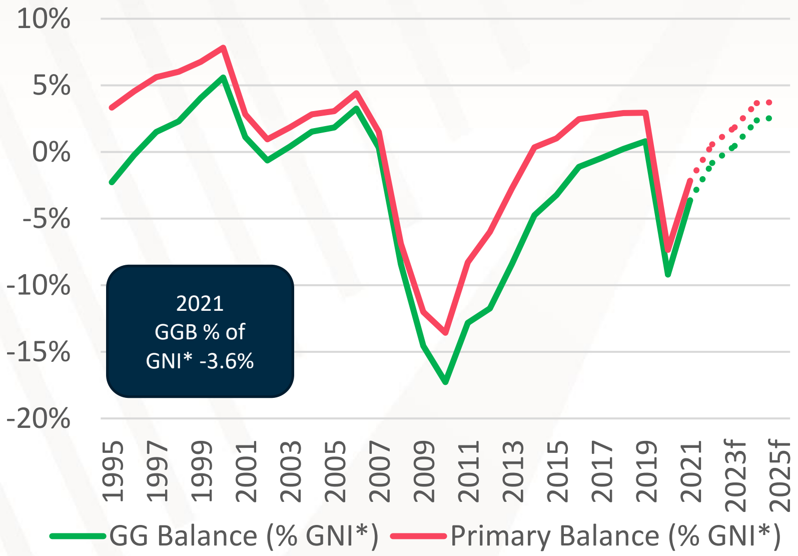
Debt ratios increased due to Covid with modest jump in 2021 for debt to GNI*

End-2021 ratio at 106% after 105% in 2020. Ratio should fall below 100% by end-2022

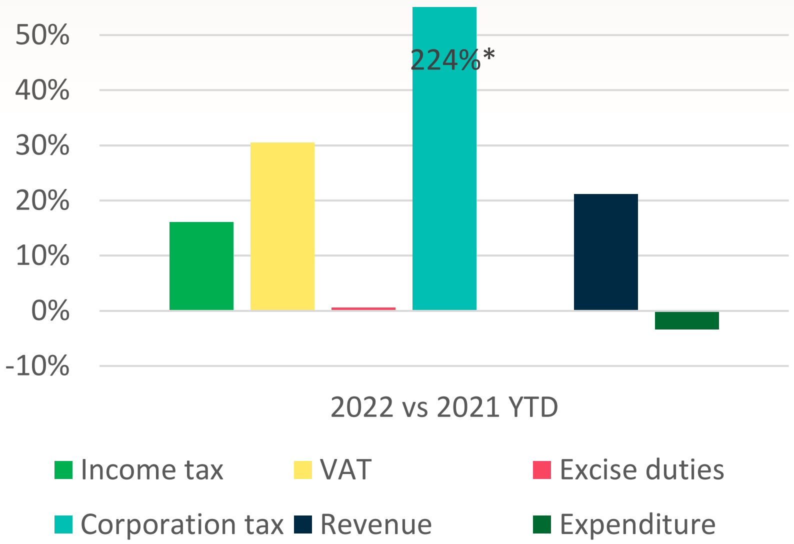
Deficit in 2021 smaller than expected

Ireland plans for primary surplus in 2022 and GG balance in 2023

Gen. Govt. Balance (% of GNI*) of -€8.1bn in 2021, expected to fall again in 2022



Revenues strong in 2021 and early 2022; income tax and corporate tax continue to grow strongly



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Source: CSO; Department of Finance

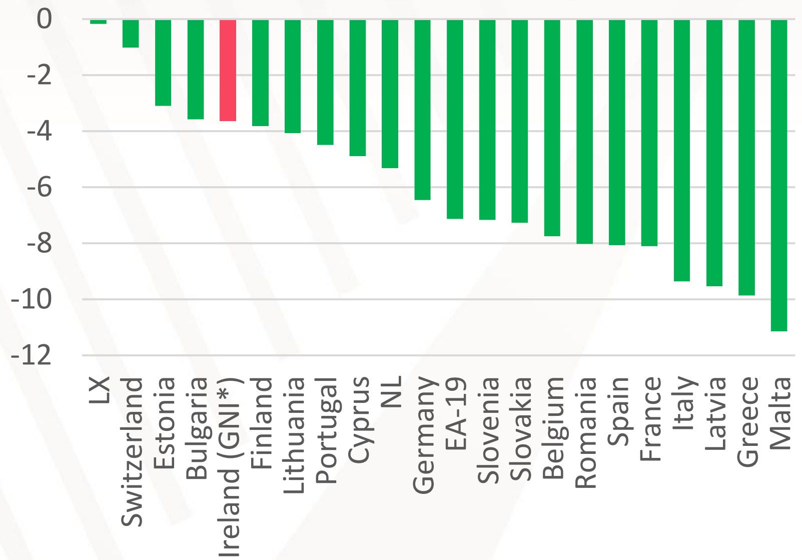
**CT receipts growth unusually large due to timing issue – expected to be c. 10% for 2022*

LHS chart: Underlying GG and primary balance numbers used (excludes banking recapitalisations during GFC)

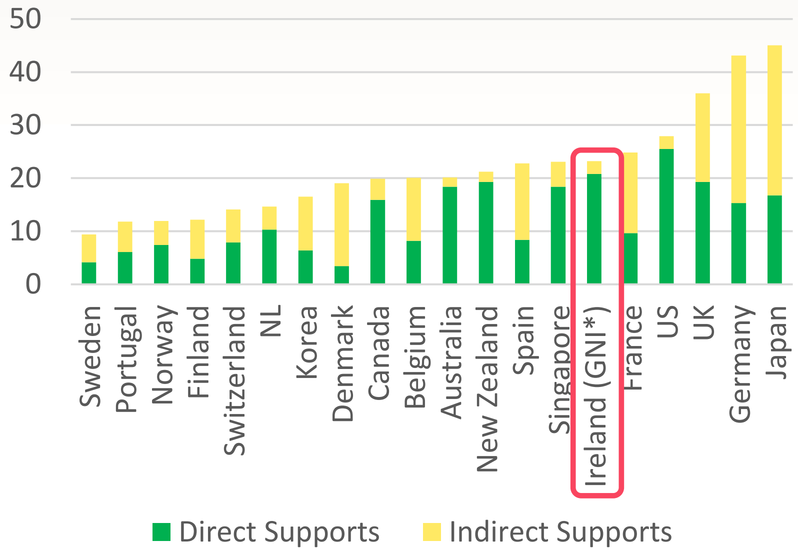
Ireland’s deficit smaller than EA

Covid fiscal response highly skewed to direct supports unlike others in EU

2021 GG Balance (forecast, % of GDP or GNI*): Ireland’s figure at -3.6% of GNI*



Total Covid-19 fiscal response (% of GDP/GNI*) – given rebound full use of fiscal supports might not occur



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Source: IMF, European Commission, Department of Finance

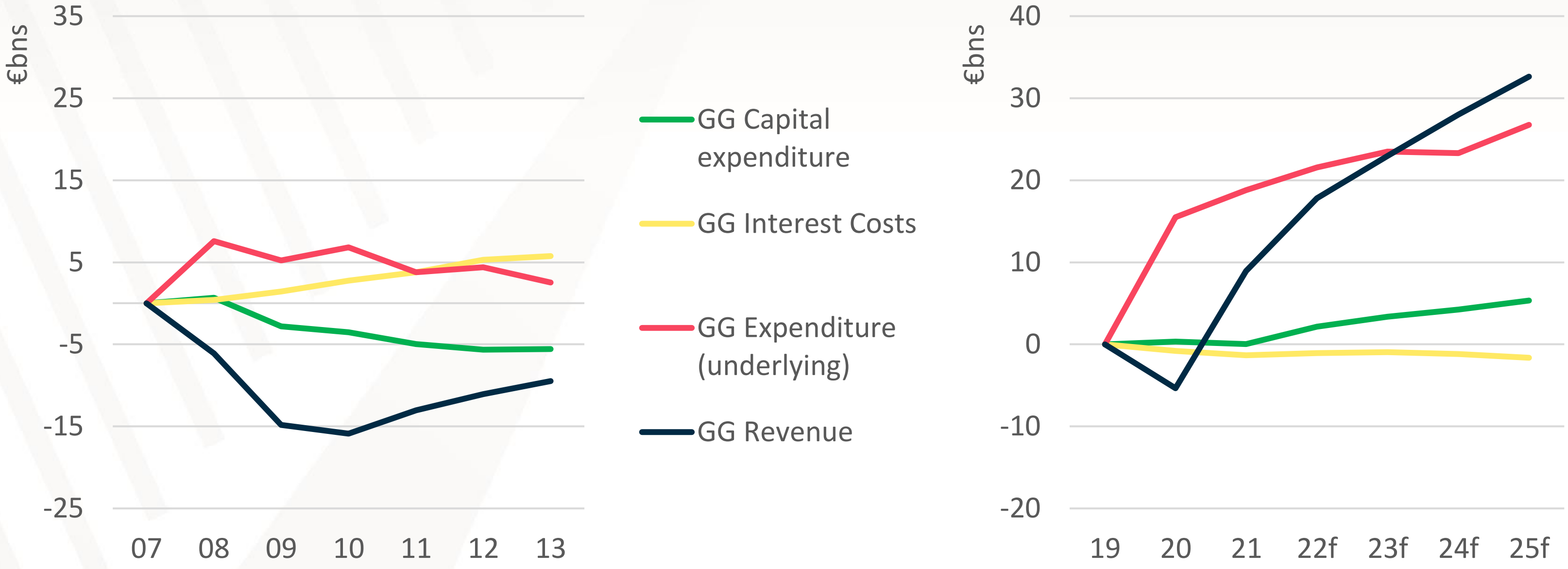
Direct supports = Additional spending and forgone revenue. Indirect supports = Equity, loans, and guarantees

Fiscal response to Covid is opposite of GFC

Interest bill won't balloon and investment set to increase

After global financial crisis, Ireland cut capital spending, paid more interest as taxes fell…

…now revenues are more resilient, spending (incl. inv.) increases, interest bill unchanged



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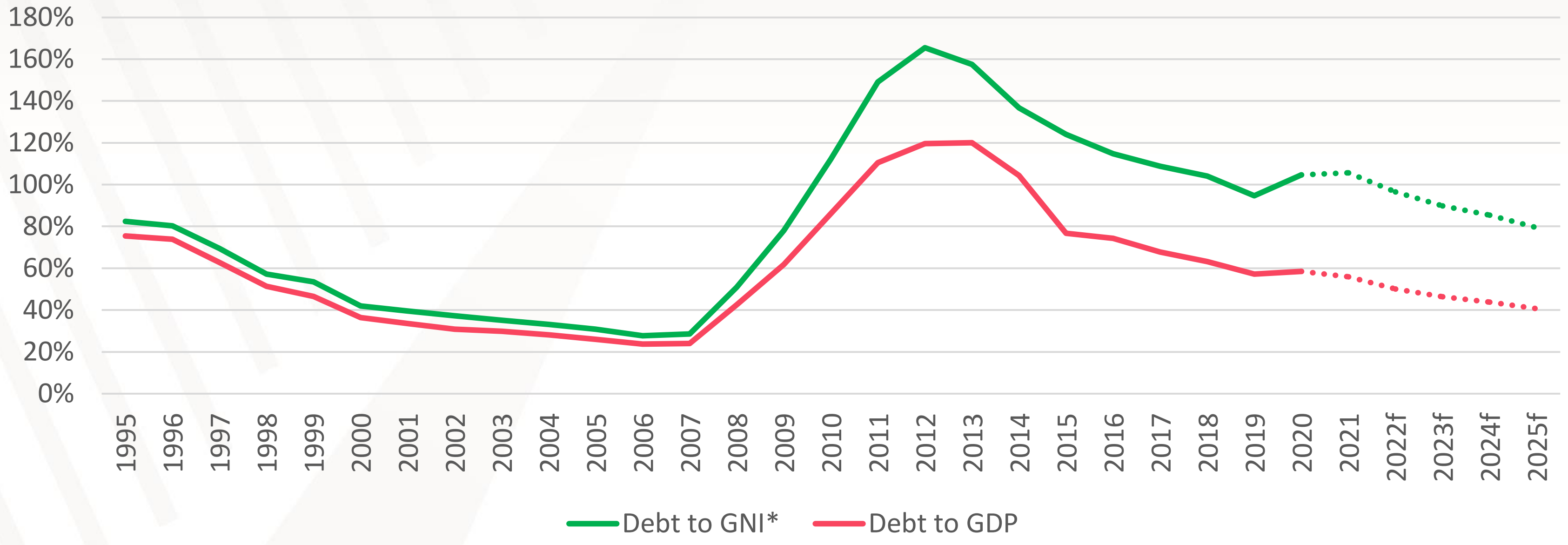
Source: CSO, Department of Finance forecasts. Charts represent the change in billions for selected fiscal variables versus 2007/2019 levels. Underlying GG expenditure numbers used (excludes banking recapitalisations)

GG debt to GNI* increased on Covid response

Debt close to 106% of GNI* but expected to fall over 2022-25

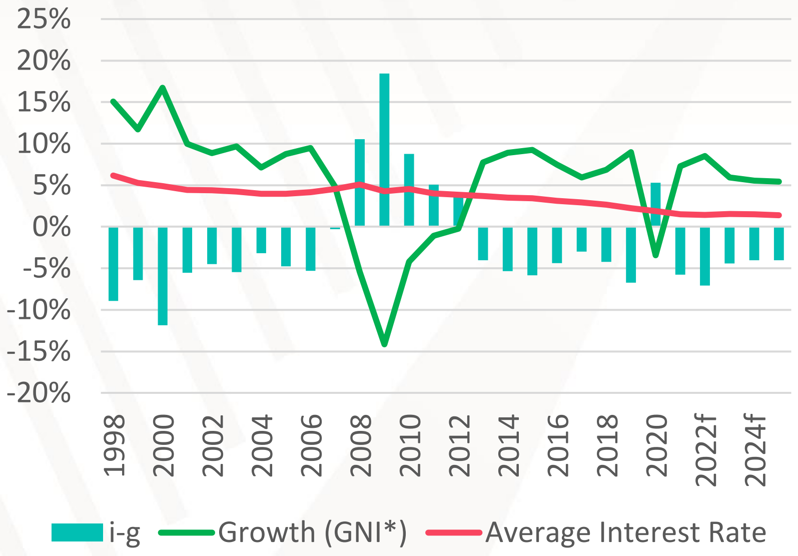


Source: CSO; Department of Finance forecasts

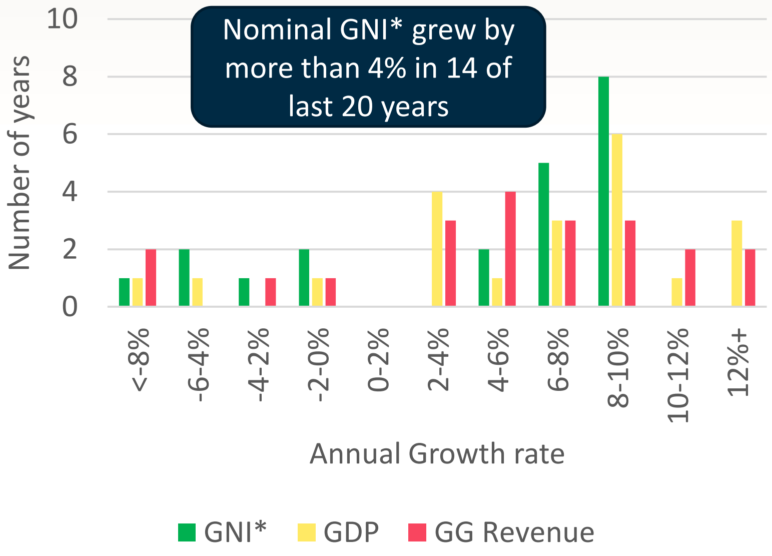
The "i-g" snowball effect in Ireland's favour

