Ireland: Growth despite external risks

Underlying growth remains healthy, but Brexit and other external risks pose challenges

March 2017

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

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Summary

Ireland’s headline GDP is distorted;
yet underlying growth remains healthy

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Ireland's headline numbers distorted; underlying growth strong but Brexit will slow pace in 2017

- **GDP and GNP are exaggerated by the activity of multinational companies; behind the headline numbers, Ireland's growth has slowed but is still one of the fastest in the euro area**
  - The National Accounts are distorted by several companies and their assets being reclassified as resident in Ireland. GDP and GNP series are suboptimal as a result. All other metrics show the economy is growing, albeit slower than in 2015. Our underlying metric suggest the economy grew by 4.6% y-o-y in 2016.
  - At the same time, employment is expanding; unemployment was down to 6.6% in February – a cyclical low.
  - Consumer spending and investment have recovered. Consumption grew by 3% in 2016. There is pent up demand for investment e.g. housing supply is lagging demand, leading to soaring rents.

- **Brexit will slow Irish growth in 2017**
  - The UK may enter recession after its vote to leave the EU: for every 1% drop in UK GDP Ireland's may fall by 0.3-0.8%. Growth in 2016 will not be much affected; 2017 is likely to see some impact.

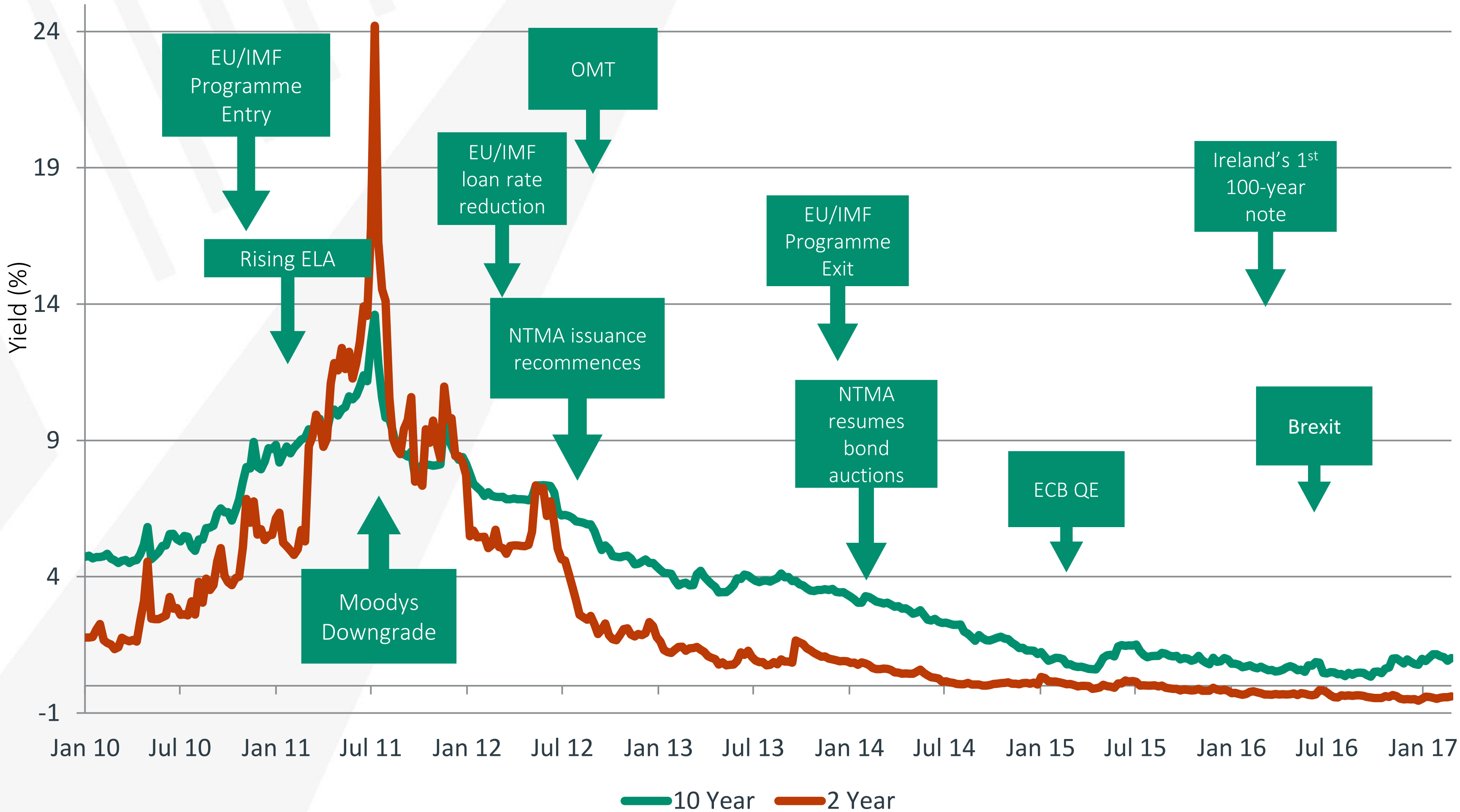
- **Government debt and deficit metrics are also distorted by GDP revisions; analysis should include other measures of Ireland's debt serviceability**
  - Government debt-to-GDP is expected to have fallen to 76% in 2016; the GG deficit to 0.9%. The inflated GDP denominator means other metrics of debt serviceability are required.
  - Debt-to-GG Revenue (277%), interest cost as a share of revenue (8.6%) and the average interest rate on Ireland's debt (3.1%) are more apt measures for comparison with other sovereigns (2016 forecasts).
  - Excluding the distortions, Ireland's fiscal picture is improving. Ireland is in primary surplus, revenue data in recent quarters has been steady and spending is relatively restrained.

Funding in 2017: €9-13 billion – up on 2016 low level; €6.5bn raised already

- **Funding in 2017**
  - NTMA plans to issue between €9-13billion of long-term bonds over the course of 2017.
  - On January 4th the NTMA raised €4 billion through the syndicated sale of a new 20-year benchmark Treasury Bond maturing in May 2037. The funds were raised at a yield of 1.734%.
  - On February 9th, the NTMA raised a further €1.25bn in a dual auction of the 2022s and 2026s at yields of 0.088% and 1.026% respectively.
  - In March, the NTMA conducted a dual-auction of the 2026s and 2045s raising €1.25bn (yields of 1.046% and 2.187%).
  - The investor base continues to expand: International investors bought 97% of the bonds on offer in January, led by Germany/Austria (31%), the UK (25%), and the Nordics (10%).
  - Among investor categories, the bias of the deal was to real money: asset/fund managers took 36%, banks bought 28% and pension funds/ insurance companies bought 16%.

- **€8.4bn issued in 2016**
  - Funding was light thanks to the shrinking Exchequer deficit and October 2017 is the next bond redemption
  - On Jan 7th, the NTMA issued a €3bn 2026 bond via syndication – at a yield of 1.156%. It auctioned a further €1.75bn of the bond in February and April below 1%. In September and October, the NTMA tapped the 2026 bond twice for €1bn at yields of 0.33% and 0.495%.
  - In May, €750m of the 0.8% 2022 bond was auctioned at a yield of 0.157%
  - In March, the NTMA issued its first ever 100-year bond by private placement. The €100m note yielded 2.35%.
  - In November, it issued €750m of the 2030 bond (yield 0.978%).

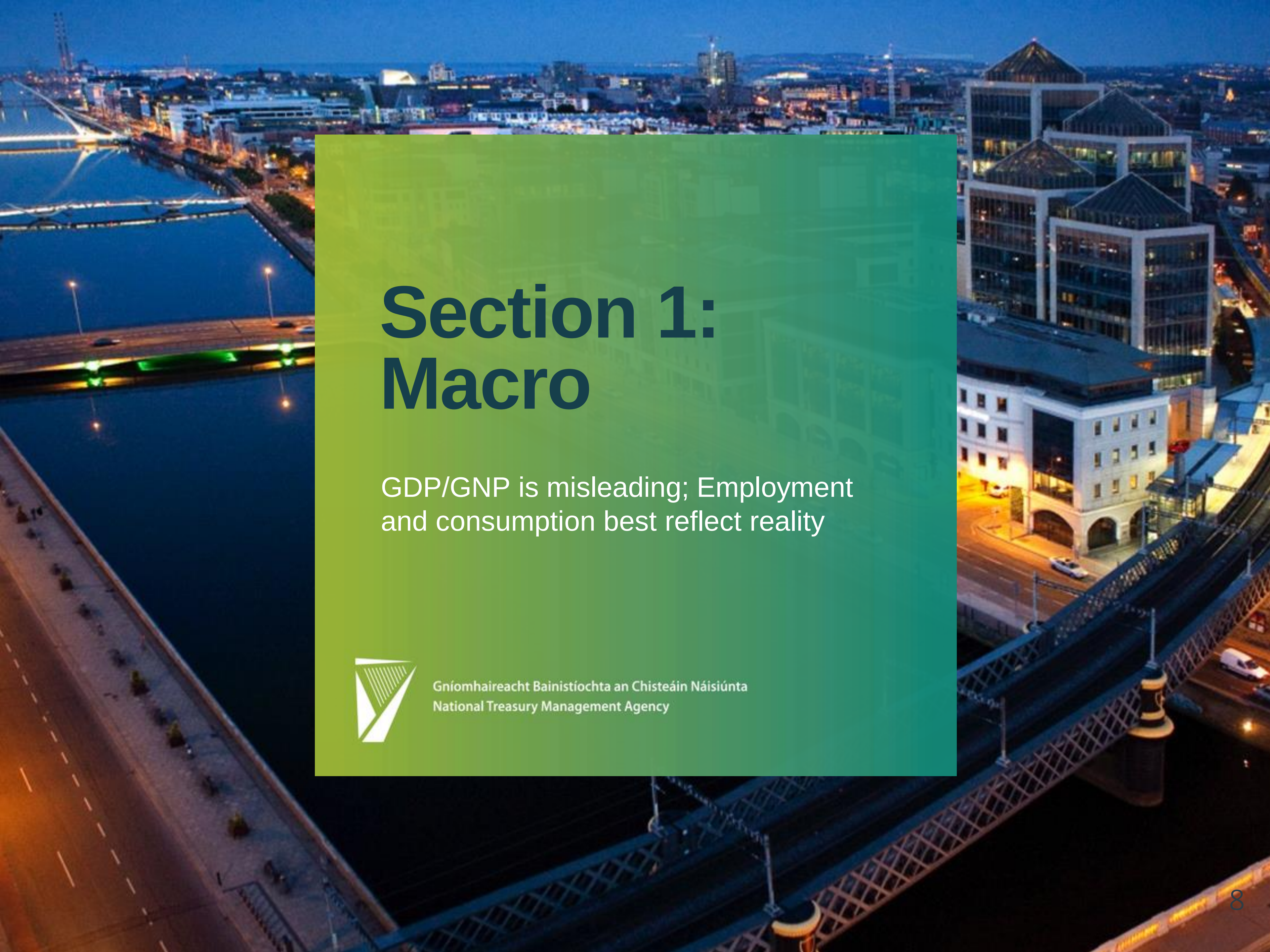
Ireland's bond performance underpinned by prudent domestic policy and ECB action



Source: Bloomberg (weekly data)

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	Feb. 2016
Moody's	A3	P-2	Positive	May 2016
DBRS	A(high)	R-1 (middle)	Stable	Mar. 2016
R&I	A-	a-1	Positive	Dec. 2015



