Ireland: Amid risks, underlying growth of 5% realized

Risks have increased such as challenges to multinational sector

April 2018

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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Summary

Growth is strong and Ireland is living within its means

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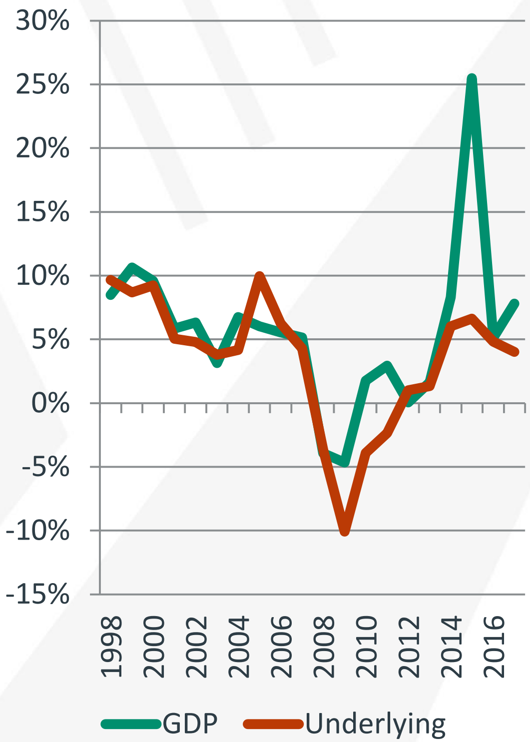
Macro picture is positive: fastest growing economy in the euro area for last four years

GDP distortions hide underlying real growth



Appropriate debt analysis* is needed…

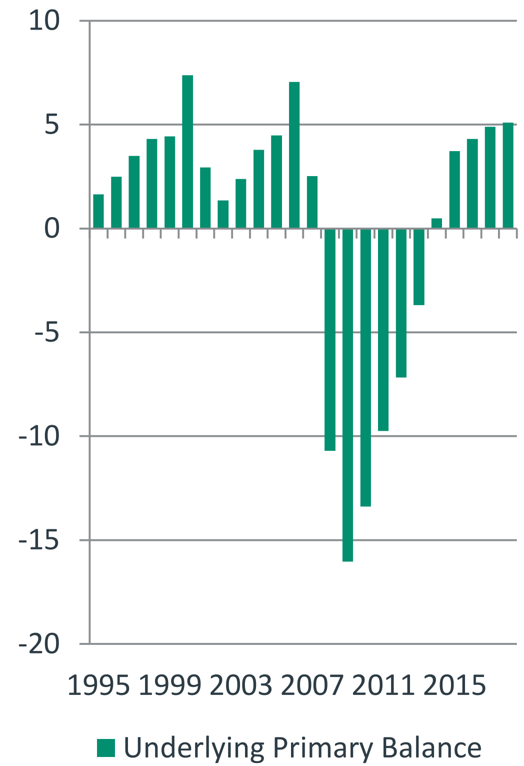
Debt-to-GDP
(68.5%, from 120%)

Debt-to-GNI*
(102%, from 158%)

Debt-to-GG Revenue
(269%, from 353%)

Average interest rate
(2.9%, from 5.1%)

…but Ireland running a primary surplus (€bn)



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** End-2017 Forecasts from Budget 2018 and NTMA*

Funding environment is favourable for Ireland - €6.25bn issued already in 2018

€14-18bn

funding range for 2018

2017
€17bn of funding
Average maturity 13.2 years
Interest rate of 0.88%

A+

Three upgrades in 2017 highlighted by Fitch upgrading Ireland to A+ in December

€5.5bn

Early repayment of IMF and Swe/Den bilaterals further reduced interest bill to below 3% average rate

Challenges are primarily from overseas

Debt

Ireland has used the QE period to deleverage ; healthiest demographics in Europe means that the country can cope with higher debt

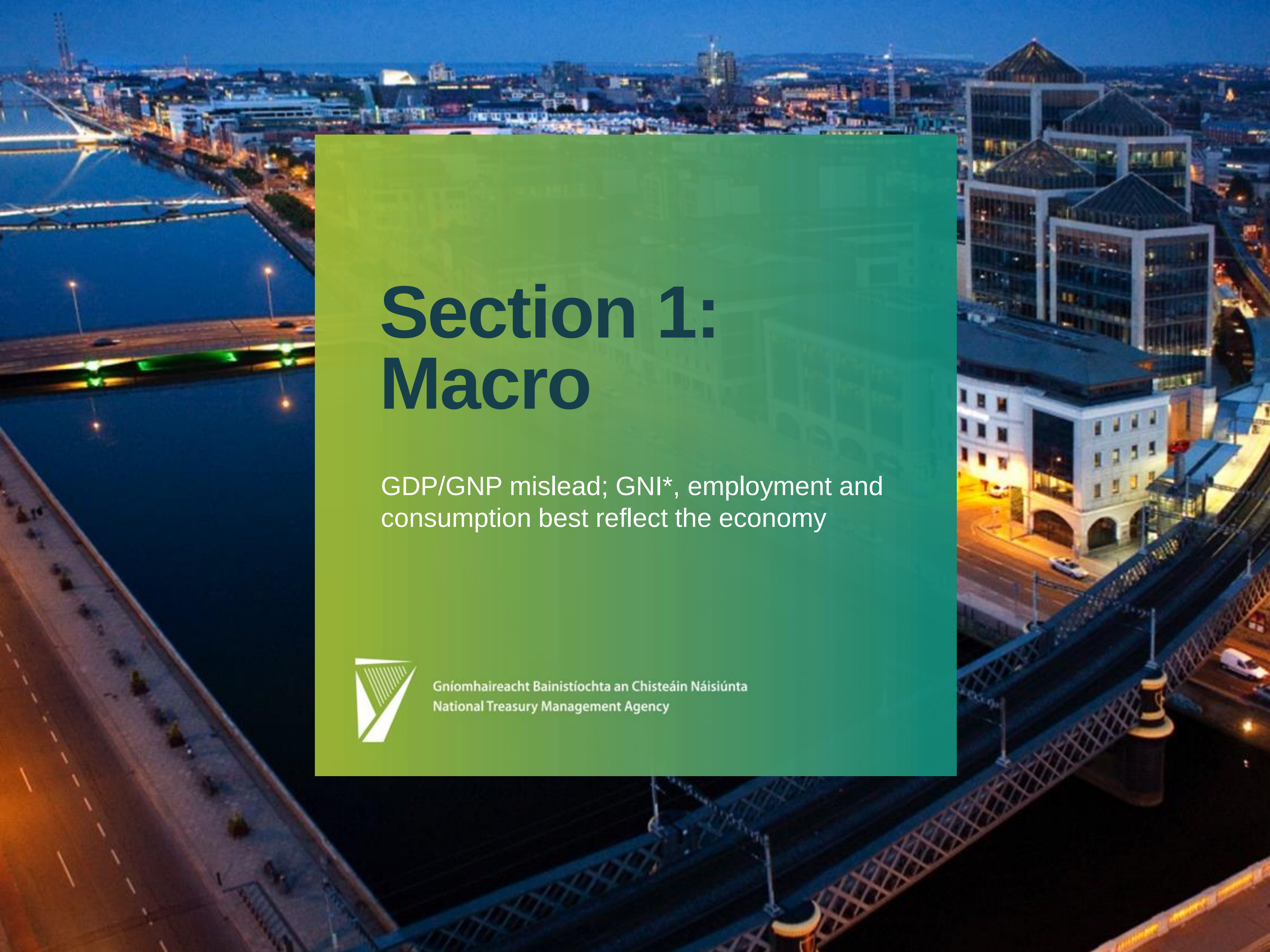
US

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

Impact of US Corporate Tax reform

Brexit

“Hard” Brexit could impact Irish Growth by 4% over a 4-5 year period



Section 1: Macro

GDP/GNP mislead; GNI*, employment and consumption best reflect the economy

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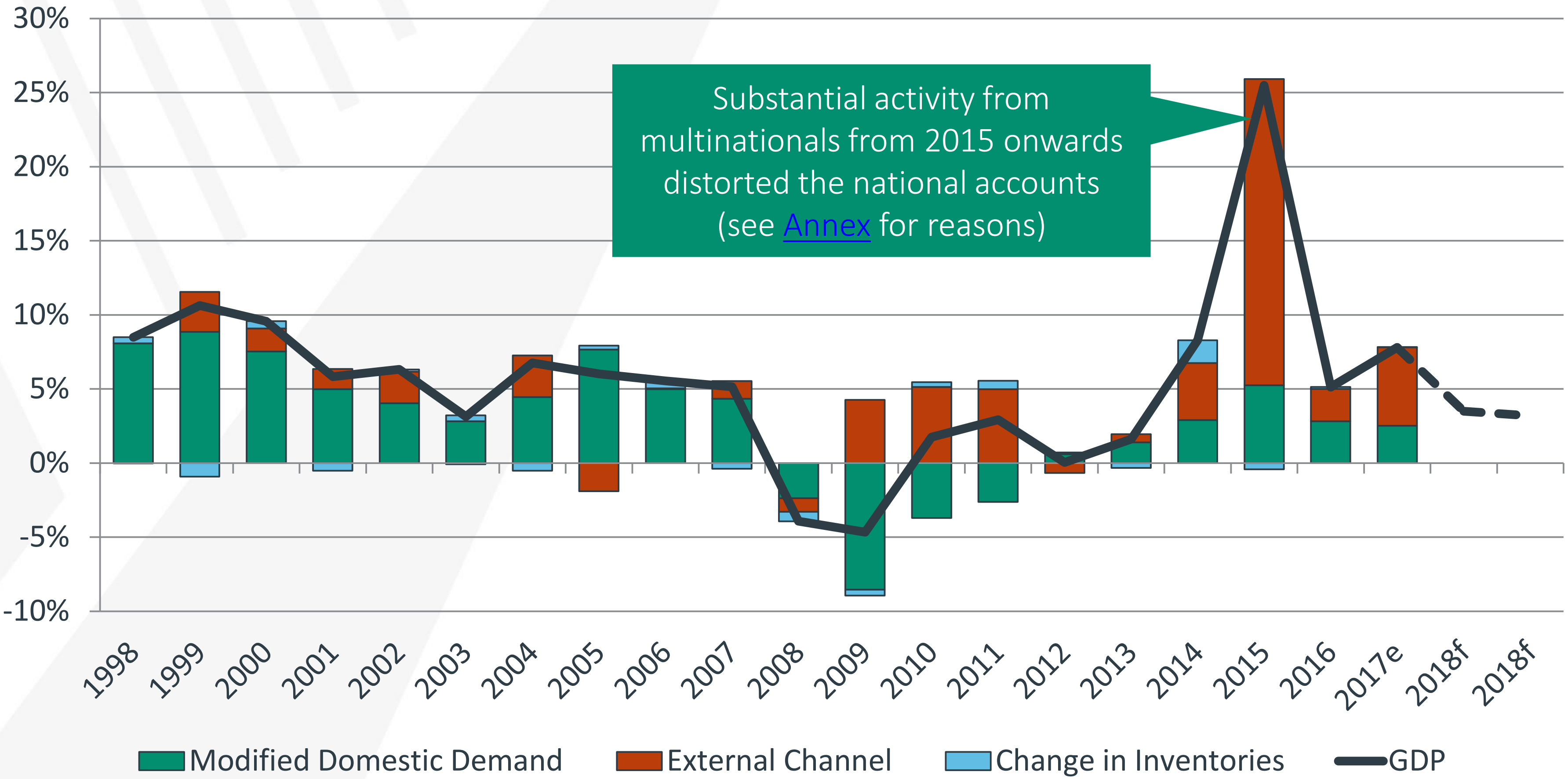
Distortions to GDP/GNP make them sub-optimal indicators of economic performance



Source: CSO; Department of Finance

GNI* is a better measure of underlying economic activity: the new metric grew by 9.4% nominally in 2016

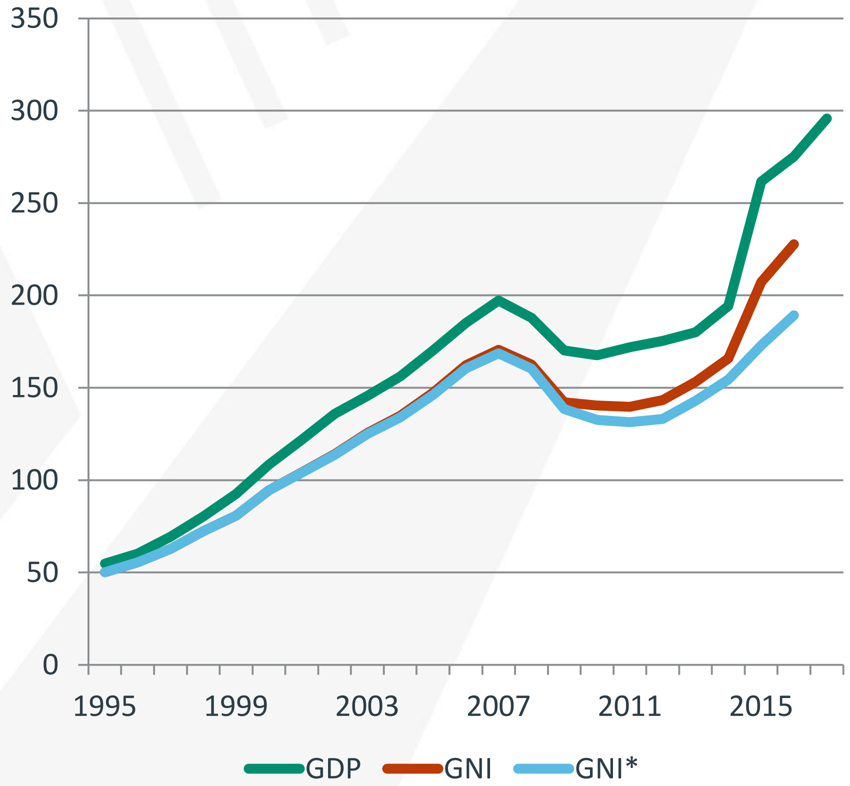
- GDP headline numbers do not reflect the "true" growth of Ireland's income due to MNCs.
- Reasons for 2015-17 MNC distortions:
  - Re-domiciling/inversions of several multinational companies
  - The "onshoring" of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in Ireland.
- By modifying GNI to take account of these factors, GNI* gives us a better understanding of the underlying economy.
- GNI* only available in nominal terms at present and is not available for 2017 yet.
- In time, GNI* will be published on a constant price basis.

National Account – Current Prices (€ Billions, y-o-y growth rates)	2015	2016
Gross Domestic Product (GDP)	262bn (34.7%)	275.6bn (5.2%)
minus Net Factor Income from rest of the world		
= Gross National Product (GNP)	206bn (25.0%)	226.7bn (10.1%)
add EU subsidies minus EU taxes	1.2bn	1.0bn
= Gross National Income (GNI)	207.2bn (24.9%)	227.7bn (9.9%)
minus retained earnings of re-domiciled firms	-4.6bn	-5.8bn
minus depreciation on foreign owned IP assets	-25.0bn	-27.8bn
minus depreciation on aircraft leasing	-4.6bn	-5.0bn
= GNI*	172.9bn (11.9%)	189.2bn (9.4%)

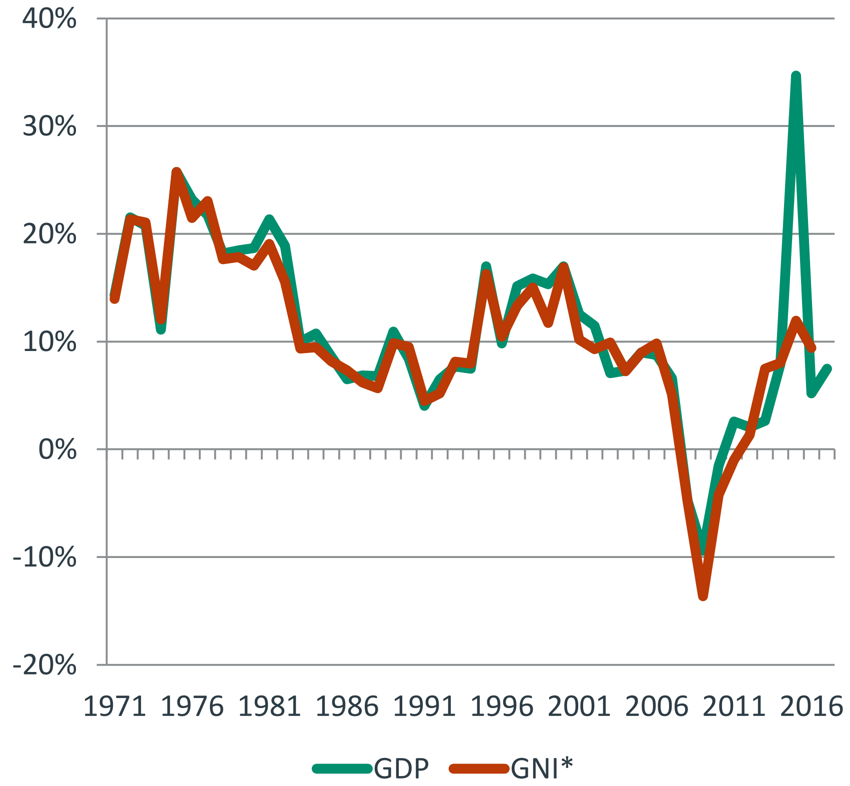
Source: CSO

Irish recovery more realistic when looking at GNI*

GNI* was €189bn in 2016; 12% higher than in 2007 (current prices)



GNI* growth rate averaged 7.6% 2011-2016 (current prices)



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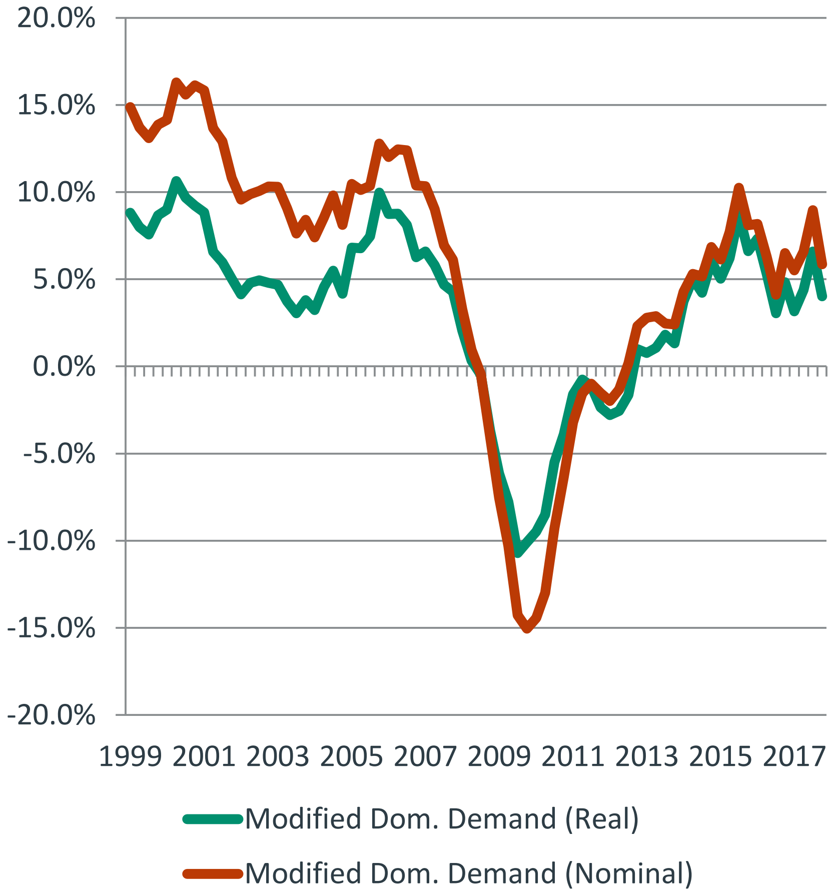
Source: CSO
Note: GNI series pre 1995 = GNI given minimal distortions in pre-1995 era.*
GNI for 2017 released in June 2018.*

Modified Domestic Demand (MDD) is useful as a timely cyclical indicator

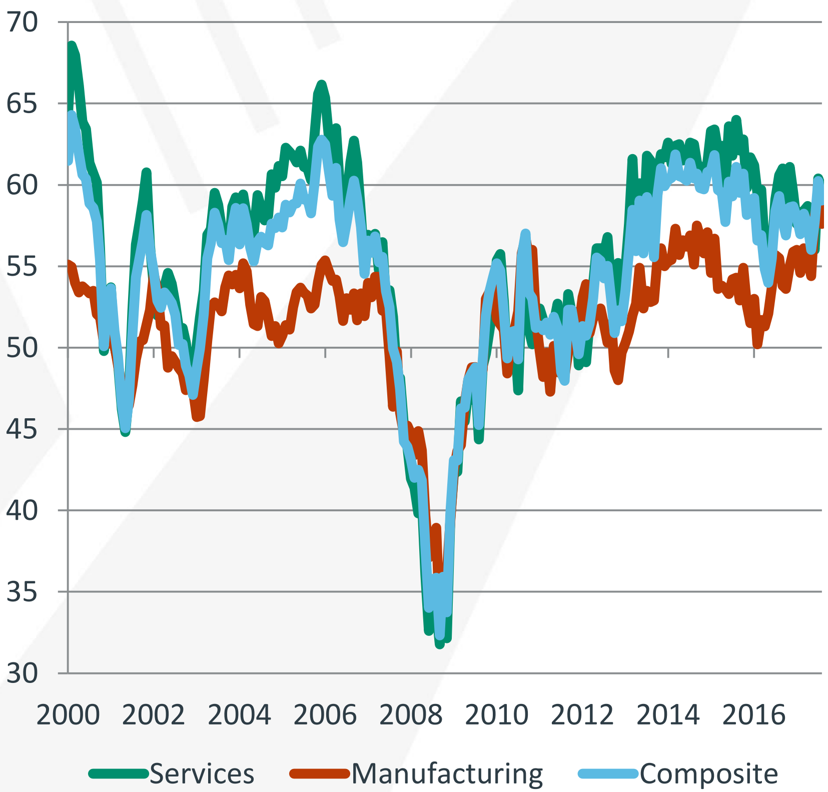
- MDD also seeks to strip out the impacts of the MNC distortions.
- The measures ignores the net exports channel. It also omits aircraft leasing and IP imports from investment to give a modified measure of domestic demand.
- The measures includes:
  - private consumption
  - government consumption
  - building investment
  - elements of machinery & equipment investment
  - elements of intangible asset investment
- This measure pegs real growth closer to 4.0% in 2017 versus 2016. Since 2014, annual growth has averaged over 5% when looking at MDD.



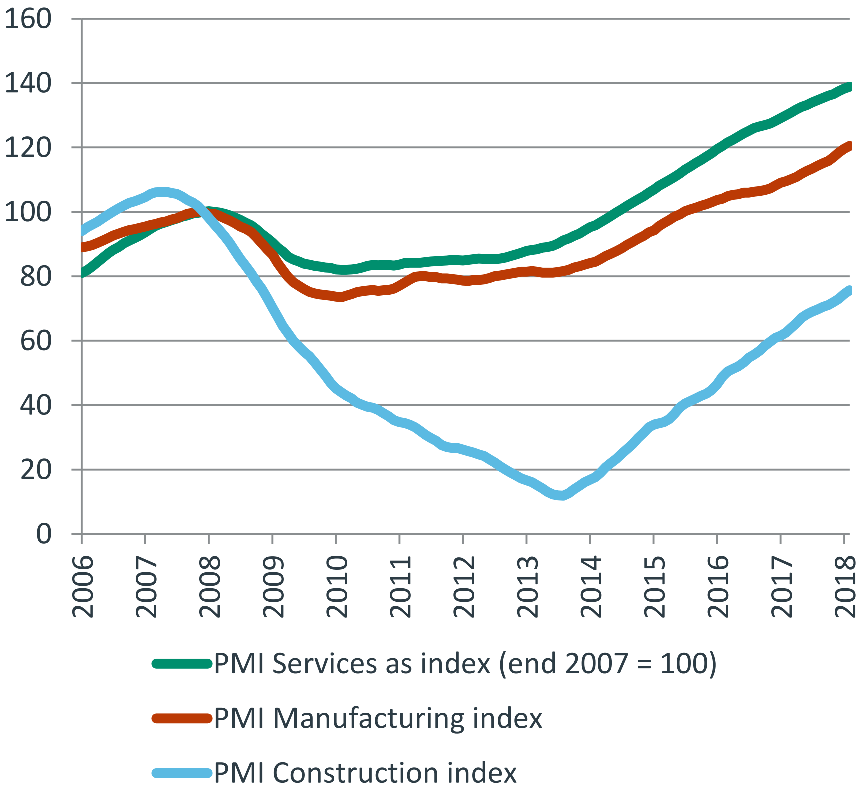
Source: CSO, four quarter sum growth rate used to strip out substantial quarterly volatility.
Note MDD also includes Value of Physical Changes in Stock.

PMI indicators show Ireland's broad based recovery

Ireland's PMIs are all expanding

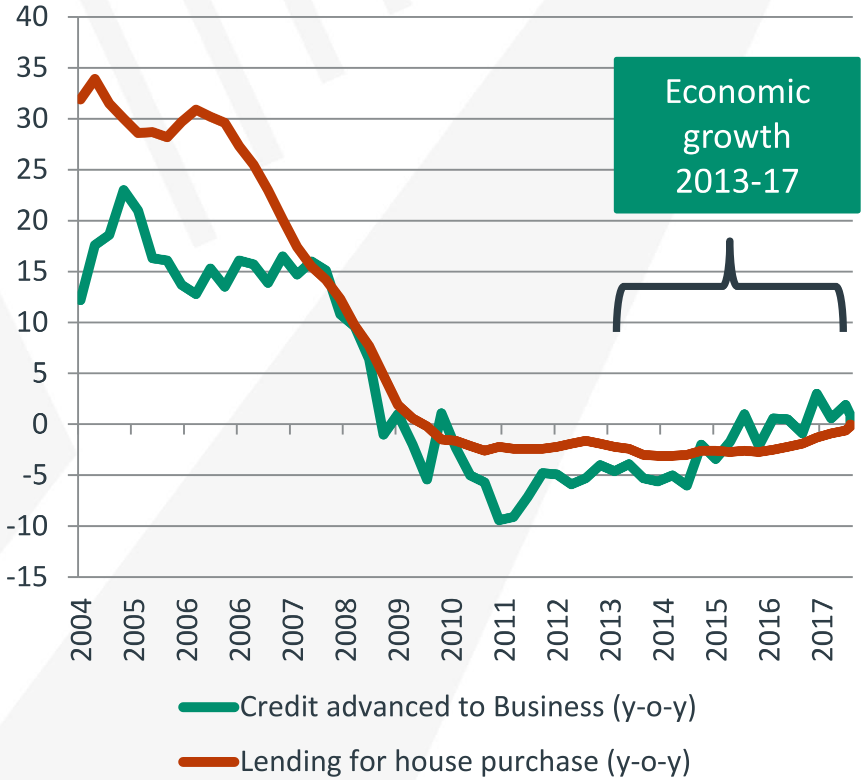


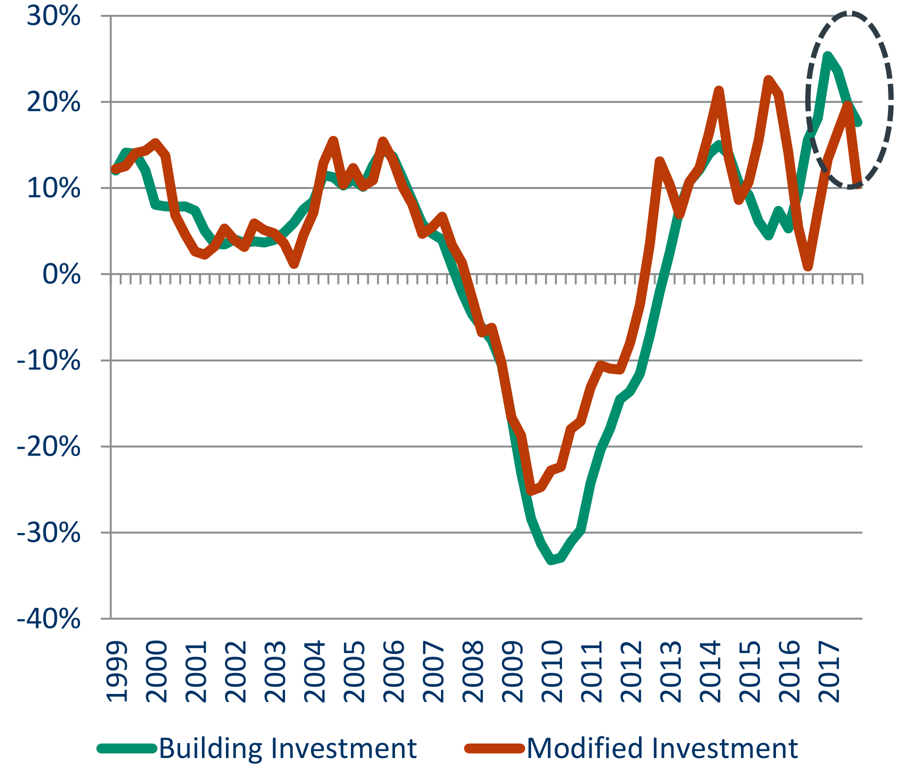
PMIs show a pivot away from construction to services in particular



Source: Markit; Bloomberg; Investec ; NTMA workings

Recovery has not been driven by credit so far, although residential construction will boost economy in 2018