Low interest rates coupled with reversion to growth underpins debt dynamics

With low rates locked in, Ireland's "hurdle rate" for a positive snowball effect is low



Histogram of Ireland's recent growth history (2001-2020)

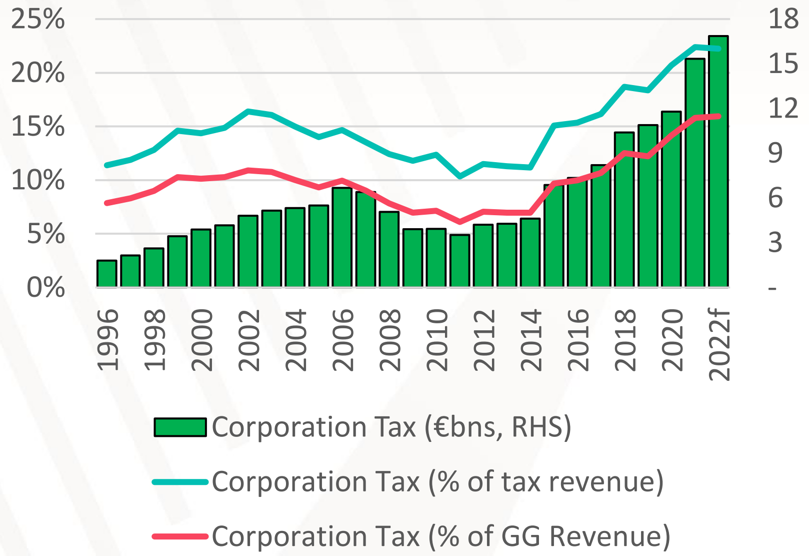


Source: CSO; Department of Finance forecasts, NTMA analysis

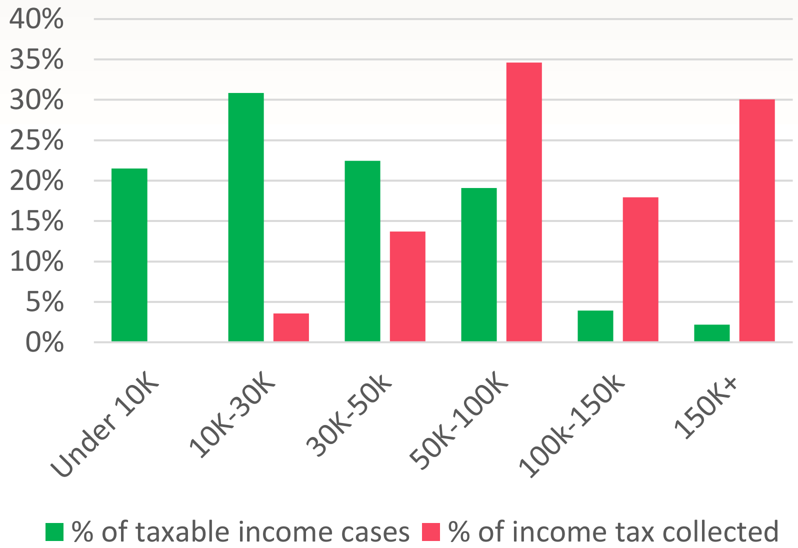
Revenues increasing strongly despite Covid

CT revenue growing due to multinationals; income tax base helped by progressive system

Corporation tax (CT) receipts jumped again in 2021 to €15.3bn for the year



Progressiveness of income tax system and sector mix limited hit to overall receipts and helped with revenue rebound



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Source: Department of Finance, Revenue, NTMA analysis

Alternative Debt Metrics

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

2021	GG debt to GG revenue %	GG interest to GG rev %	GG debt to GDP %
Greece	423%	5.4%	206%
Italy	330%	7.3%	156%
Portugal	288%	5.8%	135%
Spain	282%	5.2%	120%
UK	279%	5.7%	102%
Cyprus	260%	4.8%	115%
Ireland	**243%**	**3.4%**	**56% (106% GNI*)**
Belgium	230%	3.5%	113%
France	221%	2.2%	115%
EA19	217%	3.0%	99%
Slovenia	178%	3.2%	80%
EU28	176%	3.3%	79%
Austria	169%	2.3%	83%
Germany	156%	1.2%	69%
Slovakia	153%	2.9%	60%
Netherlands	134%	1.1%	54%

Source: EU Commission, CSO

NTMA Funding

Flexibility in funding strategy due to cash balances, smooth maturity profile and long average life

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2022 funding range is €10-14bn

NTMA funded €4.5bn so far this year

Cash

Improving fiscal position alongside NTMA's strategy of prefunding means Ireland has a strong cash position

This affords the NTMA a large degree of flexibility

>10 years

Weighted average maturity of debt one of longest in Europe

NTMA issuance since 2020 has a weighted average maturity of 12.6 years

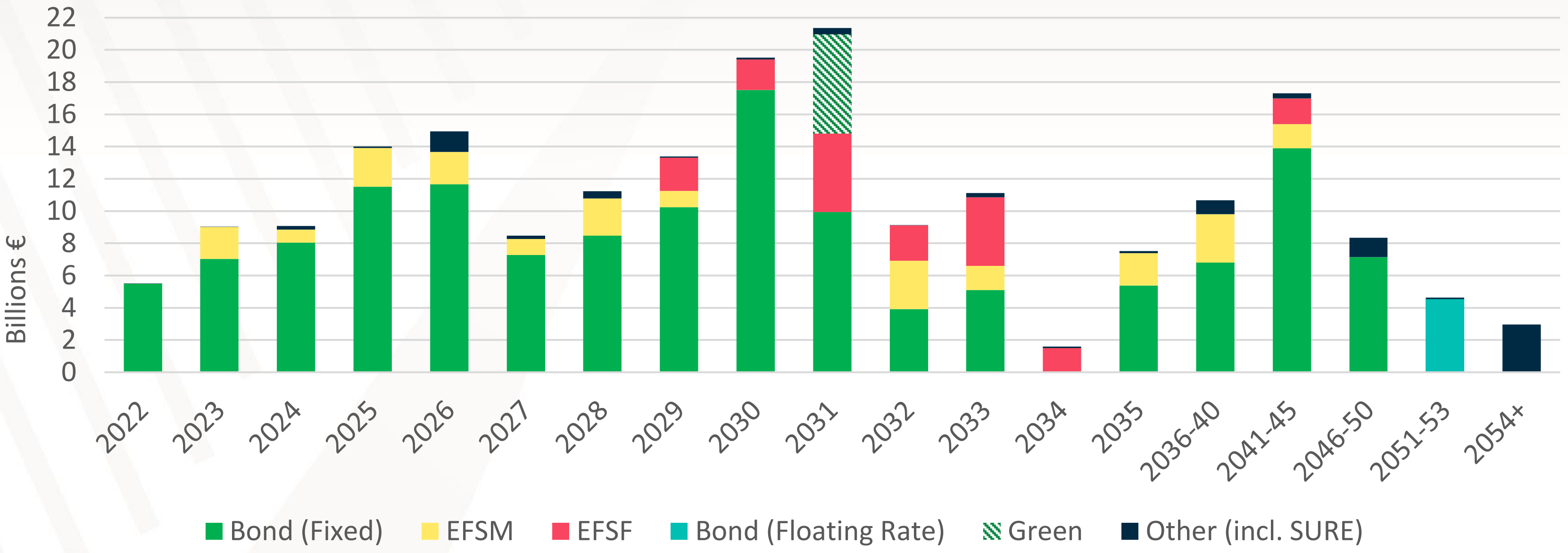
AA-

Ireland rated in the AA category with all but one of major rating agencies

Despite Covid impact Fitch and DBRS have upgraded its rating for Ireland to AA space. Moody's at A+ but with positive outlook

High level of flexibility in NTMA issuance plans

Helped by smoother maturity profile



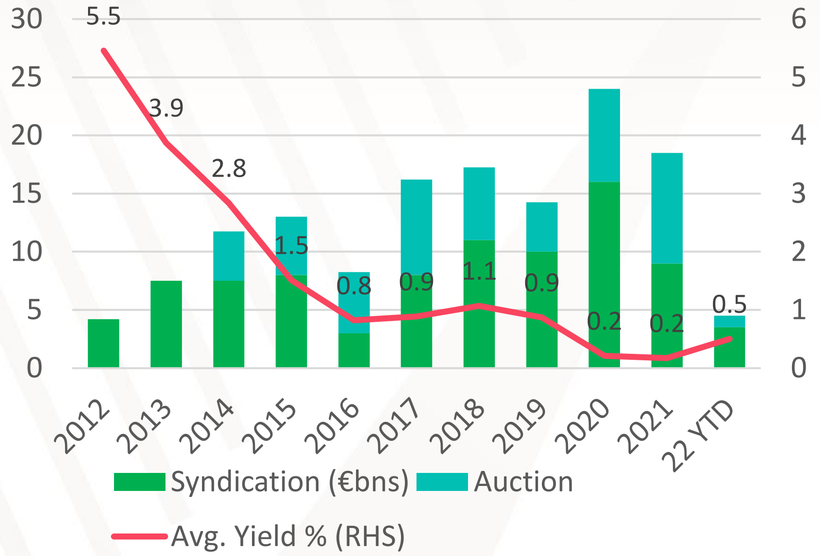
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA

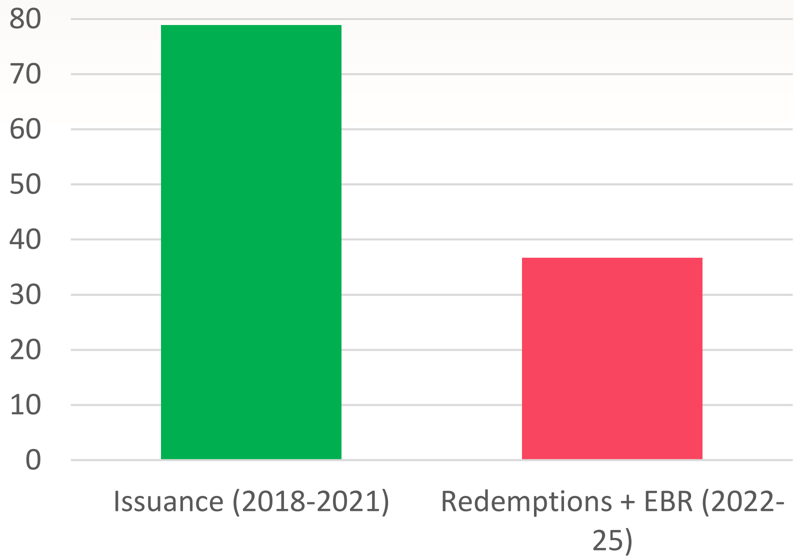
Lower supply expected in coming years

Lower borrowing costs also provides NTMA with flexibility

NTMA issued €47bn MLT debt since 2020 at 12.6 yr. weighted maturity and avg. rate 0.22%



Current borrowing requirements suggest NTMA issuance won't match recent past in coming years (€bns)



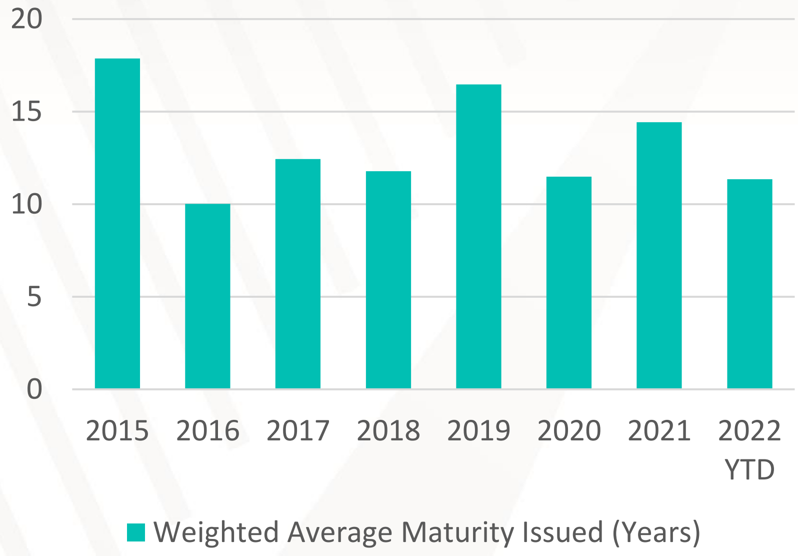
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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

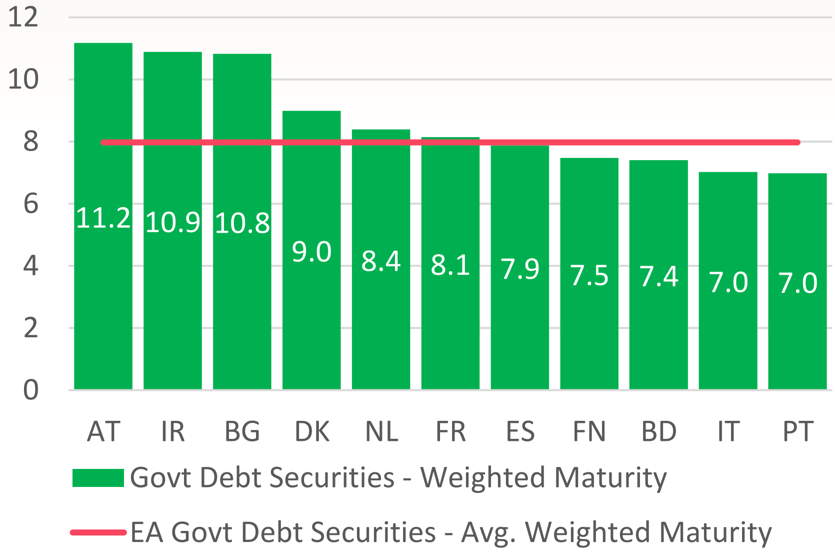
NTMA has lengthened weighted maturity

Debt management strategy took advantage of QE to extend debt profile since 2015

Benchmark issuance has extended the maturity of Government debt …



…Ireland (in years) compares favourably to other EU countries (January 2022 data)



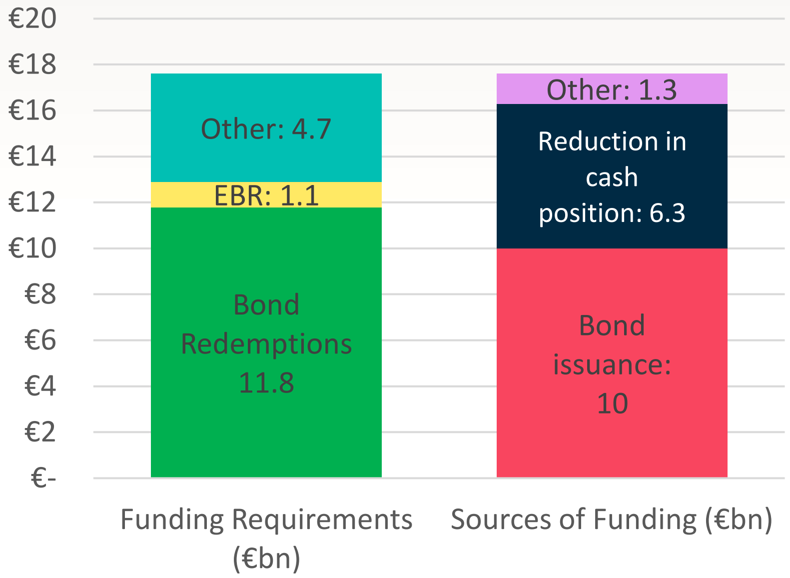
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA for Ireland data; ECB for other countries
Note: Weighted maturity for Ireland includes Fixed rate benchmark bonds, FRNs, Amortising Bonds, Notes issued under EMTN programme, T-Bills and ECP Data. It excludes programme loans and retail.

