Ireland: 5%-plus growth for four straight years

Risks have increased such as challenges to multinational sector

January 2018

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Index

Summary

Growth is strong and Ireland is living within its means

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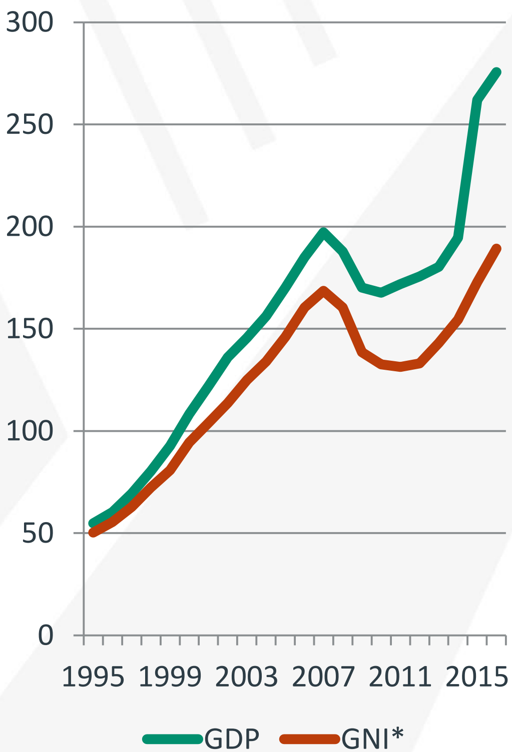
Macro picture is positive: fastest growing economy in the Euro Area for last four years

Cleaner GNI* highlights rapid recovery (€bn)



Appropriate debt analysis* is needed…

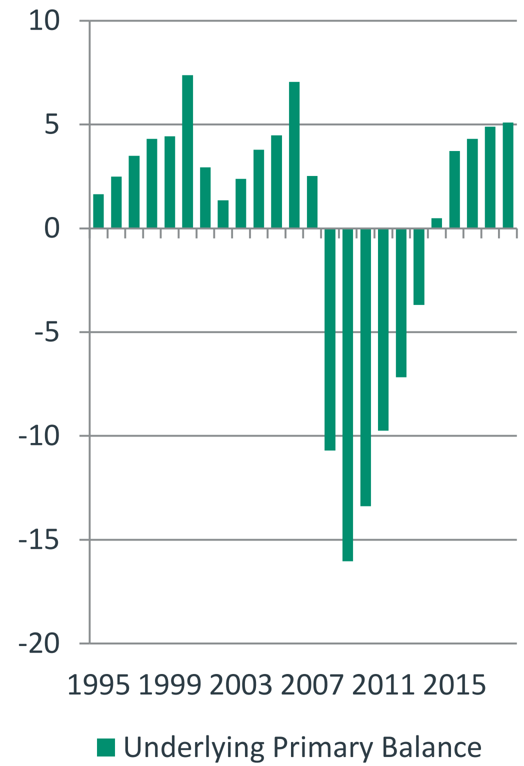
Debt-to-GDP
(70.1%, from 120%)

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 - €4bn 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

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 reality

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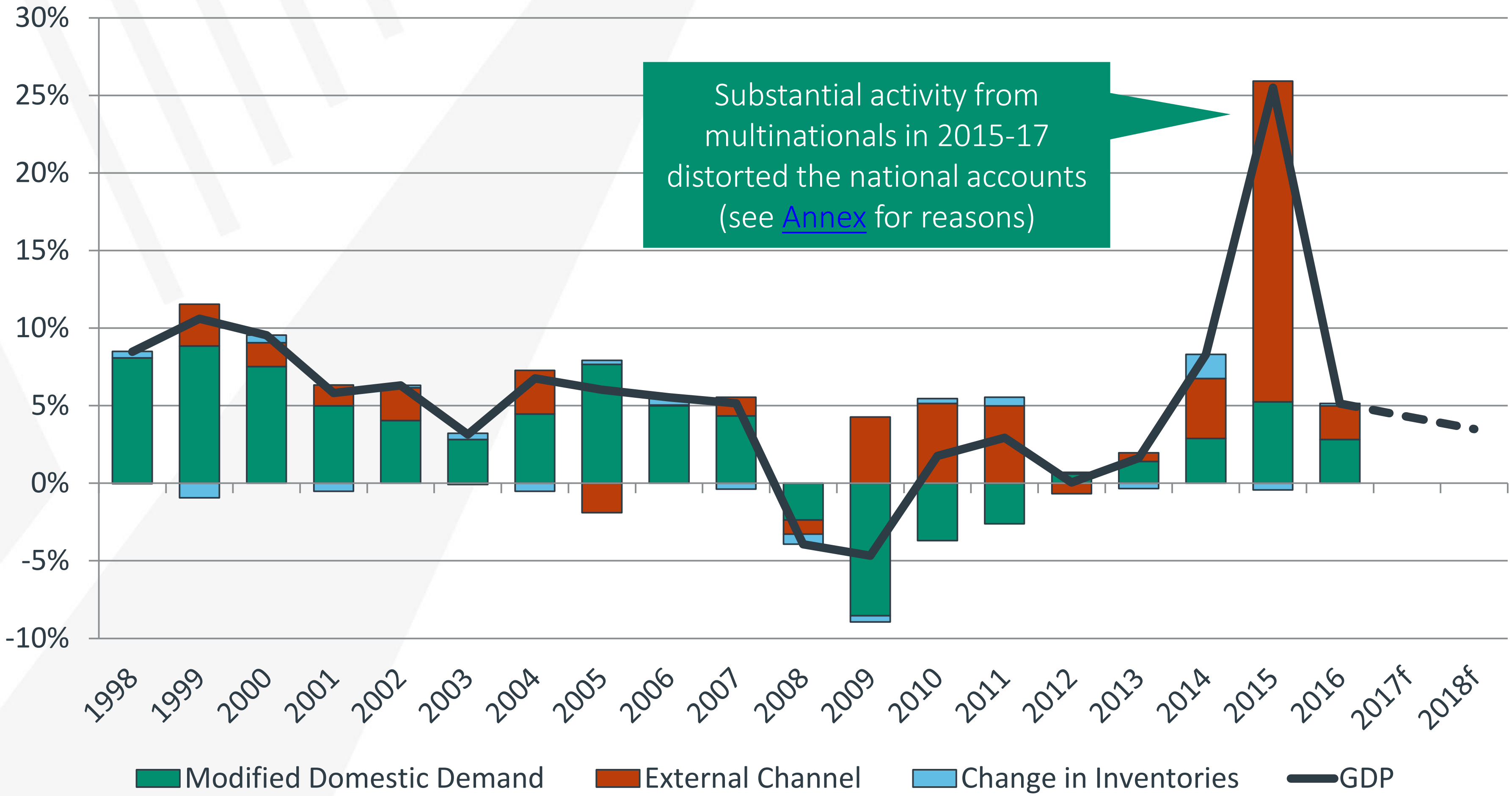
Distortions to GDP/GNP make them sub-optimal indicators of economic performance



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Source: CSO; Department of Finance

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

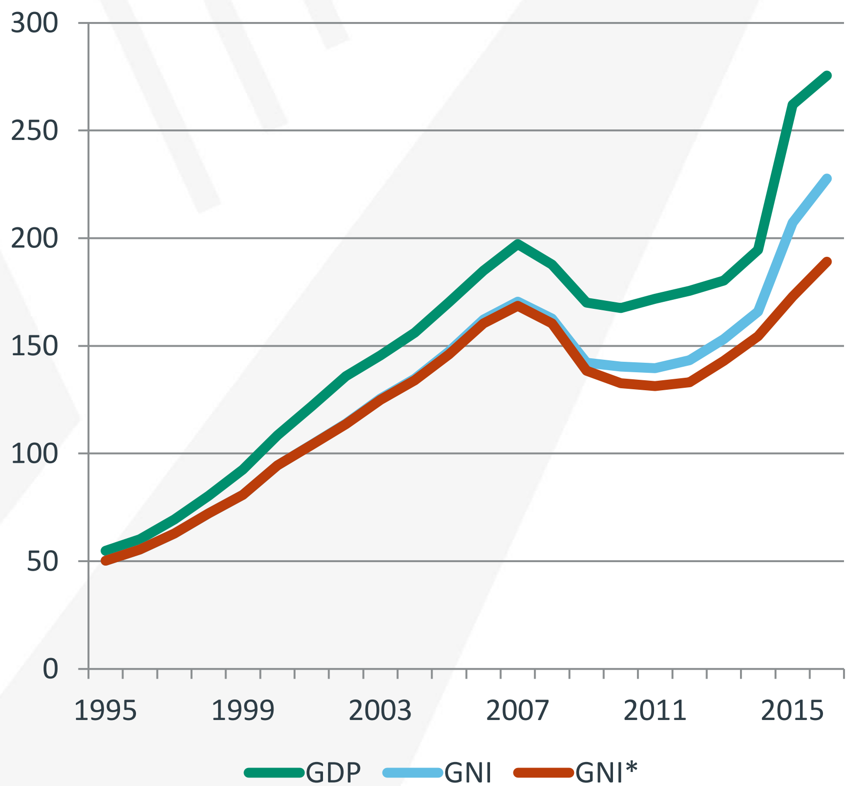
- GDP headline numbers do not reflect the "true" growth of Ireland's income due to MNCs.
- Reasons for 2015-17 MNC distortions:
  - Re-domiciling/inversions of several multinational companies
  - The "onshoring" of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in 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.
- 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%)

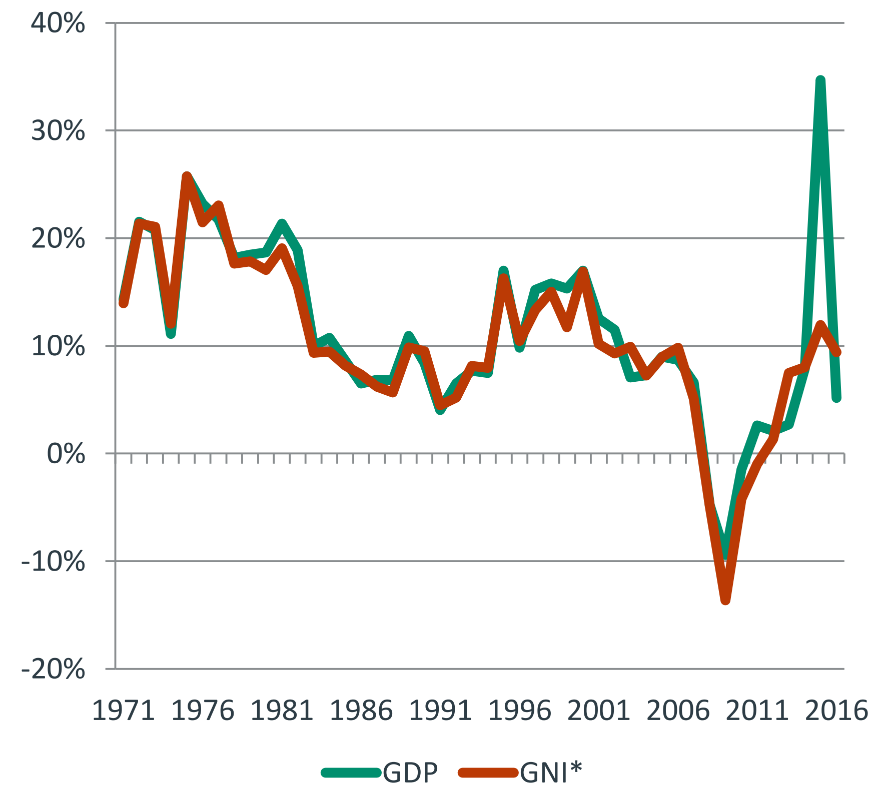
Source: CSO

Irish recovery more realistic when looking at GNI*

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



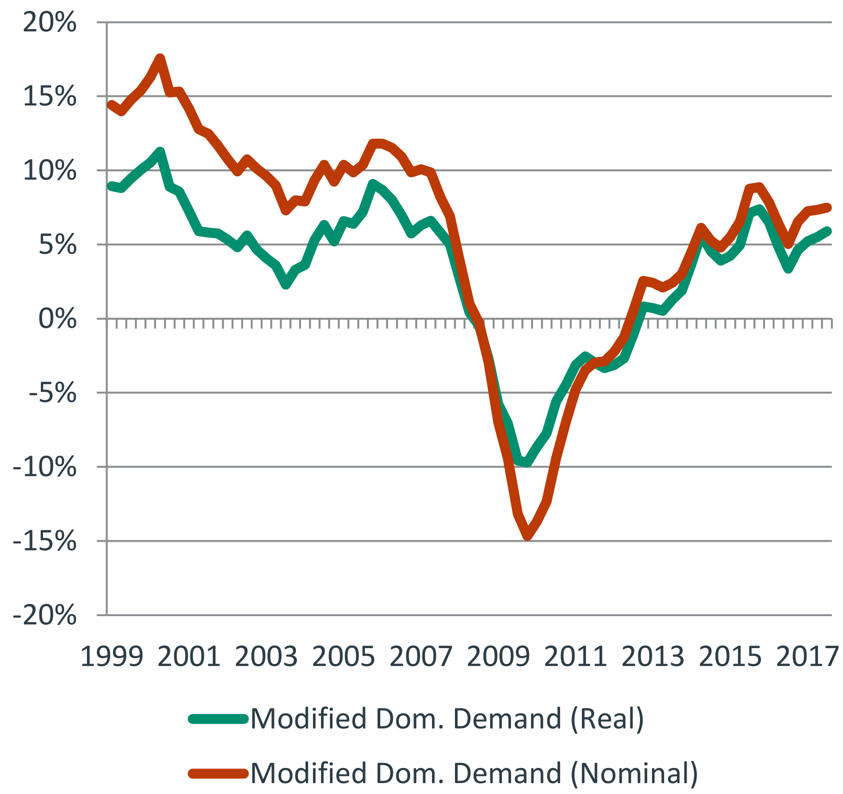
GNI* growth rate averaged 7.6% since 2011 (current prices)



Source: [CSO]
Note: GNI series pre 1995 = GNI given minimal distortions in pre-1995 era.*

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

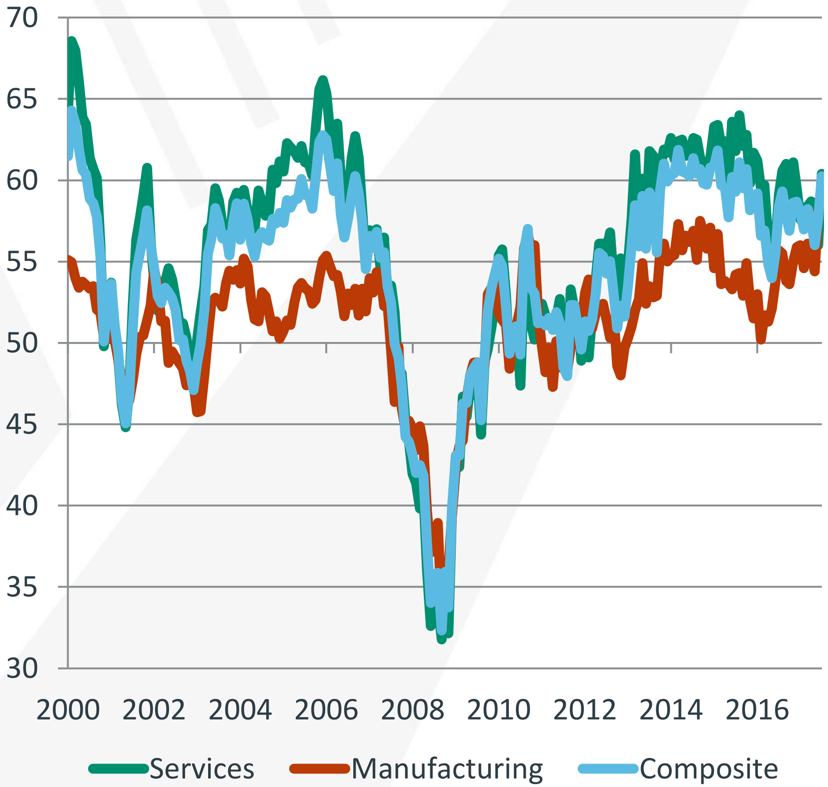
- MFDD also seeks to strip out the impacts of the MNC distortions.
- The measures ignores the net exports channel. It also omits aircraft leasing and IP imports from investment to give a modified measure of domestic demand.
- The measures includes:
  - private consumption
  - government consumption
  - building investment
  - elements of machinery & equipment investment
  - elements of intangible asset investment
- This measure pegs nominal growth closer to 7.5% at Q3 2017 (4 quarter y-o-y). In real terms, growth y-o-y in Q3 was 5.9%.



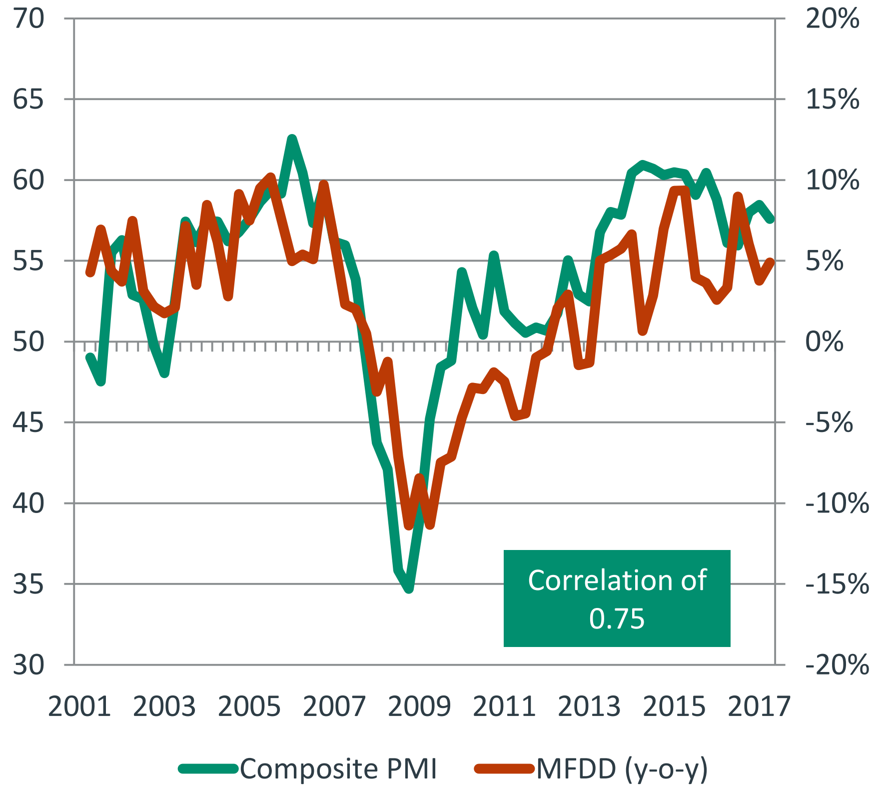
Source: CSO

PMI indicators show Ireland's broad based recovery

Ireland's PMIs are all expanding

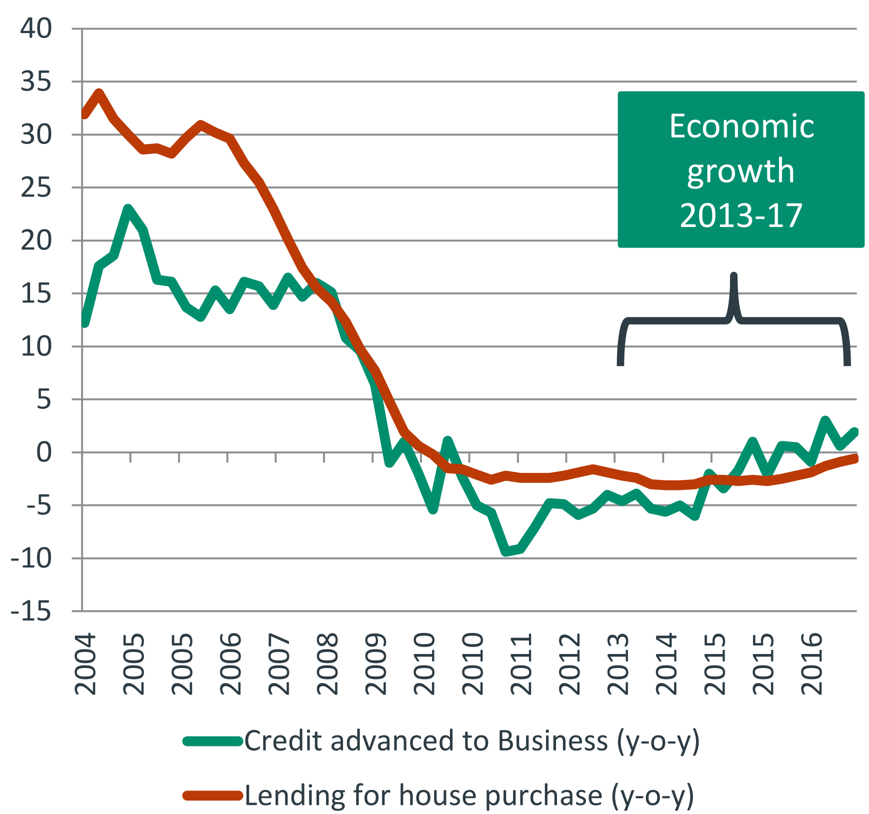


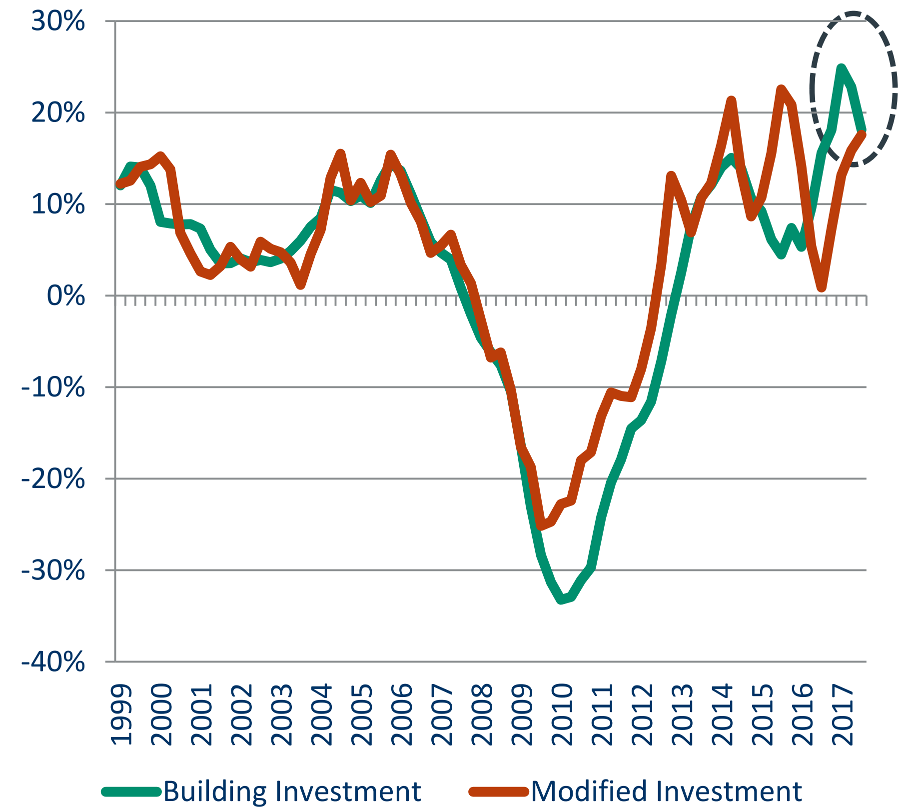
Composite PMI has acted as a 2Q-ahead leading indicator for Domestic Demand



Source: Markit; Bloomberg; Investec ; NTMA workings

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

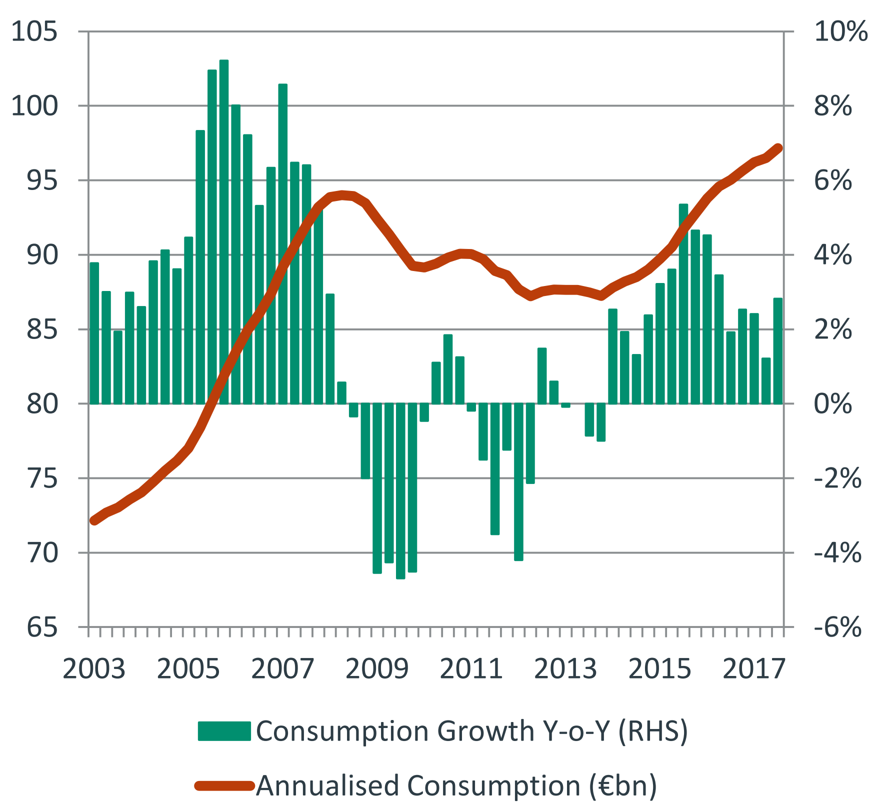




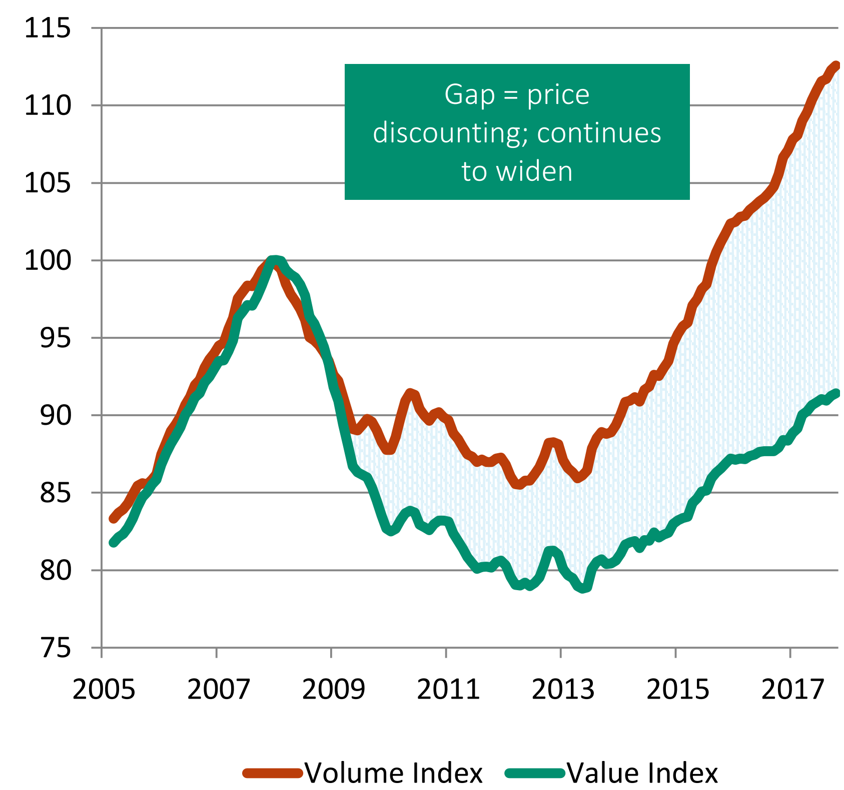
Source: CBI; CSO
Note Modified investment excludes impact of imports of intangible and aircraft leasing assets