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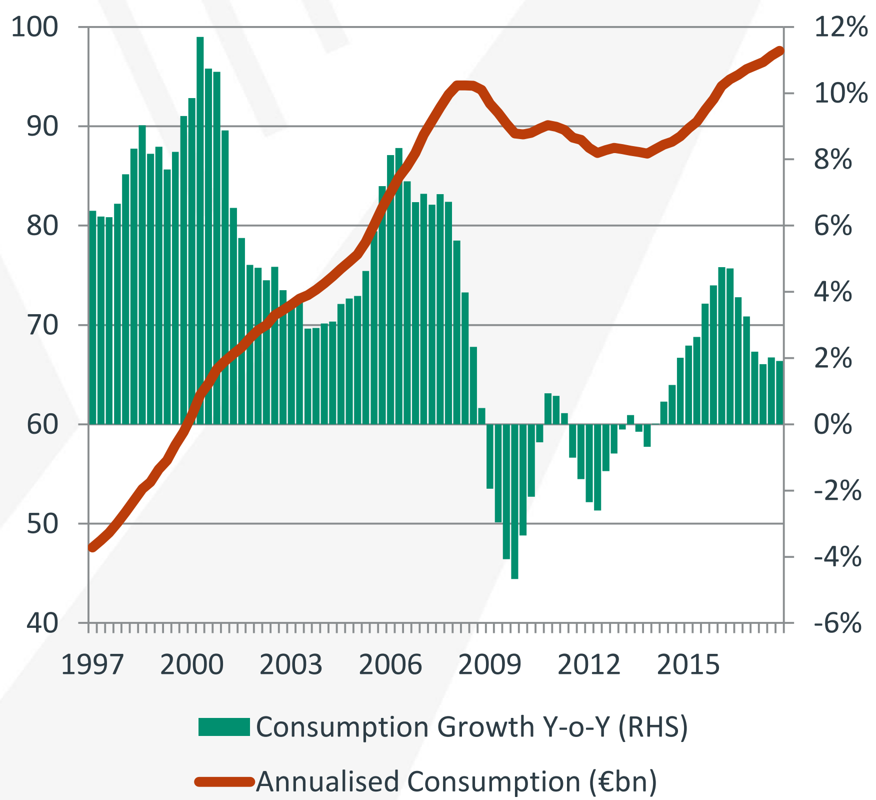
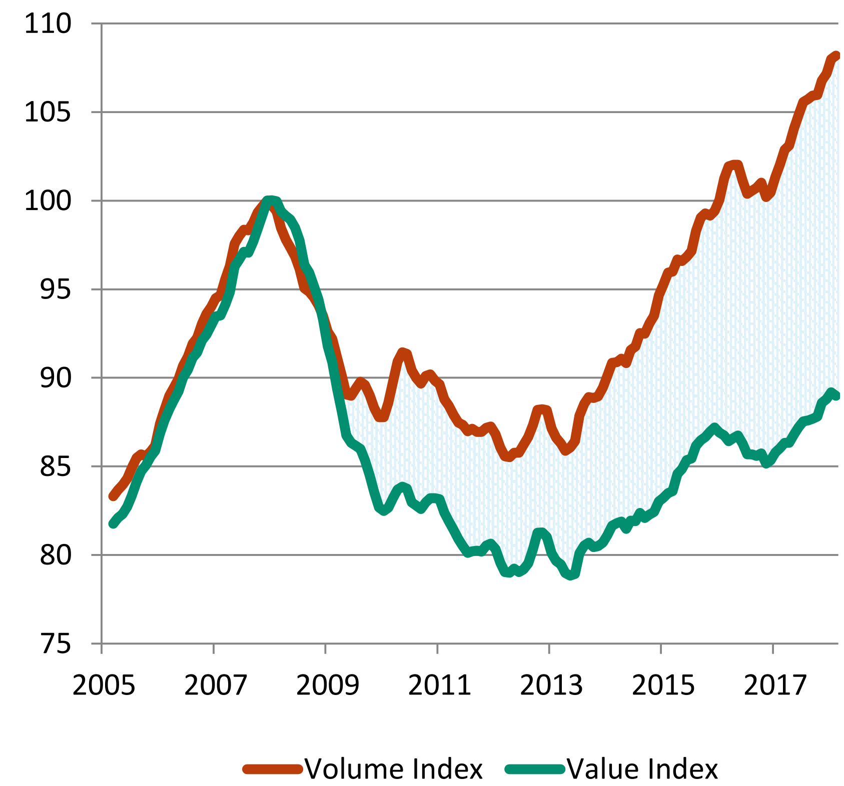
Source: CBI; CSO
Note Modified investment excludes impact of imports of intangible and aircraft leasing assets

Consumer spending growth is driven by rising incomes not recourse to debt

Private consumption grew at 2% y-o-y in 2017

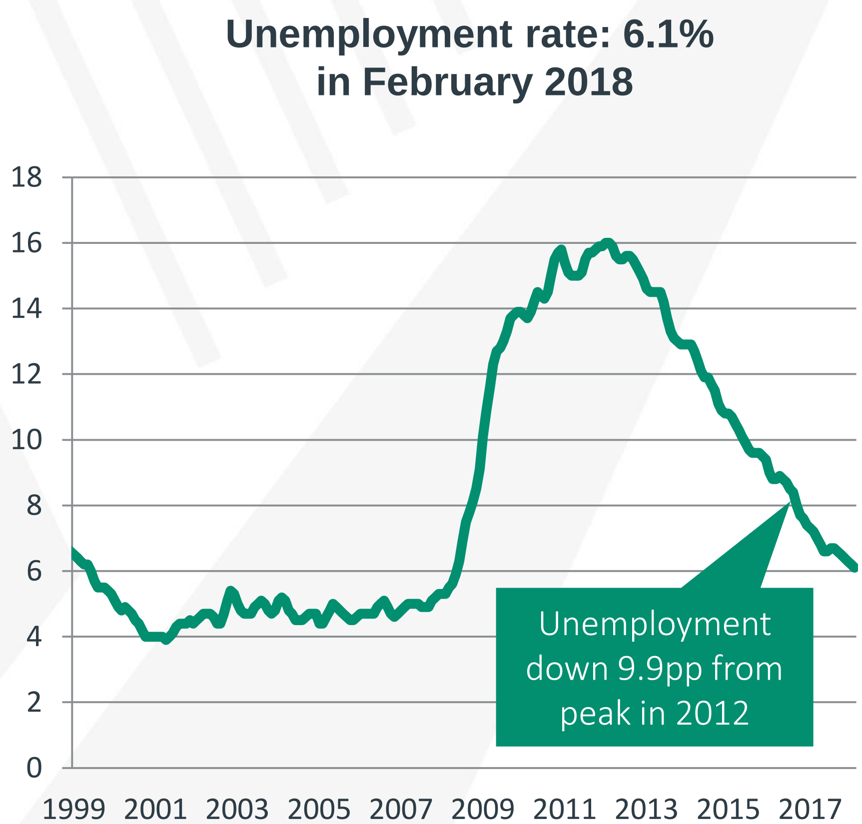


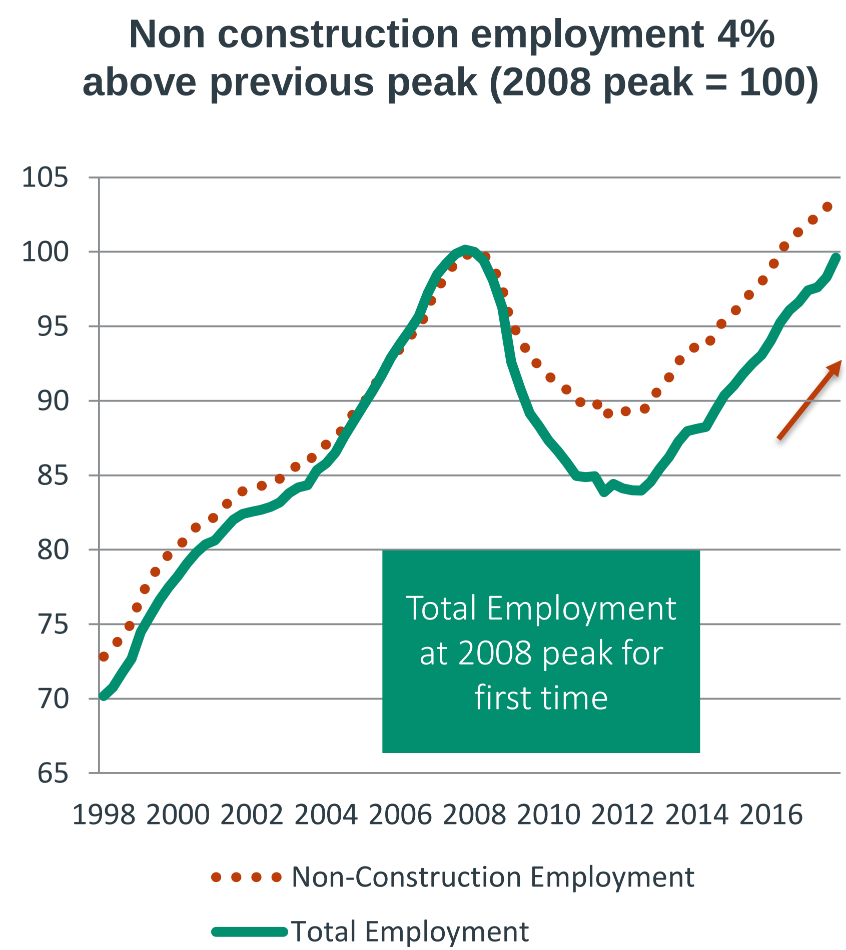
"Core"* retail sales up 3.4% y-o-y in value terms in Feb 2018 (peak=100)



*Source: CSO; CSO (retail sales) * excludes motor sales; 3m average*

Revisions to labour market data show Ireland employs 2.2 million people again ten years on from previous high





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Source: CSO

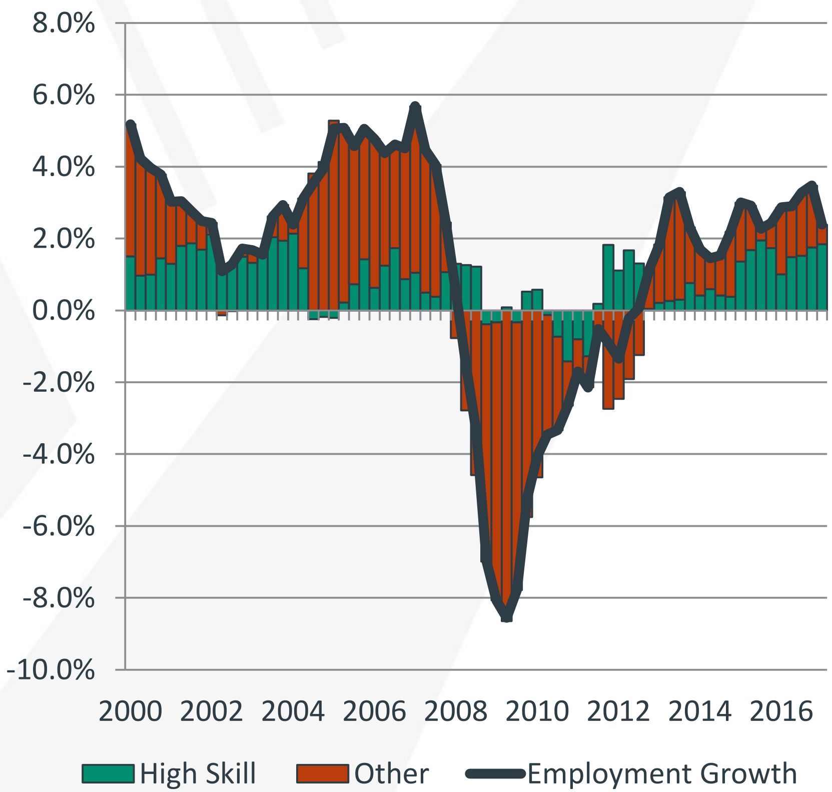
Unemployment falling across Europe; falling faster here

	Q4 2013 %	Q4 2014 %	Q4 2015 %	Q4 2016 %	Q4 2017 %
Germany	5.1	4.9	4.5	3.9	3.6
Netherlands	7.6	7.1	6.7	5.5	4.4
Ireland	12.9	10.9	9.5	7.6	6.4
Sweden	8.0	7.8	7.1	6.9	6.5
Belgium	8.5	8.5	8.7	7.3	6.7
EU 28	10.7	9.9	9.0	8.3	7.3
Portugal	15.4	13.5	12.3	10.4	8.2
Euro Area	11.9	11.4	10.5	9.7	8.7
France	10.2	10.4	10.2	10.0	9.1
Italy	12.3	12.7	11.5	11.8	11.0
Spain	25.8	23.7	21.0	18.7	16.6
Greece	27.6	25.9	24.3	23.3	20.9

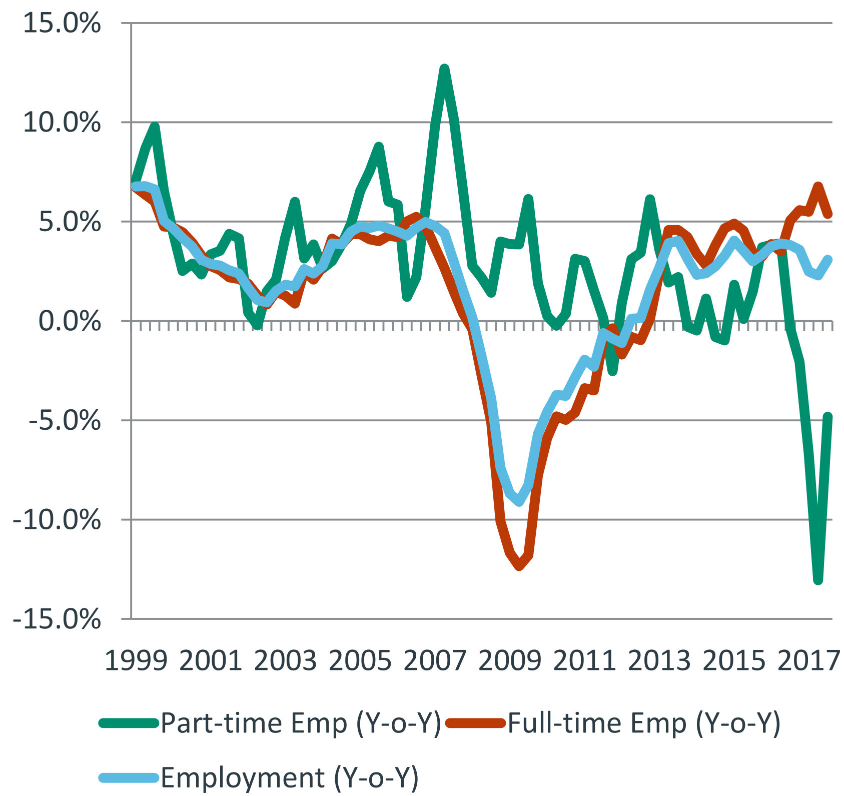
Source: Eurostat, 15-74 age basis

Employment growth driven by high skill job creation; Full-time employment expanded by 5% in 2017

Over 55% of all employment growth has been high skilled since start of 2014



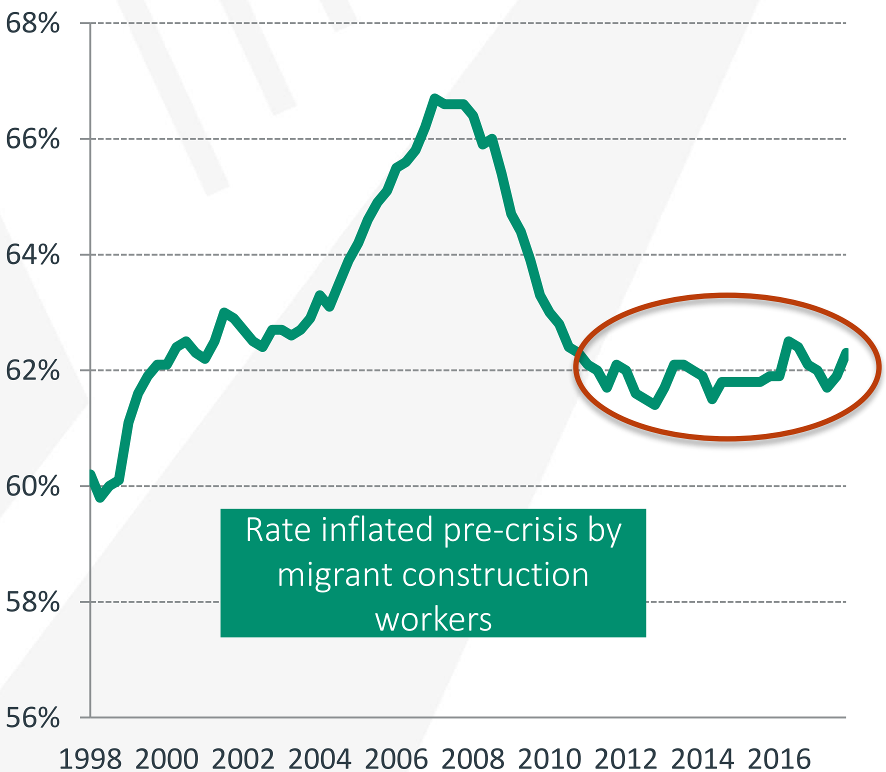
Substantial full-time employment growth in recent quarters



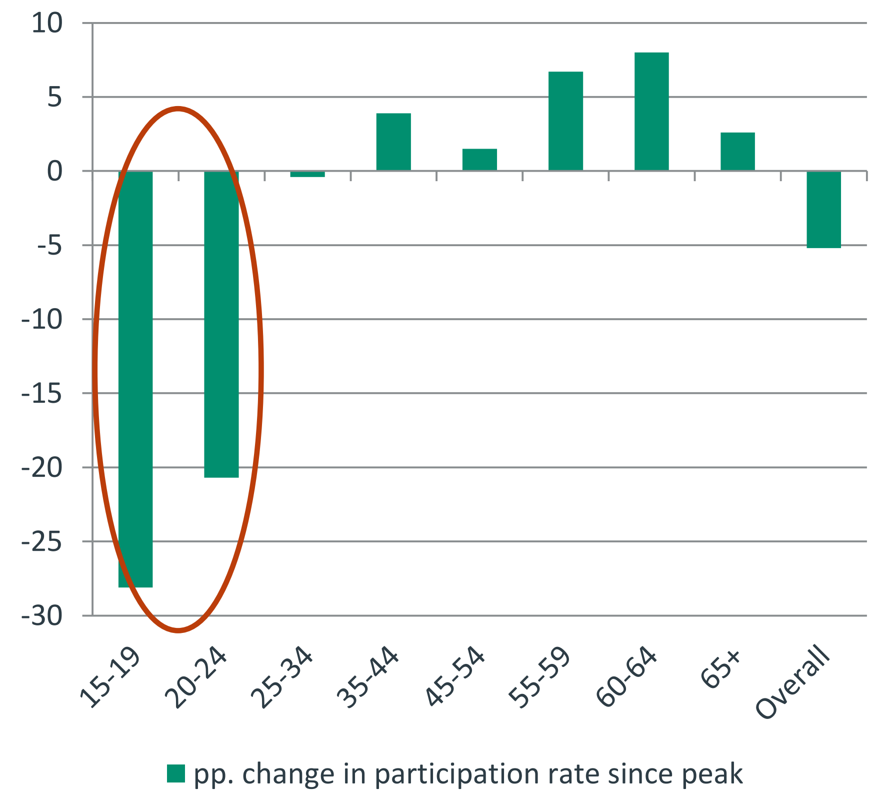
Source: Eurostat; [CSO]
High Skill jobs include the ISCO08 defined groupings Managers, Professionals, Technicians and associate professionals

Labour participation has not yet recovered – young age groups are the driver

Participation rate hovering around 62%



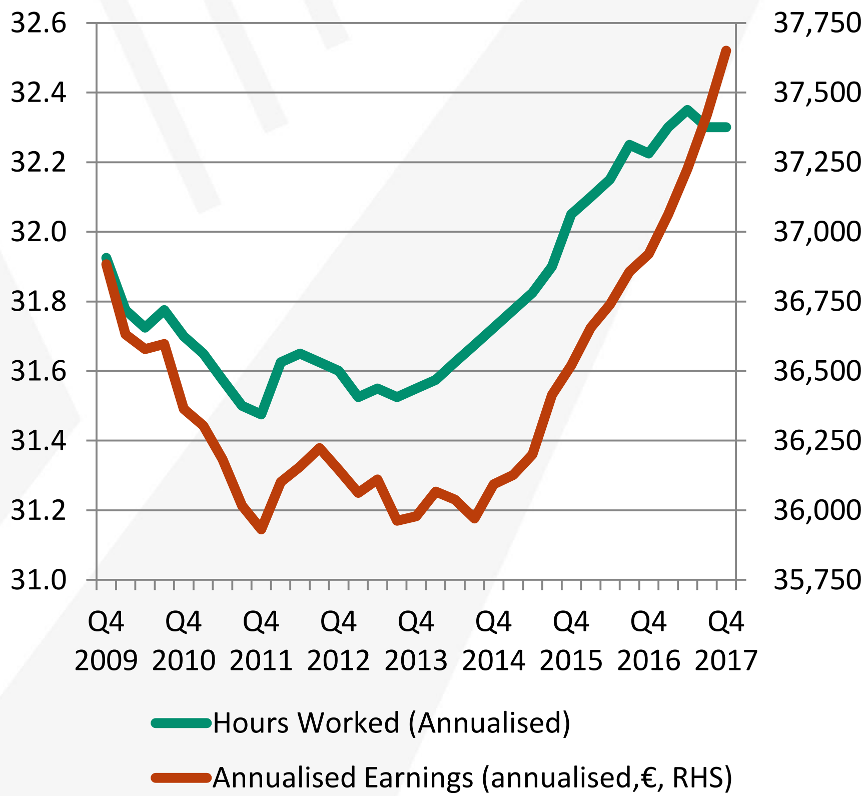
Part. rate down as construction jobs lost and younger people stay in education longer



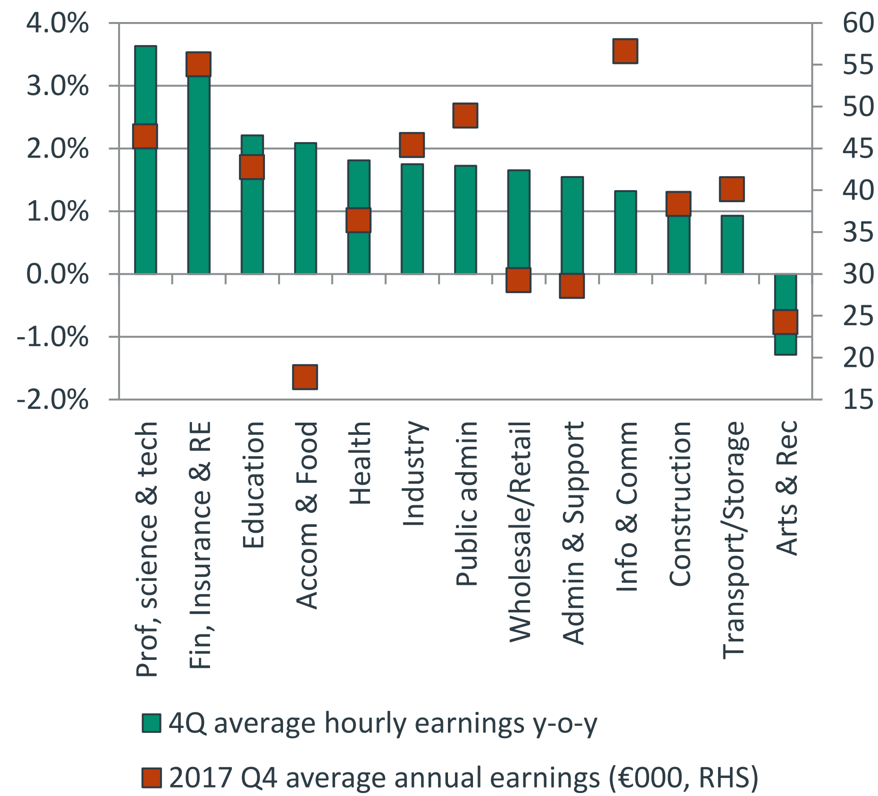
Source: CSO

Wages rising slowly, pointing to slack in the market

Wages and hours worked recovering, although pockets of excess capacity remain

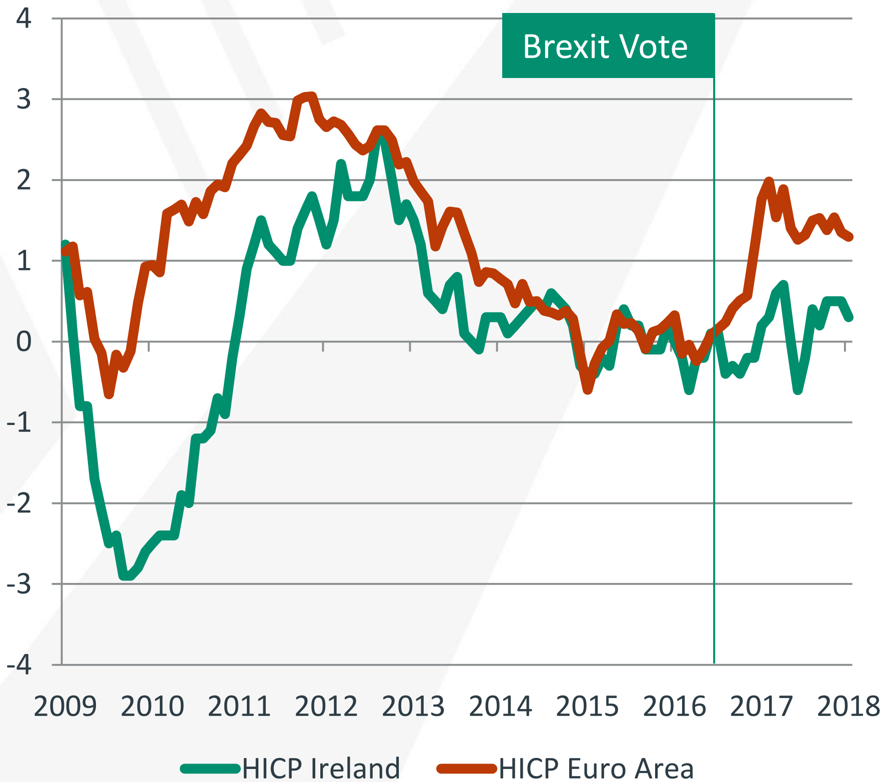


Wage growth across most sectors but still disparity



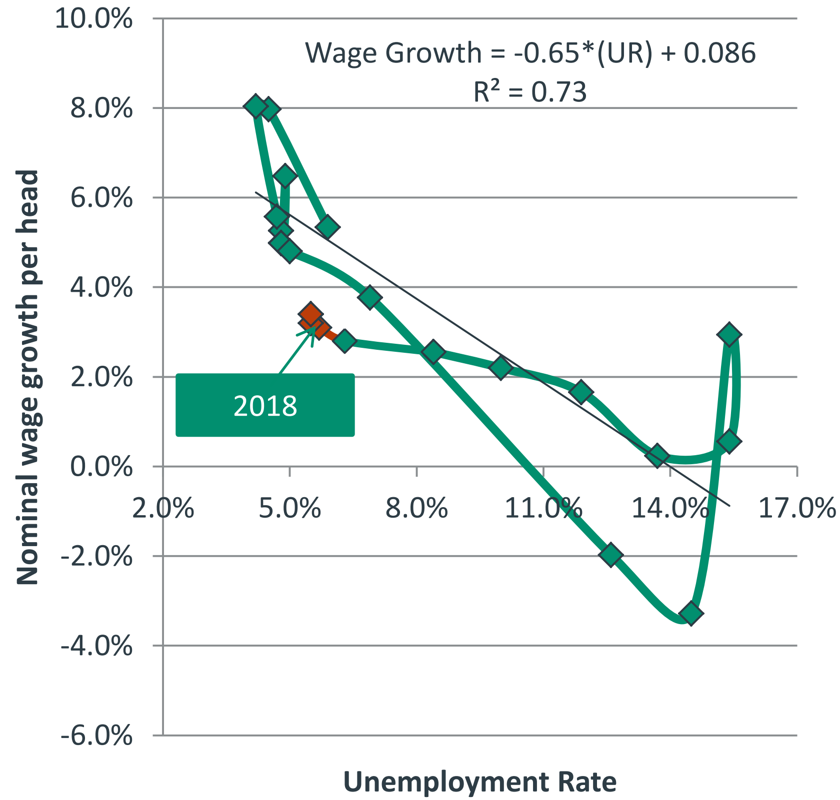
Despite some wage growth, inflation is low; Ireland's *Phillips Curve* may be "kinked"

Inflation in Ireland lower than EA due to sterling weakness



Source: CSO, Eurostat

Wage growth a natural consequence of improving labour conditions (1999-2021)



*Source: CSO, NTMA analysis *red dots are Budget 2018 forecasts (2017-2021); Non-Agriculture employment /wage data*

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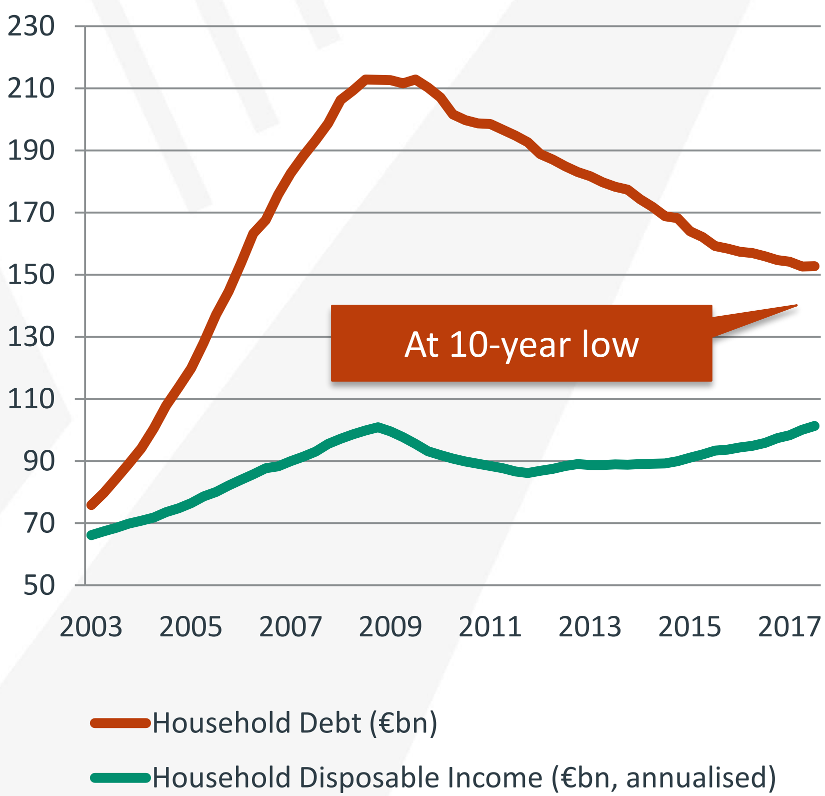
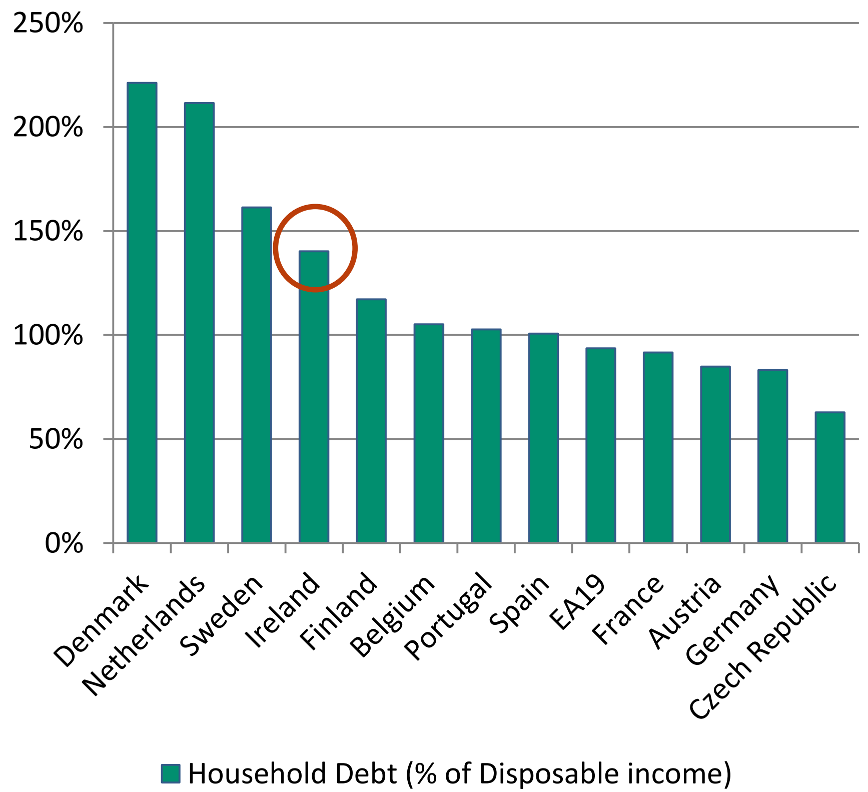
Private debt levels are high but improving rapidly

