Imminent risk from Brexit

Last year saw first budget surplus since 2007

August 2019

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Index

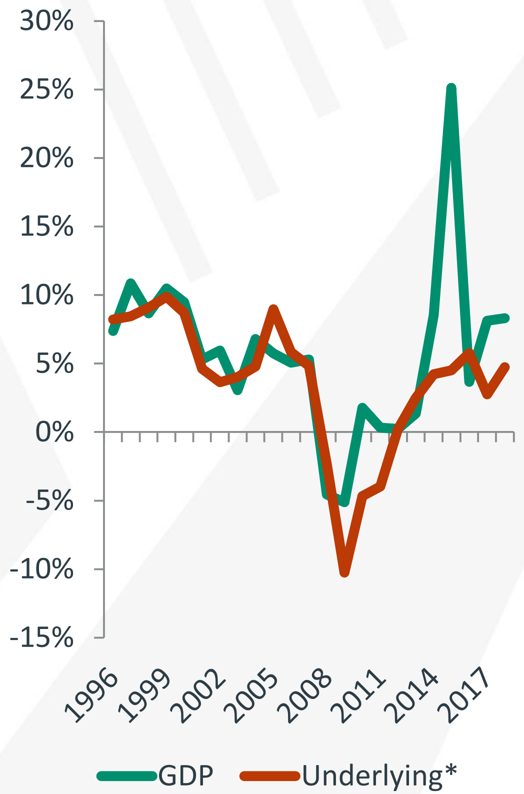
Summary

Full employment as debt sustainability improves

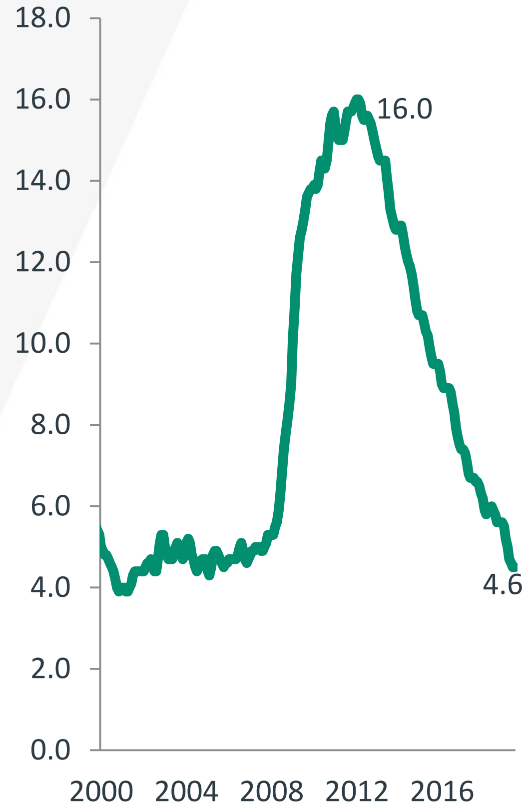
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Domestic economy growing: averaging around 4.5 per cent from 2013-18

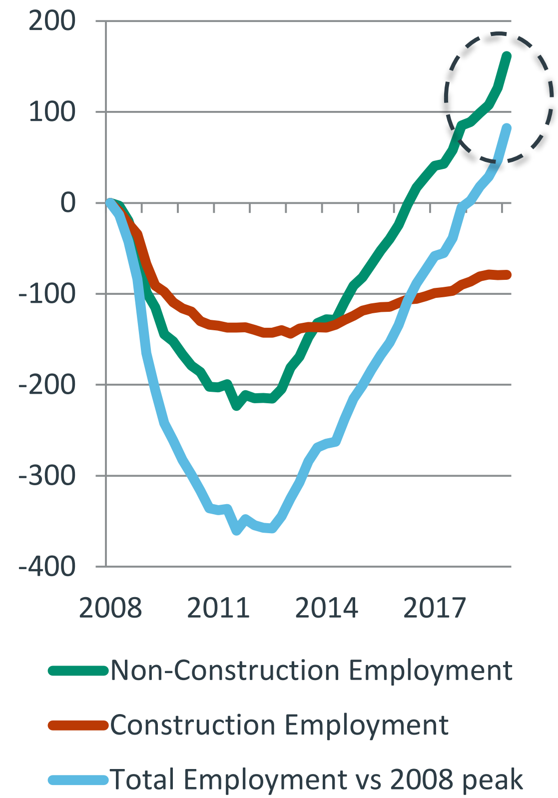
True growth healthy



Dramatic drop in unemployment rate



Employment (000s) well above 2008 peak



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

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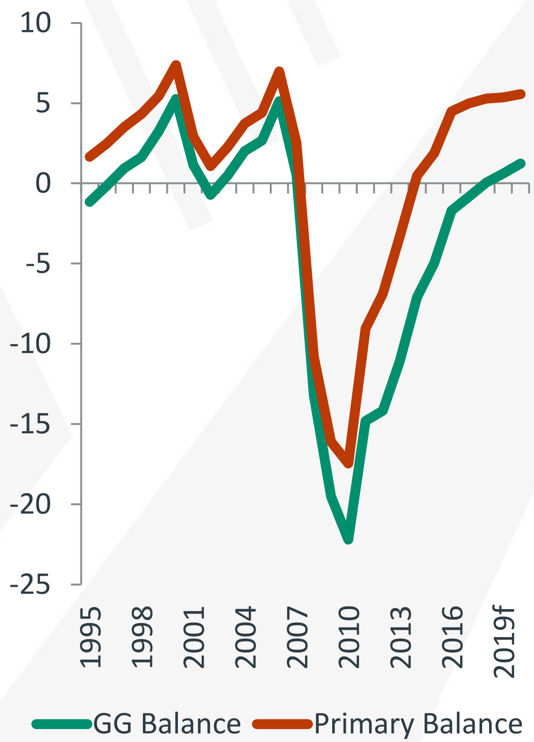
Primary surplus, improving debt dynamics and cash balances provide protection

Five years of primary surplus (€bn)



Ireland is improving its debt dynamics by the month

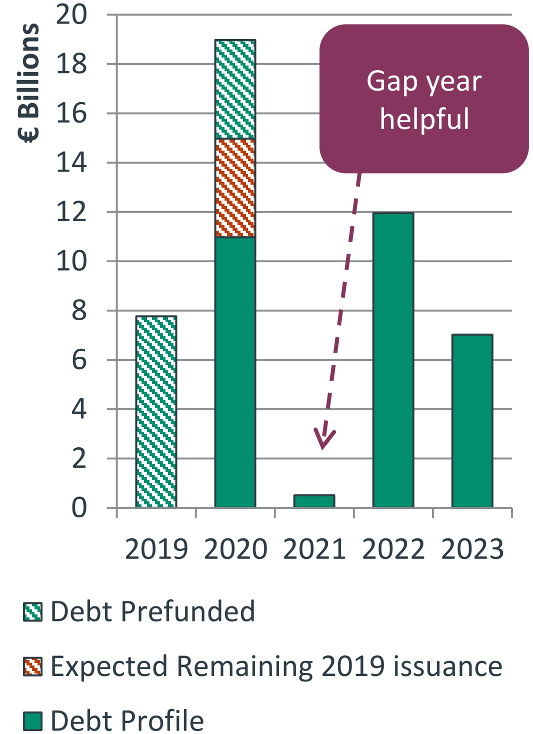
Debt-to-GNI*
(104% 2018, from 166% peak)

Debt-to-GG Revenue
(251% 2018, from 353%)

Average interest rate
(2.6% 2018, from 5.1%)

Debt-to-GDP^
(64% 2018, from 120%)

Cash-balance provides near-term protection (€bn)



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

Main risks are external and outside of Ireland's control

Brexit

"Hard" Brexit – end Oct. 2019 is next cliff edge - could reduce Irish growth to 0% in 2020.

Employment might be up to 4% less than in a benign scenario according to DoF/ESRI.

US

Ireland is still a "high beta" bet on the US economy, in particular its ICT sector.

US is in the late stage of its economic cycle, although this may be extended by Fed policy

Tax

Corporation tax reform may impact Ireland's economic model in the medium term.

The OECD BEPS II process is slated to report by end 2020

€12bn (of €14-18bn) issued in 2019 so far; well positioned given prefunding and maturity lengthening

Pre-funded

Current cash balances cover all 2019 redemptions and more

The remainder of this year's funding (at least €3bn) will meet 2020 bond redemptions

10 years

One of the longest weighted average maturities in Europe

NTMA used ECB's QE to extend debt maturity, reduce interest cost and repay the IMF loans

A+/A2/A+

Ratings from main agencies

Ireland's debt sustainability is improving, although Brexit is holding back rating upgrades

Section 1: Macro

Best measures - labour market and MFDD
- show Ireland's economy is in rude health

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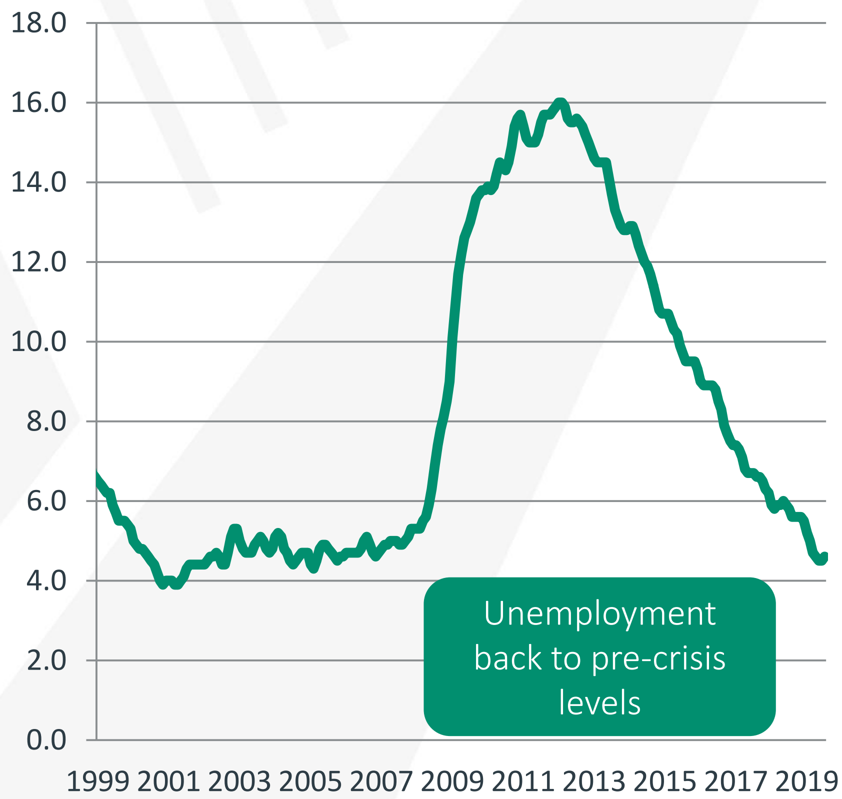
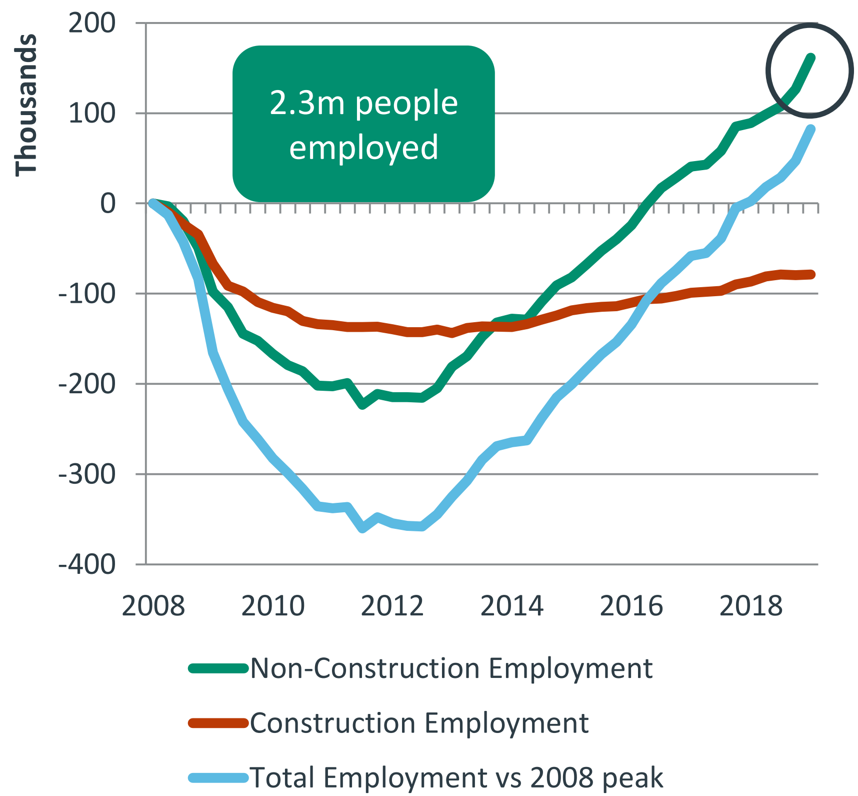
Labour market best illustrates Ireland's growth story – Ireland is at or very close to full employment

Unemployment rate: down to 4.6% in July 2019 from peak of 16%



Total employment back above previous peak as 160K non-construction jobs added on net



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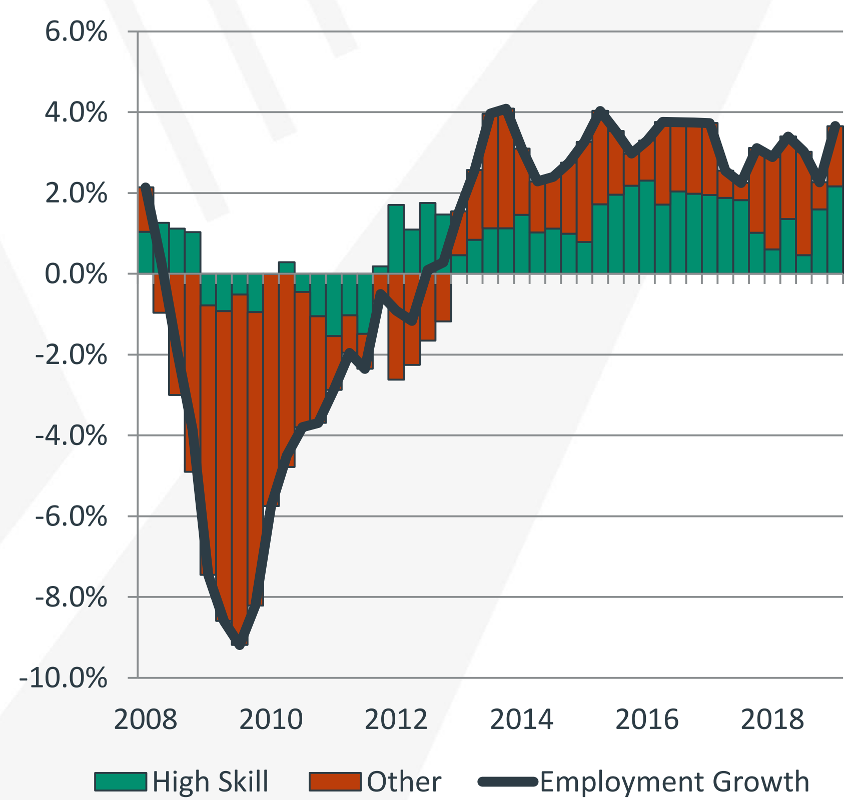
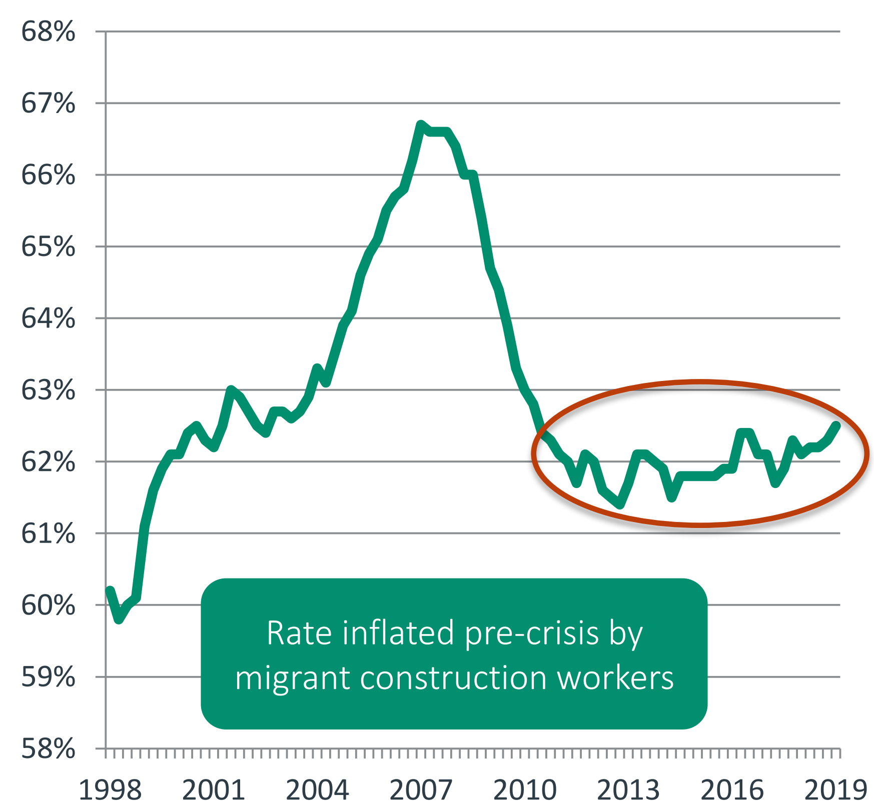
Source: CSO

High-skill employment an important driver; though labour participation rate has been slow to recover

High-skill employment has grown sharply



Labour participation has not yet fully recovered as young stay in school



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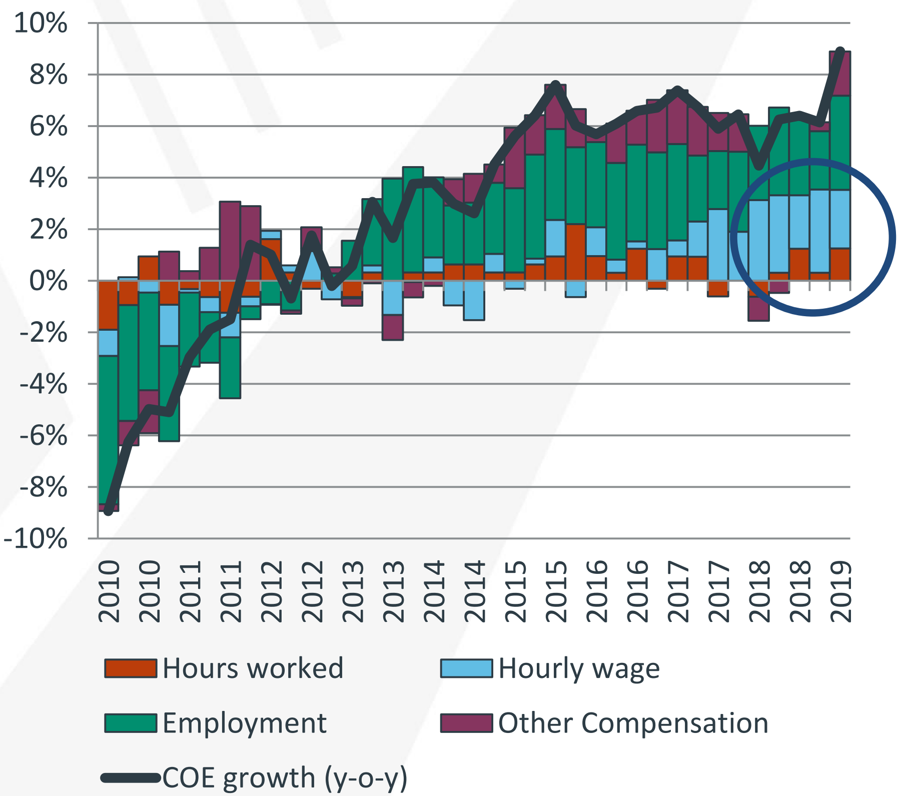
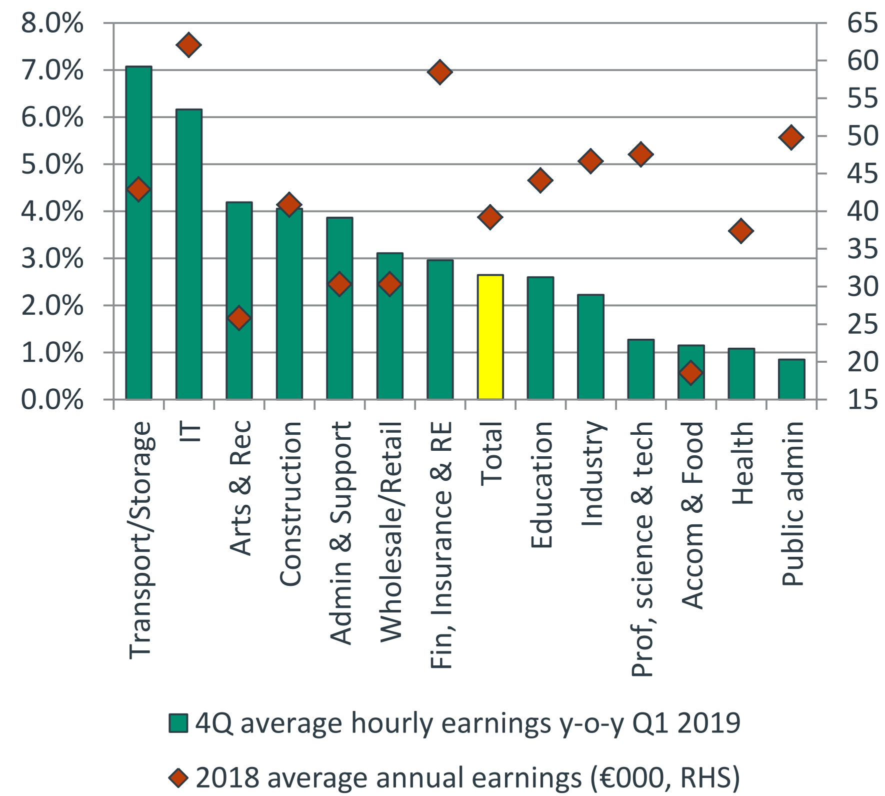
Source: Eurostat; CSO
High Skill jobs include the ISCO08 defined groupings Managers, Professionals, Technicians and associate professionals

Wages growth evident in 2018 but uneven across sectors

Wage growth a driver for increase in compensation of employees…



… but disparities remain across sectors

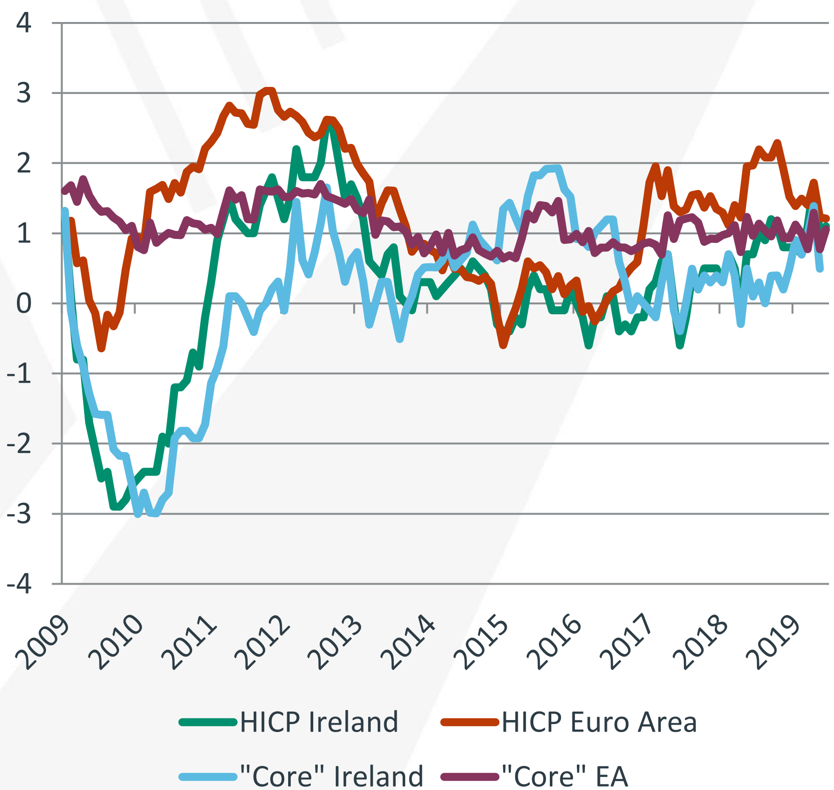


Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Source: CSO

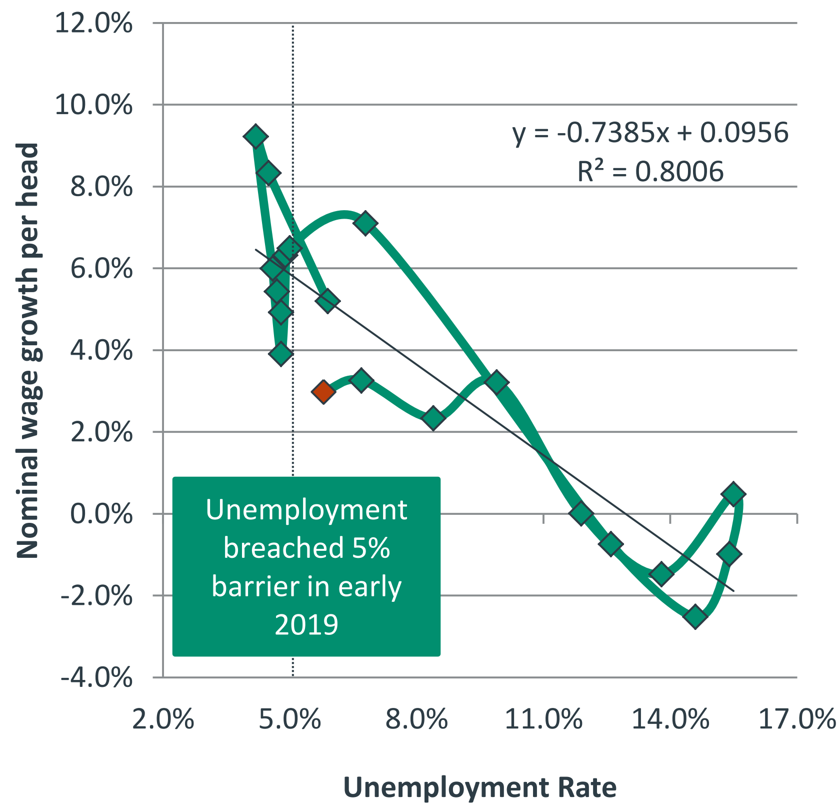
Despite being late cycle, inflation is low; Ireland's *Phillips Curve* might be starting to bite

Inflation (%) in Ireland similar to rest of euro area currently – Brexit ref. impact has gone



Source: CSO, Eurostat

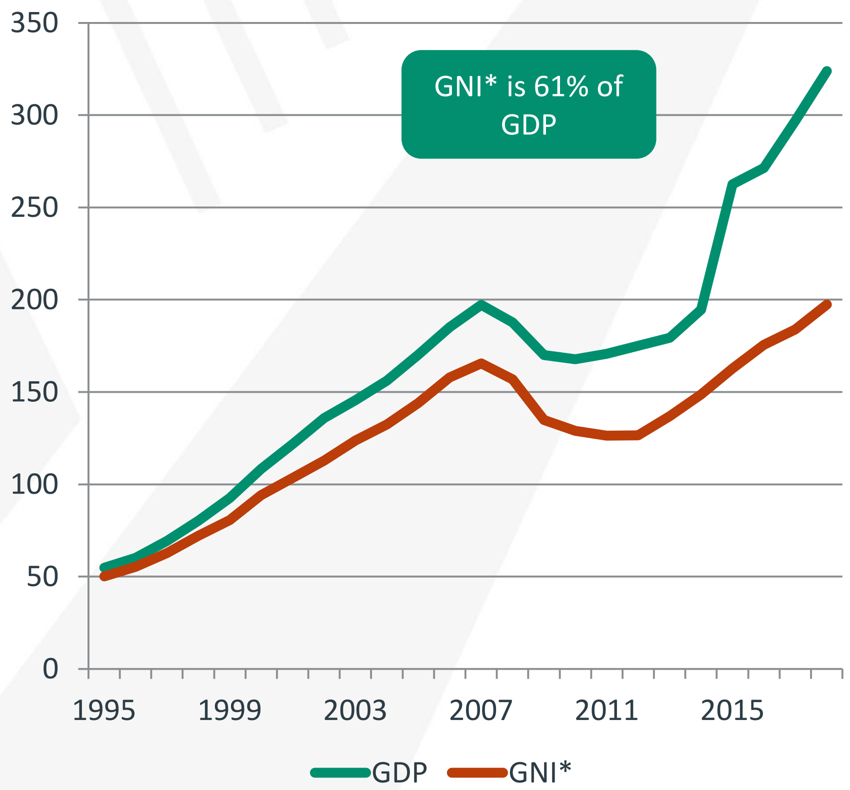
At full employment, wage growth could be an issue in 2019



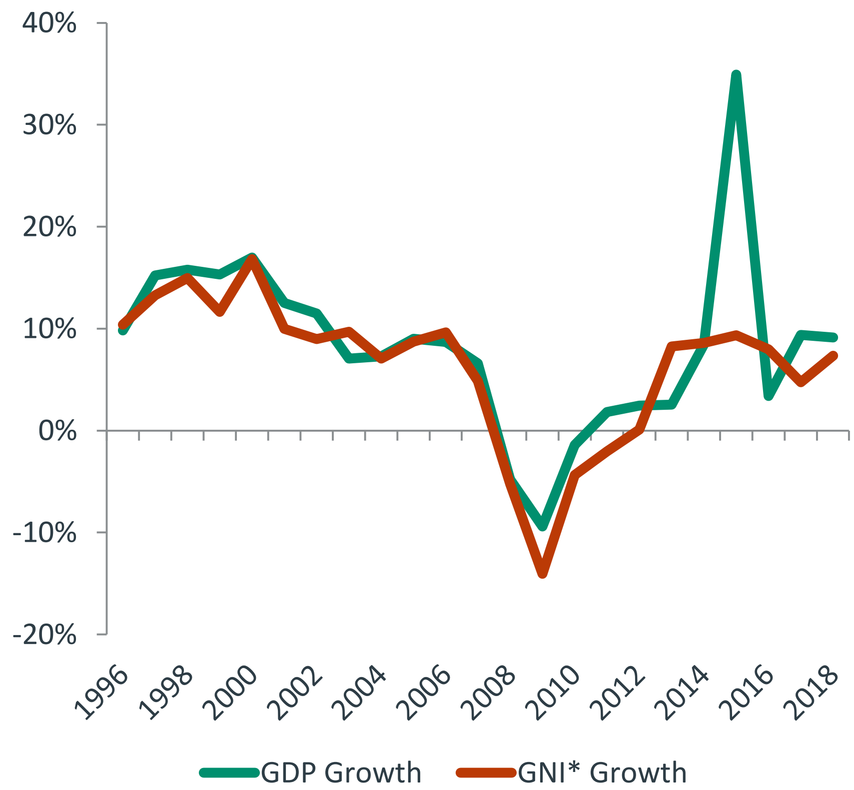
Source: CSO, NTMA analysis; Non-Agriculture employment /wage data on yearly basis (1999-2018)