Consumption - unaffected by MNC distortions - is a large contributor to economic growth

Private consumption grew at 2.8% y-o-y in Q3 2017



"Core"* retail sales up 4.0% y-o-y in value terms Oct 2017 (peak=100)



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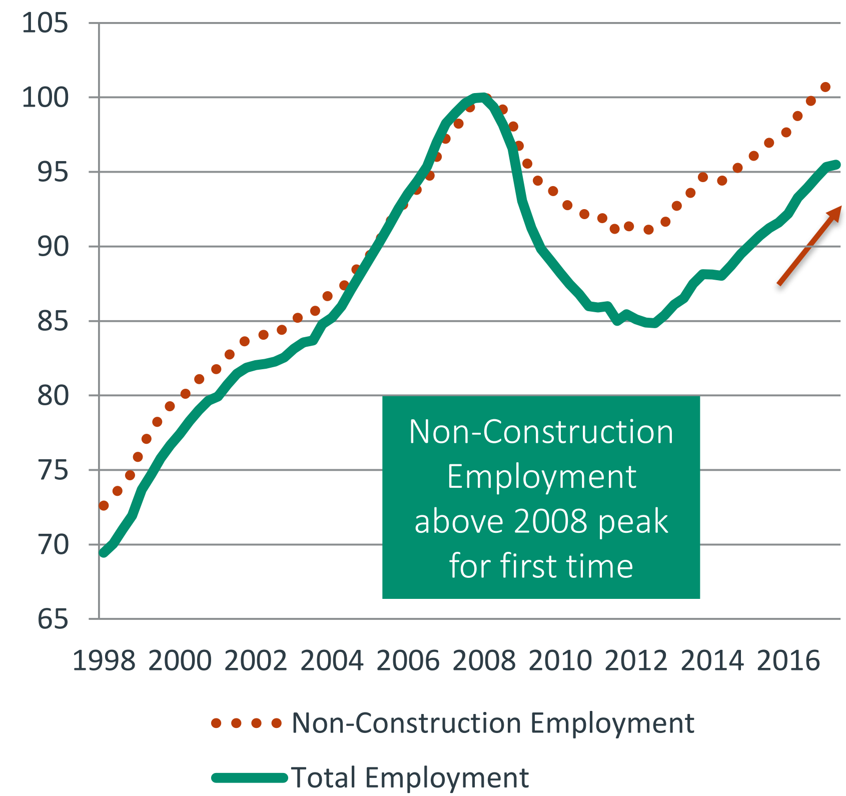
*Source: CSO; CSO (retail sales) * excludes motor sales; 3m average*

Unemployment continues to fall; Ireland employs over two million people again

Unemployment rate: 6.1% in November 2017

Employment up 12.6% from cyclical low (2008 peak = 100)



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Source: CSO

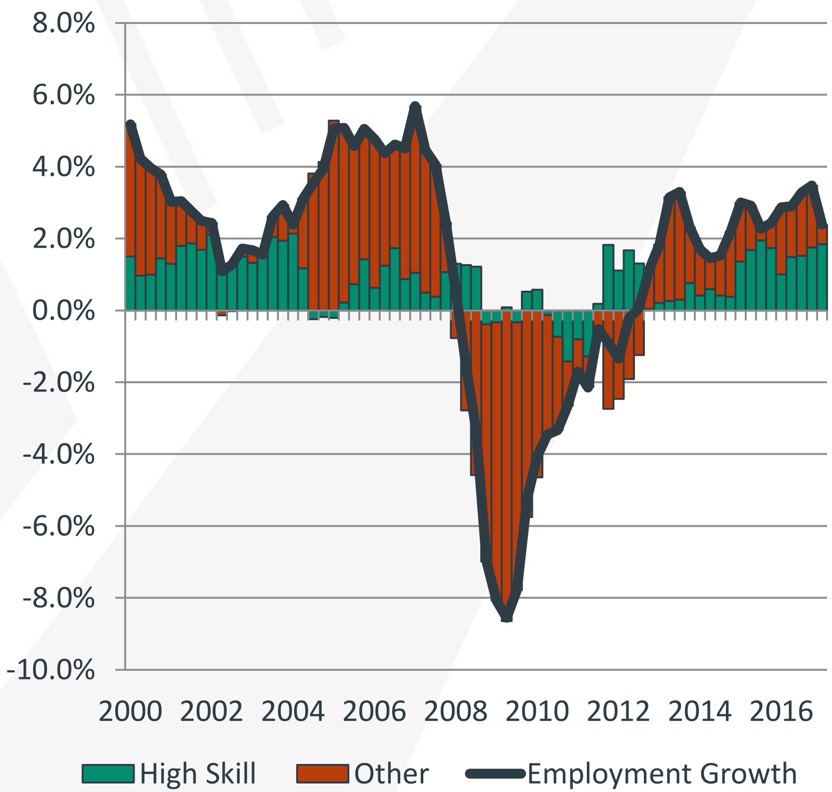
Unemployment falling across Europe; falling faster here

	Q4 2013 %	Q4 2014 %	Q4 2015 %	Q4 2016 %	Q3 2017 %
Germany	5.1	4.9	4.5	4.0	**3.7**
Netherlands	7.6	7.1	6.7	5.5	**4.7**
<u>Ireland</u>	<u>12.8</u>	<u>10.9</u>	<u>9.5</u>	<u>7.5</u>	<u>6.4</u>
Sweden	8.0	7.8	7.1	6.9	**6.8**
Belgium	8.5	8.6	8.7	7.2	**7.2**
EU 28	10.7	9.9	9.0	8.3	**7.5**
Euro area	11.9	11.4	10.5	9.7	**9**
Portugal	15.4	13.5	12.3	10.4	**8.8**
France	10.1	10.4	10.2	10.0	**9.7**
Italy	12.3	12.7	11.6	11.8	**11.2**
Spain	25.8	23.8	21.0	18.7	**16.8**
Greece	27.6	25.9	24.3	23.3	

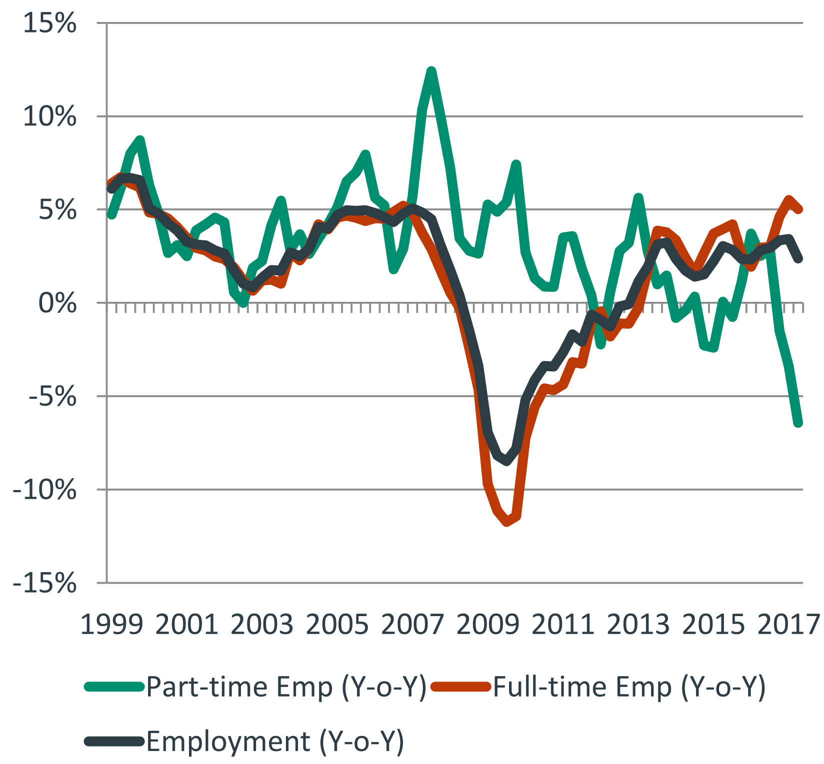
Source: Eurostat, 15-74 age basis

Employment growth driven by high skill job creation; Full-time employment growing at 5% in Q2 2017

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



Substantial shift from part-time employment to full-time employment in recent quarters



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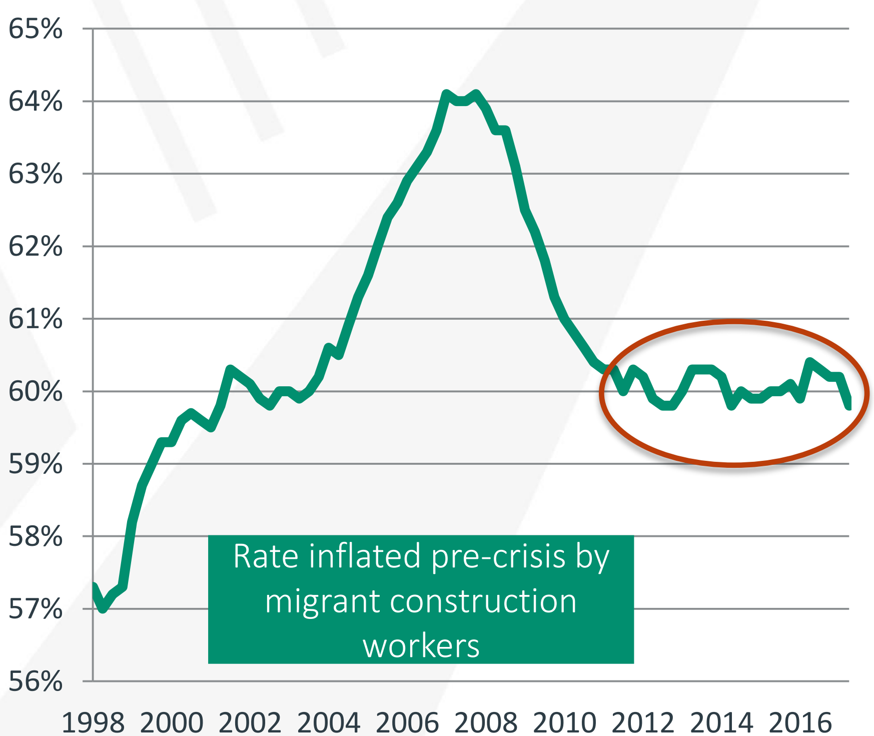
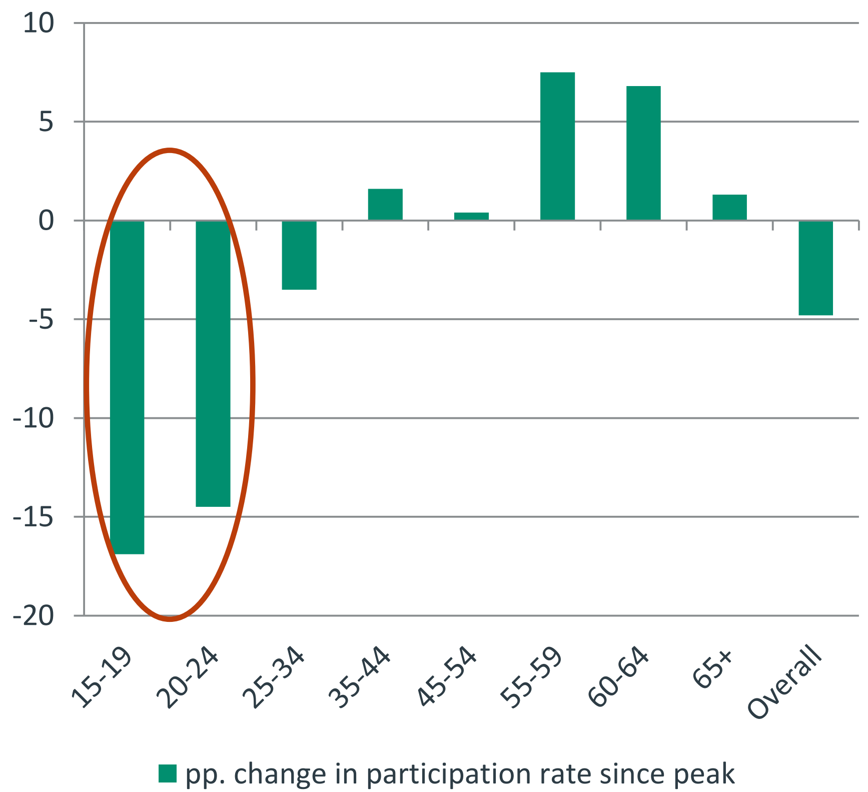
Source: Eurostat; CSO
High Skill jobs include the ISCO08 defined groupings Managers, Professionals, Technicians and associate professionals

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

Participation rate hovering around 60%



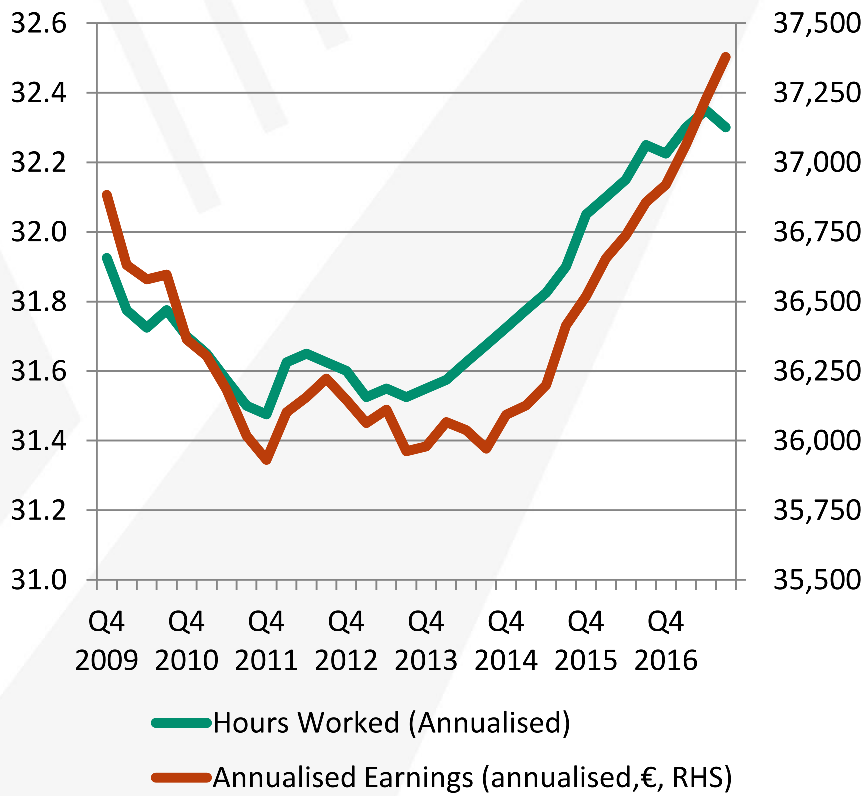
Part. rate down as construction jobs lost and younger people stay in education longer



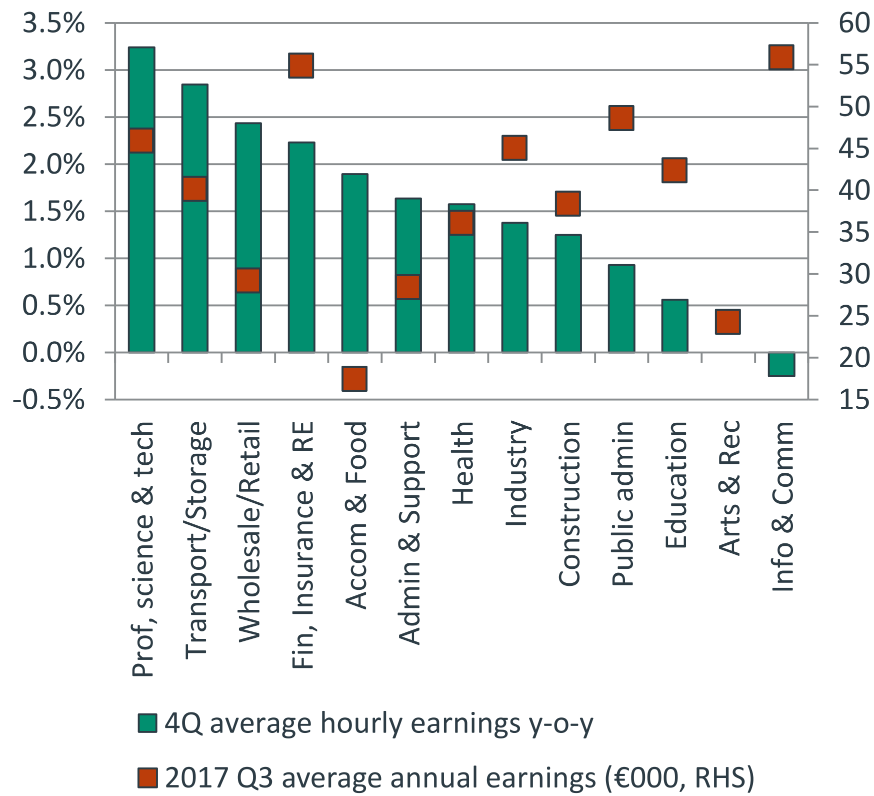
Source: CSO

Wages rising slowly, pointing to slack in the market

Wages and hours worked beginning to recover, although pockets of excess capacity remain



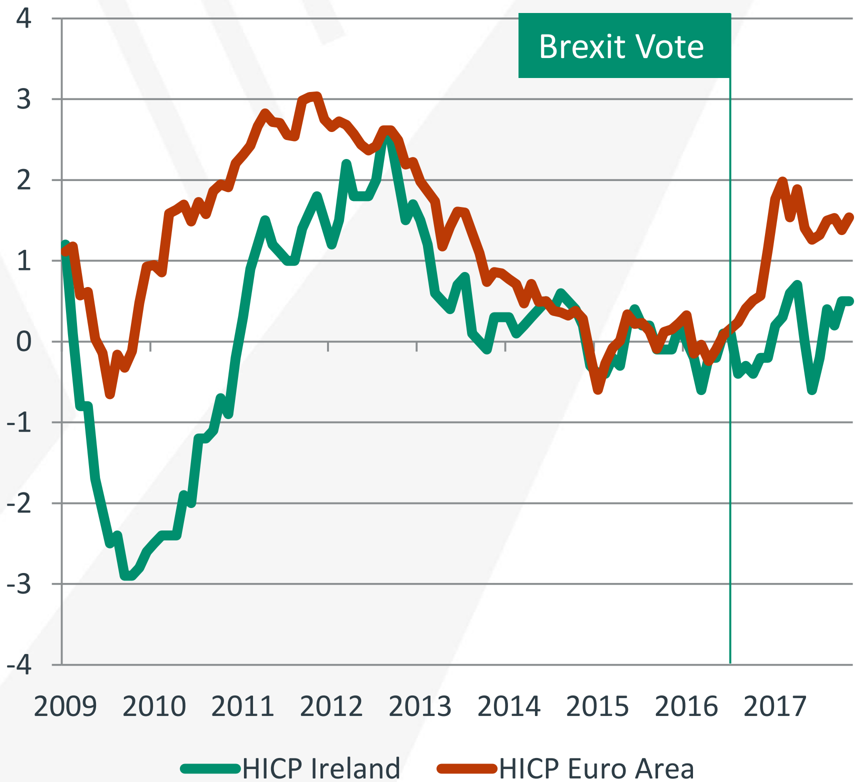
Low wage growth across most sectors but still disparity



Source: CSO

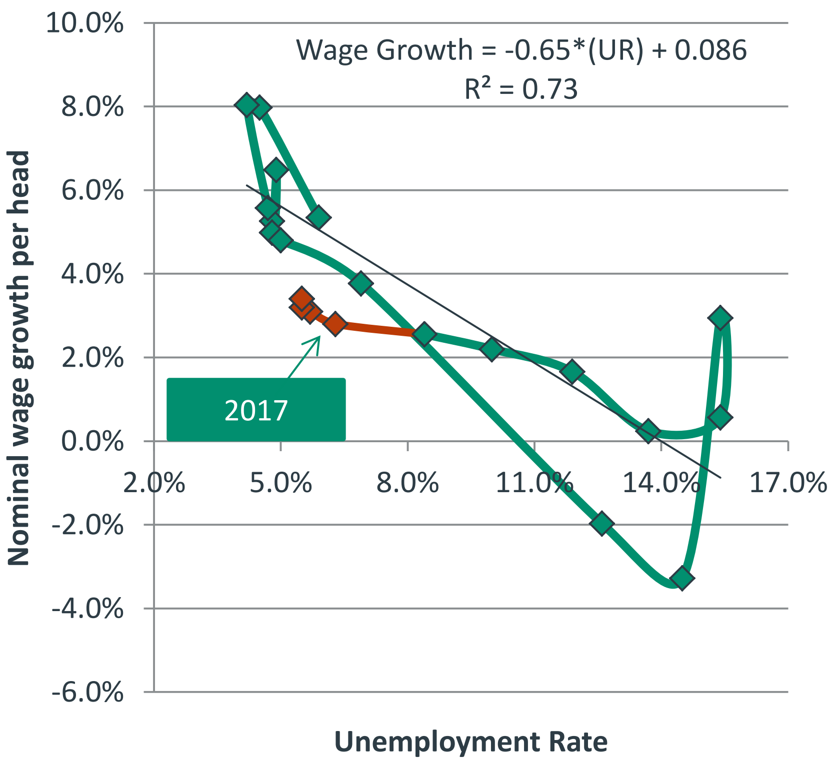
Despite some wage growth, inflation is low; Ireland's *Phillips Curve* may be "kinked"

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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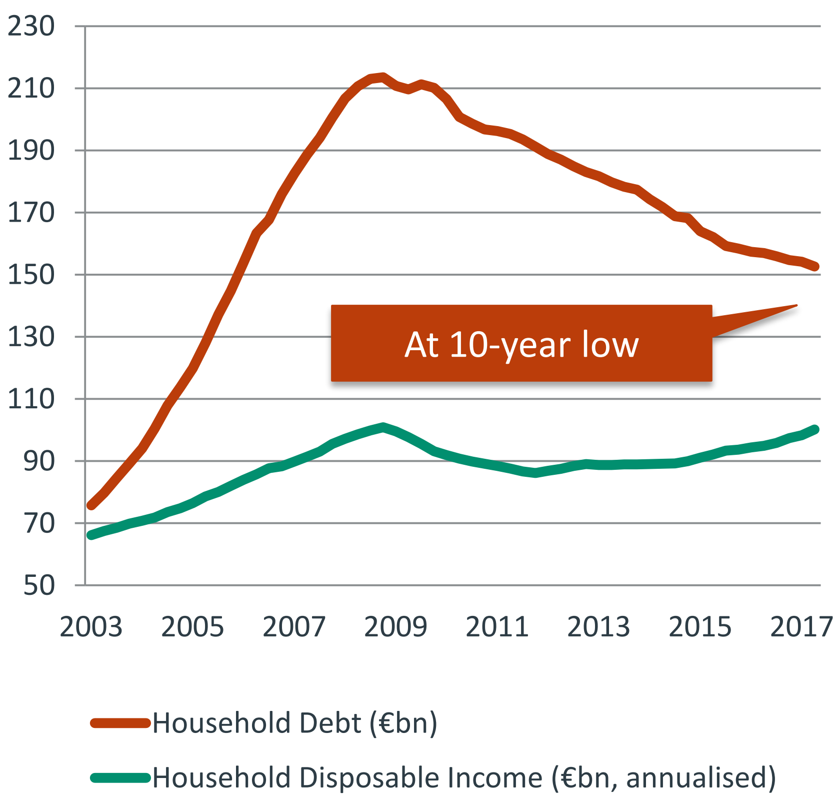
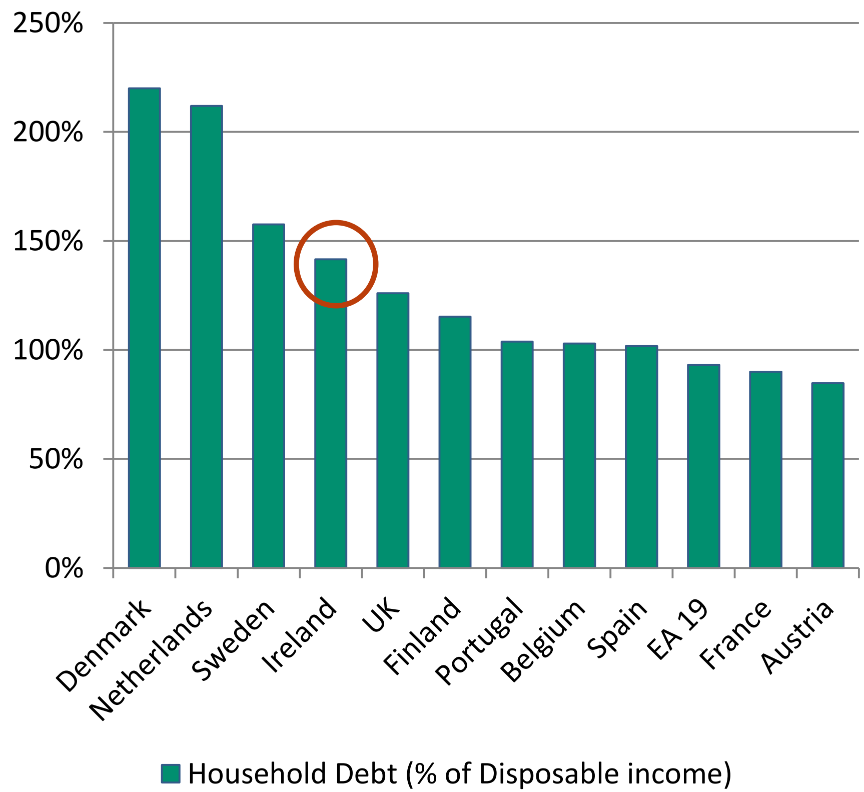
Private debt levels are high but improving rapidly

Household debt down €60bn from peak



Source: CBI

Debt to after-tax income* improving (142%) but among highest in Europe

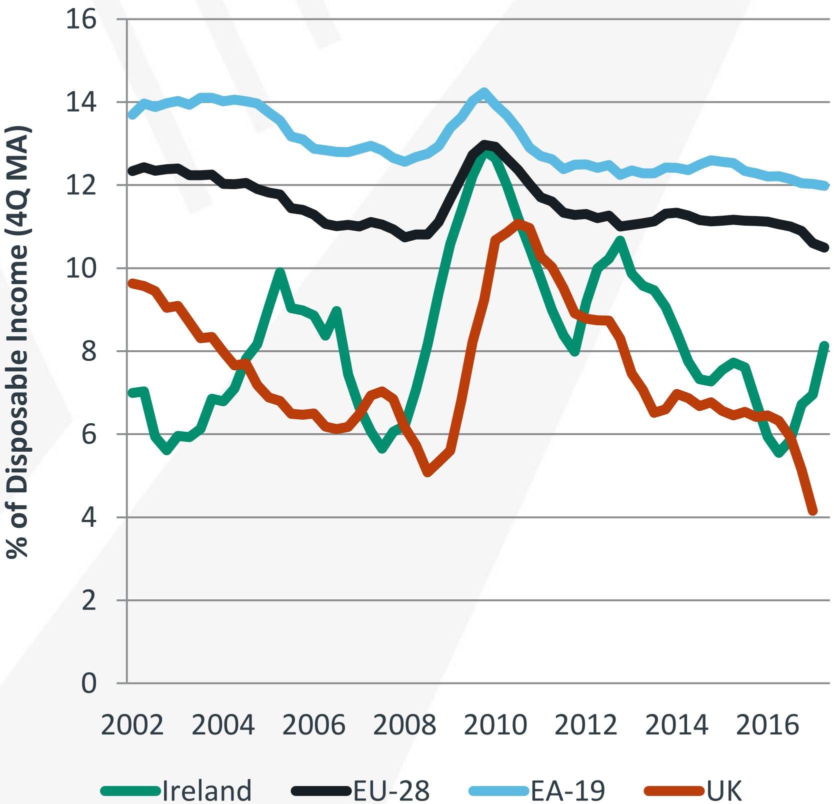


Source: Eurostat (IE Q2 2017, others Q1 2017)

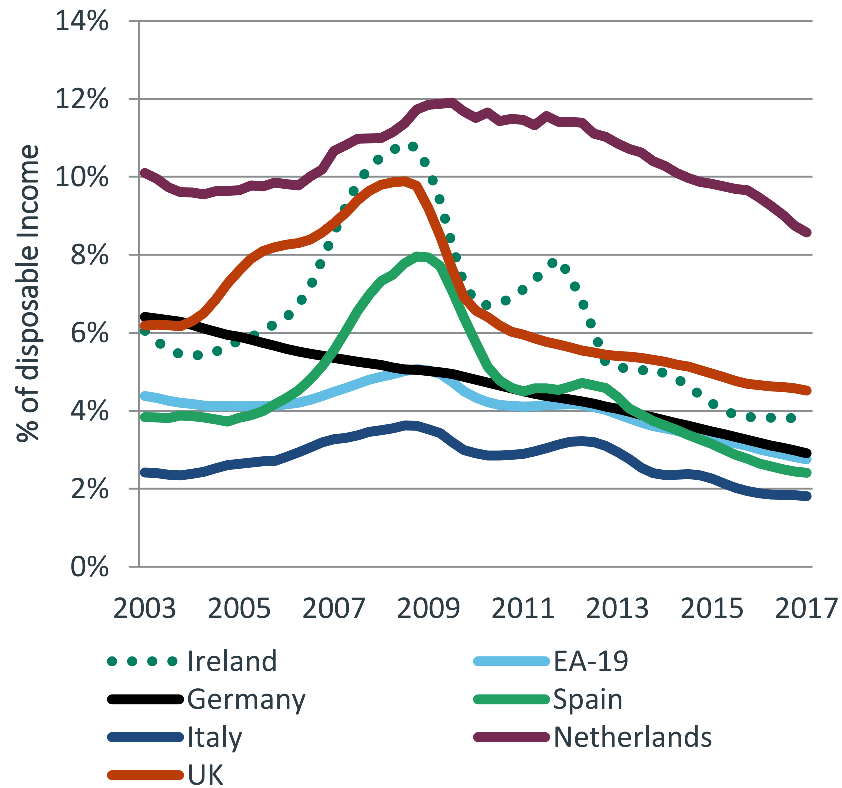
*Measure excludes "other liabilities" from household debt.