Household debt down €60bn from peak



Source: CBI

Debt to after-tax income* improving (140%) but among highest in Europe

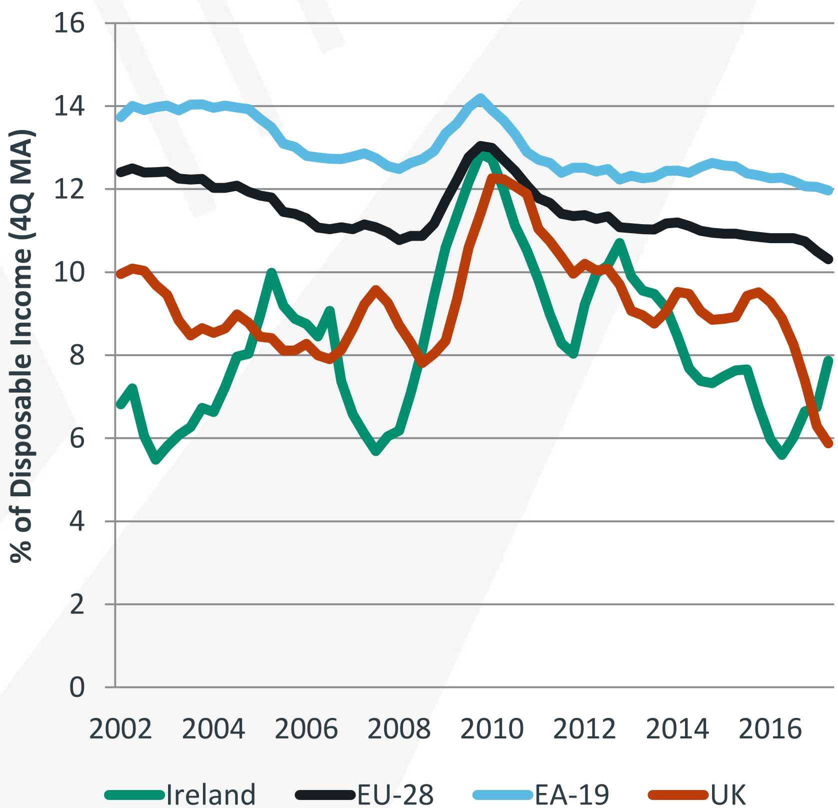


Source: Eurostat (Q3 2017)

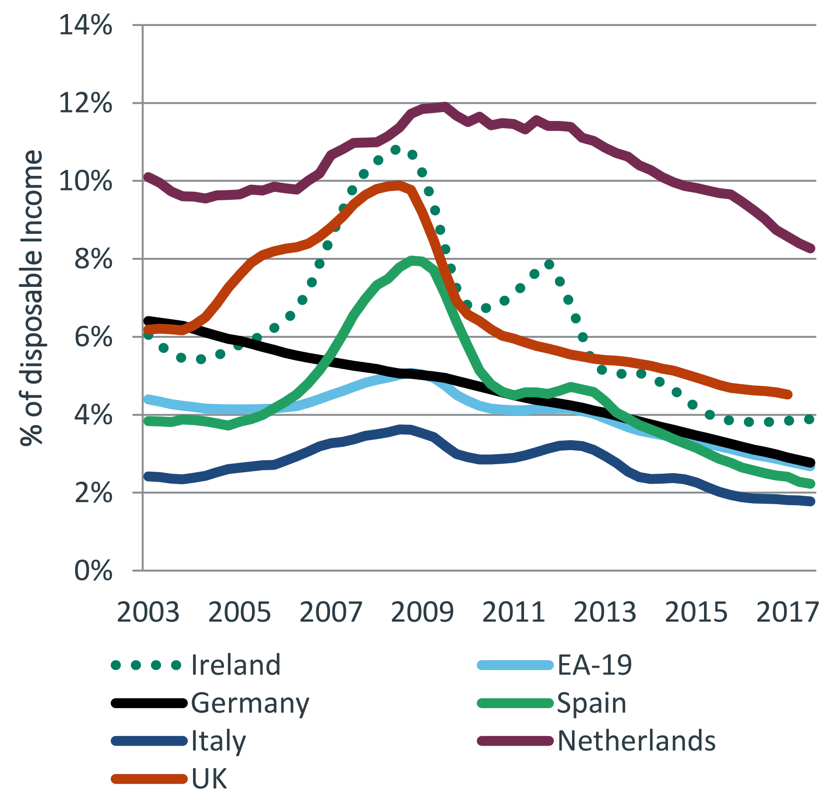
*Measure excludes "other liabilities" from household debt.

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

Gross household saving rate revised recently – more in line with UK than EU



Interest burden down to only 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

Section 2: Fiscal & NTMA funding

Ireland is funded a year ahead; though Government deficit nearly closed

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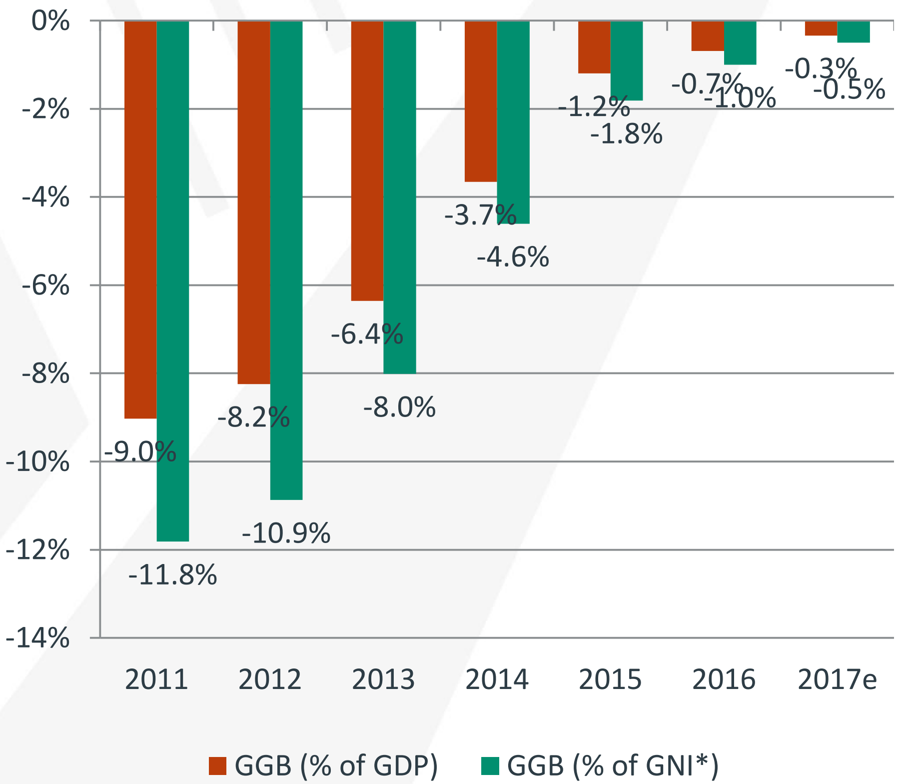
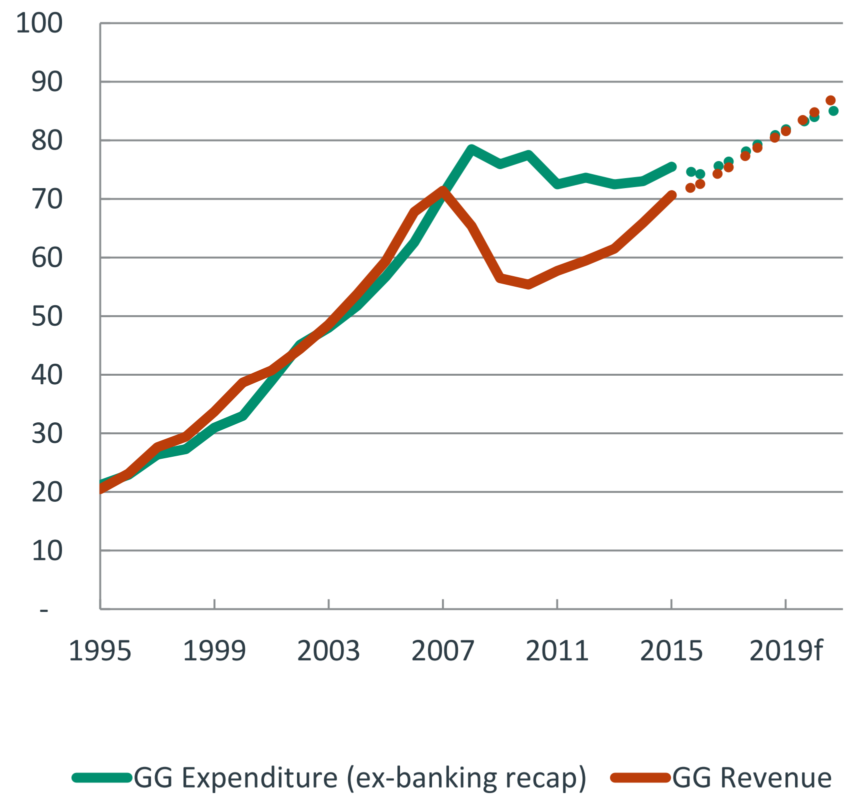
Irrespective of GDP moves, Ireland has had six straight years of fiscal outperformance

General Government Balance (excl. banking interventions)



Deficit forecast to be fully closed in euro terms by 2020 (€bn)



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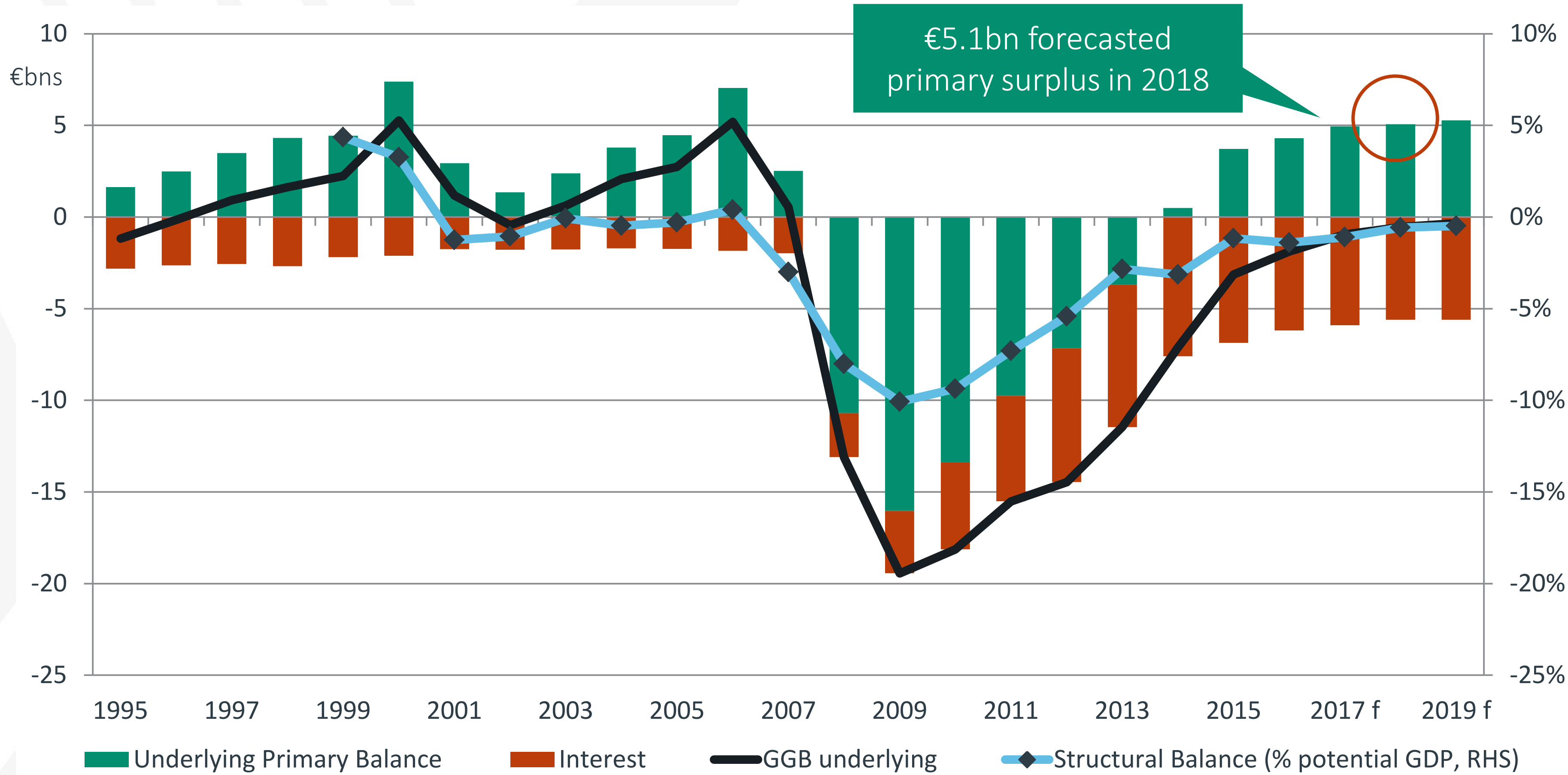
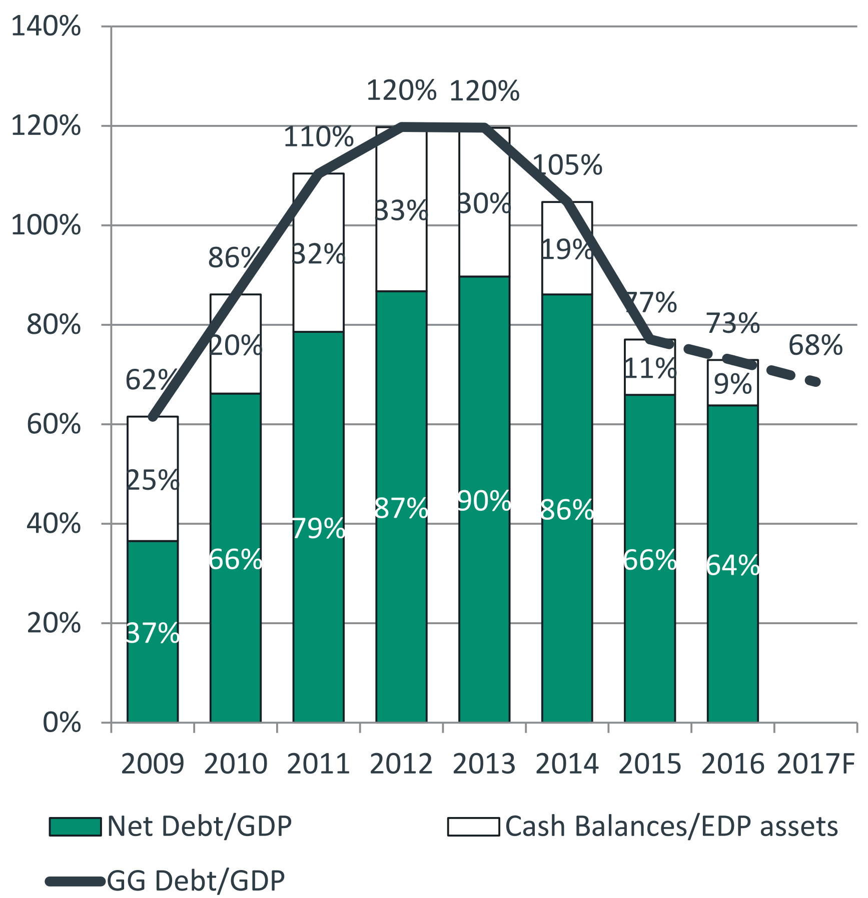
Source: CSO; Department of Finance

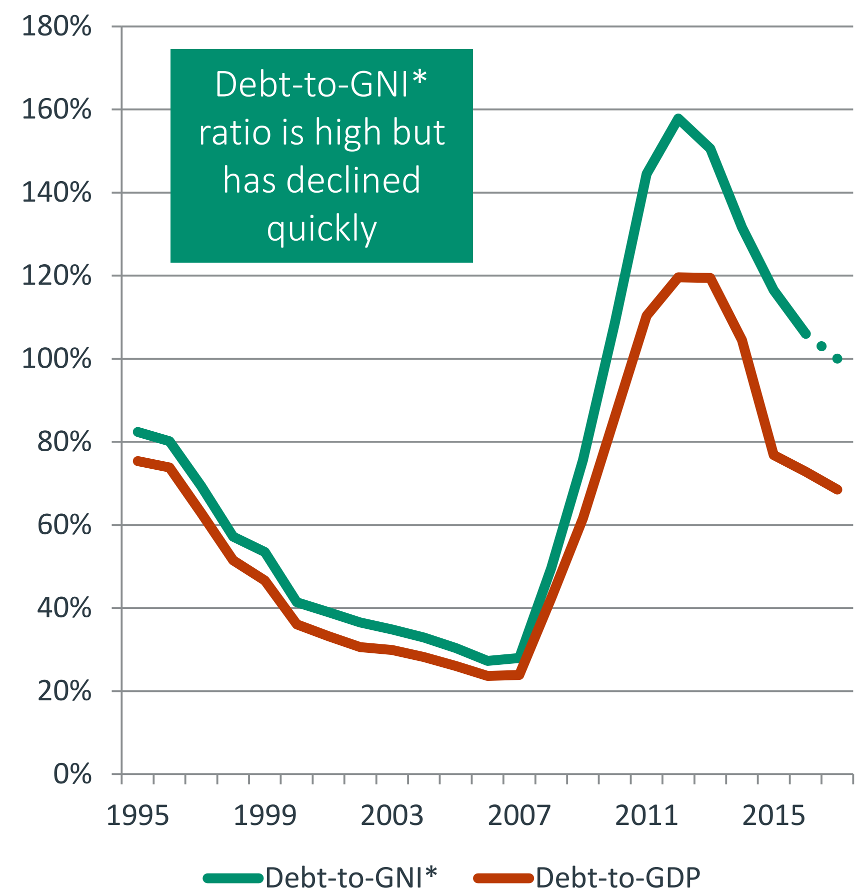
Medium Term Objective of structural balance of -0.5% of GDP may be achieved in 2018



Source: CSO; Department of Finance; IMF

Gross Government debt c.68% of GDP in 2017; GG debt fell close to 100% of GNI*; reality somewhere in between





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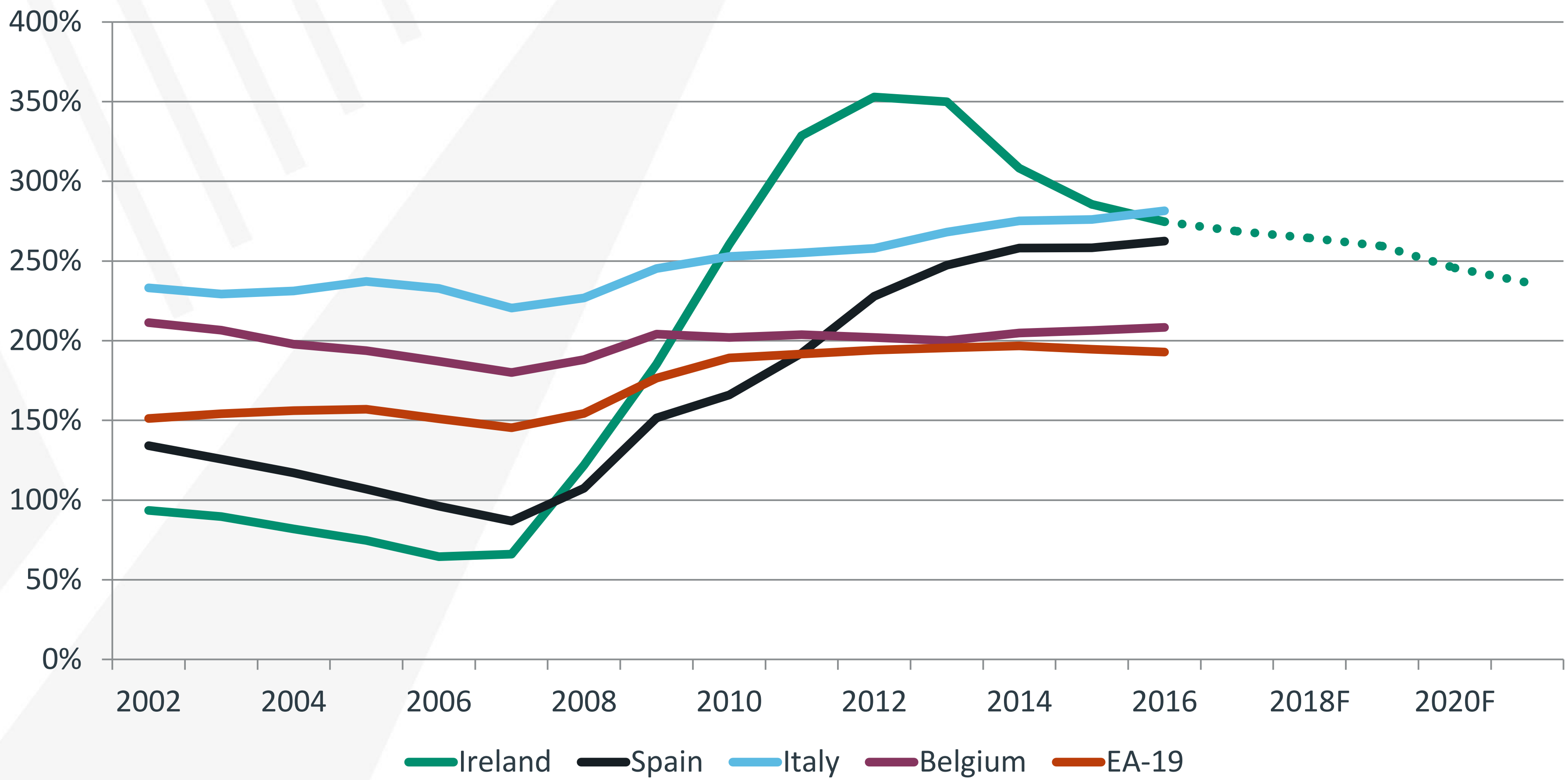
Source: CSO; Department of Finance, NTMA calculations

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



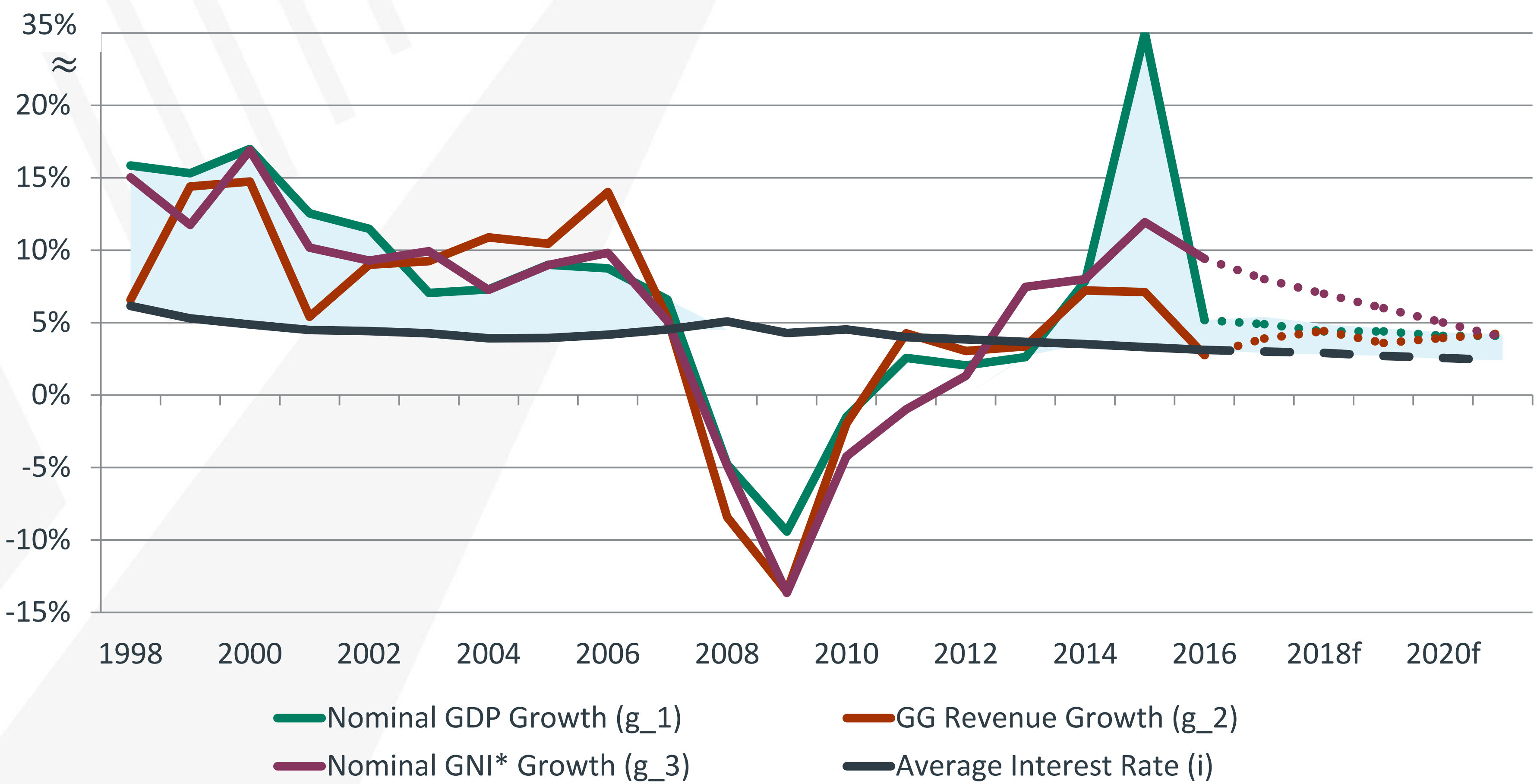
Source: CSO; Department of Finance

Better to use broad range of debt serviceability metrics

2016	GG debt to GDP %	GG debt to GG revenue %	GG interest to GG rev %
Greece	180.8%	*360.5%*	6.5%
Portugal	130.1%	*302.3%*	9.8%
Italy	132.0%	*281.5%*	8.4%
Cyprus	107.1%	*276.3%*	6.6%
Ireland	**72.8% (68%)**	***276.1% (269%)***	**8.5% (7.8%*)**
Spain	99.0%	*262.6%*	7.4%
UK	88.3%	*217.9%*	6.3%
Belgium	105.7%	*208.4%*	5.6%
EA19	88.9%	*193.0%*	4.8%
EU28	83.2%	*186.2%*	4.8%
France	96.5%	*182.2%*	3.6%
Slovenia	78.5%	*181.5%*	7.3%
Austria	83.6%	*170.3%*	4.2%
Germany	68.1%	*151.3%*	3.1%
Netherlands	61.8%	*141.1%*	2.5%
Slovakia	51.8%	*131.8%*	4.2%
Finland	63.1%	*116.7%*	2.0%

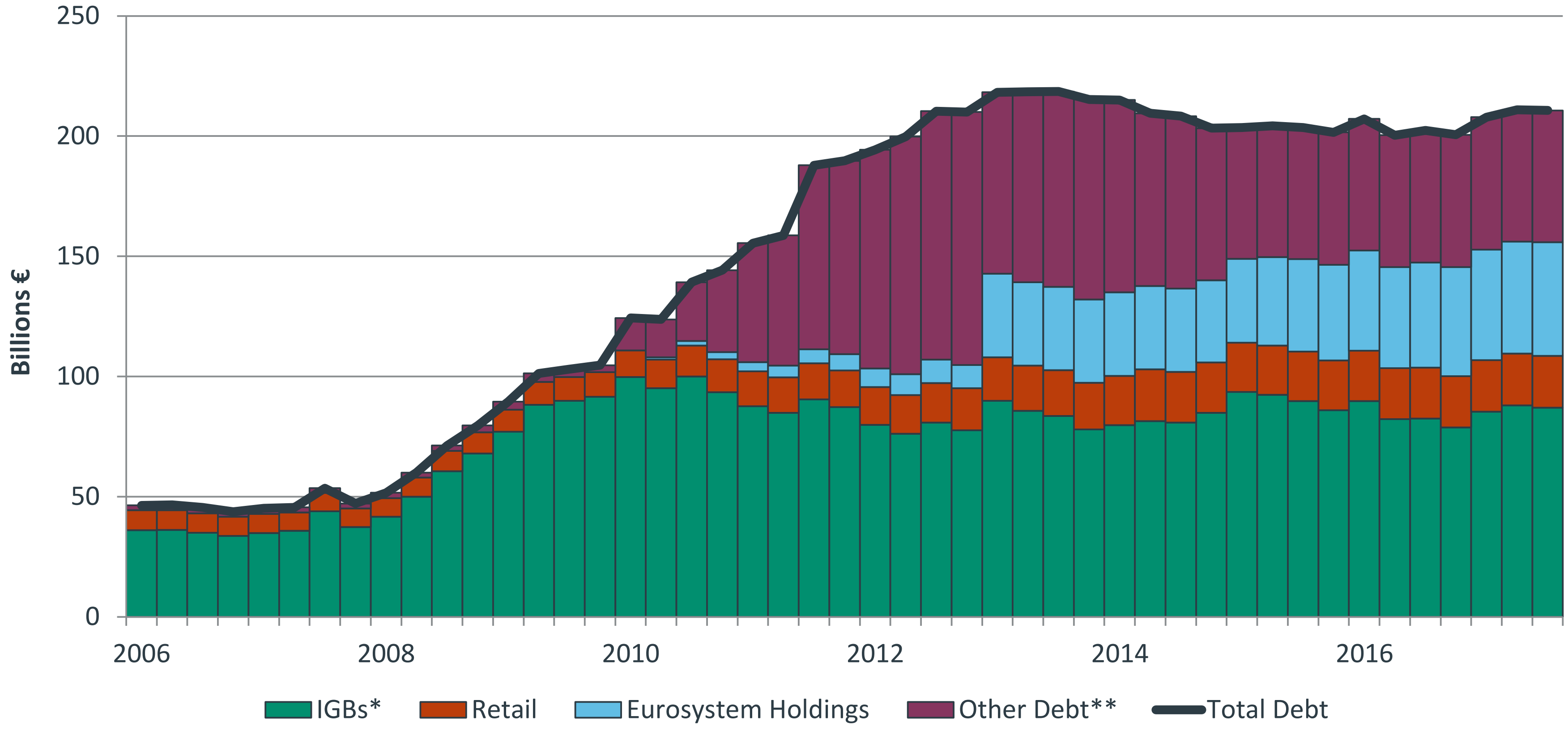
Source: Eurostat,, Department of Finance, NTMA calculations (figure in brackets are 2017 forecasts)
** Closer to 6.5% of GG Revenue if you exclude the interest paid to CBI. Other countries would also see their interest % of GG Revenue fall under this treatment but Ireland's would fall by more given amount held by CBI (FRNs etc.)*

Snowball Effect (i-g) in Ireland’s favour regardless of which growth - “g” - metric is used



Source: CSO; Department of Finance, NTMA calculations
Please note the break in the y-axis to incorporate the outsized 2015 GDP growth figure

Over 50% of Irish debt stock held by “sticky” sources



Source: CSO, ECB, NTMA Analysis
**excludes those held by Eurosystem. Euro system holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA holdings which are likely to further increase the Eurosystem’s holdings.*
*** 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.