GDP distortions mean we need to look to other metrics; Irish recovery evident when looking at GNI*

GNI* was €197bn in 2018; 7.3% higher than in 2017 (current prices)



GNI* growth rate averaged 7.7% 2013-2018 (current prices)



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
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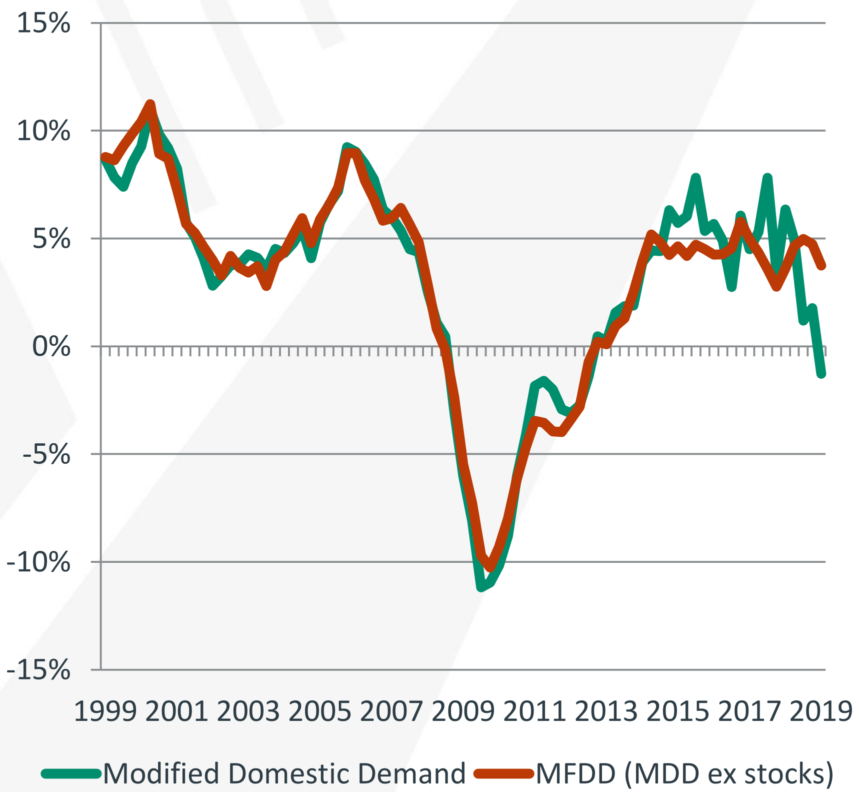
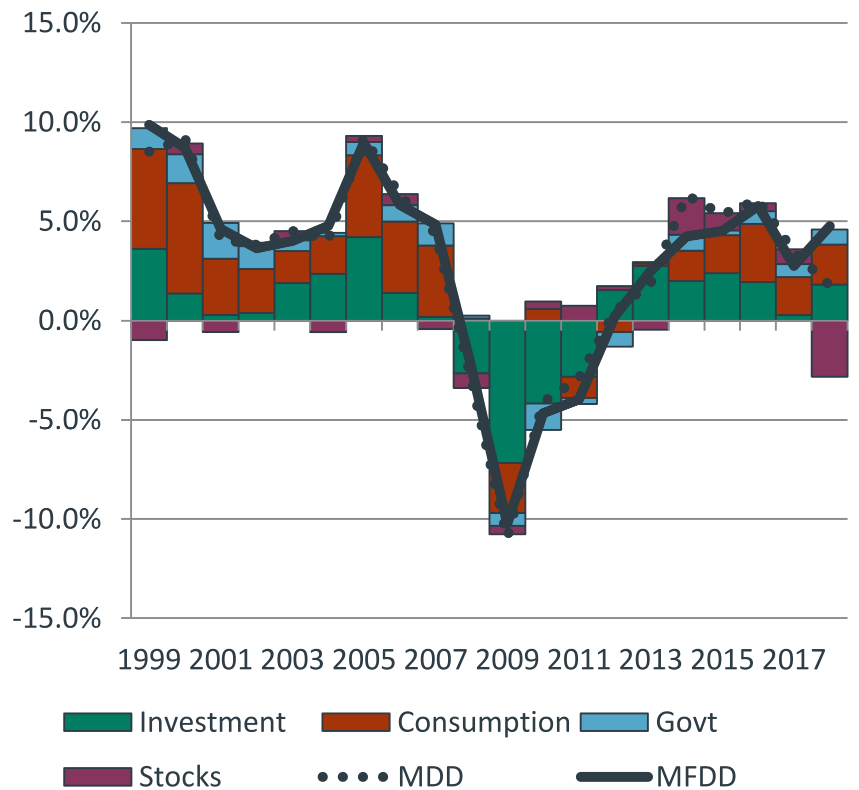
Source: CSO
Note: See annex for discussion on the GDP distortions from 2015 onwards

When looking for price-adjusted timely data, modified final domestic demand is the best measure

In real terms underlying growth in Ireland averaged 4.4% since 2014



Unusually large changes in multinational stock levels distort the MDD measure



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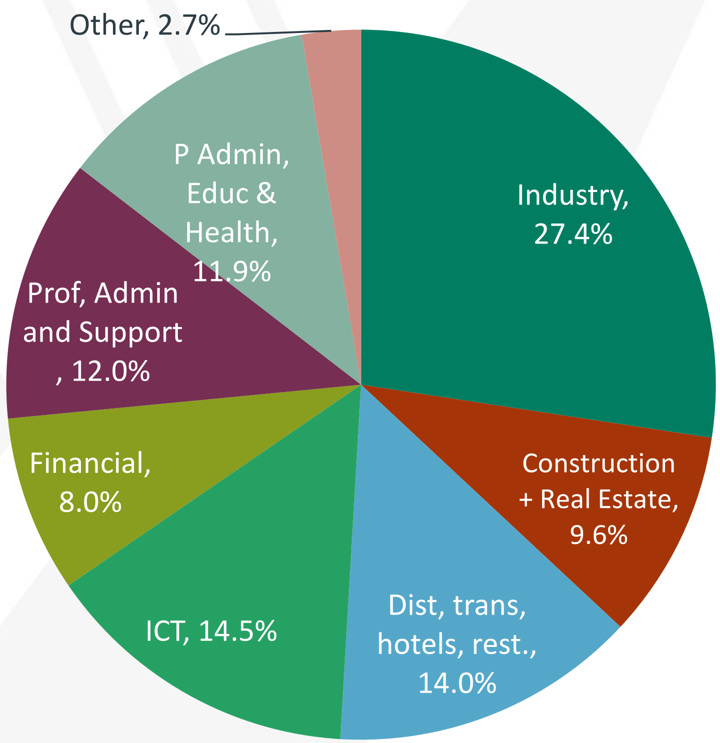
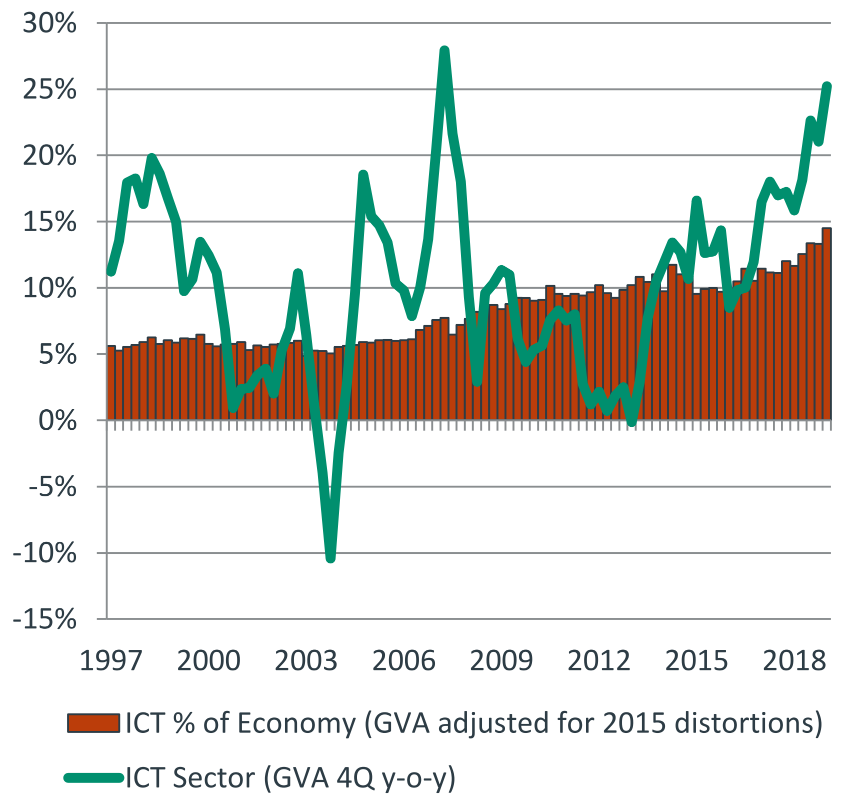
Source: CSO
Note MFDD measure used here includes private consumption, government consumption, building investment, elements of machinery & equipment investment, elements of intangible asset investment. See annex for more detail.

Economy has been driven by multinational growth – in particular ICT; sector grew 25% in 2018 alone

Breakdown of the Irish economy by sector – Industry (pharma) and ICT are 40% of GVA



Information and communication sector has seen exceptional growth in recent years



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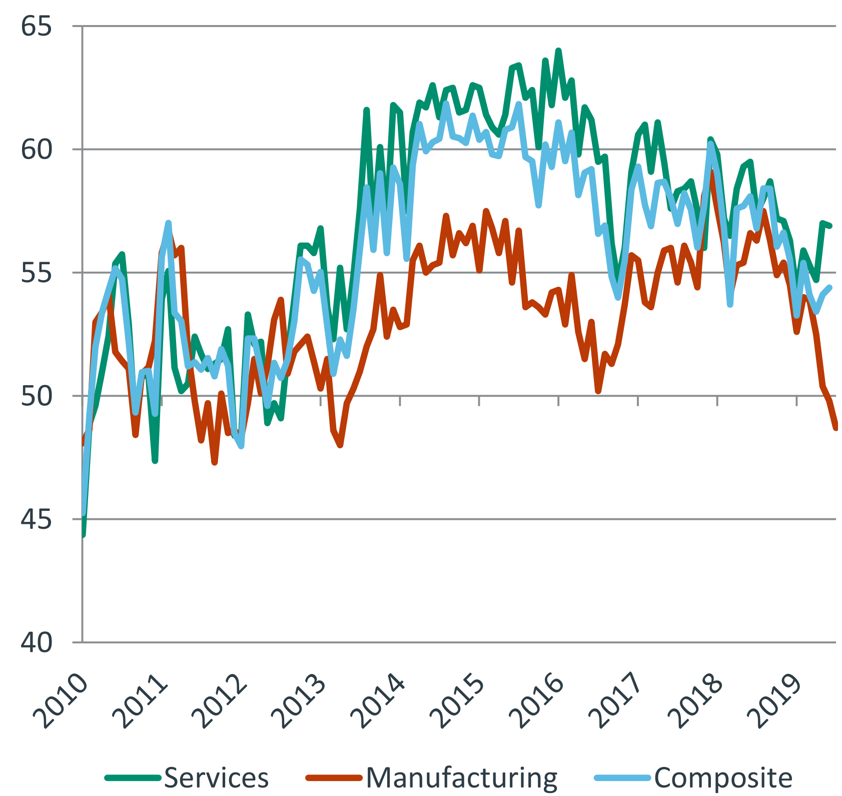
Source: CSO (2018)
Note GVA figures adjusted for distortions in 2015. A depreciation charge was subtracted from industry GVA in 2015 and onwards to take account od multinational effects.

Short-term indicators point to further growth, although a little less hot than in the last five years

MFDD growth is heavily correlated with employment growth

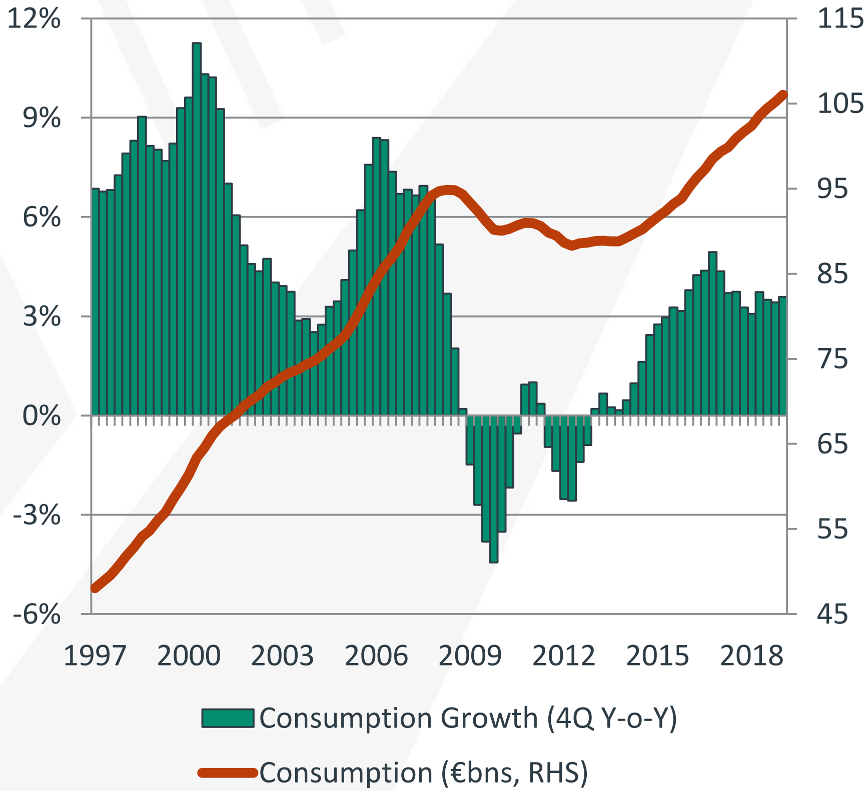
Ireland's PMIs diverging in recent months, as manufacturing slows around the world



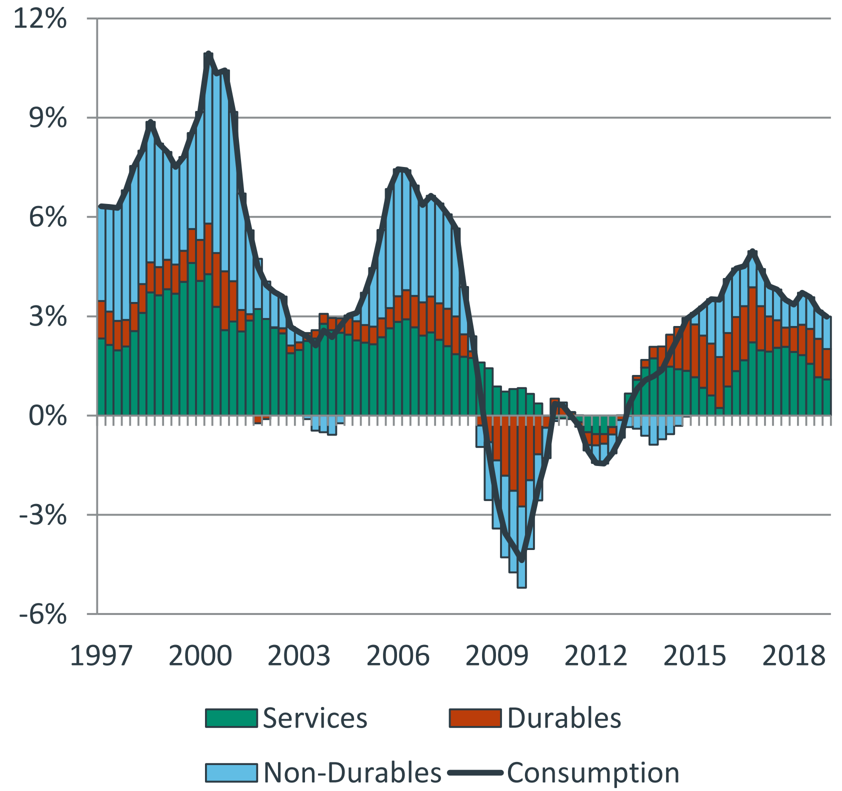
Source: CSO; Markit, Bloomberg, Investec
Note MFDD measure used here includes private consumption, government consumption, building investment, elements of machinery & equipment investment, elements of intangible asset investment. See annex for more detail.

Consumer spending growth consistent around 3% mark

Private consumption expanded by 3.4% in 2018 – Q1 continued trend



Services driving latest growth in spending



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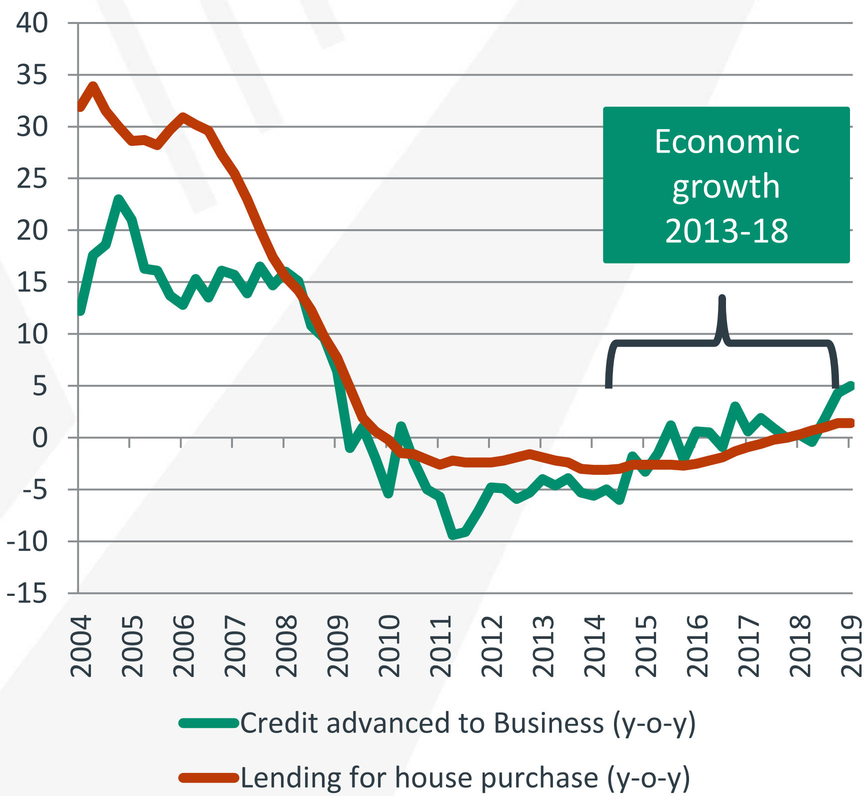
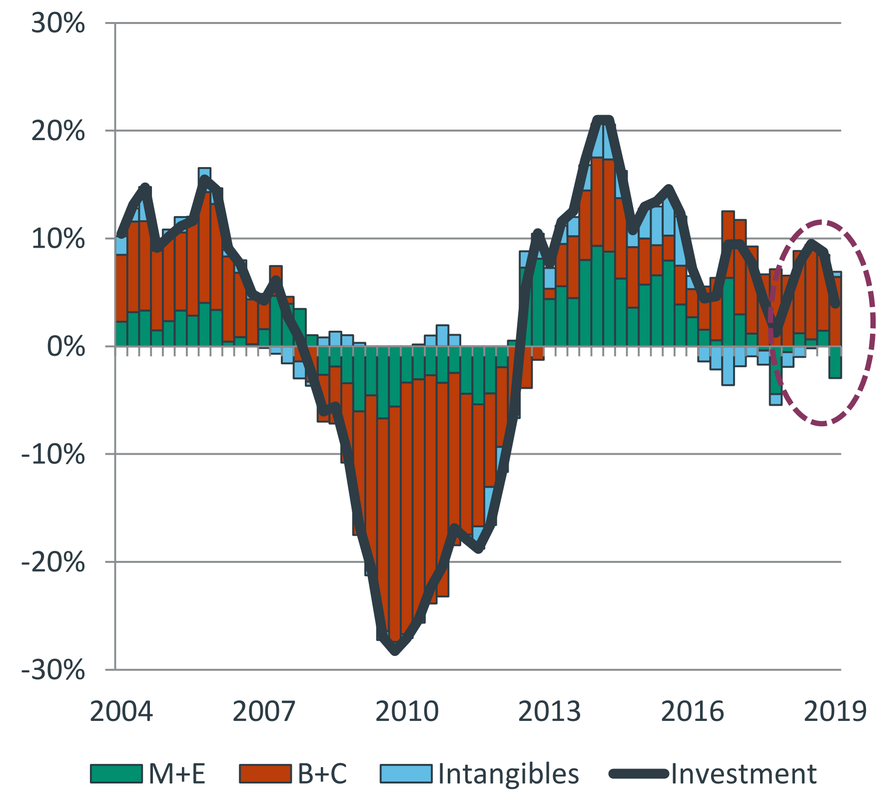
Source: CSO; Eurostat

Crucially the recovery has not been driven by credit so far

Lending for house purchase only edging into positive territory recently



Modified investment led solely by building + construction; Mach. + Equipment sluggish



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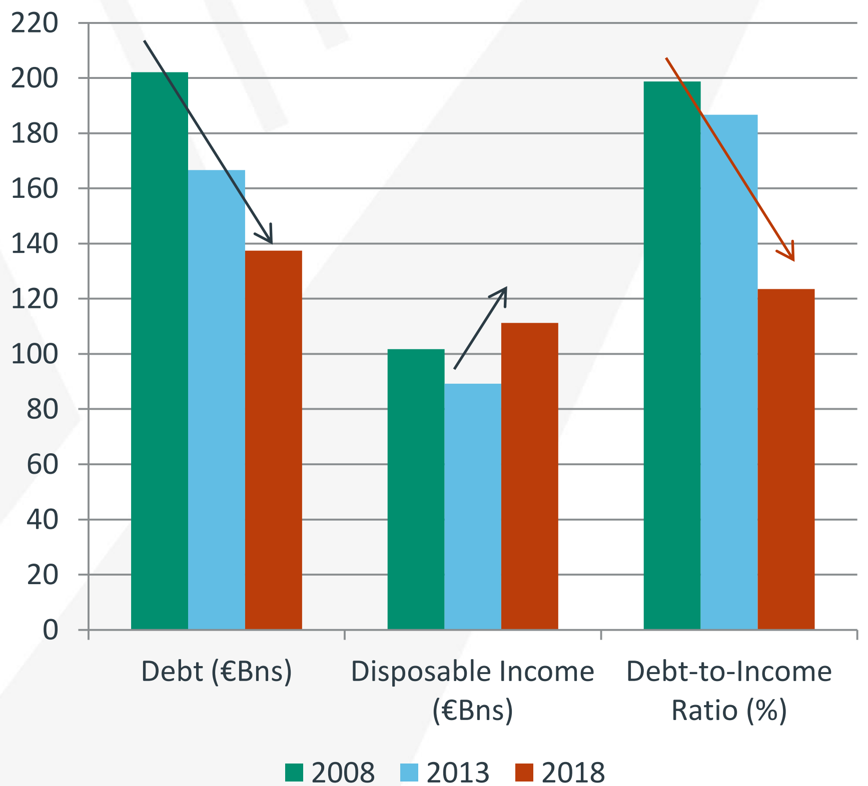
Source: CBI; CSO
Note: Credit to business series excludes financial intermediation and property related credit
Note: Modified investment excludes impact of imports of intangible and aircraft leasing assets

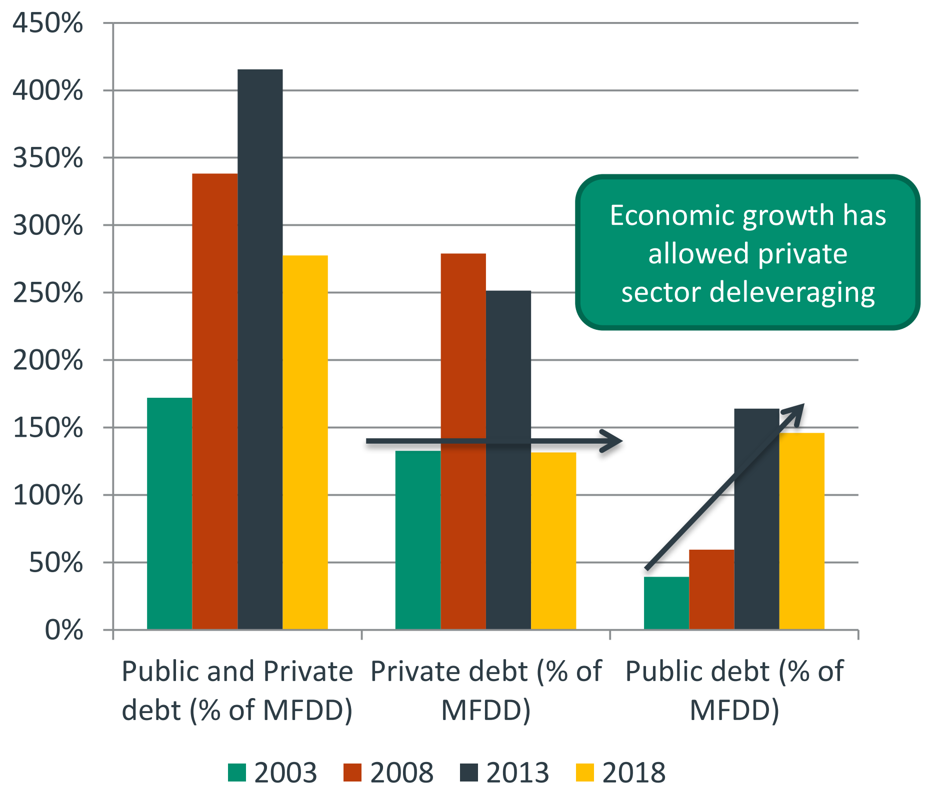
Private debt levels remain elevated but Ireland has used recovery period to repair balance sheets

Household debt ratio has decreased due to deleveraging and increasing incomes



Source: [CBI]

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



Source: CBI data

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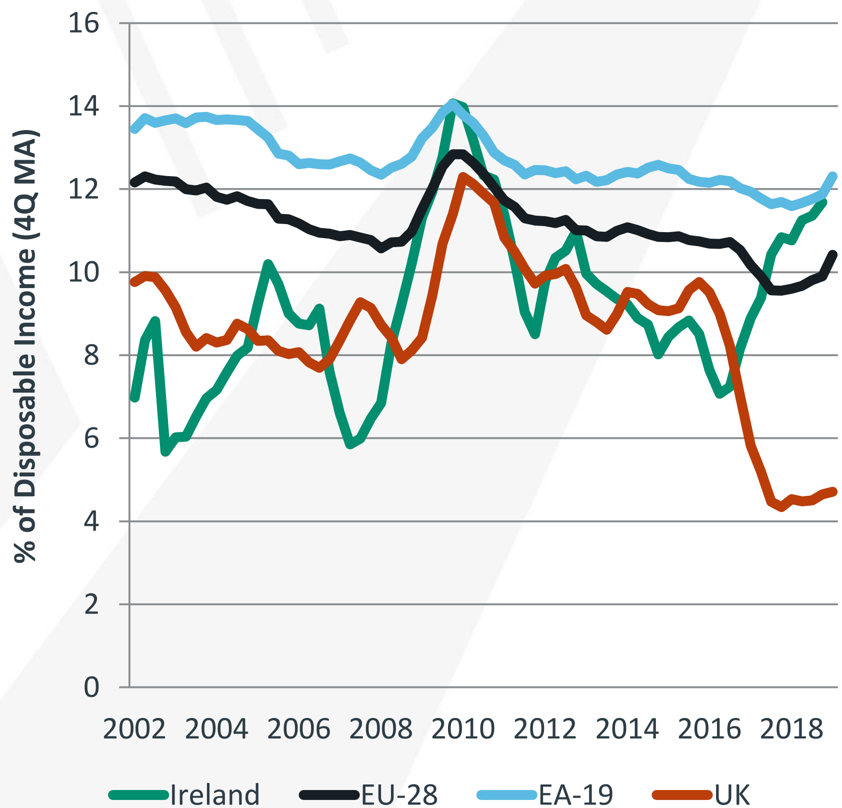
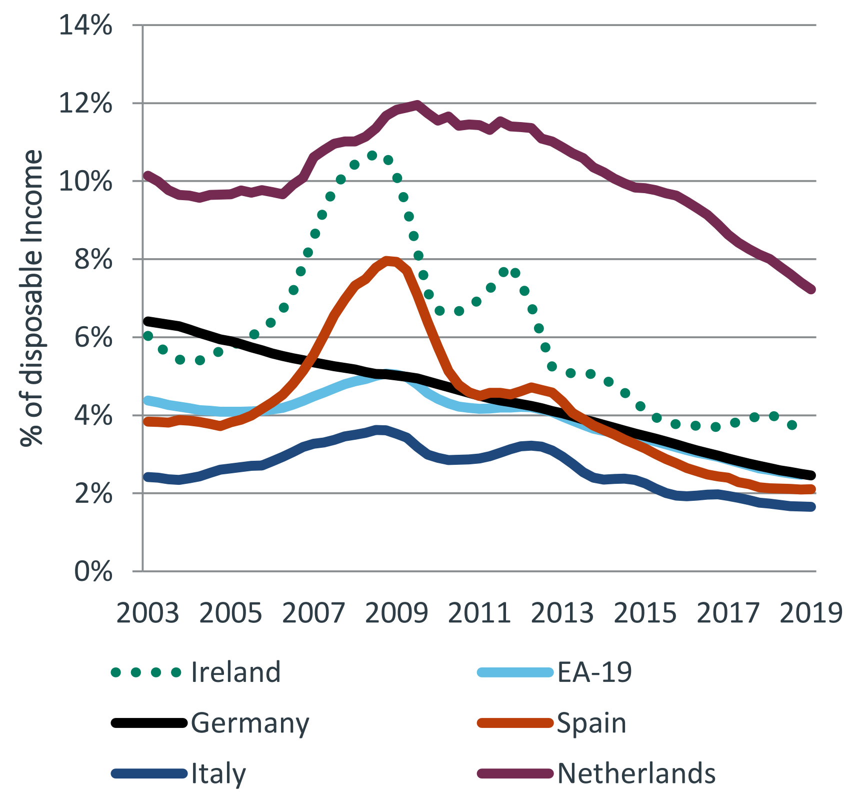
Note: Private debt includes Household and Irish-resident enterprises (ex. financial intermediation)
CBI quarterly financial accounts data used for household and government liabilities.
MFDD = modified final domestic demand. Used instead of GDP.