Section 1: Macro

GDP/GNP is misleading; Employment and consumption best reflect reality

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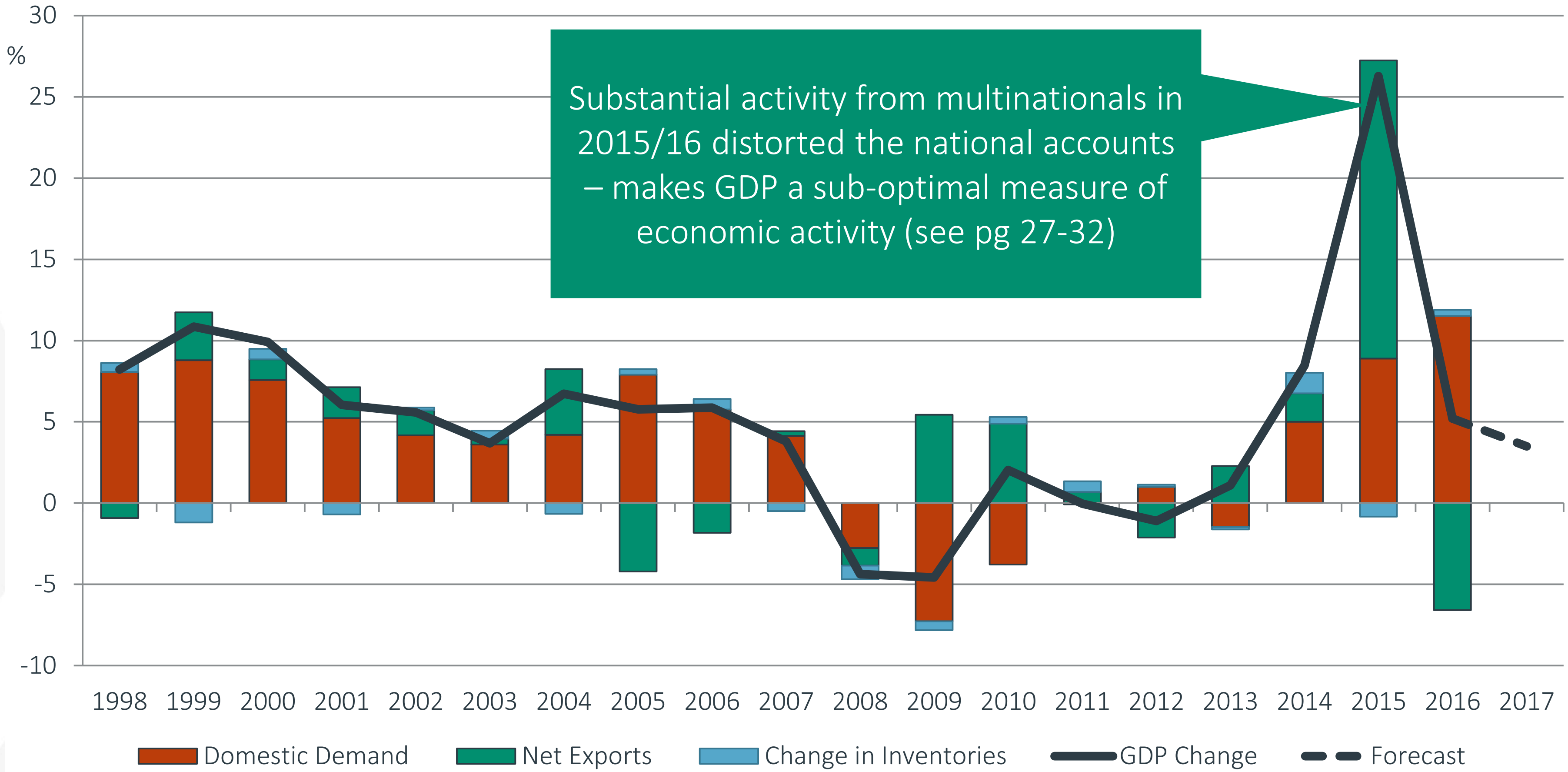
Distortions to GDP/GNP make them poor indicators of economic performance



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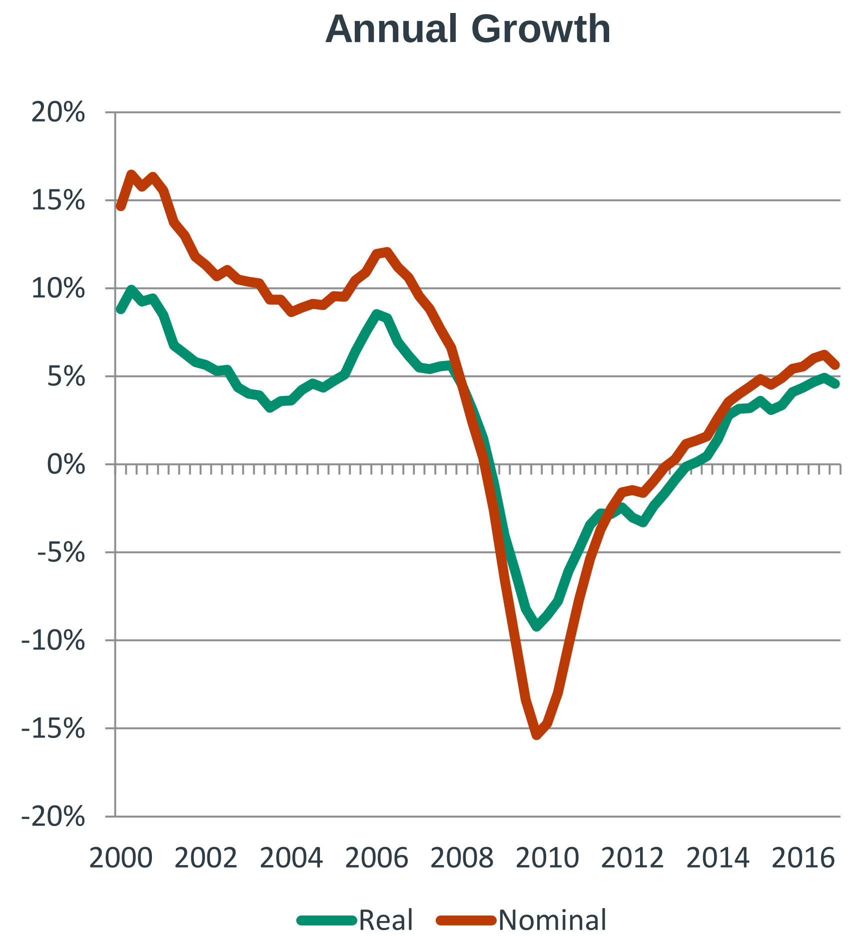
Source: CSO; Department of Finance

Better measures of economic activity are necessary – we present "Underlying Domestic Demand*"

- The measure is constructed to strip out the distorting effects of MNCs.
- Underlying domestic demand (UDD) includes:
  - private consumption
  - government consumption
  - building investment*
- This measure pegs nominal growth closer to 5.6% at Q4 2016 (y-o-y). UDD grew by 4.6% y-o-y in real terms in Q4 2016.
- The CSO will release its own adjusted metric "GNI*" in the summer.

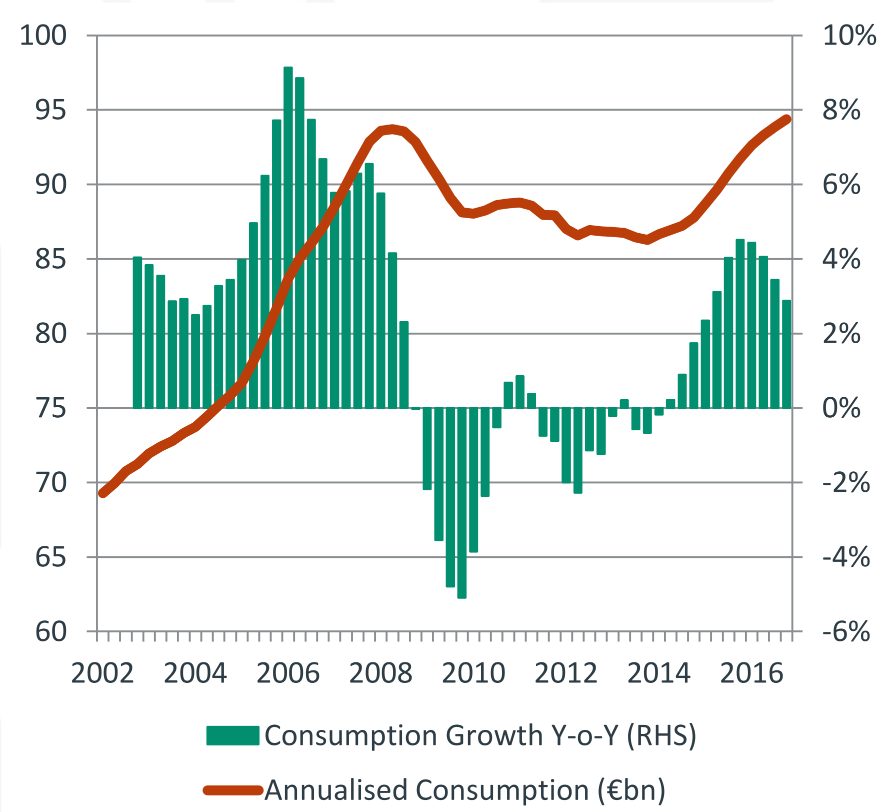


Source: CSO, NTMA calculations

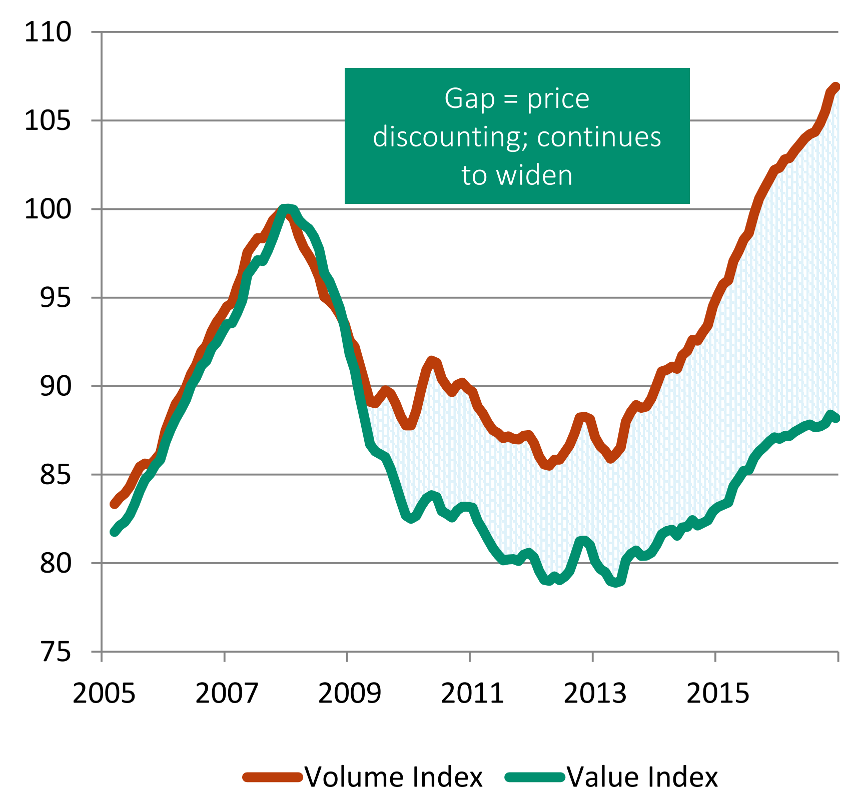
**note previous versions of UDD included machinery and equipment investment ex. planes. However confidentiality issues mean data on this is now restricted and so it is removed from our UDD metric.*