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%



Source: Eurostat, 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

Fiscal accounts are robust;
GDP revisions mean we
look beyond the habitual debt ratios

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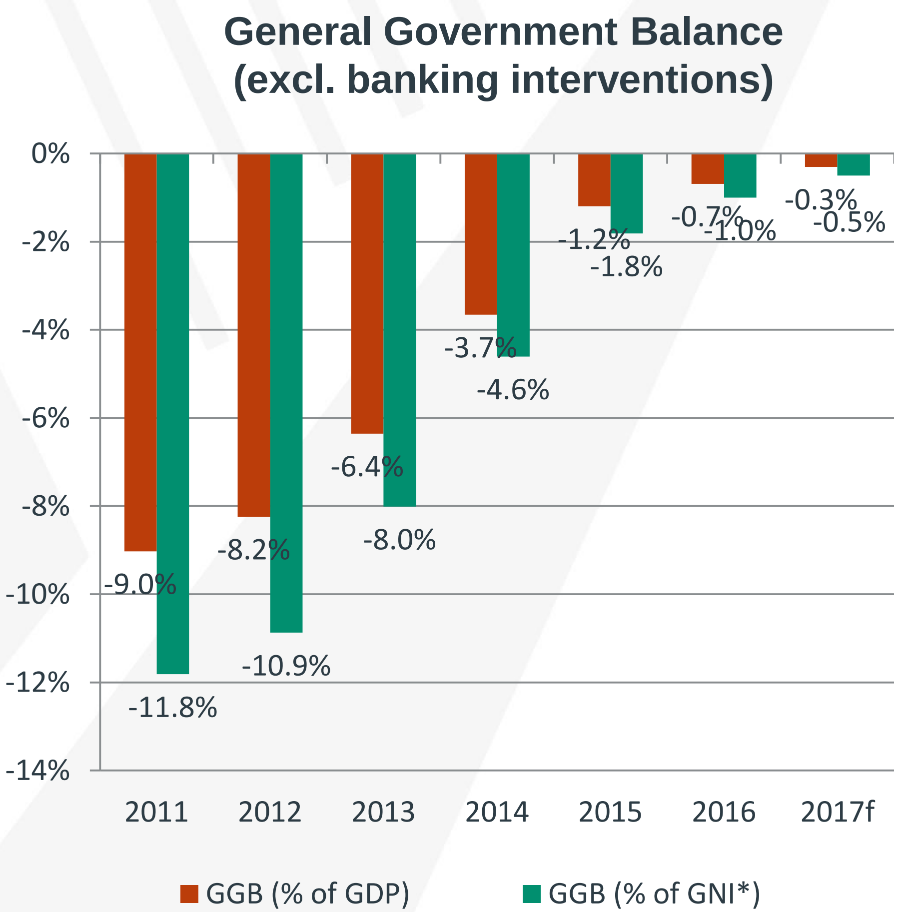
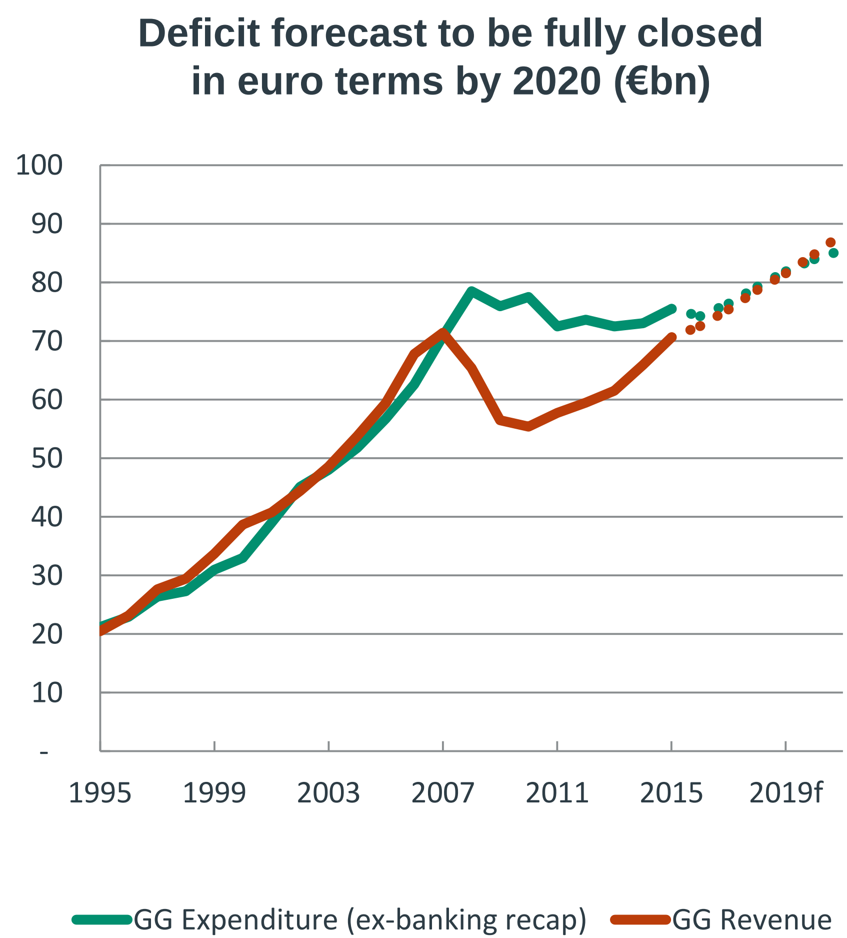
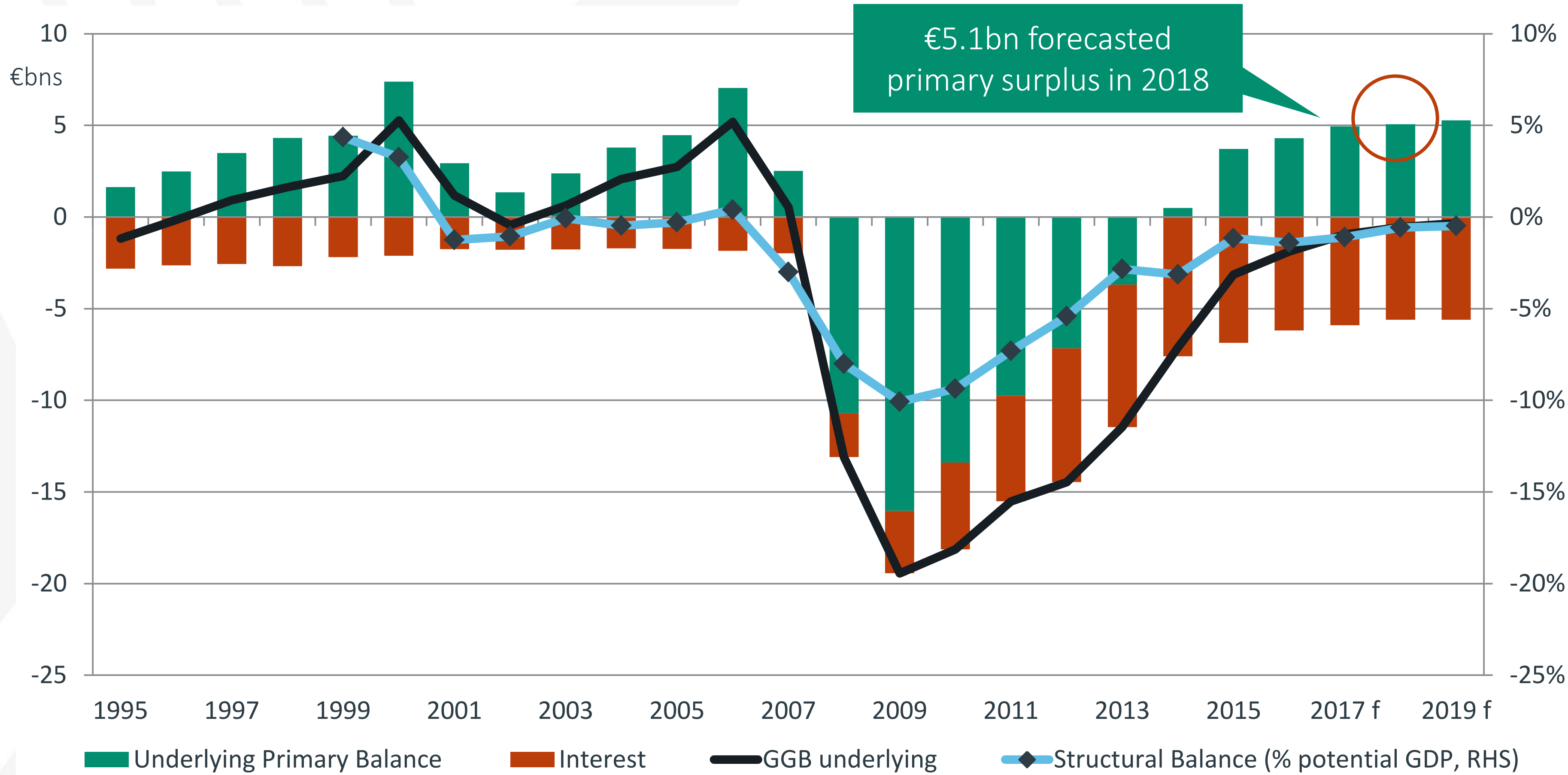
Irrespective of GDP moves, Ireland has had six straight years of fiscal outperformance





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

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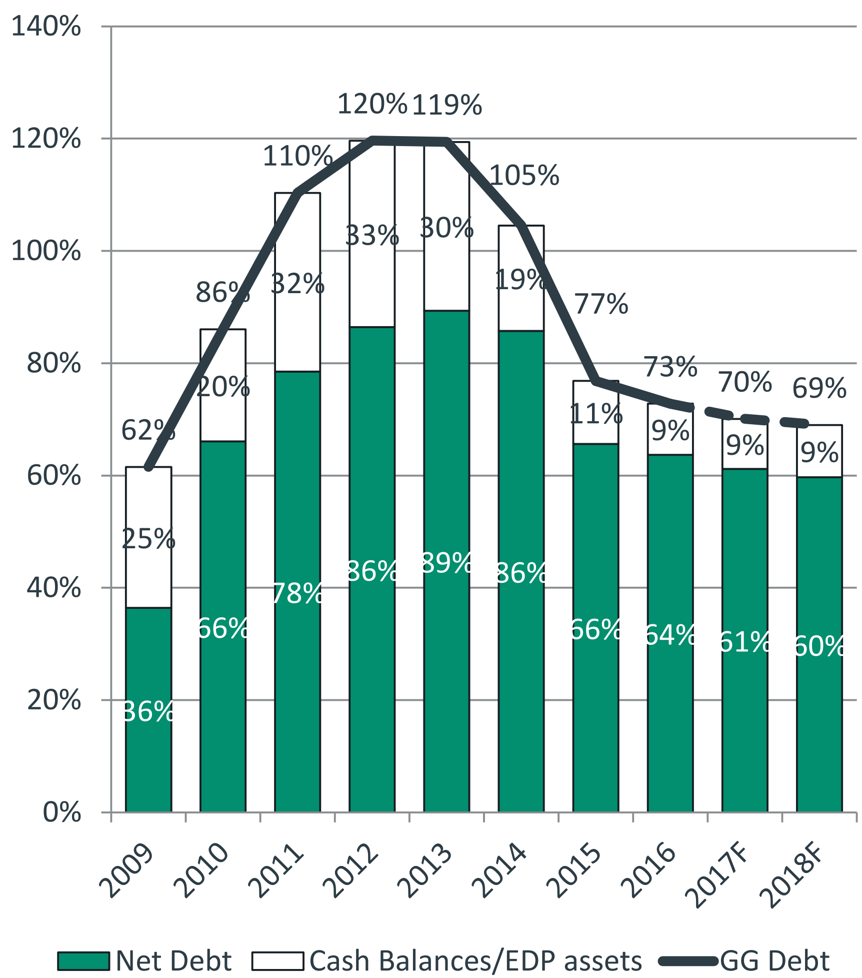
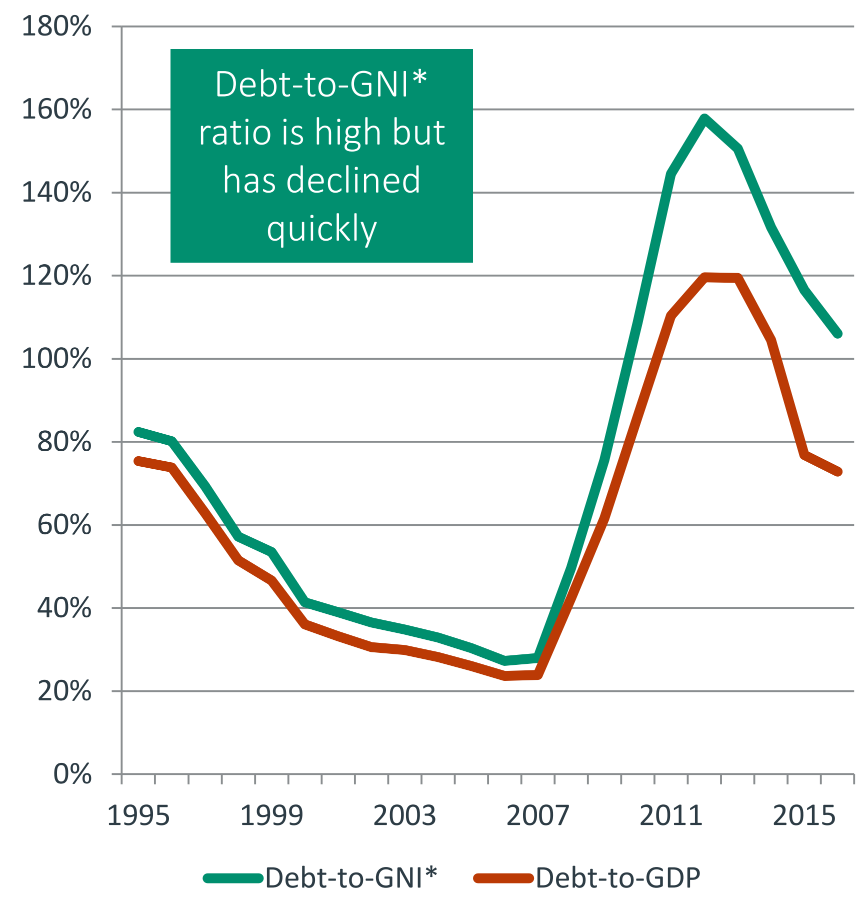
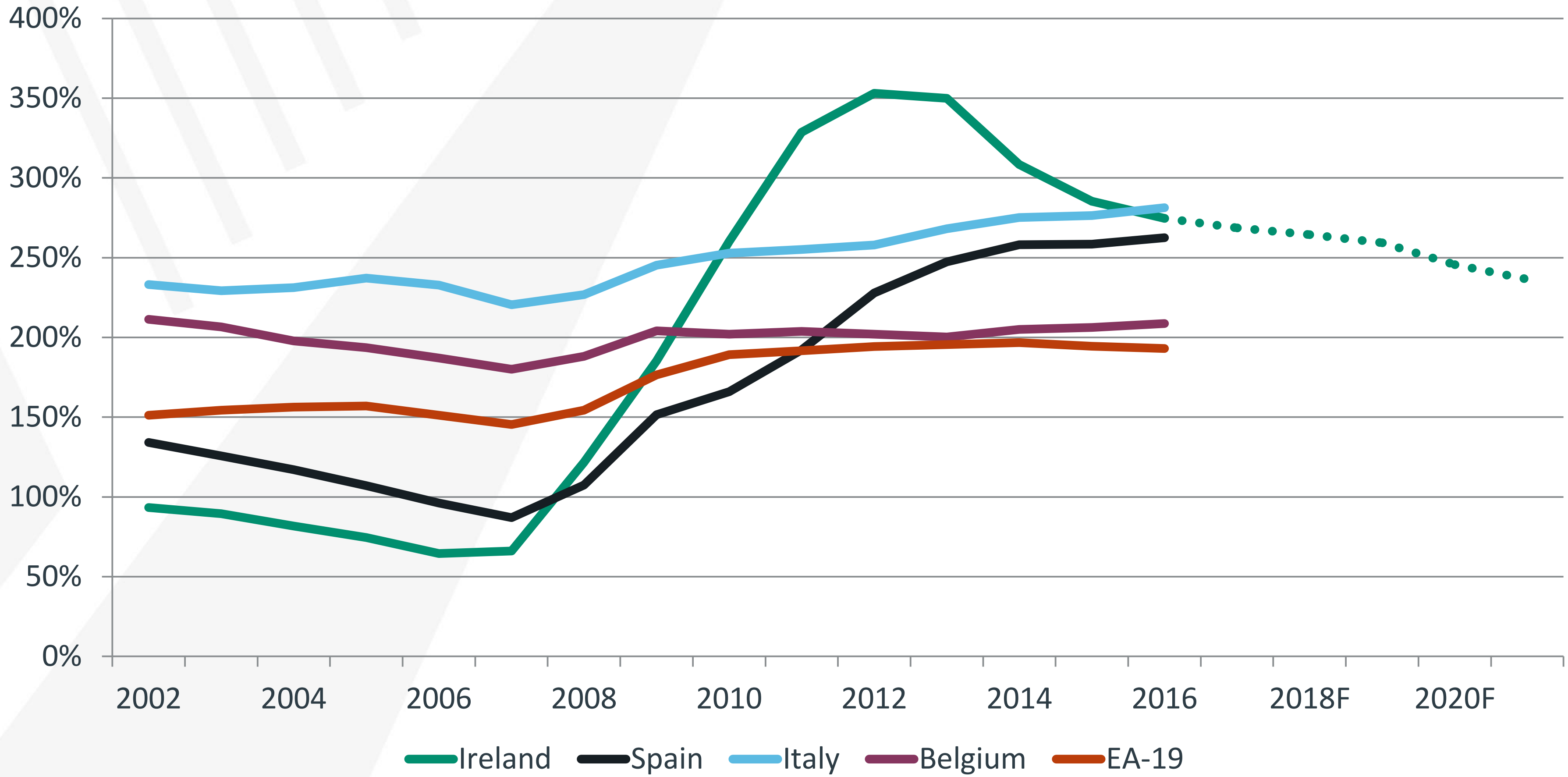
Gross Government debt c.70% of GDP in 2017; GG debt fell close to 100% of GNI*; reality somewhere in between





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



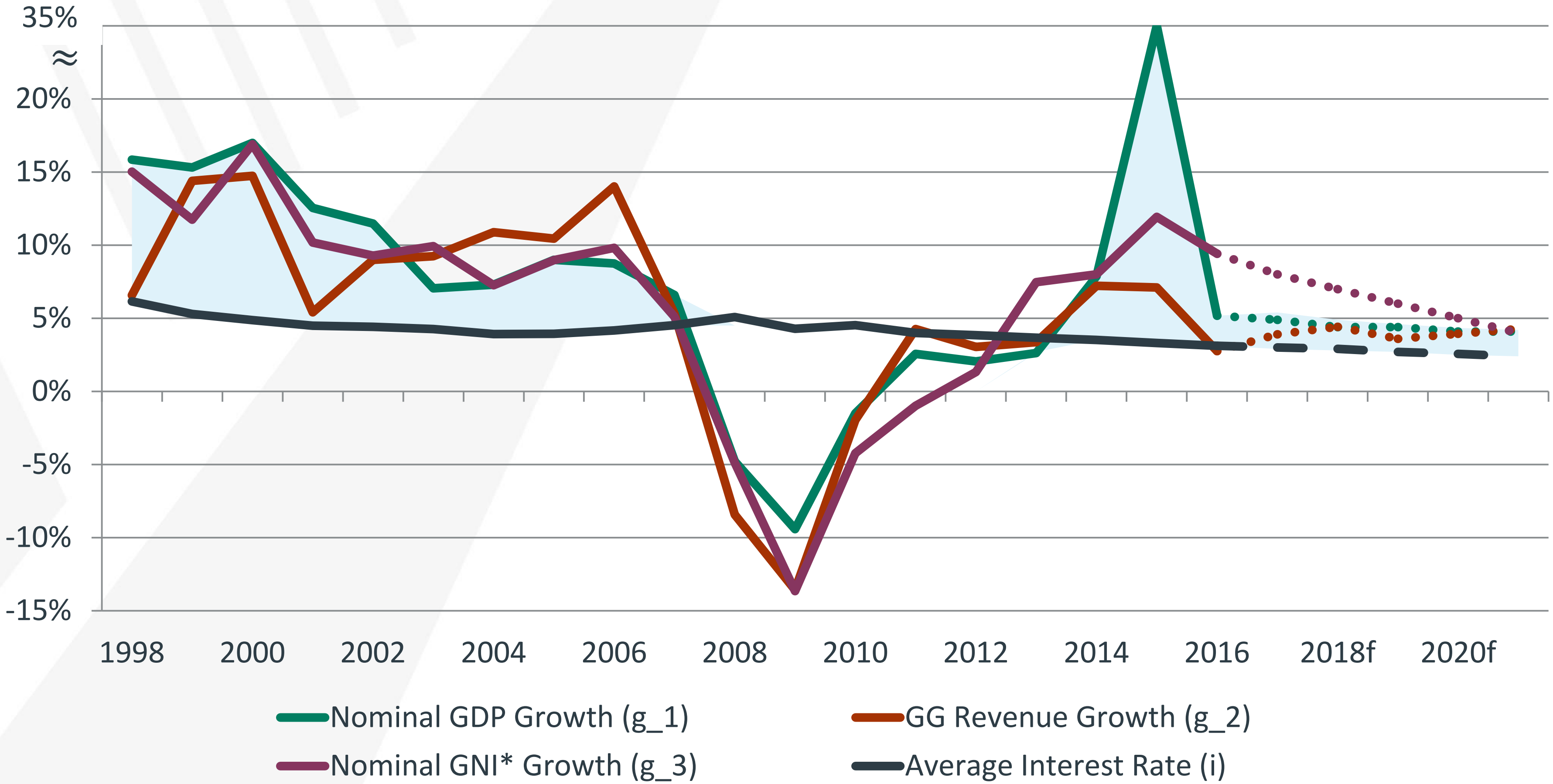
Source: CSO; Department of Finance

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% (70%)**	***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%

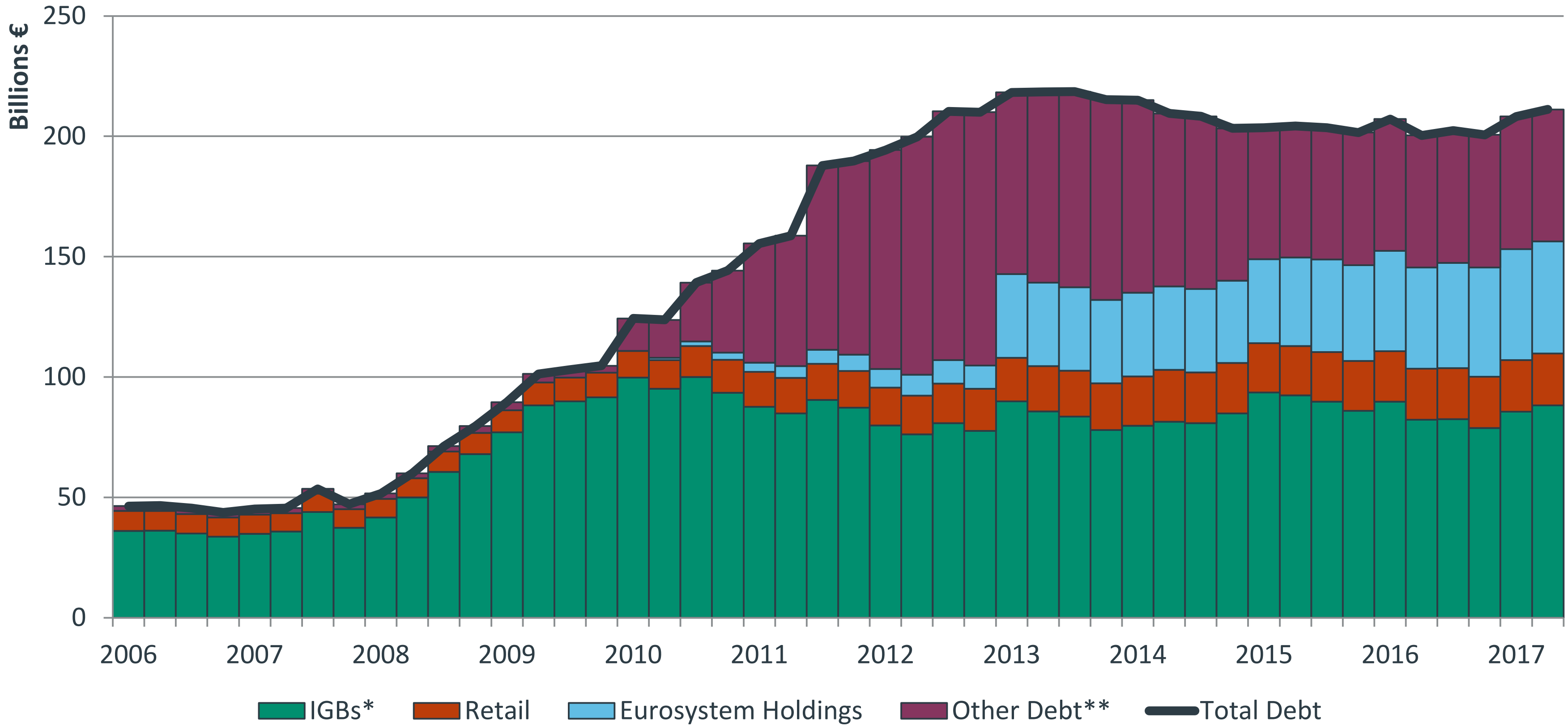
Source: Eurostat,, Department of Finance, NTMA calculations (figure in brackets are 2017 DOF forecasts)
** Closer to 6.5% of GG Revenue if you exclude the interest paid to CBI. Other countries would also see their interest % of GG Revenue fall under this treatment but Ireland's would fall by more given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