Saving rate lower in recent years, facilitating consumption and slower pace of deleveraging

Gross household saving rate lower than peak but healthy 8-11%



Interest burden down to below 4% of disposable income from peak of 11%



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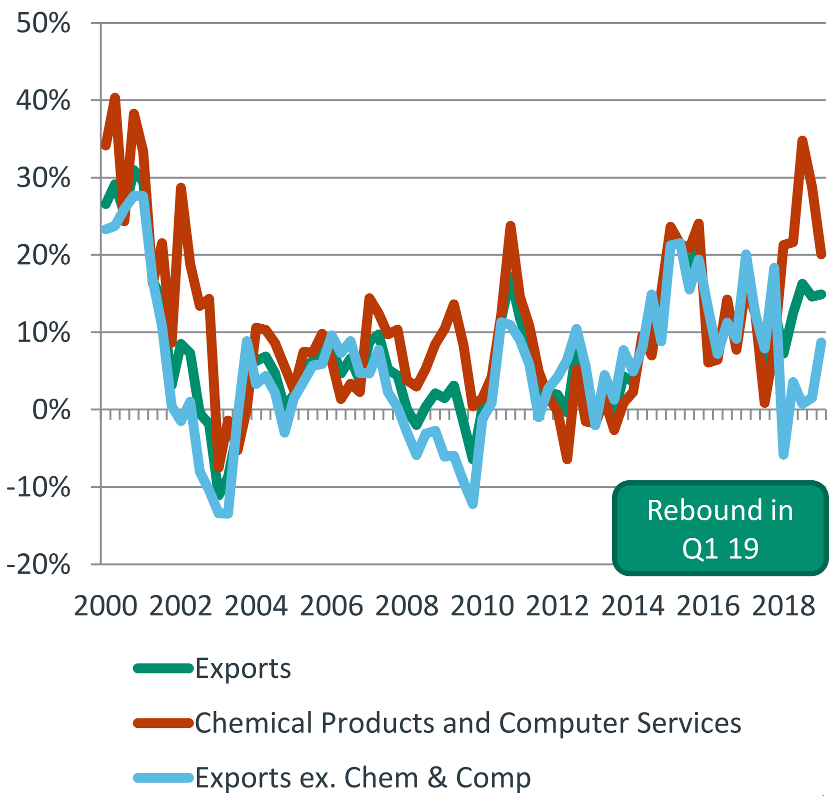
Source: Eurostat, ONS, CSO ; CBI, Eurostat NTMA calculations
Note: Gross Savings as calculated by the CSO has tended to be a volatile series in the past, some caution is warranted when interpreting this data

External environment a bit more helpful for Ireland in 2019

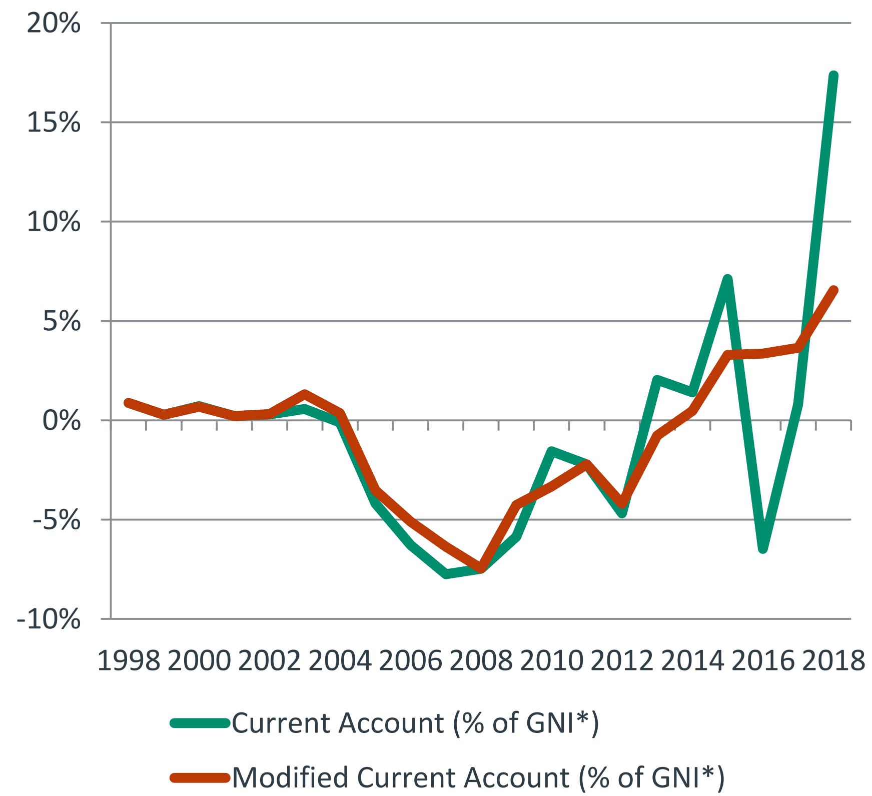
	2015	2016	2017	2018	2019f
EA Monetary Policy	Accommodative	Accommodative	Accommodative	Less accommodative	Accommodative ?
US Monetary Policy	Accommodative	Accommodative	Accommodative but tightening	Further tightening	Curve inversion, but easing possible
US growth	Stimulative	Less stimulative	Stimulative	Stimulative due to fiscal package	Neutral 2nd derivative
Oil price	Falling	Falling	Rising	Falling	No change y-o-y
UK growth	Stimulative	Less favourable; Brexit impact	Growth slowing	Growth slowing	Brexit crunch
Euro Growth	Stimulative	Stimulative	Stimulative	Slowing growth	Possibly improving
Euro currency	Very Helpful	Helpful	Headwind	Neutral	No change y-o-y v. £; weaker v $

Outside Pharma and ICT, export growth has slowed in recent quarters; Ireland is living within its means

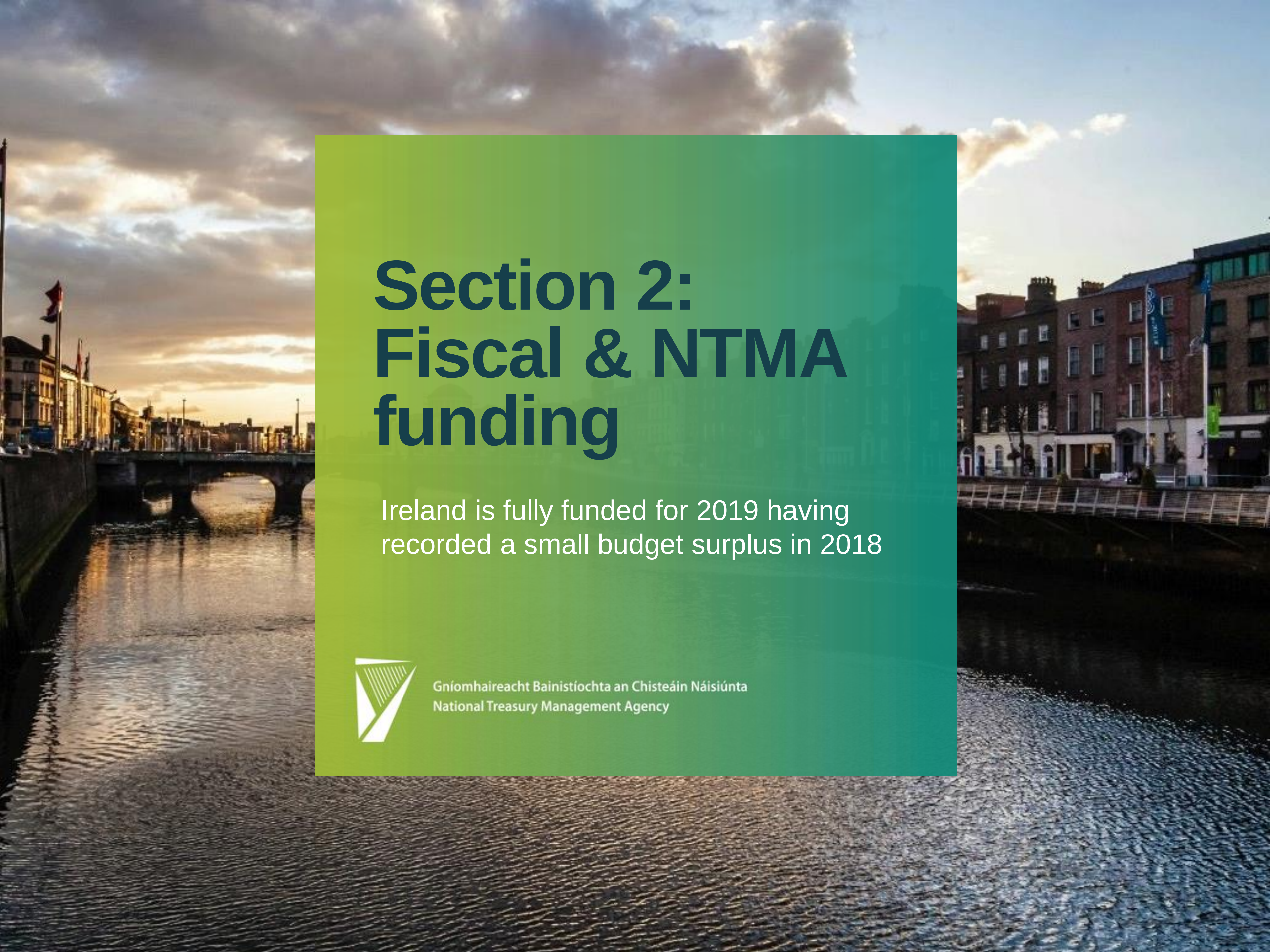
Goods exports outside MNC-dominated sectors were weak in 2018 (y-o-y change)



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



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



Section 2: Fiscal & NTMA funding

Ireland is fully funded for 2019 having recorded a small budget surplus in 2018

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€11.25bn issued in 2019 so far; well positioned given prefunding and maturity lengthening

Pre-funded

Current cash balances cover 2019 redemptions

The remainder of €14-18bn in expected funding in 2019 to fund 2020 redemptions

10 years

One of the longest weighted average maturities in Europe

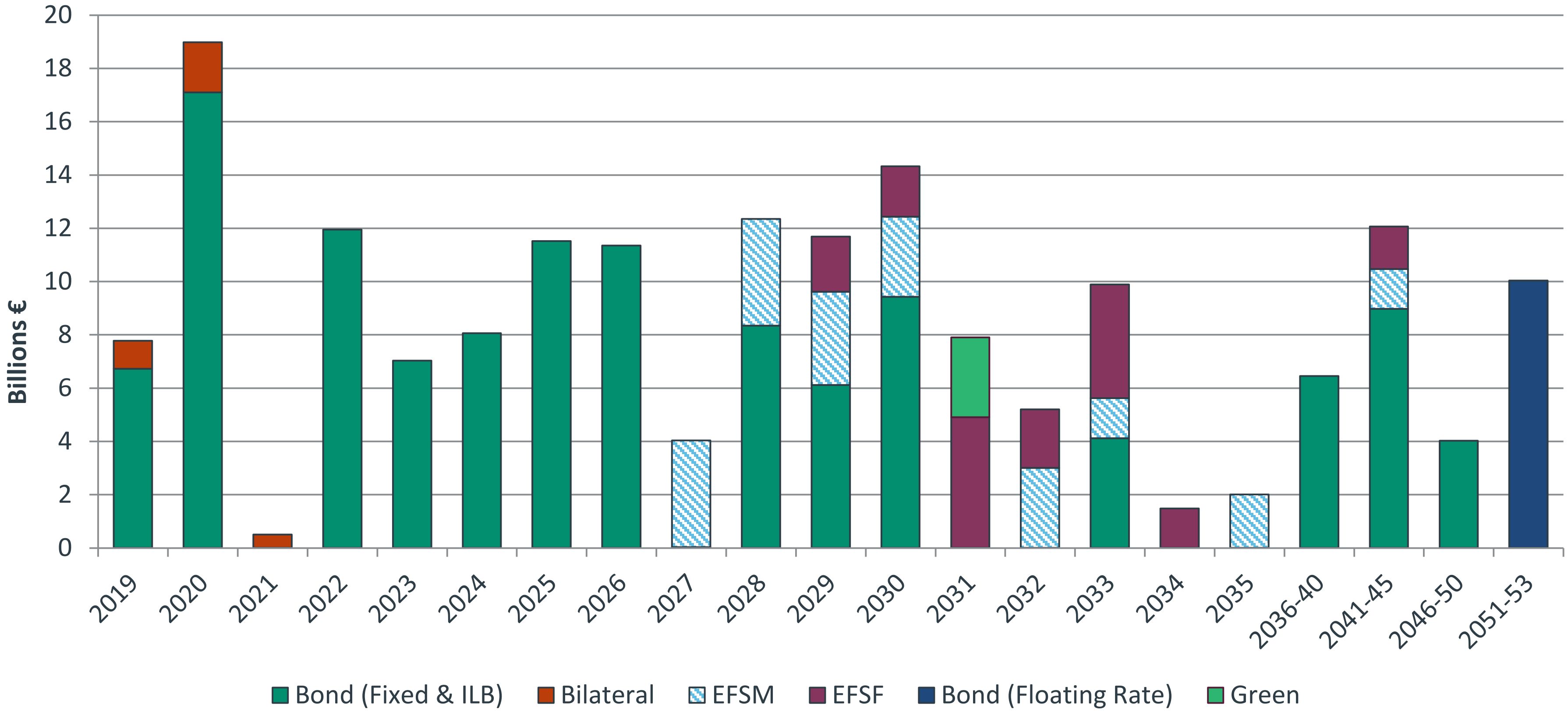
NTMA has used QE period to lengthen maturities, lower interest costs and repay its IMF loans early

A+/A2/A+

Ratings from main agencies

Ireland's debt sustainability is improving, which suggests that ratings may rise to double-A territory further barring shocks

Maturity profile: IMF repayment and FRN buy-backs have reduced refinancing risk; Green diversifies investor base



Source: NTMA

Note: EFSM loans are subject to a 7-year extension that will bring their weighted-average maturity from 12.5 years to 19.5 years. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the pre-2027 EFSM loan maturity dates in the 2027-30 range although these may be subject to change.

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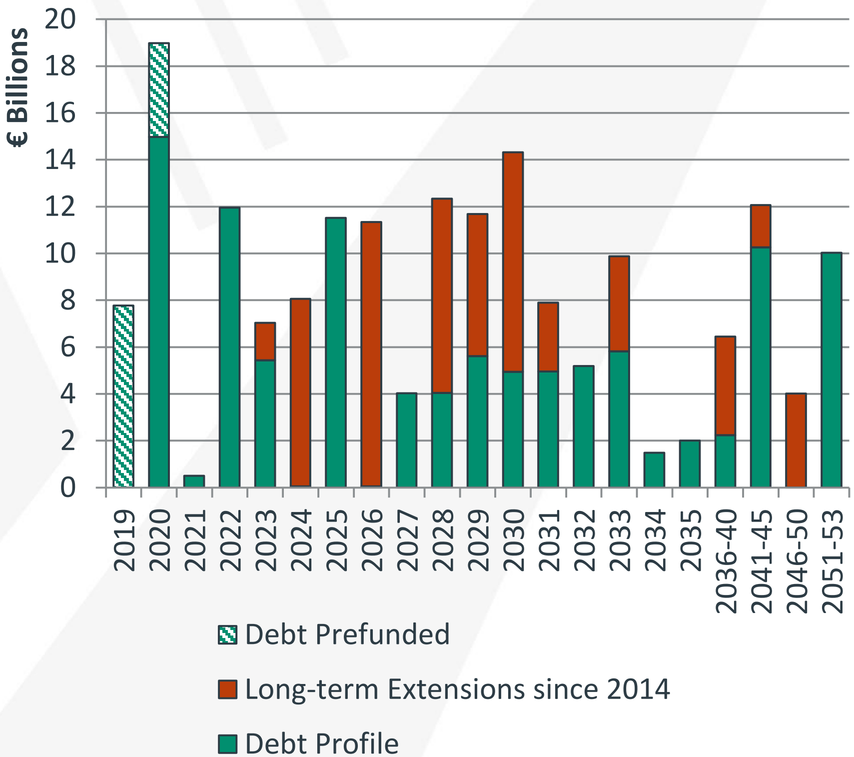
The NTMA took advantage of QE to extend debt profile

Various operations have extended the maturity of Government debt …



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

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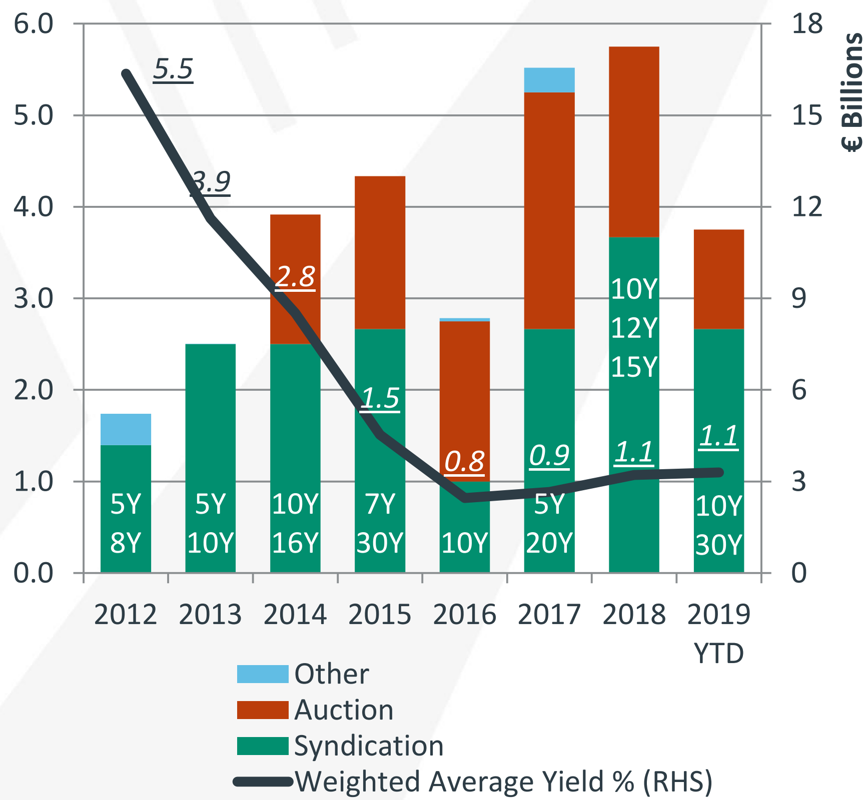
Source: NTMA; ECB

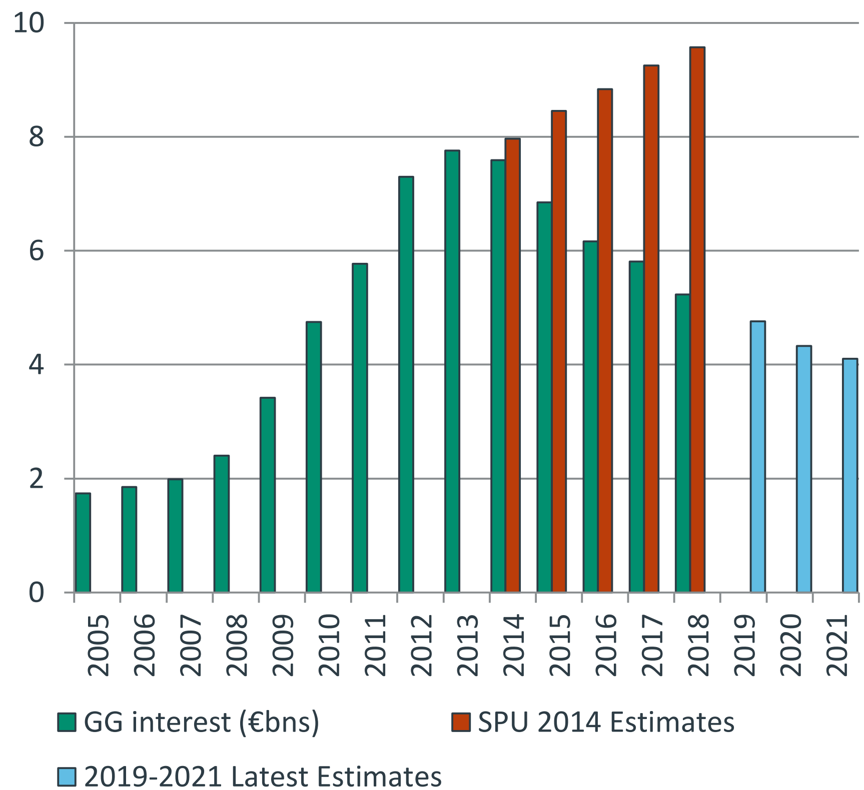
**excludes programme loans. Ireland's maturity including these loans is still similar*

Funding strategy has lowered the State's interest burden

NTMA issued €66bn MLT debt since 2015; 14.3 yr. weighted maturity; avg. rate of 1.1%



Interest costs forecasted pre-QE to be c.€10bn; likely to be below €5bn in '19

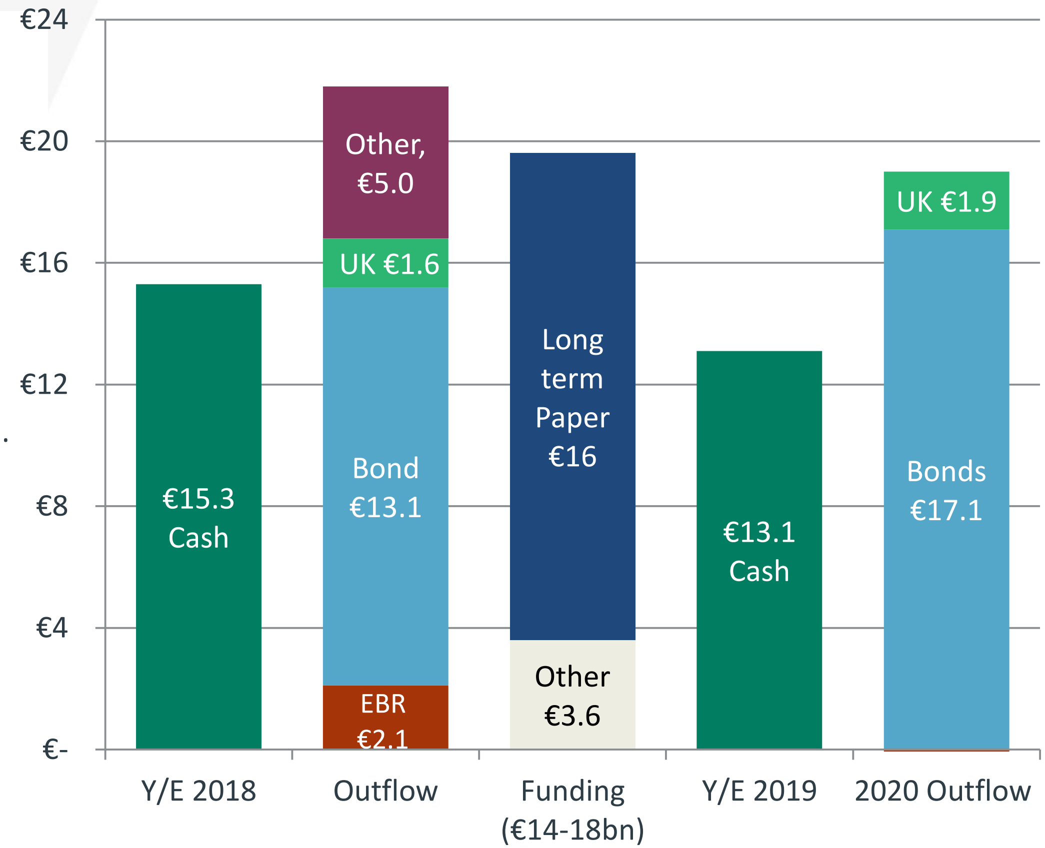


Source: NTMA, CSO, Department of Finance

Other issuance includes inflation linked bonds, private placement and amortising bonds

The State is funded three to four quarters in advance

- The next redemption is in October. Cash balances easily cover it.
- In January 2019, the NTMA issued a 10 year benchmark bond. It raised €4bn at 1.123% yield.
- In May 2019, the NTMA issued a 30 year benchmark bond. It raised €4bn at 1.53%.
- In February, June and July, the NTMA auctioned a further €3.25bn across the 2029, 2033 and 2037 bonds.
- Other borrowing (such as non-comp) brings the total to c. €12bn

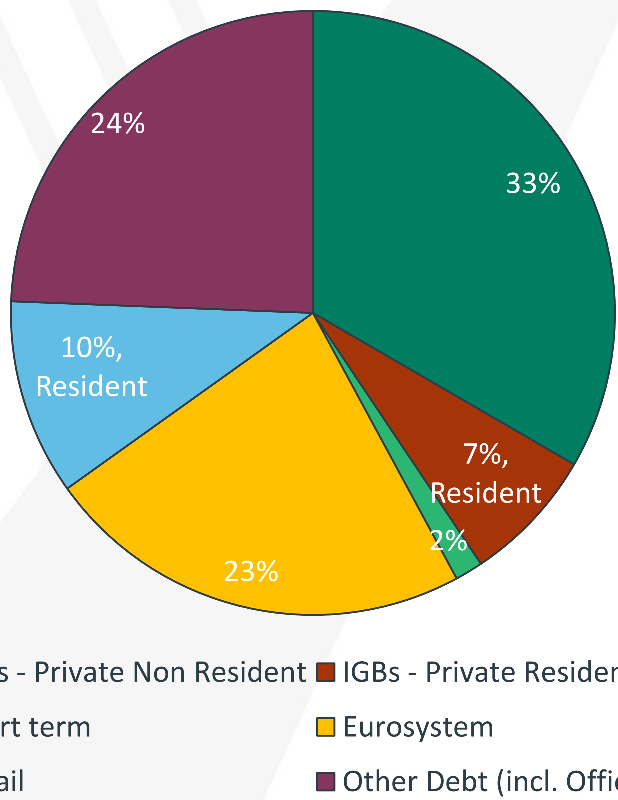


Source: NTMA

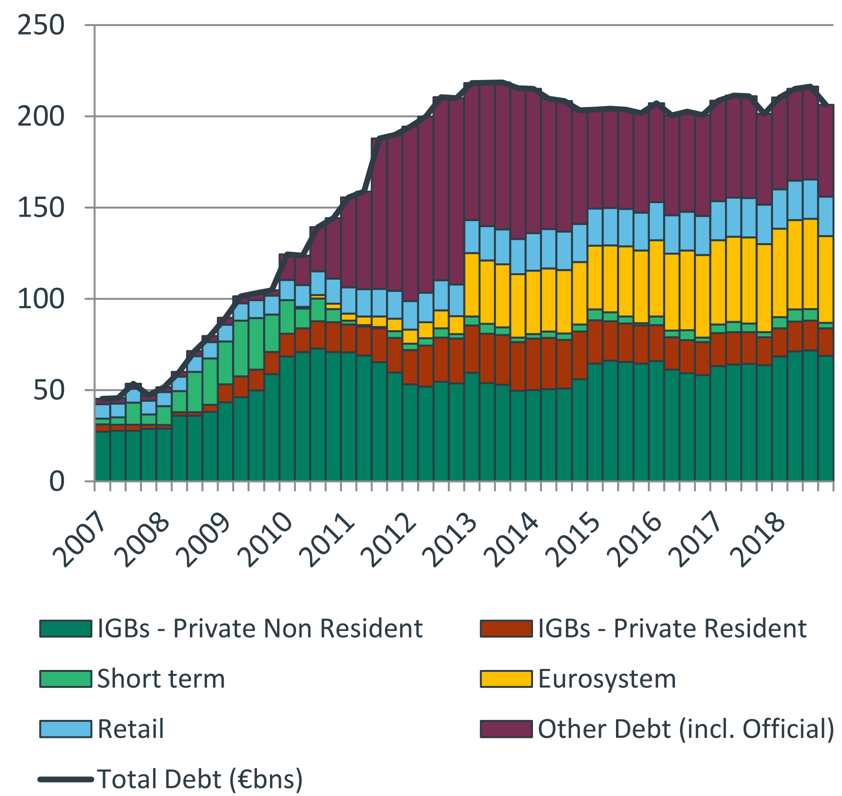
- EBR is the Exchequer Borrowing Requirement (DOF estimate)
- Outflows, long term paper and end-year cash position are estimates for illustrative purposes.
- Cash balances excludes non-liquid asset classes such as Housing Finance Agency (HFA) Guaranteed Notes.
- Other outflows includes bond buybacks, switches, and contingencies.
- Other funding includes Retail (State Savings).
- Rounding may occur.