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IMF "Programme" funding fully repaid by Ireland

2011
€22.5 billion
(Dec 2023)

Other Benefits:
PSPP capacity
Increases mkt. liquidity
Operational efficiency

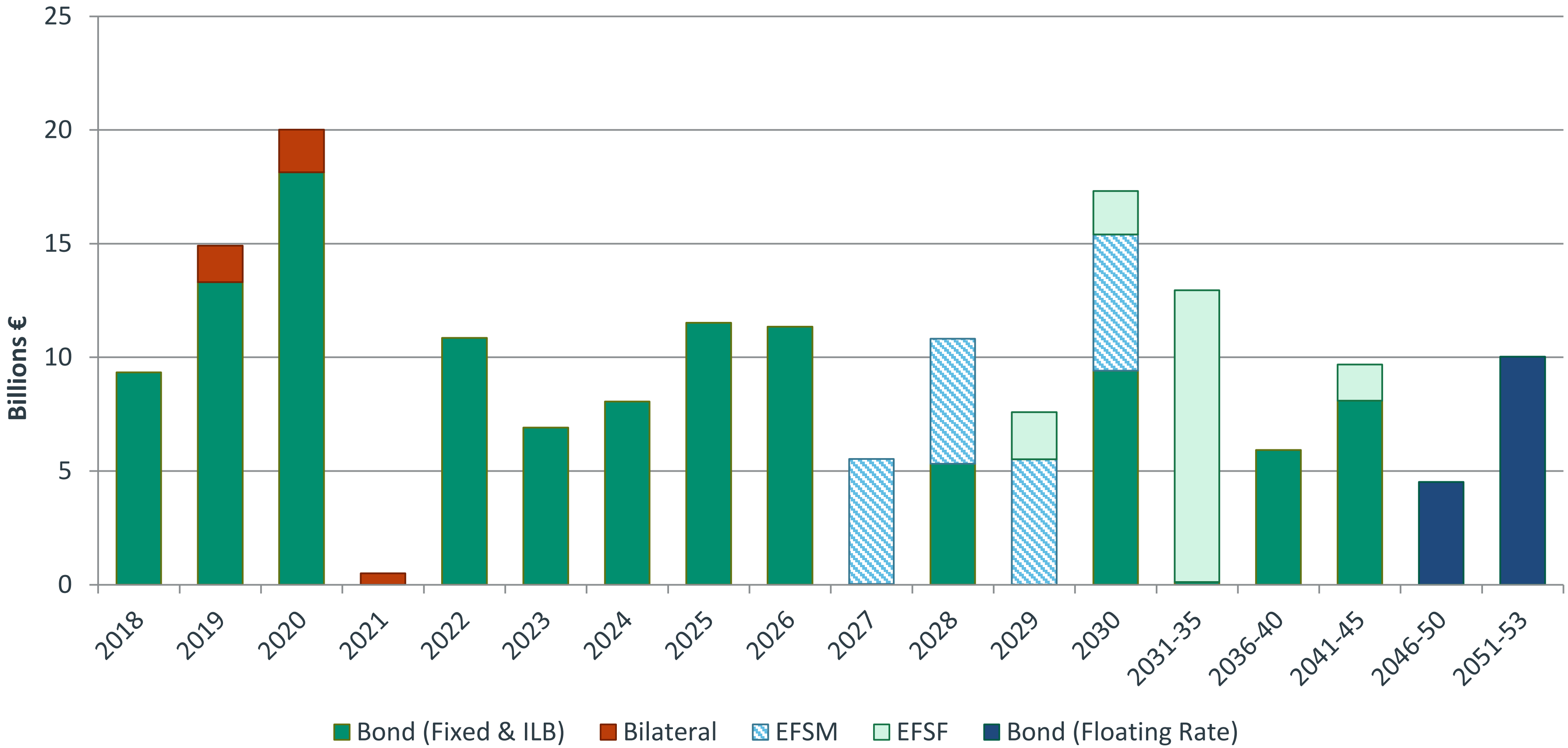
2015
€18 billion @ 4%-5%

Replaced @ 1.5%-2%
Saving €1.5 billion

2017
€4.5 billion @ 0.5%-1%

Replaced @ 0%
Saving €150 million

Maturity profile – IMF repayment and FRN buy-backs have simplified the product mix and reduced refinancing risk

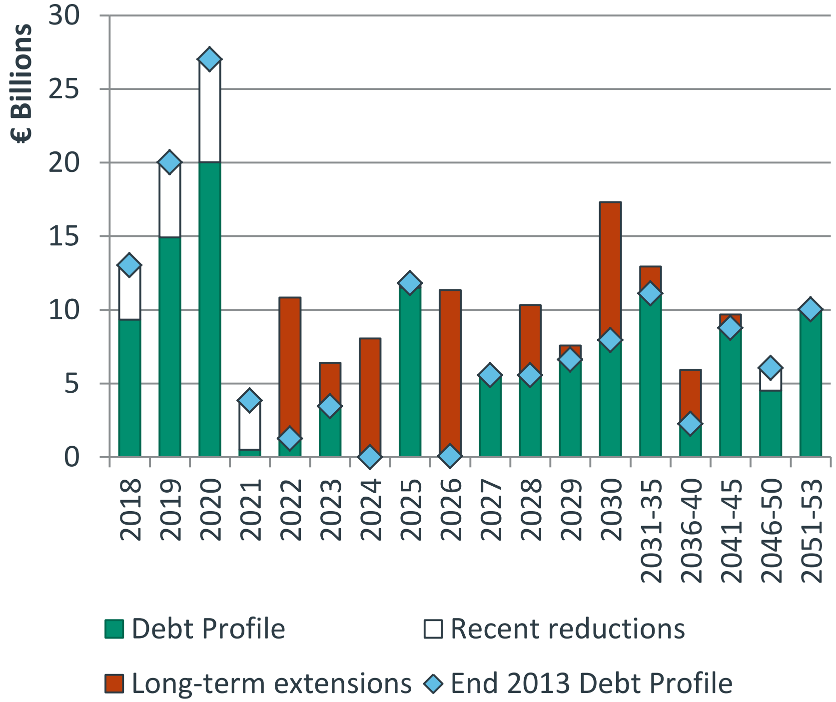


Source: NTMA

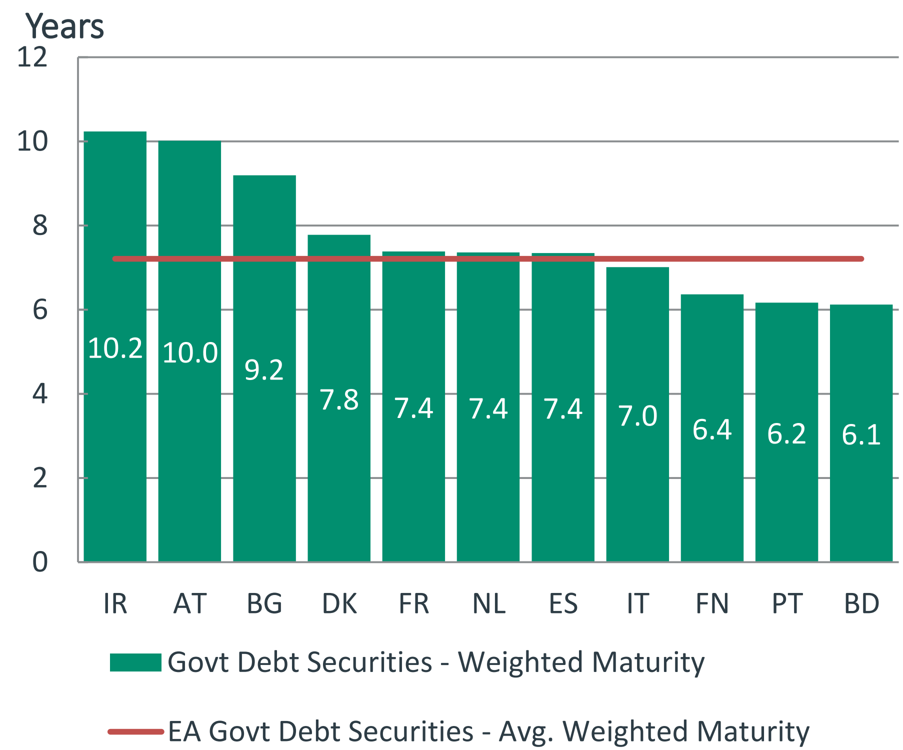
Note: EFSM loans are subject to a 7-year extension that will bring their weighted-average maturity from 12.5 years to 19.5 years. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the EFSM loan maturity dates in the 2027-30 range although these may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

The NTMA improved Ireland's 2018-2020 maturity profile in recent years

Various operations have extended the maturity of Government debt …



…Ireland now compares favourably to other European countries

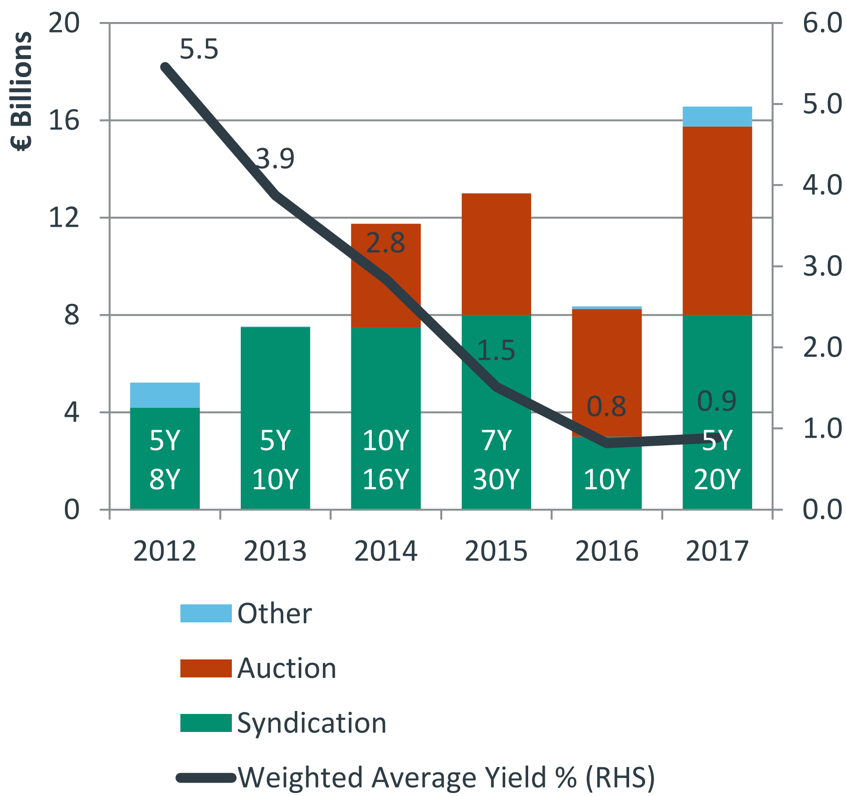


Source: NTMA; ECB

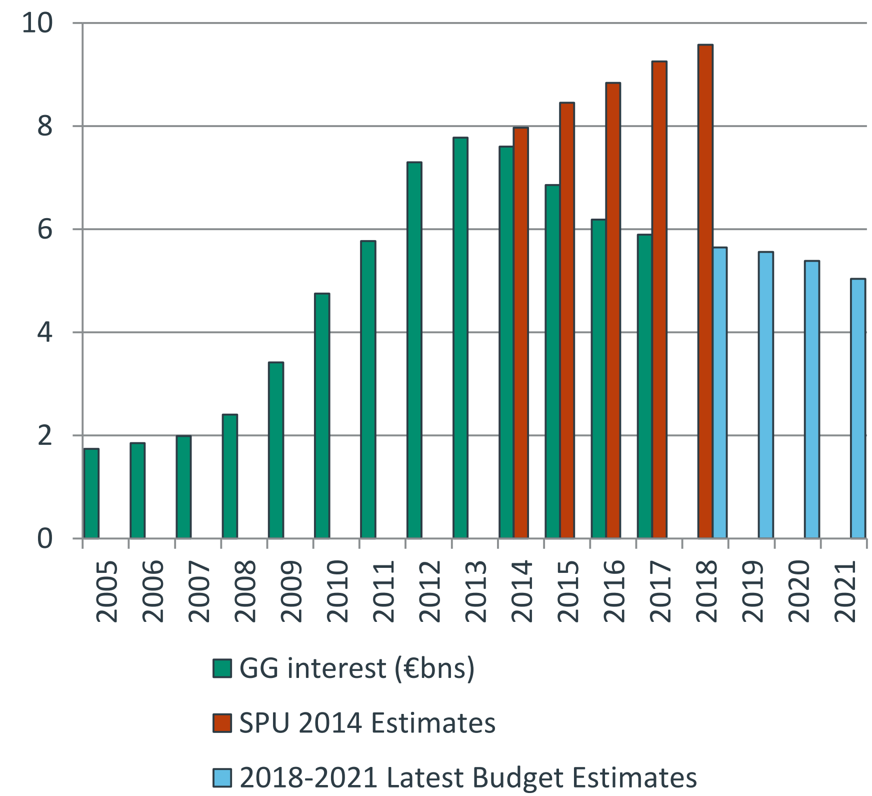
**excludes programme loans. Ireland's maturity including these loans is still similar.*

NTMA actions have lowered the State's interest burden

NTMA issuance (by type) in recent years have been biased towards longer dates



Interest costs were expected to reach almost €10bn but now are below €6bn a year



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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

- Our next bond redemption will be in October 2018 - €8.9bn.

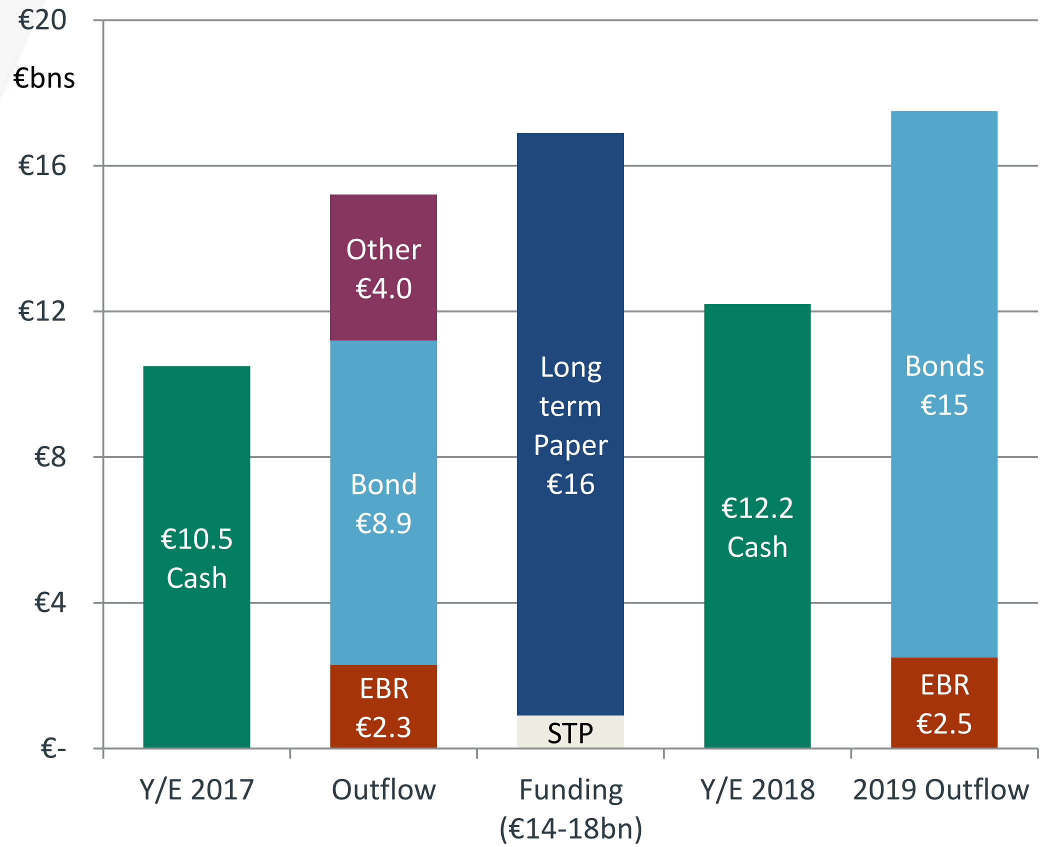
- On January 3rd, the NTMA issued a new 10 year benchmark bond via syndication. €4bn was raised at a yield of 0.944%. On February 8th , a further €1.25bn was raised by auction.

- On March 8th, the NTMA auctioned another €1bn of bonds.

- NTMA has indicated it would issue €14-18bn worth of long term bonds in 2018. The chart uses €16bn indicatively.

- Forecast for end-year 2018 cash is €12.2bn.

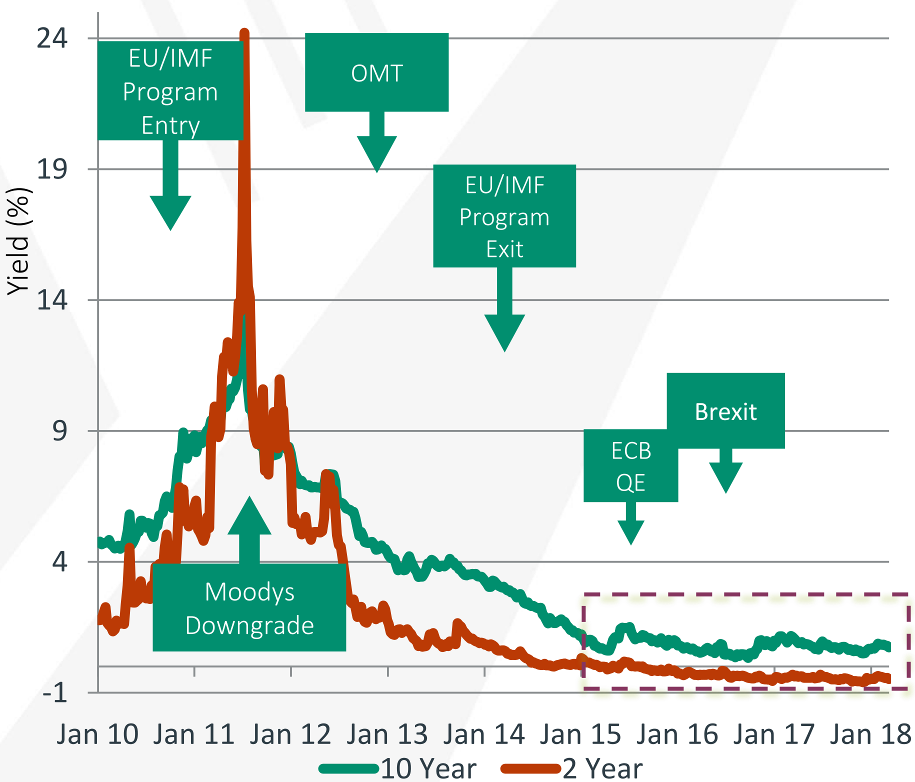
Source: NTMA



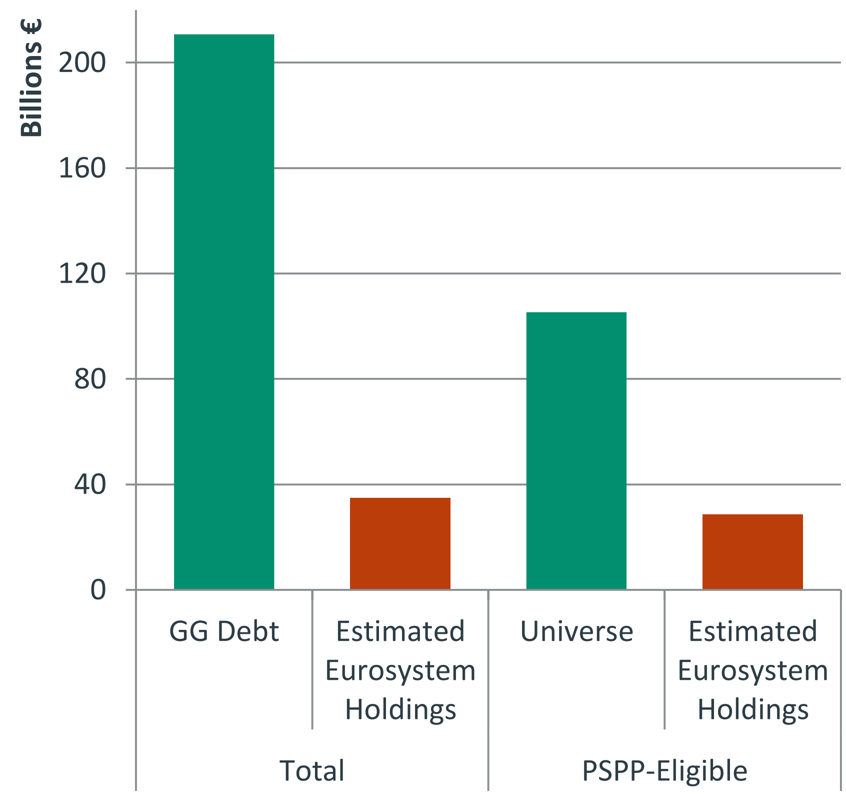
- EBR is the Exchequer Borrowing Requirement (DOF estimate)
- Cash balances excludes non-liquid asset classes such as Housing Finance Agency (HFA) Guaranteed Notes.
- Other outflows includes contingencies and potential bond purchases.
- Other funding includes Retail (State Savings).
- Rounding may occur.

Ireland’s bond market performance has been underpinned by ECB action

OMT and QE (PSPP) have both helped Ireland and other EA sovereigns



Purchases of IGBs under PSPP in year to September 2018 of c.€3-4bn



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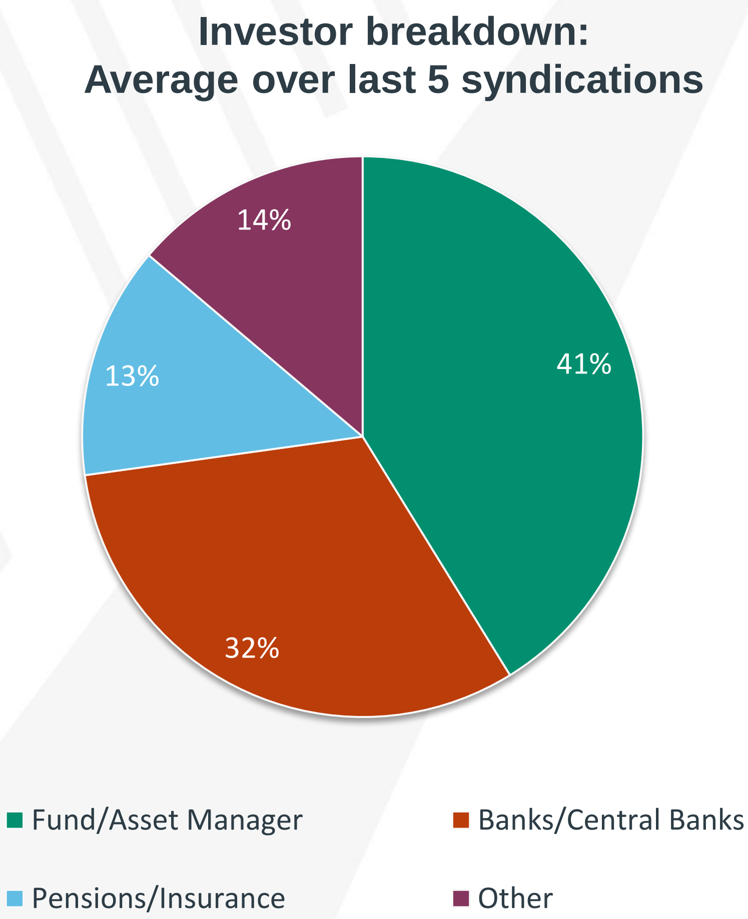
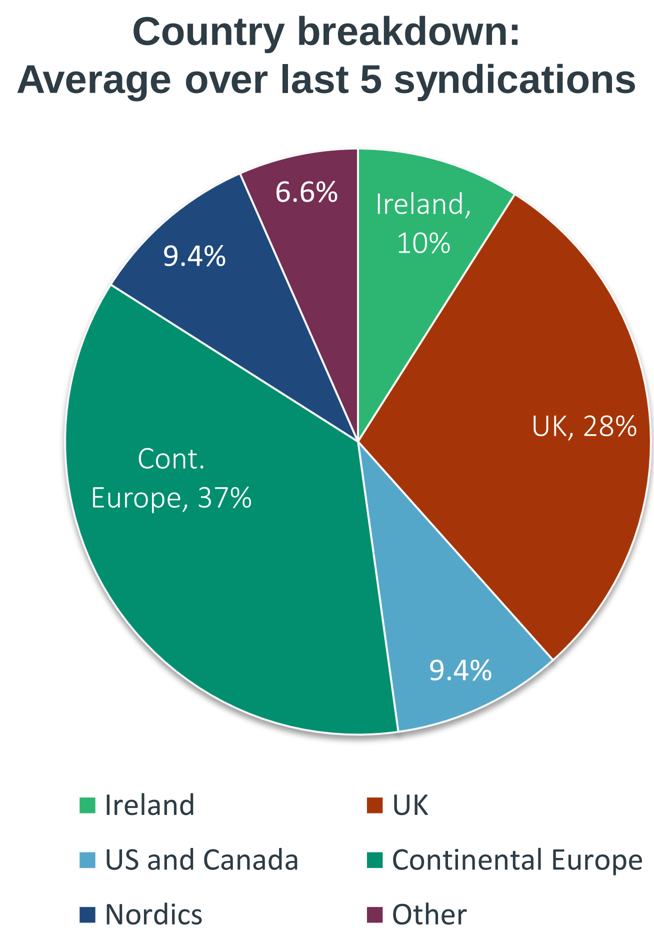
National Treasury Management Agency

Source: Bloomberg (weekly data)

Investor base for Government bonds is wide and varied





Source: NTMA

Central Bank of Ireland holdings increase domestic share of Irish Government bonds (IGBs) through PSPP

€ Billion				
End quarter	Dec 2014	Dec 2015	Dec 2016	**Dec 2017**
1. Resident	50.8	50.8	54.6	**54.8**
(as % of total)	(43.7%)	(40.6%)	(44.9%)	**(43.1%)**
– Credit Institutions and Central Bank*	45.9	46.9	51.1	**51.7**
– General Government	1.6	0.8	0.5	**0.4**
– Non-bank financial	2.9	2.8	2.7	**2.4**
– Households (and NFCs)	0.4	0.3	0.3	**0.2**
2. Rest of world	65.5	74.2	67.1	**72.2**
(as % of total)	(56.3%)	(59.4%)	(55.1%)	**(56.9%)**
Total MLT debt	116.3	125.1	121.6	**127.0**

Source: CBI

Breakdown of Ireland's General Government debt

€ Billion	2012	2013	2014	2015	2016	2017 Q3
Currency and deposits (mainly retail debt)	62.1	31.4	20.9	20.7	21.3	21.5
Securities other than shares, exc. financial derivatives	87.3	112.7	119.1	125.7	124.1	134.3
- Short-term (T-Bills, CP etc)	2.5	2.4	3.8	1.4	2.4	5.0
- Long-term (MLT bonds)	84.8	110.3	115.3	124.4	120.8	129.3
Loans	60.6	71.3	63.3	55.1	55.1	54.9
- Short-term	1.9	1.4	1.3	1.0	0.7	0.6
- Long-term (official funding and prom notes 2009-12)	58.7	69.8	62.0	54.1	54.4	54.3
General Government Debt	210.0	215.3	203.3	201.6	200.6	210.7
EDP debt instrument assets	57.9	53.8	36.1	29.1	*25.0*	*37.8*
Net Government debt	152.111	161.5	167.2	172.5	175.6	172.9