Funding needs and sources

Borrowing requirements lower than expected means extra cash

- There are two bond redemptions in 2022, one of which occurred in March. They total €11.8bn.
- The Exchequer Borrowing Requirement (EBR) for 2021 was €7.4bn. This was lower than expected in October's Budget (forecasted EBR of €12.1bn). Thus, the NTMA entered 2022 with a large cash balance of €27.5bn.
- In 2022, the EBR for the year has been revised downwards also. The 2022 EBR is estimated at €1.1bn in the latest SPU (down from €7.7bn). The NTMA is likely to continue to hold significant cash into 2023.



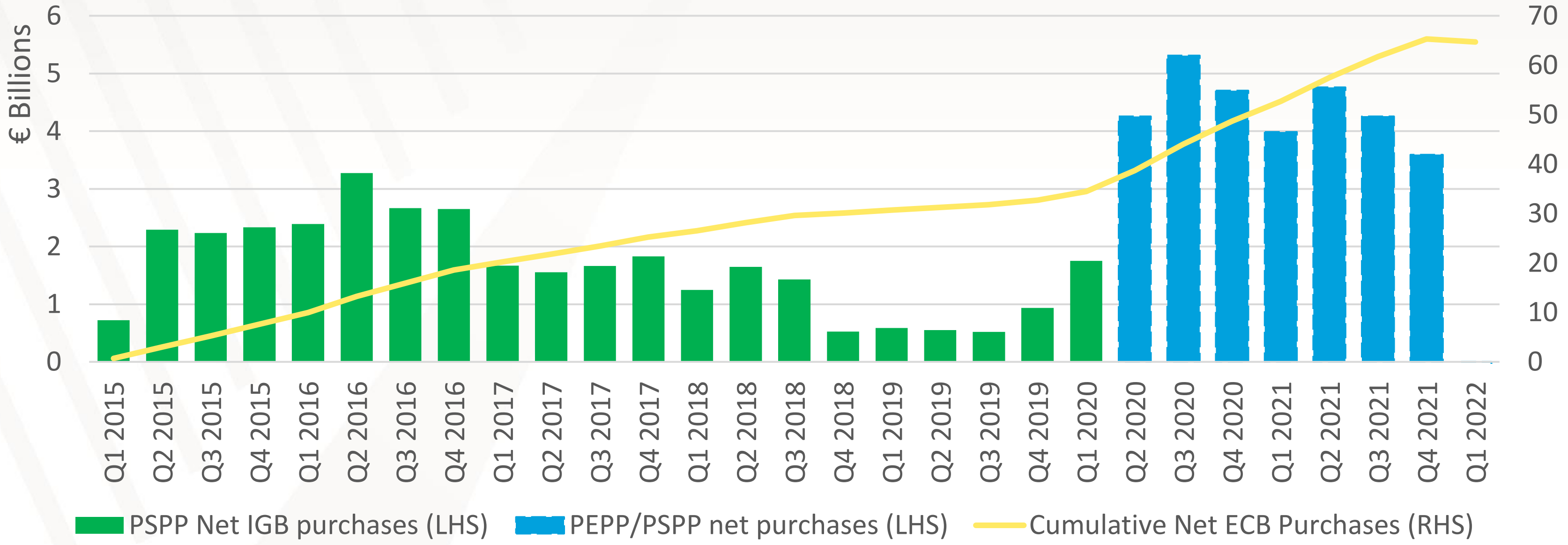
Source: NTMA

Notes:
Rounding may affect totals
1. *The NTMA bond funding range for 2022 is €10-€14bn. The low point of €10bn is used indicatively in the chart above.*
2. *Other funding needs includes provision for the potential bond/FRN purchases and general contingencies.*
3. *Other funding sources mostly comprises of net State Savings (retail) and other medium/long-term borrowing.*
4. *EBR is the Department of Finance's SPU 2022 (Apr 2022) estimate of the Exchequer Borrowing Requirement*

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

ECB's purchases have offered strong support

PEPP ended and APP is likely wound down but support from ECB re-investment will continue



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

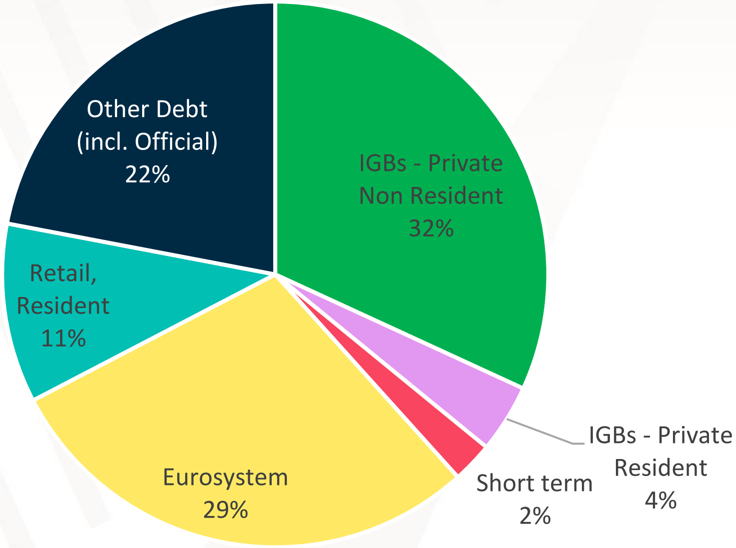
Source: ECB, NTMA Calculations

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.

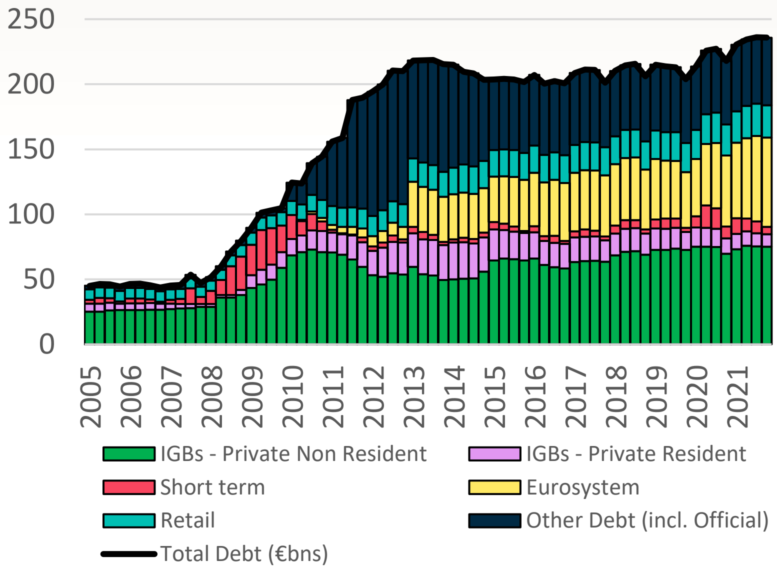
Diverse holders of Irish debt

Sticky sources account for c. 60%

Ireland roughly split 85/15 on non-resident versus resident holdings (end-2021)



“Sticky” sources - official loans, Eurosystem, retail - make up c. 60% of Irish debt



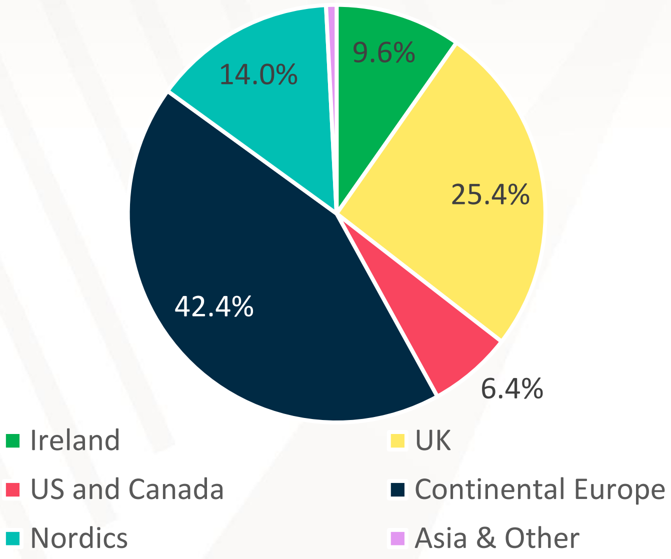
Source: CSO, Eurostat, CBI, ECB, NTMA Analysis
IGBs excludes those held by Eurosystem. Eurosystem holdings include SMP, PSPP, PEPP and CBI holdings of FRNs. Figures do not include ANFA. Other debt has included IMF, EFSF, EFSM, Bilateral as well as IBRC-related liabilities over time. Retail includes State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

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

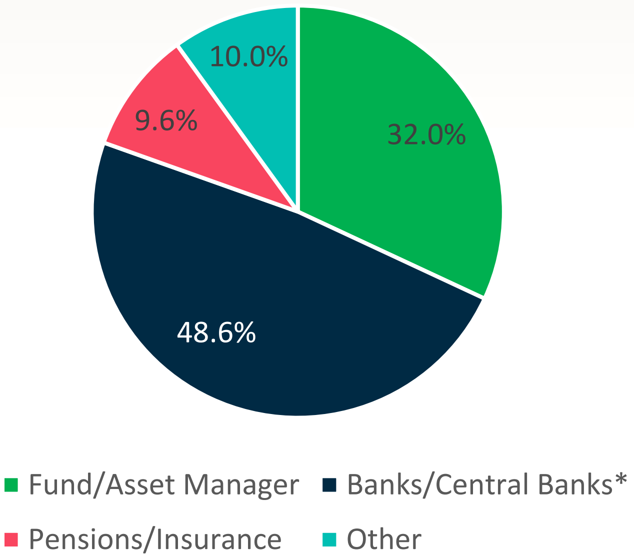
Investor base

Demand for Government bonds is wide and varied

Country breakdown:
Average over last five syndications



Investor breakdown:
Average over last five syndications



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: NTMA

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

Credit Ratings for Ireland

Three upgrades in 2022 so far; Ireland rated in “AA” category by majority

Rating Agency	Long-term	Short-term	Outlook/ Trend	Date of last change	Date of next review
Standard & Poor's	AA-	A-1+	Stable	Nov 2019	May 2022
Fitch Ratings	AA-	F1+	Stable	Jan 2022	H2 2022
Moody's	A2	P-1	Positive	Aug 2021	May 2022
DBRS Morningstar	AA(low)	R-1 (middle)	Stable	Jan 2022	H2 2022
R&I	AA-	a-1	Stable	Feb 2022	2023
KBRA	AA-	K1+	Stable	Jan. 2020	Jun 2022
Scope	AA-	S-1+	Stable	May 2021	H2 2022

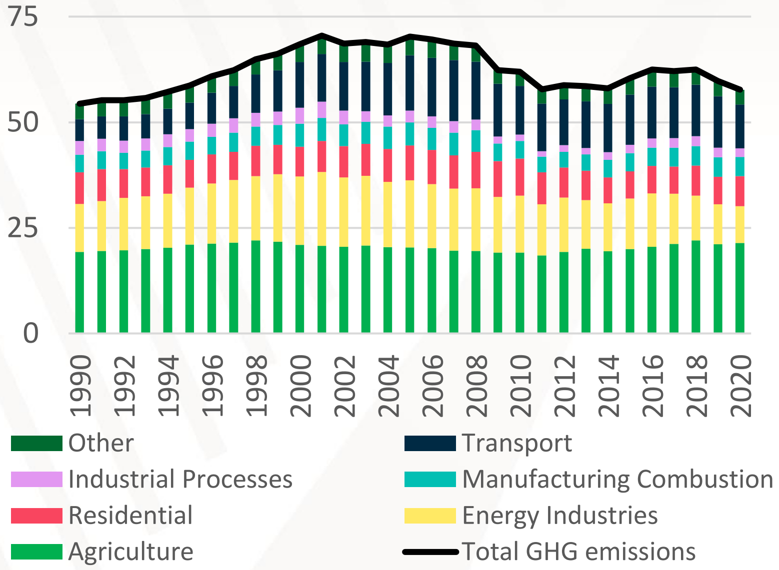
ESG Sustainability

Issuance & government policy
demonstrate Ireland's green commitment

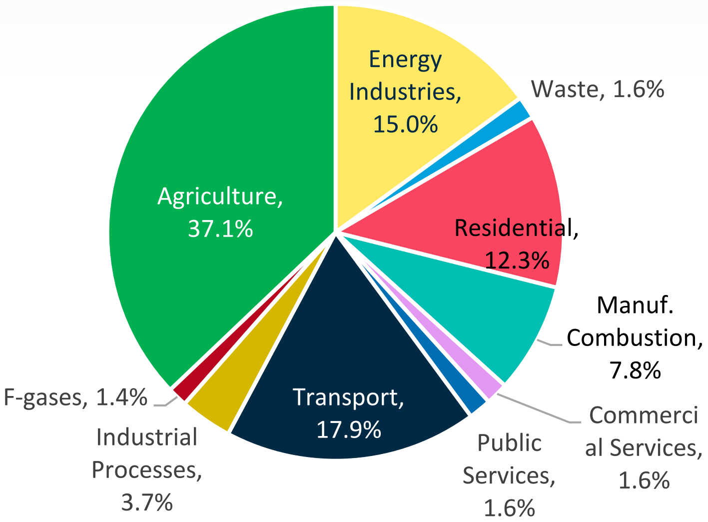
Ireland’s Greenhouse Gas emissions

State of Play – emission fell modestly in Covid year

Ireland’s emissions fell post financial crisis – Covid meant they fell again in 2020