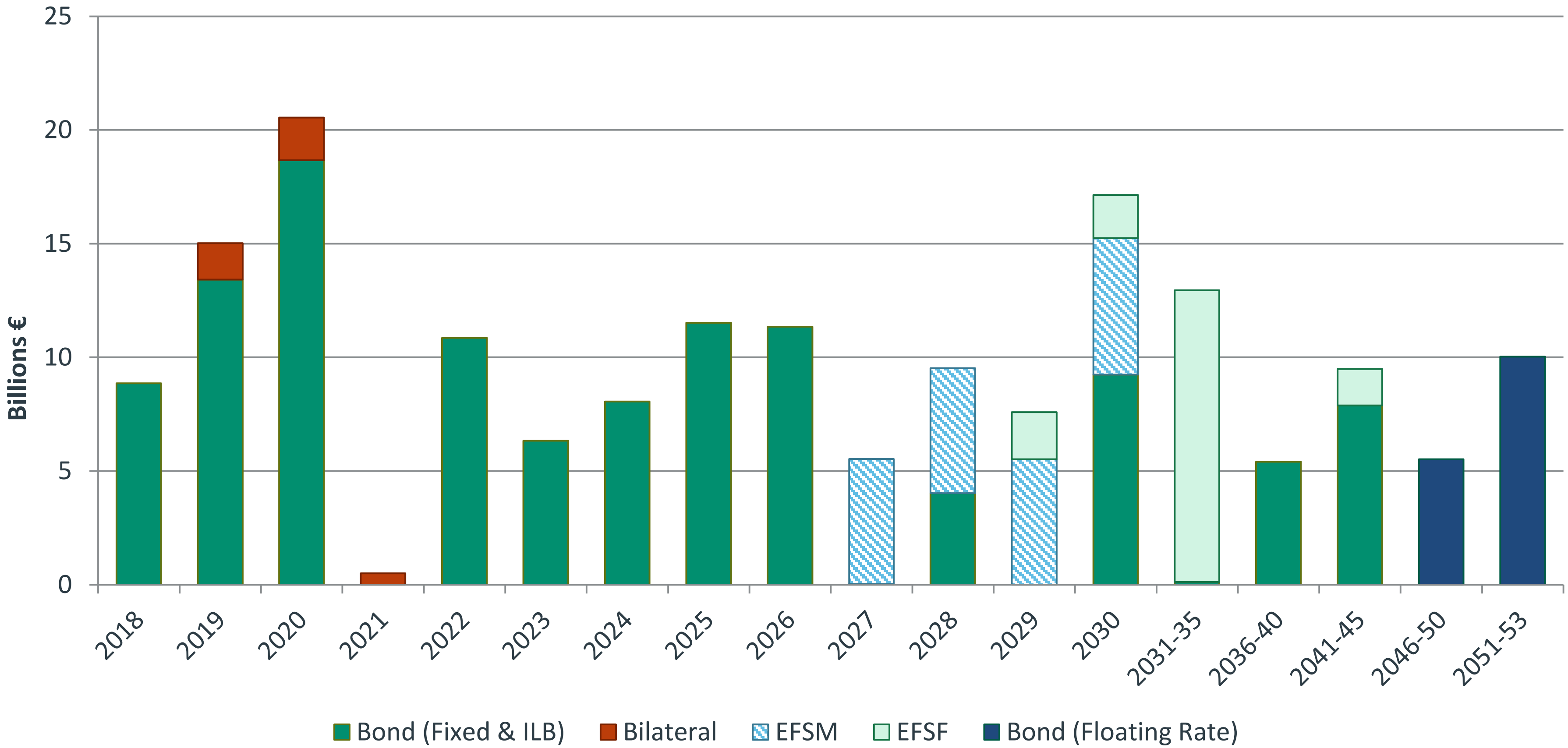


Source: CSO, ECB, NTMA Analysis
**excludes those held by Eurosystem. Euro system holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA holdings which are likely to further increase the Eurosystem’s holdings.*
*** Includes IMF, EFSF, EFSM, Bilateral as well as IBRC-related liabilities.*
Retail includes State Savings and other currency and deposits. The CSO series has been altered to exclude the impact of IBRC on the data.

Ireland repays IMF and Bilateral facilities early; €150m in expected interest savings plus extra QE capacity

- In December 2017, Ireland repaid loans from the IMF (approx. €4.5bn), together with bilateral facilities agreed with Sweden (€0.6bn) and Denmark (€0.4bn), a total of circa €5.5bn.
- The IMF has now been fully repaid by the Irish State.
- The NTMA estimates that <u>interest savings</u> for the Exchequer from the early repayment of c. €5.5bn could be of the order of <u>€150m over the remaining lifetime of the loans</u>.
- <u>Any replacement of programme loans with marketable debt increases the ECB's purchase capacity for Irish government bonds</u>.
- In addition there are secondary market liquidity and operational benefits.

Maturity profile – IMF repayment and FRN repurchases are simplifying the profile



Source: NTMA

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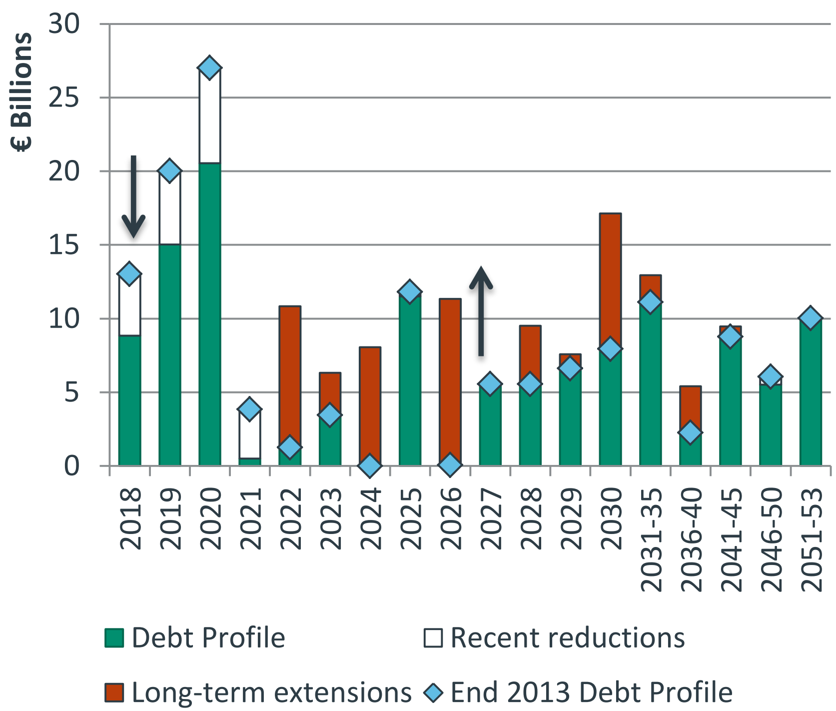
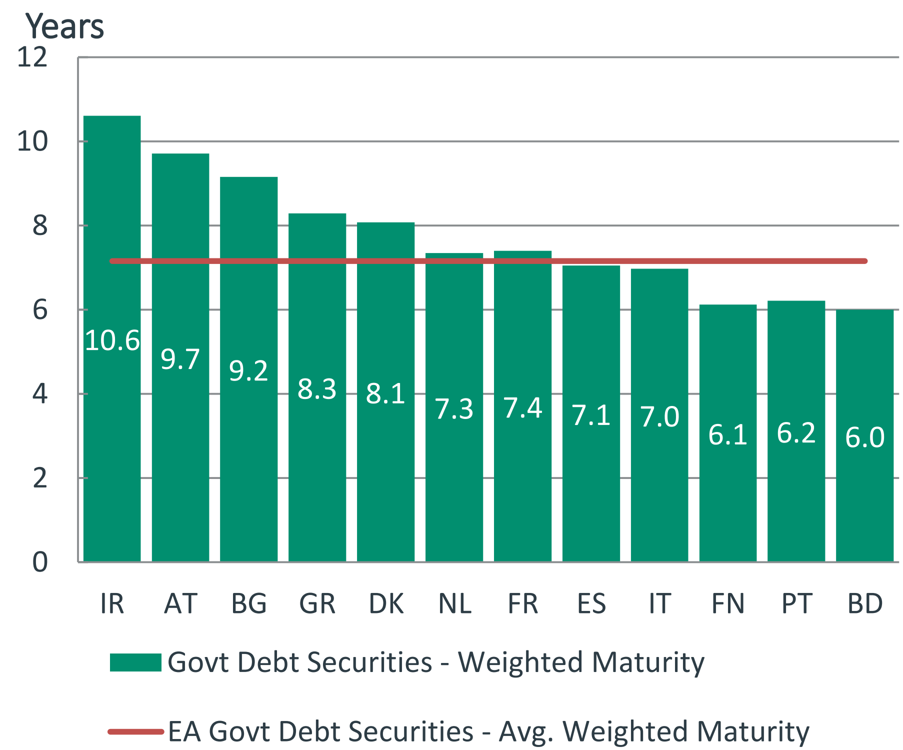
Note: EFSM loans are subject to a 7-year extension that will bring their weighted-average maturity from 12.5 years to 19.5 years. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the EFSM loan maturity dates in the 2027-30 range although these may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

We improved our 2018-2020 maturity profile significantly in recent years

Various operations by NTMA have led to an extension of maturity…



…Ireland compares favourably to other European countries



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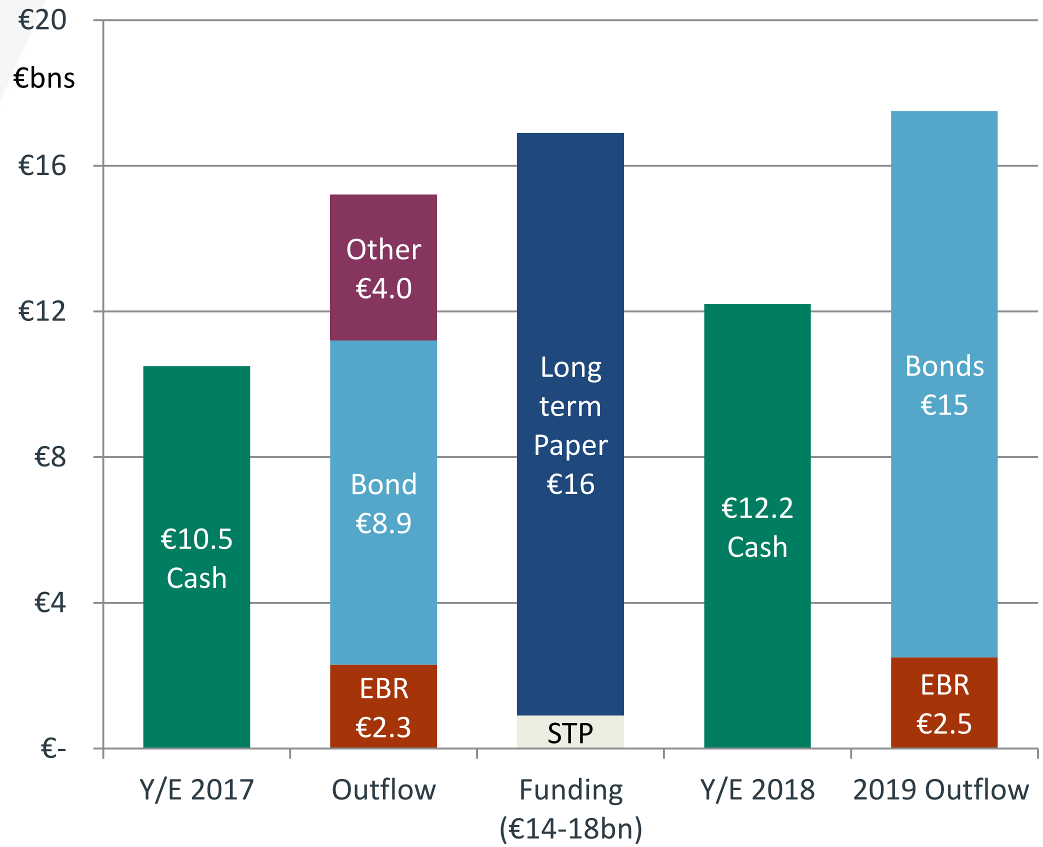
Source: NTMA; ECB

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

NTMA funded approximately 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%.
- NTMA has indicated it would issue €14-18bn worth of long term bonds in 2018. The chart uses €16bn indicatively.
- 2018 issuance level to be similar to 2017.
- Exchequer cash balance at end 2017 was €10.5bn. 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.

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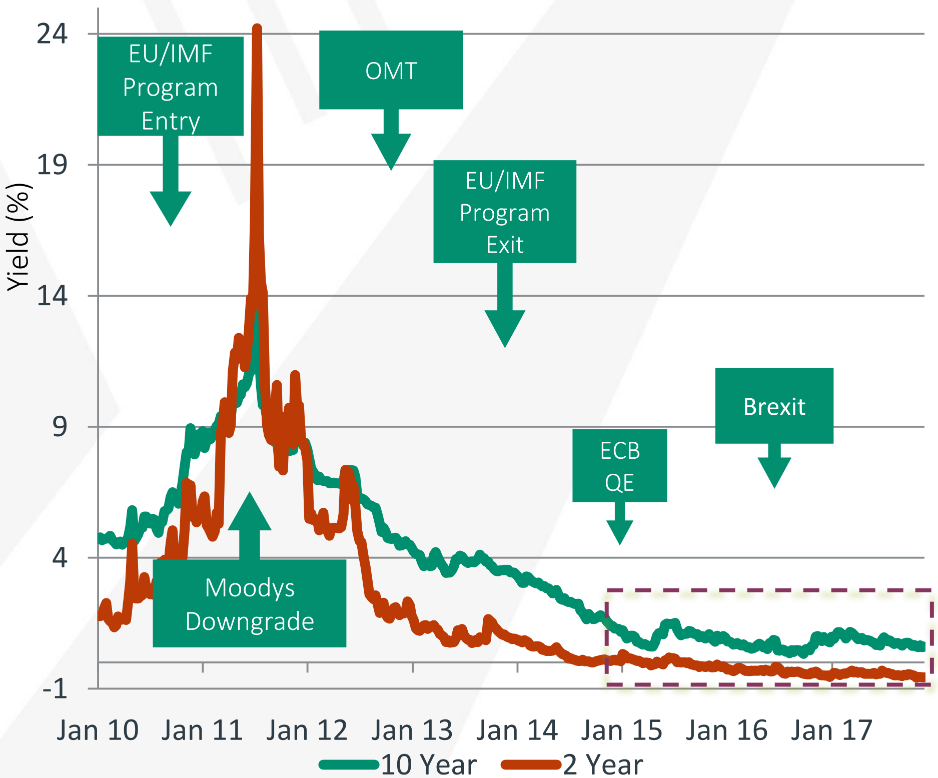
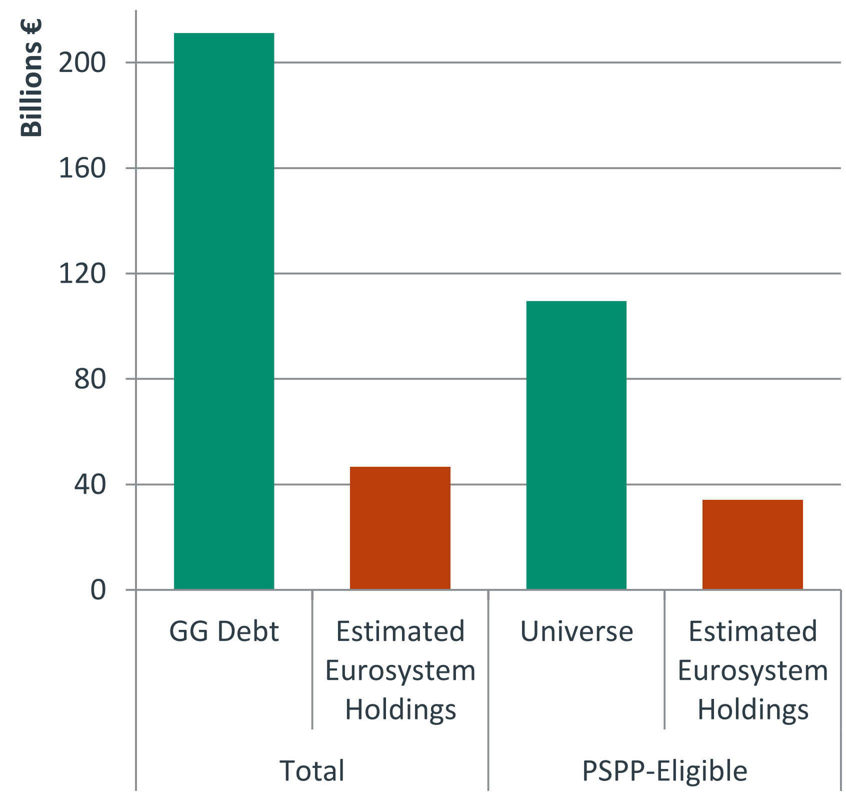
Ireland's bond market performance has been underpinned by ECB action

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



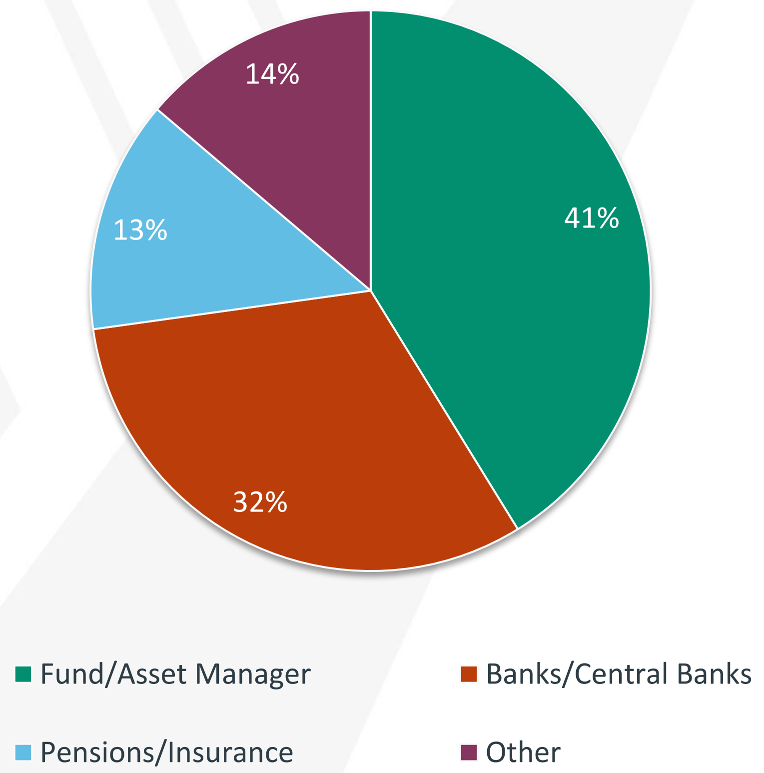
Purchases of IGBs under PSPP in year to September 2018 of c.€3-4bn



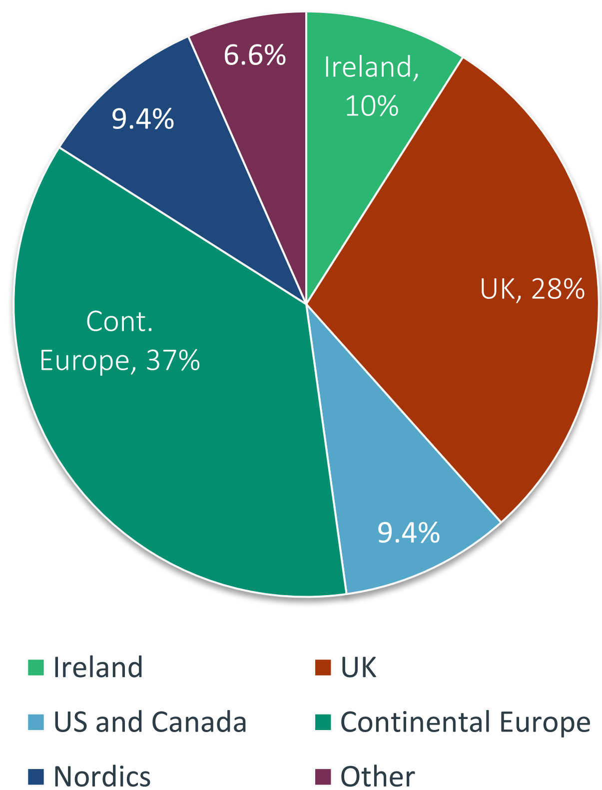
Source: Bloomberg (weekly data)

Investor base for Government bonds is wide and varied

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



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



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	**Sept 2017**
1. Resident	50.8	50.8	54.6	**56.1**
(as % of total)	(43.7%)	(40.6%)	(44.9%)	**(43.5%)**
– Credit Institutions and Central Bank*	45.9	46.9	51.1	**53.1**
– 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	**0.3**
2. Rest of world	65.5	74.2	67.1	**72.9**
(as % of total)	(56.3%)	(59.4%)	(55.1%)	**(56.5%)**
Total MLT debt	116.3	125.1	121.6	**129.1**

Source: CBI

Breakdown of Ireland's General Government debt

€ Billion	2012	2013	2014	2015	2016	2017 H1
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	125.6	124.0	134.9
- Short-term (T-Bills, CP etc)	2.5	2.4	3.8	1.2	2.3	5.9
- Long-term (MLT bonds)	84.8	110.3	115.3	124.4	121.8	129.0
Loans	60.6	71.3	63.3	54.9	55.2	54.8
- Short-term	1.9	1.4	1.3	1.1	0.7	0.4
- Long-term (official funding and prom notes 2009-12)	58.7	69.8	62.0	53.8	54.5	54.4
General Government Debt	210.0	215.3	203.3	201.1	200.6	211.2
EDP debt instrument assets	58.7	54.6	36.8	29.6	*25.1*	*38.5*
Net Government debt	151.3	160.7	166.5	171.5	175.5	172.7

Source: 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 opportunities may arise too

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

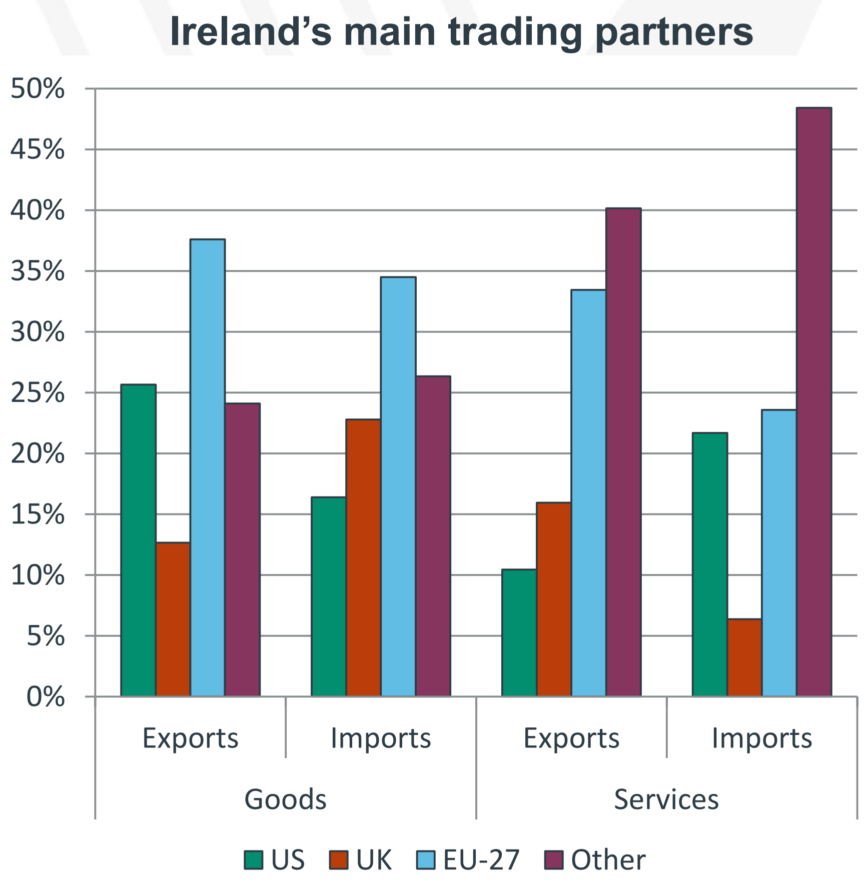
Cons

- 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



- **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**

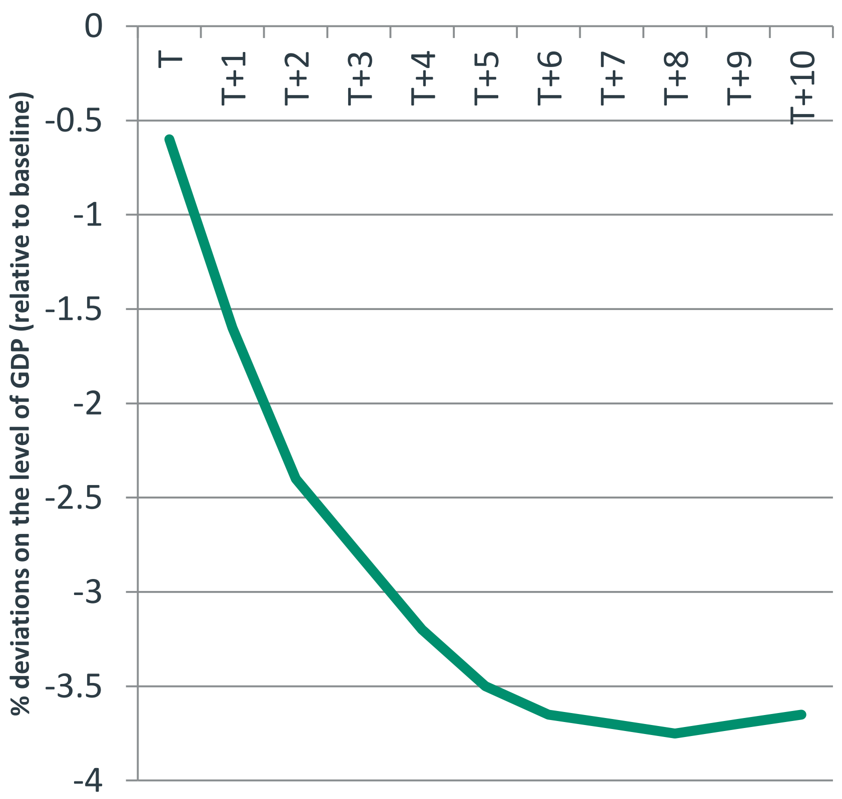
Source: CSO 2016, NTMA calculations; Data does not include contract manufacturing