Source: [CSO](CSO)

Ireland: “A”grade from all major credit rating agencies

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

Source: Bloomberg

Section 3: Brexit

Brexit is likely net negative for Ireland but transition deal will delay the reckoning

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National Treasury Management Agency

Negative for the Irish economy: each 1% drop in UK GDP may lower Ireland’s GDP by between 0.3-0.8%

Cons

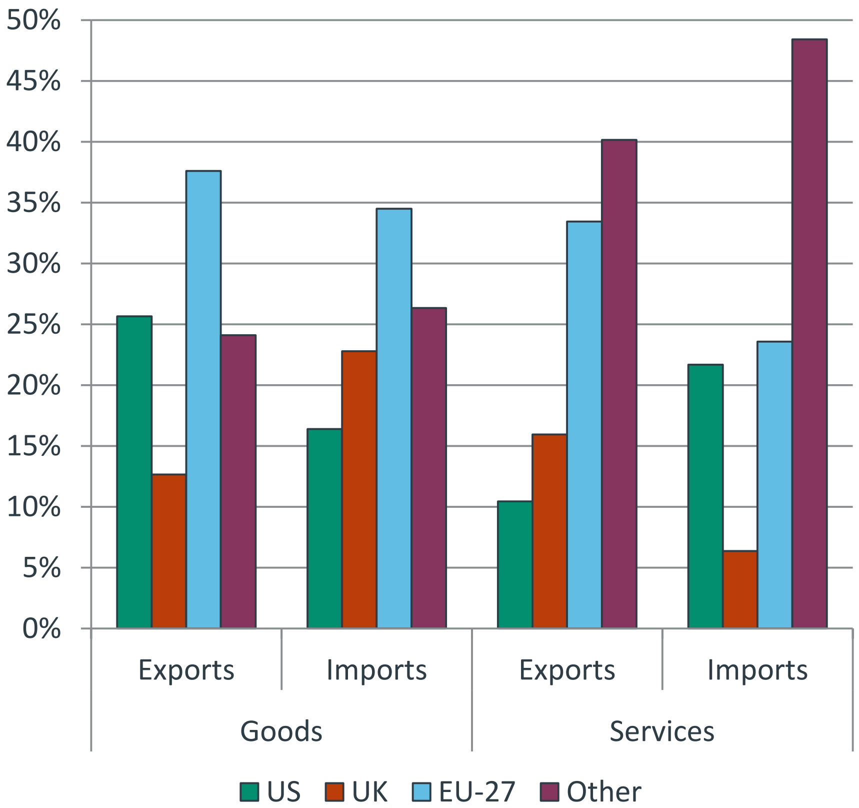
- Trade
  - Lower demand from UK/ tariffs
  - FX: £ lower v € (1% annual avg. move = 1% hit to Irish exports to the UK)
  - British market as test-bed less feasible
- Higher import prices possible in long-term: tariffs may outweigh FX benefit. Non-tariffs costs could also be significant.
- Regions suffer (agriculture, tourism), while Dublin may benefit (via FDI that leaves Britain)
- Banking sector likely to suffer because of its UK operations
- Political economy (border, ally on direction of EU economic policy)

Pros

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

Trade channel is likely to be negatively impacted

Ireland's main trading partners



- 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 14% of Ireland's total exports, but Ireland is more dependent than that, when you consider the employment related to those exports
- SMEs (particularly agri-food and tourism) likely to be more affected than larger companies by the introduction of tariffs and barriers to trade

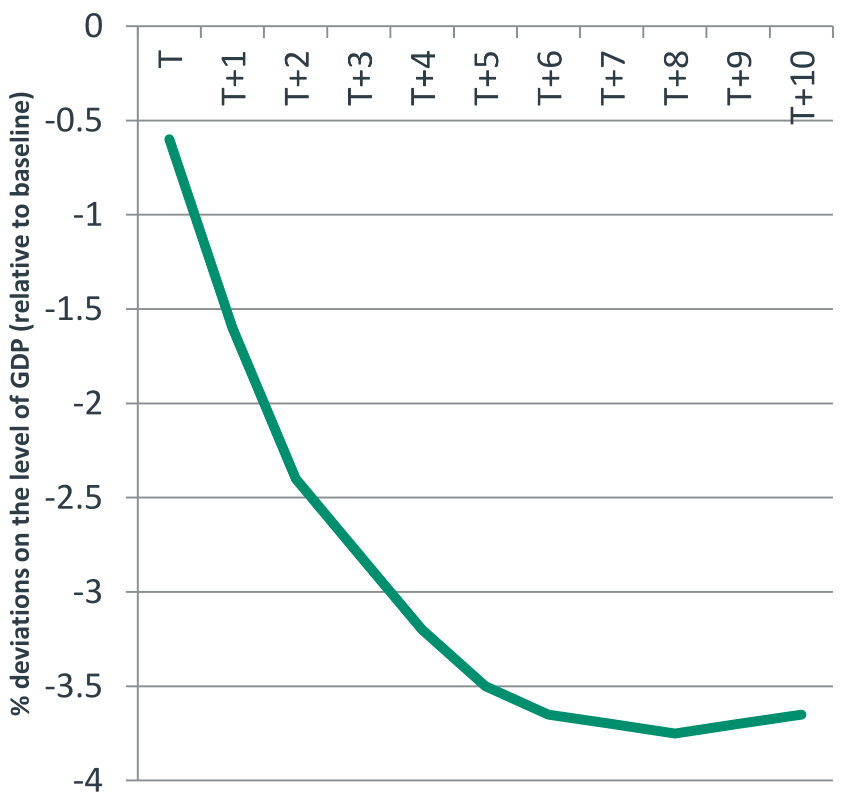
Source: CSO 2016, NTMA calculations; Data does not include contract manufacturing

There could be significant trade impacts on Ireland in "hard" Brexit scenario

Estimated Trade Reductions in "WTO rules Hard Brexit" Scenario

	% of exports lost with UK	% of total exports lost		% of UK exports lost with EU partner	% of total UK Exports lost
Ireland	30.6	4.2		27.6	1.5
Belgium	35.1	3.1		25.7	1.0
Spain	38.6	2.9		25.6	0.7
Germany	34.1	2.5		19.4	2.0
Denmark	39.8	2.5		24.4	0.2
Portugal	33.0	2.2		27.7	0.1
EU Total	30.5	2.1		22.3	9.8
Poland	30.6	2.1		20.8	0.3
NL	22.1	2.0		15.6	0.9
Italy	29.9	1.7		26.9	0.8
France	24.9	1.6		20.9	1.2
Greece	28.4	1.2		27.2	0.1

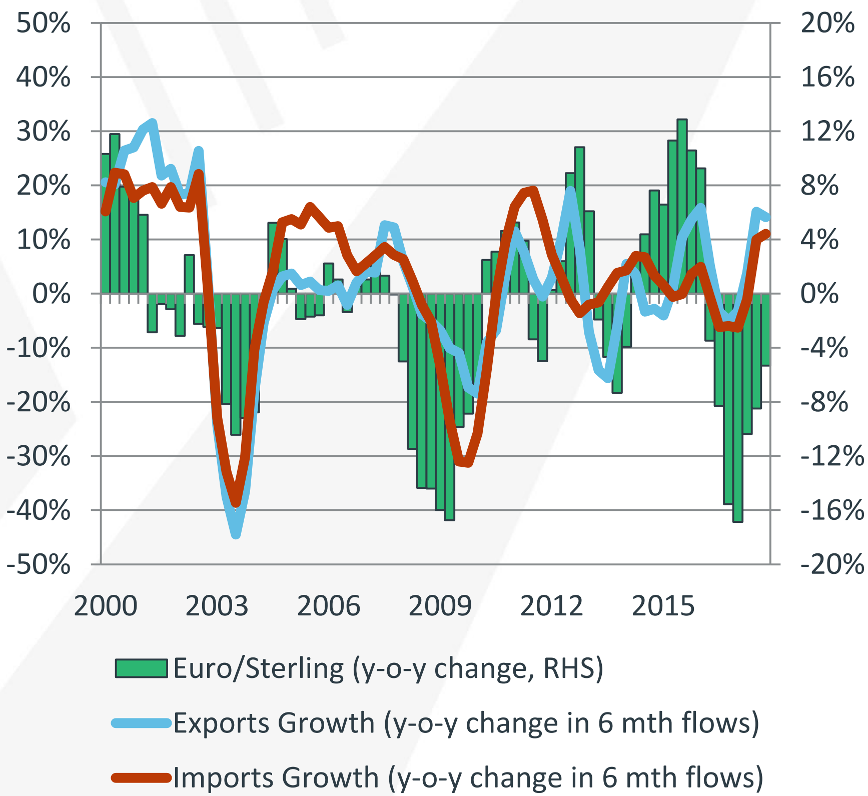
Estimated GDP impact "WTO rules Hard Brexit" Scenario



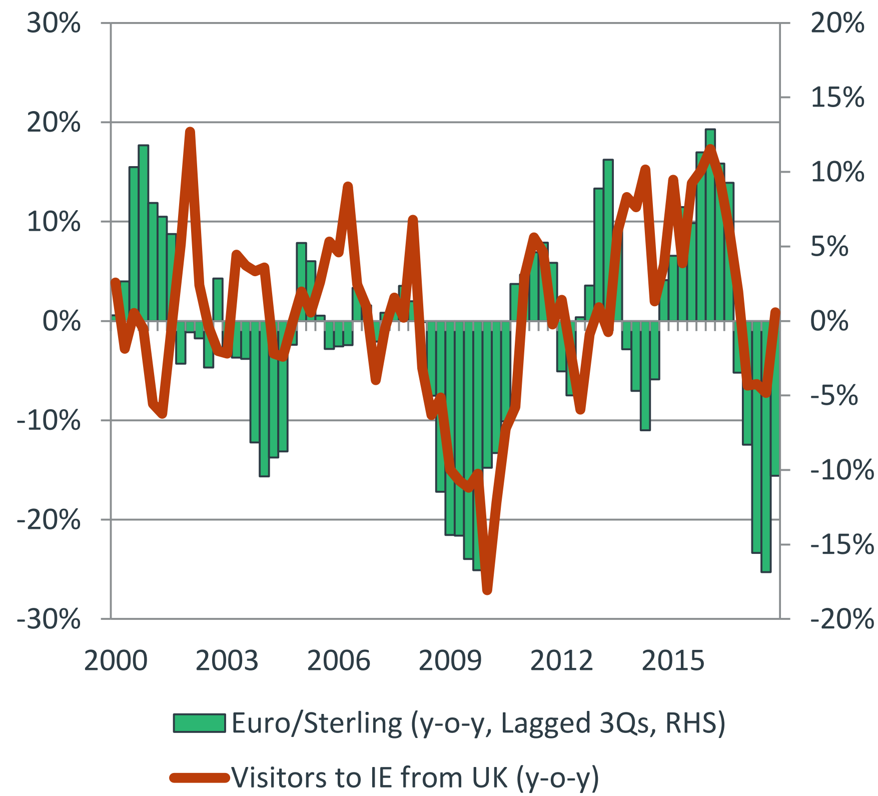
Source: ESRI and Department of Finance analysis

Effects of Brexit visible in currency impact

IE/UK goods trade slowed on back of currency moves before recent rebound



UK visitor numbers fell through 2017 (note time lag in effect)



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Source: CSO; DataStream; CSO

Foreign firms in the UK might consider relocation following 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 likely to compete with Frankfurt, Paris and Amsterdam for financial services, if the UK (City of London) loses EU passporting rights on exit. There may be opportunities too in the clearing of trades in €.

- Ireland's FDI opportunity will depend on the outcome of post-exit trade negotiations.

Why choose Ireland

Research has shown that FDI decisions are based on a wide range of factors:

- EU Membership
- Common language (important for US companies)
- Law system (Ireland and UK both have common law structure)
- Pro-business environment
- Corporate tax rate of 12.5%
- Educated workforce
- Cost competitiveness
- Regulatory environment (financial sector)

Irish banks have exposure to UK market: face challenging environment following Brexit

BoI UK exposure

	End-2017	% of Group Total
Total Income	€581m	19.1%
Credit Outstanding	€24.3bn	31.0%
Operating Profit	€180m	17.1%

AIB UK exposure

	End-2017	% of Group Total
Total Income	€310m	10.4%
Credit Outstanding	€8.5bn	13.5%
Operating Profit	€161m	10.4%

Source: Published bank accounts

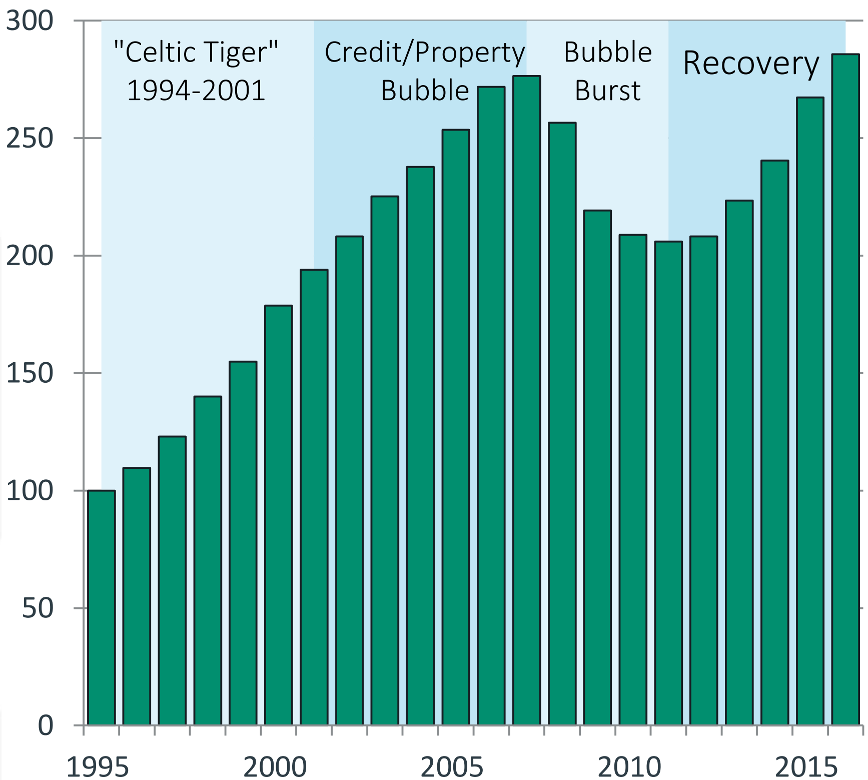
Section 4: Long term fundamentals

Ireland's long run future looks bright. Demographics, educated workforce and retaining competitiveness are all key

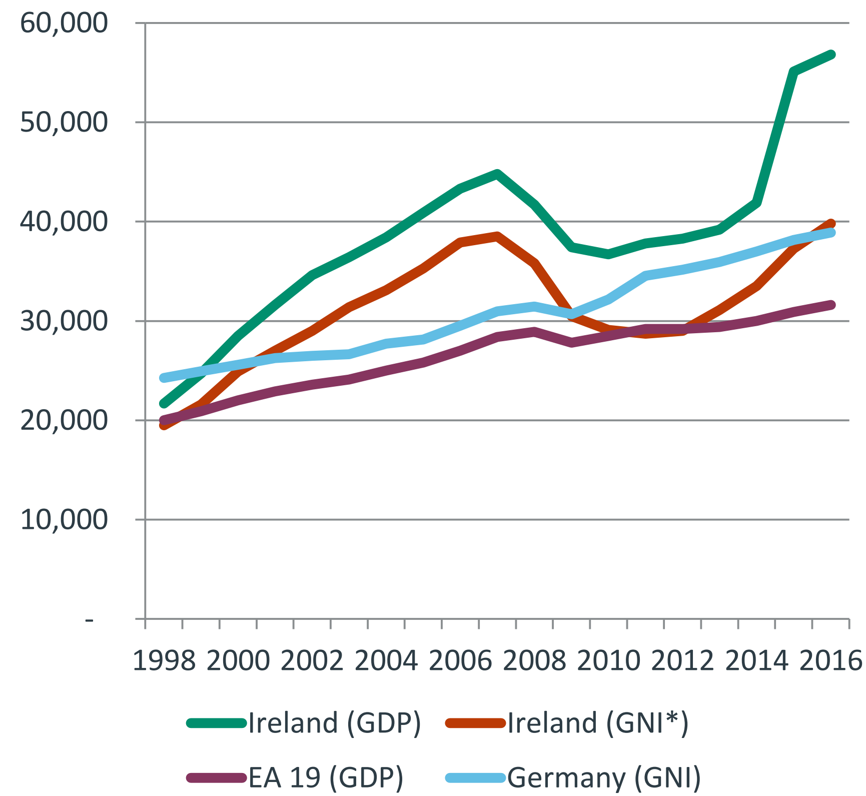
Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Much rebalancing has taken place – Ireland structural growth drivers have returned

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



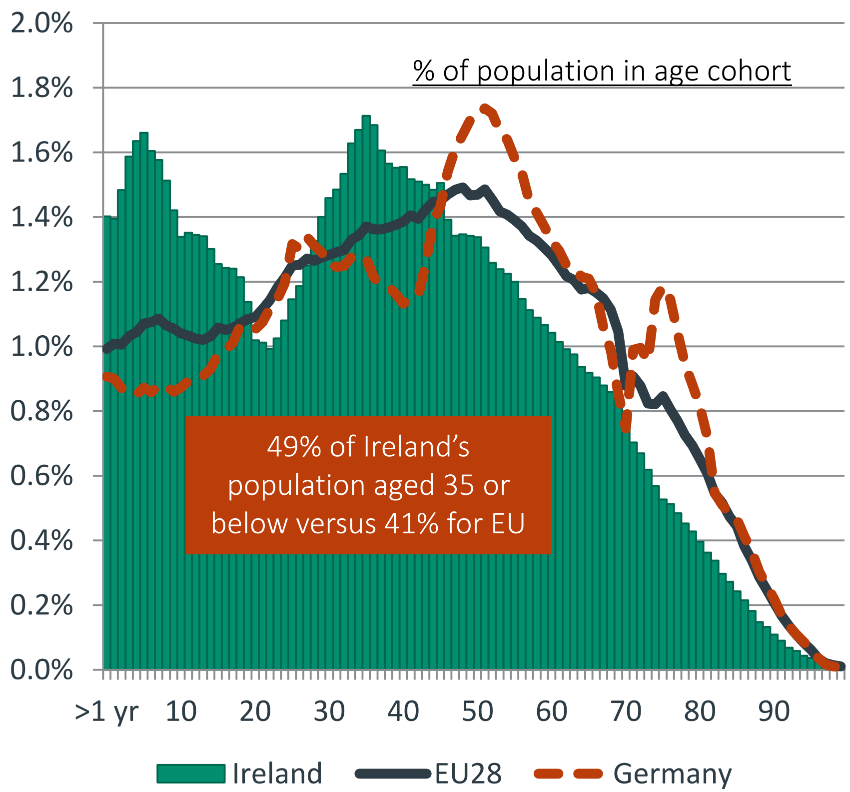
Ireland's GNI* per capita surpassed 2007 levels and compares favourably to EA



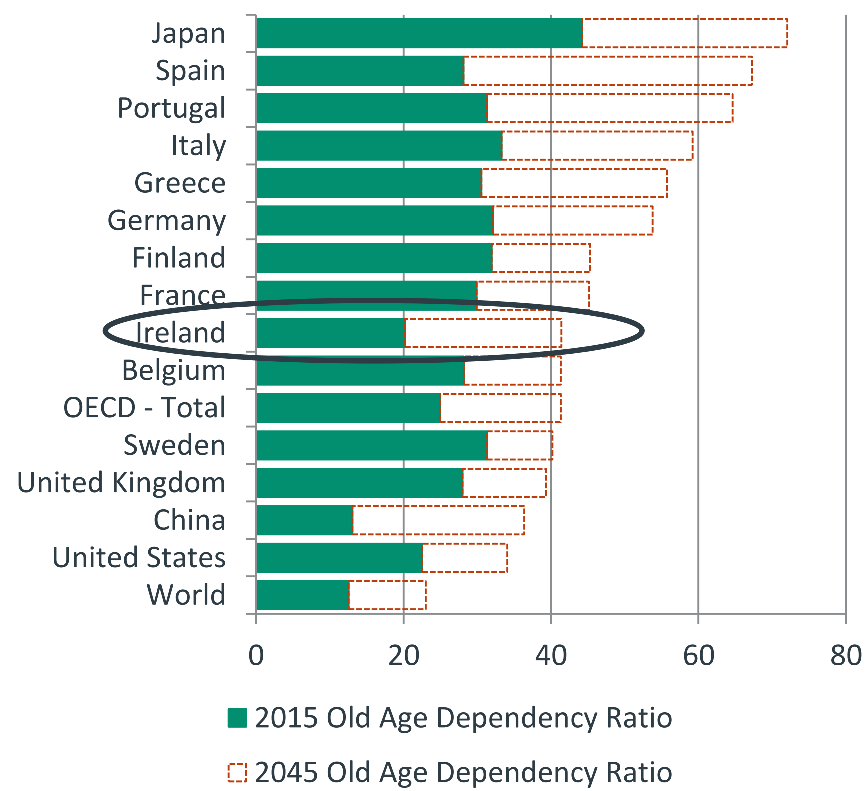
Source: CSO

Ireland's population profile healthier than the EU average

Ireland's population jumped to 4.79m in 2017 – up 200,000 on the 2011 Census



Ireland's population will age similar to others but likely remain ahead of EA counterparts



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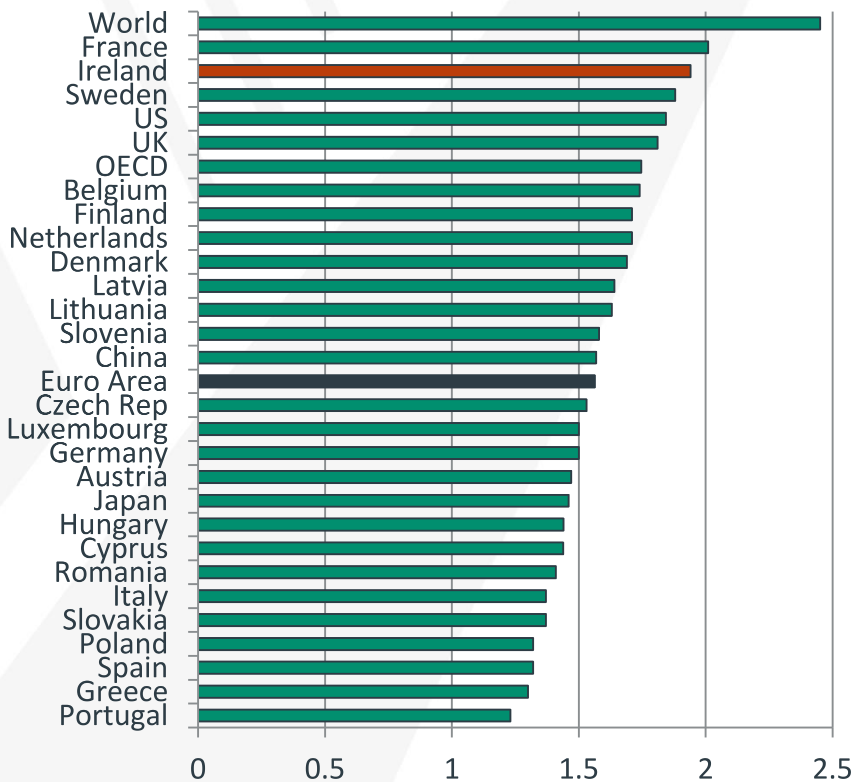
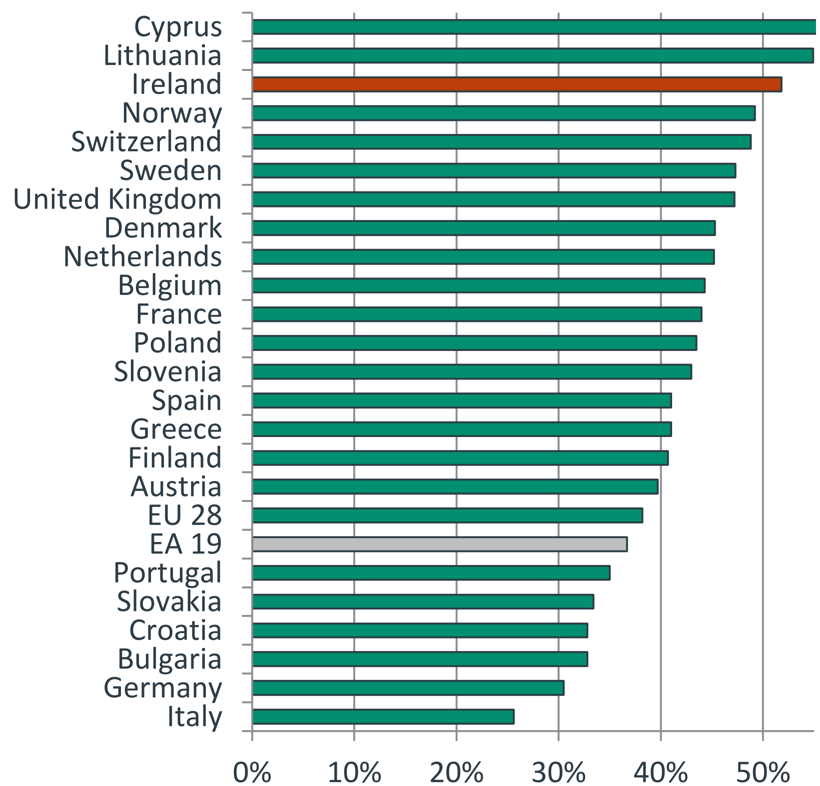
Source: Eurostat (2016) CSO; OECD population projections

Favourable population and workforce characteristics underpin debt sustainability over longer term

Fertility rates in Ireland are above typical international replacement rates



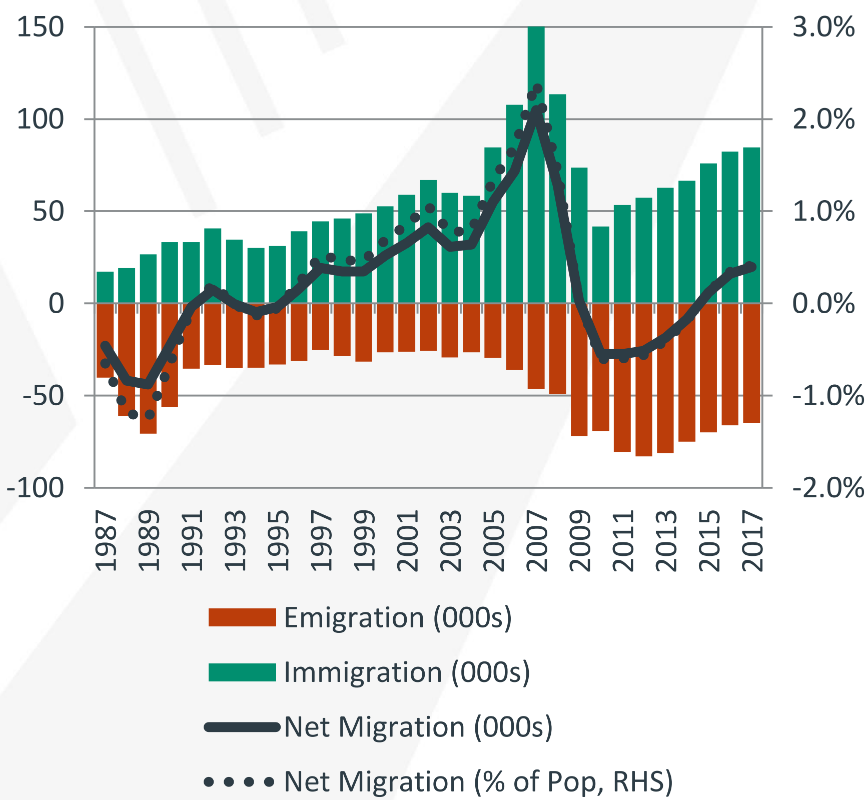
Ireland has large % of 25-34 years old with a third-level degree (2016 data)



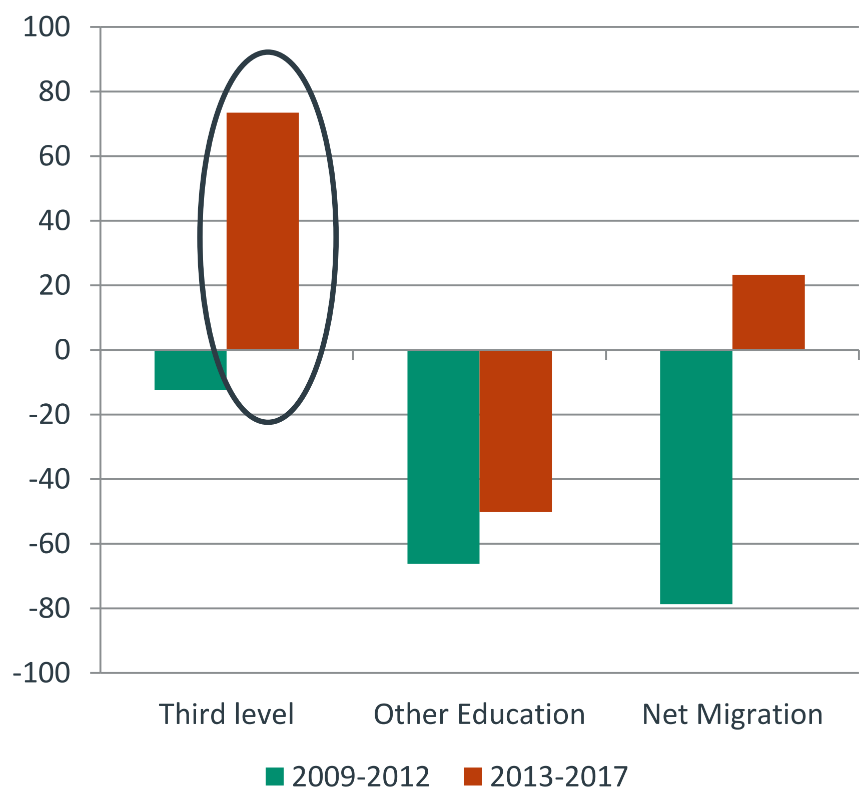
Source: World Bank WDI (2015); Eurostat

Openness to people has been beneficial to Ireland

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



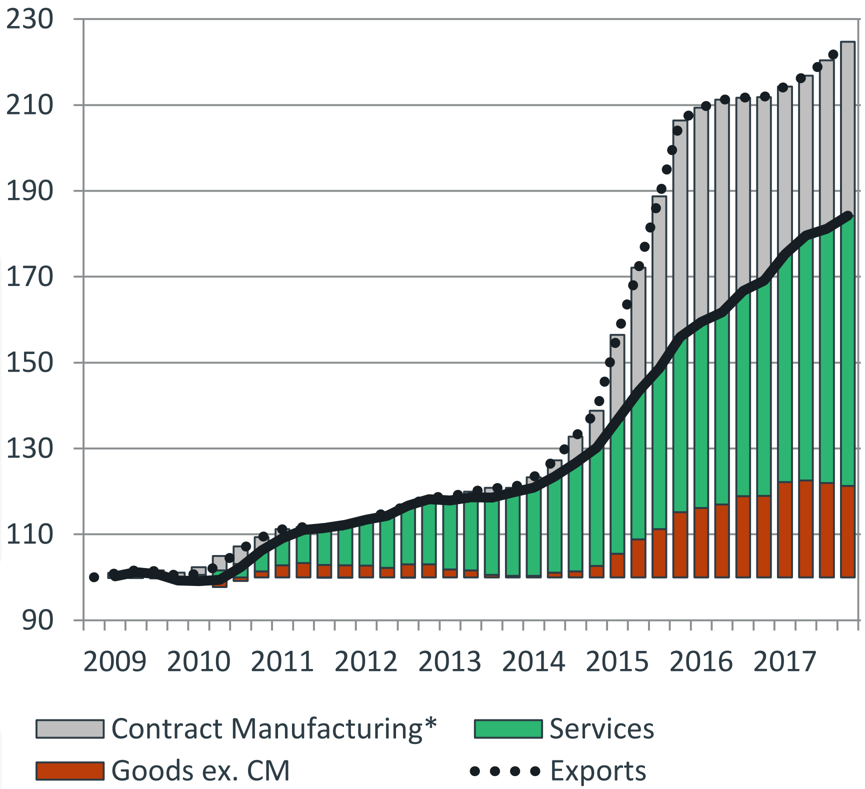
Highly educated migrants moving to Ireland “Reverse Brain Drain”