Emissions from agriculture make up a more significant portion of total In Ireland (c. 10% in EU or US)



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

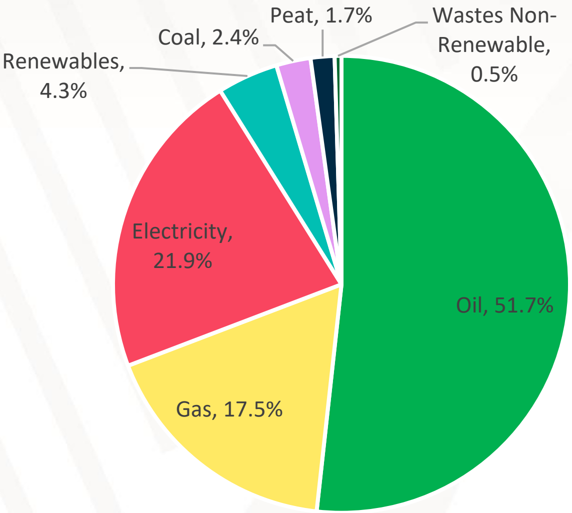
Source: Environment Protection Agency (Ireland)

Note: Metric used is million tonnes carbon dioxide equivalent (Mt CO2eq))

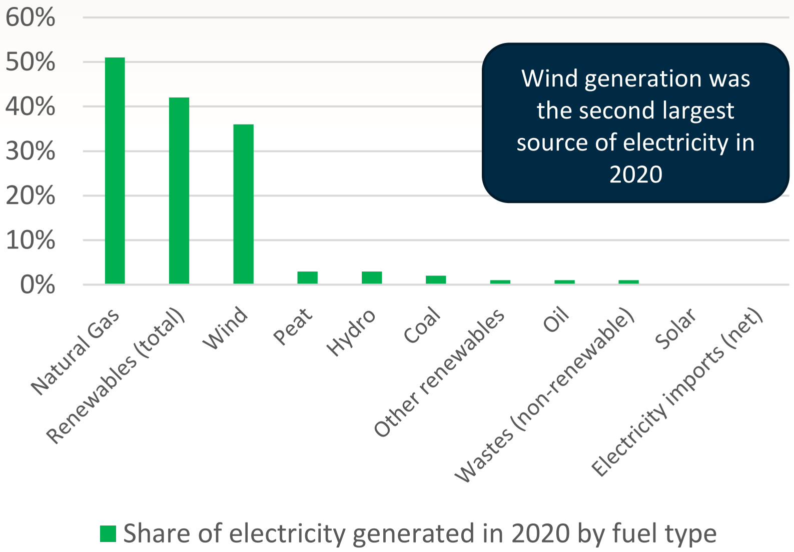
Irelands Energy Breakdown

Irelands energy mix is reliant on fossil fuels but renewables share to increase by 2030

Oil accounts for the largest share of Irelands energy mix. Transport accounted for 63% of oil use in 2020



Electricity production more renewables based but still far from Climate Action Plan aims of 80% by 2030

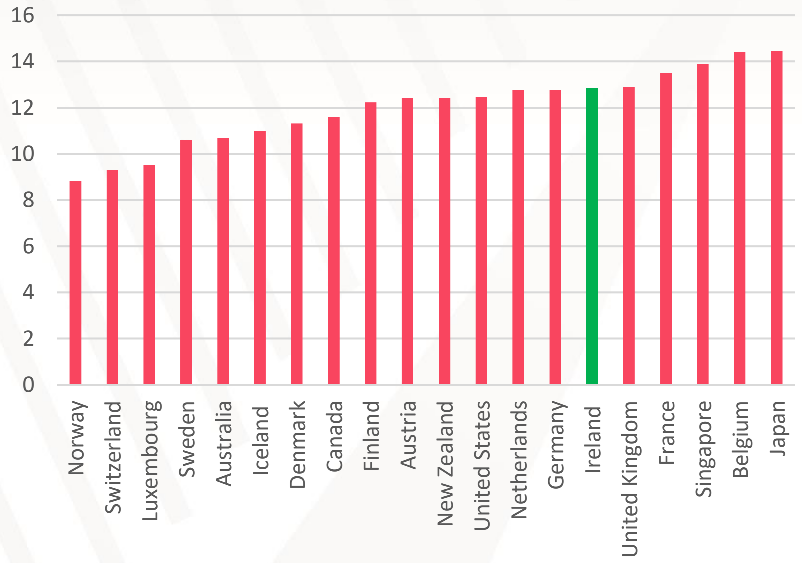


Source: SEAI, Climate Action Plan 2021, EU Renewable Energy Directive

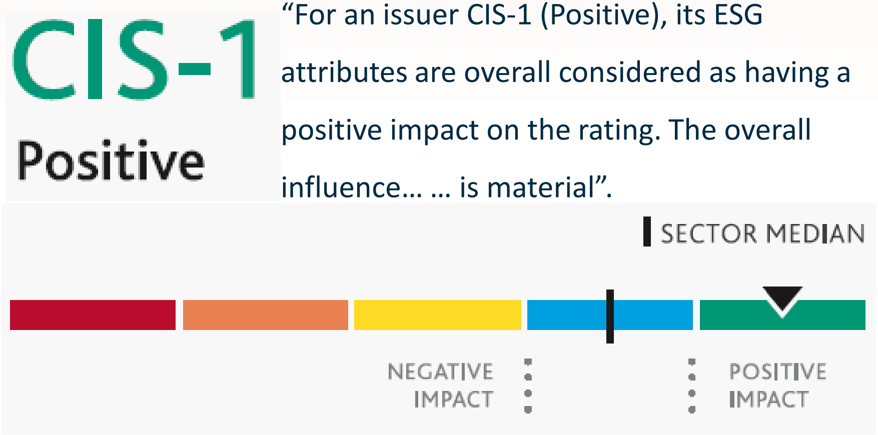
Ireland in top 20 most sustainable countries

Ireland rated highly by Sustainalytics and rating agencies on ESG

Ireland ranks 15th globally by Sustainalytics for ESG risk



Moody's view on Ireland much like other agencies – strong governance a key risk mitigant



"For an issuer CIS-1 (Positive), its ESG attributes are overall considered as having a positive impact on the rating. The overall influence… … is material".

Ireland's ESG Credit Impact Score:
"low exposure to environmental risk"
"a positive influence of its social considerations"
"very strong governance profile"

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

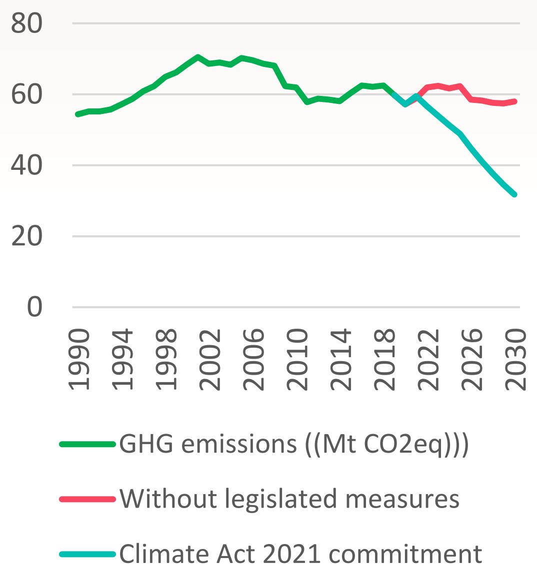
Source: Sustainalytics (2021), Moody's

Note: Sustainalytics score is out of 100, closer to zero means less ESG risk

Climate Action Legislation

The Climate Action & Low Carbon Development Act 2021 supports transition to Net Zero by 2050

- **Carbon Budgeting:** The Act embeds the process of carbon budgeting into law. It requires Government to adopt a series of economy-wide-five-year carbon budgets.
- **51% reduction:** First carbon budgets will aim for a reduction of 51% of emissions by 2030.
- **Sectoral Action Plans:** Actions for each sector detailed in the Climate Action Plan, to be updated annually.
- **Legally binding targets:** Govt. Ministers responsible for achieving targets for their sector.
- **Climate Action Strategy:** A national plan will be prepared every five years.
- **All of Government approach:** Local authorities are required to prepare a Climate Action Plan and public bodies obliged to conduct their functions in line with the national plan.
- **Gas Exploration:** Government approved draft amendments to end the issuance of new licenses for the exploration and extraction of gas.



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

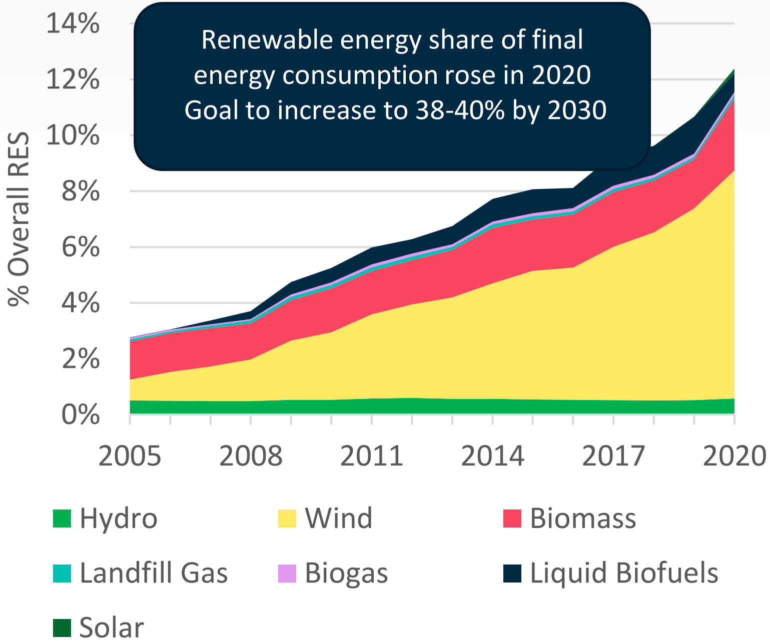
Source: Department of the Environment, Climate and Communications, EPA, NTMA Economics analysis

Plans to significantly increase use of wind

Climate Action plan outlines significant increase to wind generated electricity

Climate Action Plan Goals:

- Reduce emissions from electricity by up to 81% from 2018 levels. Target of 5GW of offshore and up to 8GW of onshore wind energy by 2030.
- Enable 500,000 sustainable travel journeys per day. Increase biofuel use in transport. Increase proportion of kms driven by electric cars to 40-45%. All replacements for bus & rail vehicles to be low or zero carbon emissions and increased rollout of rural public transport.
- 29-41% reduction in emissions through increased uptake of carbon-neutral heating and decreasing embodied carbon in building materials.
- Commitment to retrofit 500,000 homes by 2030 and install 680,000 renewable energy heat sources in new and existing residential buildings.



Source: SEAI, Climate Action Plan 2021

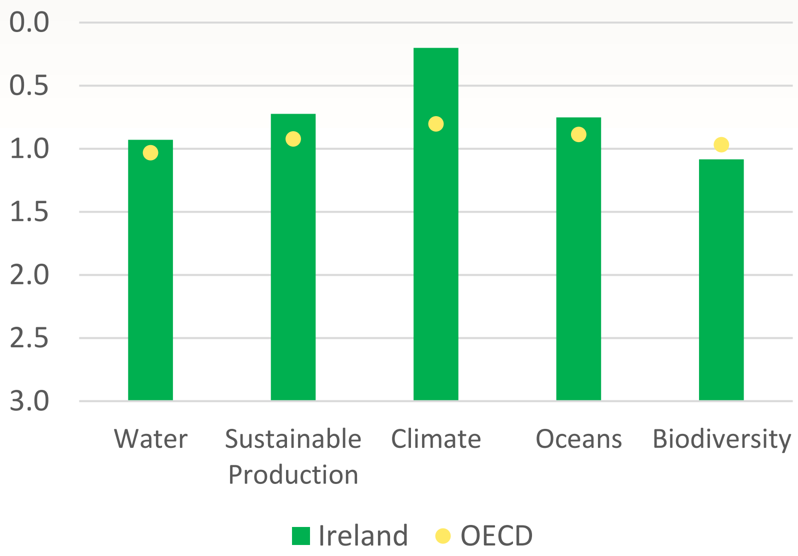
Close to OECD average on progress

But behind some of the leaders in Europe

Ireland similar to OECD but behind others when considering intensity metrics

	GHG emissions per unit of GDP	OECD Ranking (1st = High Intensity)	CO2 emissions per unit of GDP	OECD Ranking (1st = High Intensity)	% Renewable energy supply	OECD Ranking (1st is desirable)
Ireland	0.2	30	0.09	35	11.1	24
Ire (GNI*)	0.3	11	0.14	24		
OECD	0.3	n/a	0.14	n/a		
Australia	0.5	2	0.32	2	7.1	35
Belgium	0.2	19	0.17	14	7.8	32
Canada	0.5	4	0.34	1	16.4	18
France	0.2	33	0.10	34	10.7	26
Germany	0.2	23	0.16	17	14.6	21
Italy	0.2	28	0.13	27	18.2	16
NL	0.2	25	0.16	17	7.2	34
UK	0.2	32	0.12	30	12.5	23
Spain	0.2	27	0.13	27	14.7	20
US	0.4	6	0.24	6	7.9	31

Ireland compares well to the OECD average



Source: OECD, EPA

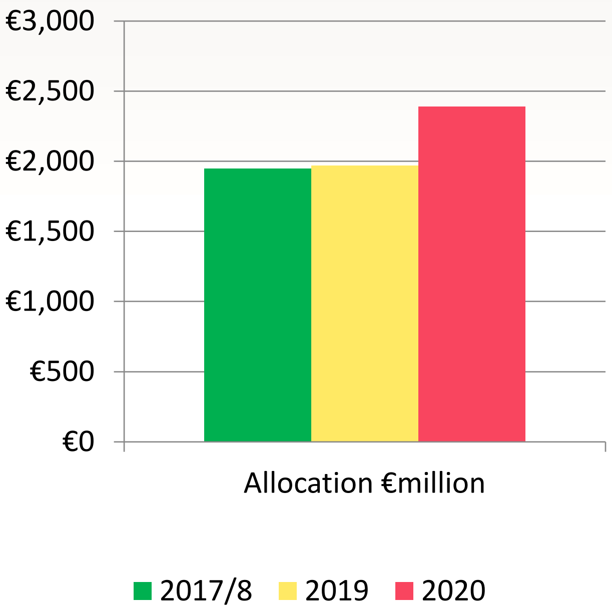
RHS shows the average distance the country needs to travel to reach each SDG. 0 indicates that the level for 2030 has already been attained: and 3 is the distance most OECD countries have already travelled. Bars show the average country performance against all targets under the relevant Goal