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



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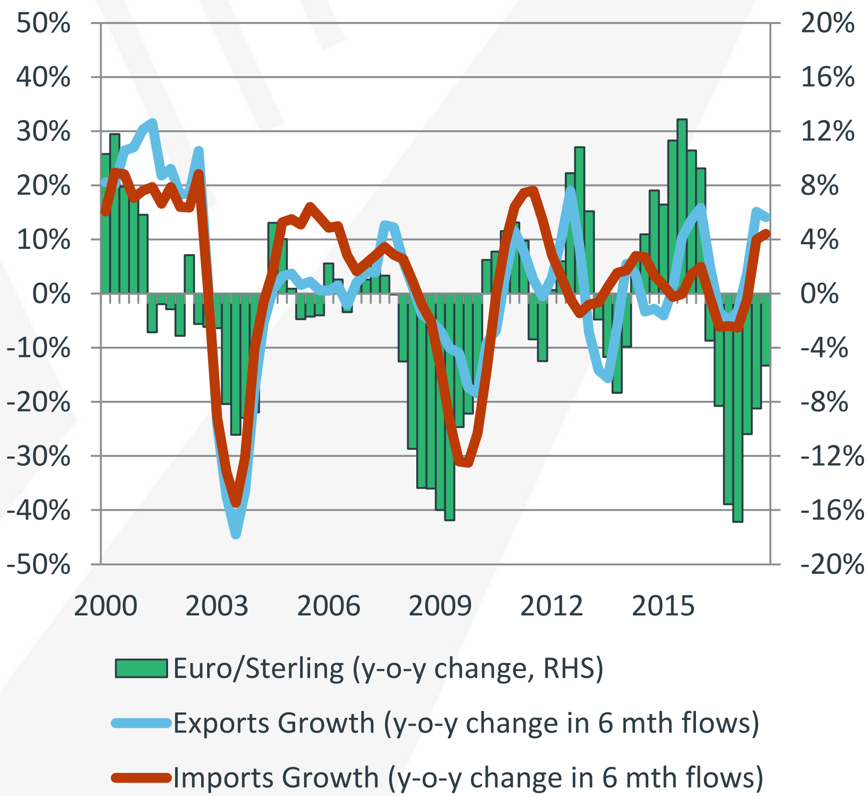
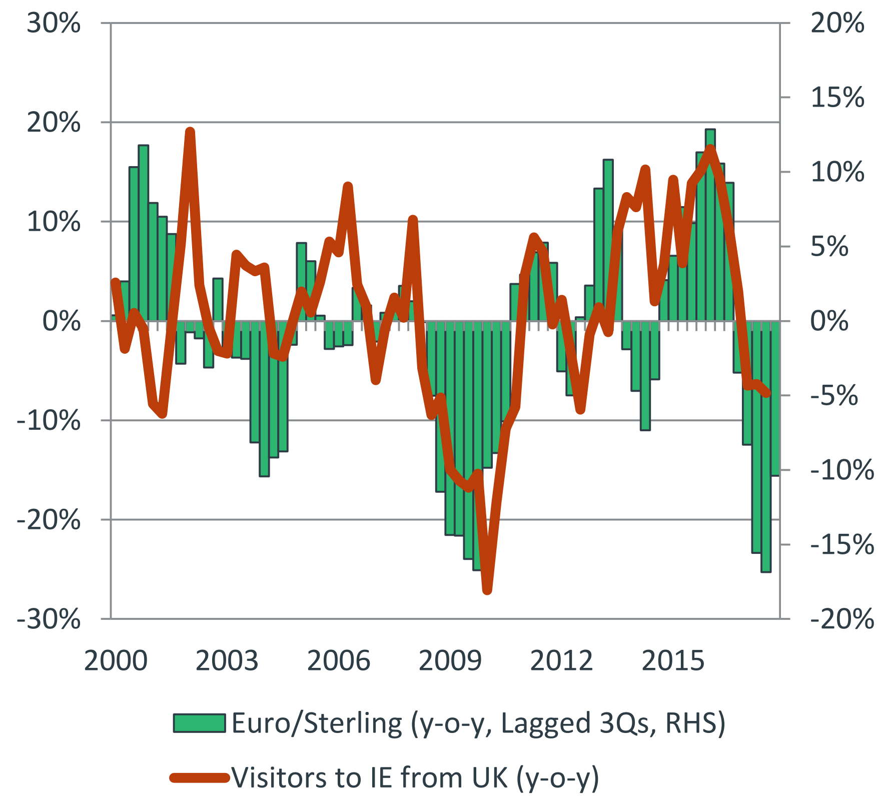
Source: ESRI and Department of Finance analysis

Effects of Brexit visible in currency impact

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



UK visitor numbers have fallen (note time lag in effect)



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
- Educated workforce
- Cost competitiveness
- Regulatory environment (financial sector)

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

BoI UK exposure

	End-2016	% of Group Total
Total Income	€600m	19.3%
Credit Outstanding	€33.4bn	40.0%
Operating Profit	€188m	15.6%
Impairment charge	(€99m)	55.6%

AIB UK exposure

	End-2016	**% of Group Total**
Total Income	€310m	11.8%
Credit Outstanding	€9.3bn	14.3%
Operating Profit	€171m	13.6%
Impairment writeback	€37m	12.6%

Source: Published bank accounts

Section 4: Long term fundamentals

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

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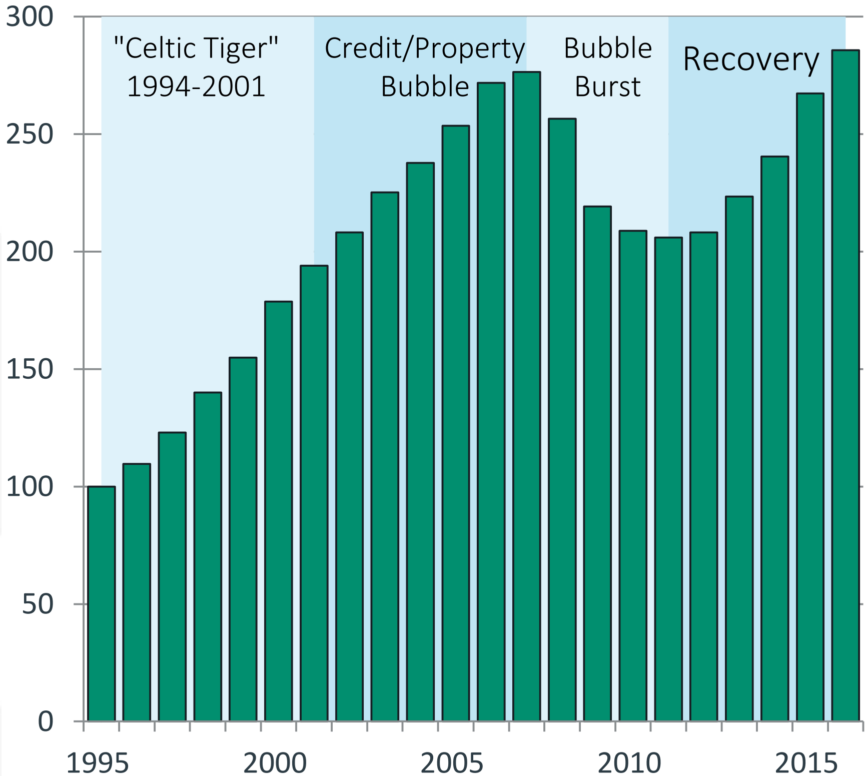
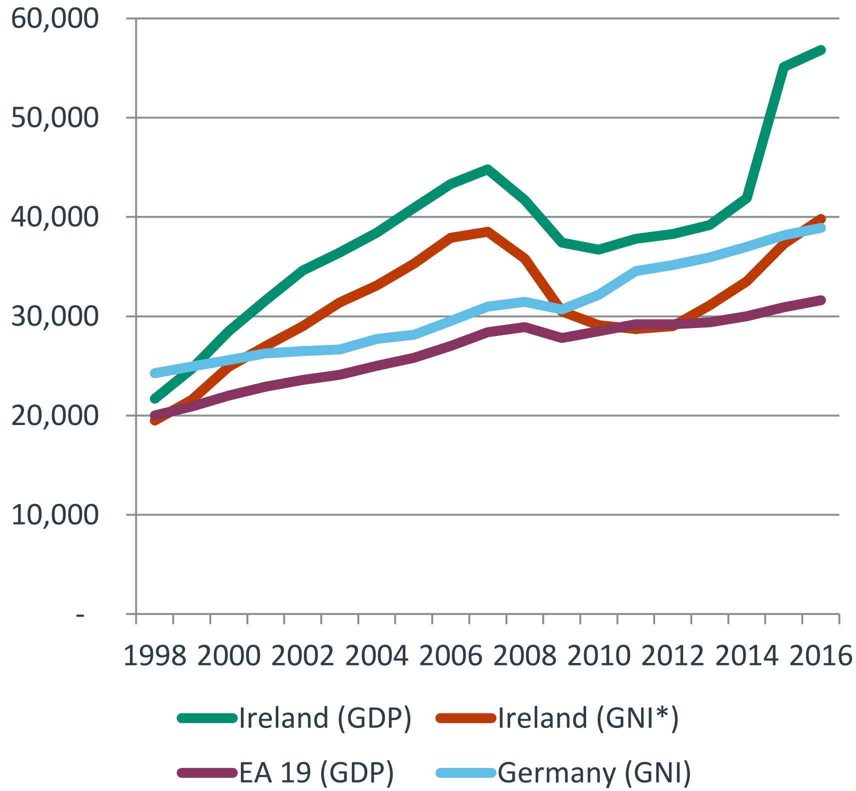
Much rebalancing has taken place – Ireland has looked to return to long term growth drivers

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



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



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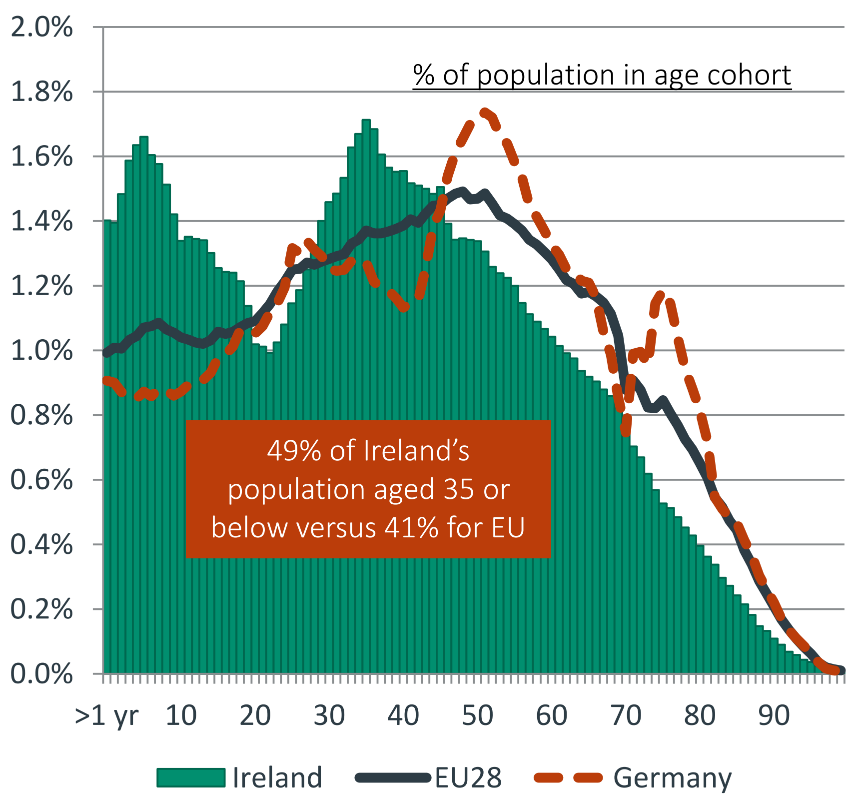
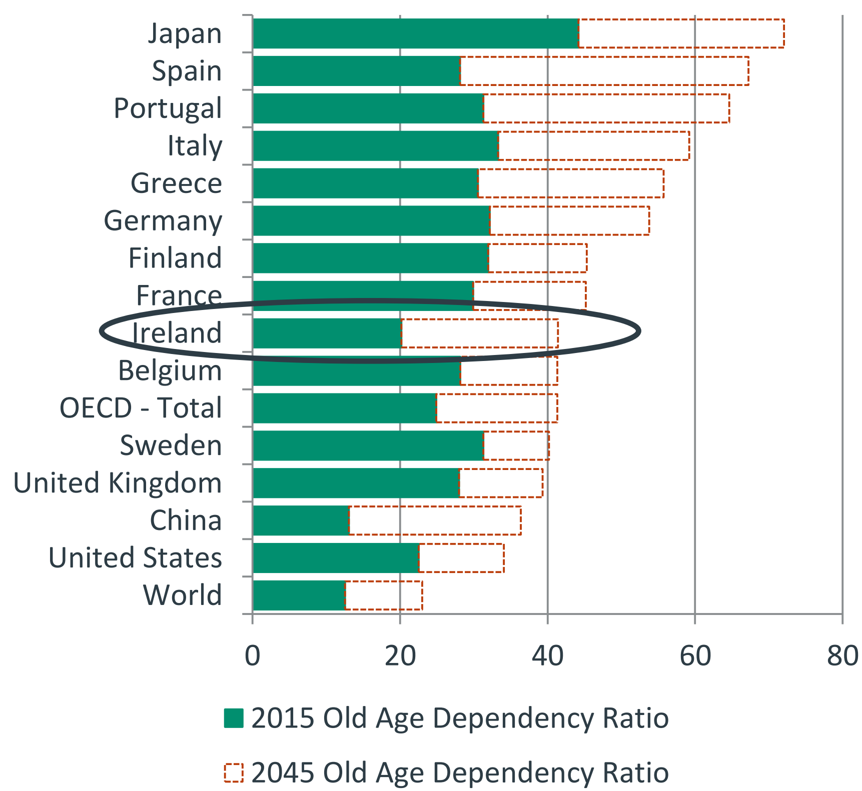
Source: CSO

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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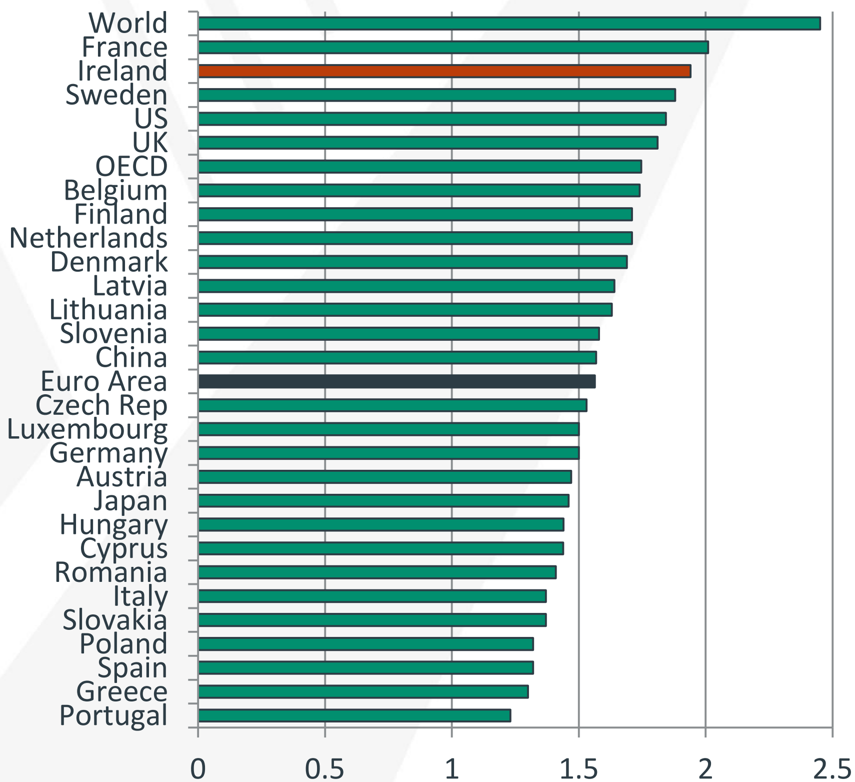
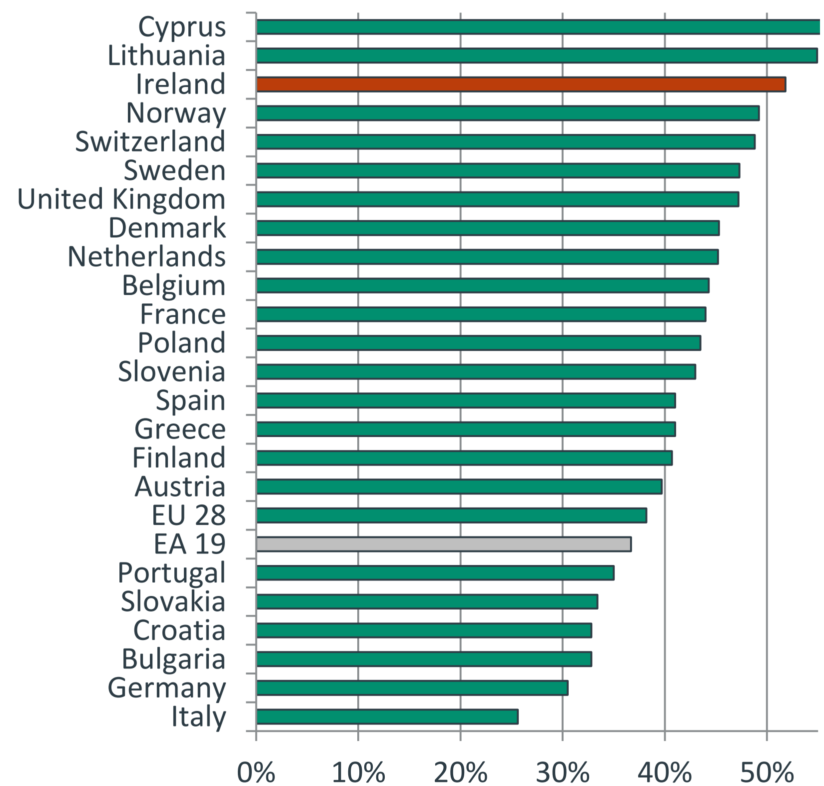
Source: Eurostat (2016) CSO; OECD population projections

Favourable population and workforce characteristics underpin debt sustainability over longer term

Fertility rates in Ireland are above typical international replacement rates



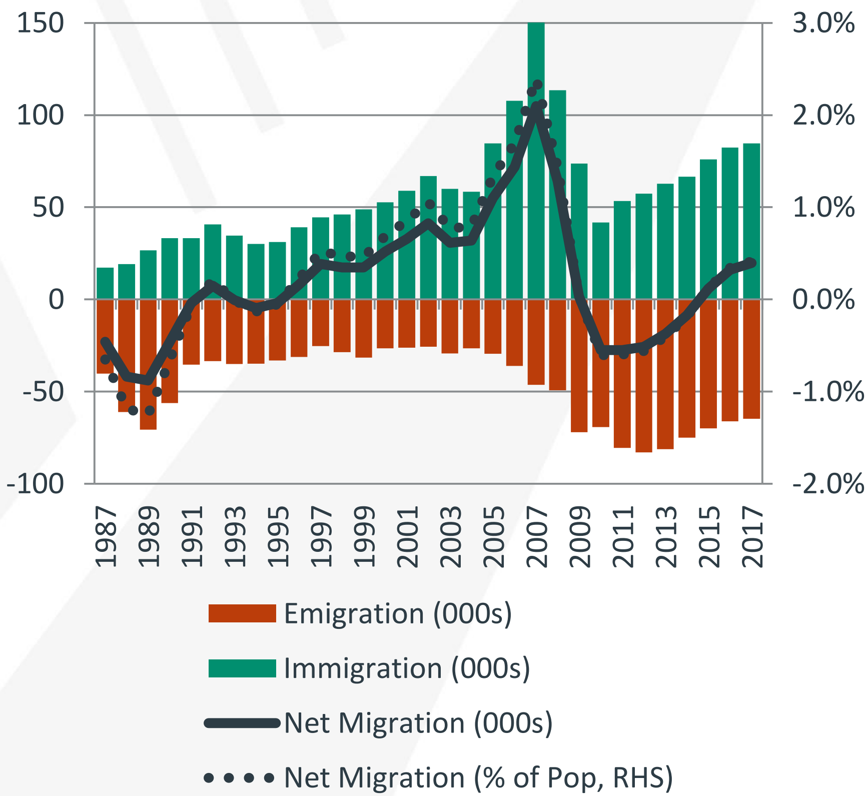
Ireland has large % of 25-34 years old with a third-level degree (2016 data)



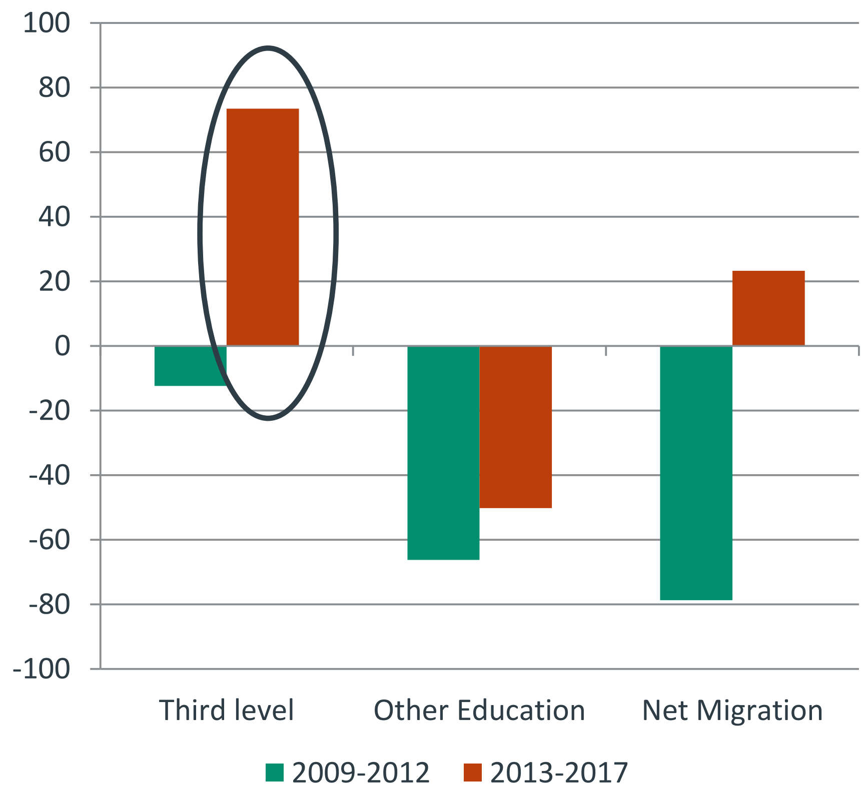
Source: World Bank WDI (2015); Eurostat

Openness to people has been beneficial to Ireland

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



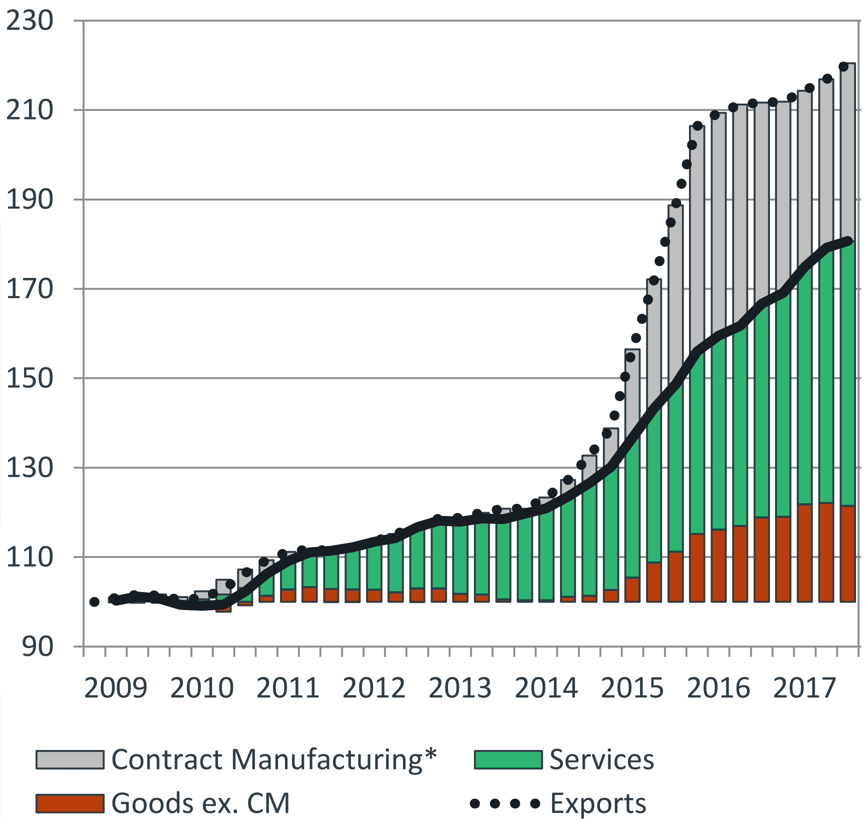
Highly educated migrants moving to Ireland "Reverse Brain Drain"



Source: CSO

Openness to trade central to Irish success - in particular services exports; Brexit hinders 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*

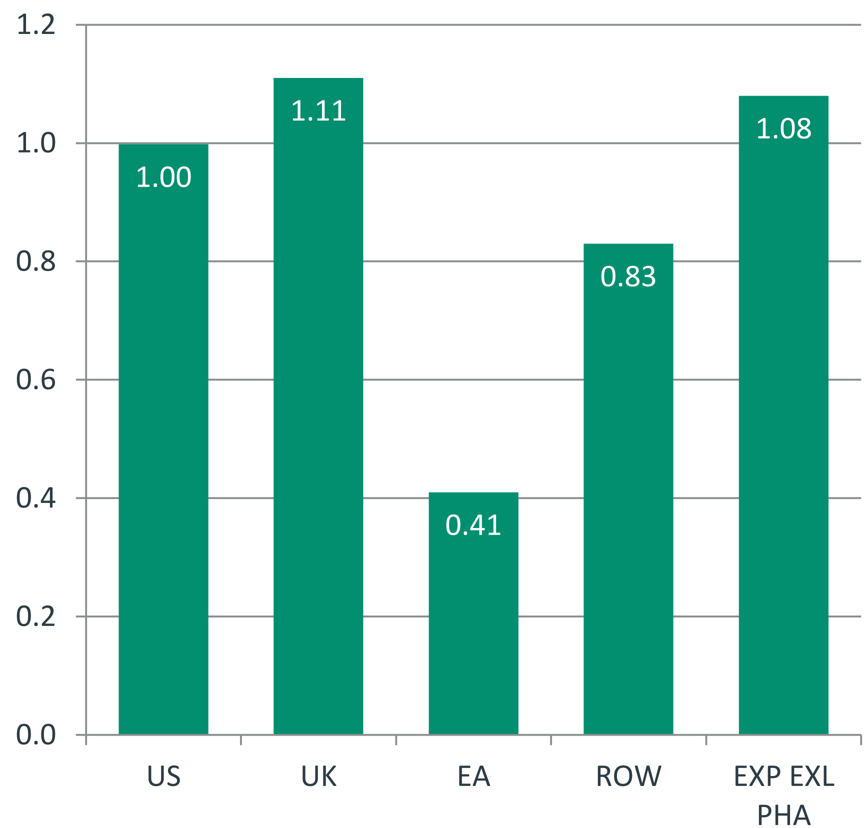
Ireland's goods exports respond vigorously to euro movements – in both directions

- 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

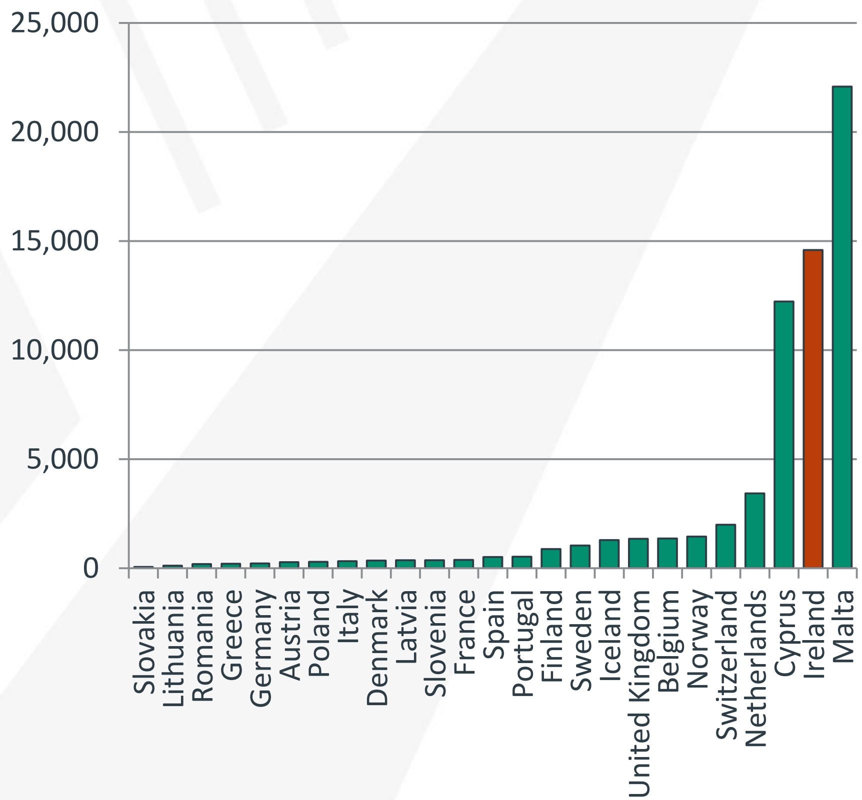
Note: All coefficients significant at 99% level; not affected by contract manufacturing. Time period is 1998 to 2016 Q2. For longer time periods, the UK elasticity is smaller (closer to 0.4-0.5 for 1981 onwards).