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		Services		Total	
2016	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	25.7	16.4	10.5	21.7	17.4	20.2
UK	12.6	22.8	16.0	6.4	14.4	11.0
EU-27	37.6	34.5	33.4	23.6	35.3	26.7
China	3.1	5.7	2.7	0.2	2.9	1.8
Other	21.0	20.3	37.4	48.2	29.9	40.4

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

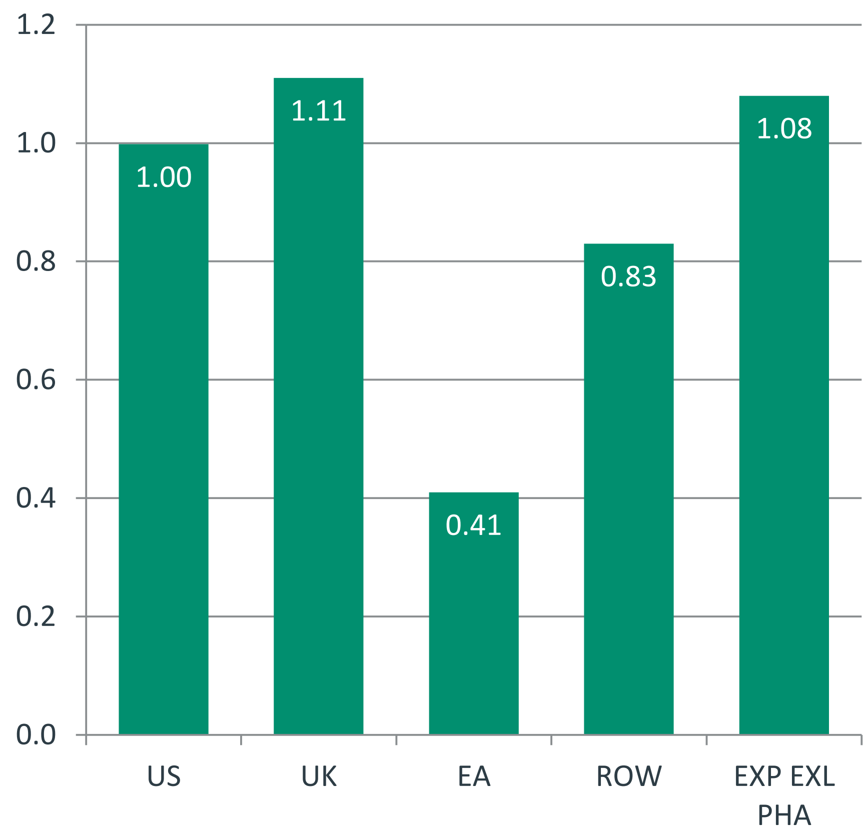
Ireland's goods exports respond vigorously to euro movements – in both directions

- A 1% depreciation of the euro increases Irish goods exports to the US by 1%
- The equivalent response for exports to the UK is 1.1% and to the rest of world is 0.8%. Brexit has the opposite effect on Irish exports.
- The EUR/USD exchange rate has a positive effect (elasticity of 0.4) on Irish goods exports to the euro area, due to Ireland-based multinational companies' exports to EA for onward sale to the rest of the world
- The elasticity of total goods exports excluding pharma to the exchange rate >1

Source: CSO; NTMA empirical analysis

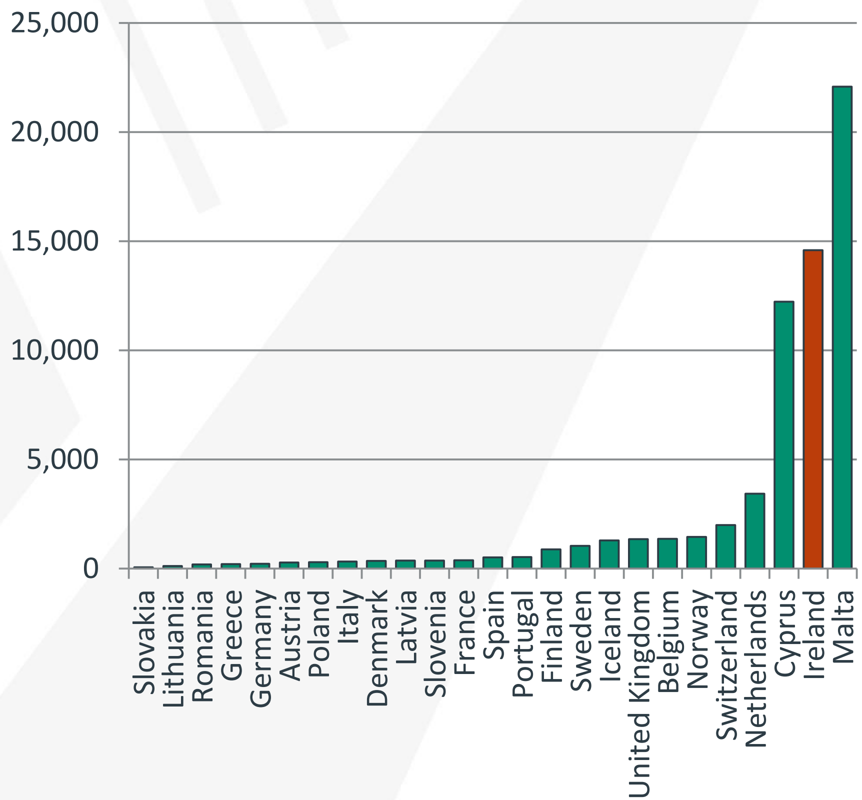
Note: All coefficients significant at 99% level; not affected by contract manufacturing. Time period is 1998 to 2016 Q2. For longer time periods, the UK elasticity is smaller (closer to 0.4-0.5 for 1981 onwards).

Response (% chg.) of Irish goods exports to 1% depreciation of the euro

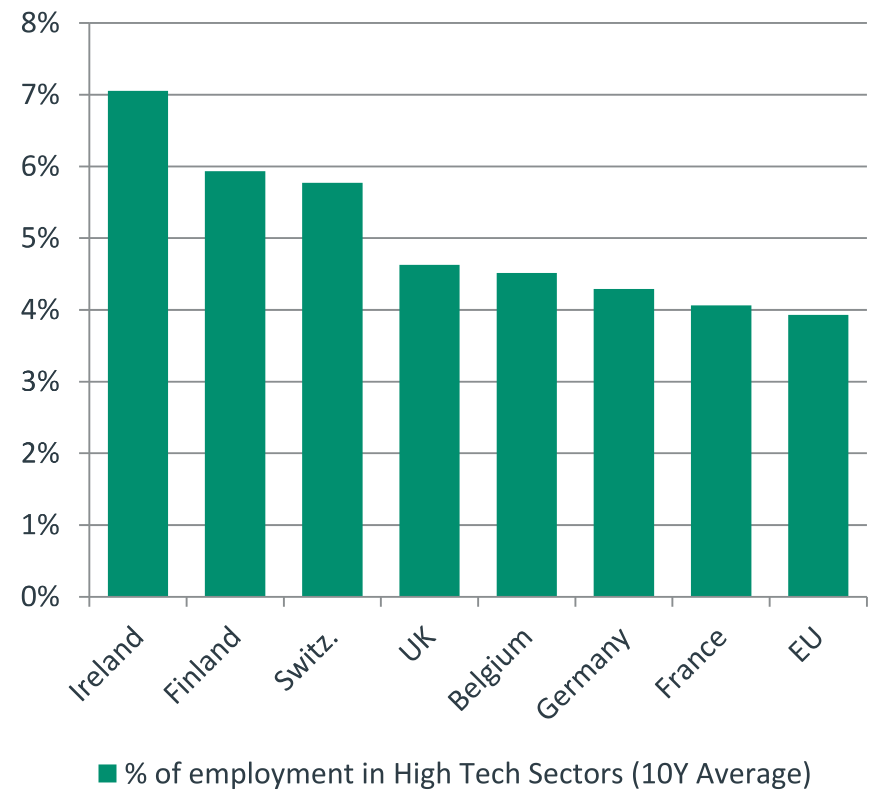


Crucially, openness to capital has played a big part in Ireland's economic model

Average FDI inflow in $ per capita, 2011–16



Ireland has attracted high-quality jobs to Ireland



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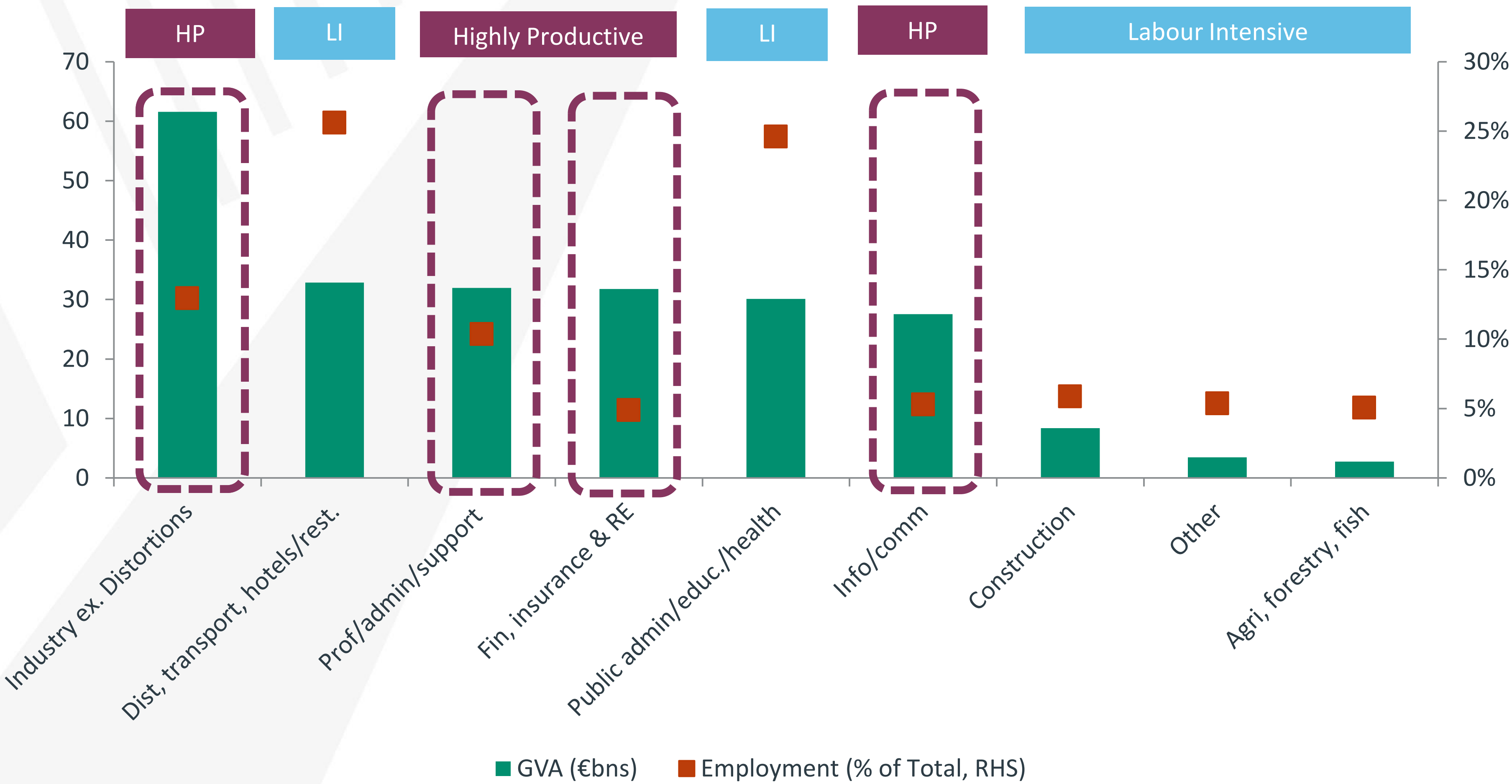
National Treasury Management Agency

Source: Unctad (UN) database
Note: Luxembourg excluded for presentation purposes – average $68,700 per capita over period.
Note 2: High tech = High-technology manufacturing and knowledge-intensive high-technology services

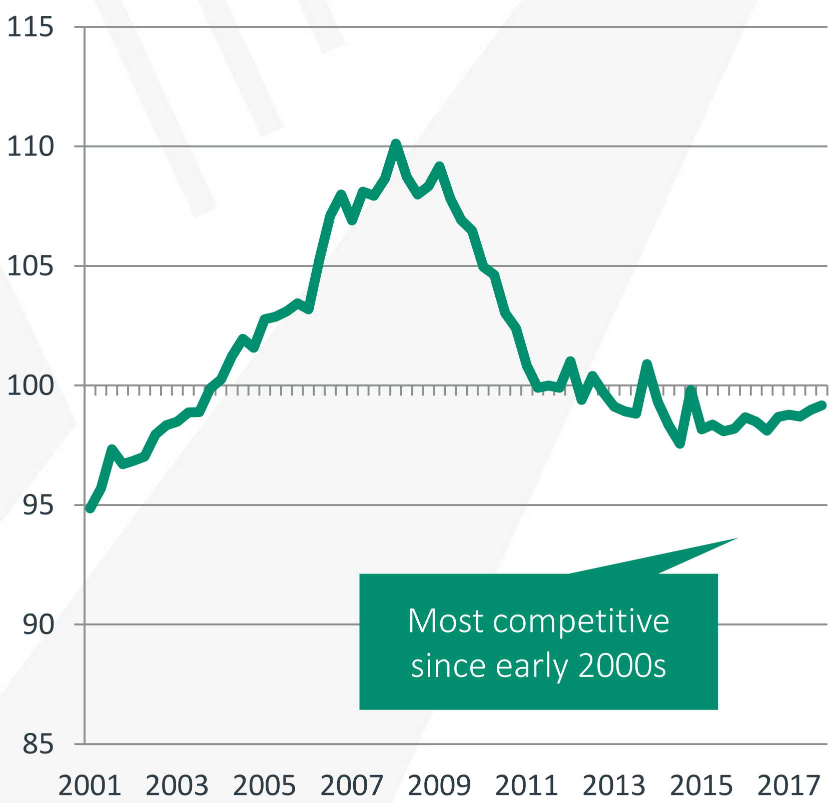
All this leads to mixture of highly productive and labour intensive sectors in Ireland



Source: CSO , NTMA calculations 2017 data

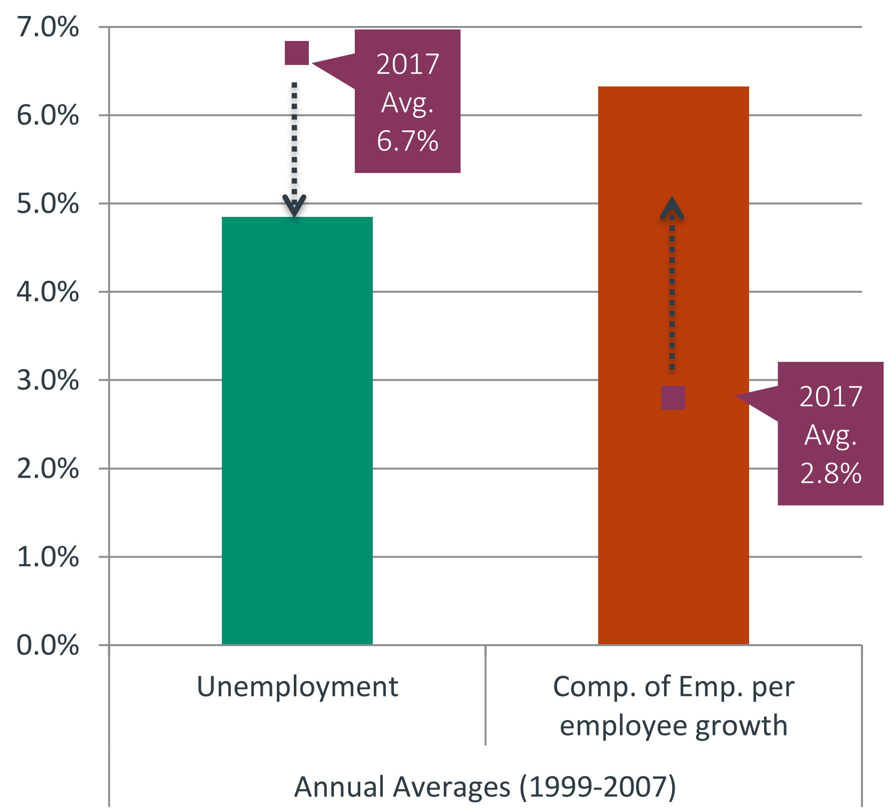
Ireland is pretty competitive now; we need to avoid repeat of the mid-2000s

Nominal Labour Cost Ratio – IE vs Euro Area



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

Wage growth a distinct feature of last cycle but some room to run before then



Source: CSO, Eurostat

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

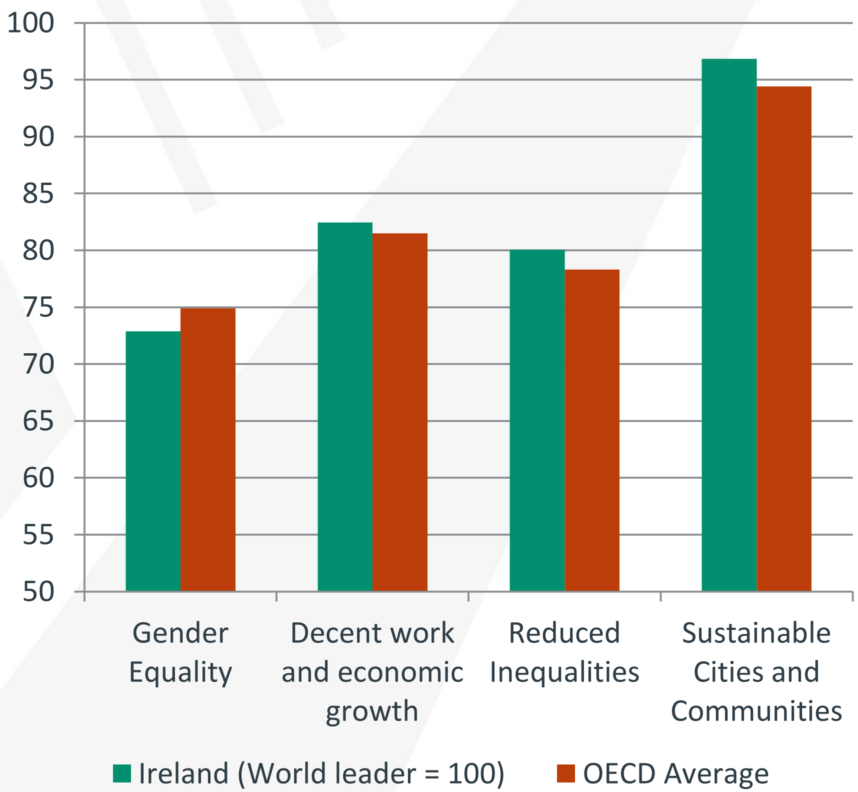
Selected Countries	Global Rank	Index Score (0-100)
Sweden	1	85.6
Denmark	2	84.2
Finland	3	84.0
Norway	4	83.9
Czech Republic	5	81.9
Germany	6	81.7
France	10	80.3
Belgium	12	80.0
United Kingdom	16	78.3
Ireland	**19**	**77.9**
Spain	25	76.8
Portugal	28	75.6
Italy	30	75.5
Luxembourg	33	75.0
Greece	38	72.9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

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%	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	87.8	74.6
Property Rights (1-7)	6.1	**94.8**	**73.1**
Population who feel safe walking alone at night (%)	75%	73.7	67.4

Source: United Nations SDG project

Section 5: Property

Property prices are rising thanks to lack of supply and capital inflows

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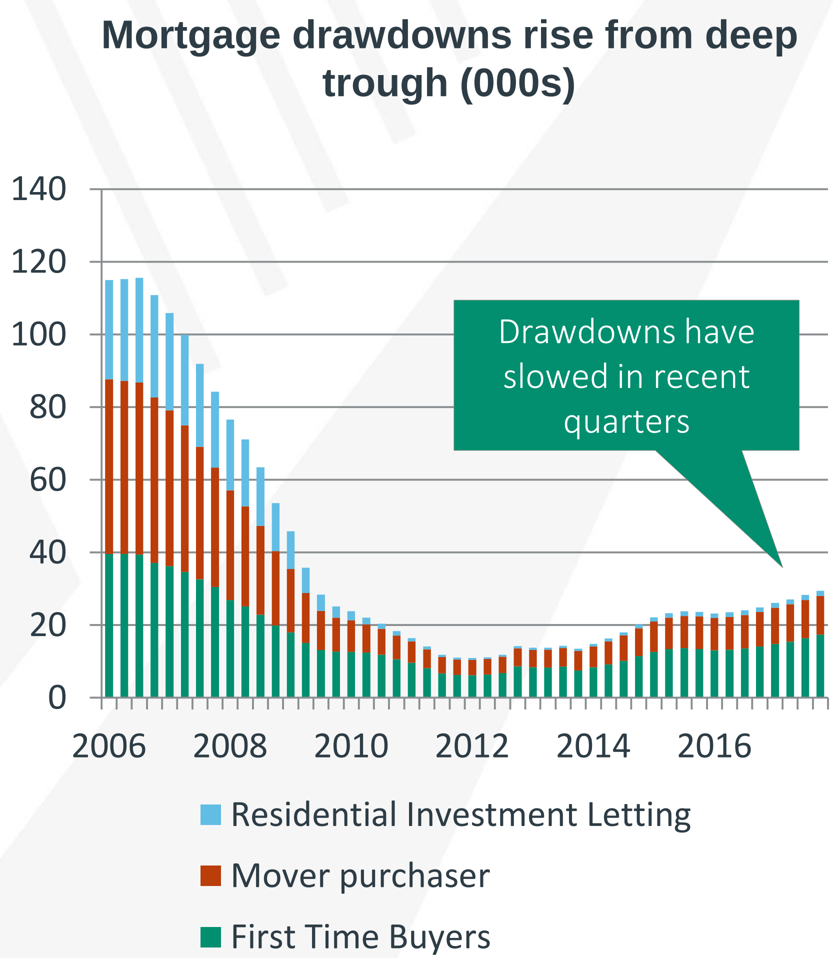
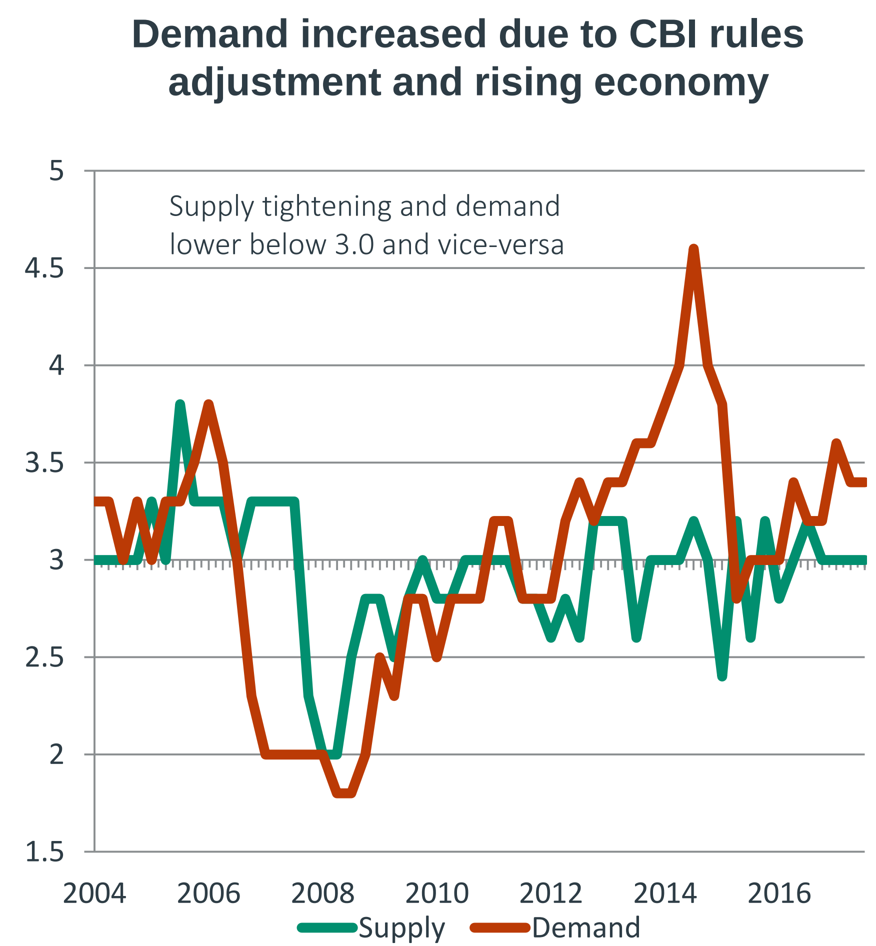
National Treasury Management Agency

Demand has picked up since 2015; amendments to CBI rules and rising economy have boosted buying power



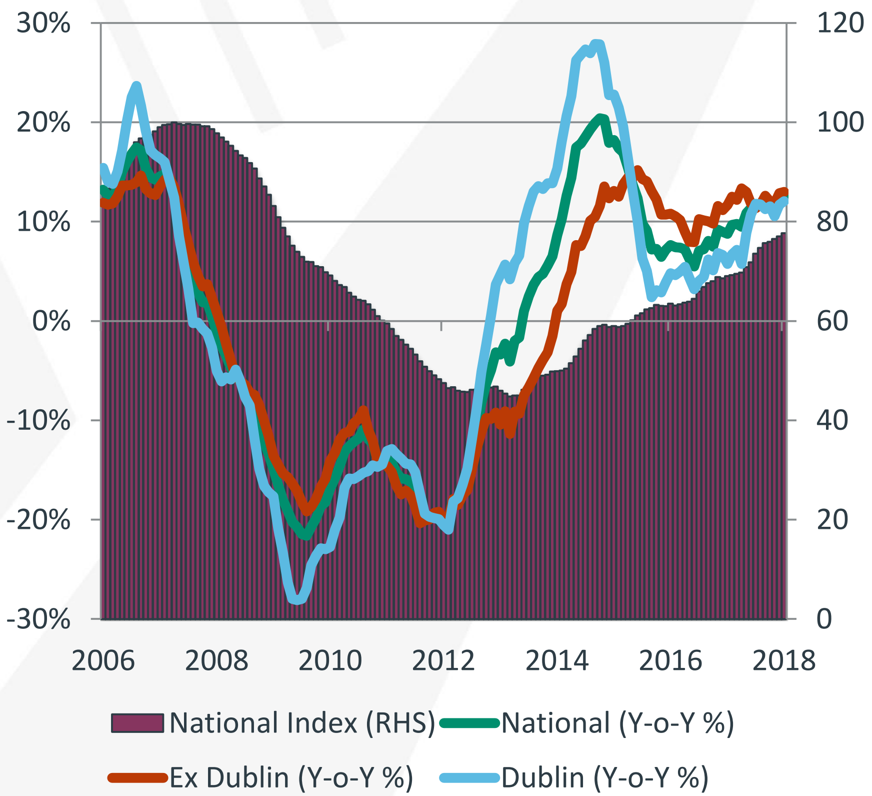
Source: BPFI *4 quarter sum used



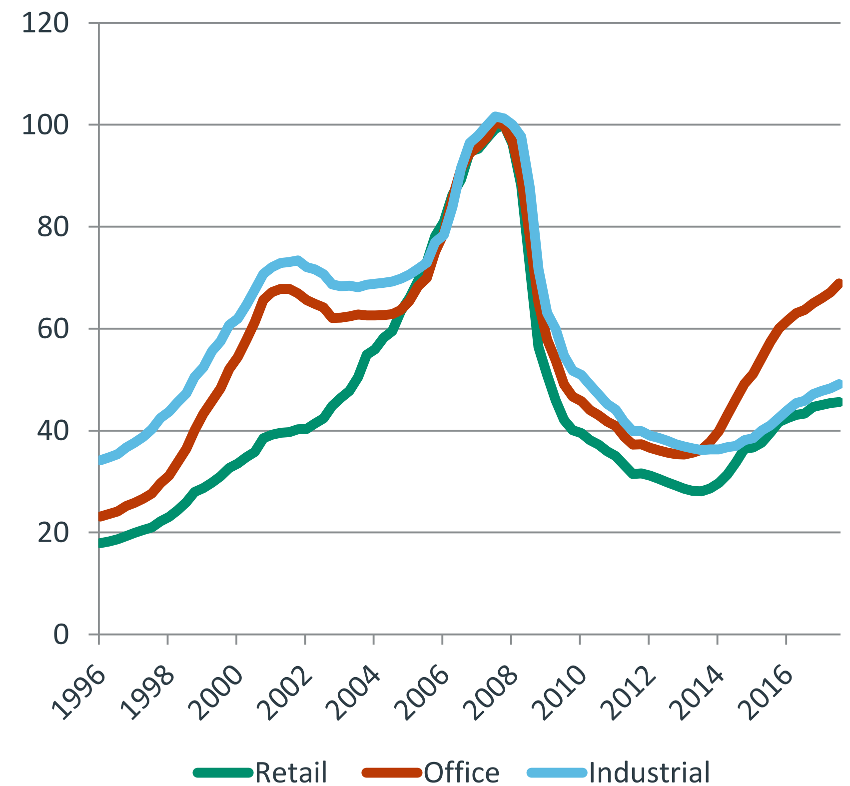
Source: ECB and CBI (Bank lending survey)