Diverse holders of Irish debt – sticky sources account for over 50%

Ireland roughly split 80/20 on non-resident versus resident holdings (End '18)



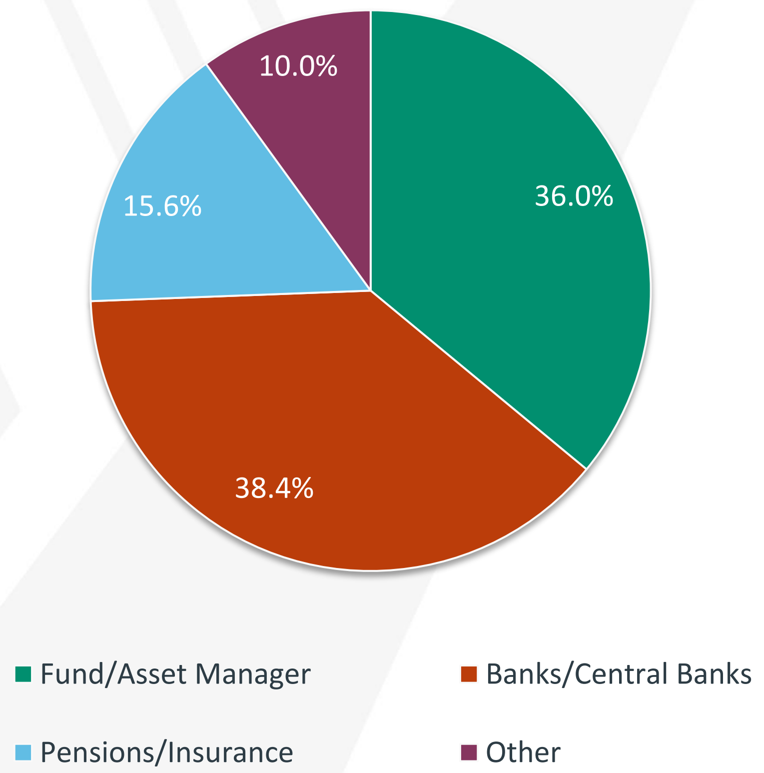
"Sticky" sources - official loans, Eurosystem, retail - make up over 50% of Irish debt



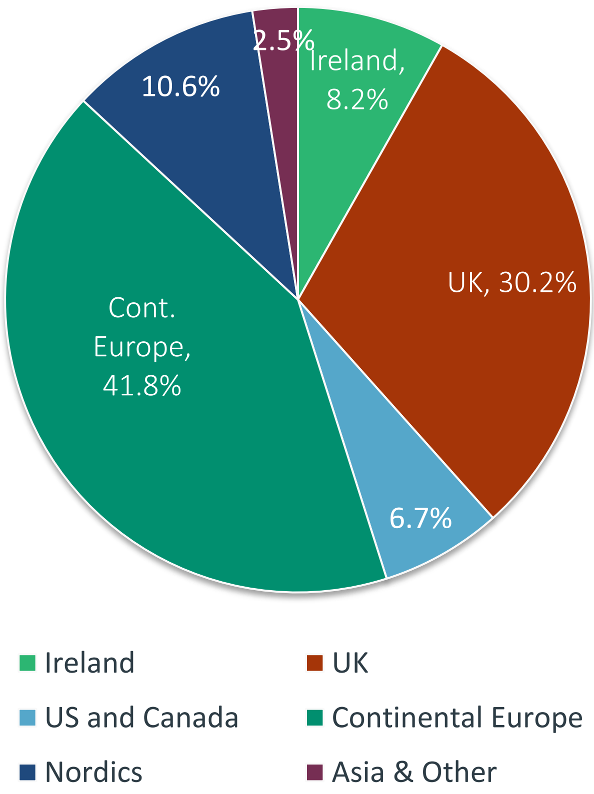
Source: CSO, Eurostat, CBI, ECB, NTMA Analysis
IGBs excludes those held by Eurosystem. Eurosystem holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA. Other debt Includes IMF, EFSF, EFSM, Bilateral as well as IBRC-related liabilities. Retail includes State Savings and other 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 5 syndications**



**Country breakdown:
Average over last 5 syndications**



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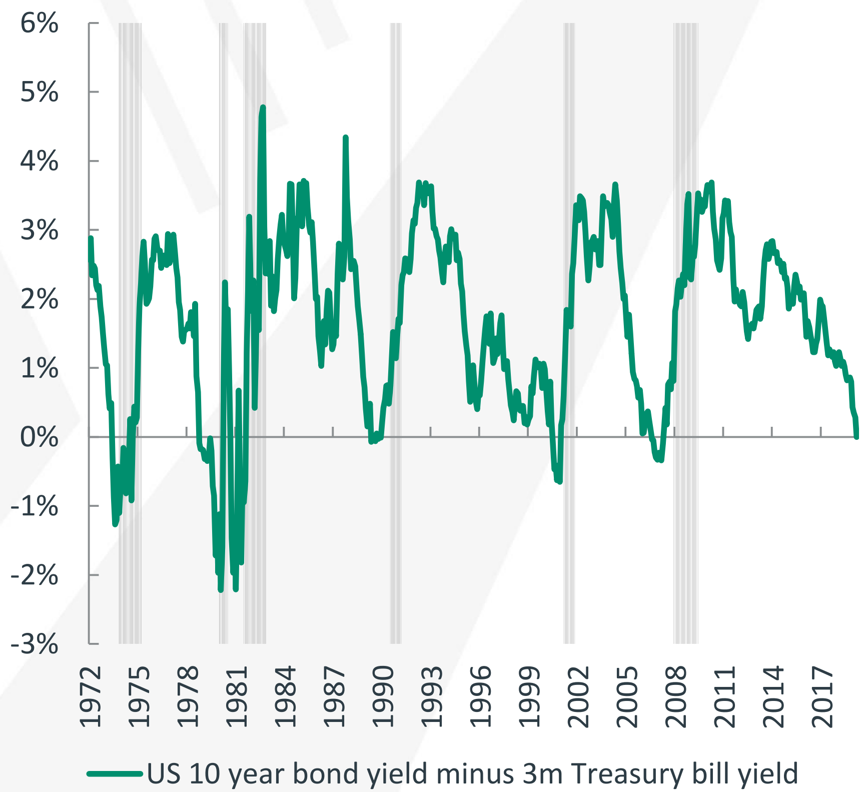
National Treasury Management Agency

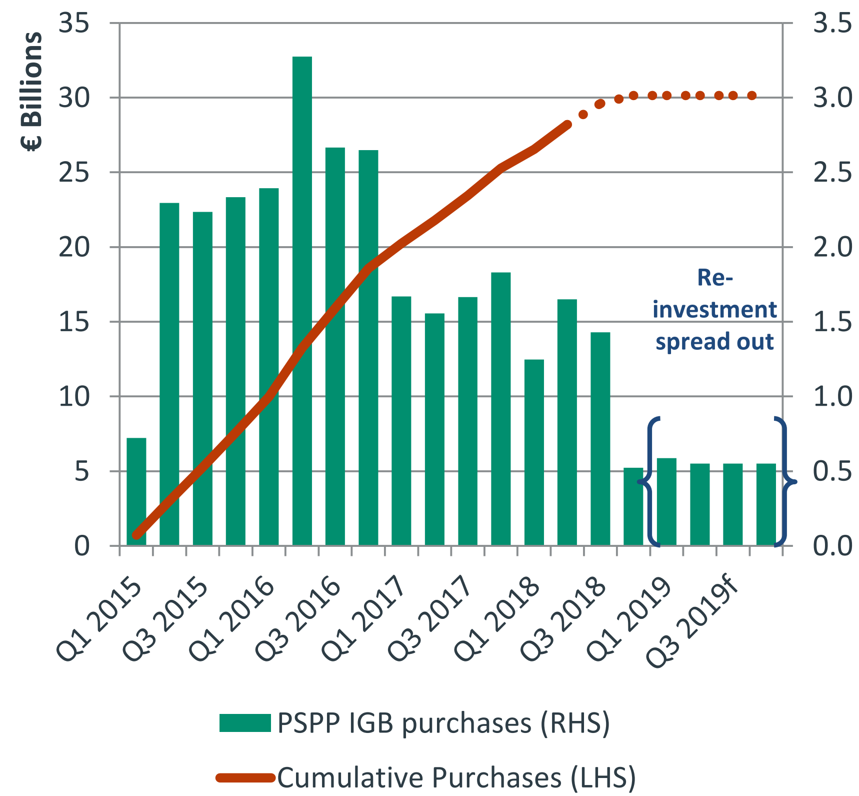
Source: NTMA

Late cycle risks mixed for Ireland: yield curve sets recession clock ticking but central banks are now easing

US yield curve has inverted (albeit only slightly so far): will history repeat?



In Euro Area, PSPP re-investment continuing as ECB eases with TLTROs

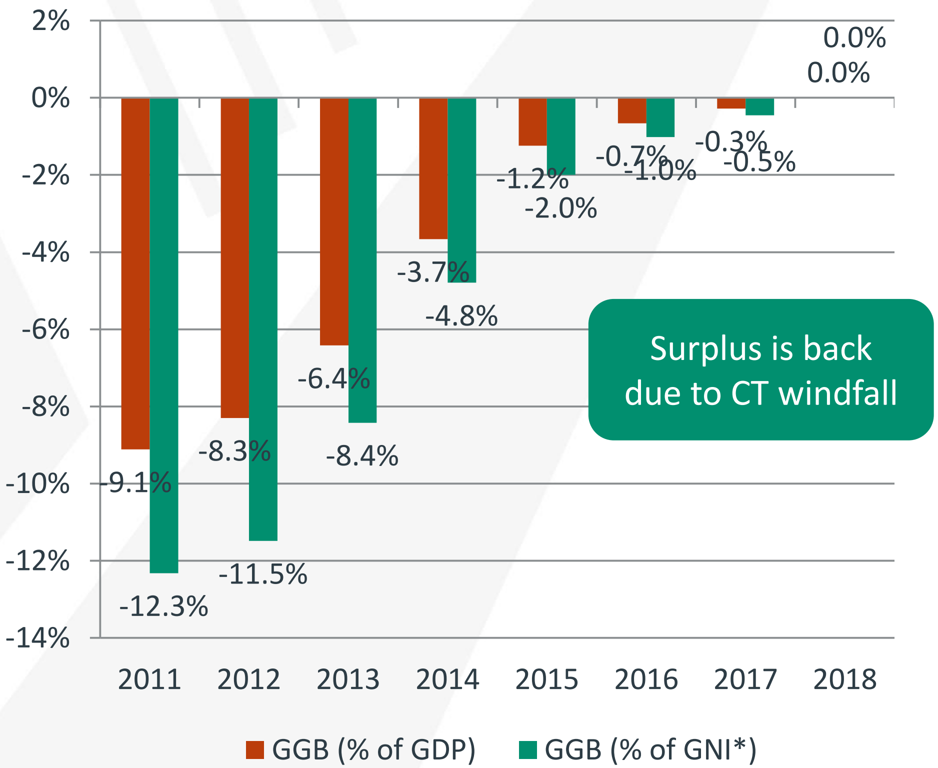


Source: DataStream, ECB

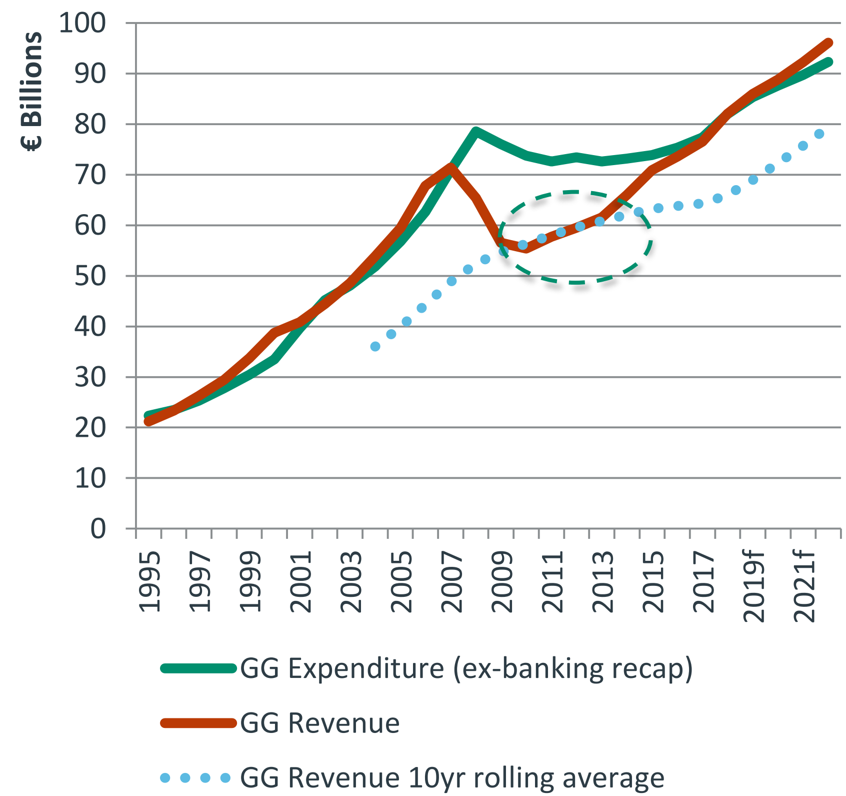
*Shaded areas indicate recessionary periods in the US

Ireland provisionally recorded a full budget surplus for first time in 11 years in 2018

Gen. Govt. Balance from -12% to surplus (ex-banking recap) in 7 yrs



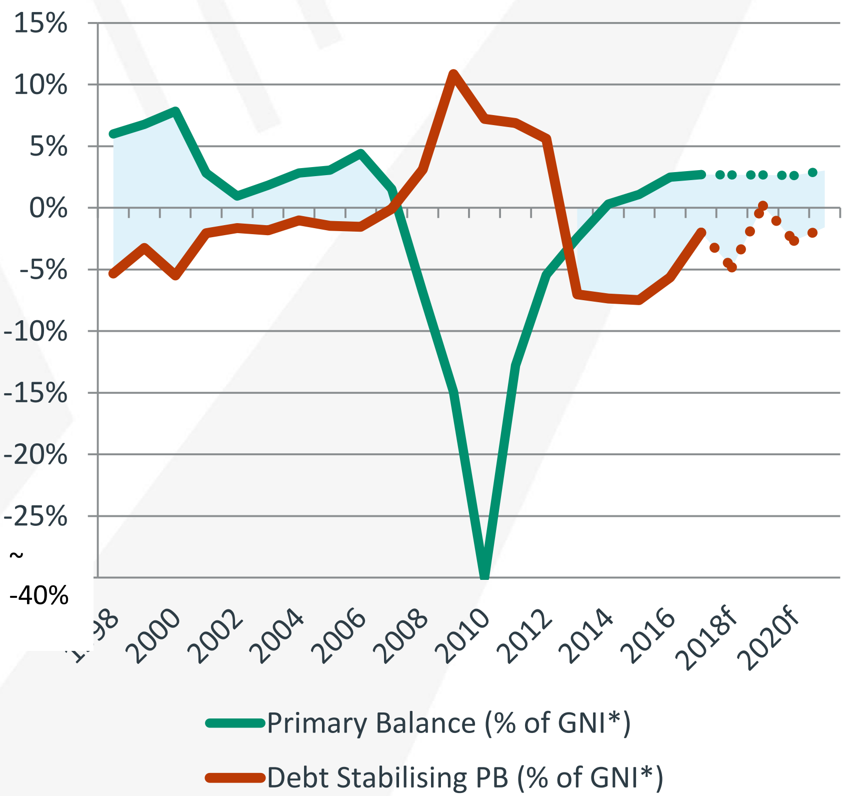
Revenue surge has helped Ireland balance the books since 2015 (€bn)



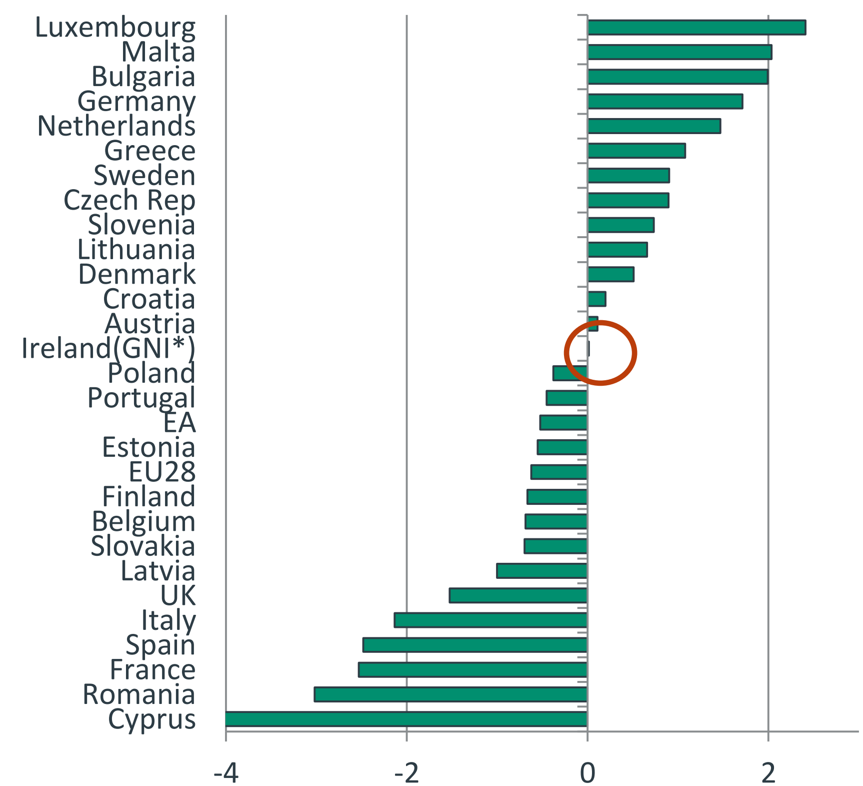
Source: [CSO](); [Department of Finance]()

Ireland has improved its debt dynamics: next step is to follow others and run consistent GGB surplus

In recent years Ireland has run primary surpluses that reduced debt ratios



2018 GGB Deficit/Surplus (% of GDP); Ireland middle of the pack in Europe



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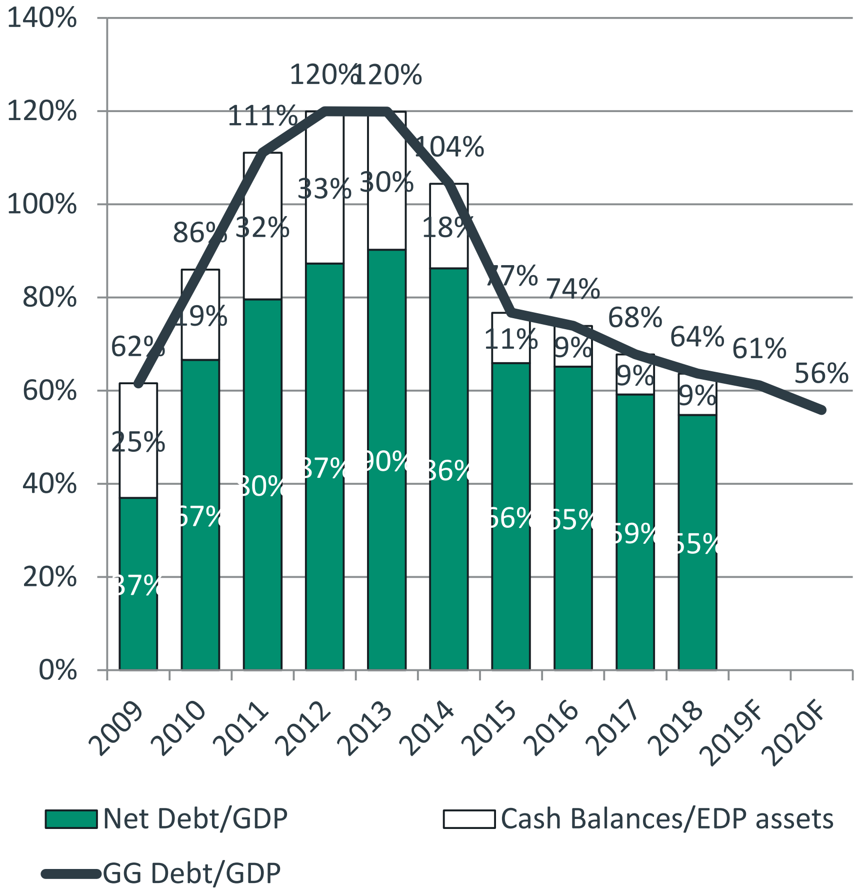
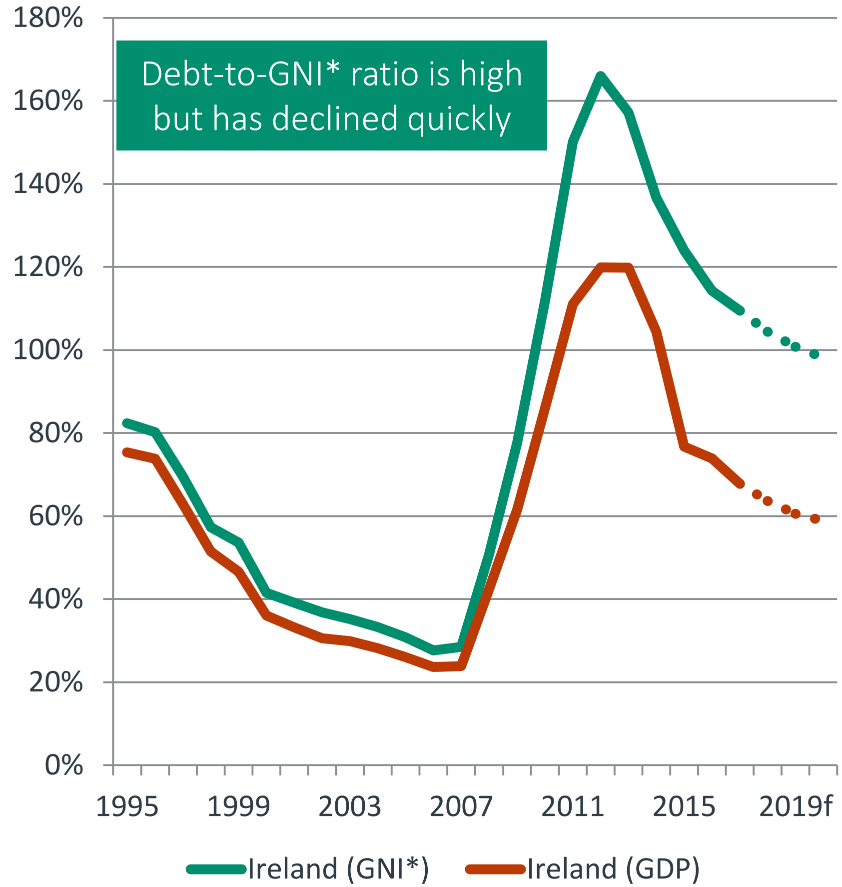
Source: CSO; Department of Finance, EU Commission forecasts, NTMA calculation
Note: Debt Stabilising primary balance is the primary balance it is necessary to run in a year to keep the debt-to-GNI ratio from rising given the average interest rate and growth in that year.*

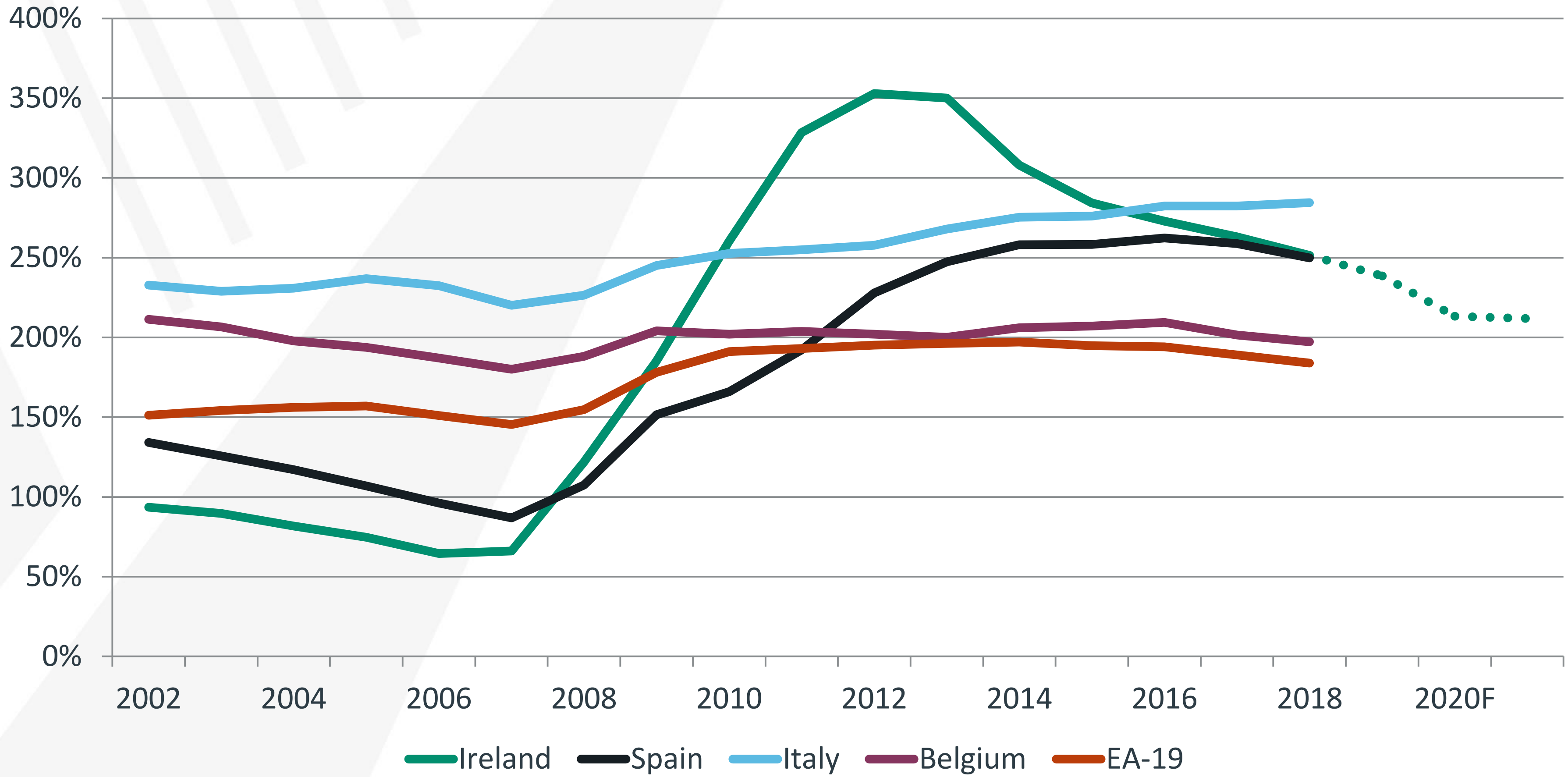
Gross Government debt 64% of GDP at end-2018; 104% of GNI*; reality somewhere in between





Source: CSO; Department of Finance

Alternative debt service metrics must also be used for Ireland e.g. General Government debt to GG Revenue



Source: Eurostat, CSO; Department of Finance

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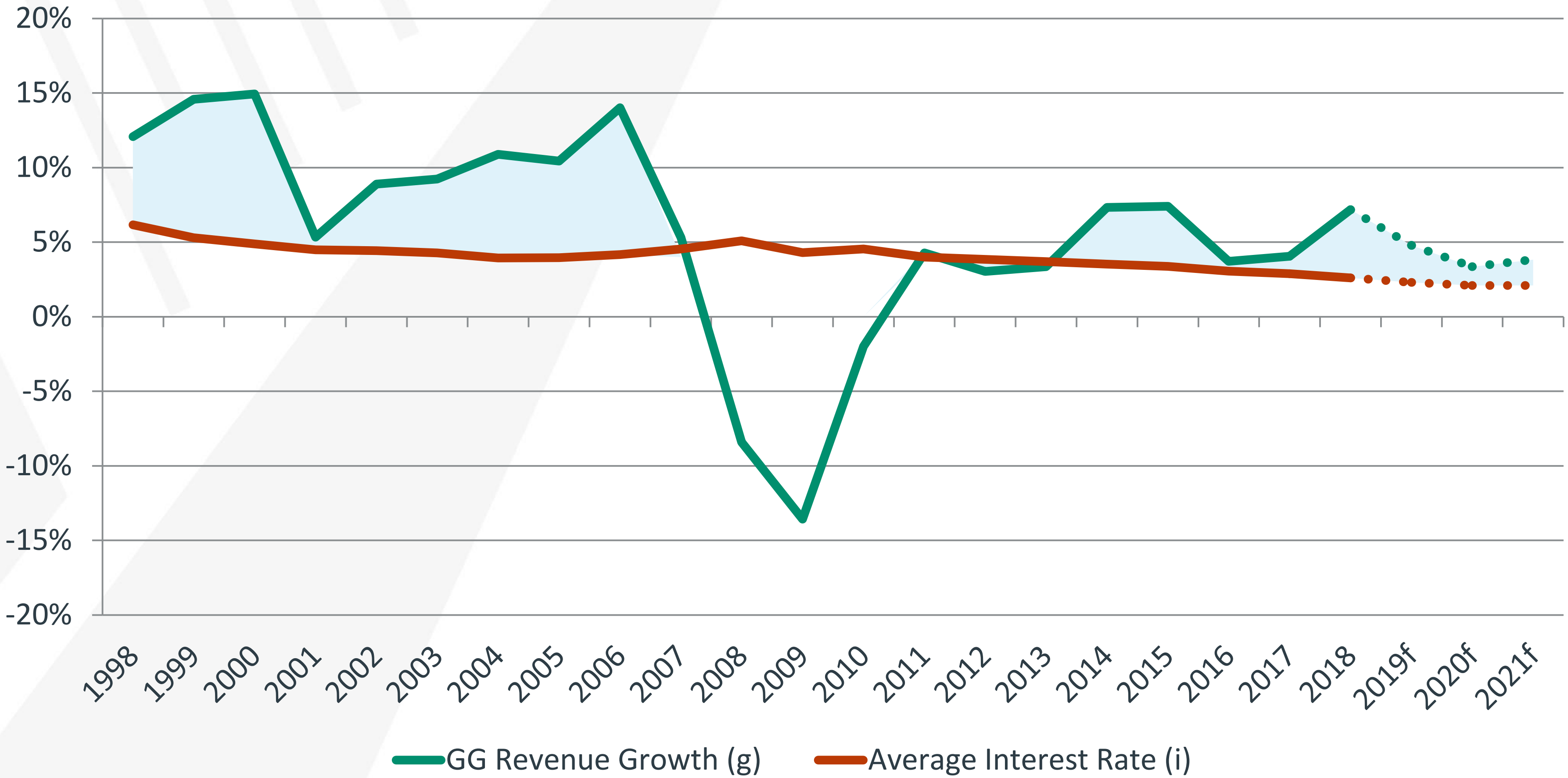
It’s best to analyse Irish debt with broad range of metrics