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

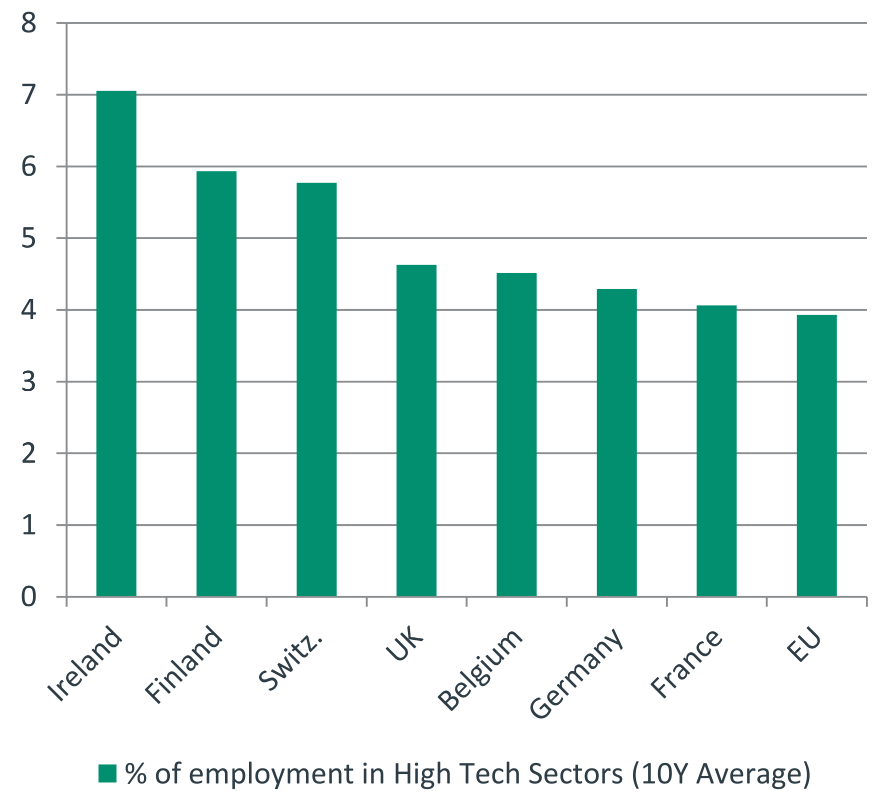


Crucially, openness to capital has played a big part in Ireland's economic model

Average FDI inflow in $ per capita, 2011–16



Ireland has attracted high-quality jobs to Ireland



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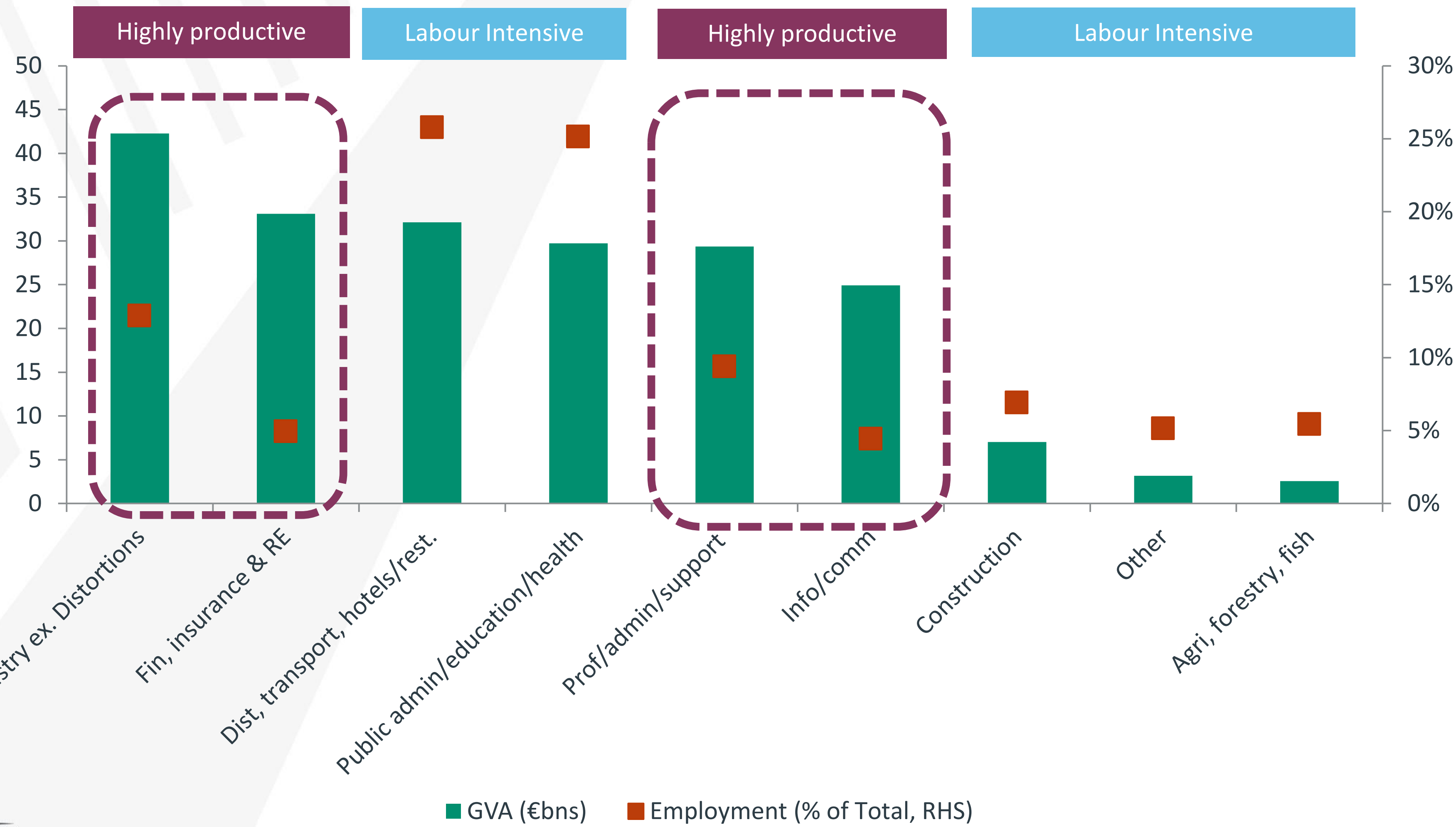
Source: Unctad (UN) database
Note: Luxembourg excluded for presentation purposes – average $68,700 per capita over period.
Note 2: High tech = High-technology manufacturing and knowledge-intensive high-technology services

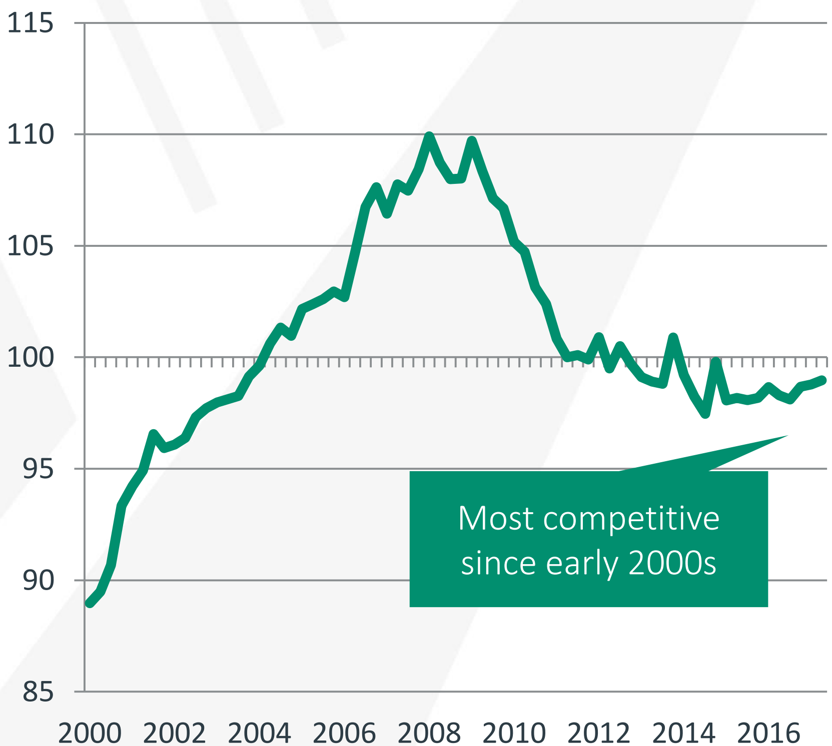
All this leads to mixture of highly productive and labour intensive sectors in Ireland



Source: CSO, NTMA calculations

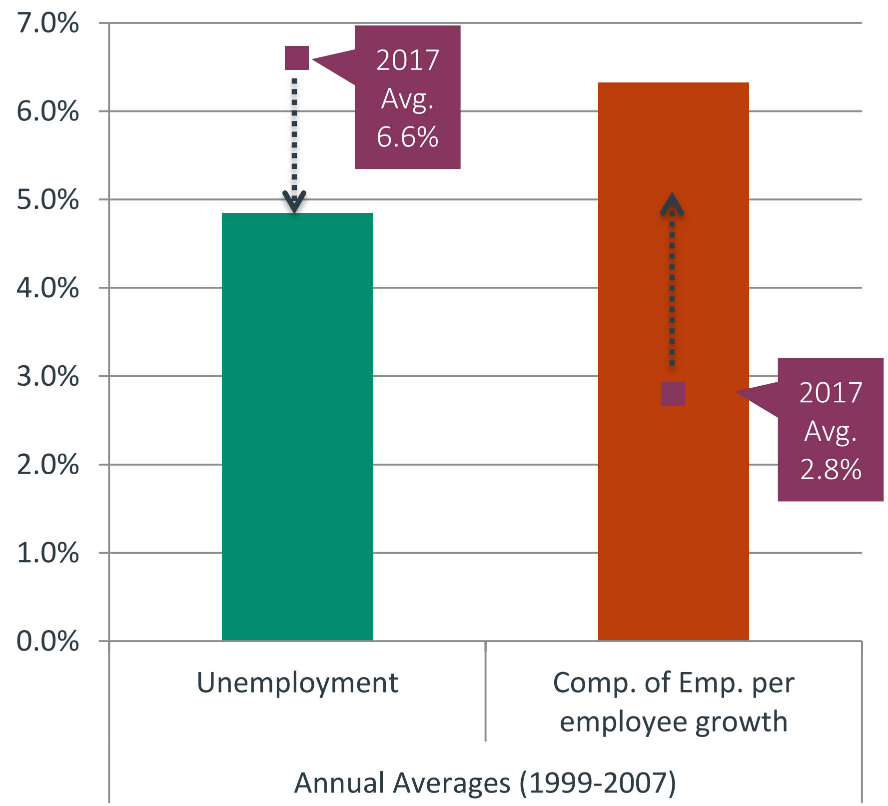
Ireland competitive now; we need to avoid repeat of mid-2000s

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

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Section 5: Property

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

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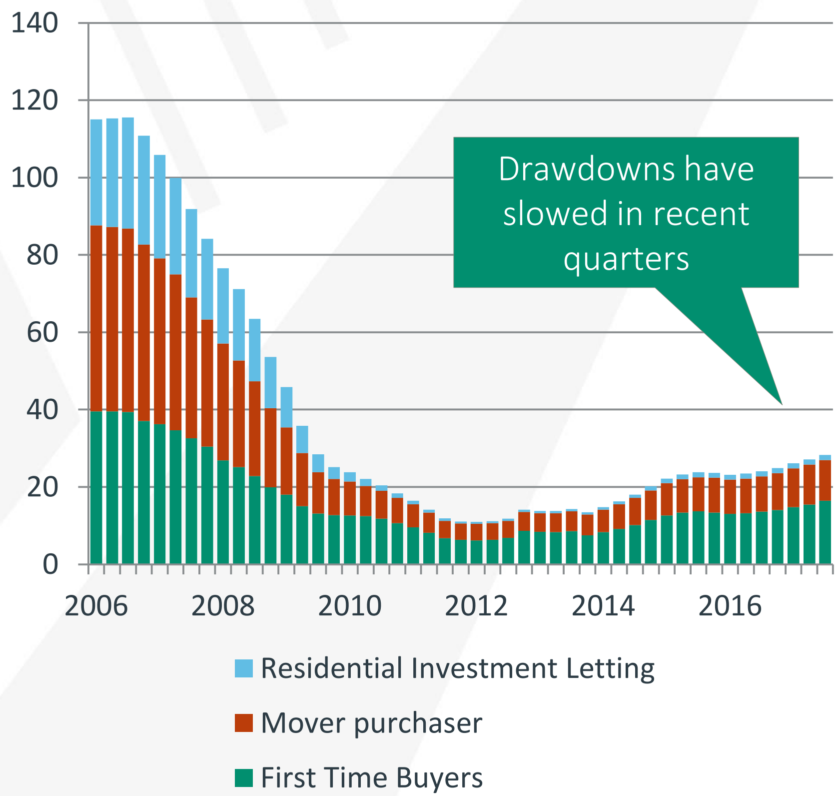
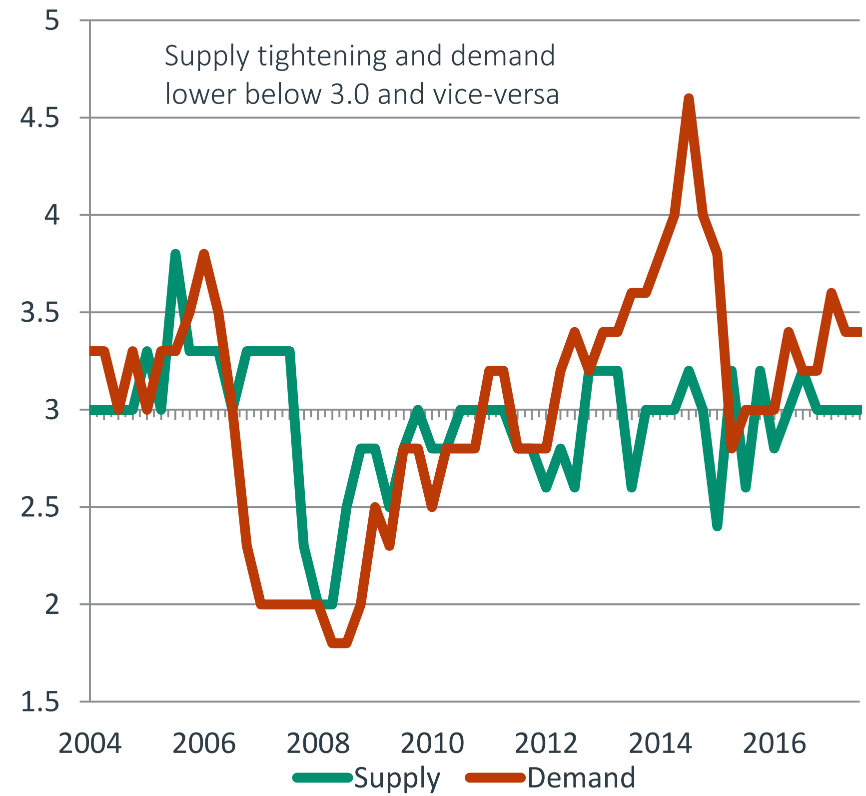
Demand has picked up since 2015; amendments to CBI rules and rising economy have boosted buying power

Mortgage drawdowns rise from deep trough (000s)



Source: [BPFI]() *4 quarter sum used

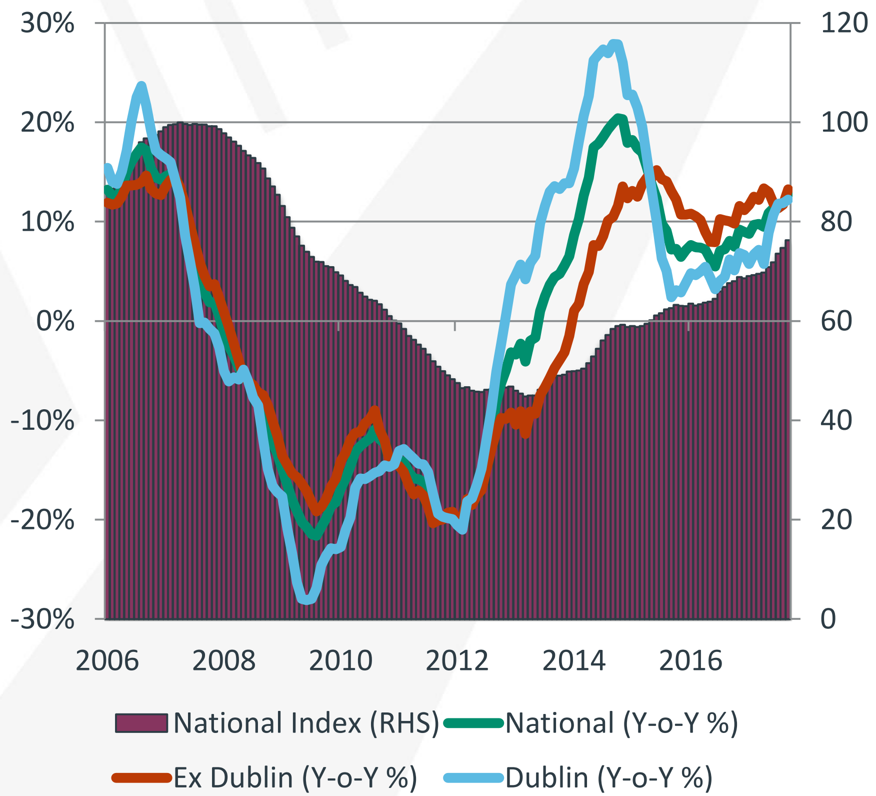
Demand increased due to CBI rules adjustment and rising economy



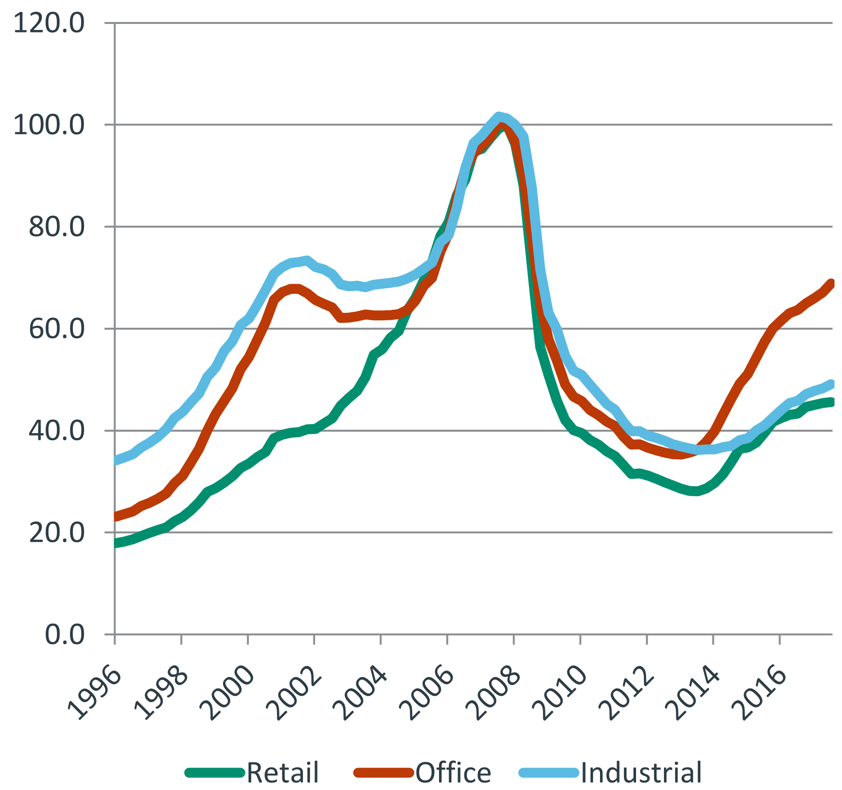
Source: ECB and [CBI]() (Bank lending survey)

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)



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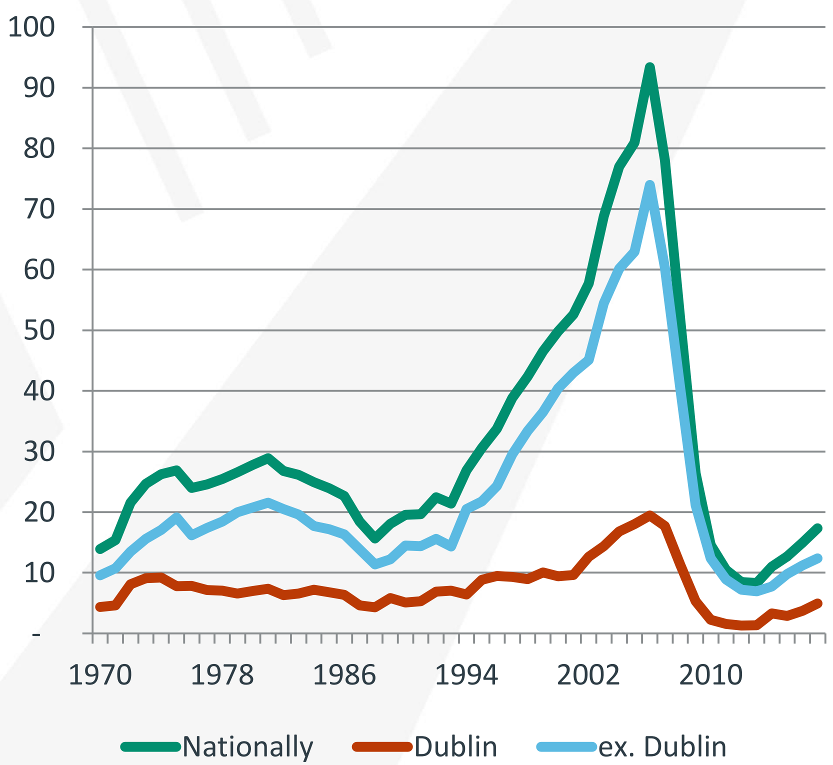
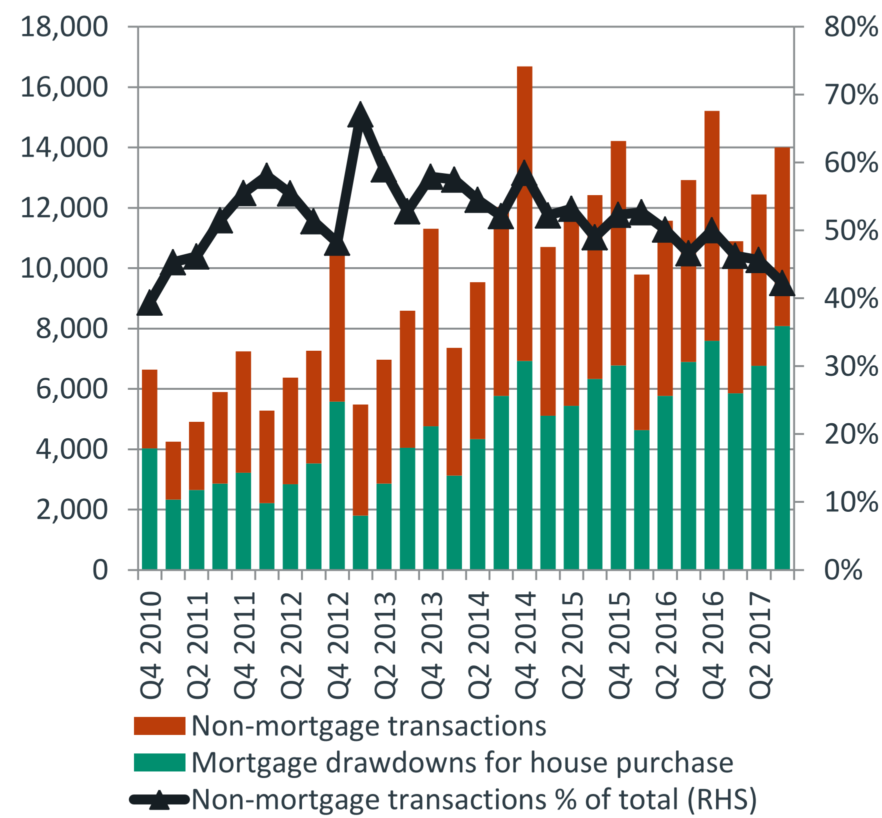
Source: CSO; IPD

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

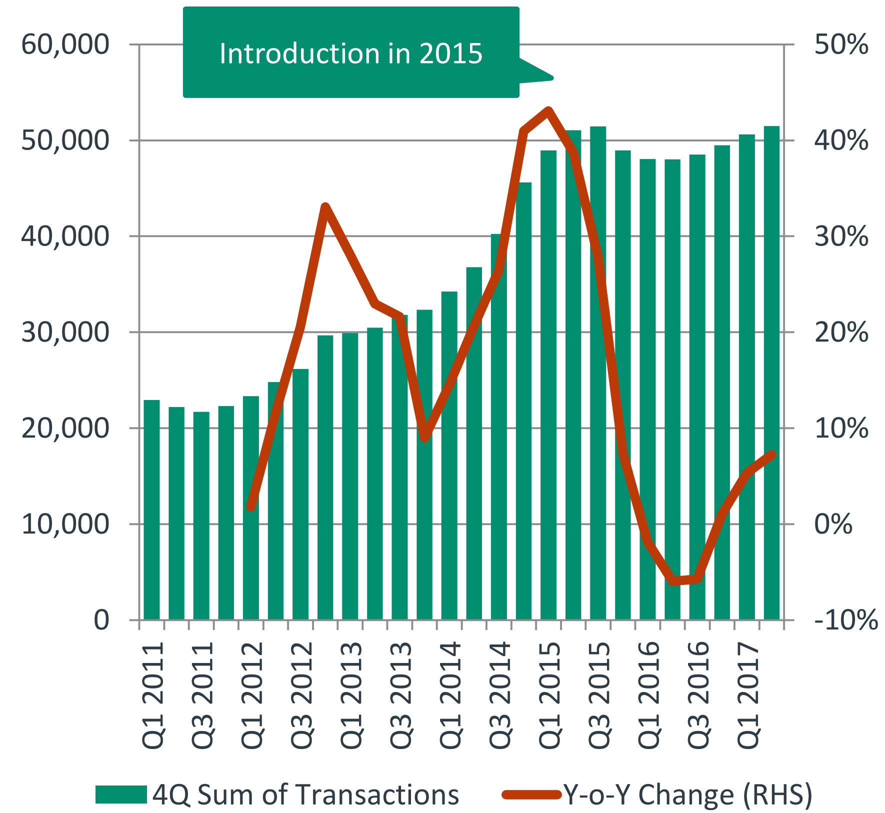
Note: Non-mortgage transactions are implied by difference between total transactions on property price register and BPFI mortgage data