Consumption is now a large contributor to growth – and is unaffected by MNC distortions

Private consumption grew at 3.0% y-o-y in 2016



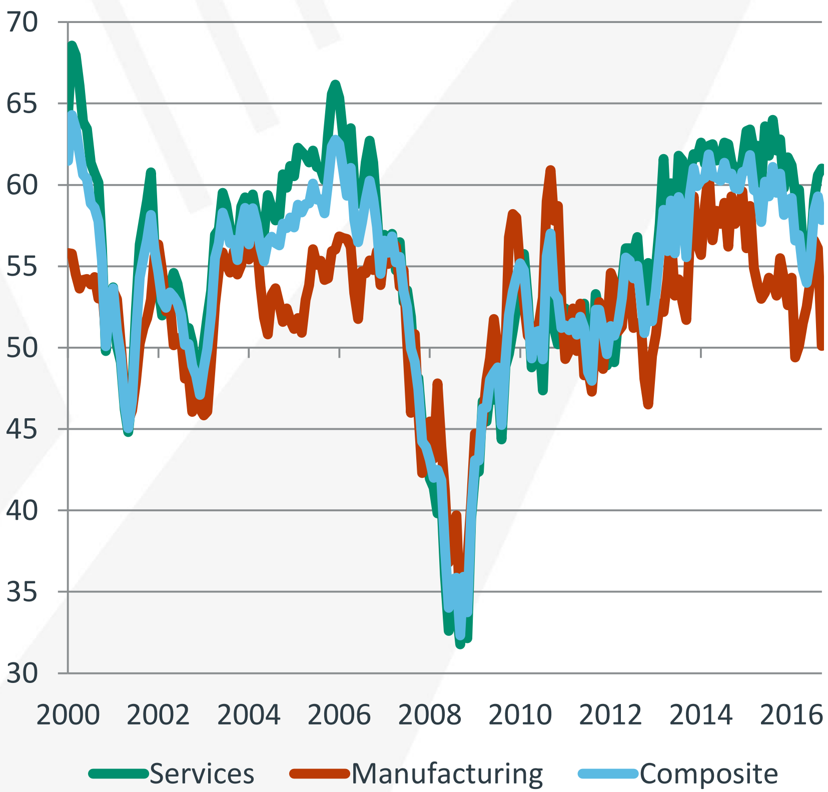
"Core"* retail sales up but value has slowed in recent months (peak=100)



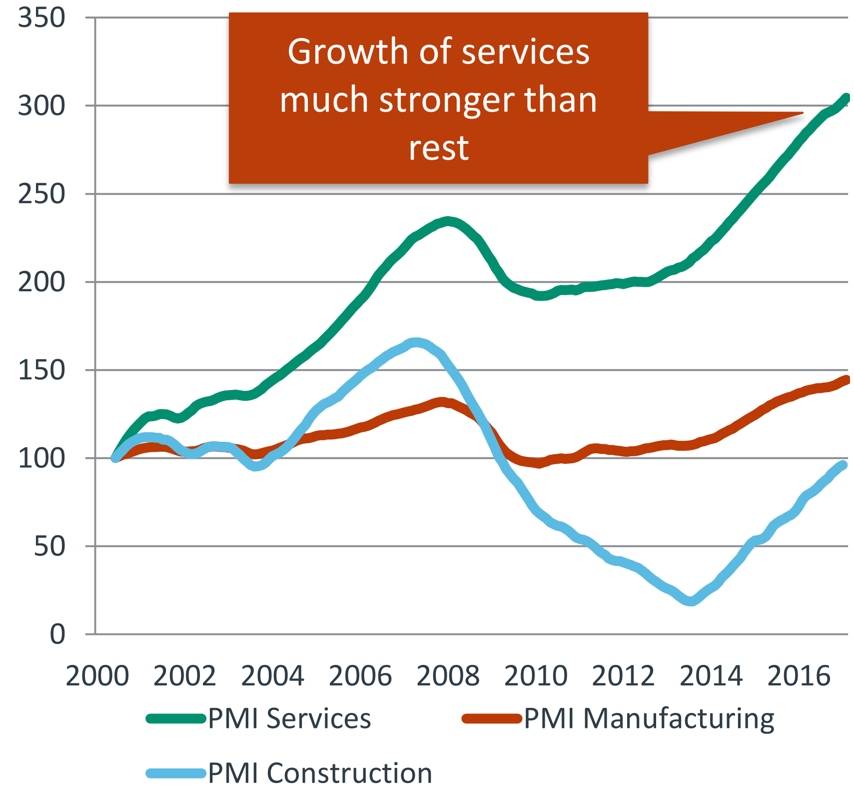
Source: CSO, CSO (retail sales)

High frequency indicators also show Ireland's recovery is broad based

Ireland Composite PMI expanding – manufacturing hurt in mid-2016 by Brexit



Recovery is broad based (PMI chg. as cumulative index level, June 2000=100)



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Source: Markit; Bloomberg; Investec ; NTMA workings

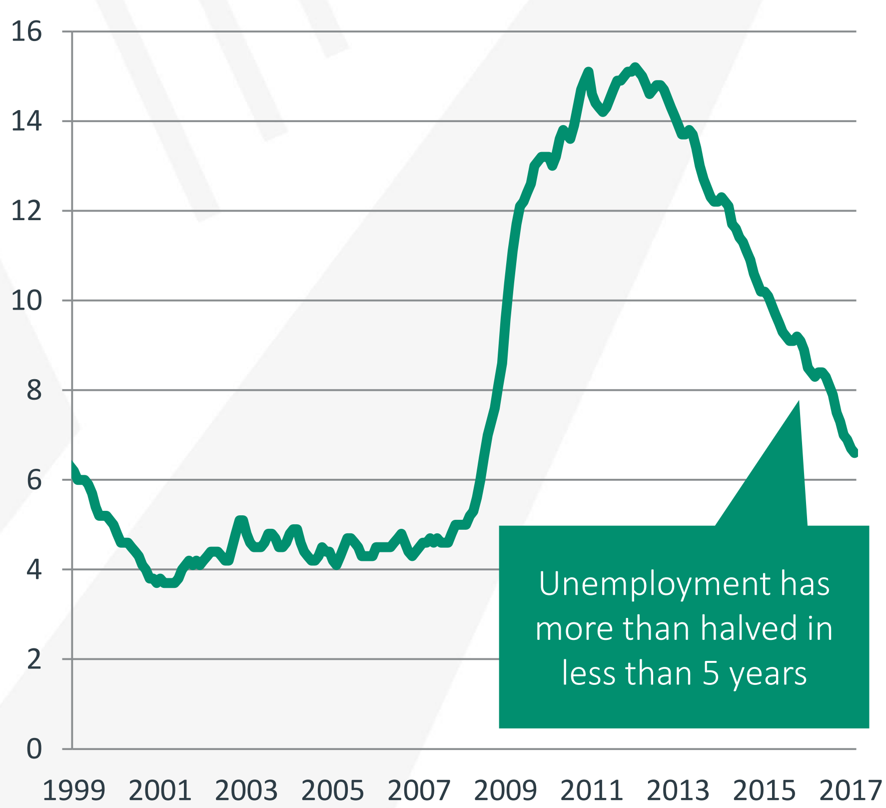
Comparison of economic activity metrics

Measures	Growth rate 2016	EA average 2016
GDP (real)	5.2%	1.7%
GNI (real)	-	-
GG Revenue	4.2%*	2.8%*
UDD (nominal)	5.6%	-
UDD (real)	4.6%	-
Consumption (real)	3.0%	1.9%
Employment	2.9%	1.6%*

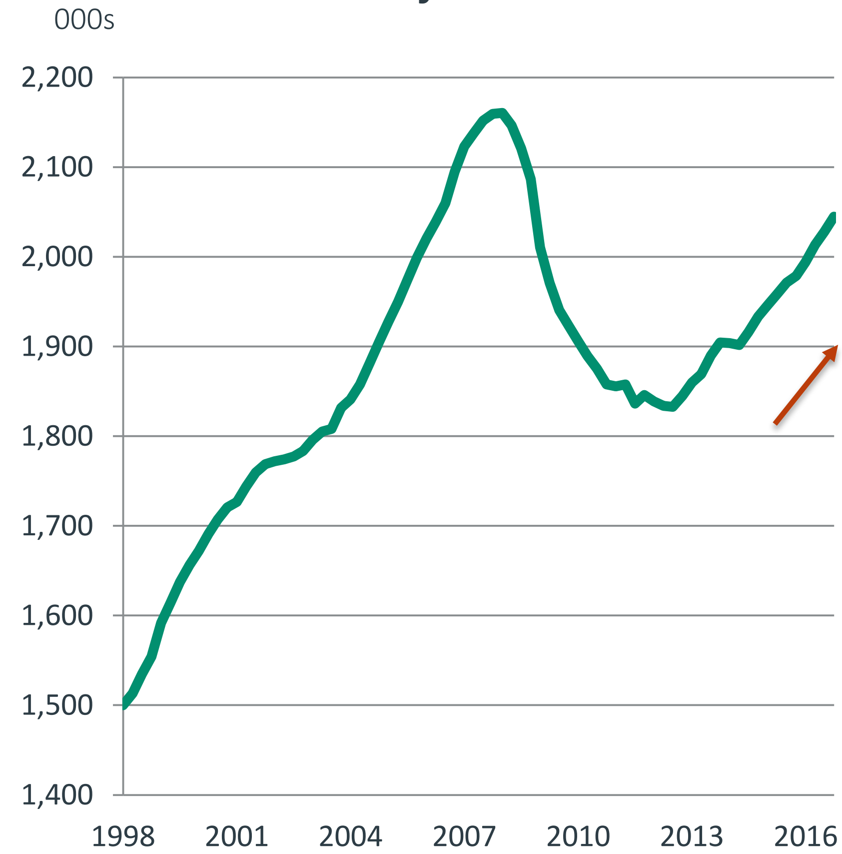
*Source: CSO, Eurostat, NTMA calculations (where appropriate four-quarter sum annual growth rates used) *Q3 2016 data*