2018	GG debt to GG revenue %	GG interest to GG rev %	GG debt to GDP %
Greece	378.8%	6.7%	181.1%
Italy	284.5%	7.9%	132.2%
Portugal	279.2%	7.9%	121.5%
Cyprus	256.8%	6.7%	102.5%
Ireland	***251.4%***	***6.4%***	***63.4%***
Spain	249.8%	6.2%	97.1%
UK	218.3%	6.2%	86.8%
Belgium	197.4%	4.6%	102.0%
EA19	184.0%	4.0%	85.1%
France	183.9%	3.5%	98.4%
EU28	177.8%	4.1%	80.0%
Slovenia	162.8%	4.6%	70.1%
Austria	151.8%	3.3%	73.8%
Germany	133.7%	2.0%	60.9%
Slovakia	122.6%	3.2%	48.9%

Source: Eurostat, Department of Finance
** 2018 Interest % of GG Revenue would be closer to 6% excluding the interest paid to CBI (of which 80% is returned to the State) , much of which accrues because of the holdings of the CBI’s legacy holding of Irish FRNs*
*** 107% Debt to GNI* ratio in 2018*

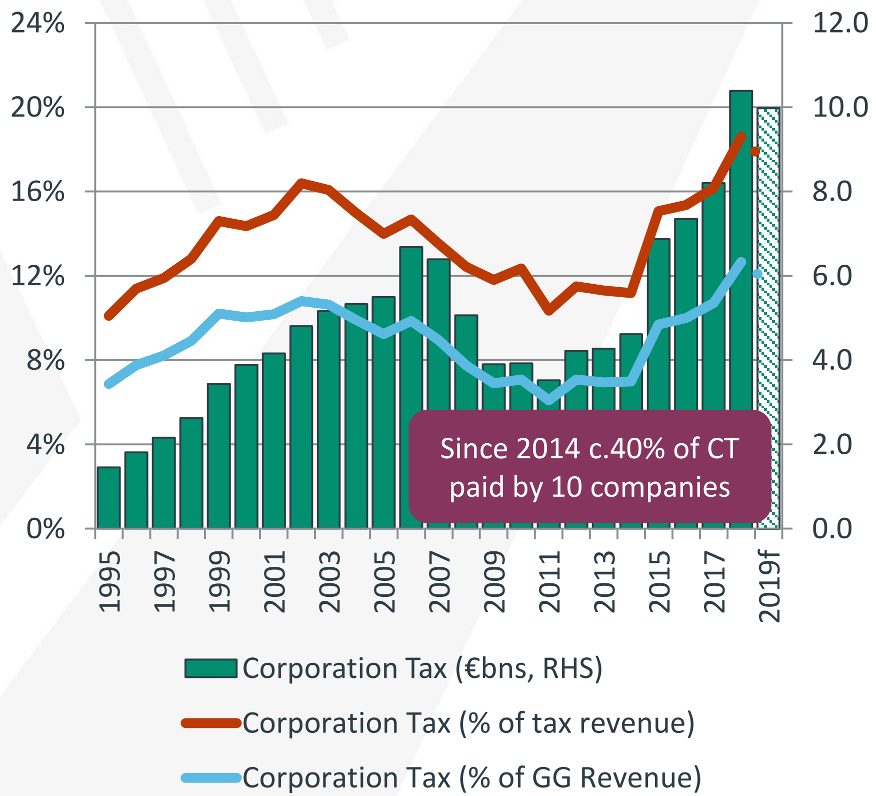
Snowball Effect (i-g) in Ireland's favour given lower average interest rate



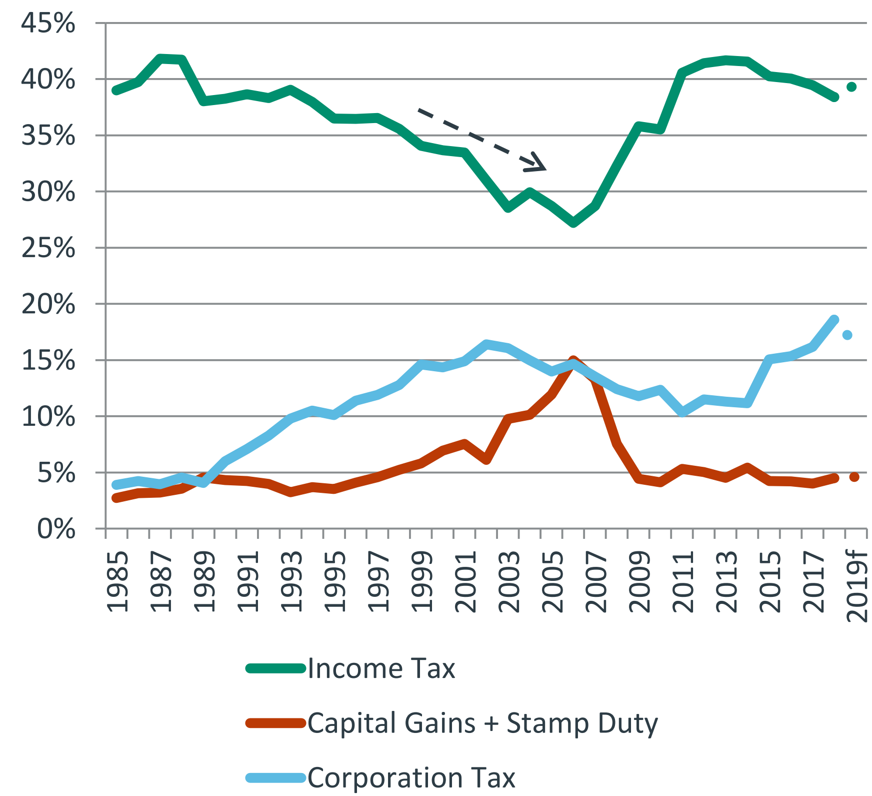
Source: CSO; Department of Finance

Corporation tax revenue keeps surprising positively, but each year the concentration risk increases

Corporation tax receipts have more than doubled in four years



Income tax base intact (% tax revenue) - not comparable to narrowing of base pre-crisis



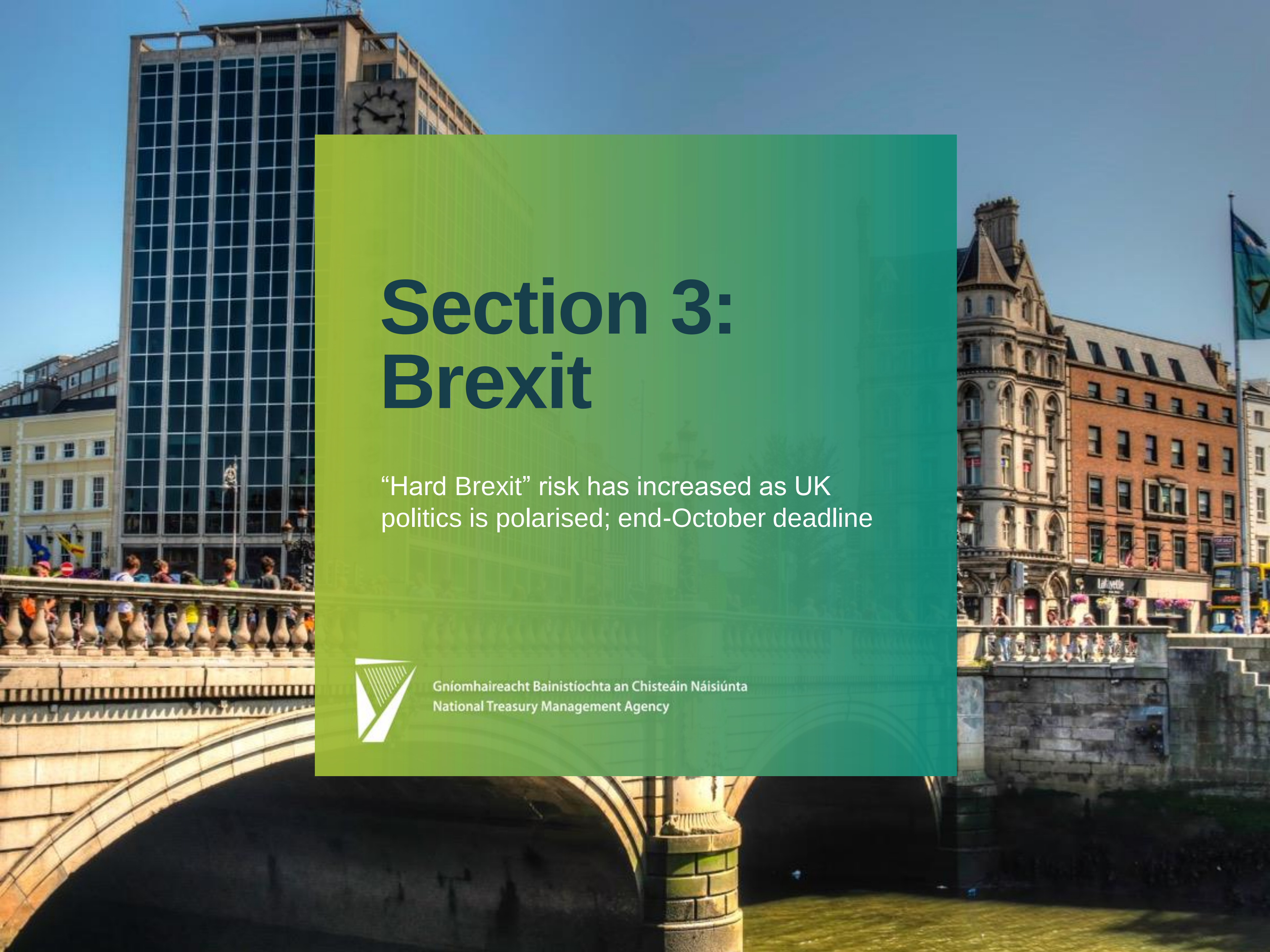
Source: Department of Finance

Ireland: "A" grade from all major credit rating agencies; Net debt level is a positive for Ireland relative to peers

Rating Agency	Long-term	Short-term	Outlook/ Trend	Date of last change
Standard & Poor's	A+	A-1	Stable	June 2015
Fitch Ratings	A+	F1+	Stable	Dec 2017
Moody's	A2	P-1	Stable	Sept 2017
DBRS	A(high)	R-1 (middle)	Stable	March 2016
R&I	A	a-1	Stable	Jan. 2017

€ Billion	2016	2017	2018
Currency and deposits (mainly retail debt)	21.3	21.6	21.6
Securities other than shares, exc. financial derivatives	124.2	130.7	134.2
- Short-term (T-Bills, CP etc)	2.4	2.9	3.1
- Long-term (MLT bonds)	121.8	127.8	131.1
Loans	55.2	49.0	50.3
- Short-term	0.7	0.5	0.6
- Long-term (official funding)	54.6	48.5	49.7
General Government Debt	200.7	201.3	206.2
EDP debt instrument assets	*24.9*	*27.3*	*28.6*
Net Government debt	175.8	174.0	177.6

Source: NTMA, CSO



Section 3: Brexit

"Hard Brexit" risk has increased as UK politics is polarised; end-October deadline

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Brexit path is unclear – probability of a "Hard" Brexit has risen with significant implications for Ireland

Cons

- Less trade given lower demand from UK/ tariffs
- Higher import prices possible in long-term: tariffs may outweigh FX benefit. Non-tariffs costs could also be significant.
- Regions suffer (agriculture, tourism), while Dublin may benefit (via FDI that leaves Britain)
- Banking sector likely to suffer because of its UK operations (especially Bank of Ireland)
- Political economy (border, ally on direction of EU economic policy)

Pros

- Increased FDI, as multinationals avoid turmoil
  - Financial services (passporting lost by UK)
  - Other multinationals - especially IT and business services
- Commercial property occupancy could rise; there may also be an influx of well paid workers
- Fiscal help from Europe is possible
- Some trade offsets
  - Irish companies may steal EU market share from British ones

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

	Goods (2018)		Services (2017)		Total (2017)	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	27.7	16.9	11.6	27.0	18.3	25.0
UK*	11.4	21.9	16.4	9.3	15.1	13.7
NI	1.6	1.6	n/a	n/a	n/a	n/a
EU-27	39.0	37.9	29.9	25.7	32.8	27.4
China	3.9	5.9	2.5	1.5	3.2	2.8
Other	18.0	17.4	39.5	36.6	30.5	31.1

Irish/UK trade linkages will suffer following Brexit

- The UK is the second largest single-country export destination for Ireland's goods and the largest for its services
- At the same time, Ireland imports 20-25% of its goods from the UK. Consumer goods, capital equipment and inputs into the export process will become cheaper thanks to FX.

There is significant employment related to Ireland's trade with the UK

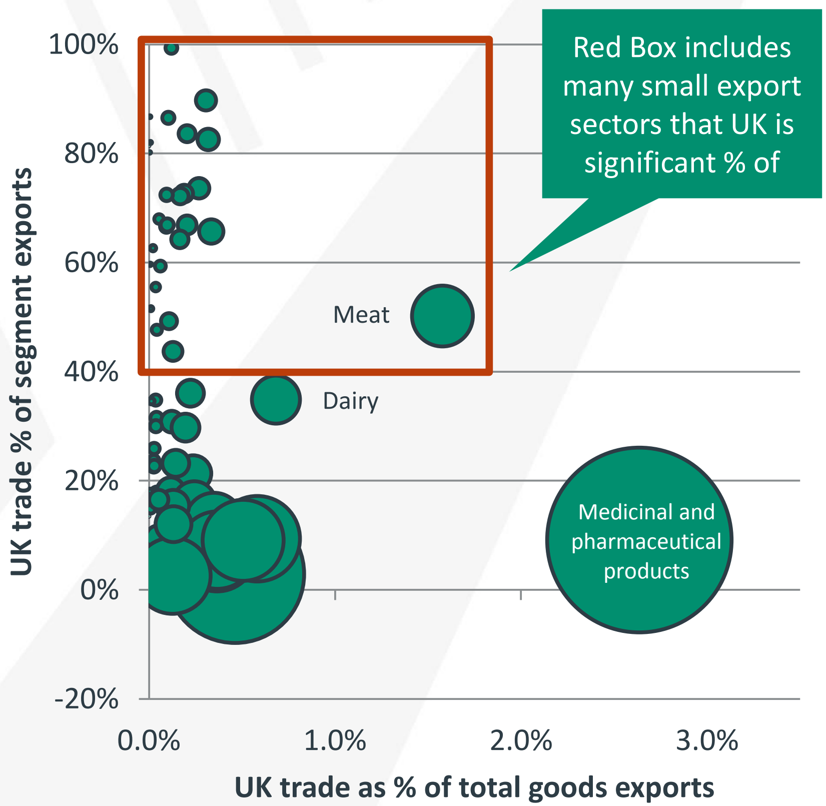
- The UK might only account for 15% of Ireland's total exports, but Ireland is more dependent than that, considering the employment related to those exports

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

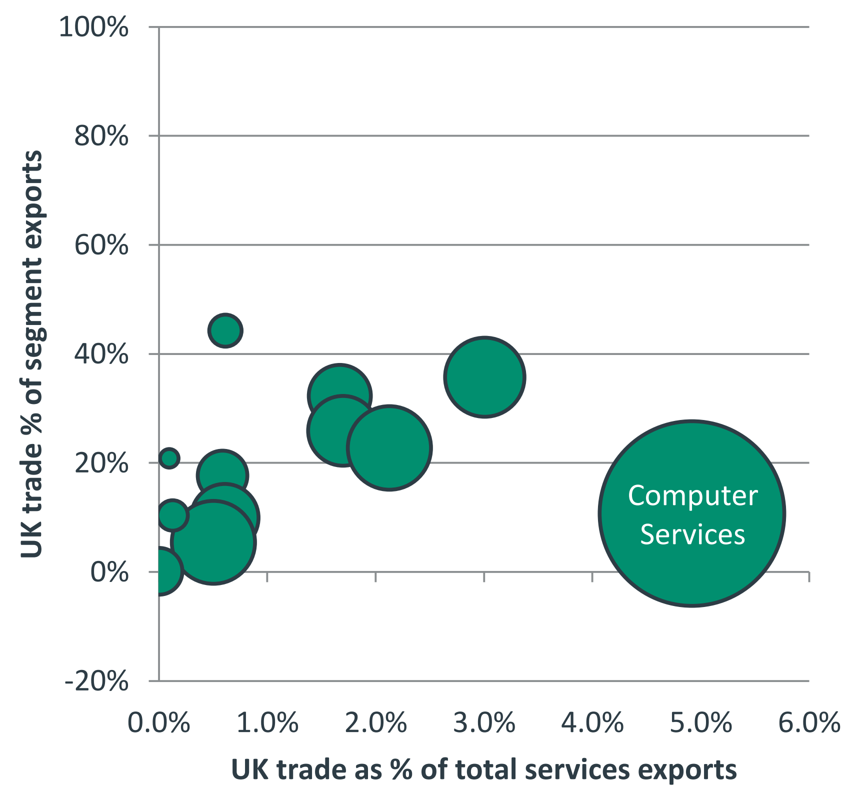
*Source: CSO 2017 * UK data includes Northern Ireland*
NTMA calculations; Data does not include contract manufacturing

Breakdown of exports to the UK: important trade partner especially so in smaller sectors (agri-food products)

UK is 13-14% of goods exports but very important partner in many small sectors



UK is 16% of services exports but not the majority trading partner in any segment



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Source: CSO goods 2017 data, services 2016 data
The size of bubble relates to the sector's importance to Ireland's exports

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

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

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

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

FDI: Ireland may benefit

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

Companies that have indicated jobs to be moved to Ireland

BARCLAYS

Morgan Stanley

citi

J.P.Morgan

Goldman Sachs

Bank of America Merrill Lynch

LEGG MASON GLOBAL ASSET MANAGEMENT

S&P Global Ratings

BARINGS

Section 4: Long term fundamentals

Ireland's long run future looks bright thanks to its favourable demographics

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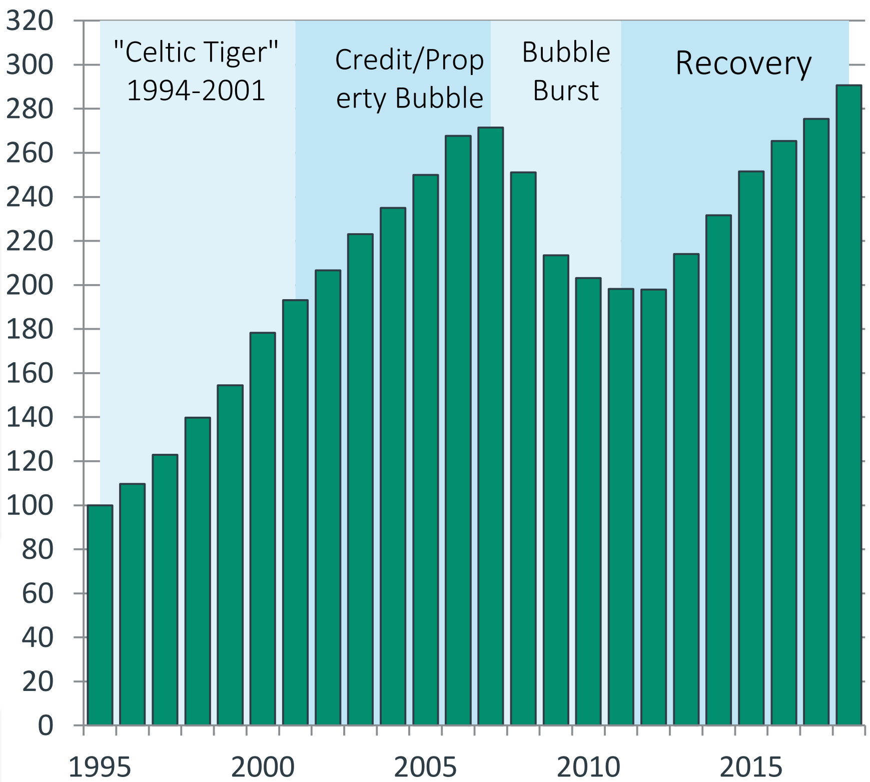
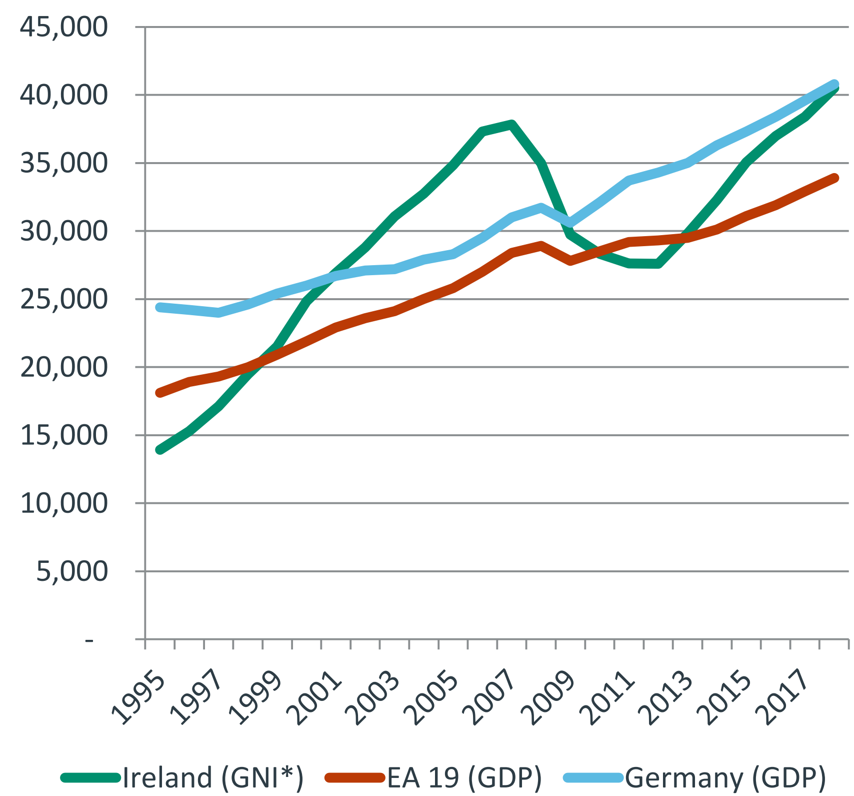
National Treasury Management Agency

Much rebalancing has taken place – Ireland's structural growth drivers have reasserted

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



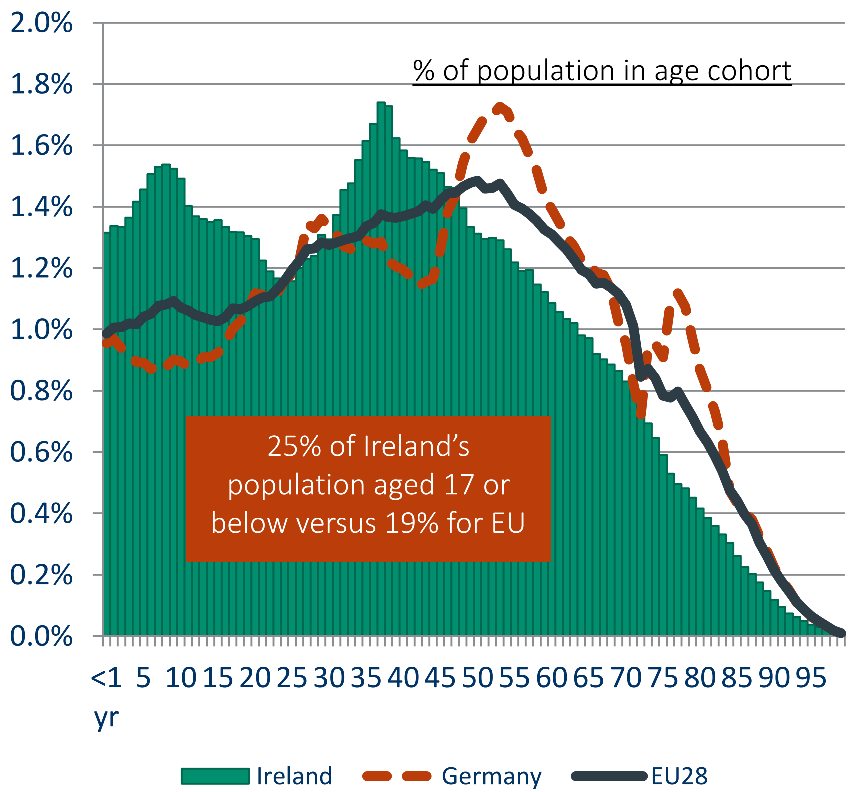
Ireland's GNI* per capita hit 2007 levels and compares favourably to EA



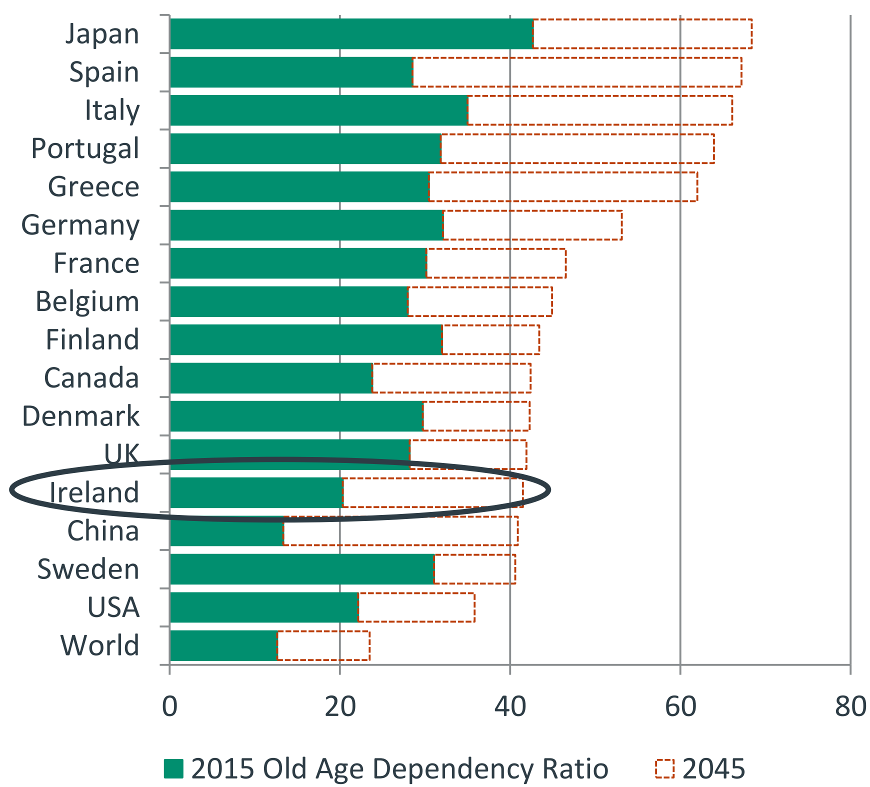
Source: CSO, Eurostat

Ireland’s population profile healthier than the EU average

Ireland’s population was 4.86m in 2018 – over 200,000 more than 2011 Census



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



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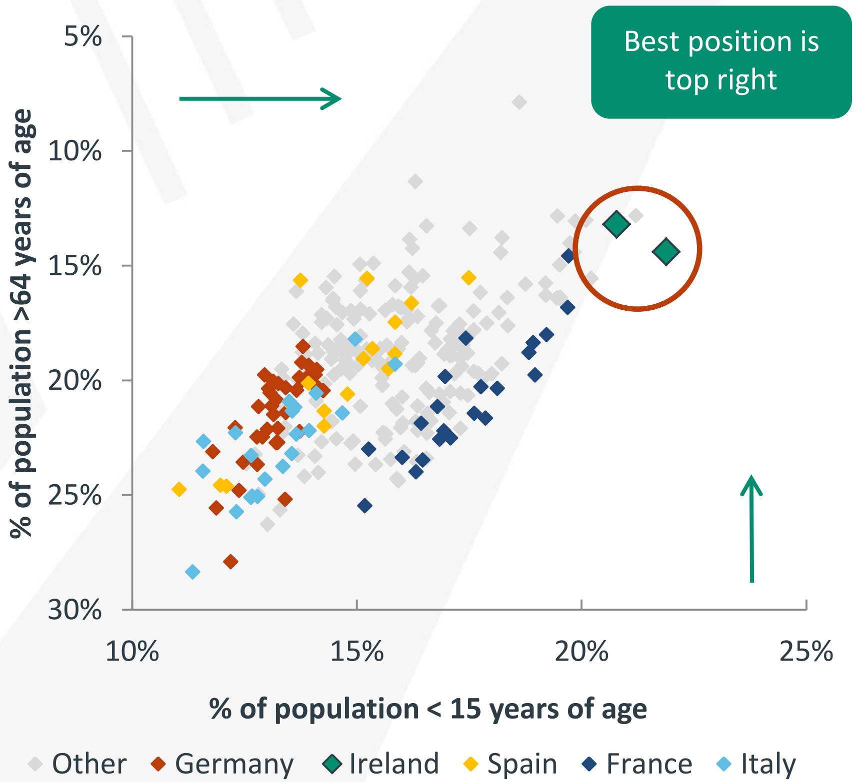
Source: Eurostat (2018) CSO; UN population projections

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

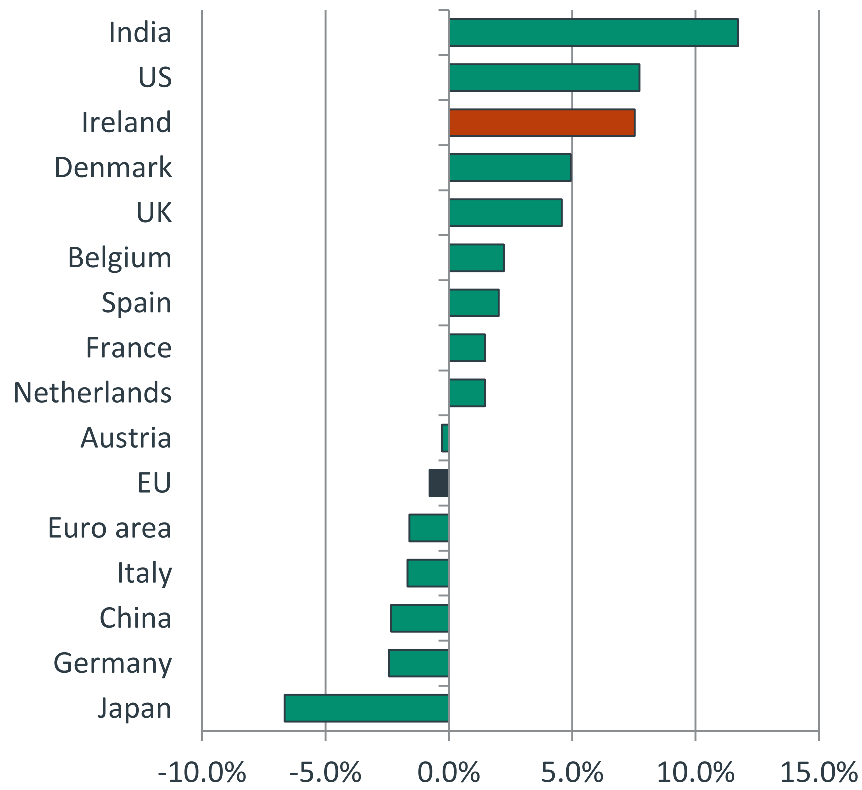
Regional data show Ireland's mix of young and old among the best in EU