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

CBI's amended macro-prudential rules

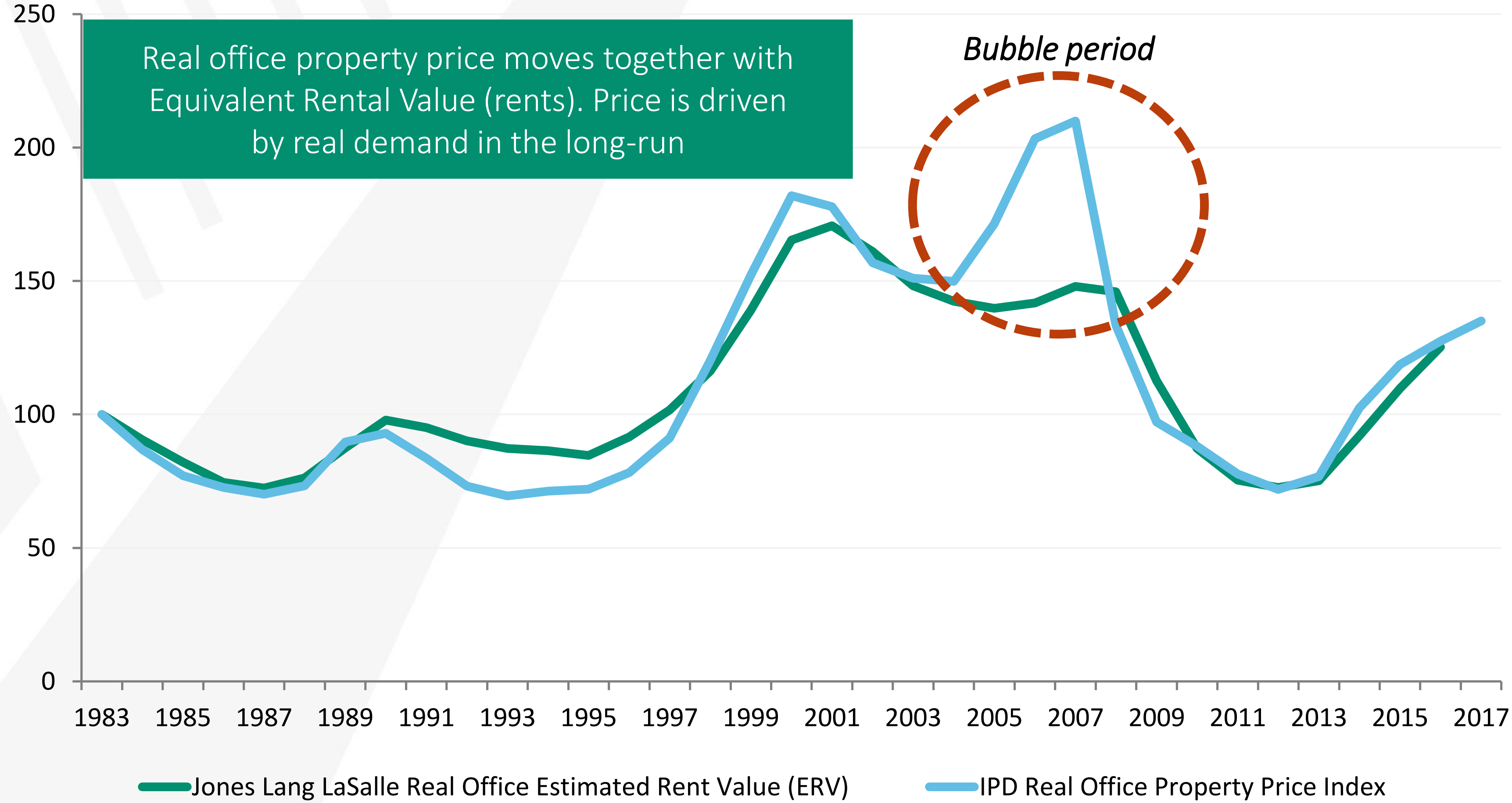
- First time buyers (FTBs) can borrow 90% of the value of a home (10% minimum deposit). Five per cent of the total new lending to FTBs will be allowed above the 90% LTV limit.
- For second and subsequent buyers (SSBs), banks must restrict lending for primary dwelling purchase above 80 per cent LTV to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



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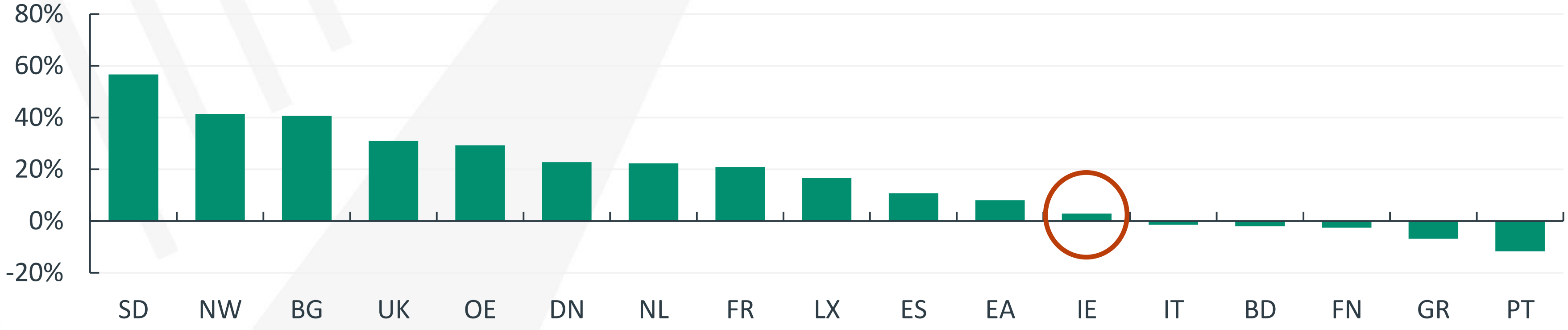
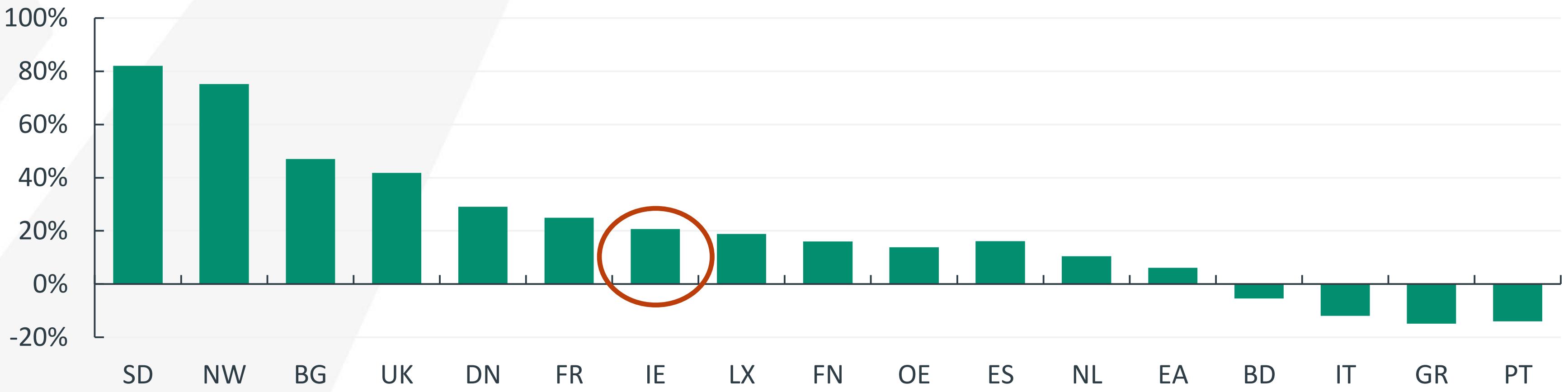
Source: IPD; NTMA
Note: IPD office price index updated to Q3 2017

Irish house price valuations rose relative to other European countries in 2017

Deviation from average price-to-income ratio (Q2 2017)



Deviation from average price-to-rent ratio (Q2 2017)



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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 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.

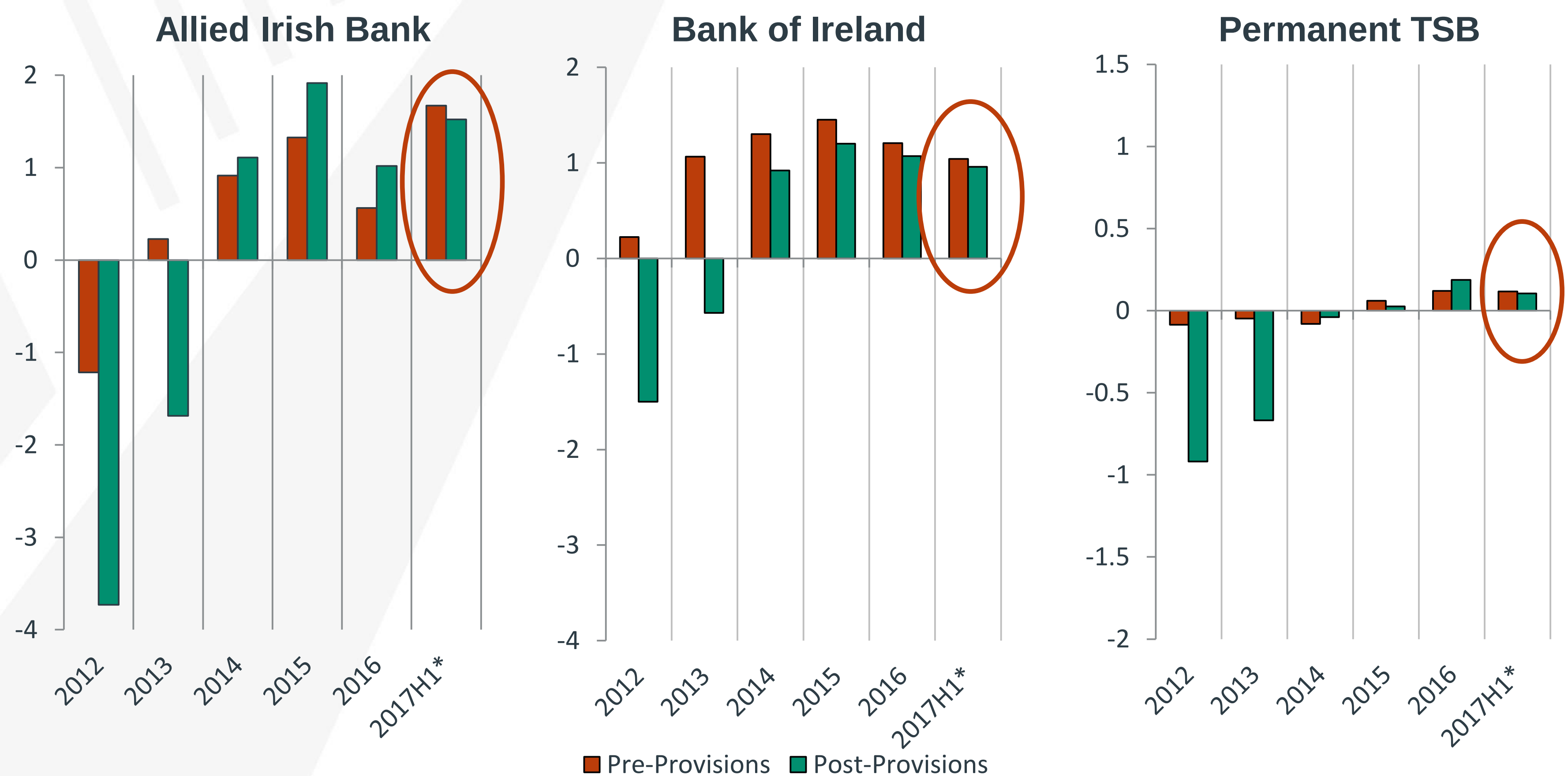
- NAMA
  - NAMA has repaid 100% of its senior debt; it forecasts a profit of €3bn subject to market conditions.

- 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 24 months

State Ownership

71% of equity | 14% of equity | 75% of equity



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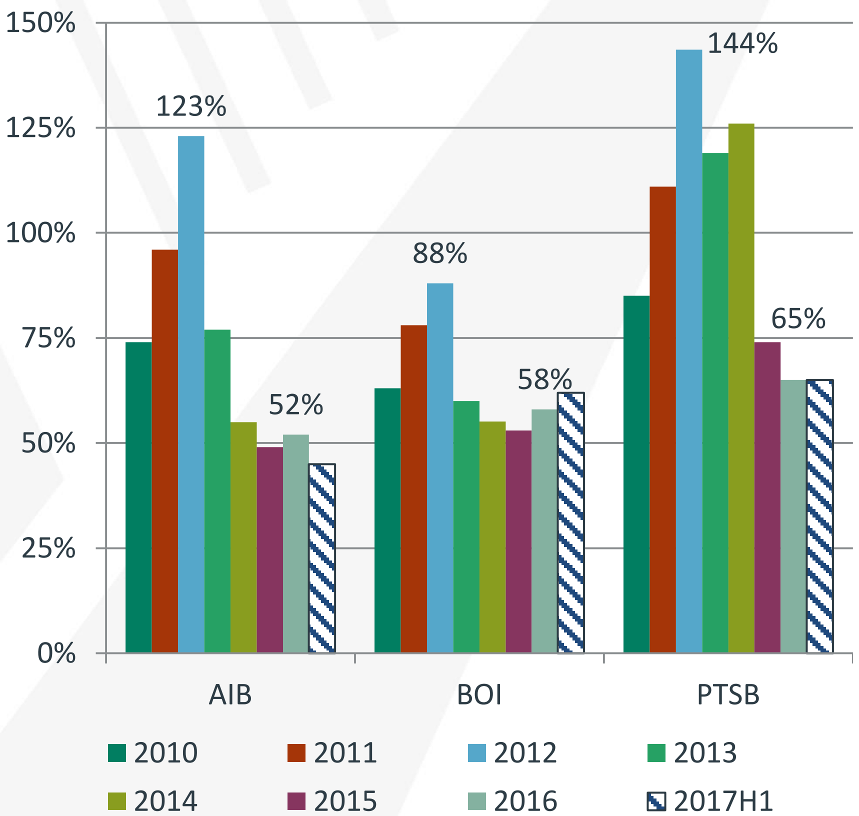
Source: Annual reports of banks - [BOI](), [AIB](), [PTSB]()
* Half year results annualised

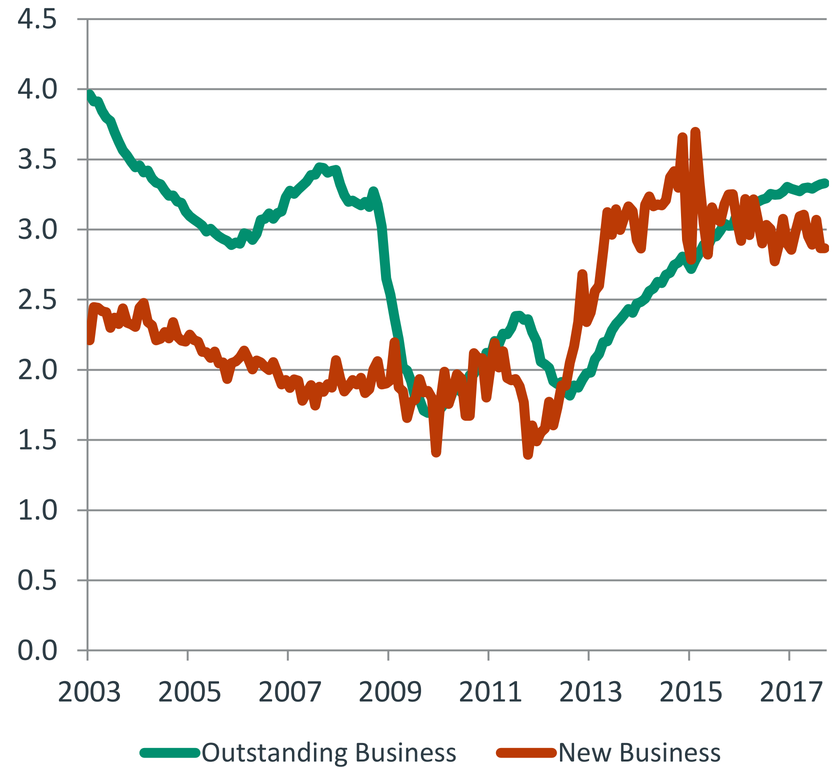
Banks fundamentally rebuild their profitability

Cost income ratios improve dramatically



Source: Annual reports of Irish domestic banks

Net interest margins (%) recover



Source: CBI, NTMA Calculations

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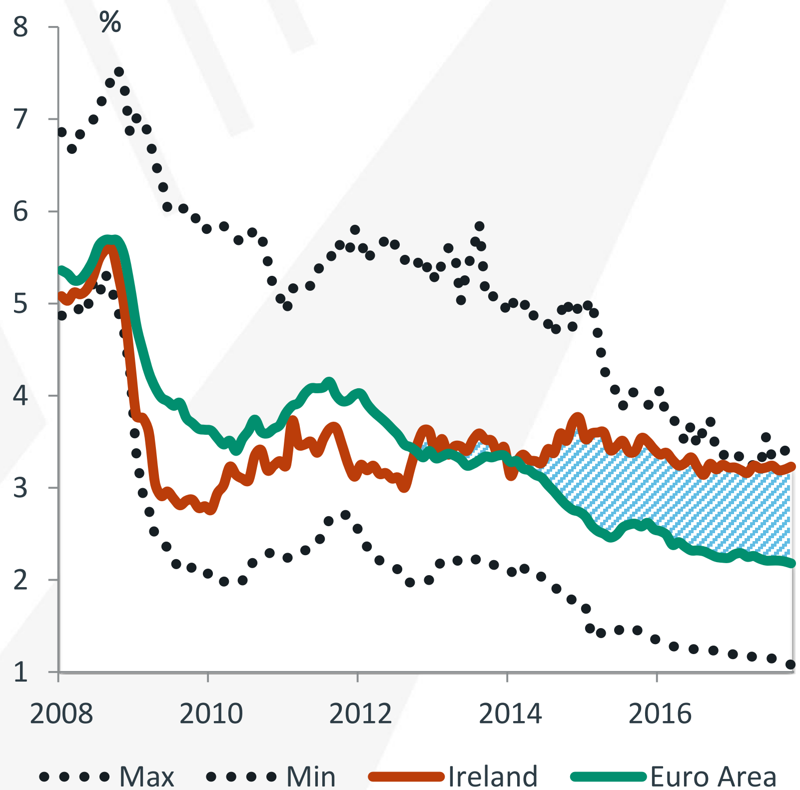
Note: Margins are derived from weighted average interest rates on loans and deposits to and from households and non-financial corporations

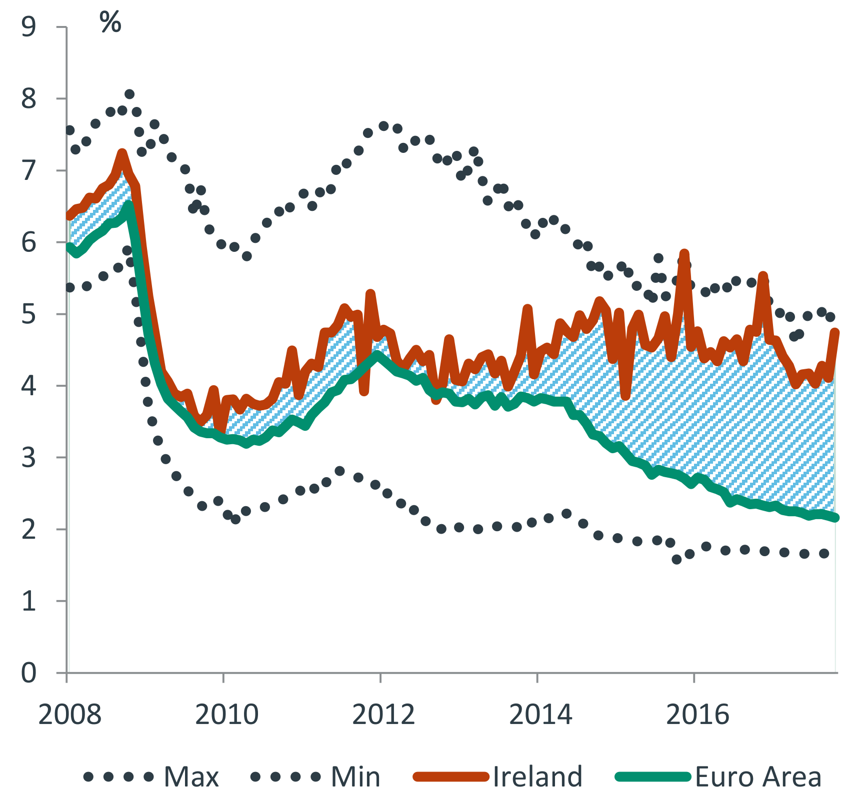
Profitability aided by higher interest rates than EA peers

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



Source: ECB

Rates on SME loans* over euro area average



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

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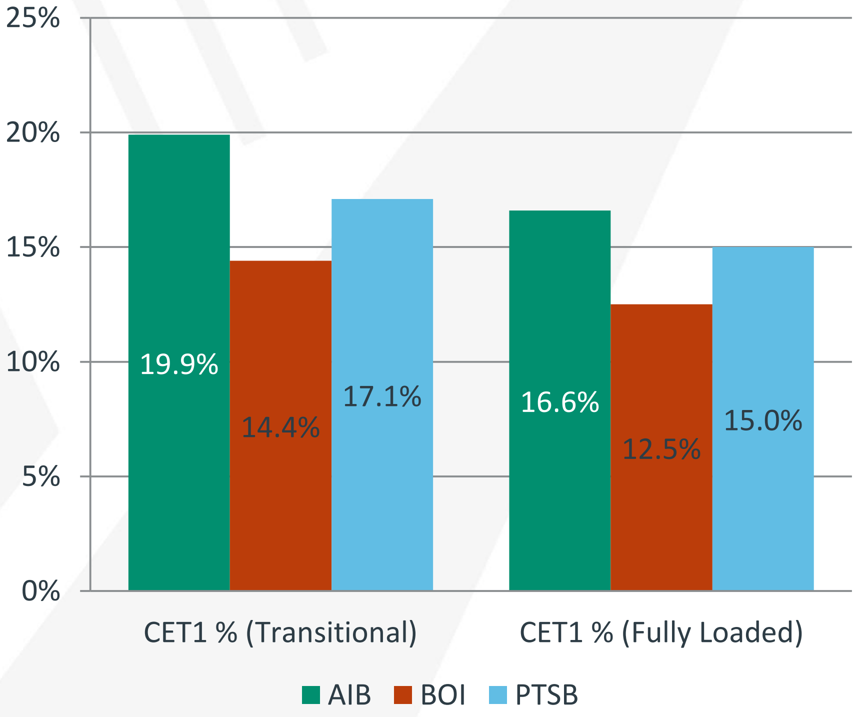
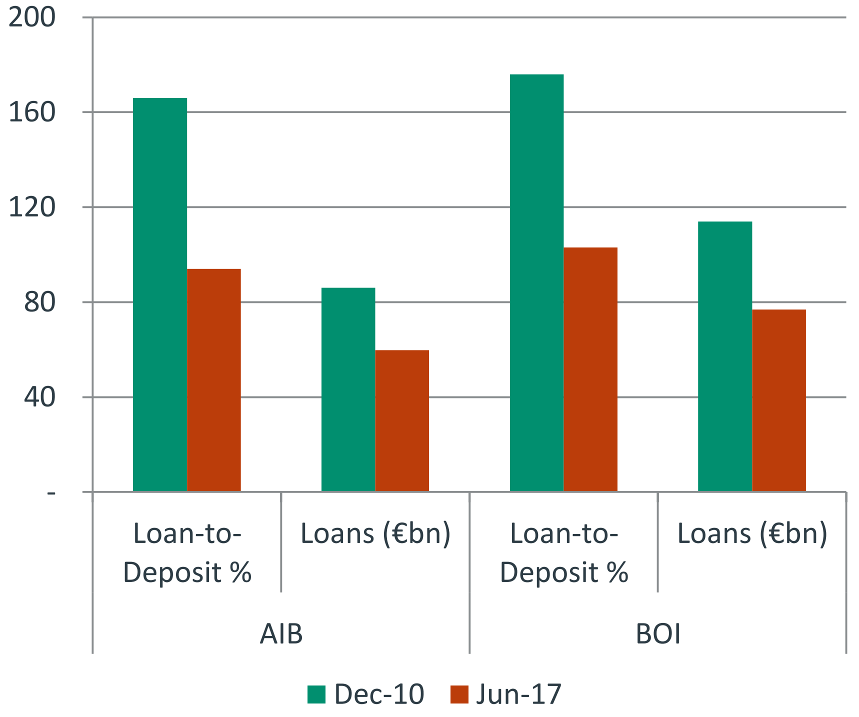
Capital ratios strengthened as banks slimmed down and consolidated

CET 1 capital ratios (Jun-17)



Source: Published bank accounts

Loan-to-deposit ratios have fallen as loan books have shrunk



Source: Published bank accounts

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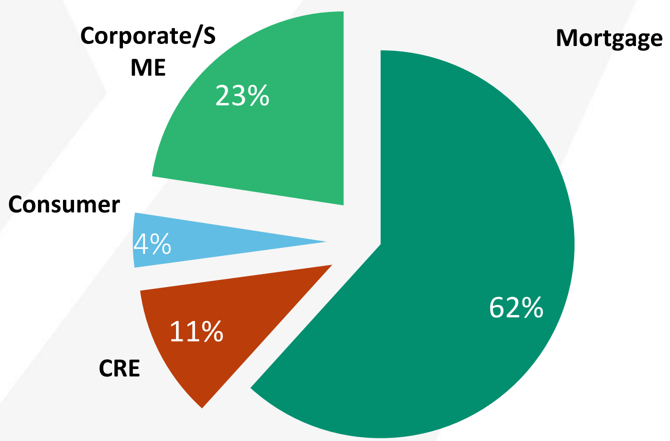
Note: "Transitional" refers to the transitional Basel III required for CET1 ratios
"Fully loaded" refers to the actual Basel III basis for CET1 ratios.