Labour market has rebounded since 2012; unemployment continues to fall

Unemployment rate drops to 6.6% in February 2017

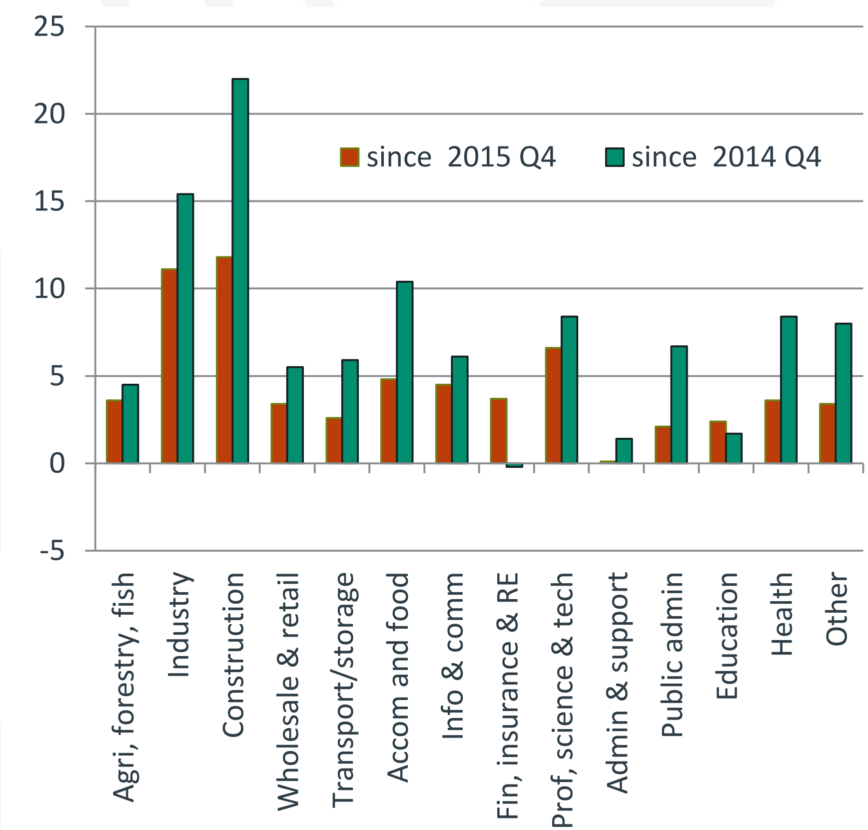


Employment up 11.6% from cyclical low

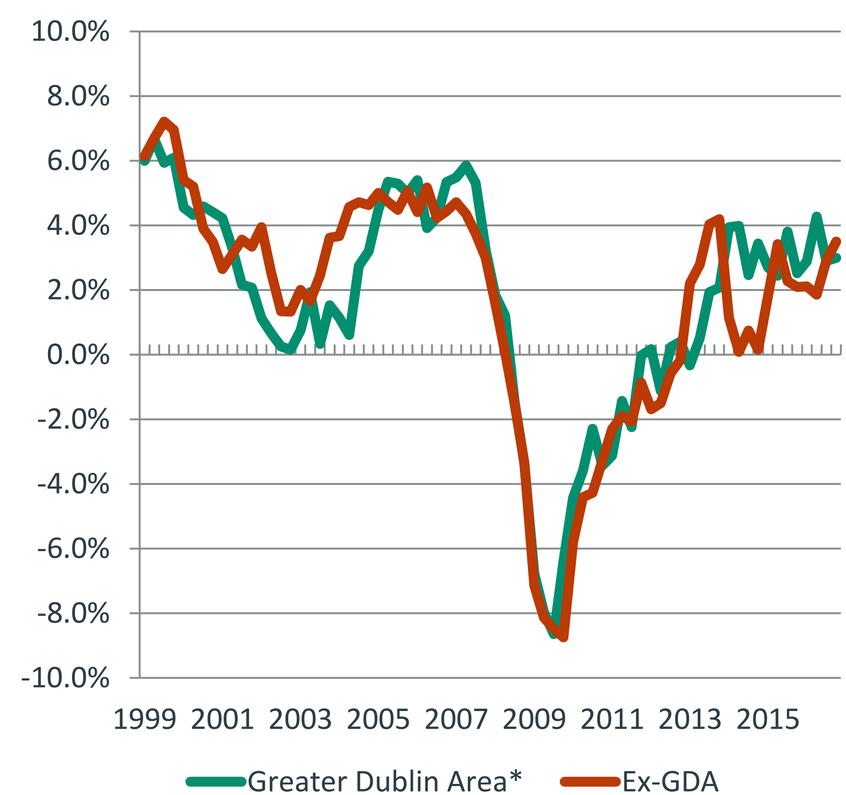


Employment growth is now broad based by sector and region

All 14 sectors have seen employment growth in year to Q4 2016 (000s)



Employment growing across all regions in Ireland – faster now in ex-GDA*



* Greater Dublin Area = Dublin, Meath, Wicklow and Kildare

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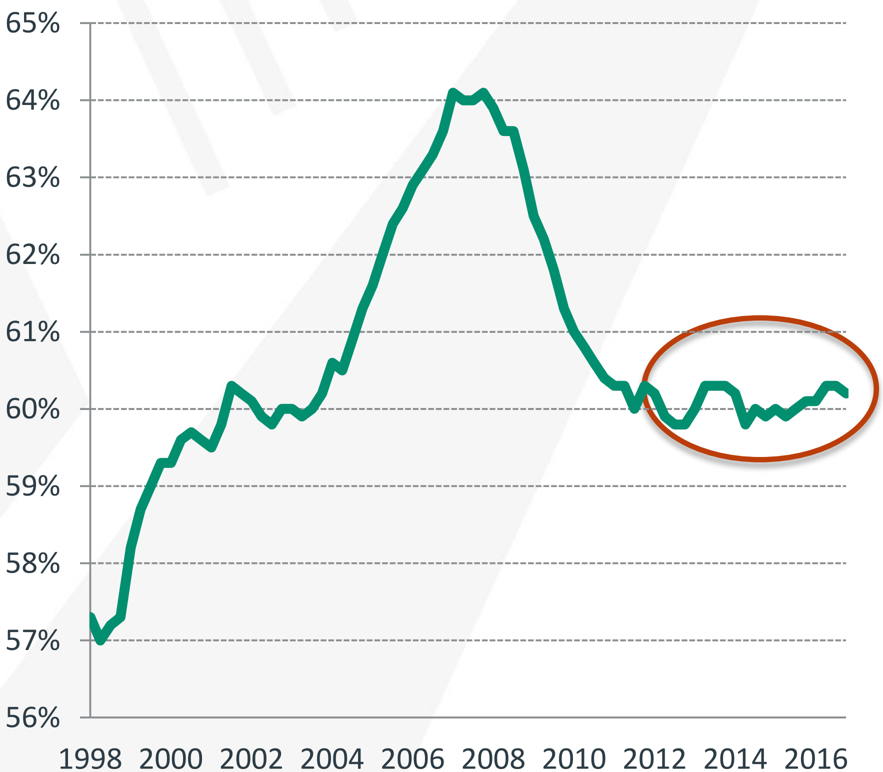
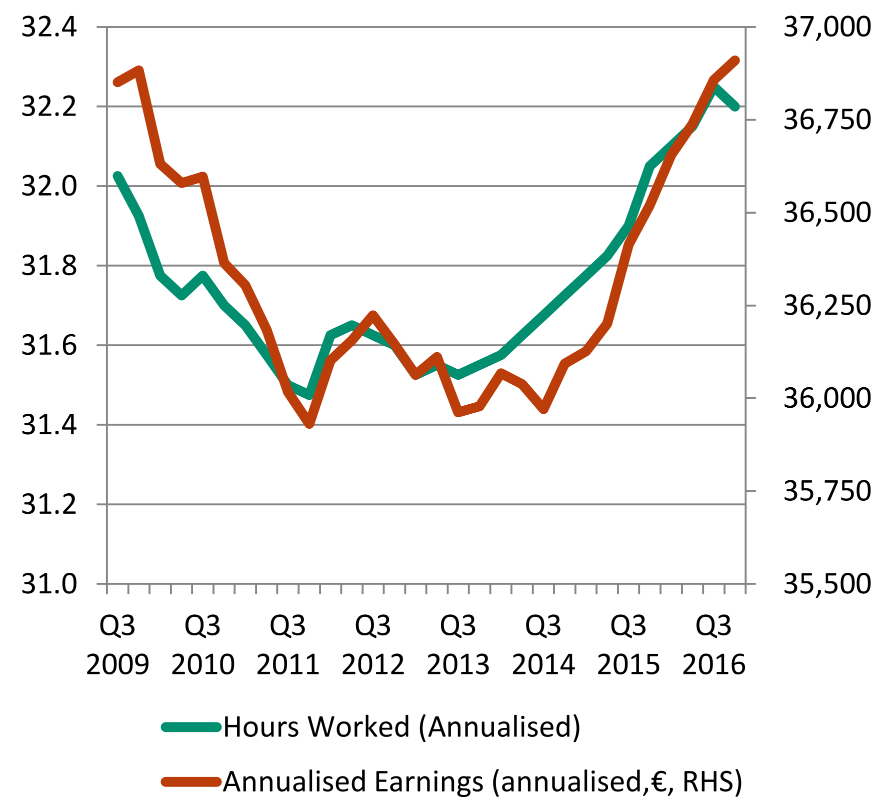
Source: CSO

Labour participation has not yet recovered – similar to US; Wages only now rising, pointing to slack in the market

Participation rate hovering around 60%

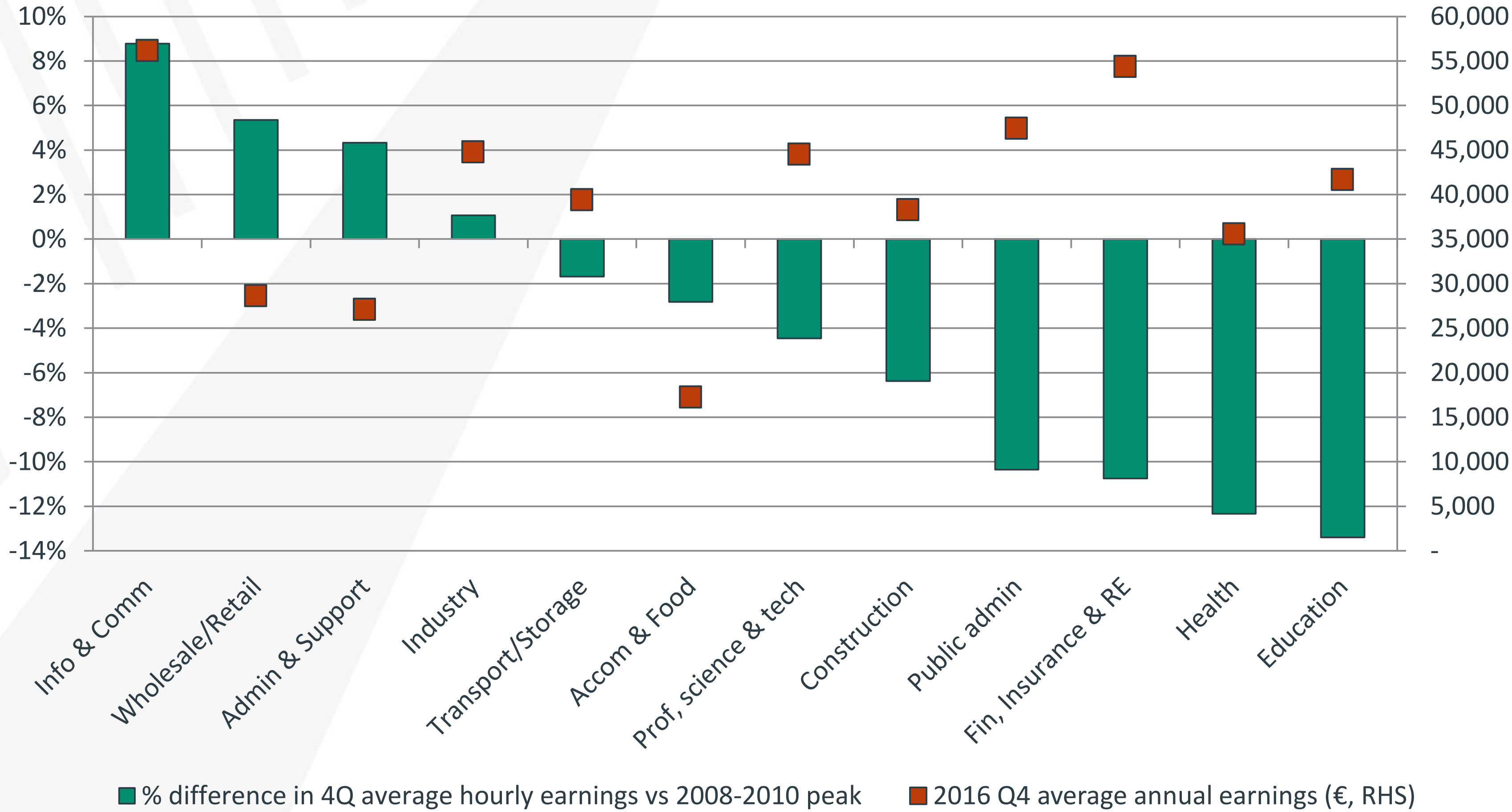


Wages and hours worked beginning to recover, although pockets of excess capacity remain