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Irish Sovereign Green Bonds (ISGB)

Cumulative €6.31bn allocated to green projects following third year

- €6.85bn nominal outstanding (€7.35bn cash equivalent)
- Circa €1.0bn remains to be allocated to eligible expenditure in 2021
- Issuance through both syndicated sales and auctions
- Pipeline for eligible green expenditure remains strong
- Launched 2018 and 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
- Three annual allocation reports and two annual impact reports now published
- ISGB 2020 Allocation Report
- ISGB 2019 Impact Report



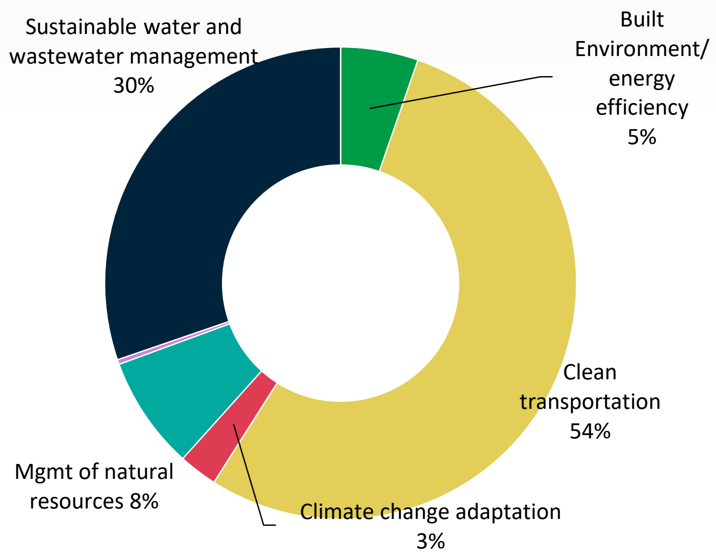
Irish Sovereign Green Bonds (ISGB)

Irish Sovereign Green Bond Impact Report 2019: sample impacts

Some highlights from the report*

- **Built Environment/ Energy Efficiency**
  - Energy saving (GigaWattHours) : 621.06
  - Number of homes renovated : 24,777
  - EV home charger grants provided: 2,548
- **Clean Transportation**
  - Number of public transport passenger journeys : 294.6 million
  - Greenway users: 1,196,428**
  - Take-up of Grant Schemes/ Tax foregone provided (number of vehicles) : 24,122
- **Climate Change Adaptation**
  - 13 major Flood relief projects at planning, development or construction phase.
  - 6,685 properties protected on completion

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



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
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*For a more detailed break-down please see the ISGB 2019 Impact Report

** Raw count from 3 longest Greenways- Waterford, Old Rail Trail, Royal Canal Greenway

Irish Sovereign Green Bonds (ISGB)

Irish Sovereign Green Bond Impact Report 2019: sample impacts cont.

Some highlights from Report*

- **Environmentally Sustainable Management of Living Natural Resources and Land Use**

  Number of hectares of forest planted : 3,550

  Number of Landfill Remediation projects being funded: 76

- **Renewable Energy**

  Number of companies (including public sector organisations) benefitting from SEAI Research & Innovation programmes as lead, partner or active collaborators : 36

  SEAI Research & Innovation awards: 46

- **Sustainable water and wastewater management**

  Water savings (litres of water per day) : 160 million

  New and upgraded water and wastewater treatment plants : 14

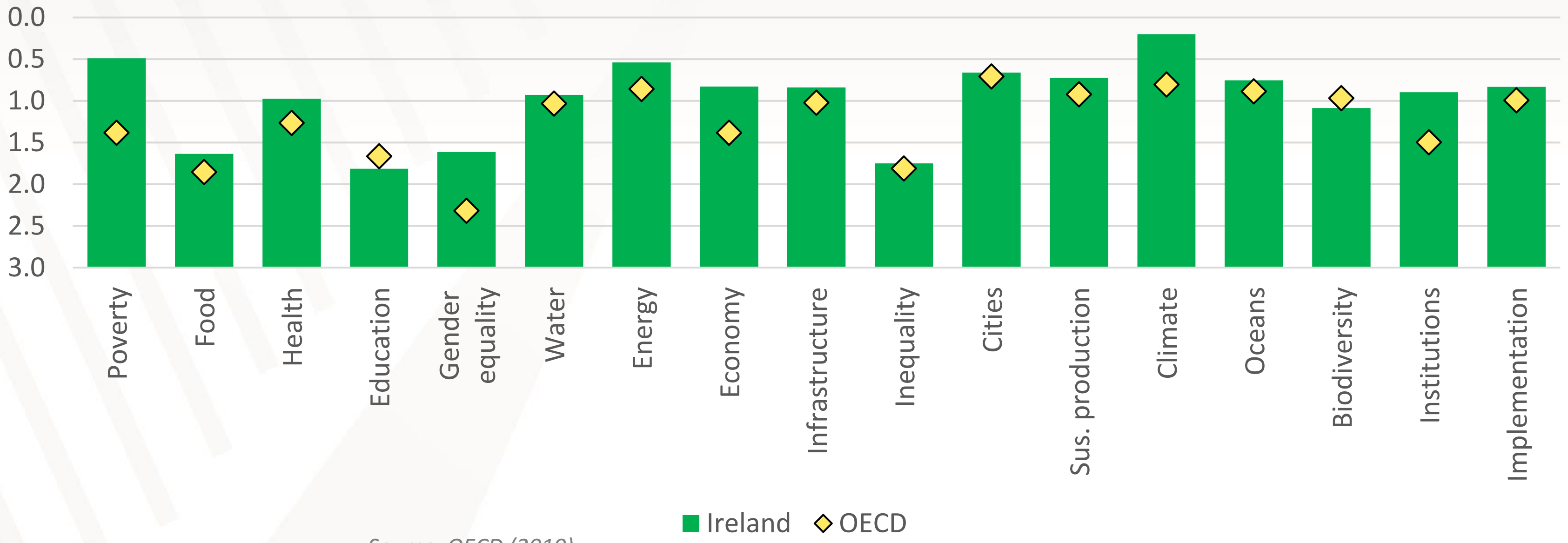
  Length of water main laid (total) : 393km

Irish peatlands; Clara Boardwalk

**For a more detailed break-down please see the ISGB 2019 Impact Report*

Ireland compares well to OECD on “S&G”

Based on the 17 Sustainability and Development Goals of the UN



Source: OECD (2019)

Each bar shows “distance” country needs to travel to reach each SDG. Distances are measured in standardised units with 0 indicating that the level for 2030 has already been attained: and 3 is the distance most OECD countries have already travelled. Bars show the average country performance against all targets under the relevant Goal for which data are available, and diamonds show the OECD average.

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

NTMA best practice

NTMA aiming to be a domestic leader in ESG

NTMA-wide

- Objective of making the NTMA the most sustainable public service workplace in Ireland - Strategy goal of becoming an environmentally sustainable and net zero emissions organisation by 2030.
- Our office building has achieved an A3 BER rating and LEED Platinum certification.
- Working on collating agency wide data as we seek to baseline our current emissions ahead of delivering Net Zero commitment.
- Established a NTMA Sustainability Group which supports the delivery of climate initiatives across the NTMAs mandates and drives the NTMA’s Climate Action Strategy.

ISIF

- Goal to reduce carbon intensity of the global portfolio by 50% by 2025.
- In the Irish portfolio the strategy is two-fold;
  - help Ireland meet its emissions targets by 2030 by investing in sustainable infrastructure.
  - achieve Net Zero by 2050 or earlier by investing in new technologies and business models that will underpin this transition.

NDFA

- Advising State Authorities on a number of climate related capital projects.

New Era

- Continues to progress a Climate Framework for the commercial semi-states.

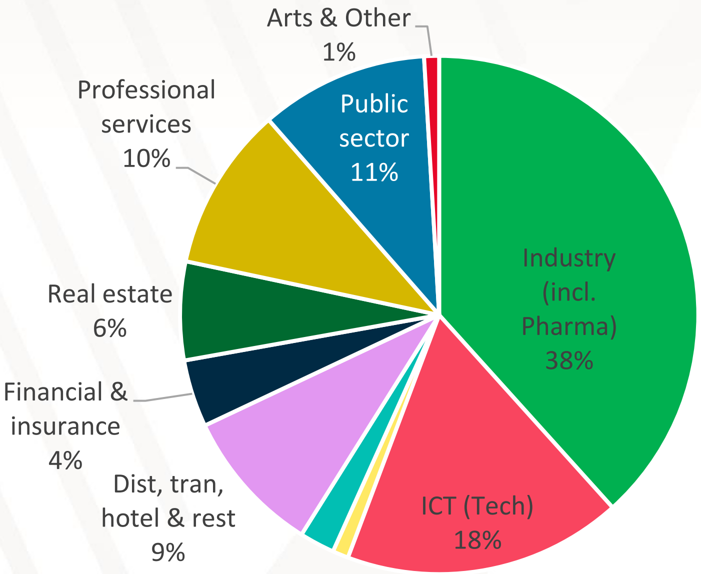
Structure of the Irish Economy

Multinationals distort the “true” economic picture but added resilience during Covid period

Multinational activity distorts Ireland's data

Notwithstanding those issues, MNCs have real positive impact

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



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: CSO

2020 Nominal GVA used

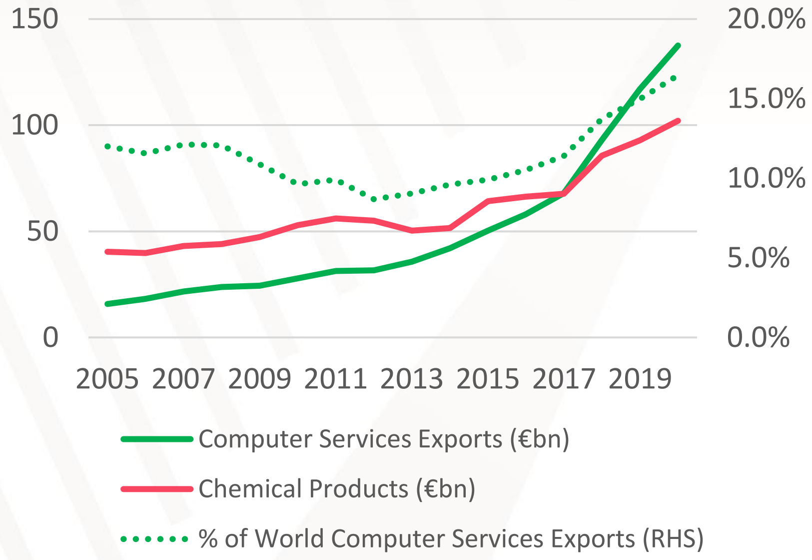
Domestic side of economy adds jobs; MNCs add GVA/high wages

	Share of Employment (2020)	Share of Wage Bill (2019)	Share of GVA (2020)	Gross Weekly Earnings € (Q4 2019)
Agriculture	4.5%	1%	1%	N/A
Industry (incl. Pharma.)	12.2%	15%	38%	916
Construction	6.2%	4%	2%	821
Dist., Tran, Hotel & Rest	25.4%	17%	9%	571
ICT (Tech)	5.4%	9%	17%	1,241
Financial	4.5%	8%	4%	1,235
Real Estate	0.4%	1%	6%	730
Professional	10.8%	13%	10%	810
Public Sector	25.6%	30%	11%	836
Arts & Other	5%	2%	1%	514

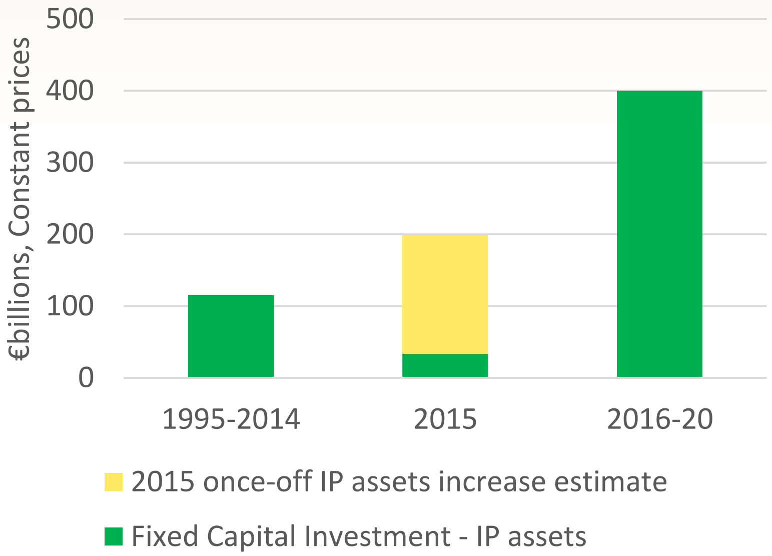
€0.6trn of intellectual property into Ireland

Assets brought here by tech. & pharma. in recent years

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



Enormous inflows (c. €0.6trn) of IP assets into Ireland since 2015 on the back of BEPS 1.0 reforms

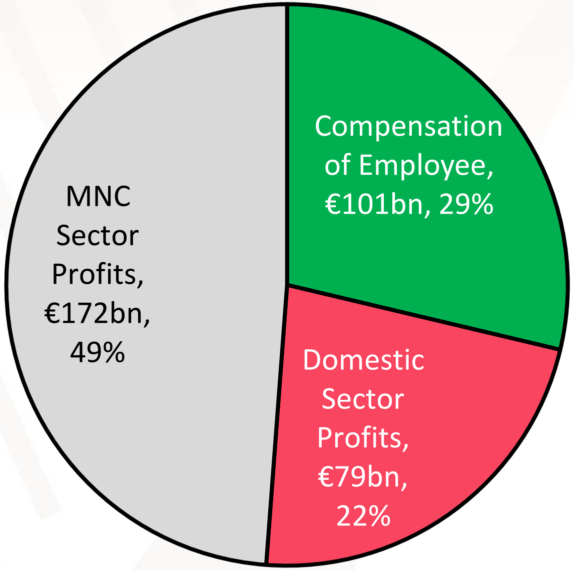


Source: IMF, CSO, NTMA Economics Calculations

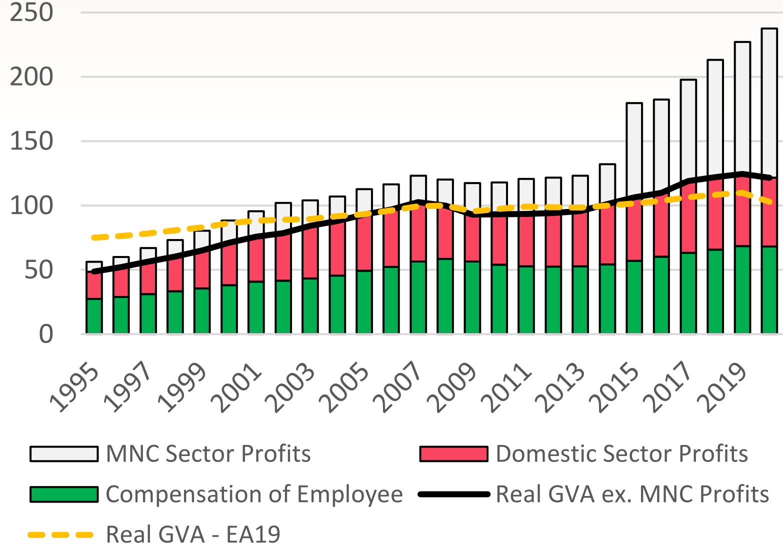
Underlying economy was robust pre-Covid

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 (2008 = 100)