Source: Eurostat; Regional NUTS2 basis

Note: Each dot is a NUTS2 region in the EU. Y-axis is inverted

Ireland's Working-Age Population expected to grow in coming years (2019-2028)



Source: Oxford Economics forecasts

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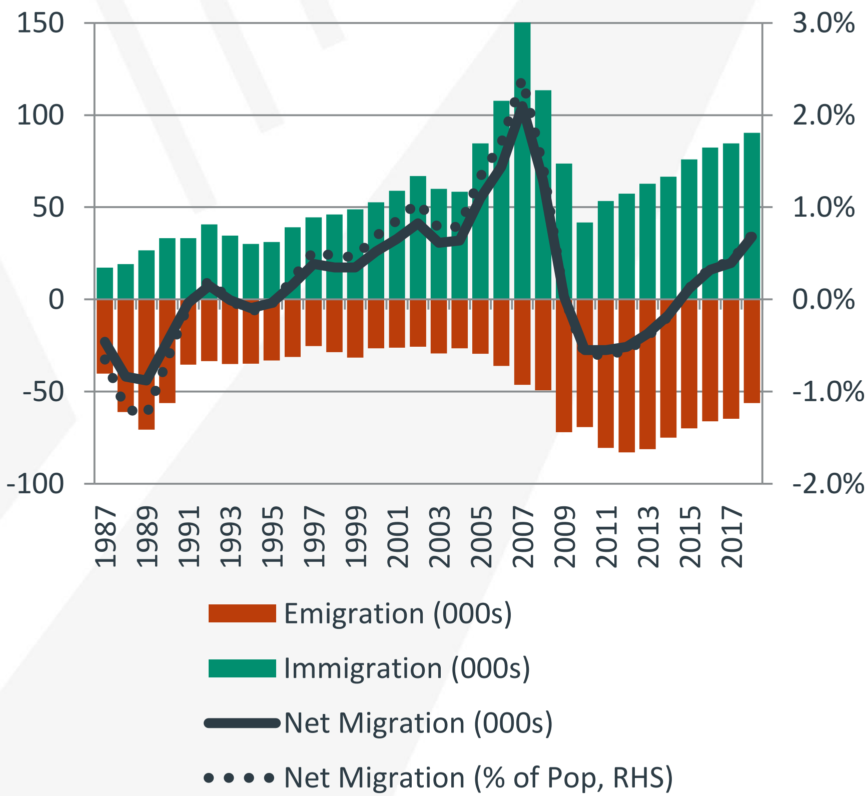
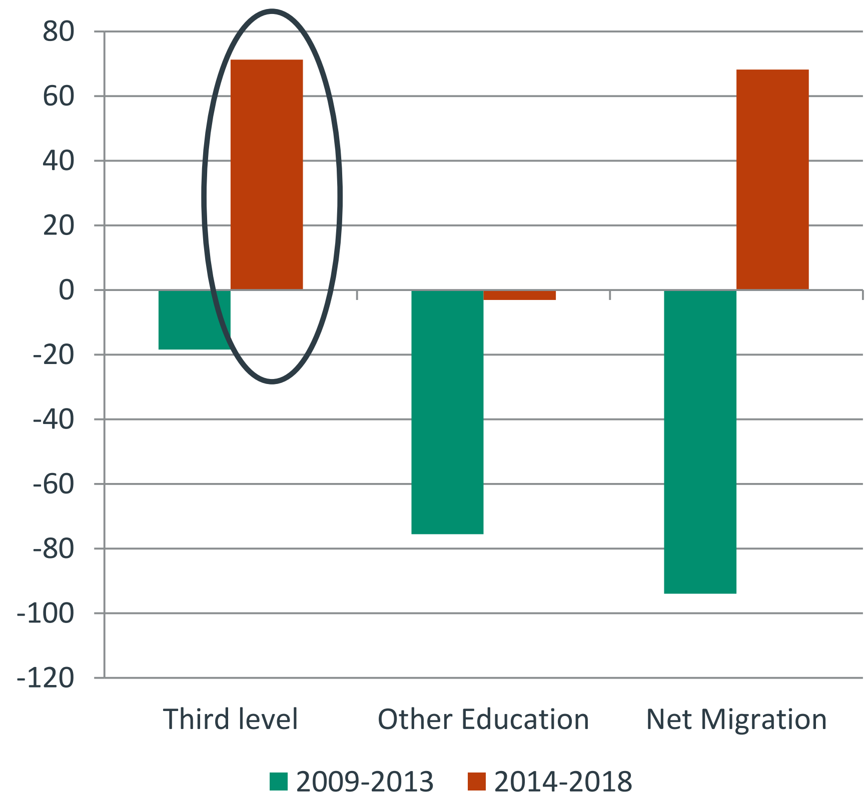
Openness to immigration has been beneficial to Ireland

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



Highly educated migrants moving to Ireland “Reverse Brain Drain”



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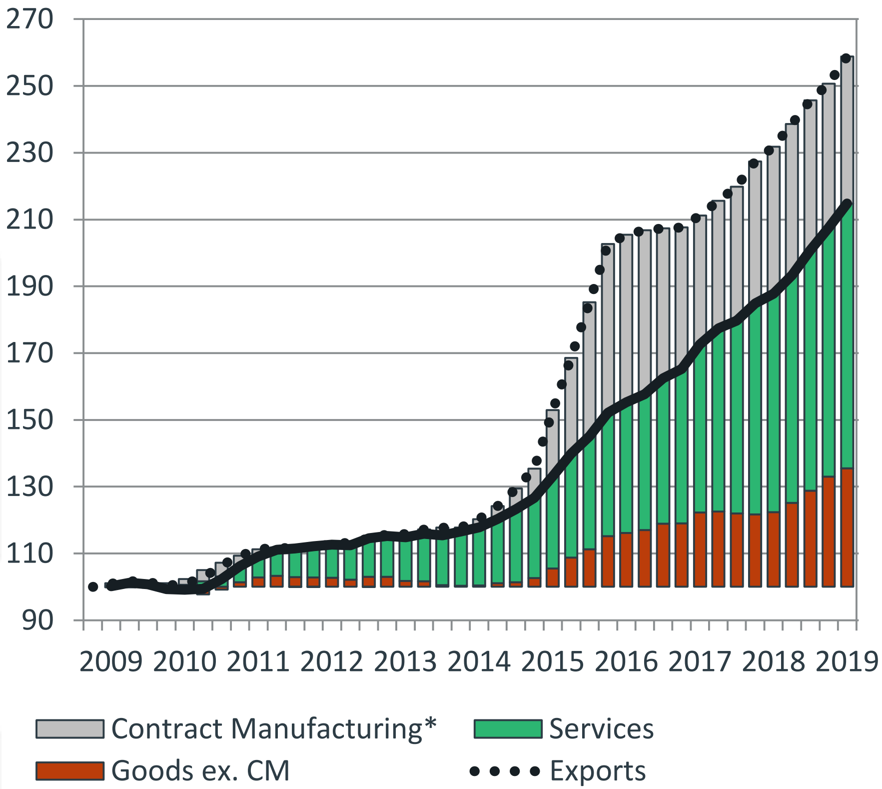
Source: CSO

Openness to trade is also central to Irish success – led by services exports; Brexit may hinder export-led growth

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

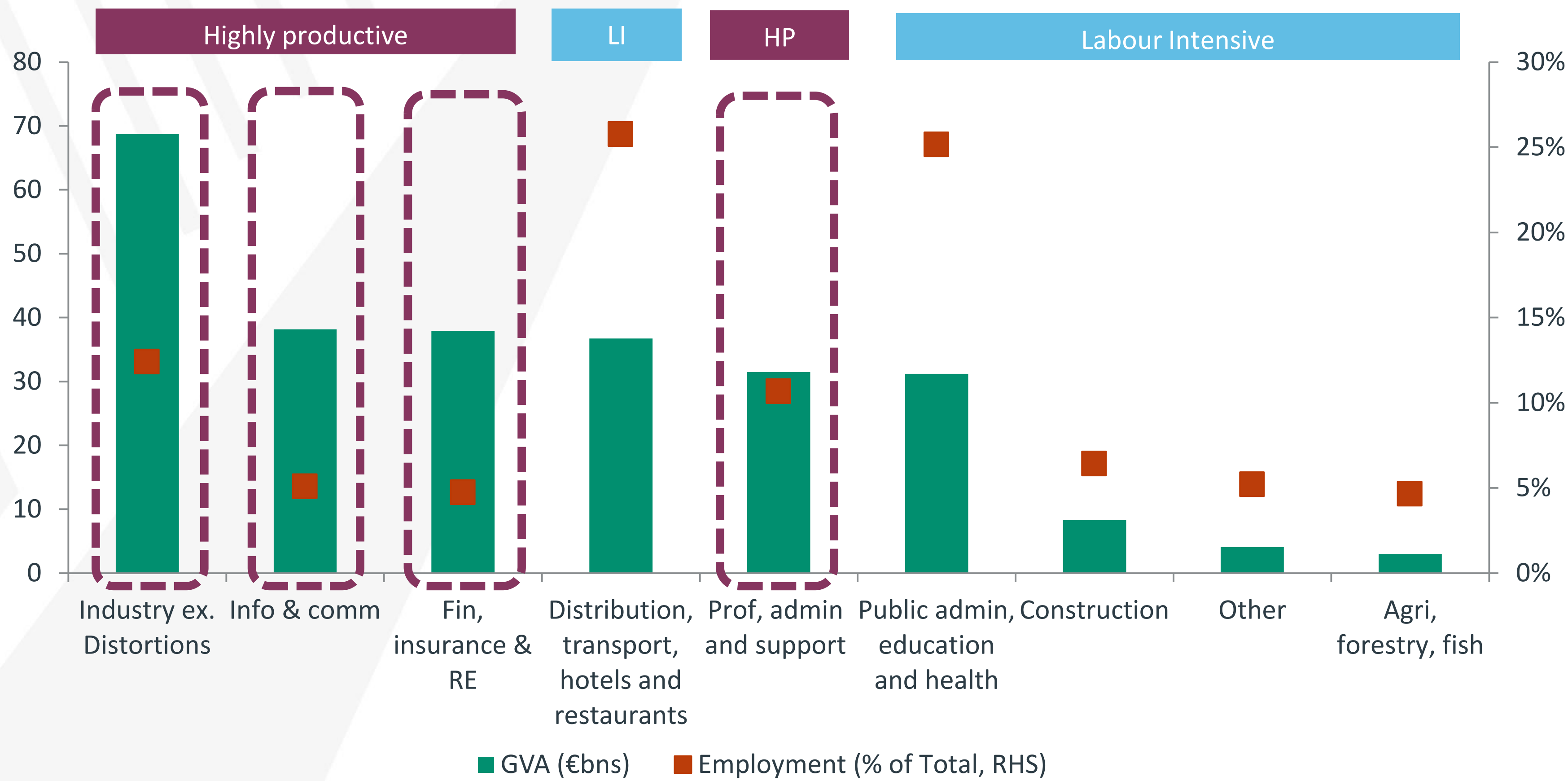


Ireland benefits from export diversification by destination

	Goods (2018)		Services (2017)		Total (2017)	
	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	27.7	16.9	11.6	27.0	18.3	25.0
UK*	11.4	21.9	16.4	9.3	15.1	13.7
NI	1.6	1.6	n/a	n/a	n/a	n/a
EU-27	39.0	37.9	29.9	25.7	32.8	27.4
China	3.9	5.9	2.5	1.5	3.2	2.8
Other	18.0	17.4	39.5	36.6	30.5	31.1

*Source: CSO, NTMA calculations , * Contract manufacturing proxy*

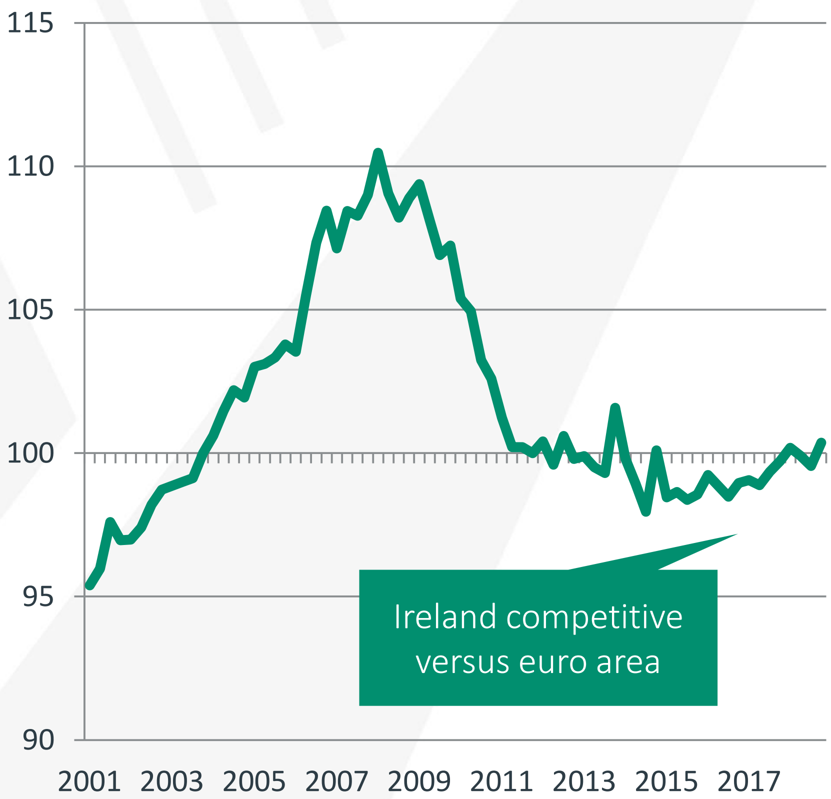
All this leads to mixture of highly productive and labour intensive sectors in Ireland



Source: CSO , NTMA calculations, 2018 data

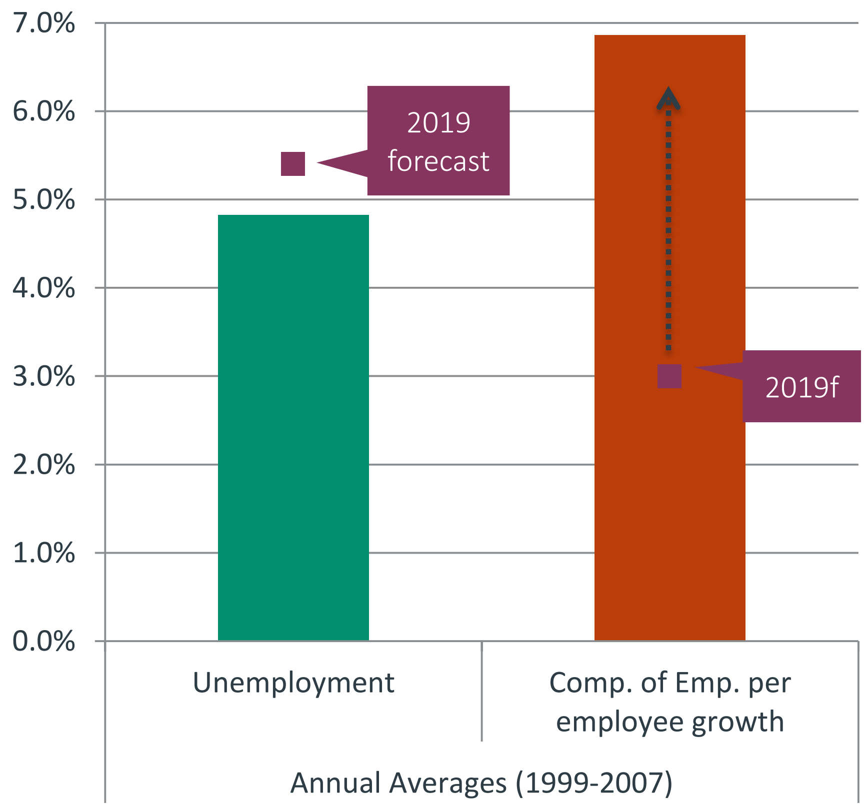
Ireland is pretty competitive now; we need to avoid repeat of the mid-2000s

Nominal Labour Cost Ratio – IE vs Euro Area



*Source: Eurostat, NTMA analysis *Ratio = IE Nom. Labour Costs/ EA Nom. Labour Costs*

Unemployment back towards 1999-2007 level, but wage growth less than half



Source: CSO, Eurostat, NTMA calculations

Ireland's strong fundamentals highlighted by performance on United Nations sustainability index

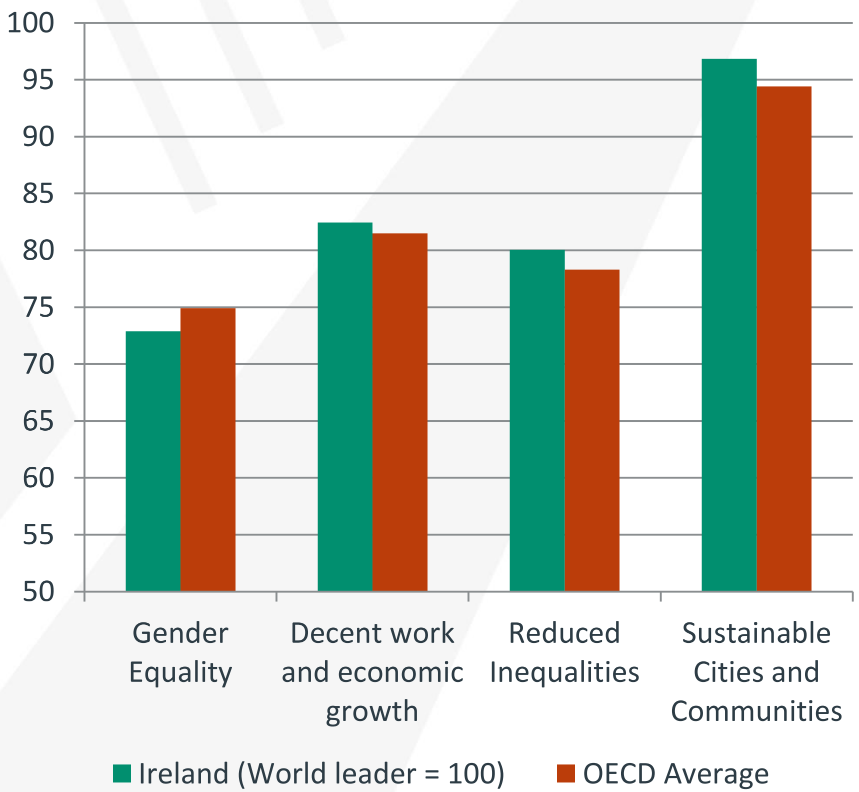
Selected Countries	Global Rank	Index Score (0-100)
Sweden	1	85.6
Denmark	2	84.2
Finland	3	84.0
Norway	4	83.9
Czech Republic	5	81.9
Germany	6	81.7
France	10	80.3
Belgium	12	80.0
United Kingdom	16	78.3
Ireland	**19**	**77.9**
Spain	25	76.8
Portugal	28	75.6
Italy	30	75.5
Luxembourg	33	75.0
Greece	38	72.9
United States	42	72.4

Ireland	Global rank	Vs. Regional Average
Subjective Wellbeing (2016)	13/133	↑
Environmental Performance Index (2016)	19/155	↑
Human Development Index (2016)	8/157	↑
Global Competitiveness Index (2016/17)	21/134	↑
Global Peace Index (2016)	12/149	↑

Source: United Nations SDG project

Ireland is a good place to live and do business

Ireland is close to OECD norms on social issues



Ireland scores well on metrics such as property rights and government efficiency

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

Source: United Nations SDG project

Ireland reformed its corporate tax code to meet global standards; the 12.5% rate is fixed Government policy

Ireland's part in OECD (BEPS) corporate tax reform

- Ireland has been a strong supporter of the BEPS process since inception.
- Removal of known tax avoidance structures such as the "Double Irish", "the Single Malt" and "stateless companies".
- Ireland is best in class on tax transparency and exchange of information. Ireland is one of only 23 jurisdictions to have been found to be fully compliant with new international best practice by the Global Forum on Tax Transparency and Exchange of Information.
- Ireland introduced Country-by-Country Reporting in 2015. Ireland also ratified the BEPS multilateral instrument in domestic legislation which will update the majority of Ireland's tax treaties to be BEPS compliant.

Ireland's role in EU actions on corporate tax reform

- Ireland agreed two Anti-Tax Avoidance Directives (ATADs) with our fellow EU Member States in 2016 and 2017. The Anti-Tax Avoidance Directives represent binding commitments to implement three significant BEPS recommendations into Irish law as well as two additional anti-avoidance measures.
- Three out of five required components of the ATADs are now in effect as of 1st Jan 2019: Controlled-Foreign Company (CFC) rules, Exit Tax and General Anti-Abuse Rules (GAAR).
- We continue to engage positively at both EU and OECD level on tax issues.

Section 5: Property

Residential property prices have started to cool as supply comes online

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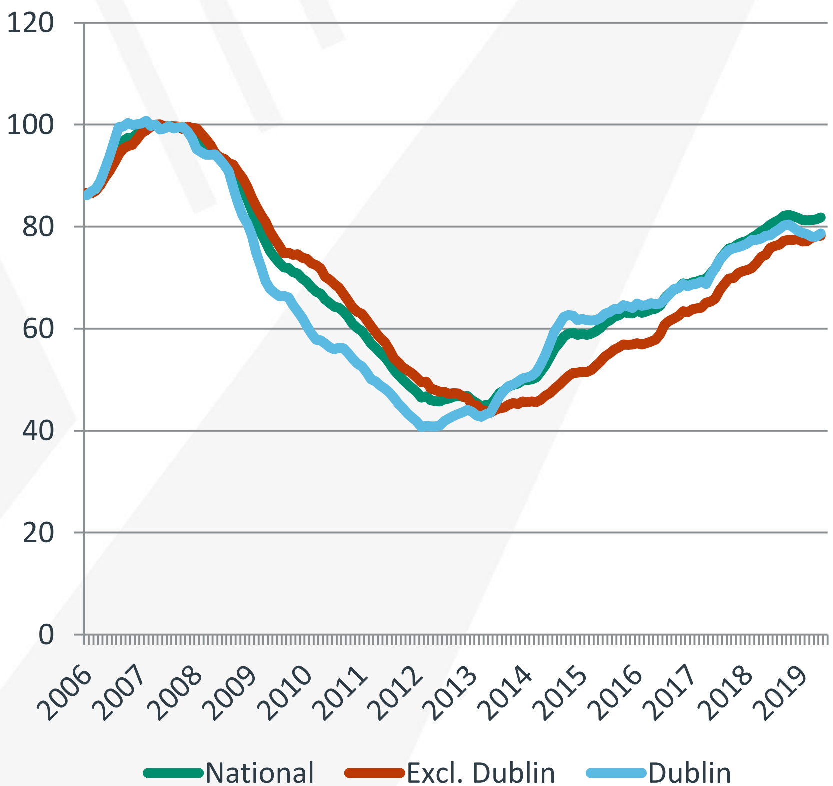
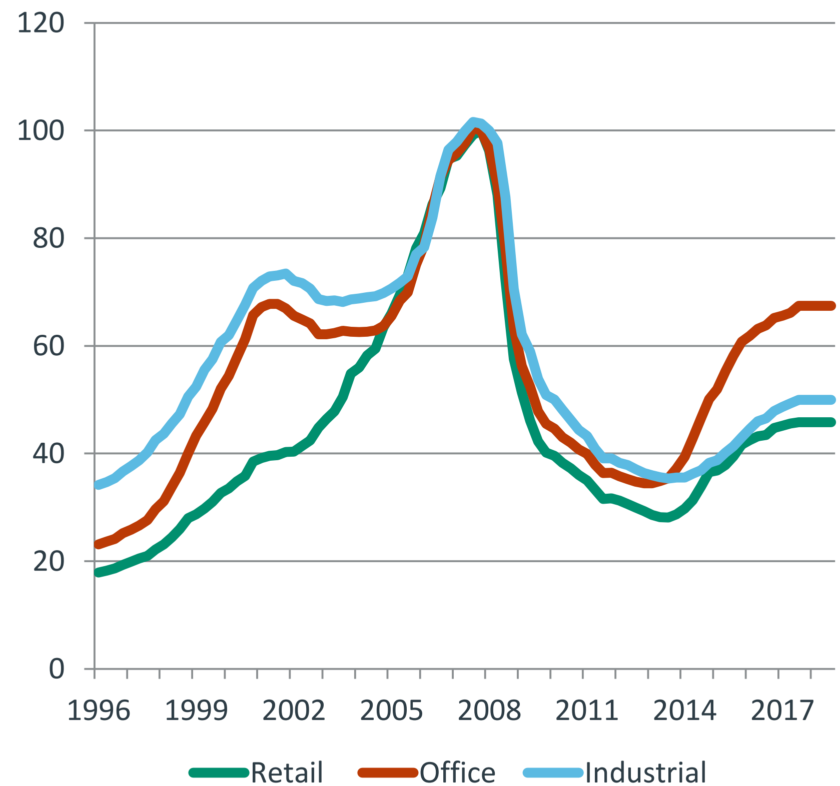
National Treasury Management Agency

Property prices have levelled off over the last year

House prices rising strongly but some way off peak



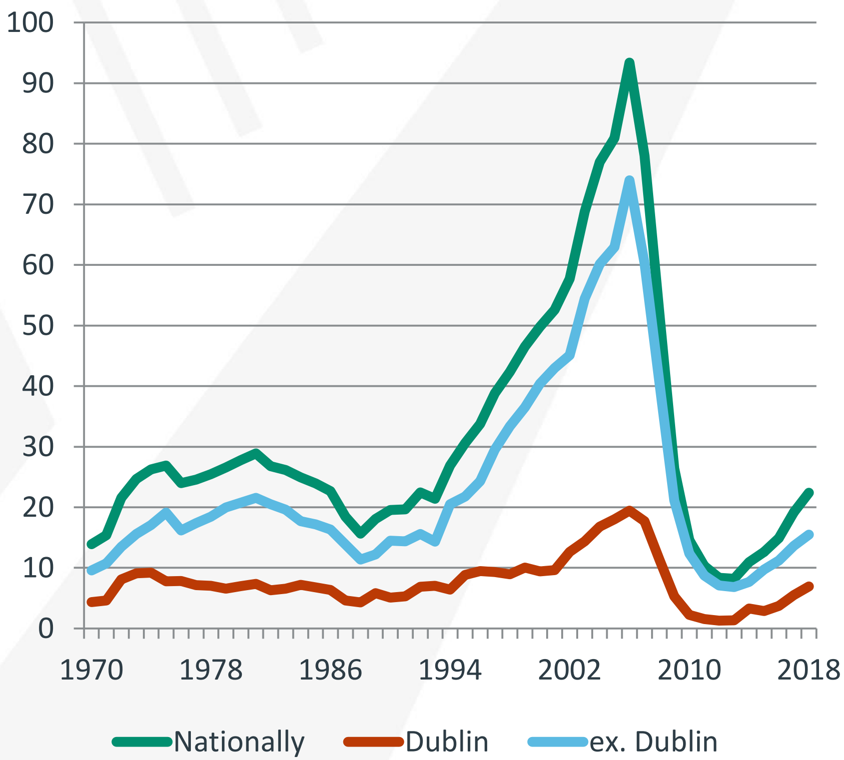
Office leads commercial property (peak = 100)



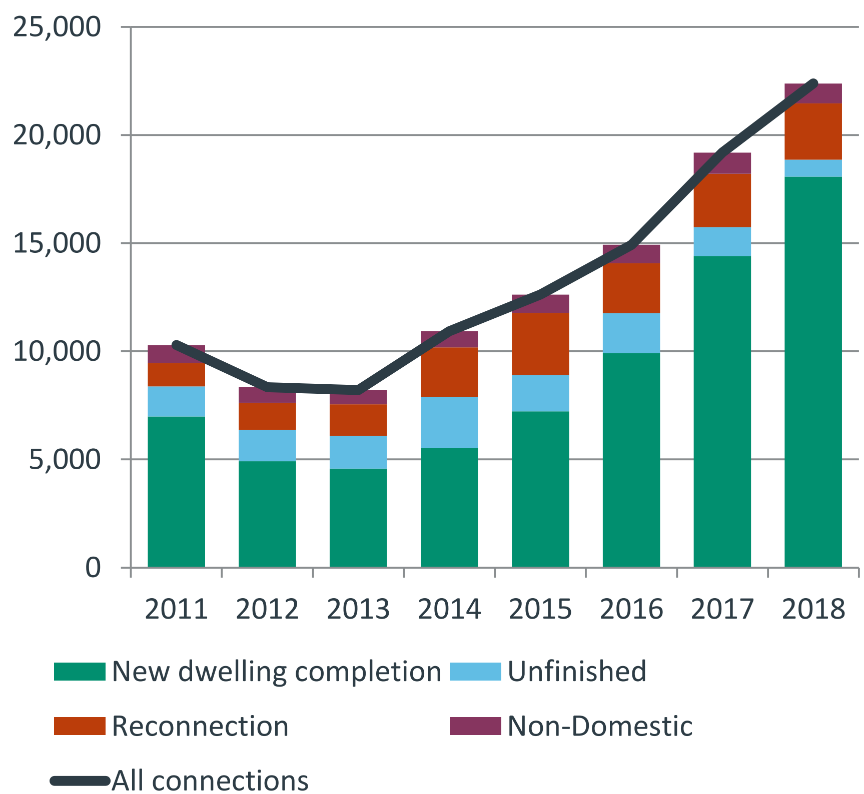
Source: CSO; IPD

Housing supply still below demand; price inflation has moderated as supply slowly catching up

Housing Completions above 22,000 in 2018 but still low historically (000s)



New dwellings* make up 80% of housing completions: some debate about the rest



Source: DoHPCLG, CSO, NTMA Calculations

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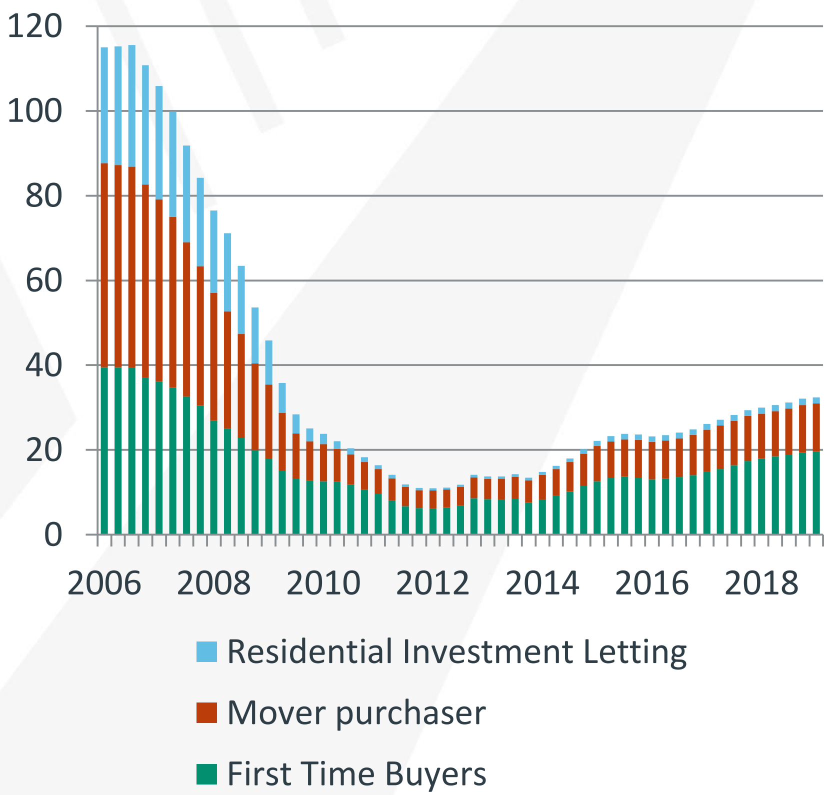
* Housing completions derived from electrical grid connection data for a property. Reconnections of old houses or connections from "ghost estates" overstate the annual run rate of new building.