Source: [CSO](), [CSO (Earnings)]()

Wide disparity in wages across sectors



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Source: CSO, NTMA analysis

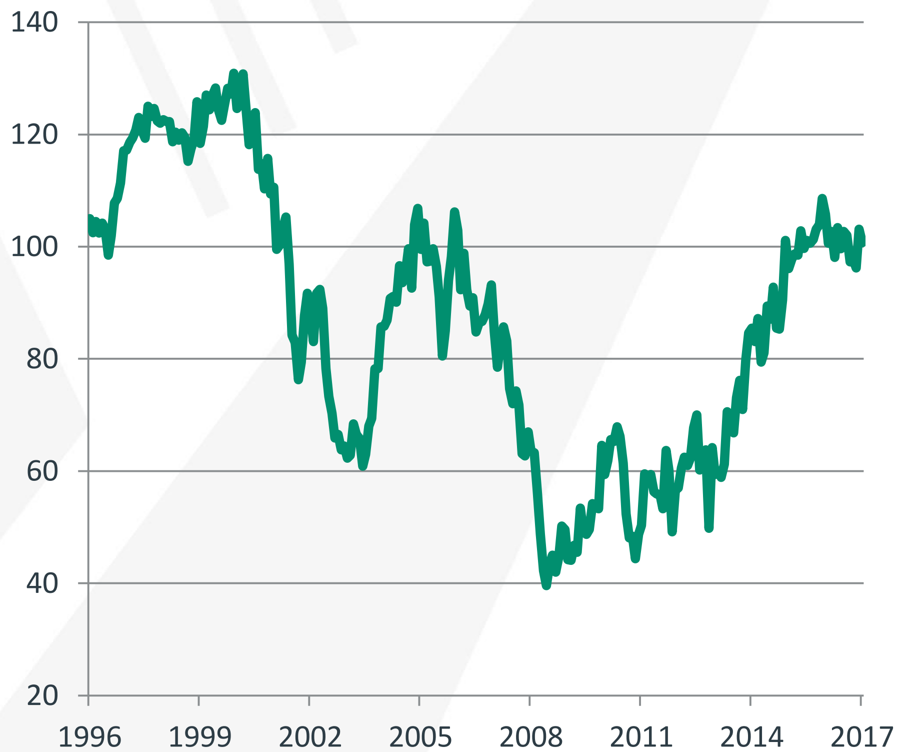
Unemployment falling across Europe; falling faster here

	Q4 2013 %	Q4 2014 %	Q4 2015 %	Q4 2016 %
Germany	5.1	4.9	4.5	**3.9**
Netherlands	7.6	7.2	6.7	**5.5**
Sweden	8	7.8	7.1	**6.9**
Ireland	12.2	10.4	9.1	7.1
Belgium	8.5	8.5	8.6	**7.6**
EU 28	10.7	10	9	**8.2**
Euro area	11.9	11.5	10.5	**9.7**
France	10.2	10.5	10.2	**10.0**
Portugal	15.4	13.5	12.2	**10.5**
Italy	12.4	12.8	11.6	**-**
Spain	25.8	23.7	20.9	**18.7**
Greece	27.6	25.9	24.4	**-**

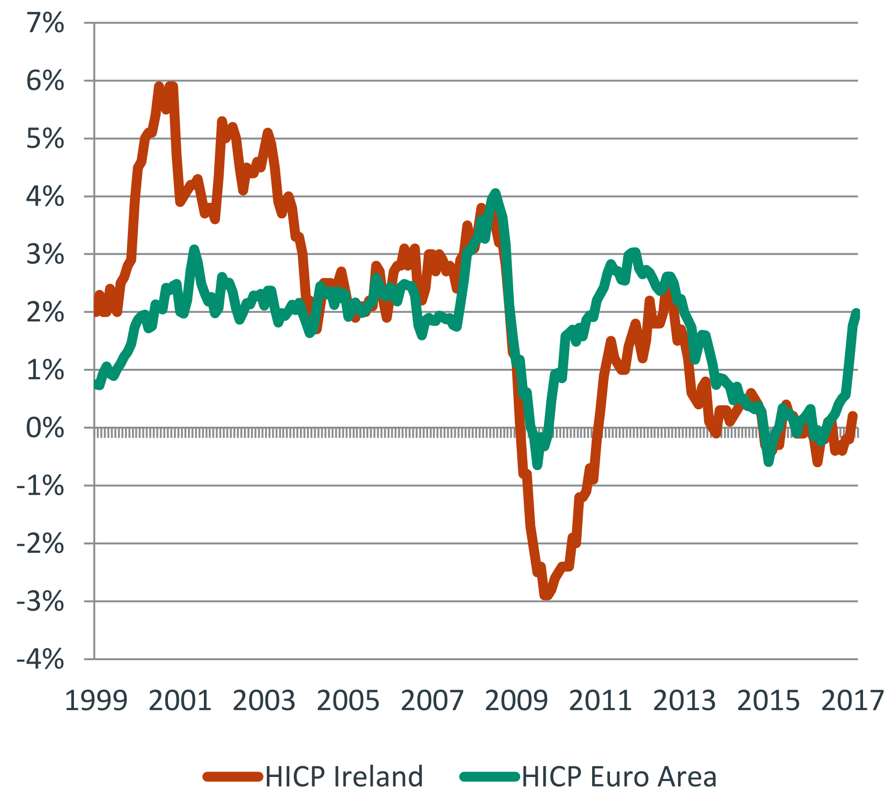
Source: Eurostat

Rising employment and house price rises lift confidence; stagnating consumer prices underpin real income…

Consumer confidence had recovered, though Brexit may have impacted



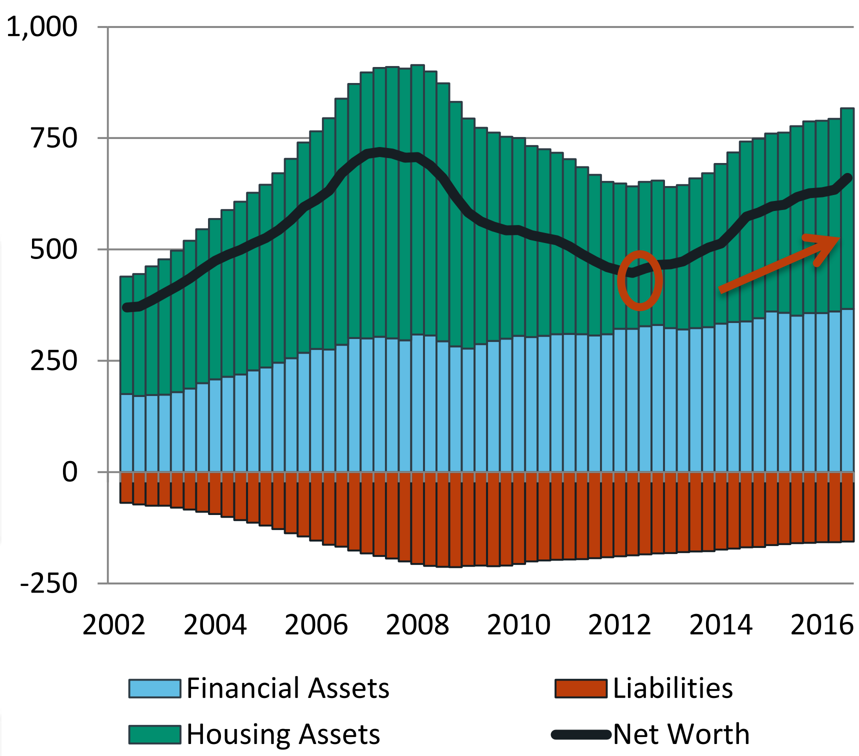
Inflation in Ireland has slowed in recent months on sterling weakness



Source: KBC, ESRI, CSO; Eurostat

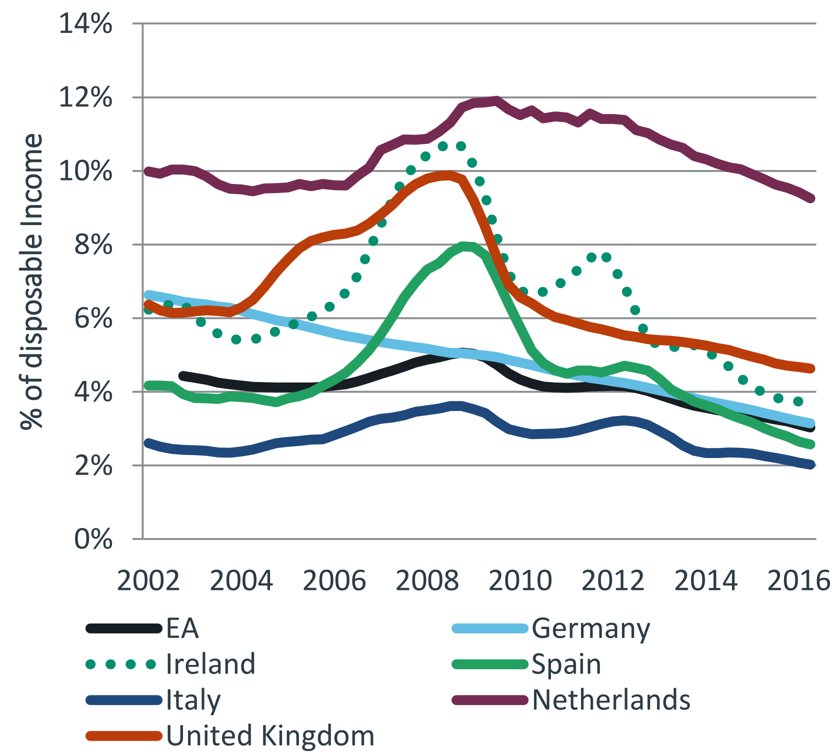
… while household deleveraging continues; rising house prices bolster household balance sheets

Household net worth (€bn) improved since 2012 underpinning consumer spending



Source: CBI, NTMA Calculations

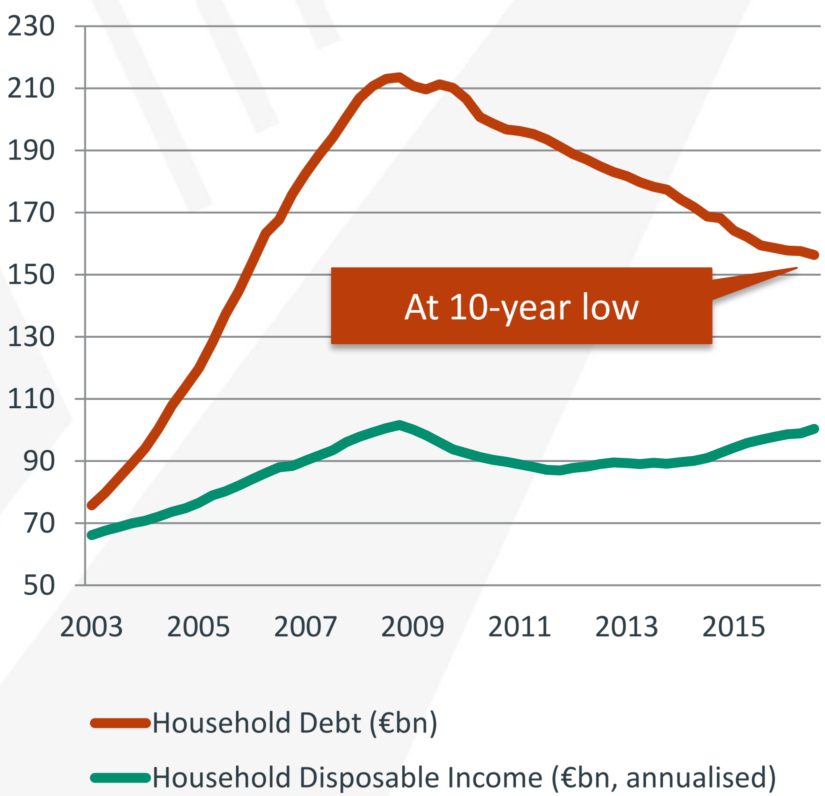
Interest burden down to only 4% of disposable income from peak of 11%