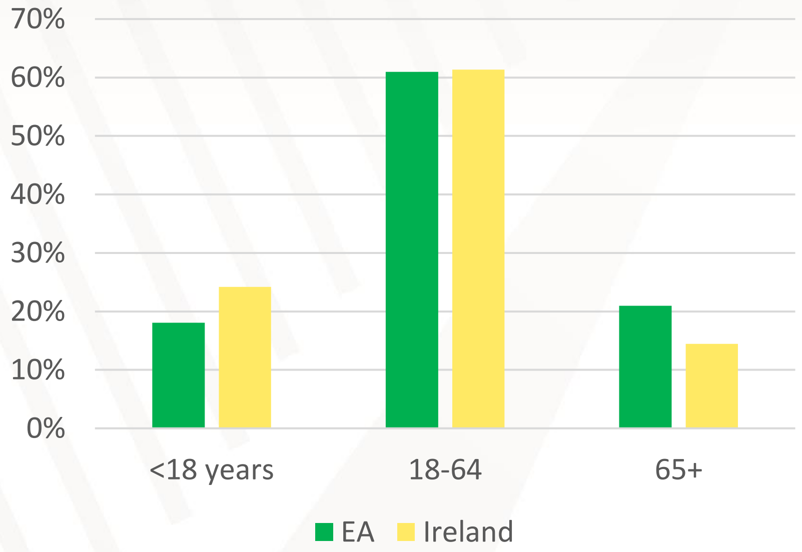
Source: CSO, NTMA calculations (Nominal 2020 data used in left chart)

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.

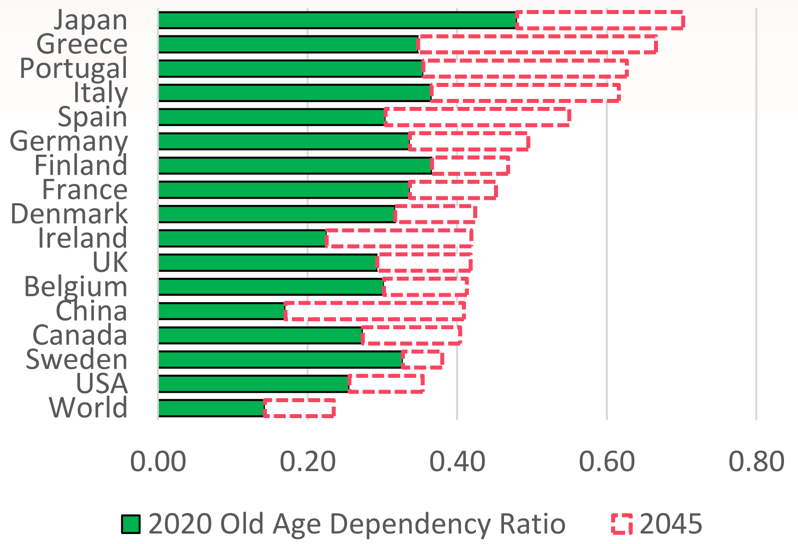
Ireland’s population helps growth potential

Age profile younger than the EU average

Ireland’s population estimated at 5.01m in 2021: younger population than EU



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



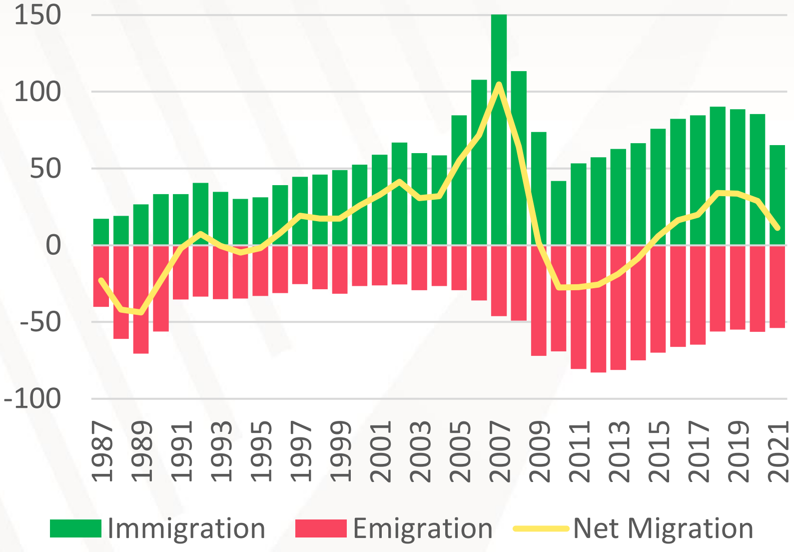
National Treasury Management Agency
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta

Source: Eurostat (2020) CSO; OECD

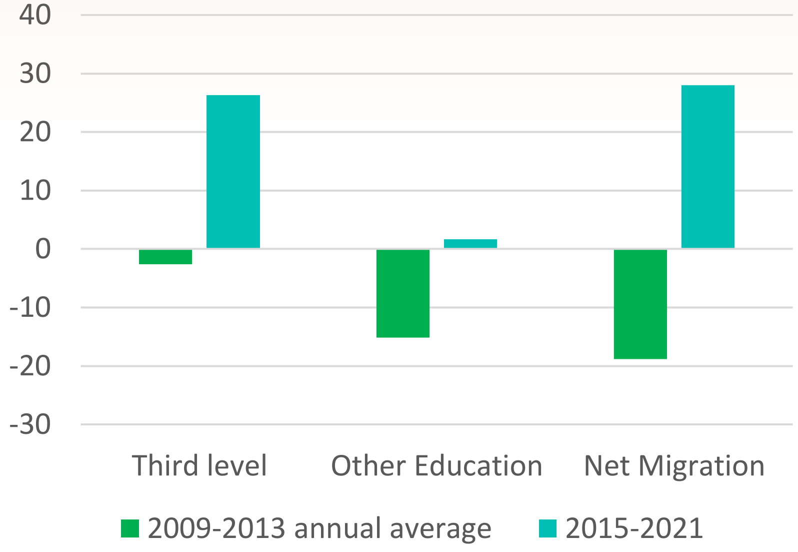
Migration improves Ireland's human capital

Ireland's net migration has swung back and forth on economic performance

Latest Census data show net migration positive since 2015 – recent slowdown due to Covid



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

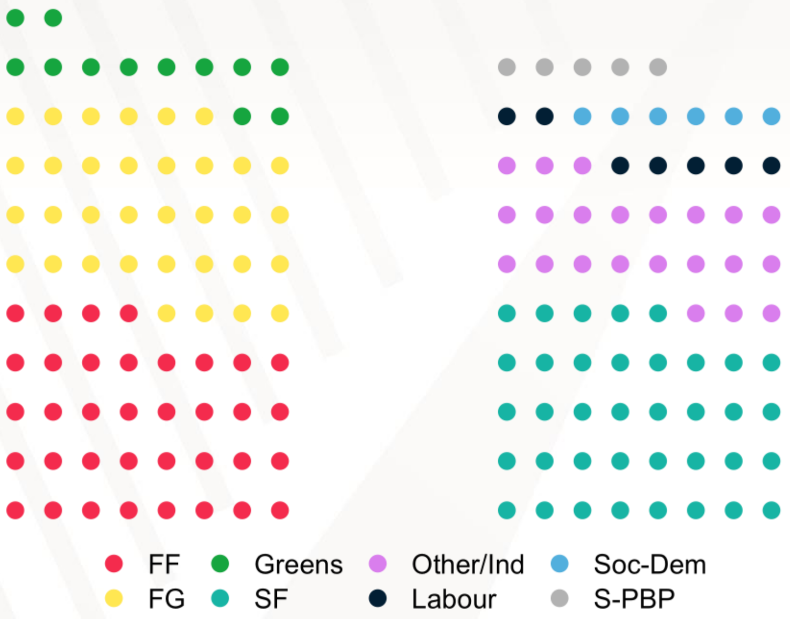


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: CSO

Ireland’s Government

The composition of the Dáil Éireann is evenly balanced between Government and Opposition



Key information on the 33rd Dáil Éireann

- Leadership
  - Taoiseach: Micheál Martin (FF)
  - Tánaiste: Leo Varadkar (FG) – (Martin and Varadkar swap roles in Dec 2022)
  - Leader of the Opposition: Mary Lou McDonald (SF)
- Political groups
  - Government (82 seats)
    - Fianna Fáil (36), Fine Gael (34), Green Party (12)
  - Opposition (77 seats)
    - Sinn Féin (37), Other/Independent (22), Labour Party (7), Social Democrats (6), S-PBP (5)
- Voting system: Proportional representation - Single transferable vote
- Last election: 8 February 2020
- Next election: No later than 20 February 2025

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Source: Houses of the Oireachtas

Brexit

Free trade agreement has re-routed trade patterns

Free Trade Agreement in place

Allows for tariff free trade but non-tariff barriers have increased

Main points of FTA

- From January 1 2021, the UK became a "third country" outside the EU's single market and customs union. As such without a free trade agreement, trade would have been subject to tariffs and quotas.
- Under the deal, goods trade between the two blocs 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 means less cooperation in certain areas compared to before Brexit. Financial and business services are only included to a small extent. Cooperation on foreign policy, security and defence will be lower also.
- 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 more modest.

Withdrawal Agreement signed in 2019

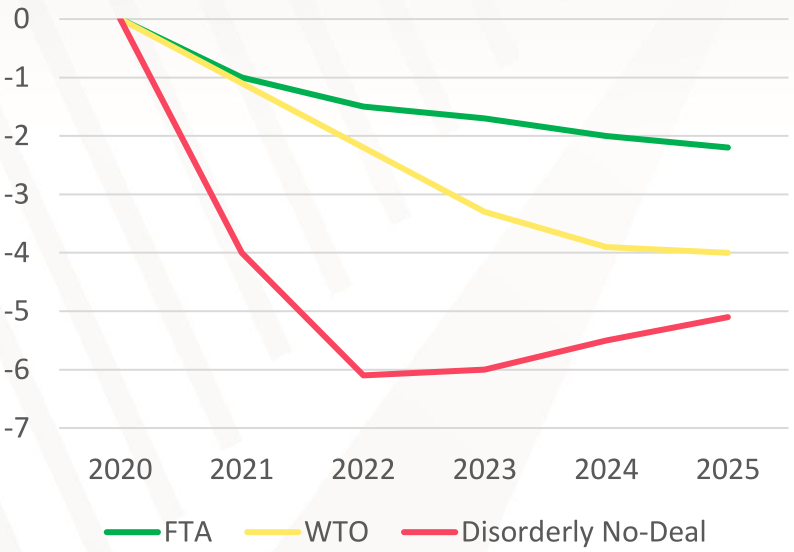
Northern Ireland protocol within Withdrawal Agreement resolves many but not all of the land border issues

- 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 is "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.

Impact of Brexit on Ireland likely net negative

Deal means the shock is smaller & spread over longer horizon

Modelled impact on output (in % of growth) versus No Brexit baseline: FTA reduces impact significantly



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

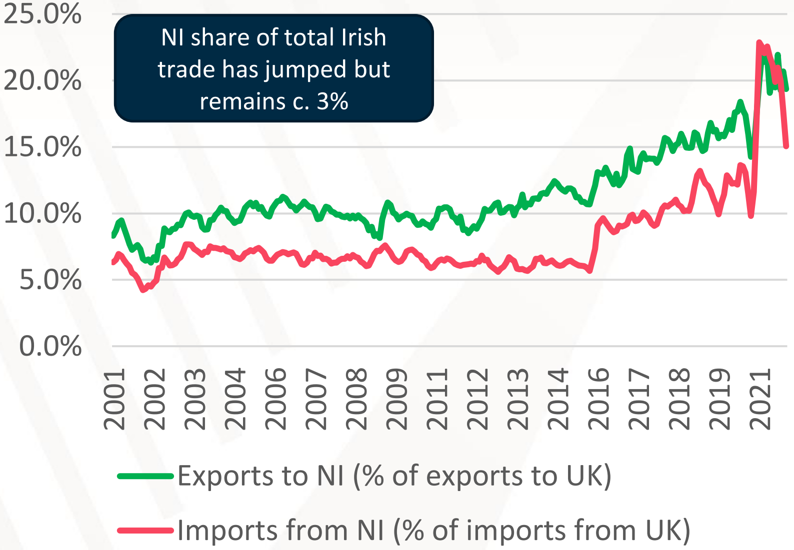
% of total	Goods (2019)		Services (2019)		Total (2019)	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	30.8	15.5	15.8	18.6	21.9	17.9
UK (ex NI)	8.9	20.6	15.8	6.9	13.5	10.6
NI	1.4	1.9	n/a	n/a	n/a	n/a
EU-27	37.1	36.7	29.8	19.8	32.8	23.8
China	5.9	5.8	2.8	1.3	4.0	2.3
Other	15.9	19.4	35.9	53.4	27.8	45.5

Source: CBI, NTMA analysis

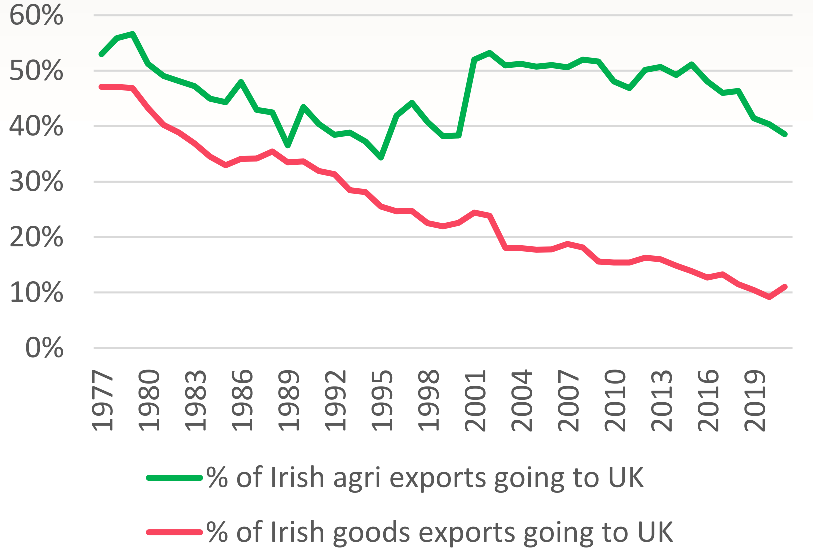
Trading flows are changing after FTA

ROI-NI trade jumped in 2021, both imports and exports

NI trading route more important than ever for IE-UK trade – special trade status of NI a factor



UK exit from single market will continue trend of lower goods trade between IE & UK



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Source: CSO

Modest benefit: FDI inflows into Ireland

The UK (City of London) has lost significant degree of access to EU market

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.
- 2019 figures from the IDA have shown that at least 70 investments into Ireland have been approved since the announcement of Brexit.