Asset quality continues to improve: impaired loans and provisions fall in 2017

All 3 PCAR banks (€bn)	Dec-15	Dec-16	Jun-17
Total Loans	186.5	168.9	165.0
Impaired	29.0	20.3	17.9
(Impaired as % of Total)	15.5%	12.0%	10.8%
Provisions	14.7	9.9	9.4
(Provisions as % of book)	7.9%	5.9%	5.7%
(Provisions as % of Impaired)	50.6%	48.8%	52.5%

Loan Asset Mix (3 banks Jun 17)



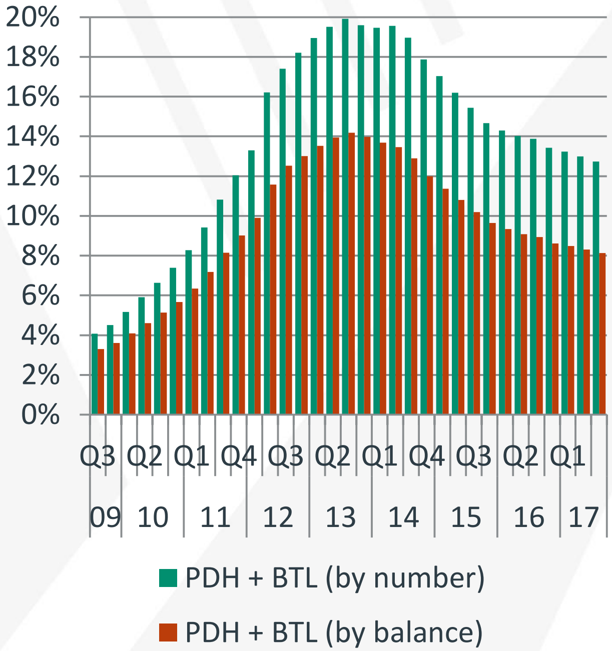
Source: Published bank accounts

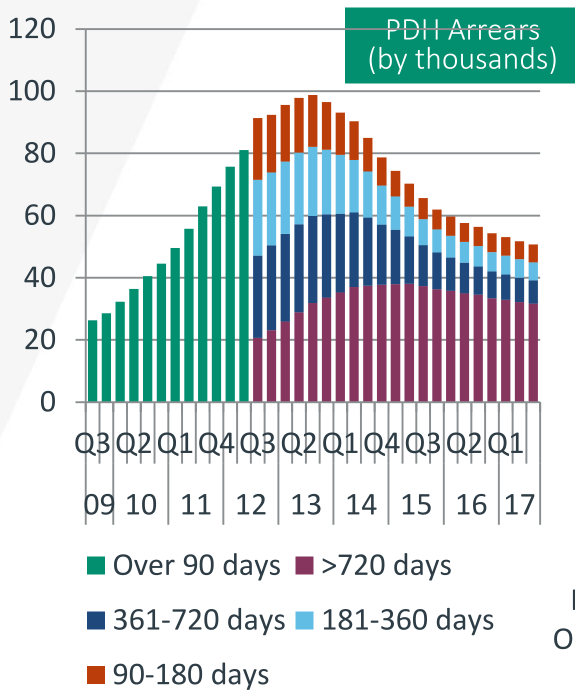
Impaired loans % (coverage %)[1] by bank and asset		Dec-15	Dec-16	Jun-17	*Book (€bn)*
BOI	Irish Residential Mortgages	9.3(52)	6.0(45)	5.3(42)	24.0
	UK Residential Mortgages	1.6(22)	0.7(15)	0.7(15)	23.1
	Irish SMEs	21.9(52)	15.7(55)	15.9(56)	8.8
	UK SMEs	11.1(51)	6.3(55)	6.3(56)	1.9
	Corporate	4.6(59)	3.5(54)	3.0(66)	9.0
	CRE - Investment	28.5(53)	21.1(57)	19.7(53)	8.6
	CRE - Land/Development	84.8(76)	68.8(73)	54.8(68)	0.7
	Consumer Loans	4.1(105)	2.7(66)	2.4(65)	4.1
		11.6(56)	**7.6(54)**	**6.7(52)**	**80.1**
AIB	Irish Residential Mortgages	16.6(38)	13.1(44)	11.2(45)	32.7
	UK Residential Mortgages	10.8(50)	10.8(46)	8.8(37)	1.6
	SMEs/Corporate	11.5(63)	8.0(60)	6.8(55)	17.4
	CRE	37.4(61)	29.0(53)	26.0(50)	9.1
	Consumer Loans	19.9(70)	13.9(58)	12.8(60)	3.1
		18.6(47)	**14.0(44)**	**12.1(53)**	**63.9**
PTSB	Irish Residential Mortgages	23.6(49)	23.4(49)	23.1(50)	20.5
	UK Residential Mortgages	3.9(39)	0.0(0)	0.0(0)	0
	Commercial	35.8(69)	29.6(113)	29.4(112)	0.2
	Consumer Loans	27.0(93)	22.3(88)	18.0(95)	0.3
		21.1(49)	**23.1(51)**	**23.1(51)**	**21.0**

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

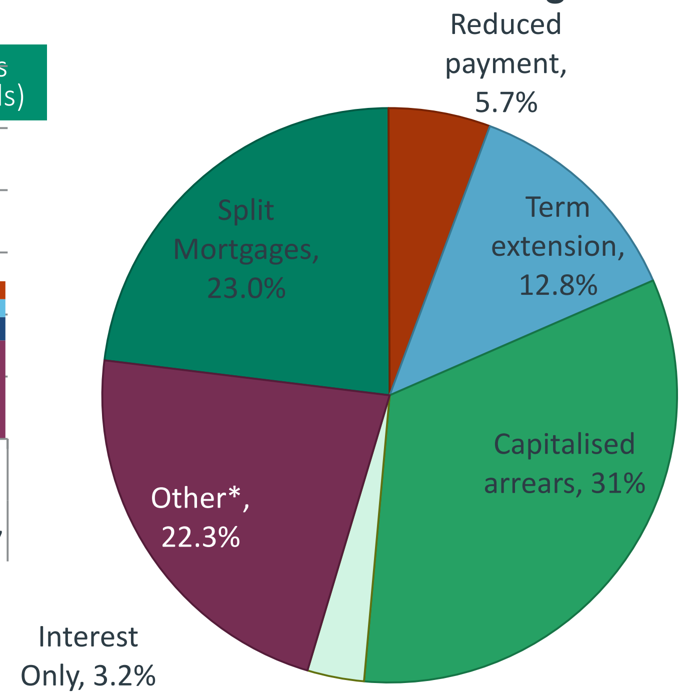
Irish residential mortgage arrears are improving across all duration categories; environment still abnormal

Mortgage arrears (90+ days)





Total restructurings



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.
- 120K PDH mortgage accounts were classified as restructured at end Q2 2017. Of these restructured accounts, over 87% were meeting the terms of the restructured arrangement.

* 'Other' comprises accounts offered temporary Interest rate reductions, payment moratoriums and long-term solutions pending six months completion of payments.

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 – <u>subject to commercial viability.</u>

NAMA's residential development funding programme

- In reaction to the lack of housing supply, NAMA hopes to fund 20,000 housing units to the market by 2020 subject to commercial viability

- The focus will be on starter homes and will be concentrated in the Greater Dublin Area
  - 75% of units will be houses, the remainder apartments
  - 93% of units in Greater Dublin Area (Dublin, Wicklow, Kildare & Meath)

- Progress of its building programme has been strong so far
  - 6,048 units completed since the start of 2014 to Nov 2017;
  - Another 2,712 under construction; 1,114 soon to be commenced;
  - Planning permission have been granted for another 7,168;
  - Planning applications lodged or will be lodged in 2017 for a further 9,266 units

- Existing NAMA commitments are unaffected by this new programme
  - Plans for subordinated debt repaid by March 2020 are still in train.

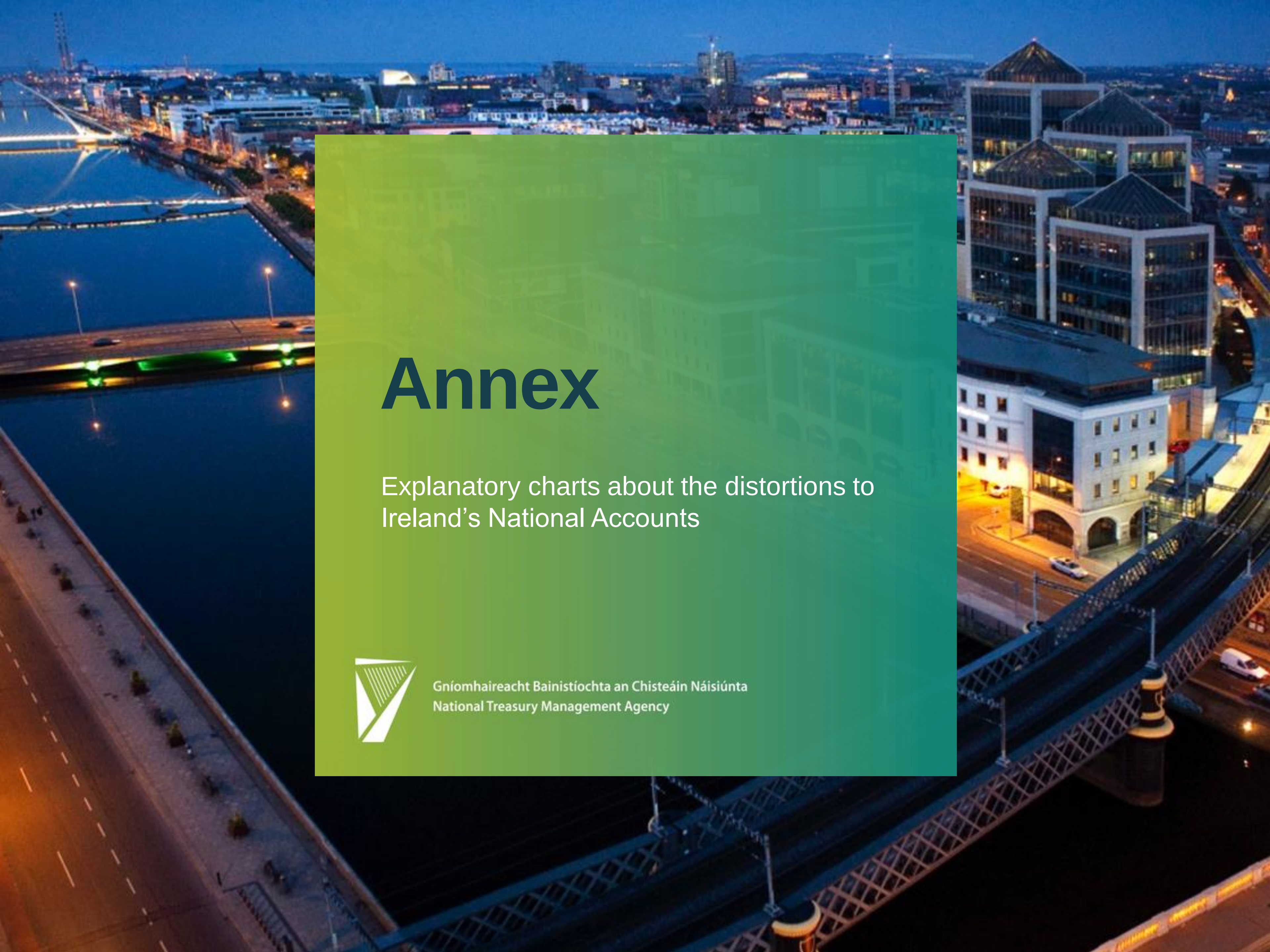
The European Commission's ruling on Apple's tax affairs does not change the NTMA's funding plans

- 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 will the Irish Government.** This process could be lengthy. Pending the outcome of the appeal, Apple is expected to pay approximately €13bn plus EU interest to the Irish Government. The funds will sit in escrow.

- An escrow agent/custodian will be appointed by Apple and the Minister for Finance to hold and administer the fund. The services of the escrow agent/custodian will be procured in accordance with the EU Regulations. The NTMA will run this procurement process.

- **The NTMA has made no allowance for these funds.** In any case, if the appeal is unsuccessful it is possible that other EU countries where Apple makes sales would seek a share of back tax.



Annex

Explanatory charts about the distortions to Ireland's National Accounts

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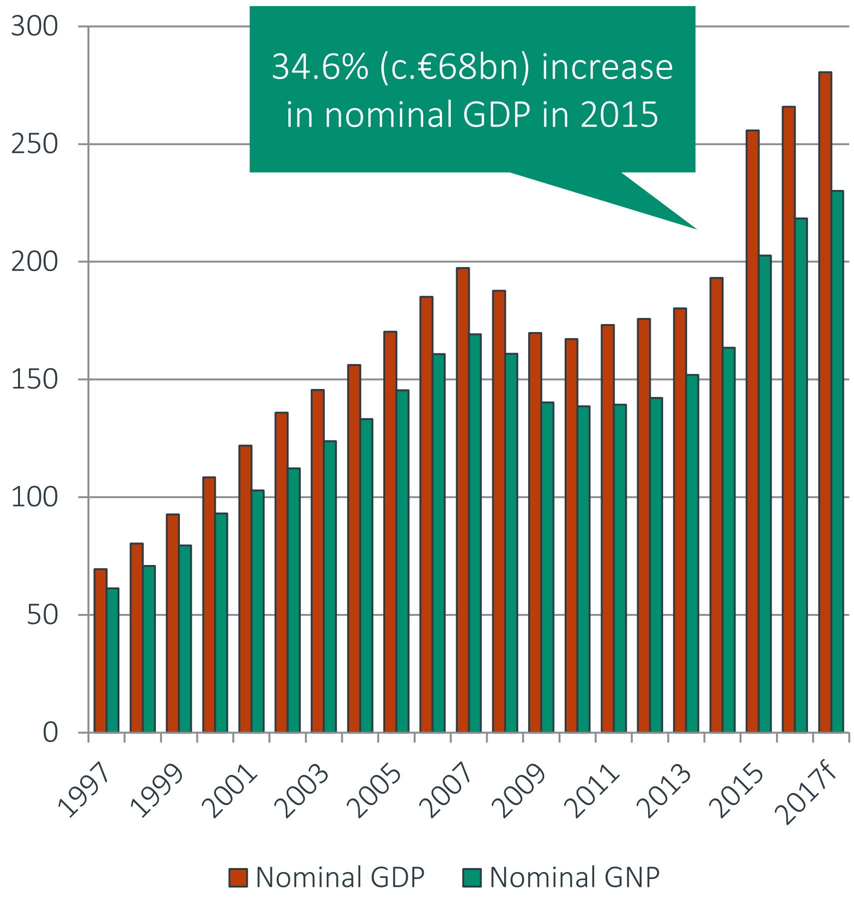
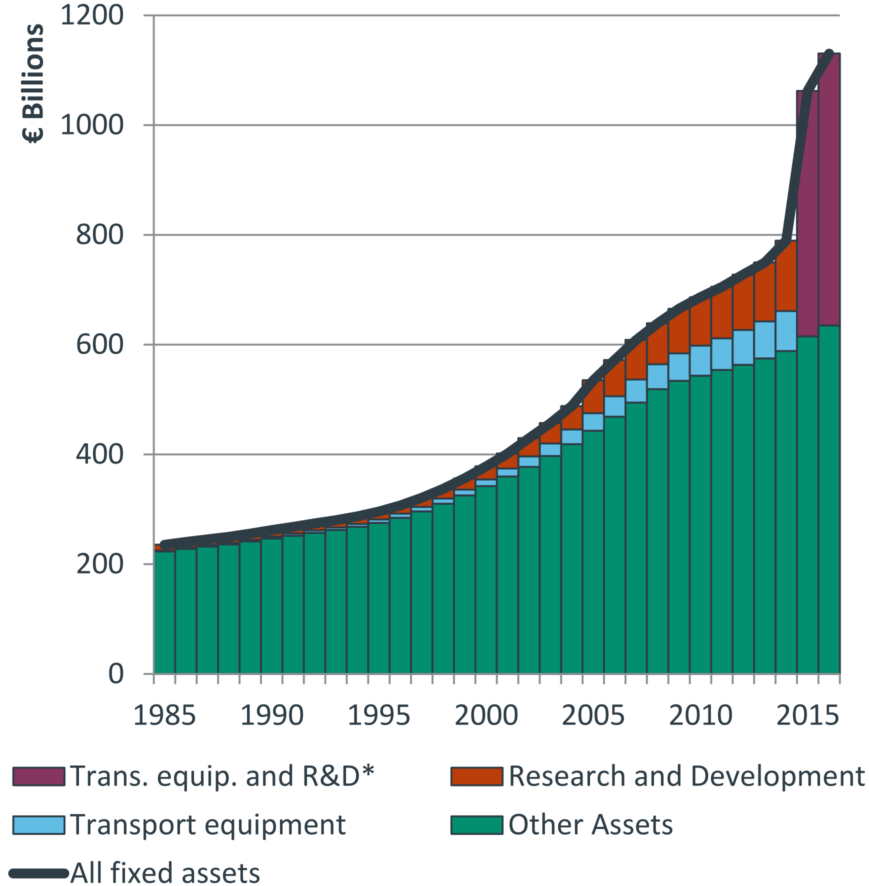
Reclassification of several companies and "onshoring" of IP led to step change in GDP & capital stock





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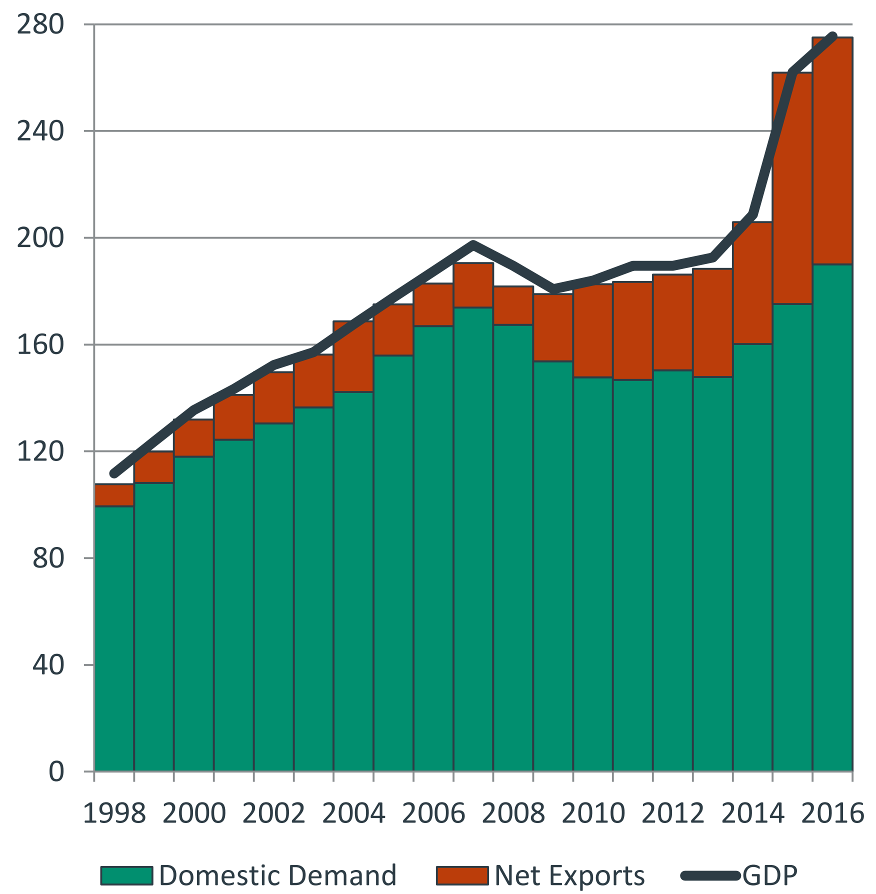
Source: CSO; Department of Finance
**due to confidentiality some sector data for 2015 has been restricted*

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

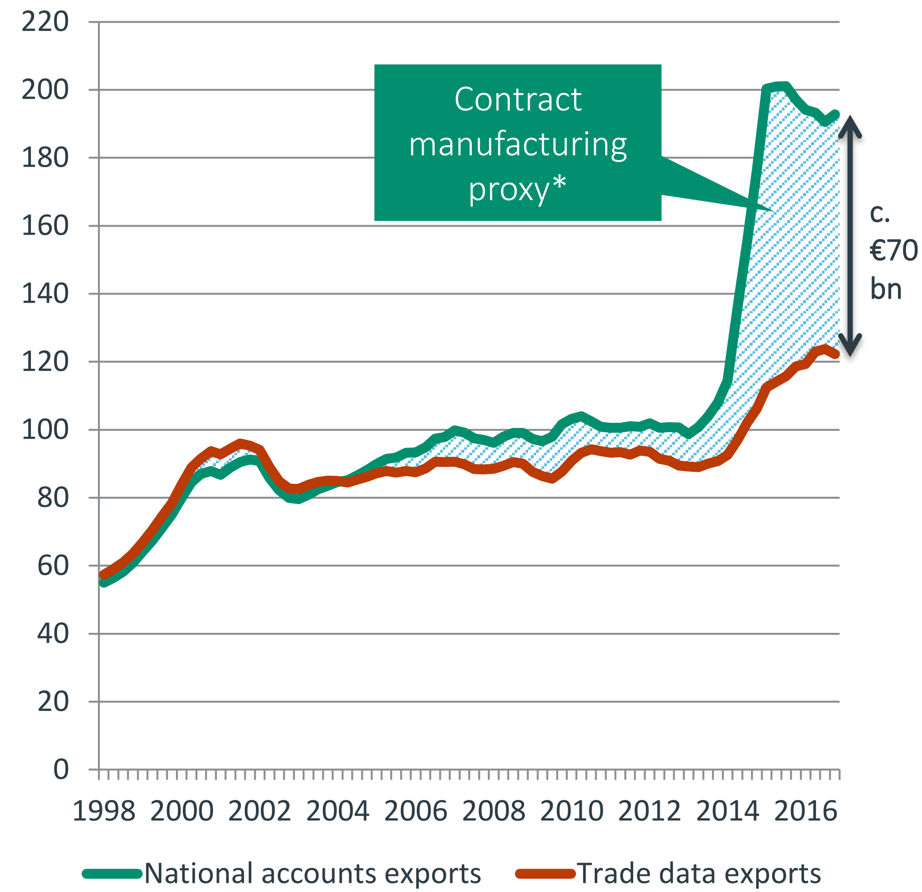
- The capital stock expanded in 2015 by c. €300bn or c. 40%. This is due to:
  - Re-domiciling/inversions of several multinational companies
  - The “onshoring” of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in Ireland.
- The transfer of whole entities and assets 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.



Source: CSO

Contract manufacturing (CM) overstates the extent of goods export growth in the last two 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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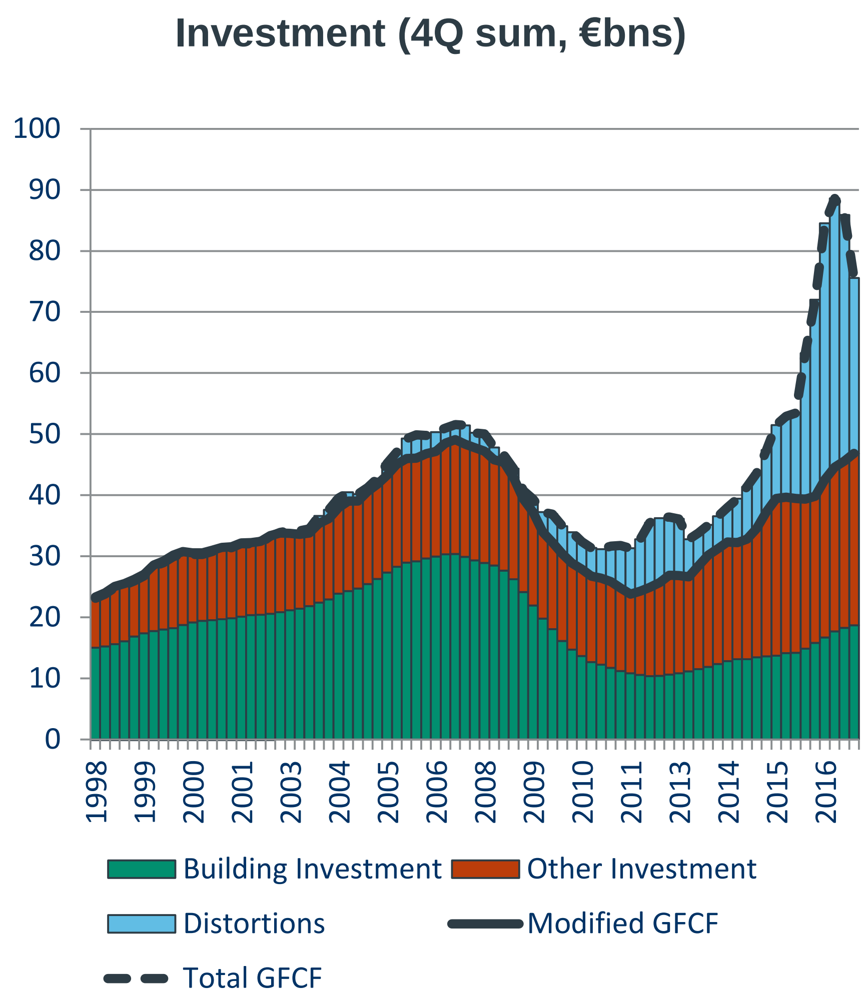
*Contract manufacturing proxy is calculated as the difference between the monthly International trade exports statistics and the National Accounts/BOP measure for goods exports. The monthly data is based on the actual volume of goods flowing through Ireland's various ports/airports whereas the national 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 16.6% Q1-Q3 2017 versus Q1-Q3 2016 highlighting pent up demand for housing.



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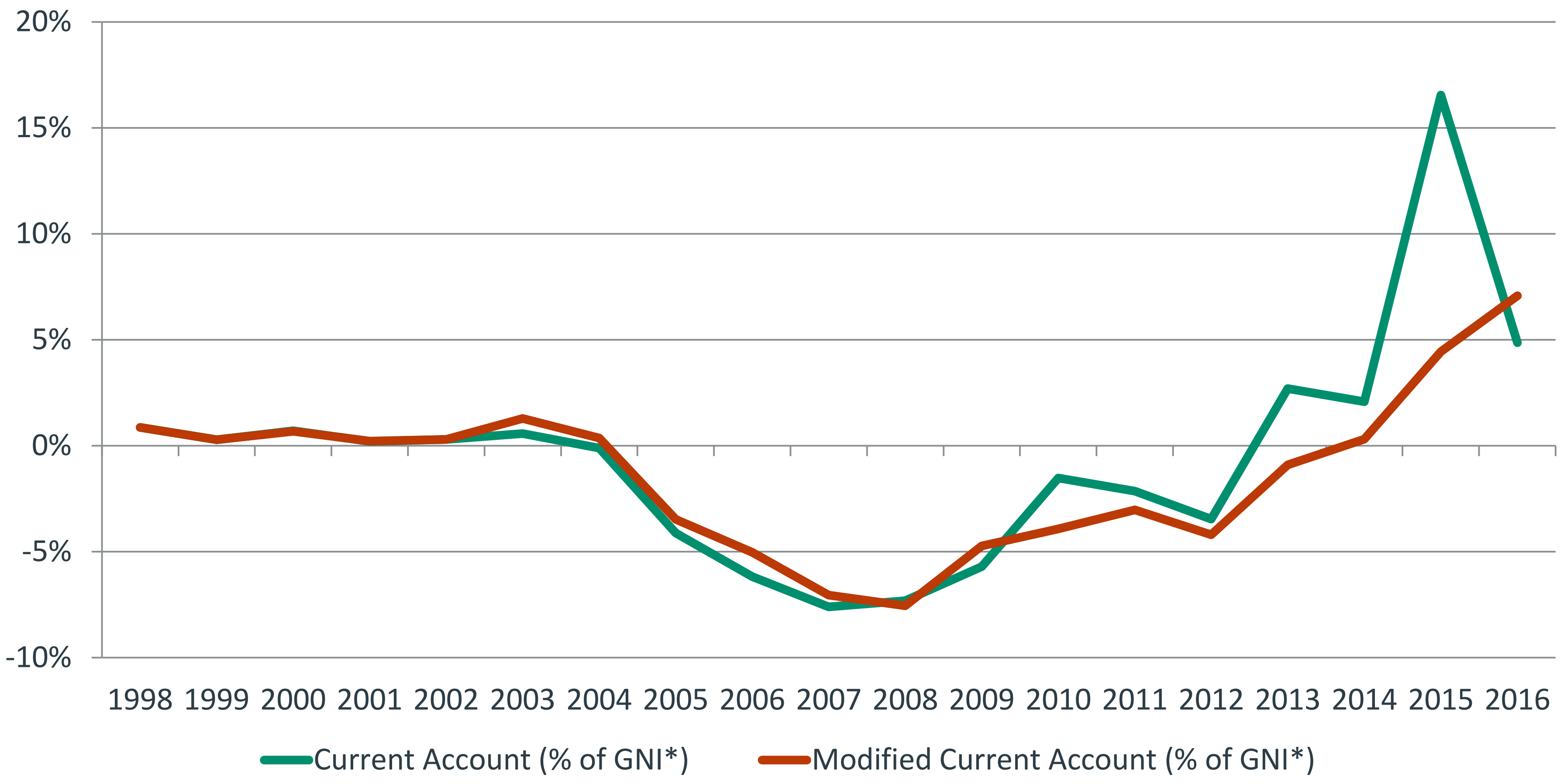
Source: CSO,

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



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Source: CSO,
CA=CA less (IP Depreciation + Aircraft Leasing Depreciation + Redomiciled Incomes) adding back (Imports of related to Leasing Aircraft + R&D related IP Imports)*

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