Source: CBI, Eurostat NTMA calculations
Note: Non-trackers bare 90% of the interest burden

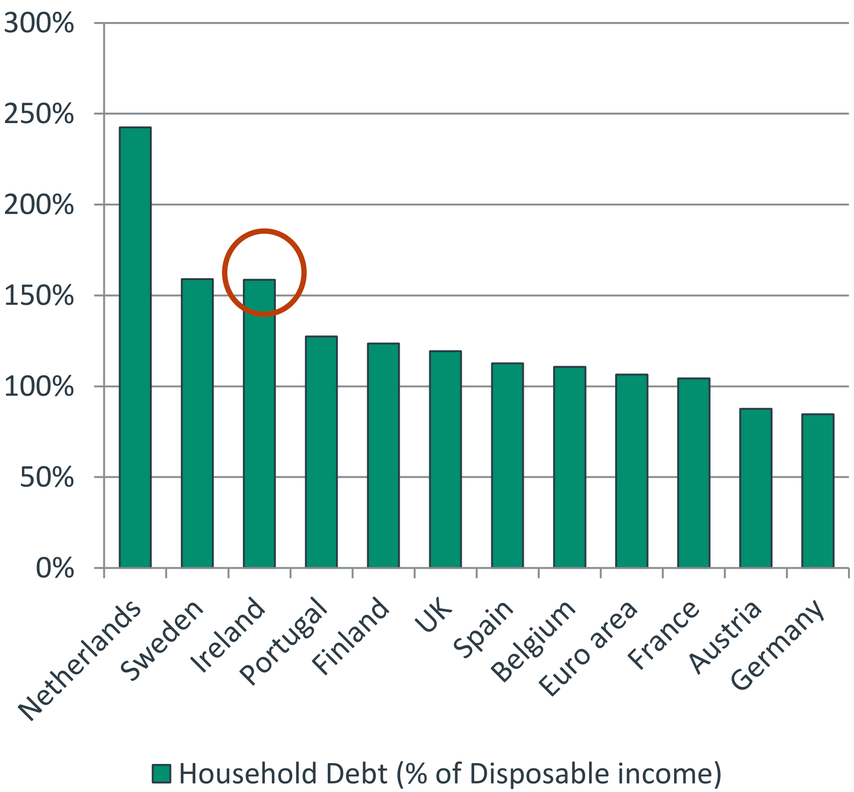
Private debt levels are high but improving

Household debt down €55bn from peak



Source: CBI

Debt to after-tax income* improving (156%) but among highest in Europe



Source: Eurostat

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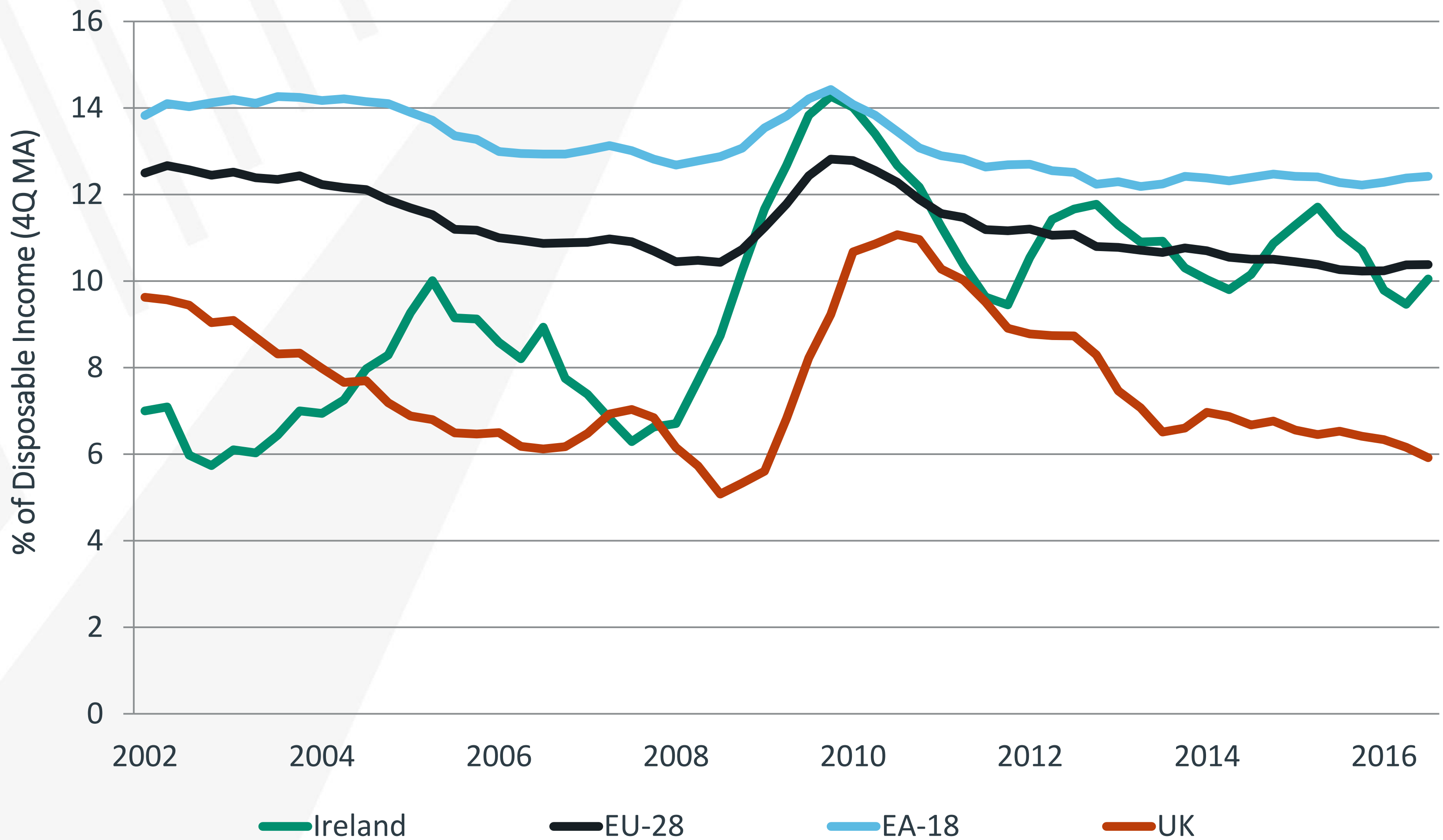
*Measure includes both loans and other liabilities.Excluding other liabilities, debt-to-income ratio is 145%

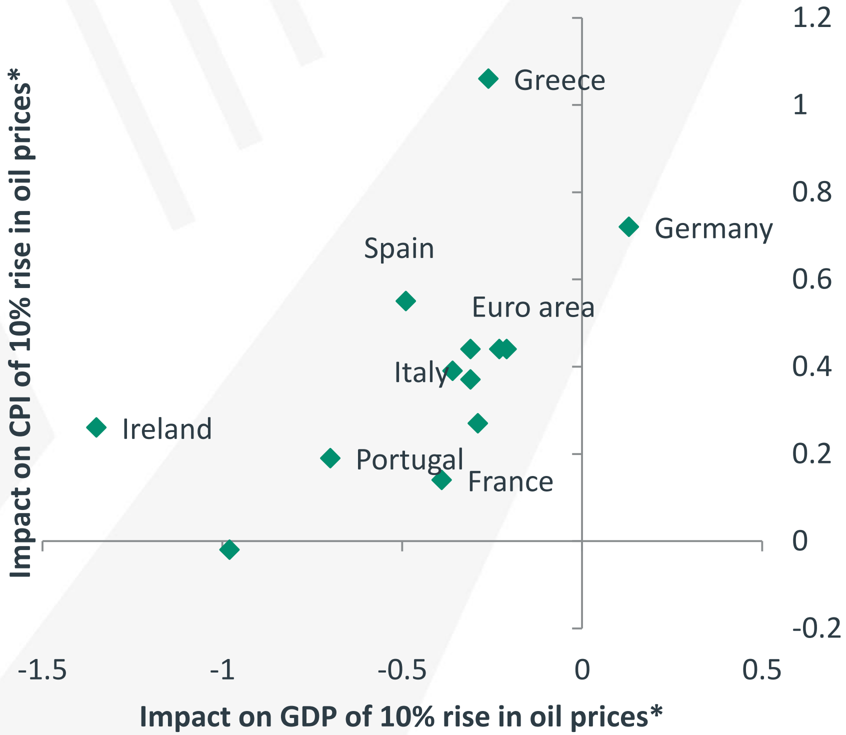
Gross household saving rate is close to the EU average



Source: Eurostat, CSO

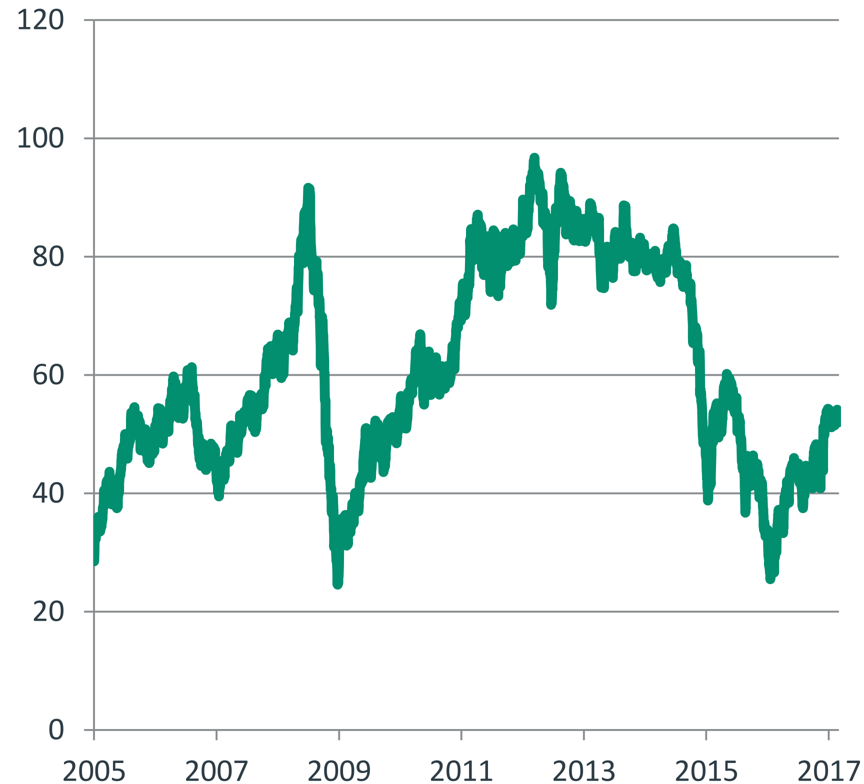
External factors supercharged the economy in 2015; but Brexit FX and oil reversal likely in next 12-18 months