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

Property

Significant price pressures resulting from a lack of supply and strong demand

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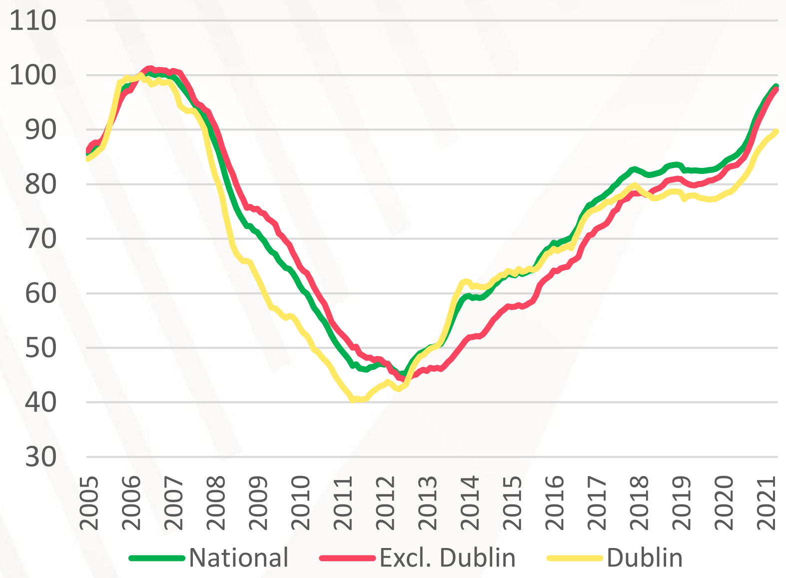
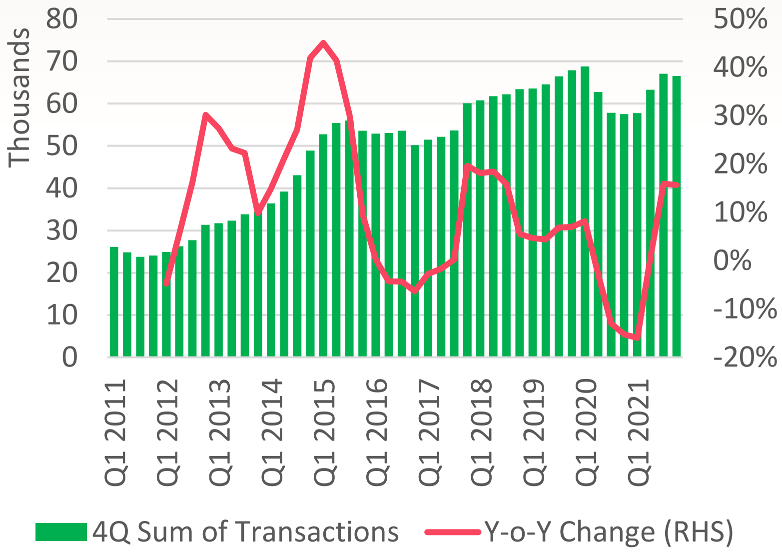
Prices have risen as Covid affected supply

House prices plateaued before the virus hit but since have increased rapidly

House prices close to previous peak in 2007 (=100), prices up 15.3% year-on-year



Transactions have begun to increase again after Covid lockdowns



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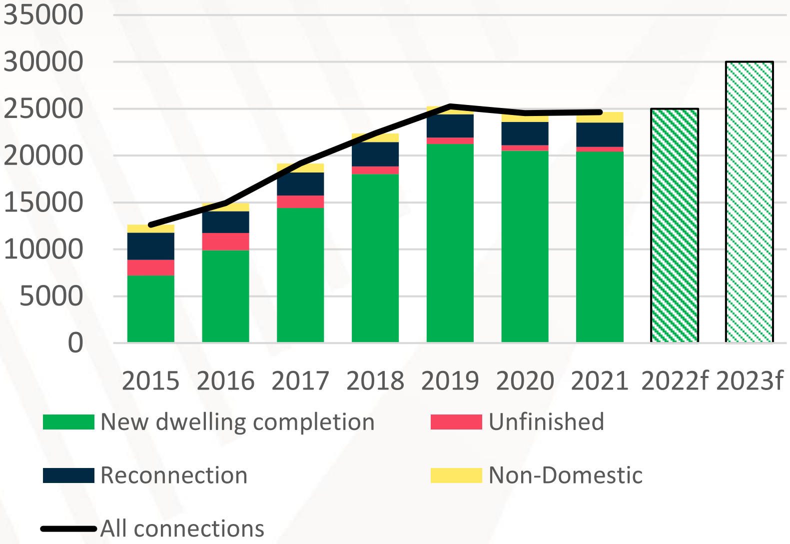
Source: CSO

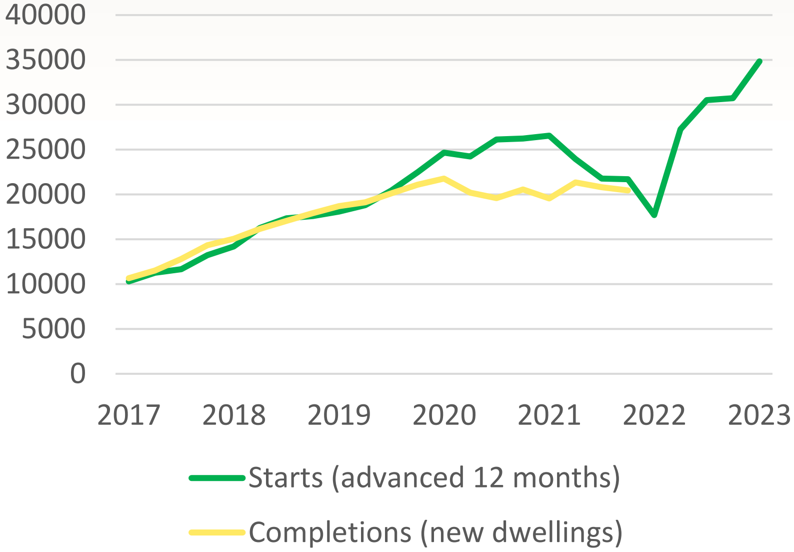
Covid-19 impacted supply for 2020 and 2021

2022/23 may see rebound in supply – housing starts c. 35k in last 12 months

Housing Completions* forecasted at 25,000 in 2022 with rebound expected in 2023**



Covid hampering supply for 2020-21 but recent housing starts show supply is responding



Source: DoHPCLG, CSO, NTMA Calculations

* 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.

** 2022 & 2023 CBI Forecast

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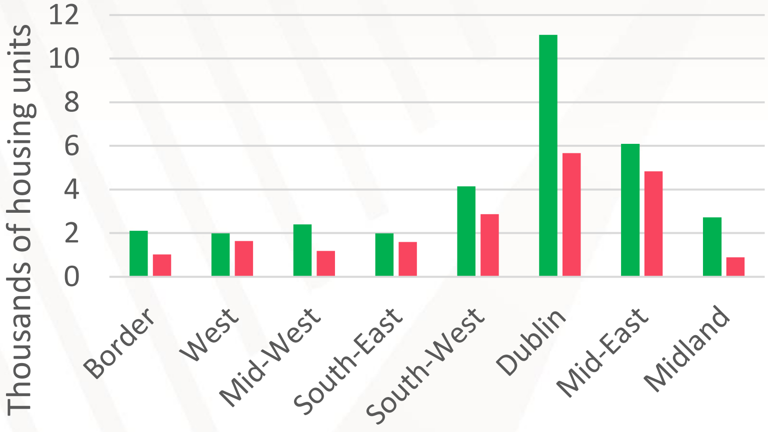
Underlying supply demand mismatch

Housing supply still well below demand – est. need at least 33K units a year



	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.

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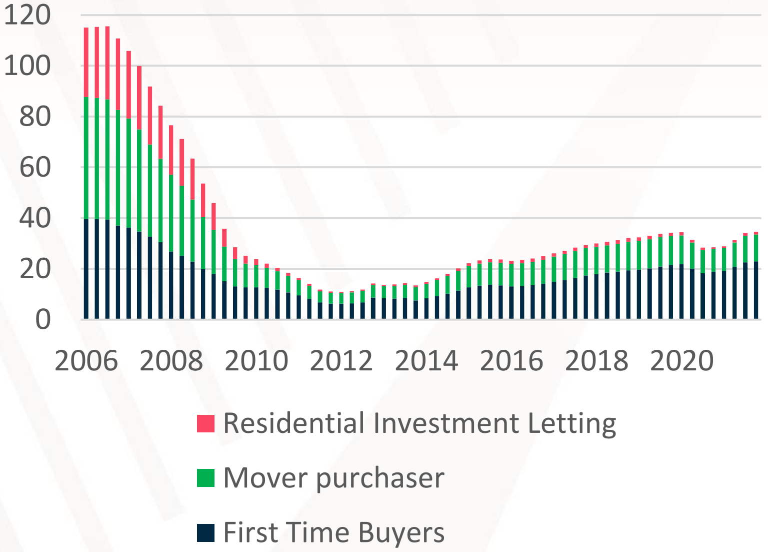
Source: CSO; NTMA analysis

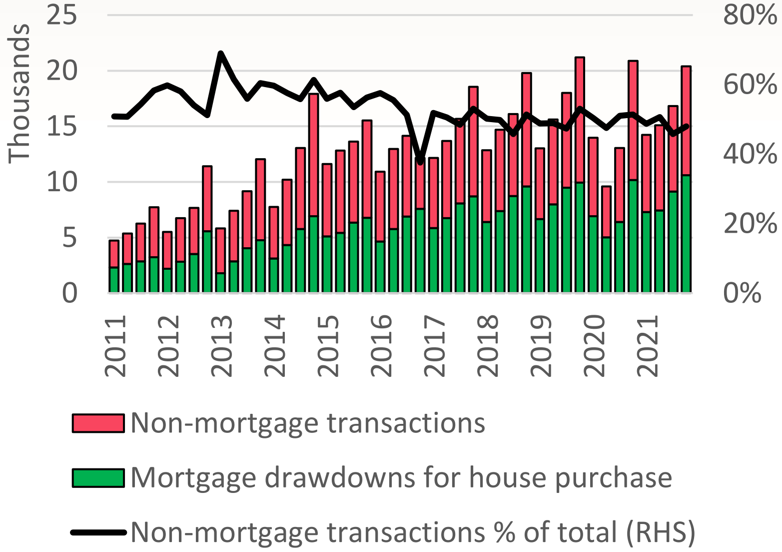
Mortgage drawdowns increasing

Restrictions impacted drawdowns but have begun to increase

Mortgage drawdowns* (000s) rose in recent quarters after Covid-19 impact



Non-mortgage transactions still important – c.40% of all transactions



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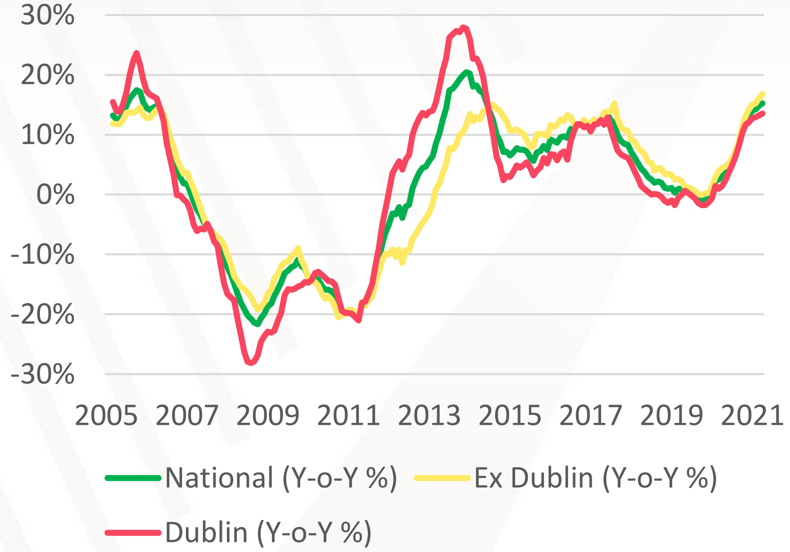
Source: BPFI; CSO

**4 quarter sum used (LHS)*

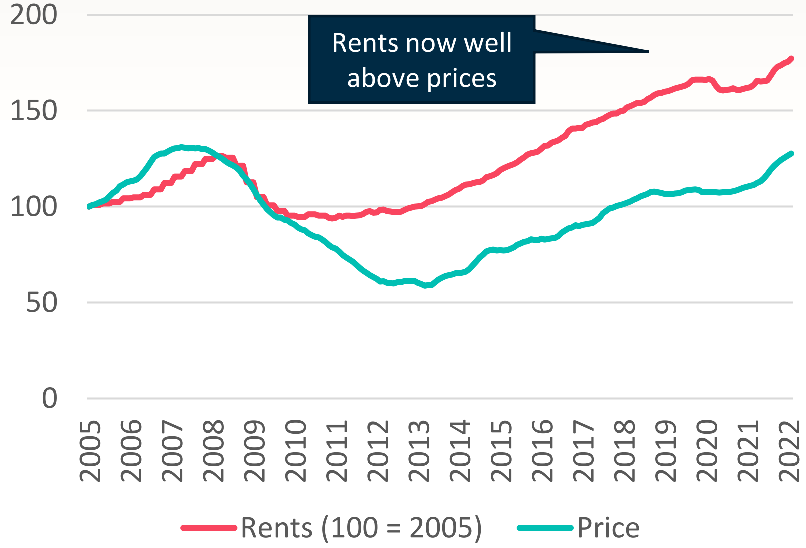
Covid-19 impact on prices coming through

Inflation driven by strong demand with rents pressure back

House prices up 15.3% in the year to February 2022



Rents pressures return strongly with a y-on-y increase of 9.2% after initial Covid related softening