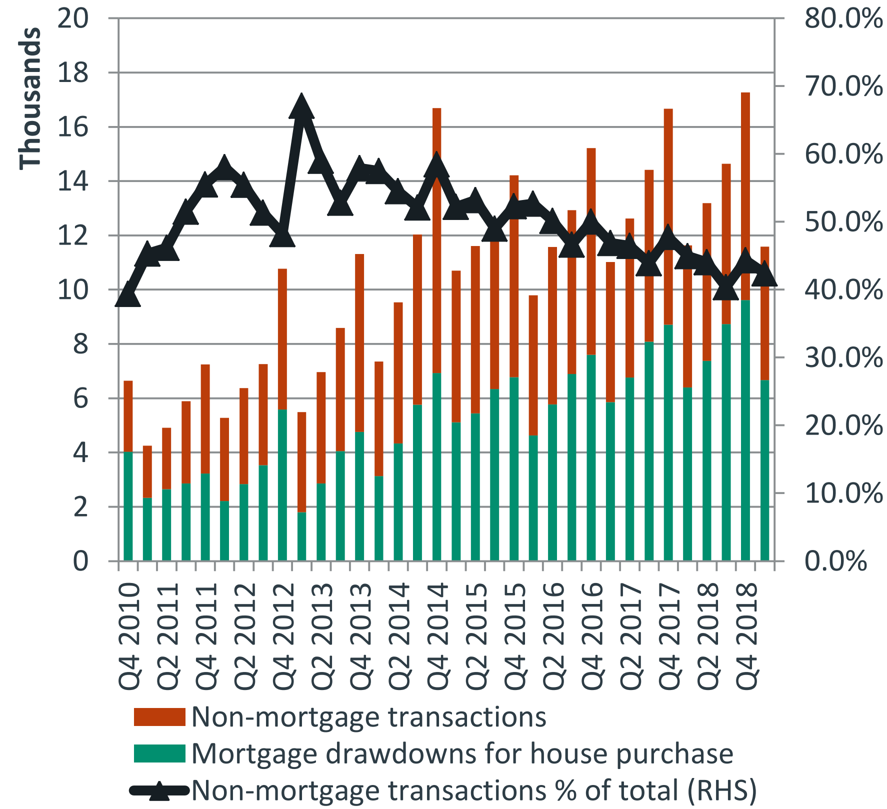
Demand has picked up since 2015; Credit slowly increasing as cash buyers become less important

Mortgage drawdowns rise from deep trough (000s)



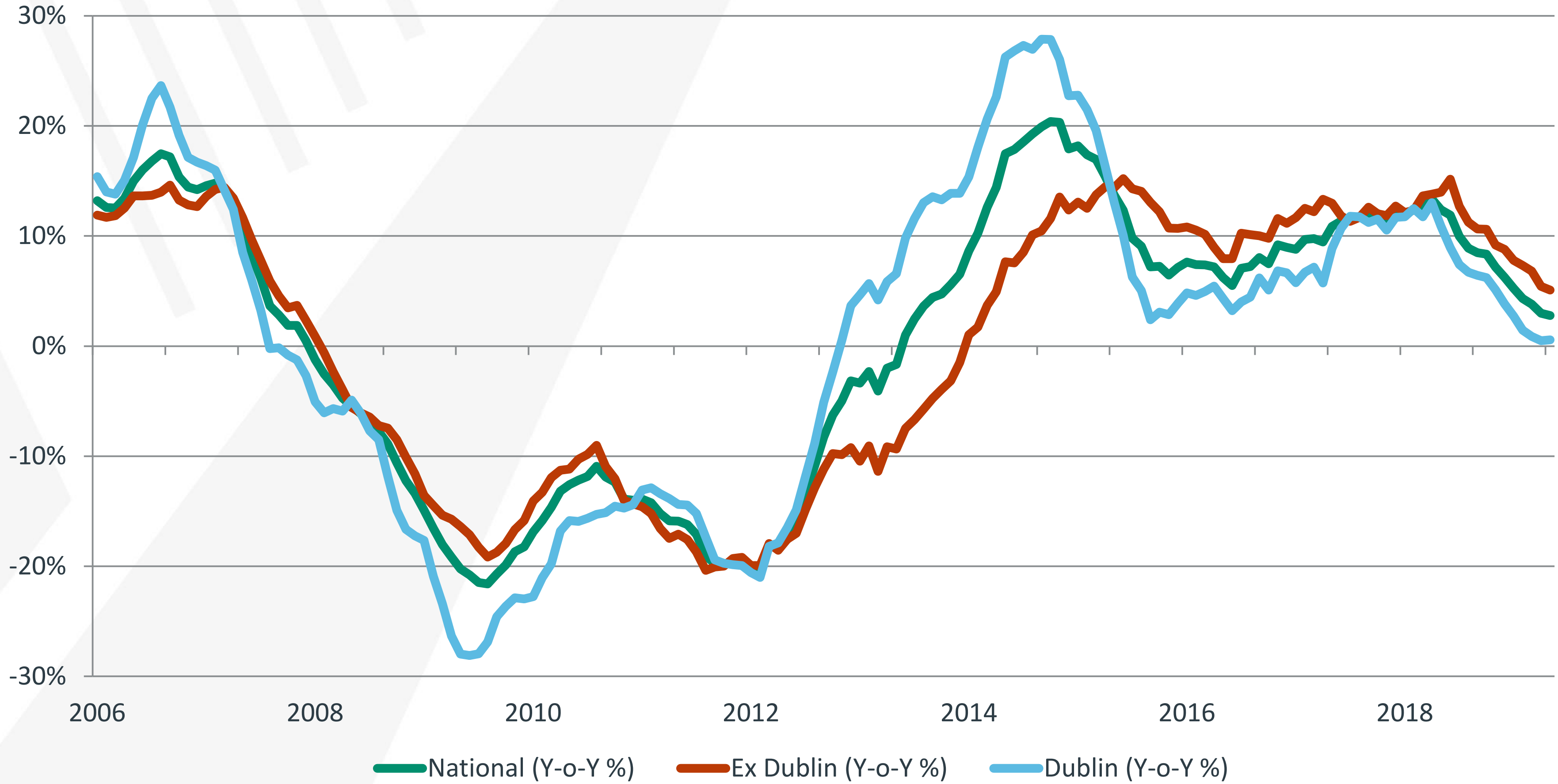
Source: BPFI *4 quarter sum used

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



Source: BPFI; Residential Property Price Register

Residential property prices have rebounded strongly since 2012 but steadied in 2018



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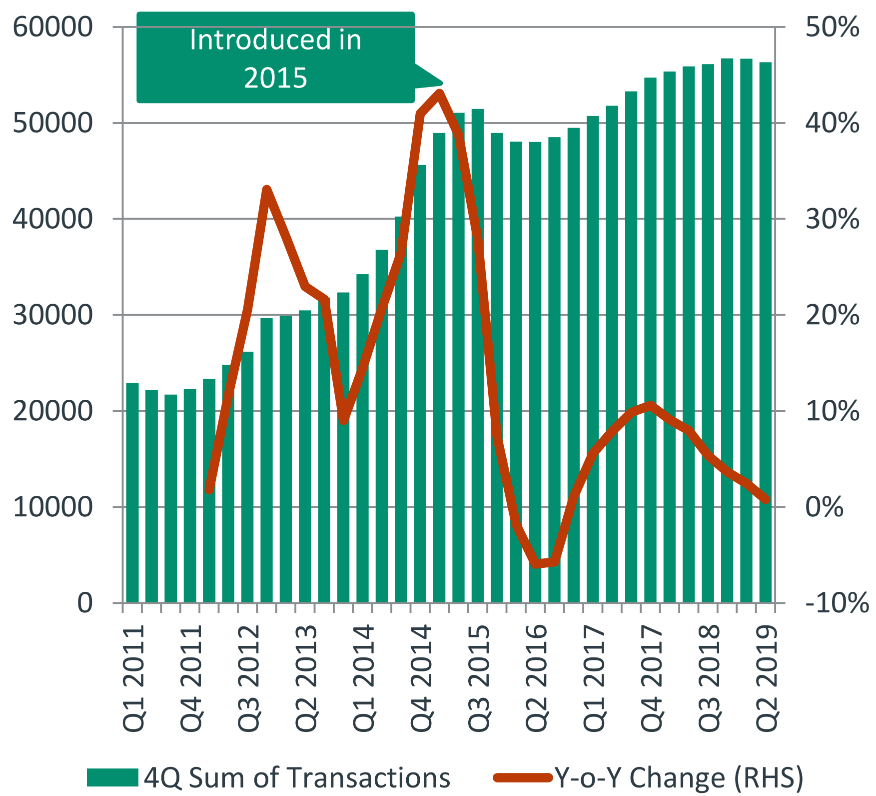
Source: [CSO](CSO);

CBI's macro-prudential rules increase resilience of banking and household sector

CBI's amended macro-prudential rules

- First time buyers (FTBs) can borrow 90% of the value of a home (10% minimum deposit). Five per cent of the total new lending to FTBs will be allowed above the 90% LTV limit.
- For second and subsequent buyers (SSBs), banks must restrict lending for primary dwelling purchase above 80 per cent LTV to no more than 20 per cent of new lending to SSBs.
- Bank must restrict lending for primary dwelling purchase above 3.5 times LTI to no more than 20 per cent of that aggregate value for FTBs and 10 per cent for SSBs.
- Banks have to limit Buy-to-Let loans (BTL) above 70 per cent LTV to 10 per cent of all BTL loans.

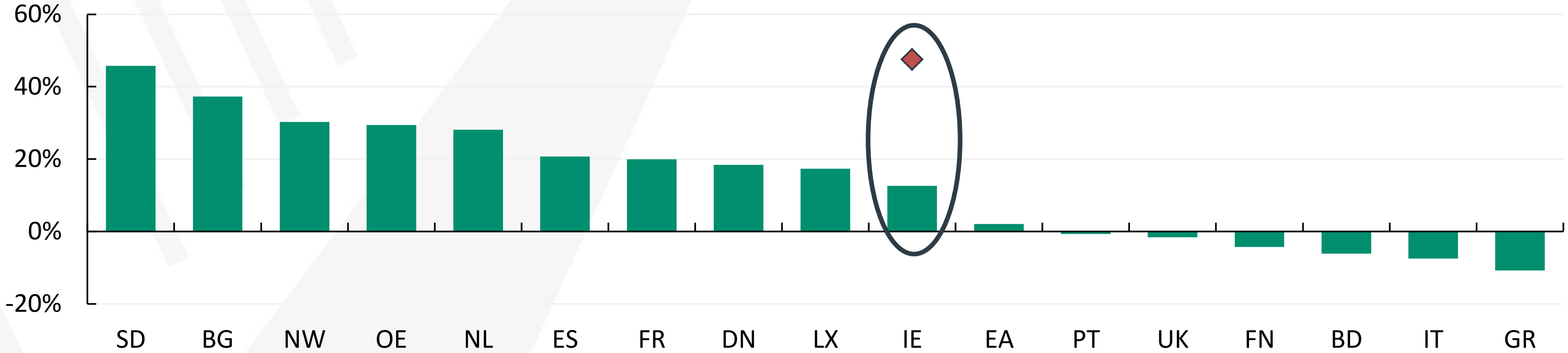
Transaction growth has slowed since macro-prudential rules introduced



Source: Residential Property Price Register

Irish house price valuation metrics continue to rise but remain below 2008 levels

Deviation from average price-to-income ratio (Q4 2018, red dot represent Q1 2008)



Deviation from average price-to-rent ratio (Q4 2018, red dot represent Q1 2008)

Source: OECD, NTMA Workings

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

Section 6: Other data

Worries about contingent liabilities no longer; Ireland now has legacy assets

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Ireland has legacy banking-related assets

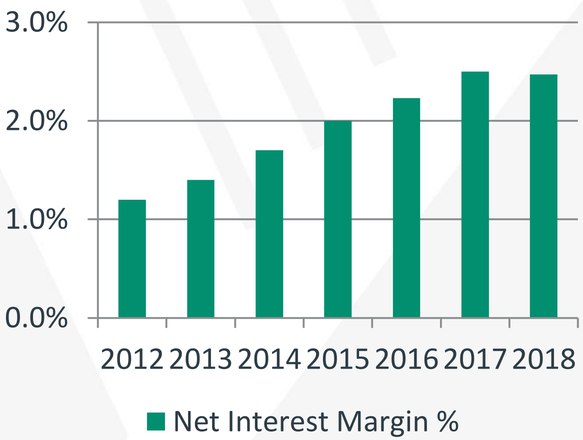
- Banking
  - Banks continue to be profitable; income, cost and balance sheet metrics are much improved.
  - Interest rates on mortgages and to SMEs are still high compared to EU thanks to legacy issues and the slow judicial process in accessing collateral.
  - An IPO of AIB stock (28.8%) was completed in June 2017. This returned c. €3.4bn to the Irish Exchequer to be used for debt reduction.

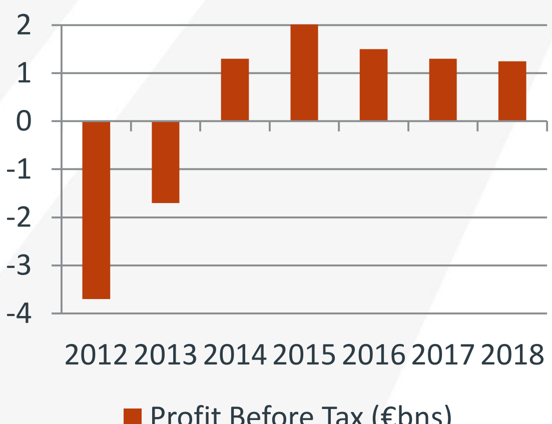
- NAMA
  - NAMA has repaid 100% of its senior debt; it forecasts a profit of €4.0bn subject to market conditions.
  - This is expected to be returned to the Exchequer in the next few years – starting in 2020.

All three pillar banks profitable given enhanced margins

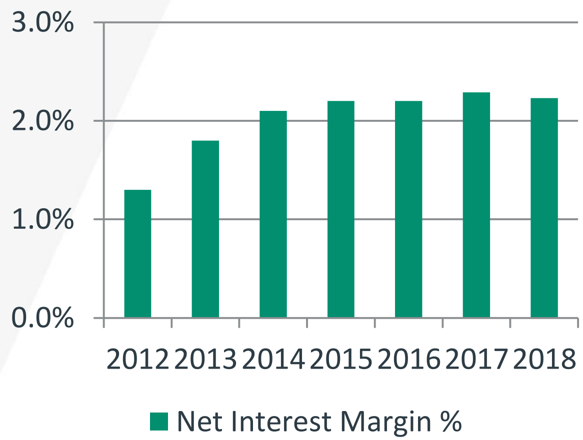
State Ownership

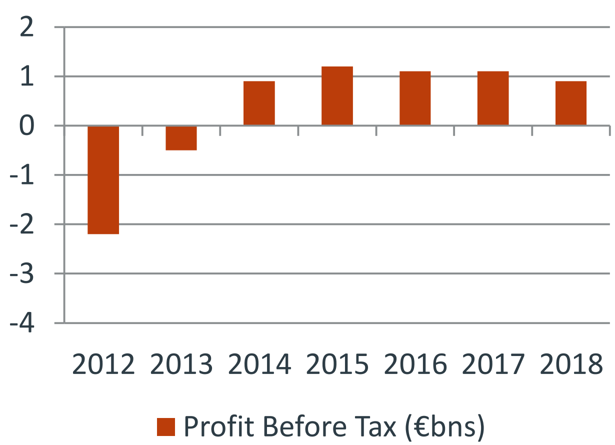
71% owned
Allied Irish Bank



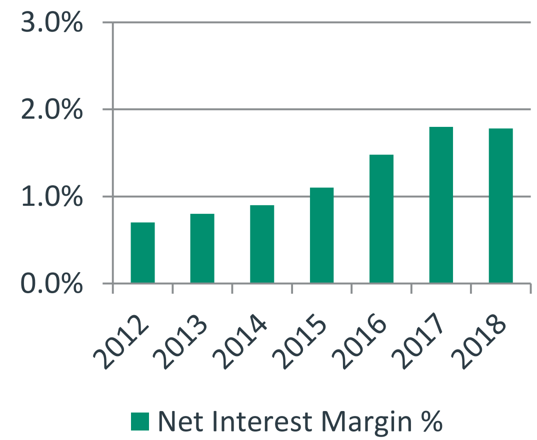


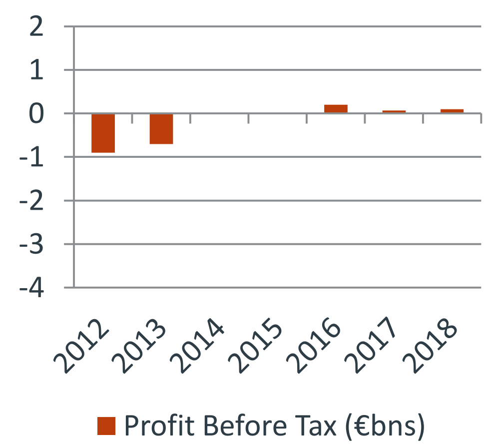
14% owned
Bank of Ireland





75% owned
Permanent TSB





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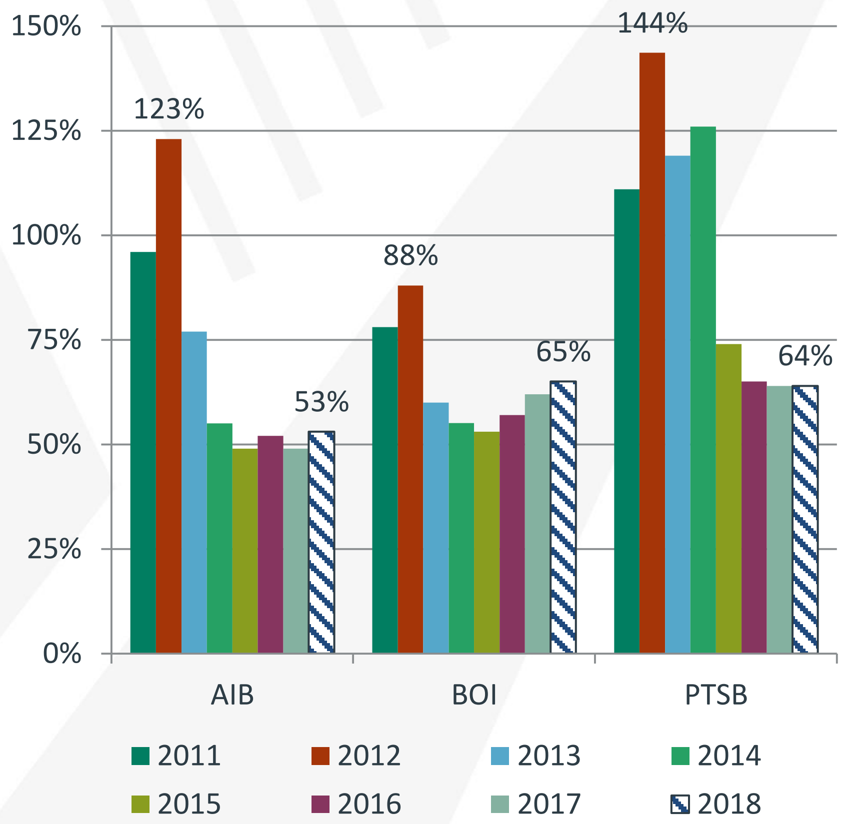
Source: Annual reports of banks - BOI, AIB, PTSB
Profit measures are before exceptional items

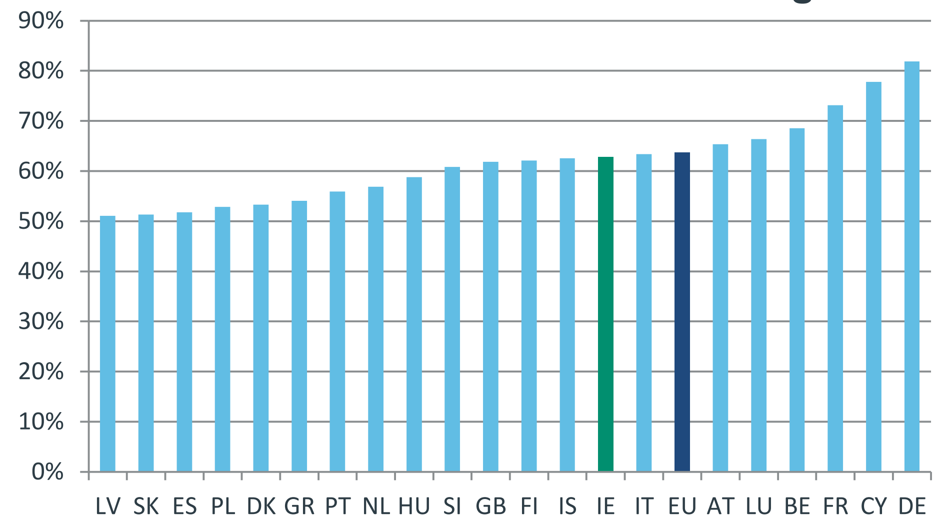
Domestic bank cost base reduced over time

Cost income ratios improve dramatically…

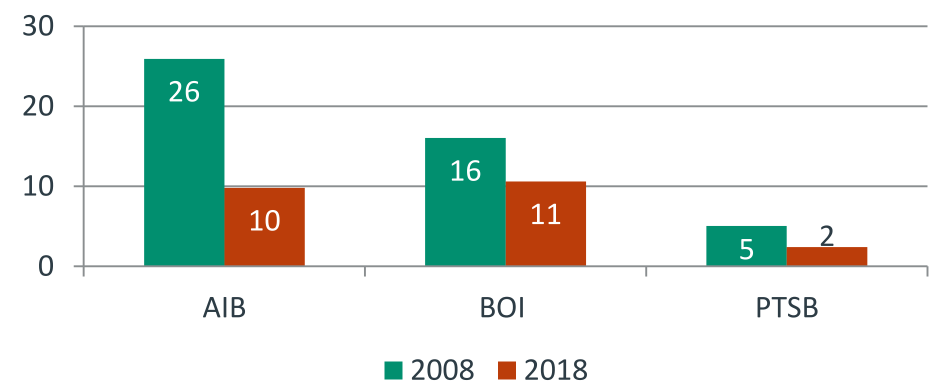


Source: Annual reports of Irish domestic banks

… and IE banks* below to EU average



Staffing (000s) shrunk by c.50% post crisis



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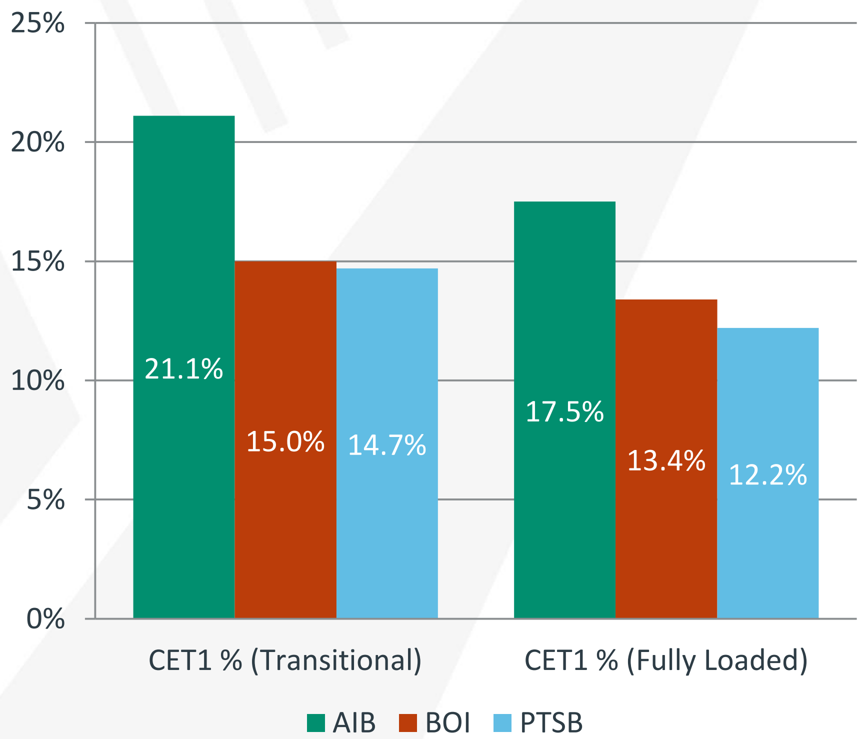
Source: Annual reports of Irish domestic banks, EBA
* EBA data includes three domestic banks as well as Ulster Bank, DEPFA & Citibank.

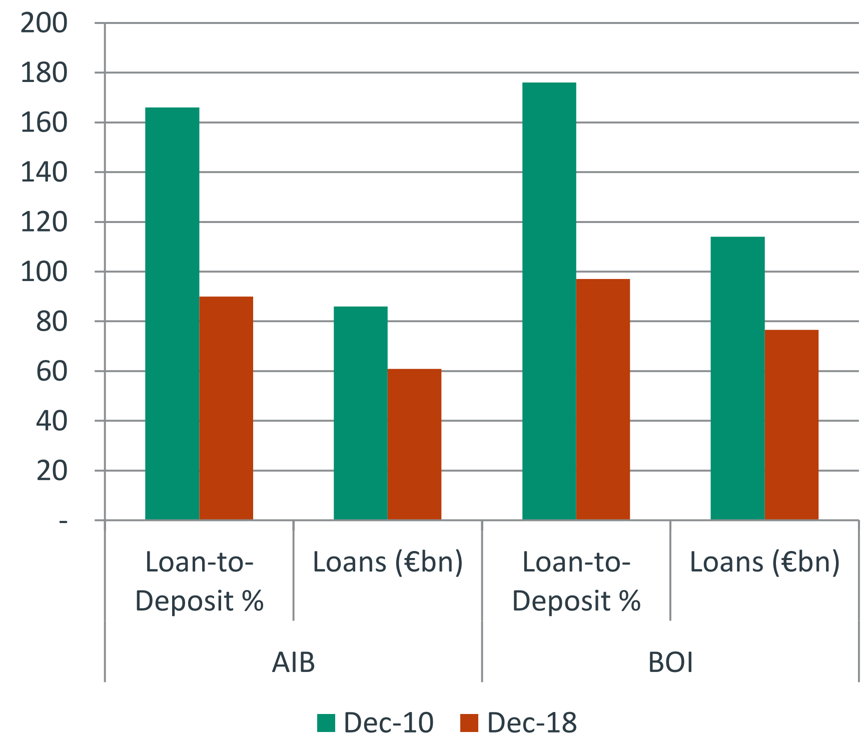
Capital ratios strengthened as banks were slimmed down and consolidated

CET 1 capital ratios (End 2018)



Source: Published bank accounts

Loan-to-deposit ratios have fallen significantly as loan books slimmed down



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.