Oil price shock boosted GDP by as much as 1.5% in 2015



Source: CEPR: Oil and the Euro Area Economy
**impact over 5 years. Oil price shock in 2015 was c.50% implies 1 year impact close to 1.5%.*

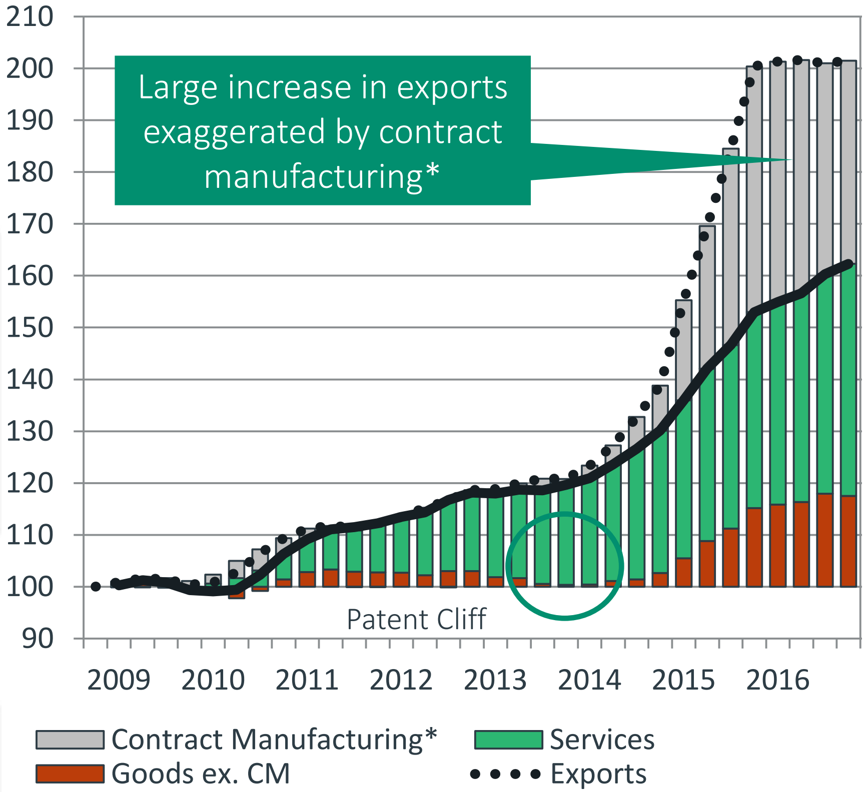
Brent Oil rising (€ / barrel)



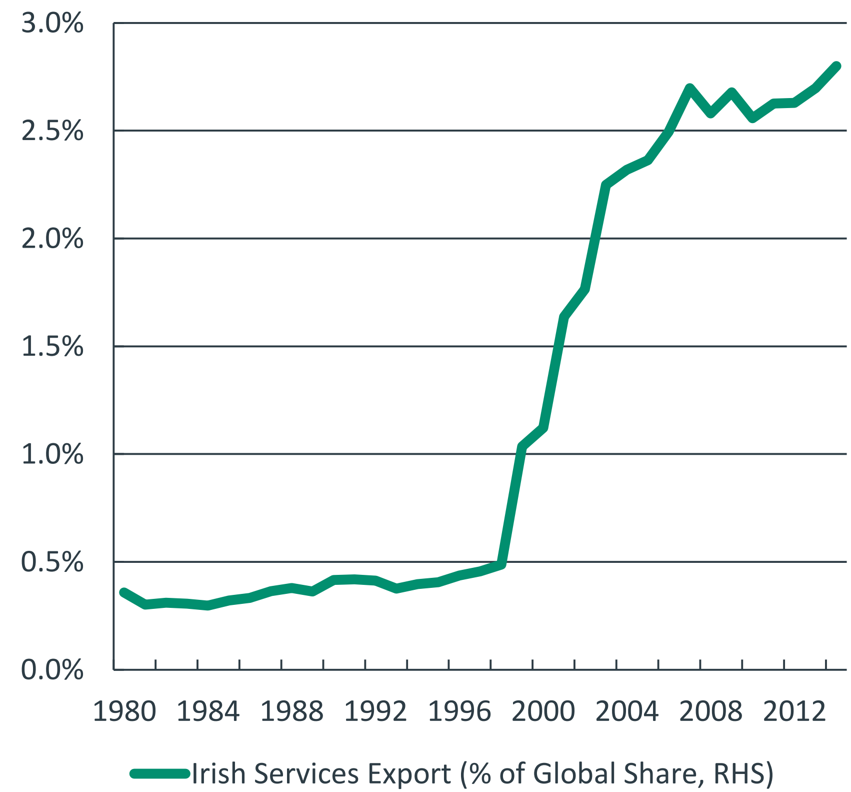
Source: Bloomberg

Service exports have been very strong post-crisis; Goods exports excluding contract manufacturing slower

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



Ireland has tripled its share of global service exports in the last 15 years



*Source: CSO, NTMA calculations , * Contract manufacturing proxy used see pg 30; WTO*

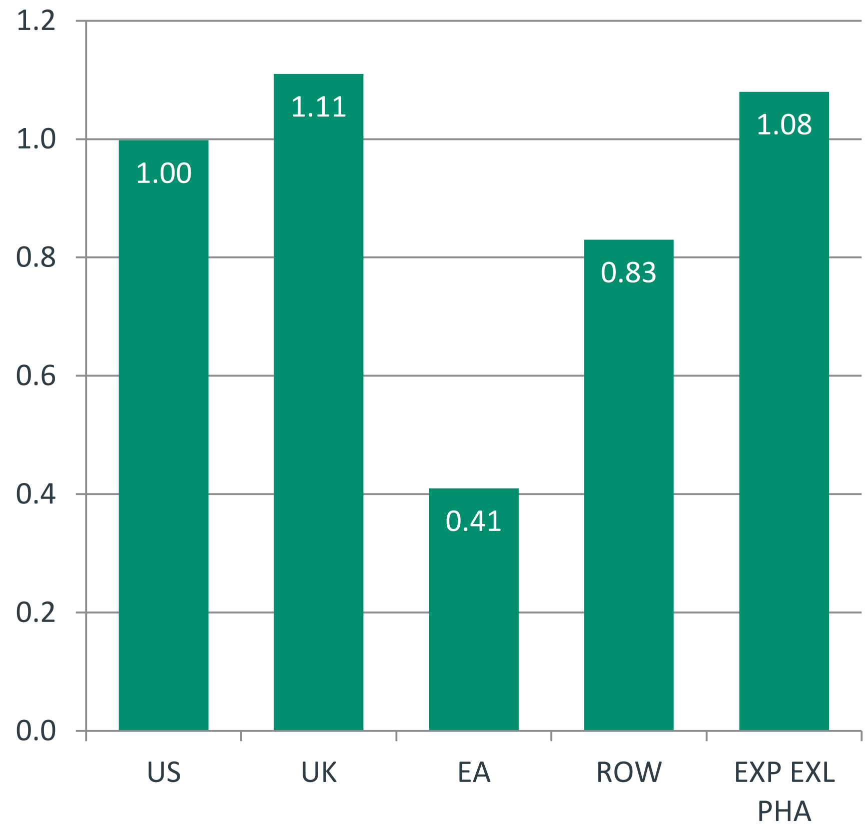
Ireland’s goods exports respond vigorously to euro movements – in both directions

- 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

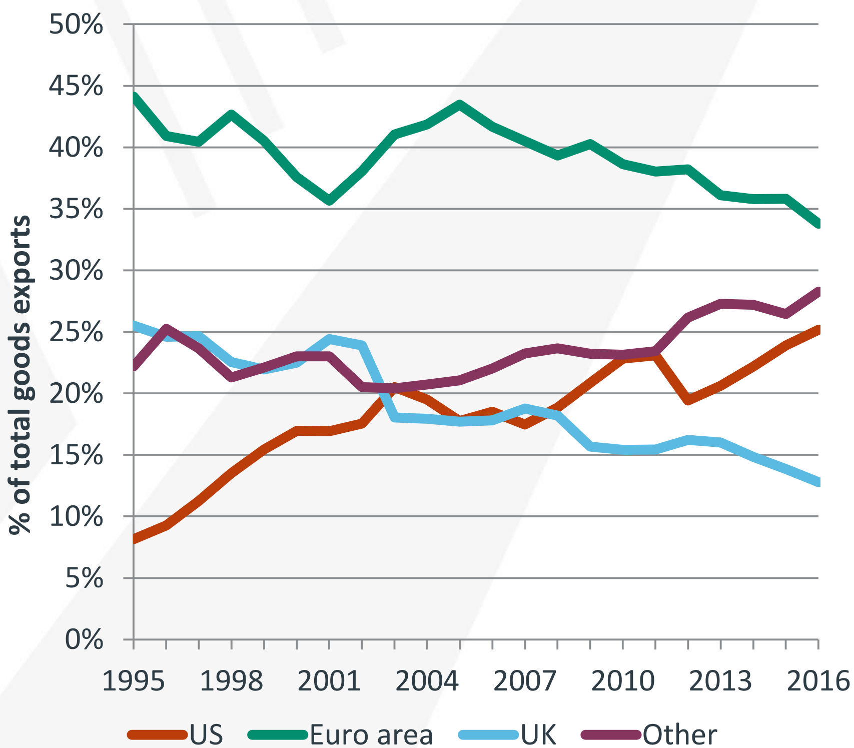
Note: All coefficients significant at 99% level; not affected by contract manufacturing. Time period is 1998 to 2016 Q2. For longer time periods, the UK elasticity is smaller (closer to 0.4-0.5 for 1981 onwards).

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



Ireland's openness has been critical to Irish success; Brexit hinders export-led growth

Ireland benefits from export diversification by destination



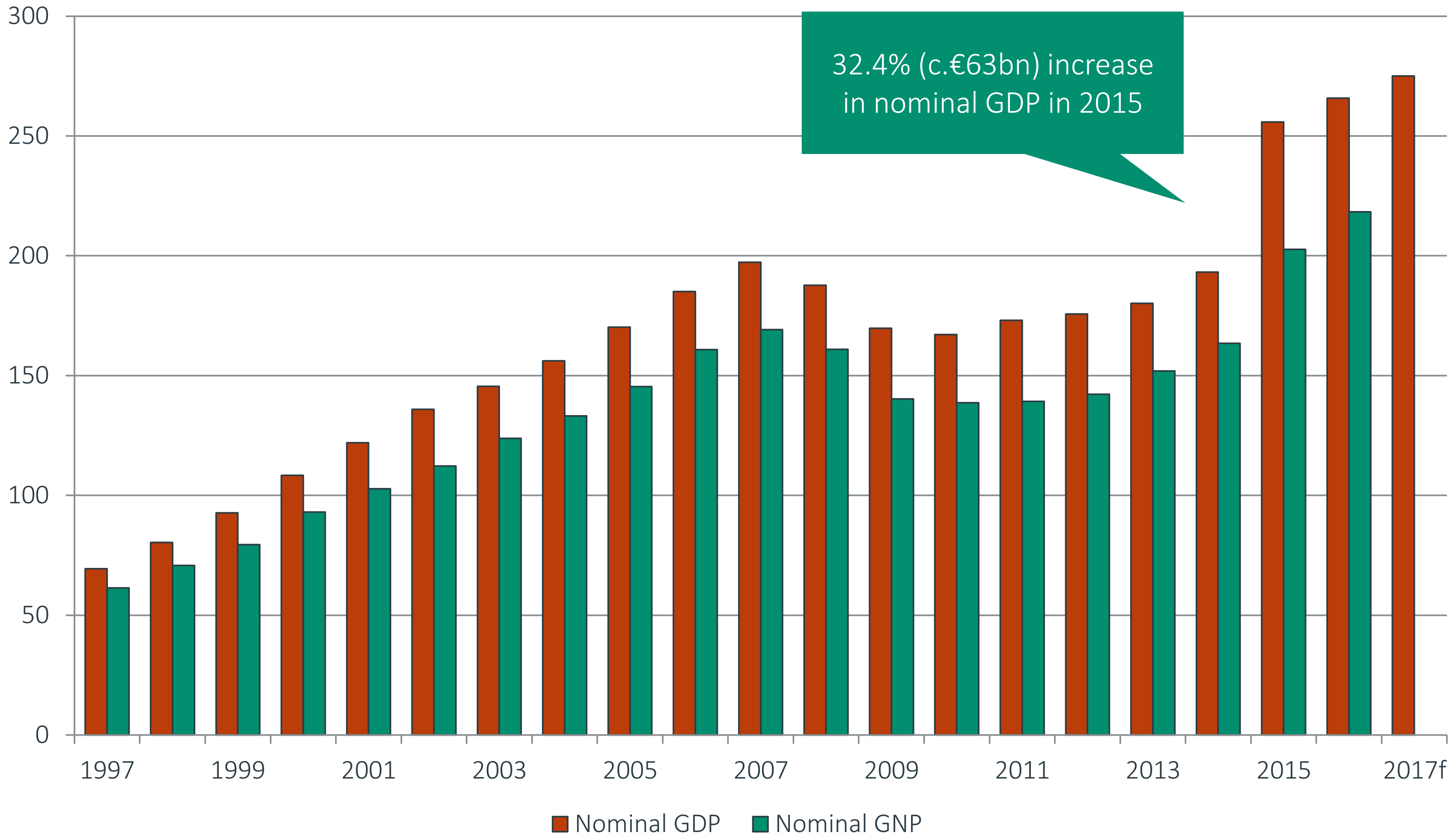
Source: [CSO]