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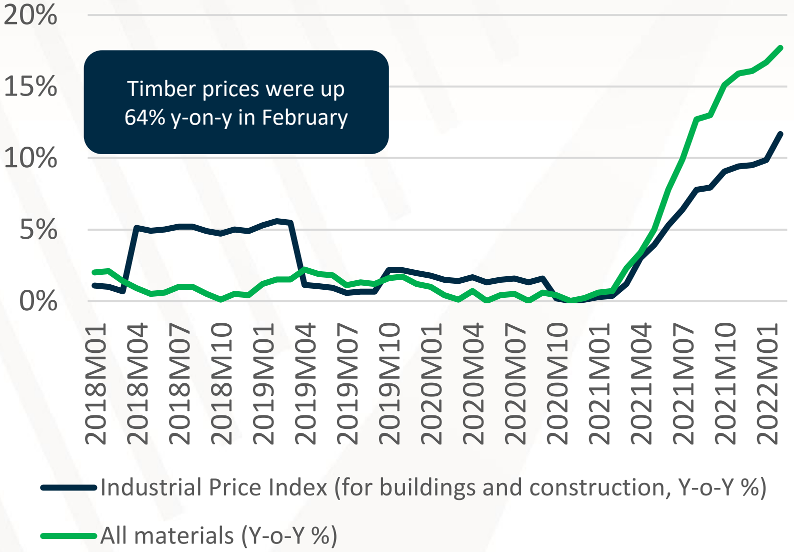
Source: CSO

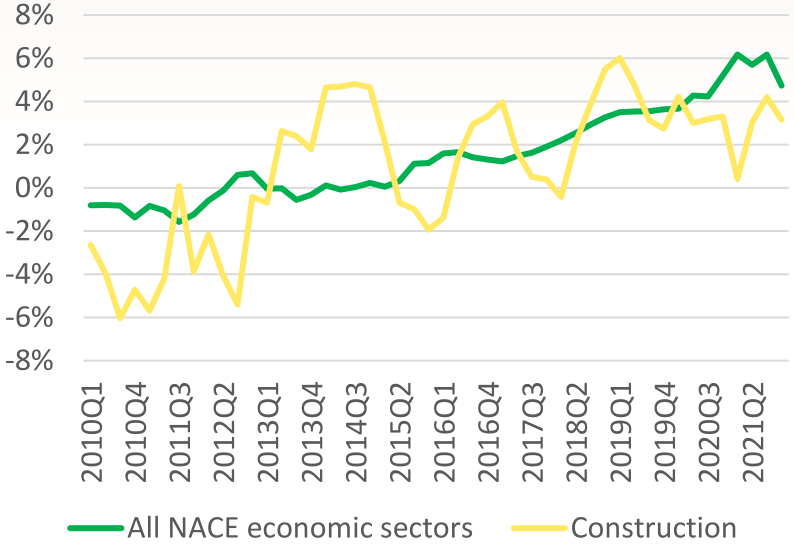
Inflation clear in construction sector

Increased material costs obvious but wages haven't expanded rapidly yet

Materials up 18% year-on-year in February



Earnings data in construction yet to show signs of inflation over and above the wider economy



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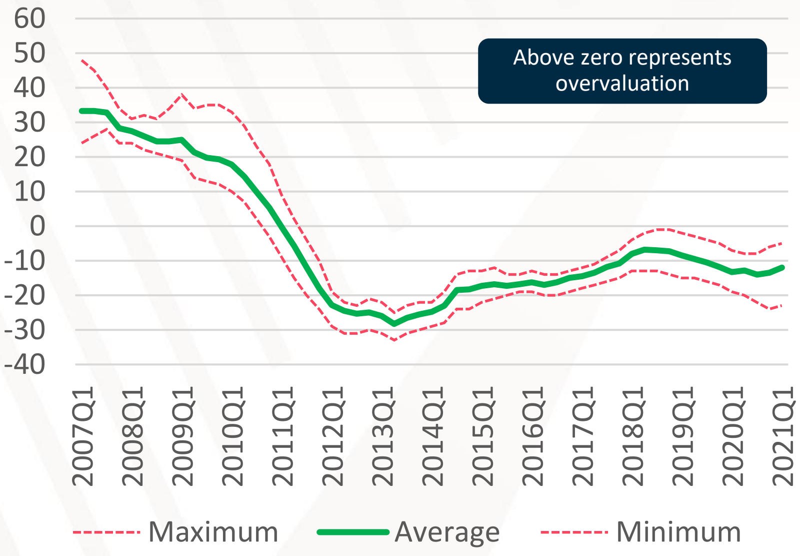
Source: CSO

RHS = weekly earnings on a 4Q yearly growth rate

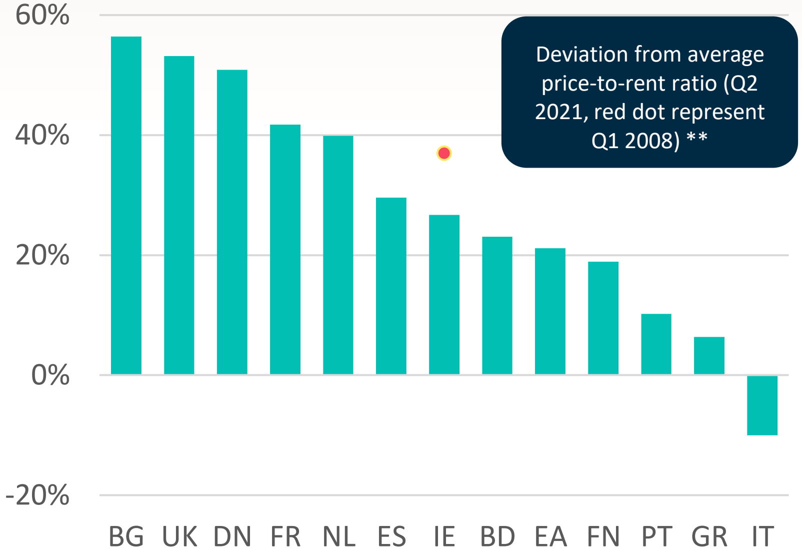
Price valuation metrics somewhat unclear

But the market is not comparable to mid 2000s

ECB estimates* indicate that residential prices in Ireland are currently undervalued…



…but by OECD measures they are above long run average



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Source: ECB, OECD

**Estimates based on methods relating to housing demand forces and asset pricing framework*

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

Banks & other

Ireland’s banks well capitalised as Government reduces BOI stake

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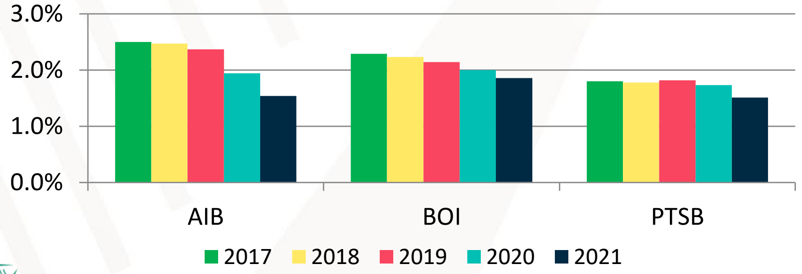
Ireland’s Banking Sector Overview

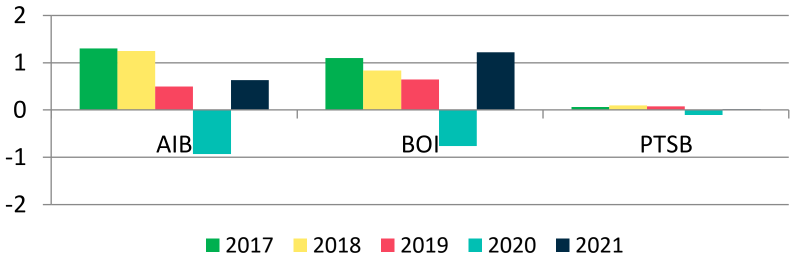
Less competition possible in decade to come

- Banks profitable before Covid-19: income, cost and balance sheet metrics much improved.
- Covid impact on profits and net interest margins but bank’s recovering alongside economy.
- Ulster Bank and KBC - both of which have no govt. ownership have decided to leave Irish banking market. Reduced competition is main impact.
- The Irish government has begun to sell its share in BOI. The Govt. owns c. 5-6% after some selling in last 6 months. The pace of shares sold will depend on market conditions. This will leave just AIB and PTSB with government involvement.
- An IPO of AIB stock (28.8%) occurred in June 2017. This returned c. €3.4bn to the Irish Exchequer. It was used for debt reduction. A modest sale of AIB shares occurred in recent months. Government still own approx. 70% of AIB.

Net Interest Margin



Profit before Tax



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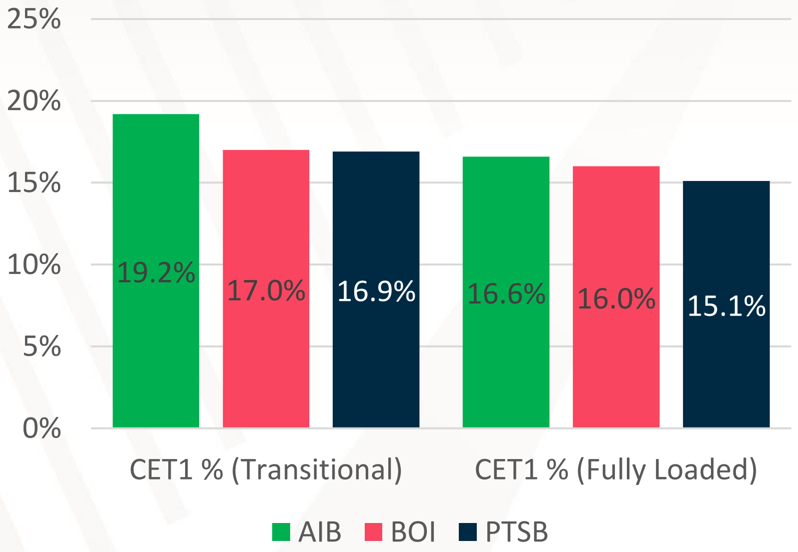
Source: Annual reports of banks - BOI, AIB, PTSB

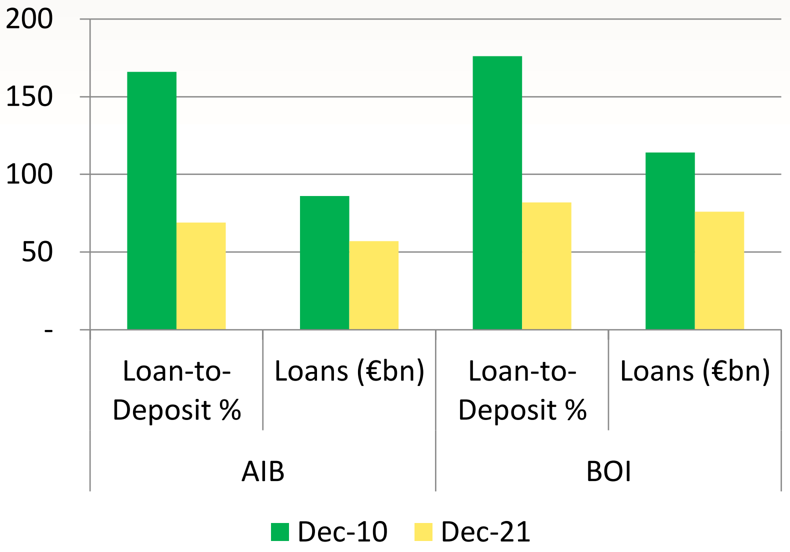
Capital ratios strengthened in last 10 years

Bank's balance sheets contracted and consolidated since GFC

CET 1 capital ratios (H1 2021) allow for ample forbearance in 2022



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



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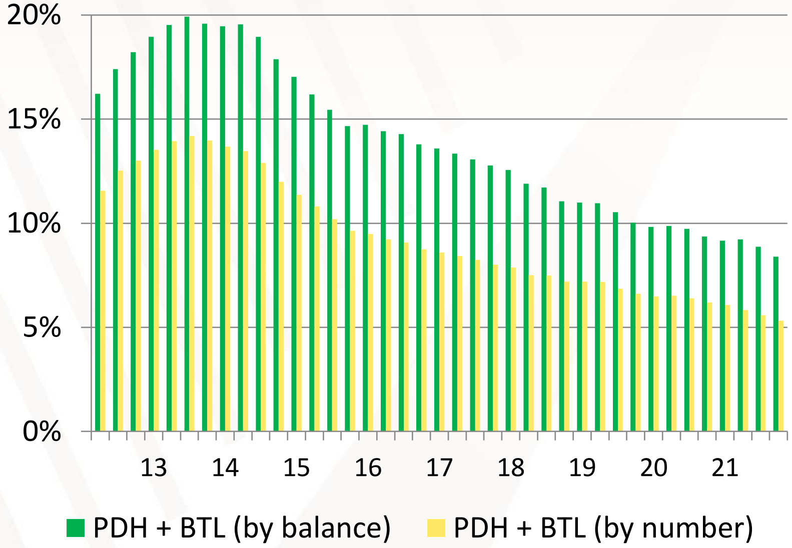
Source: Published bank accounts

Note: "Fully loaded" CET1 ratios used. Refers to the actual Basel III basis for CET1 ratios.

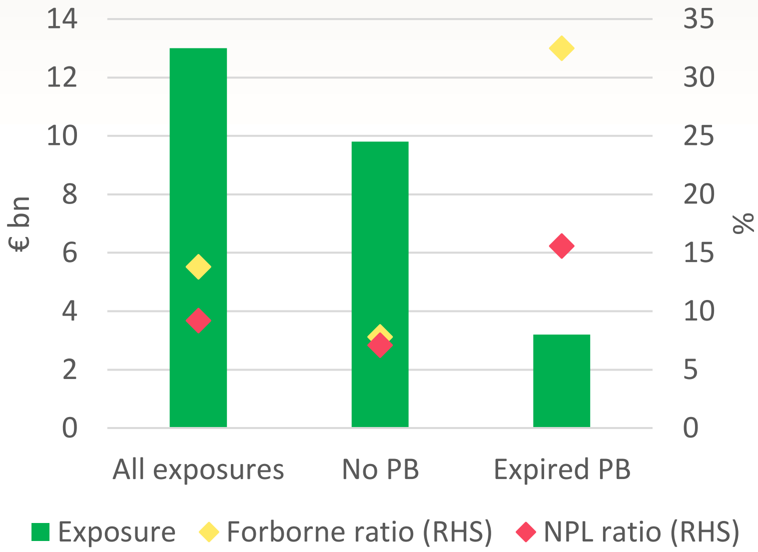
Covid impact on households and firms varies

Mortgage arrears continue to decline while sectorally exposed firms remain vulnerable

Mortgage arrears (90+ days) have steadily declined with no noticeable Covid impact



Forbearance and NPL ratios of Irish SME retail bank exposures by payment break history



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Source: CBI; RHS underlying data from CBI Financial Stability Review 2021 II

Commission's ruling on Apple annulled

Further appeal by EC means case continues

- In 2016, the European Commission ruled that Ireland illegally provided State aid of up to €13bn, plus interest to Apple. This figure was 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. **The General Court granted the appeal in July 2020, annulling the EC's ruling.**
- 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. **The General Court has judged no such advantage occurred.**
- 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. **There is no need to adjust funding plans given the decision by the General Court or by the Commission's decision to appeal.**

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