Property prices have rebounded strongly since 2012

House prices rising strongly but some way off peak (Y-o-Y change, RHS peak =100)



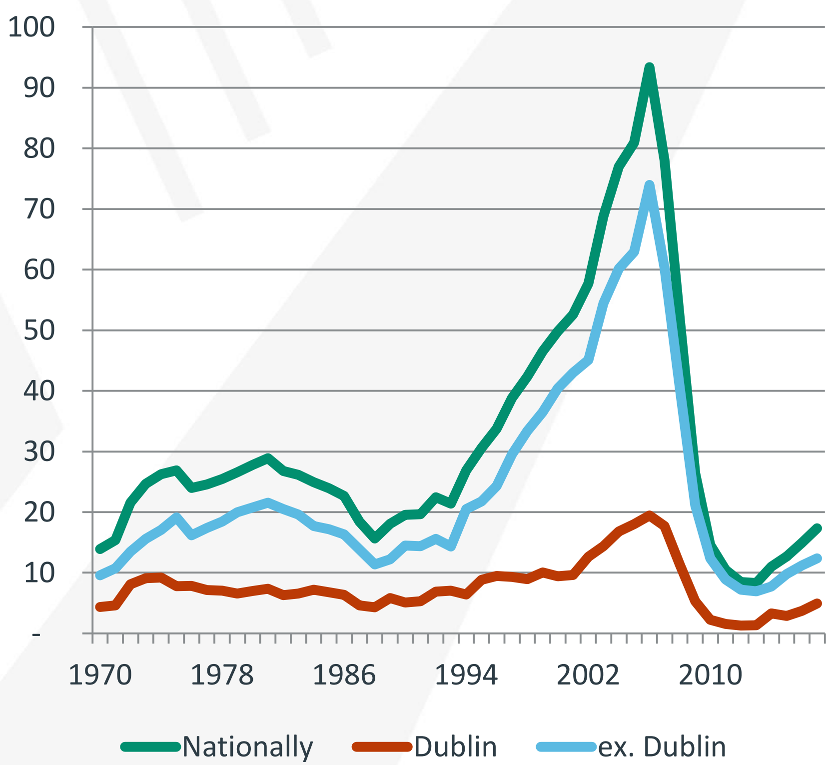
Office leads commercial property (peak = 100)



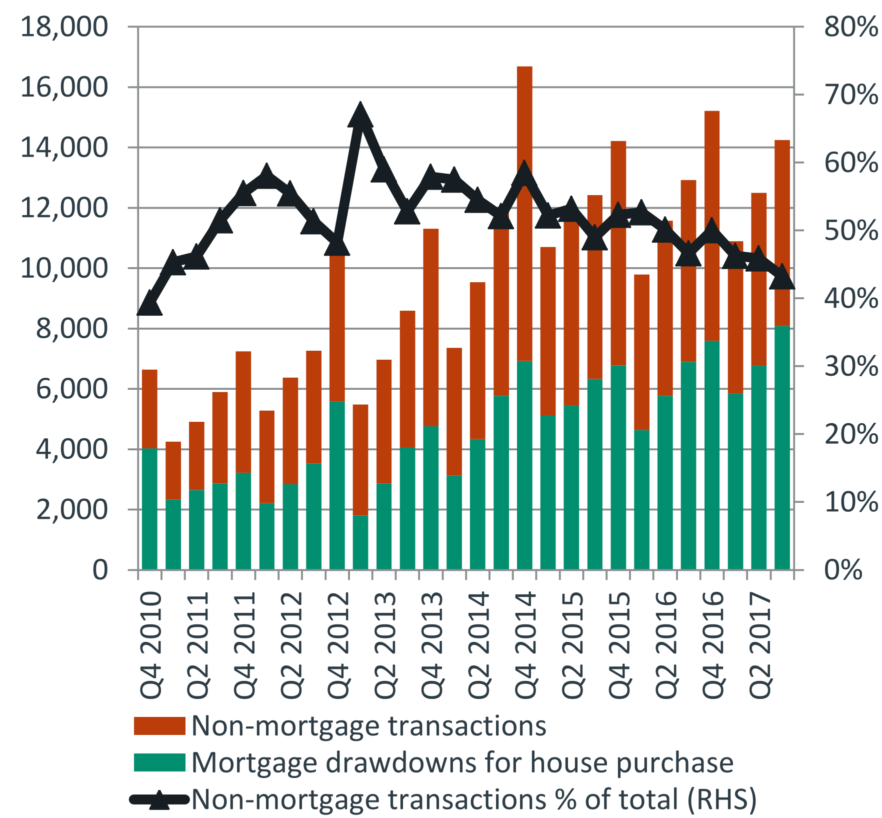
Source: CSO; IPD

Residential market continues to be boosted by non-mortgage purchasers although impact has lessened

Housing Completions above 17,000 in 2017 but still low historically (000s)



Non-mortgage transactions still important but falling below 50% of total



Source: DoHPCLG, BPFI; Residential Property Price Register

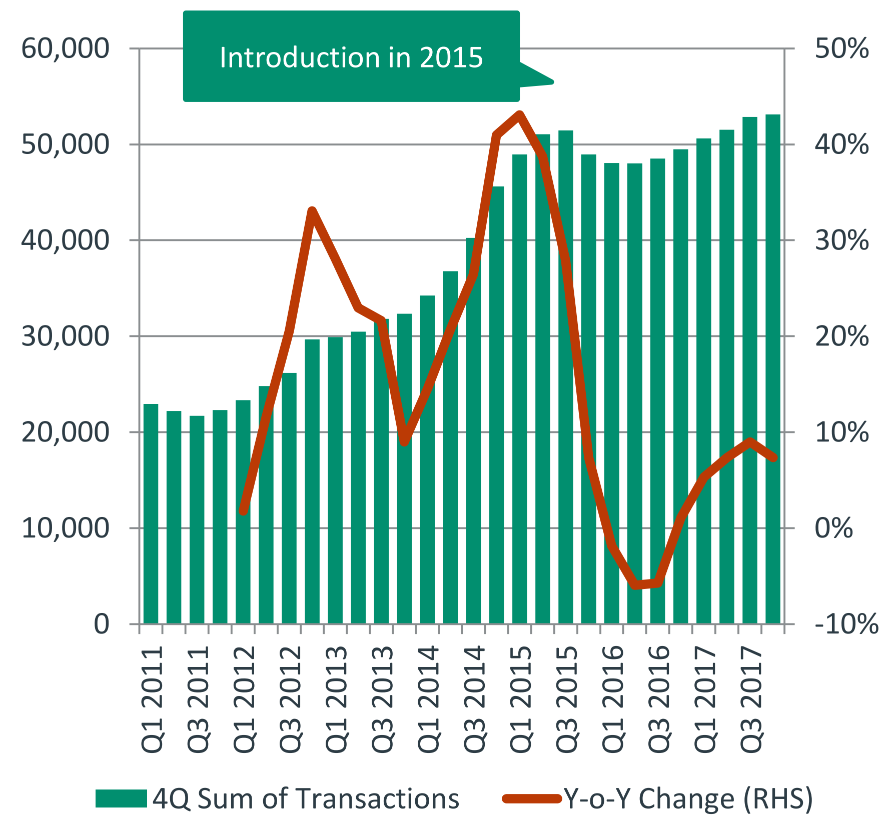
Note: Non-mortgage transactions are implied by difference between total transactions on property price register and BPFI mortgage data

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

CBI's amended macro-prudential rules

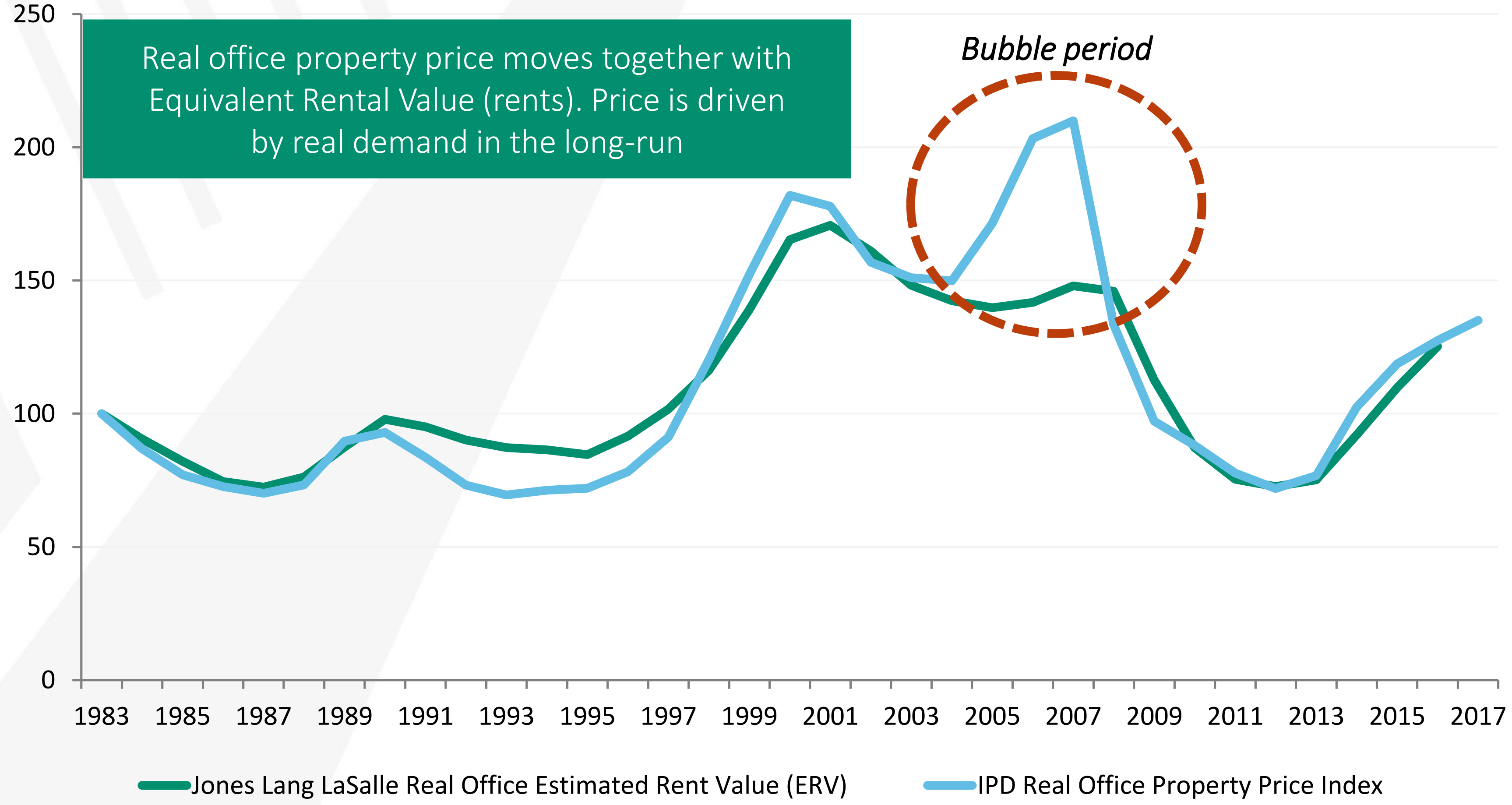
- First time buyers (FTBs) can borrow 90% of the value of a home (10% minimum deposit). Five per cent of the total new lending to FTBs will be allowed above the 90% LTV limit.
- For second and subsequent buyers (SSBs), banks must restrict lending for primary dwelling purchase above 80 per cent LTV to 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.

Transactions have slowed since macro-prudential rules introduced



Source: Residential Property Price Register

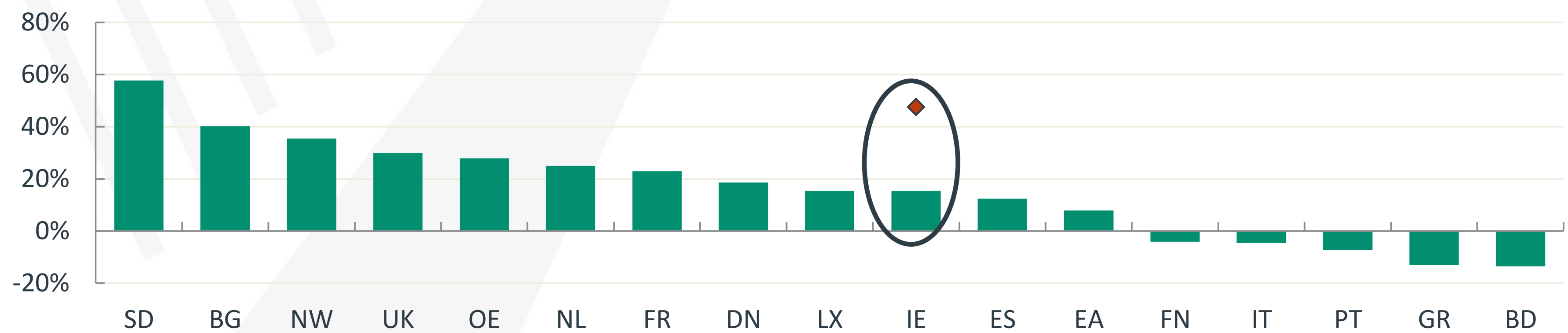
Real commercial property prices still down from peak (index 1983 = 100)



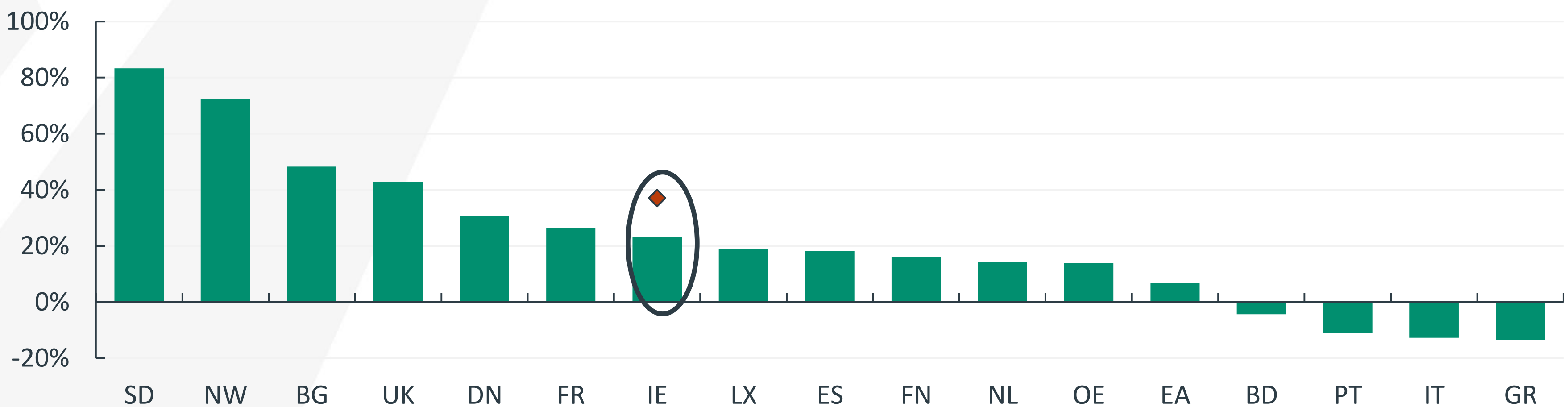
Source: IPD; NTMA
Note: IPD office price index updated to Q3 2017

Irish house price valuations rose relative to other European countries in 2017 but remain below 2008 levels

Deviation from average price-to-income ratio (Q3 2017, red dot represent Q1 2008)



Deviation from average price-to-rent ratio (Q3 2017, 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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National Treasury Management Agency

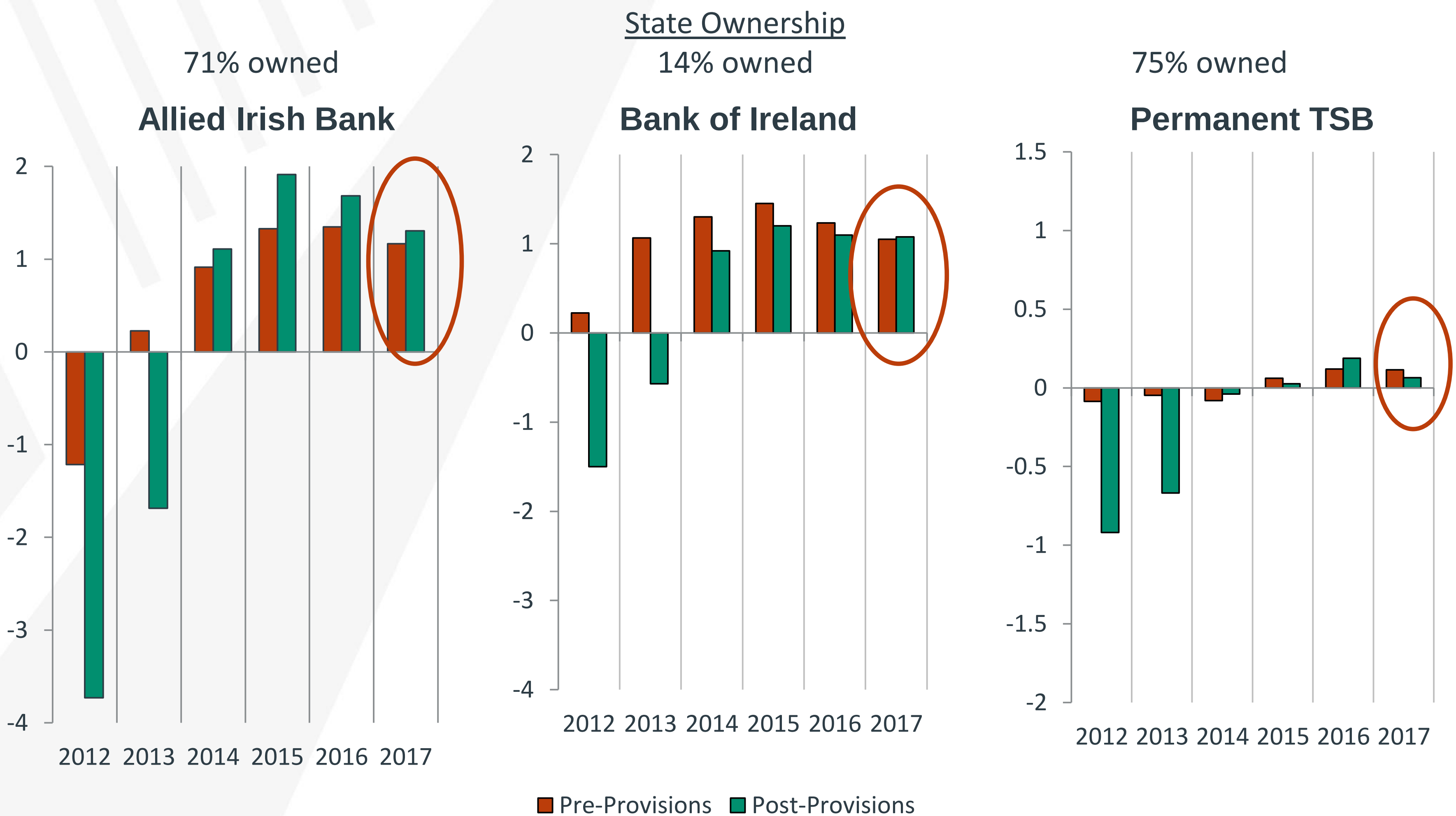
Ireland has legacy banking-related assets

- Banking
  - Banks are now profitable; Income, cost and balance sheet metrics are much improved.
  - Interest rates on mortgages and to SMEs still high compared to EU.
  - An IPO of AIB stock (28.8%) was completed in June. This returned c. €3.4bn to the Irish Exchequer.

- NAMA
  - NAMA has repaid 100% of its senior debt; it forecasts a profit of €3bn subject to market conditions.

- IBRC
  - Liquidation of the IBRC could ultimately return over €1bn to the Irish Exchequer.
  - In 2016, €280m was returned to the Exchequer as an interim dividend.
  - In December 2017, a further €270m interim dividend was returned to the Exchequer.

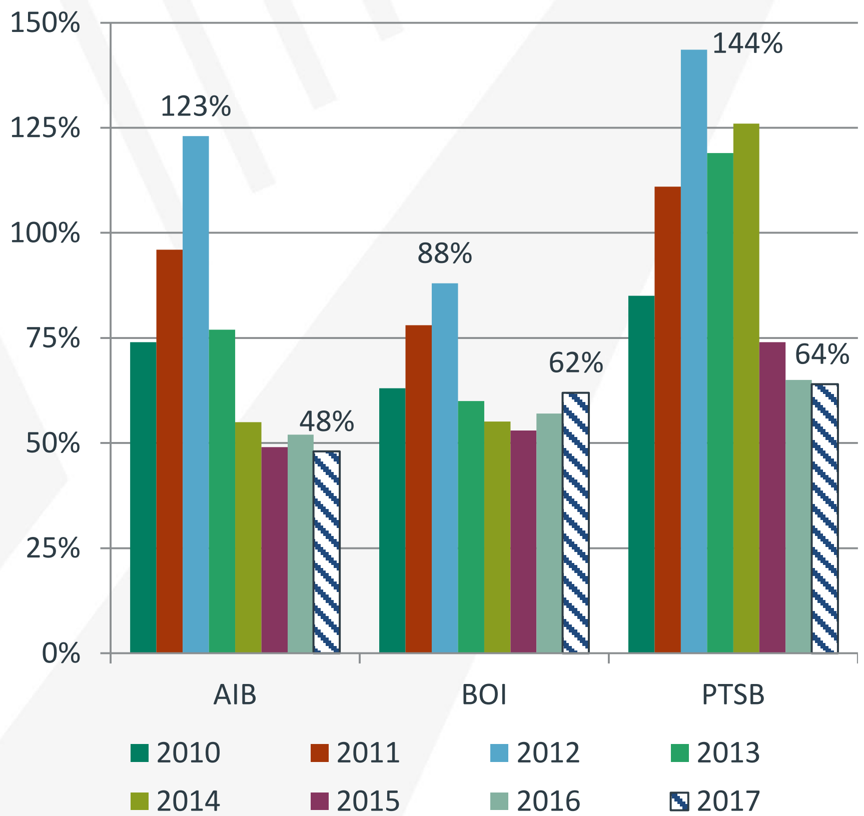
All three pillar banks in profit (€bn) for at least two years



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

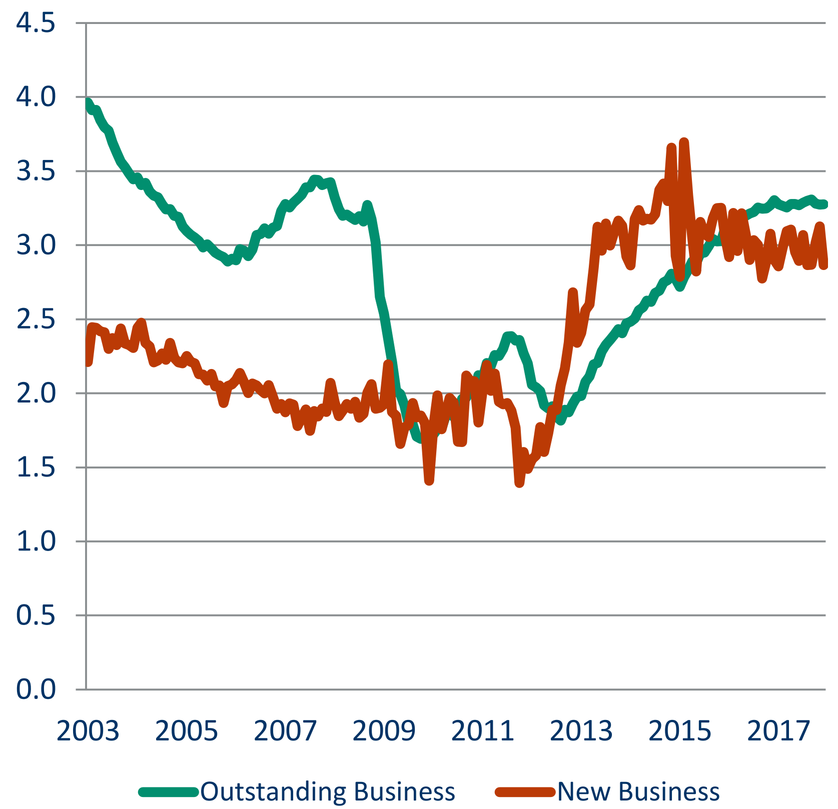
Banks fundamentally rebuild their profitability

Cost income ratios improve dramatically



Source: Annual reports of Irish domestic banks

Net interest margins (%) recover

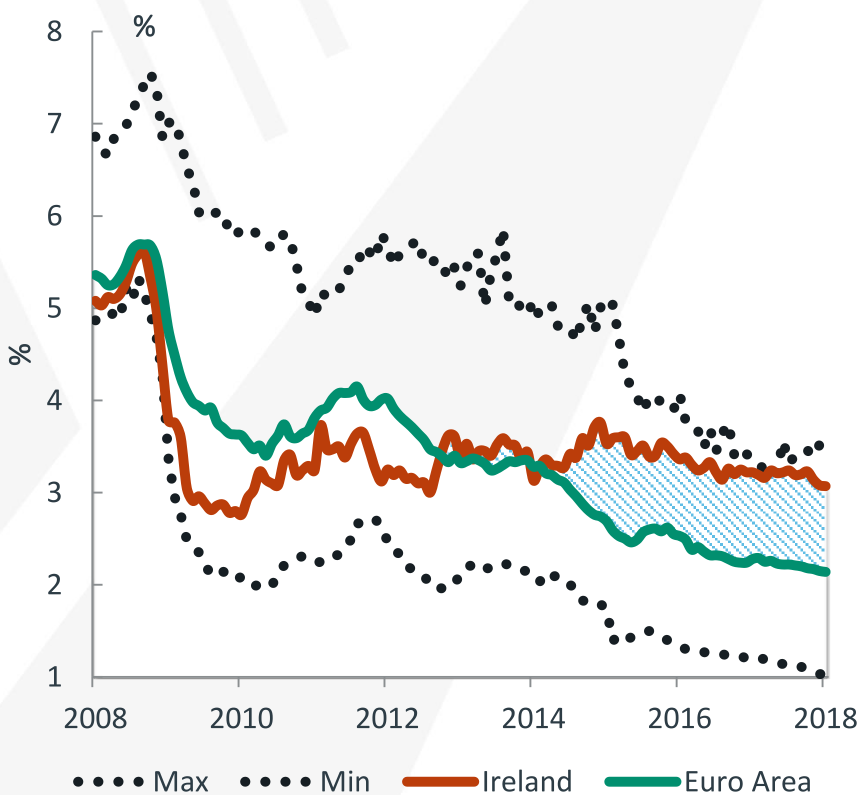


Source: CBI, NTMA Calculations

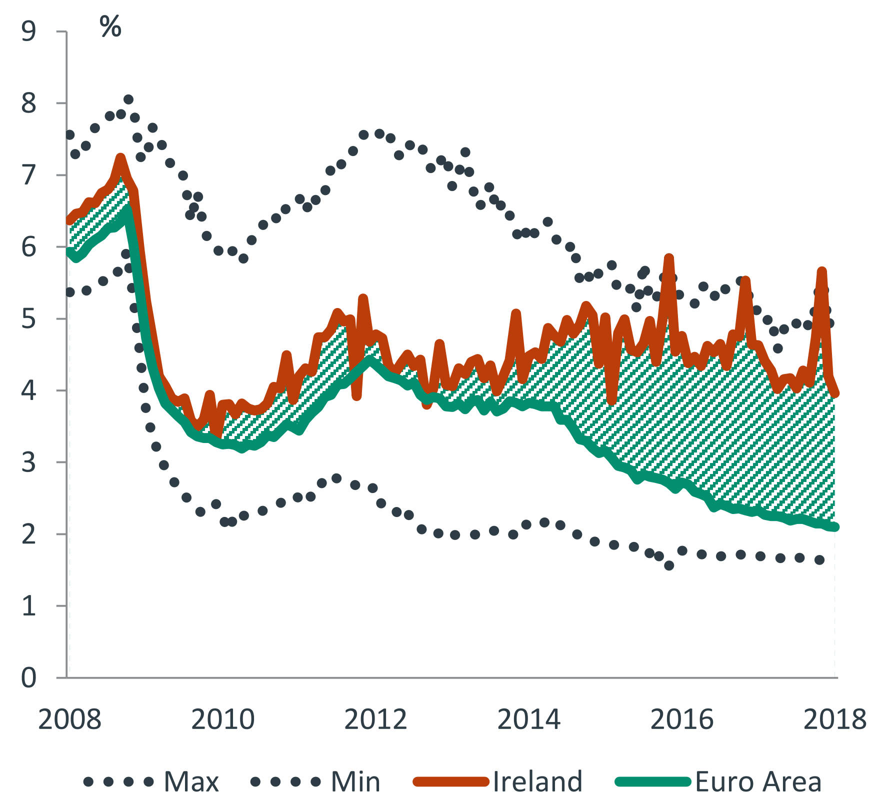
Note: Margins are derived from weighted average interest rates on loans and deposits to and from households and non-financial corporations