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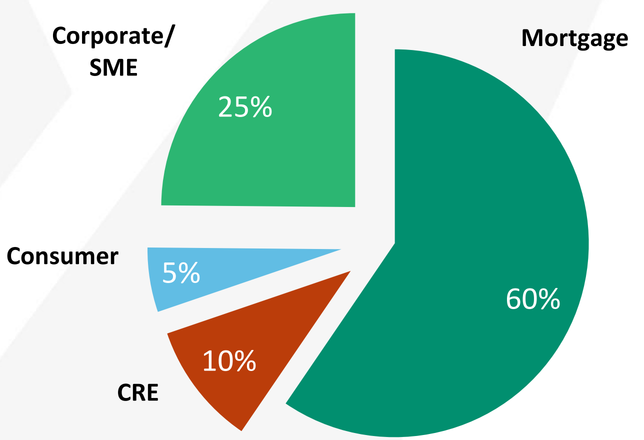
Non-performing loans sold during 2018 as asset quality continues to improve at three pillar banks

All 3 Pillar banks (€bn)	Dec-17	Dec-18
Total Loans	162.4	158.2
Non-performing Exposures	22.0	12.7
(NPE as % of Total)	13.5%	8.0%
Provisions	7.3	4.4
(Provisions as % of book)	4.4%	2.8%
(Provisions as % of Impaired)	33.2%	34.6%

Loan Asset Mix (3 banks Dec 18)



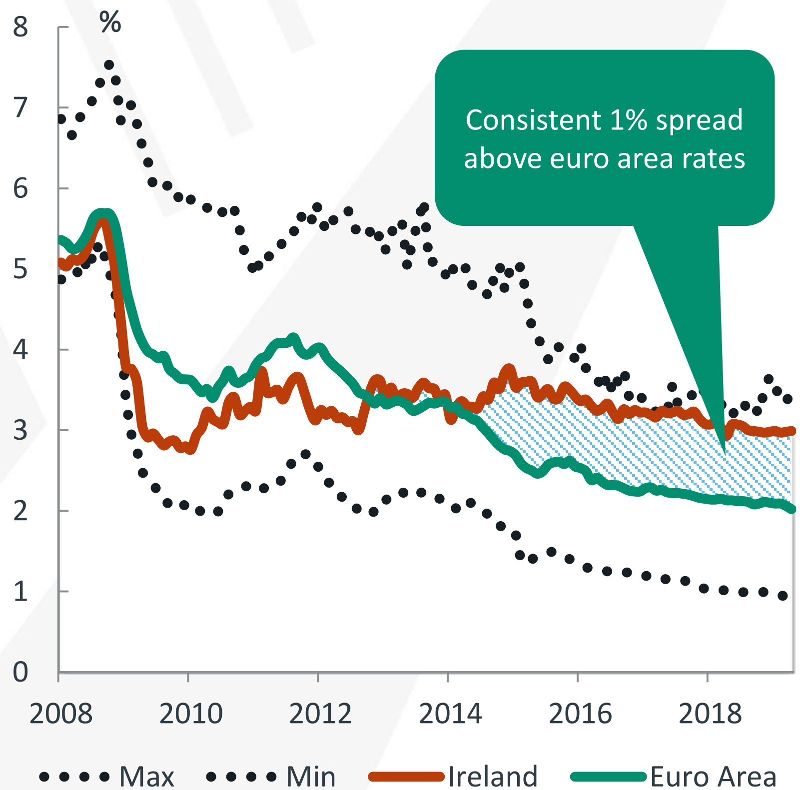
Non-performing exposures % of total loans[1] (loss provision % of NPE)		Dec-17	Dec-18	*Book (€bn)*
BOI	Irish Residential Mortgages	11.0(24)	9.5(21)	23.7
	UK Residential Mortgages	1.9(14)	2.3(15)	21.7
	Irish SMEs	15.4(46)	11.2(49)	7.6
	UK SMEs	8.6(42)	6.1(53)	1.6
	Corporate	3.0(69)	2.6(60)	10.3
	CRE - Investment	17.9(43)	10.7(44)	7.7
	CRE - Land/Development	39.4(55)	14.0(54)	0.6
	Consumer Loans	2.1(98)	2.1(140)	5.1
		8.3(36)	6.3(35)	78.4
AIB	Residential Mortgages	14	10.1 (20)	32.3
	SMEs/Corporate	11	5.2 (36)	19.6
	CRE	33	18.0 (29)	7.9
	Consumer Loans	18	11.1 (50)	3.1
		16	9.6	62.9
PTSB	Residential Mortgages	21.7(44)	8.8(39)	12.4
	Buy-to-let Mortgages	21.8(64)	12.9(113)	4.0
	Commercial	30.3(104)	33.3(76)	0.2
	Consumer Loans	15.4(92)	7.5(112)	0.3
		21.7(50)	10.0(64)	16.9

Source: Published bank accounts

1 Non-performing exposures include impaired loans, loans past due greater than 90 days but not impaired, and Forborne Collateral Realisations

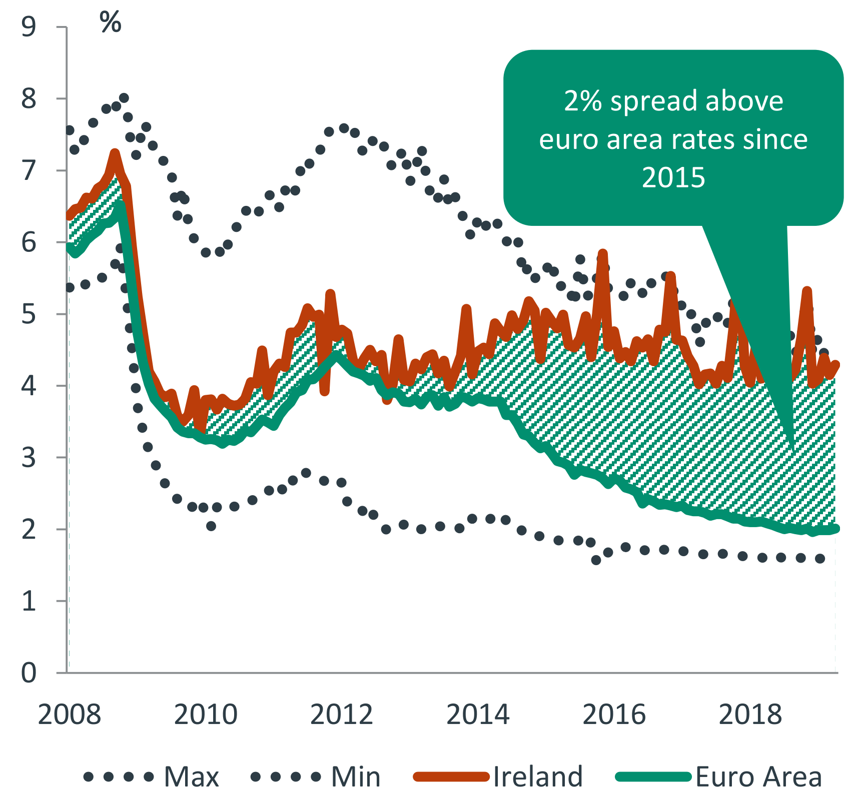
Profitability aided by higher interest rates than EA peers

Ireland's interest rates on lending for house purchase the highest in euro area



Source: ECB

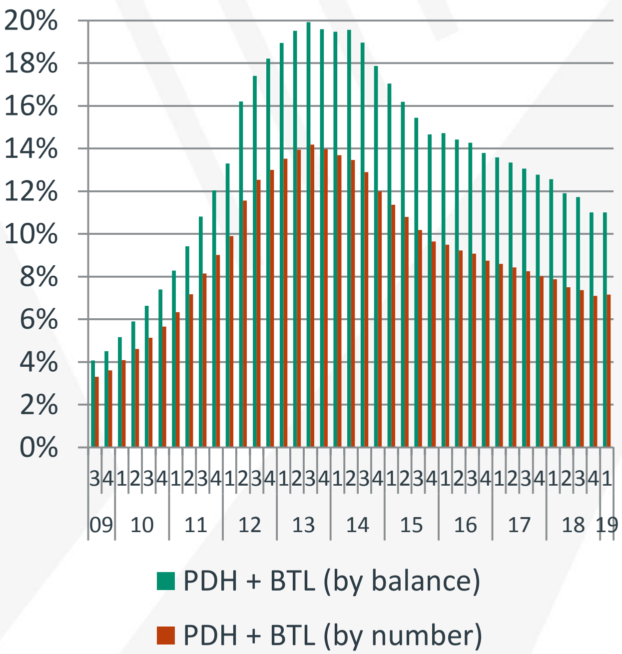
Rates on SME loans* over euro area average

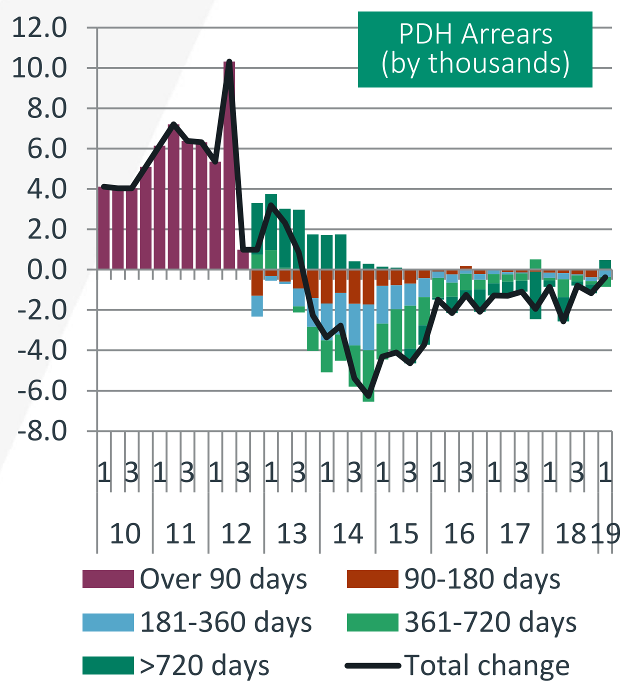


*SME loans proxy of loans <1year and <€1m to Non-Financial Corporates

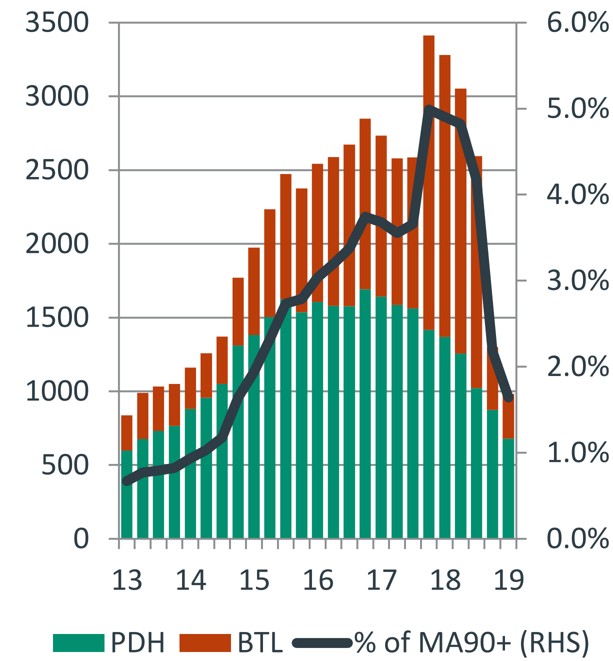
Irish residential mortgage arrears are still improving; but there are complications unrelated to the economy

Mortgage arrears (90+ days)





Repossessions**



Source: CBI

- Non-bank entities now hold 13 per cent of all PDH mortgage accounts outstanding; 9 per cent are held by regulated retail credit firms, with the remaining 4 per cent held by unregulated loan owners. Unregulated loan owners hold 23 per cent of all PDH mortgages in arrears over 720 days

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

NAMA: All original senior debt has been repaid; likely to deliver surplus of around €4bn from 2020 onwards

- NAMA's operating performance is strong
  - Acquired 12,000 loans (over 60,000 saleable property units) related to €74bn par of loans of 780 debtors for €32bn
  - NAMA continues to generate net profit after impairment charges.
- It has repaid 100% of €30.2bn of original senior debt
  - NAMA exceeded its senior debt redemption targets well ahead of schedule. It remains on course, subject to market conditions, to redeem its small amount of subordinated debt by 2020.
- NAMA could deliver a surplus for Irish taxpayers of about €4.0bn, according to its management team - if current market conditions remain favourable.
- NAMA initiative to develop up to 20,000 housing units by 2020 – subject to commercial viability.
  - Progress has been strong so far: 9,700 units were completed in 2014 – 2018;
  - Another 3,000 are under construction or have had funding approved;
  - A further 6,400 have planning permission granted.

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

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

Irish Sovereign Green Bond Framework aligned with the ICMA Green Bond Principles

Use of Proceeds

Sustainable Water, Clean Transportation, Energy Efficiency, Climate Change Adaptation & Others

Project Evaluation and Selection Process

Working Group established by Government: NTMA, DPER, DCCAE & DFIN

Management of Proceeds

Pending its allocation to Eligible Green Projects, Ireland will temporarily hold proceeds in its Central Fund.

Reporting

Annual Allocation Report &
Biennial Eligible Green Project Impact Report

External Verification

Source: NTMA
Further details are available at ntma.ie

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

1 in 5 euros in the NDP to be spent on green projects

Sustainable Mobility

€8.6 billion

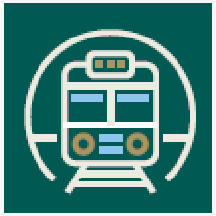
Sustainable Management of Water and Environmental Resources

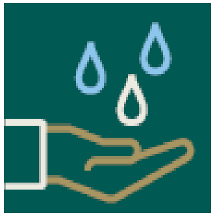
€6.8 billion

Transition to a Low carbon and Climate Resilient Society

€7.6 billion

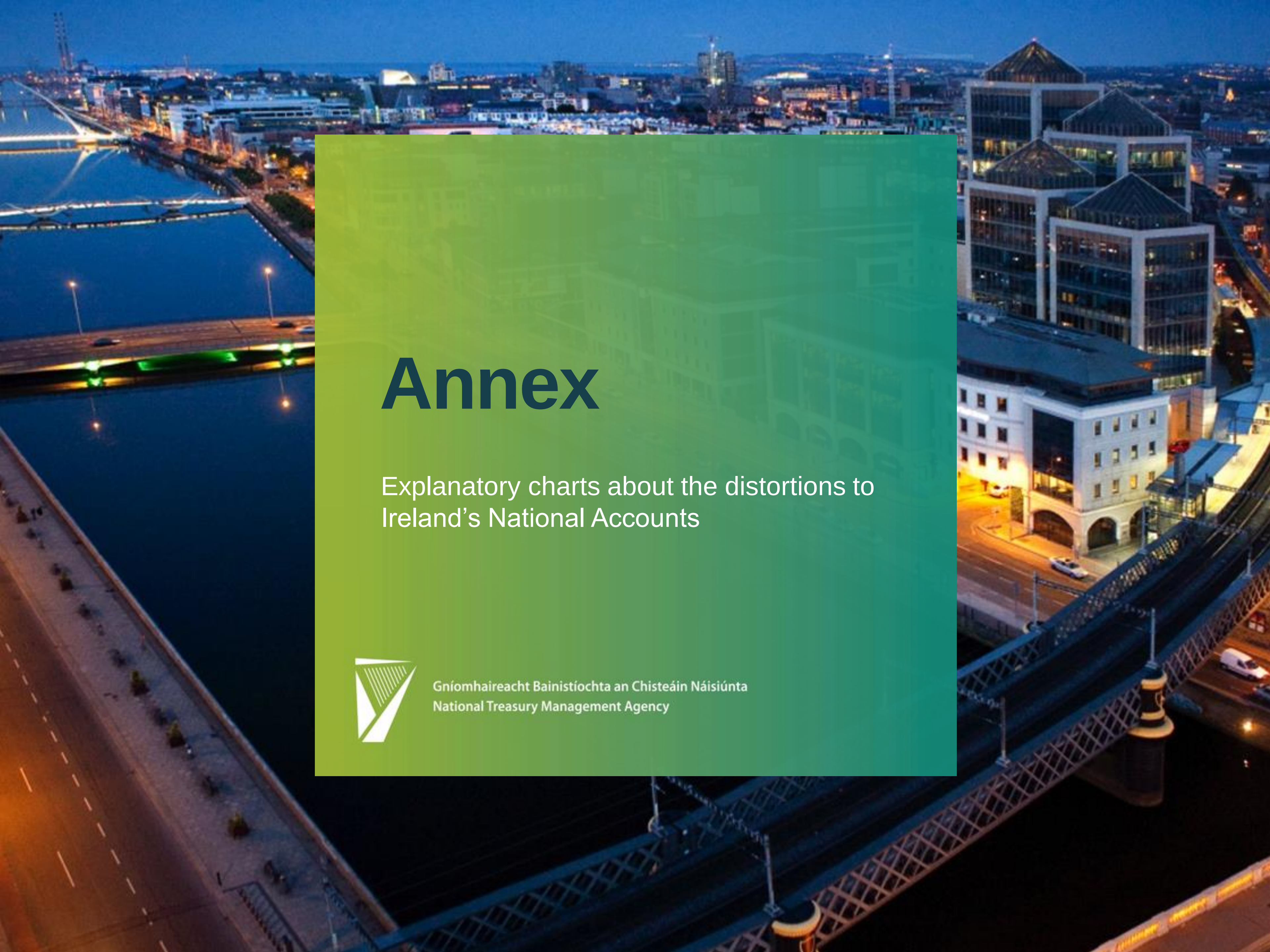
Total:€23 billion (13% of GNI*)





Further details are available at ntma.ie

Source: National Development Plan 2018-2027



Annex

Explanatory charts about the distortions to Ireland’s National Accounts

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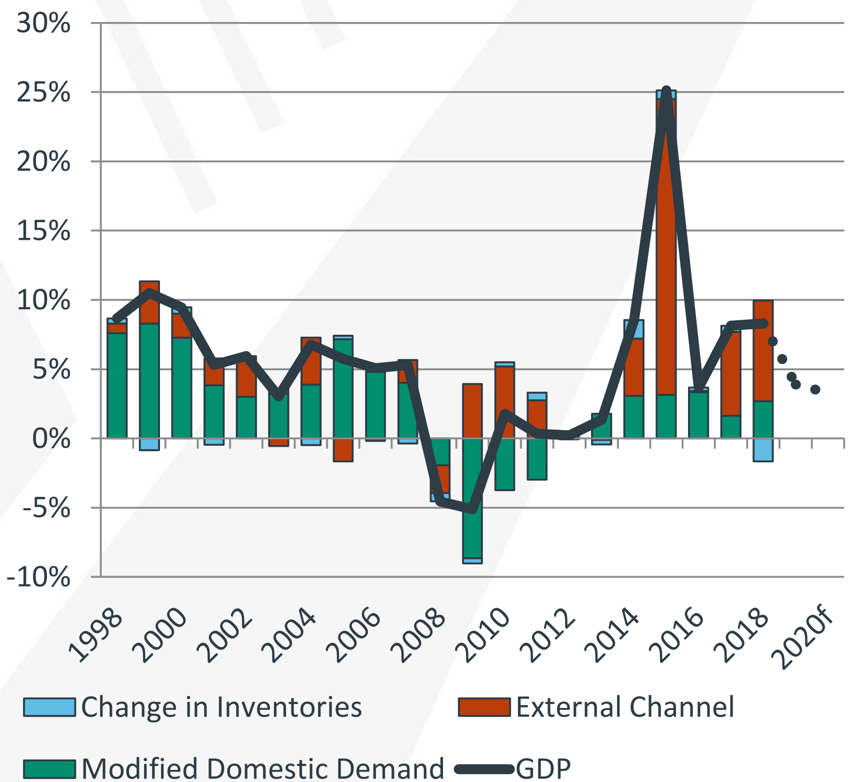
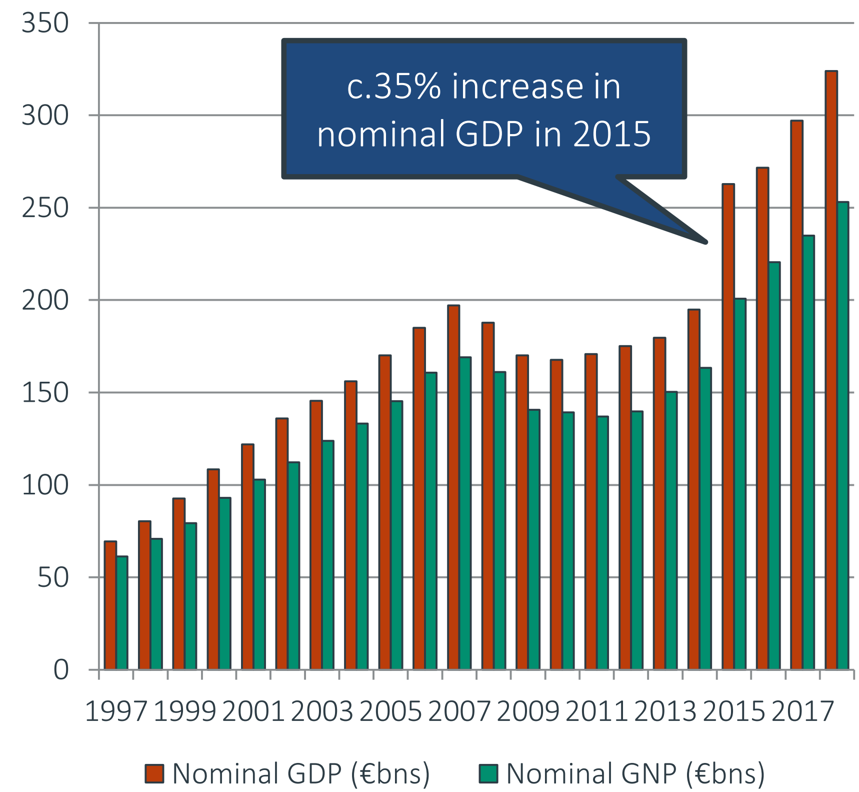
Distortions to GDP/GNP make them sub-optimal indicators of economic performance

Substantial activity from multinationals distorts the national accounts



Reclassification of several companies and "onshoring" of IP led to step change in GDP

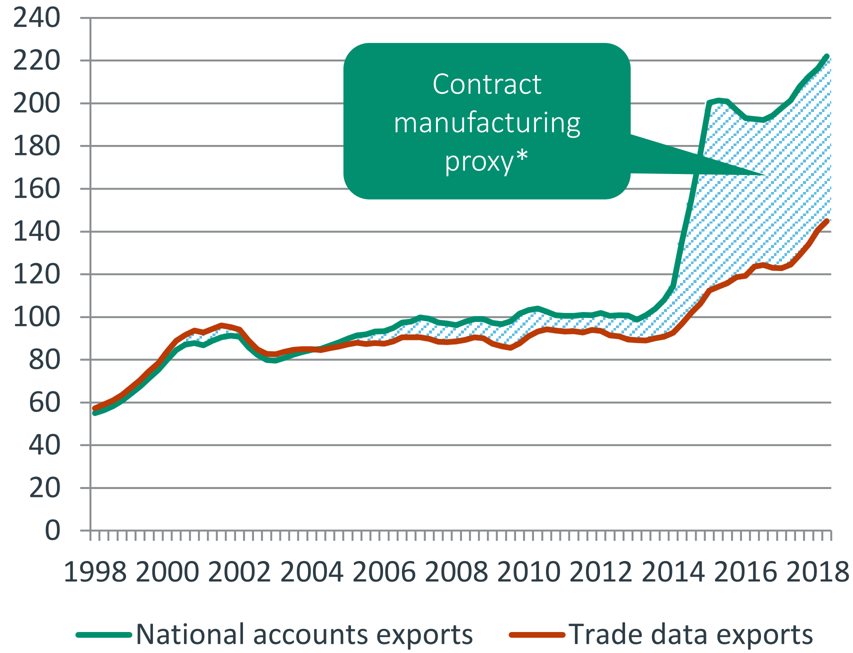


Source: CSO; Department of Finance

The change in capital stock resulted in large increase in net exports – mostly through contract manufacturing (CM)

The capital stock expanded in 2015 by c. €300bn or c. 40%. This is due to:

- Re-domiciling/inversions of several multinational companies
- The "onshoring" of IP assets into Ireland by multinationals
- The movement of aircraft leasing assets in Ireland.



Goods produced by the additional capital were mainly exported. Complicating matters, the goods were produced through "contract manufacturing".

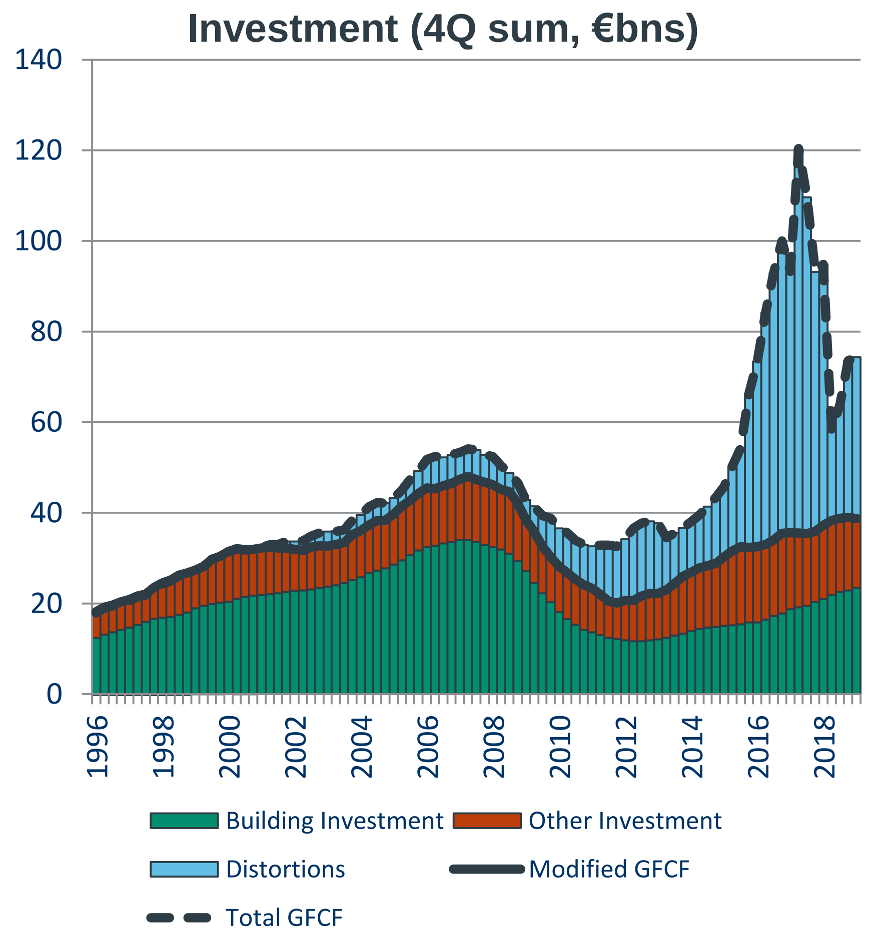
CM occurs where a company in Ireland engages another abroad to manufacture products on its behalf.

Crucially, the foreign contract manufacturer supplies a manufacturing service to the Irish entity but the overseas contractor never takes ownership of the product. When the product is sold abroad, a change of economic ownership takes place between Ireland and the country where the product is sold. This export is recorded in Ireland's statistics even though it was never produced in Ireland.

Little or no employment in Ireland results from this contract manufacturing.

Investment distorted by multinationals importing intellectual property (IP) into Ireland

- Investment is above the pre-crisis level due to MNCs importing intangibles into Ireland.
- Ireland has become an ICT hub in recent years with this investment impacting the real economy.
- However the recent sharp increase in intangibles investment overstates Ireland's position and should be discounted accordingly.
- Building investment grew by 12.4% y-o-y in 2018 versus 2017 highlighting pent up demand for housing.



Source: CSO,

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

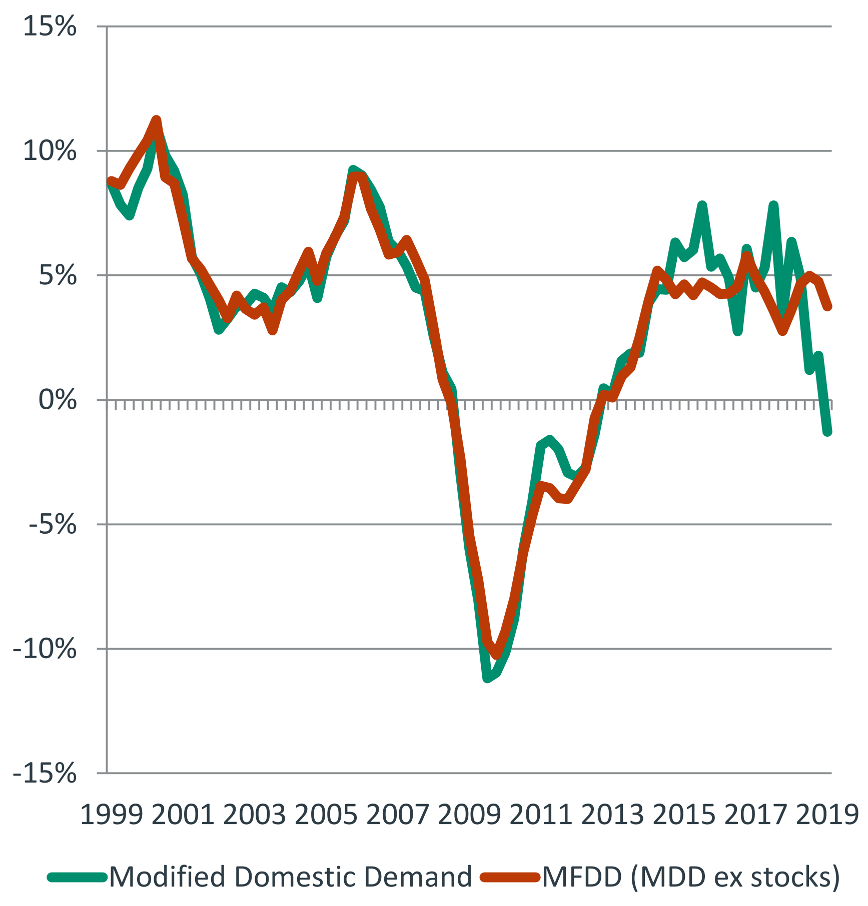
- GDP headline numbers do not reflect the "true" growth of Ireland's income due to MNCs.
- Reasons for 2015-18 MNC distortions:
  - Re-domiciling/inversions of several multinational companies
  - The "onshoring" of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in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

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

Source: CSO

Modified Domestic Demand (MDD) – which ignores exports - is best cyclical indicator

- GNI* is useful but not timely. MDD and MFDD are released on a quarterly and real basis.
- MDD ignores the net exports channel. It also omits aircraft leasing and IP imports from investment.
- The measure includes:
  - Private and government consumption
  - Building investment
  - Some machinery & equipment investment
  - Some intangible asset investment
  - Value of physical changes in stock. This last piece is impacted by MNCs and is quite volatile.
- MDD has Ireland growing negatively in Q1 2019 mainly due to volatility in stocks.
- When stocks are excluded, (i.e. using Modified Final Domestic Demand) <u>real underlying growth was 3.7%</u> in Q1 2019. Since 2014, annual growth has averaged 4.4% when looking at MFDD.



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Source: CSO, four quarter sum growth rate used to strip out substantial quarterly volatility.
Note MDD includes inventories. Large inventories in Q4 2016 added a further degree of volatility into MDD data.

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