Profitability aided by higher interest rates than EA peers

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



Rates on SME loans* over euro area average

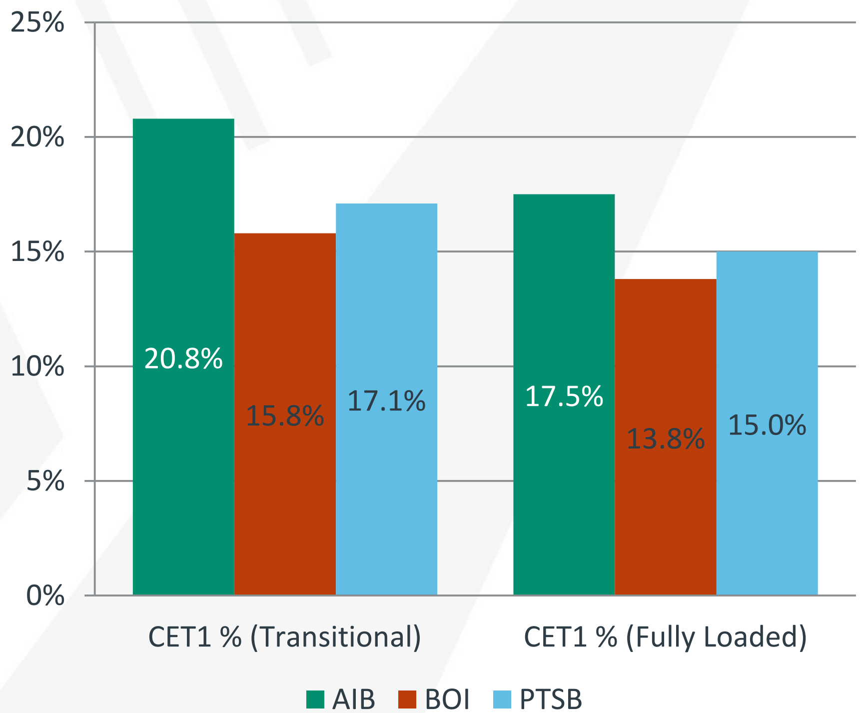


Source: ECB

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

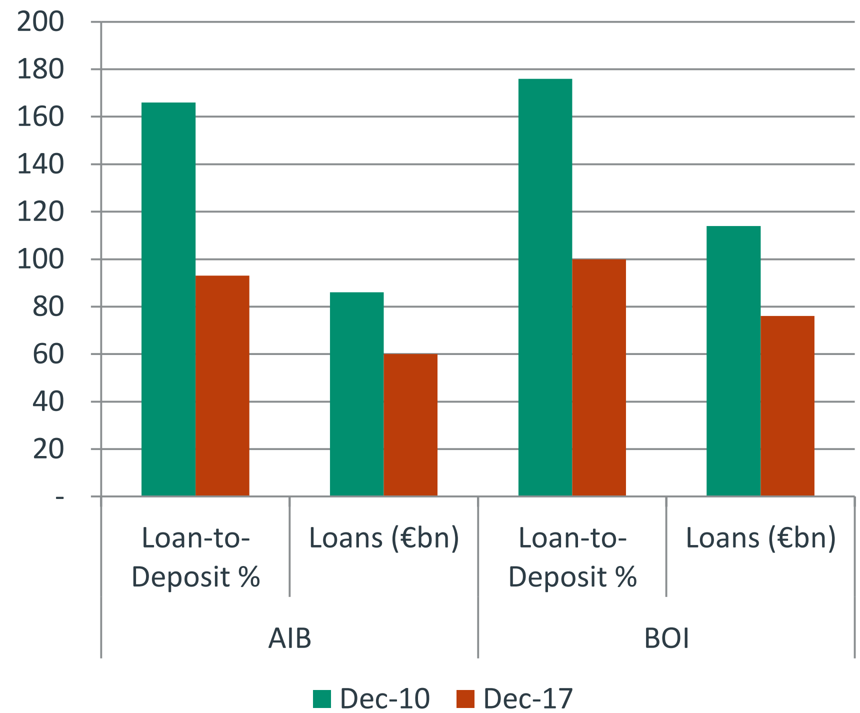
Capital ratios strengthened as banks slimmed down and consolidated

CET 1 capital ratios (Dec-17)



Source: Published bank accounts

Loan-to-deposit ratios have fallen significantly as loan books have been 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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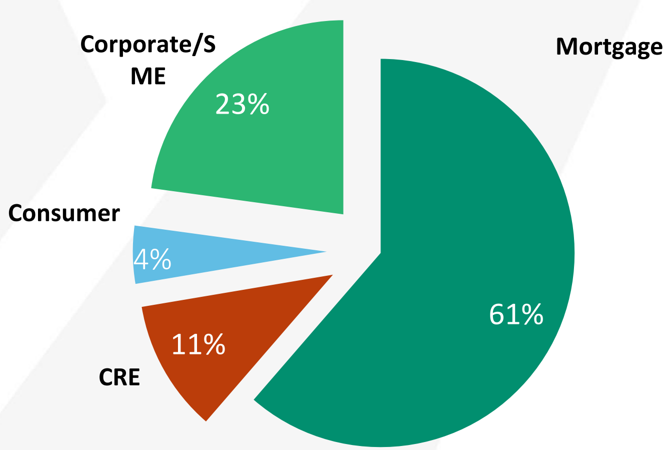
Asset quality continues to improve: impaired loans and provisions fall in 2017

All 3 PCAR banks (€bn)	Dec-15	Dec-16	Dec-17
Total Loans	186.5	168.9	160.2
Impaired	29.0	20.3	14.8
(Impaired as % of Total)	15.5%	12.0%	9.2%
Provisions	14.7	9.9	7.6
(Provisions as % of book)	7.9%	5.9%	4.7%
(Provisions as % of Impaired)	50.6%	48.8%	51.4%

Loan Asset Mix (3 banks Dec 17)



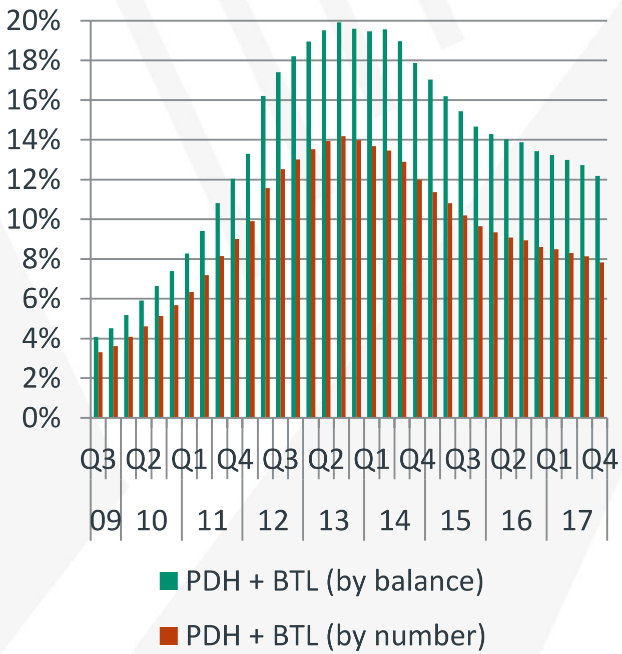
Source: Published bank accounts

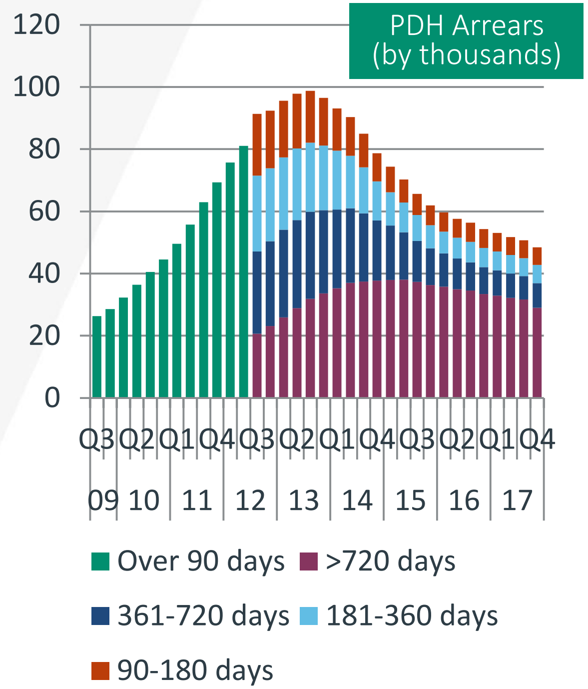
Impaired loans % (coverage %)[1] by bank and asset		Dec-15	Dec-16	Dec-17	*Book (€bn)*
BOI	Irish Residential Mortgages	9.3(52)	6.0(45)	4.7(42)	24.1
	UK Residential Mortgages	1.6(22)	0.7(15)	0.8(11)	22.6
	Irish SMEs	21.9(52)	15.7(55)	12.0(56)	8.2
	UK SMEs	11.1(51)	6.3(55)	5.9(52)	1.7
	Corporate	4.6(59)	3.5(54)	2.9(62)	8.8
	CRE - Investment	28.5(53)	21.1(57)	13.7(51)	8.3
	CRE - Land/Development	84.8(76)	68.8(73)	35.3(60)	0.5
	Consumer Loans	4.1(105)	2.7(66)	2.1(63)	4.3
		11.6(56)	**7.6(54)**	**5.2(49)**	**78.5**
AIB	Irish Residential Mortgages	16.6(38)	13.1(44)	9.8(44)	32.2
	UK Residential Mortgages	10.8(50)	10.8(46)	8.4(30)	1.5
	SMEs/Corporate	11.5(63)	8.0(60)	4.9(54)	17.7
	CRE	37.4(61)	29.0(53)	20.4(51)	8.8
	Consumer Loans	19.9(70)	13.9(58)	11.6(56)	3.1
		18.6(47)	**14.0(44)**	**10.0(53)**	**63.3**
PTSB	Irish Residential Mortgages	23.6(49)	23.4(49)	24.2(49)	17.9
	UK Residential Mortgages	3.9(39)	0.0(0)	0.0(0)	0
	Commercial	35.8(69)	29.6(113)	46.4(104)	0.2
	Consumer Loans	27.0(93)	22.3(88)	16.6(92)	0.3
		21.1(49)	**23.1(51)**	**24.2(50)**	**18.4**

[1] Total impairment provisions are used for coverage ratios (in parentheses)

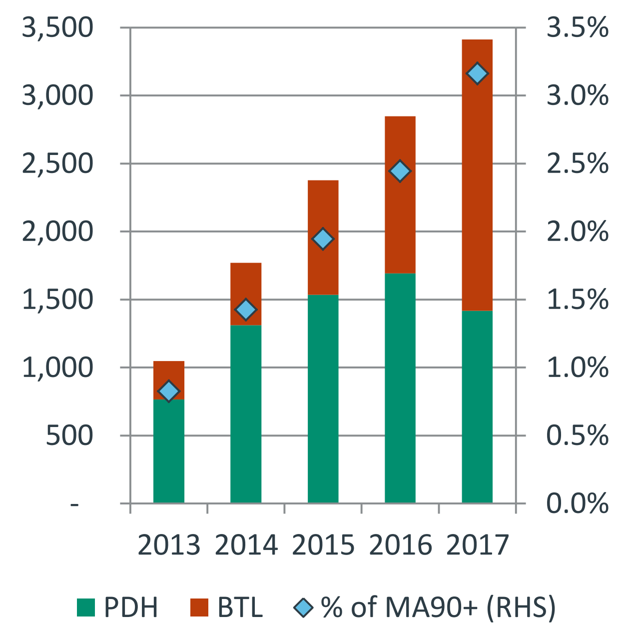
Irish residential mortgage arrears are improving across all duration categories; environment still abnormal

Mortgage arrears (90+ days)





Repossessions*



Source: CBI

- PDH mortgage arrears have fallen steadily since 2013. The smaller BTL market (c. 25% of total) has higher arrears but also saw declines in the same period.
- 118K PDH mortgage accounts were classified as restructured at end 2017. Of these restructured accounts, 87% were meeting the terms of the restructured arrangement.

* Repossessions include voluntary/abandoned dwellings as well as court ordered repossessions

NAMA: All original senior debt has been repaid: likely to deliver surplus of around €3bn

- **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 subordinated debt (€1.6 billion) by 2020.

- **NAMA could deliver a surplus for Irish taxpayers which is currently estimated at €3bn, according to its management team - if current market conditions remain favourable.**

- **In October 2015, NAMA announced a new initiative to develop up to 20,000 housing units by 2020 – subject to commercial viability.**
  - Progress has been strong so far with 7,200 units completed to end-2017;
  - Another 9,500 under construction or have planning permission granted;
  - Planning applications lodged or will be lodged in 2018 for a further 8,500 units

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 is expected to pay approximately €13bn plus EU interest into an escrow fund.
- Bank of New York Mellon has been selected as the preferred tenderer 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 as the preferred tenderers 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.**

Annex

Explanatory charts about the distortions to Ireland's National Accounts

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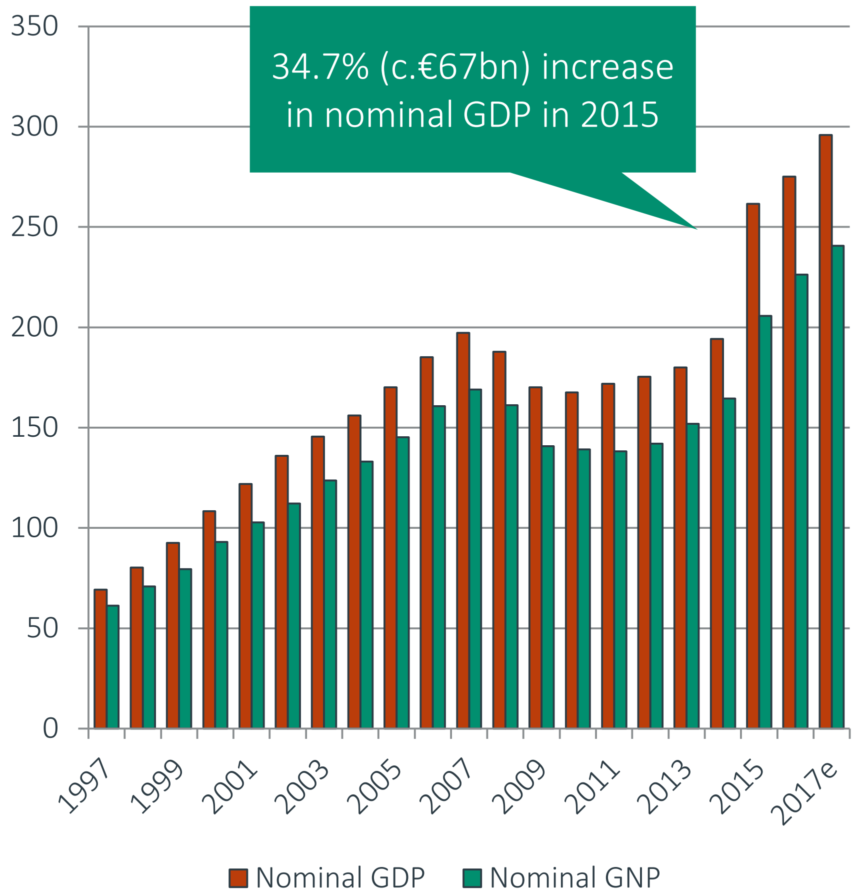
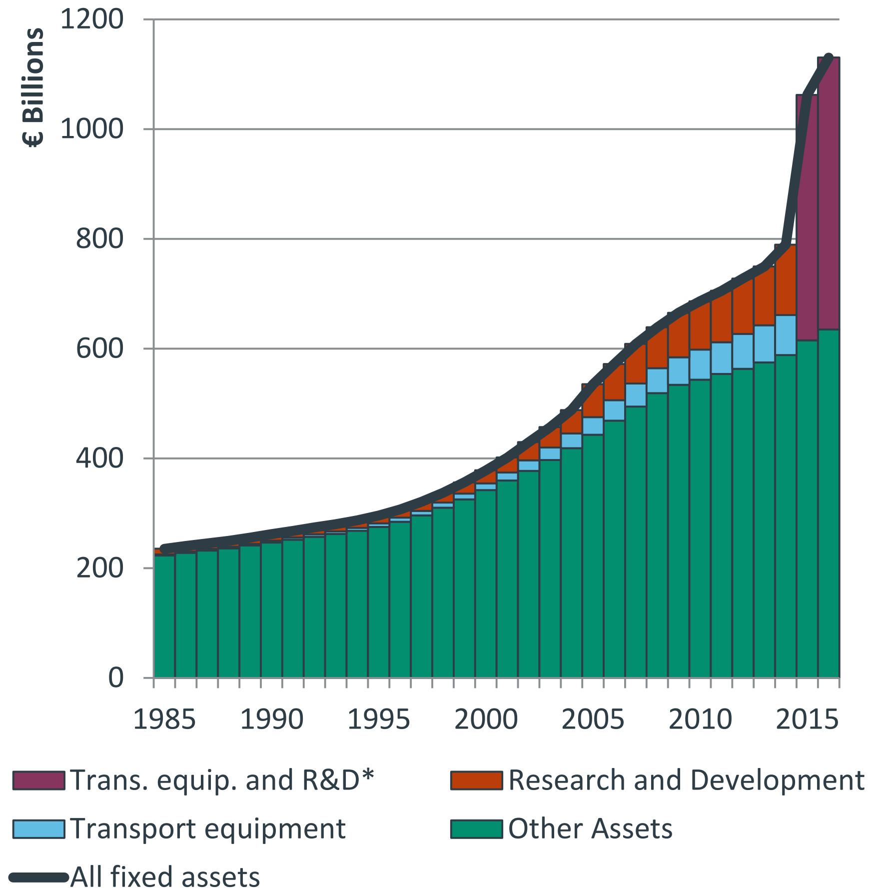
Reclassification of several companies and "onshoring" of IP led to step change in GDP & capital stock

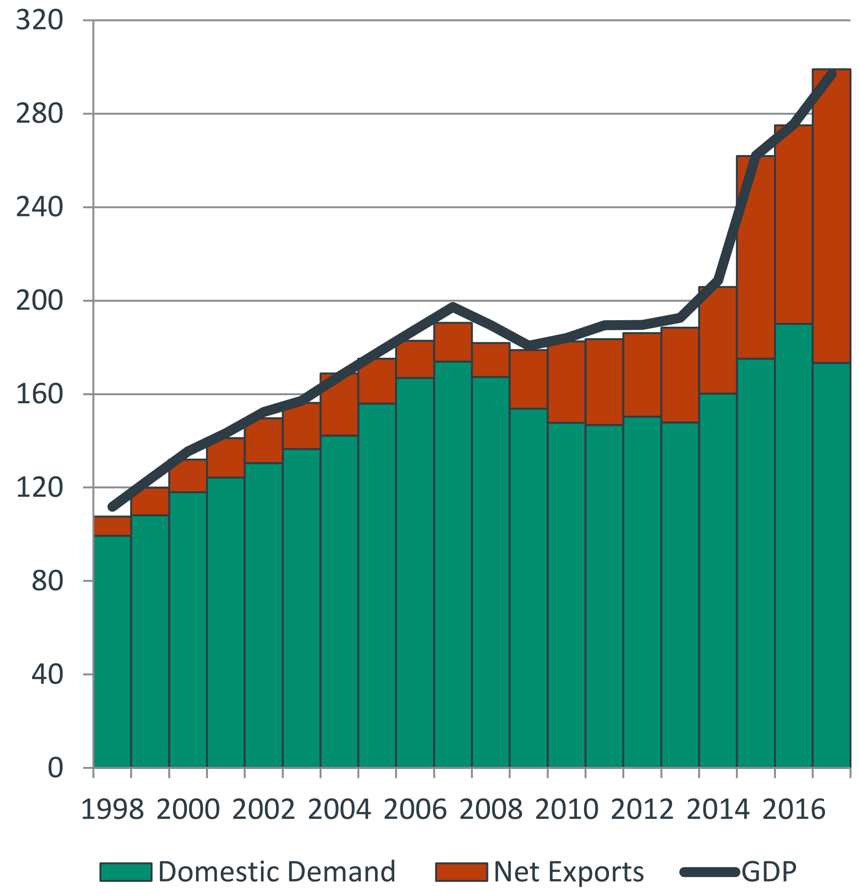




Source: CSO; Department of Finance
**due to confidentiality some sector data for 2015 has been restricted*

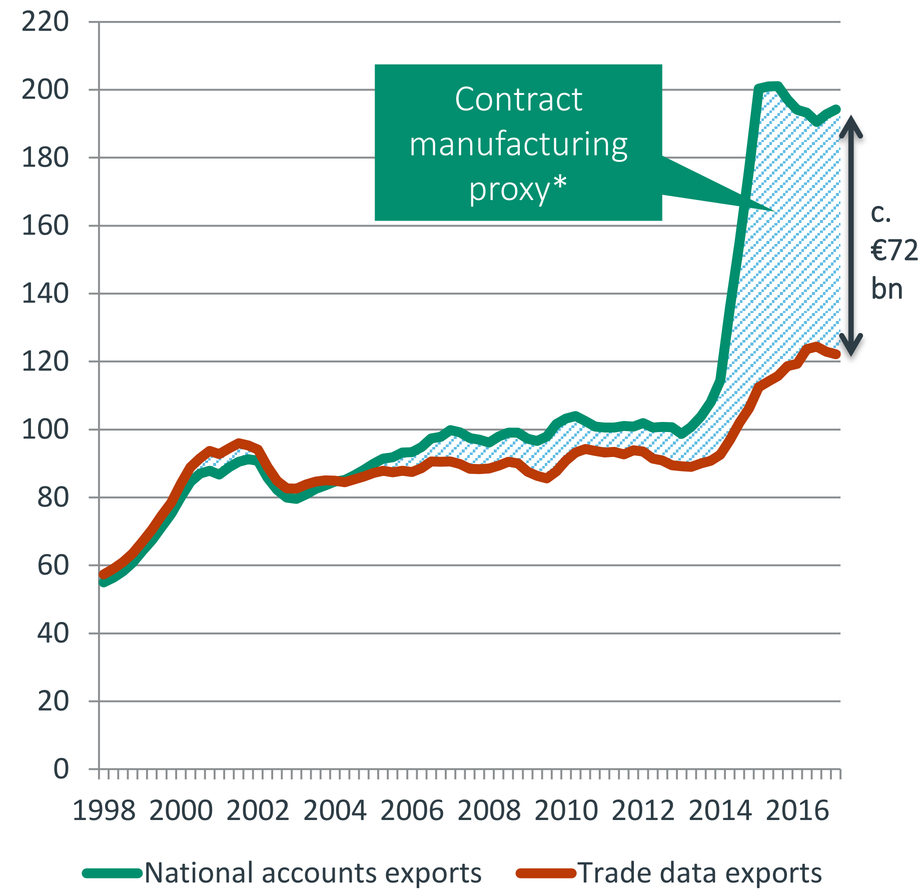
The change in capital stock resulted in large increase in net exports

- 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.
- The transfer of whole entities and assets of this size is not something seen before in Ireland.
- Goods produced by the additional capital were mainly exported. Complicating matters, the goods were produced through “contract manufacturing” (explained in detail overleaf).
- Little or no employment in Ireland results from this contract manufacturing.



Contract manufacturing (CM) overstates the extent of goods export growth in the last three years

- 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.**
- Previously, contract manufacturing did not have a significant net impact on GDP as the company would send royalties back to where the intellectual property (IP) was "owned" – it was a royalty import. Now that the IP is here, Ireland's GDP is artificially inflated.



Source: CSO, NTMA Calculations

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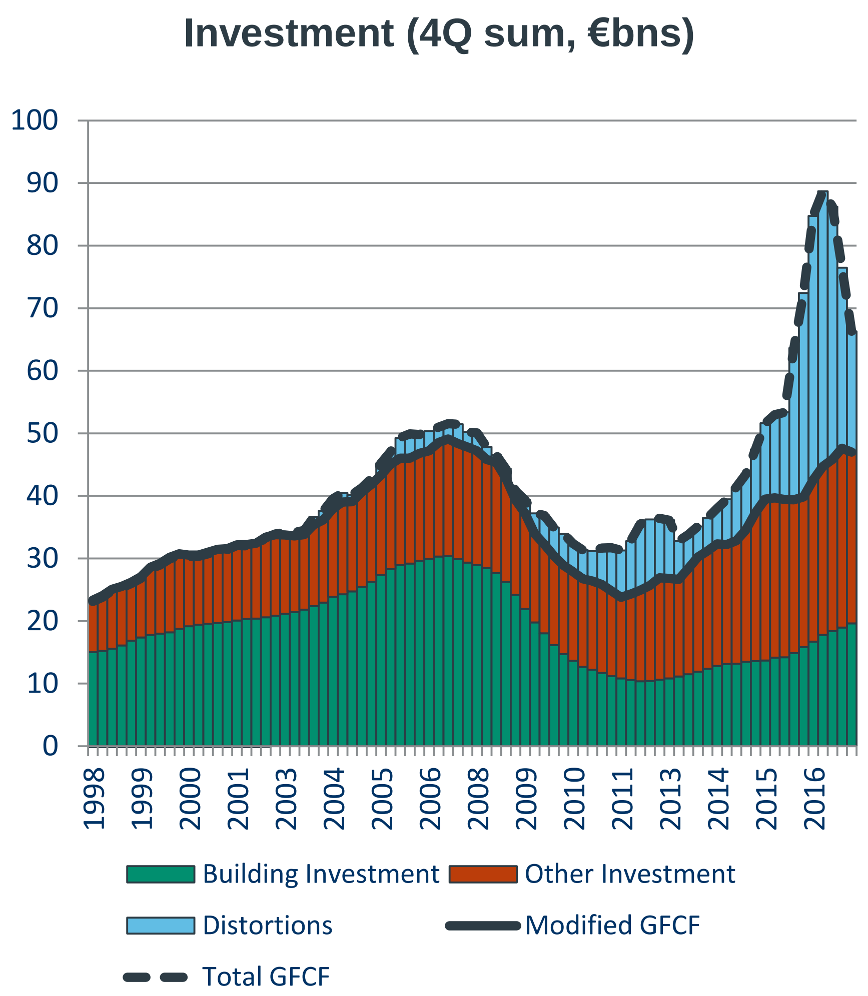
*Contract manufacturing proxy is calculated as the difference between the monthly International trade exports statistics and the National Accounts/BOP measure for goods exports. The monthly data is based on the actual volume of goods flowing through Ireland's various ports/airports whereas the national accounts/BOP makes adjustments for, among other items, contract manufacturing.

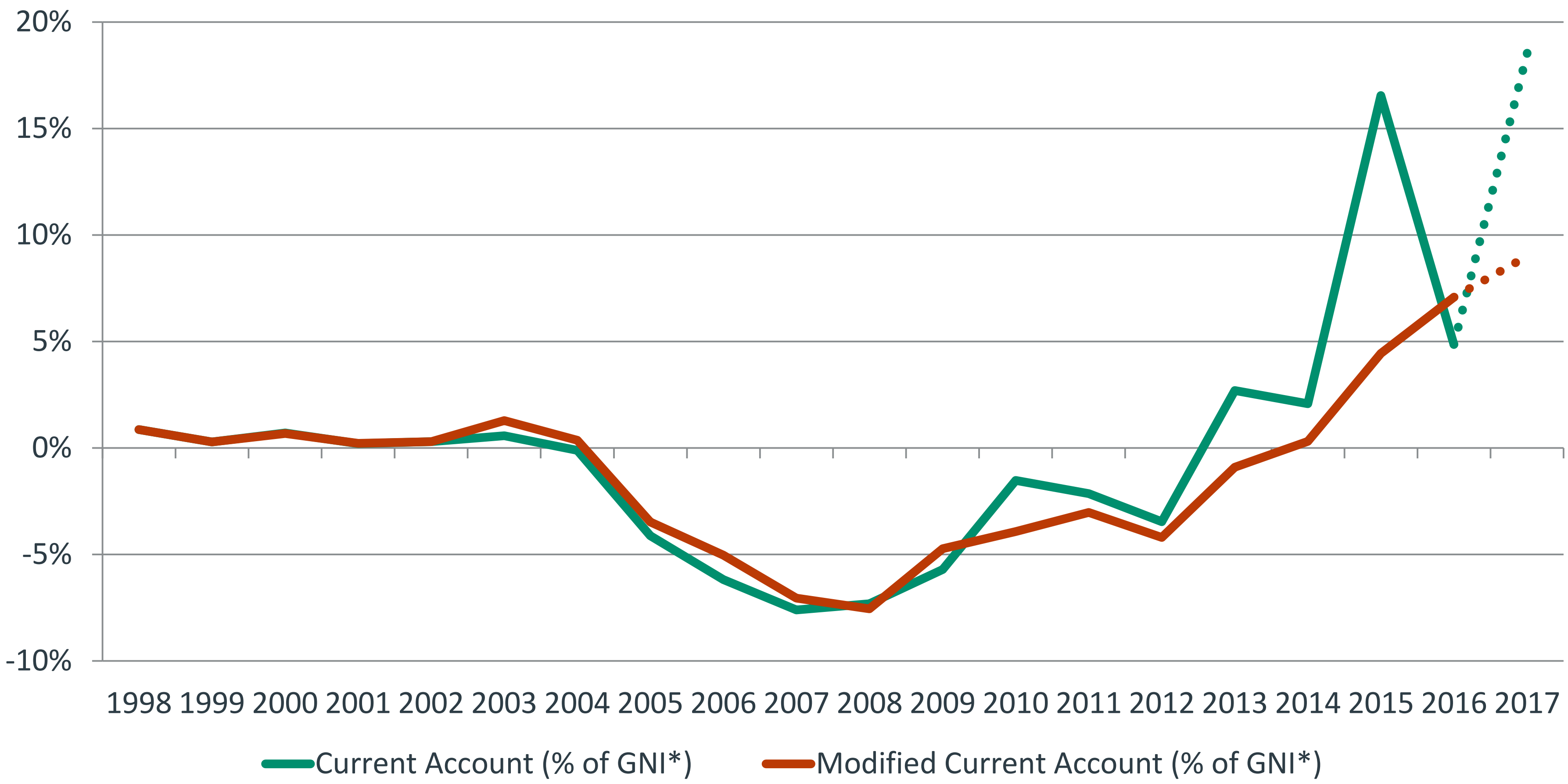
Investment distorted by multinationals importing IP into Ireland

- 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 17.6% in 2017 versus 2016 highlighting pent up demand for housing.



Source: CSO,

The current account is distorted heavily by MNEs actions – CSO have modified CA to be consistent with GNI*



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

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