Breakdown of Irish trading partners % of total

	Goods		Services		Total	
2015	Exp.	Imp.	Exp.	Imp.	Exp.	Imp.
US	22.5%	12.9%	10.0%	21.0%	16.0%	18.4%
UK	13.8%	25.6%	19.4%	8.0%	16.7%	13.6%
EA	35.1%	27.8%	29.3%	26.4%	32.1%	26.8%
China	2.0%	6.3%	2.8%	0.3%	2.4%	2.2%
Other	26.5%	27.4%	38.5%	44.4%	32.8%	39.0%

Source: CSO (2015) NTMA calculations; Data not affected by contract manufacturing

Nominal GDP and GNP (€bn) ballooned in 2015 and continued to increase in 2016



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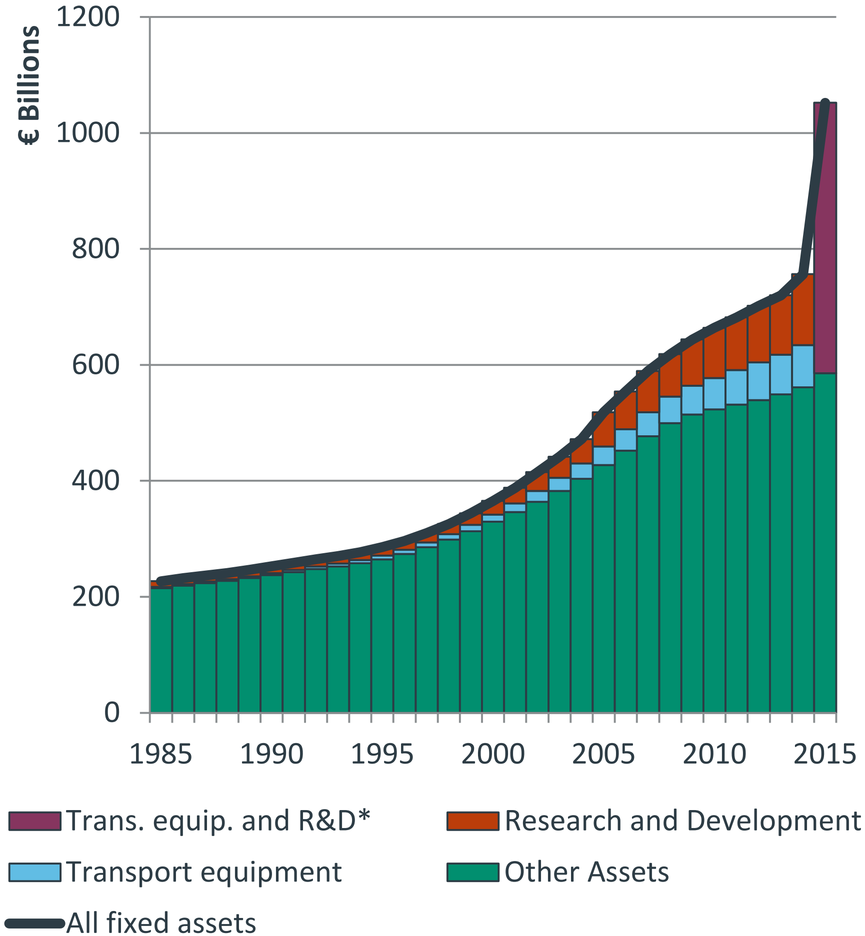
Source: [CSO](); [Department of Finance]()

Reclassification of several companies and "onshoring" of IP led to step change in capital stock in 2015



- 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 (smaller impact).
- The transfer of whole entities and assets of this size is not something seen before in Ireland.
- It is important to note that the reclassification/onshoring only affects the stock and is not included in the flow data (i.e. investment).
- The capital stock increased naturally through other investment. The reclassifications/onshoring dwarfed this growth however.

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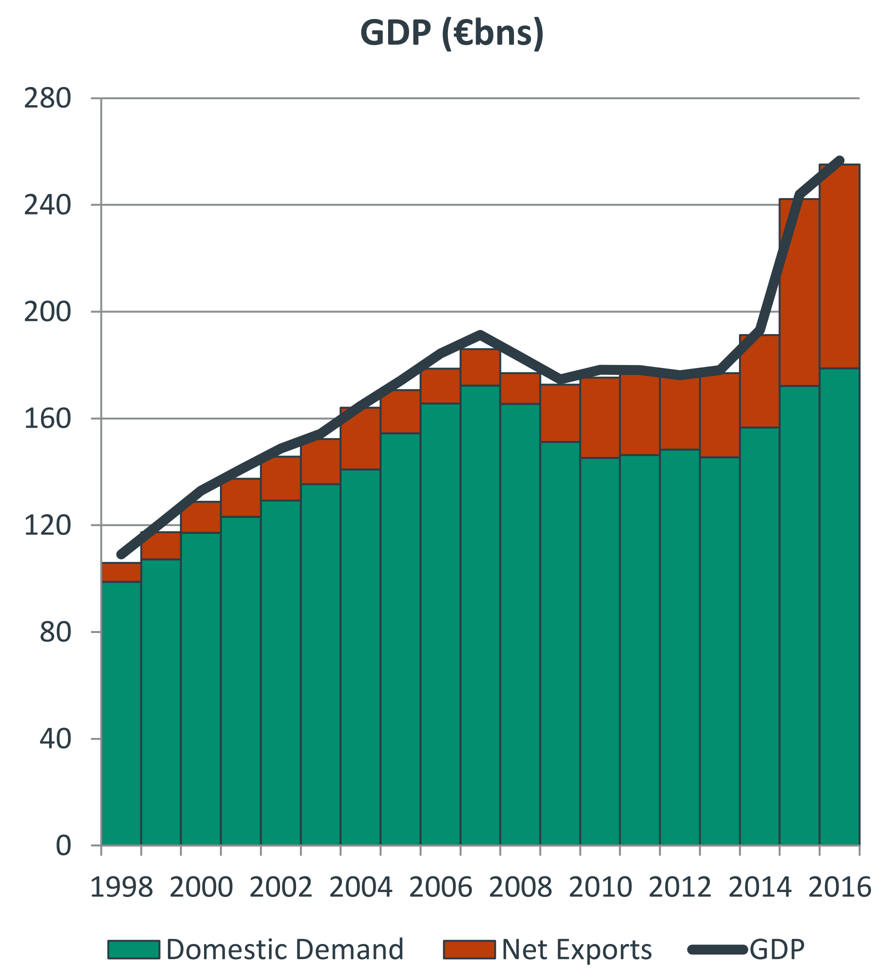
*Source: CSO, *due to confidentiality some sector data for 2015 has been restricted*

Net exports data shows step-change in 2015

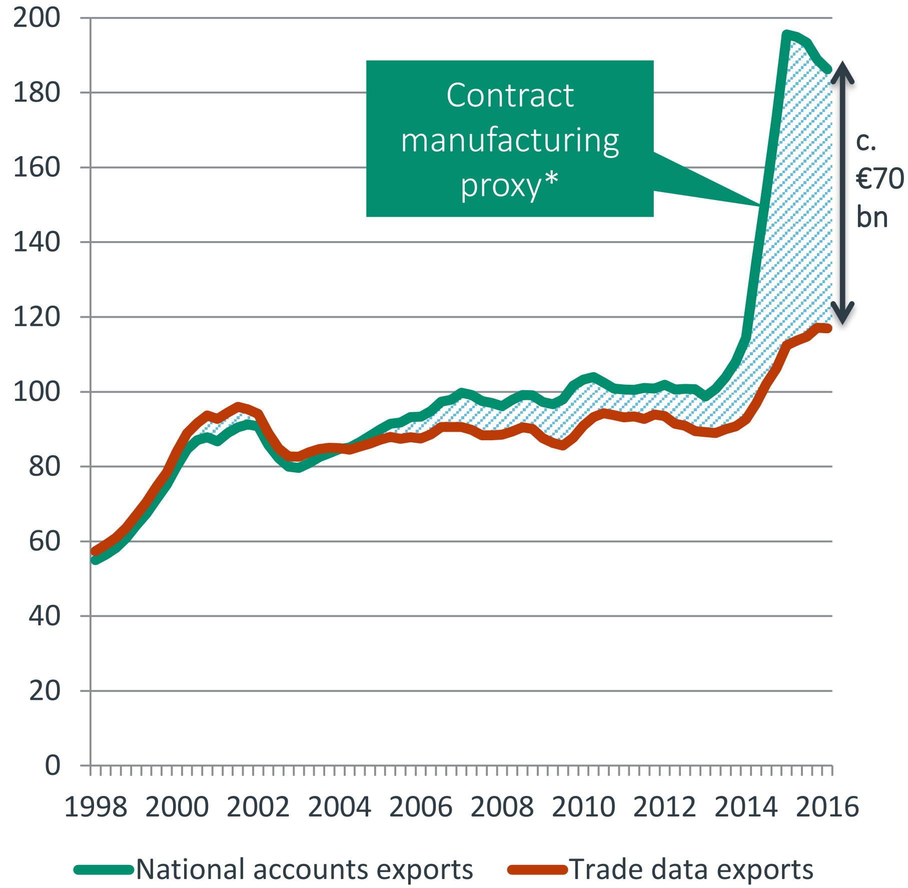
- Goods produced by the additional capital were mainly exported.
- This resulted in a step change in exports in Q1 2015. Exports grew by almost €100bn in 2015.
- Complicating matters, the goods were produced through "contract manufacturing" (explained in detail overleaf).
- The result of contract manufacturing is that extra goods exports are recorded in the Irish Balance of Payments even though they are not made here. Ireland's GDP is inflated as a result.
- Little or no employment in Ireland results from this contract manufacturing.



Source: CSO; NTMA workings

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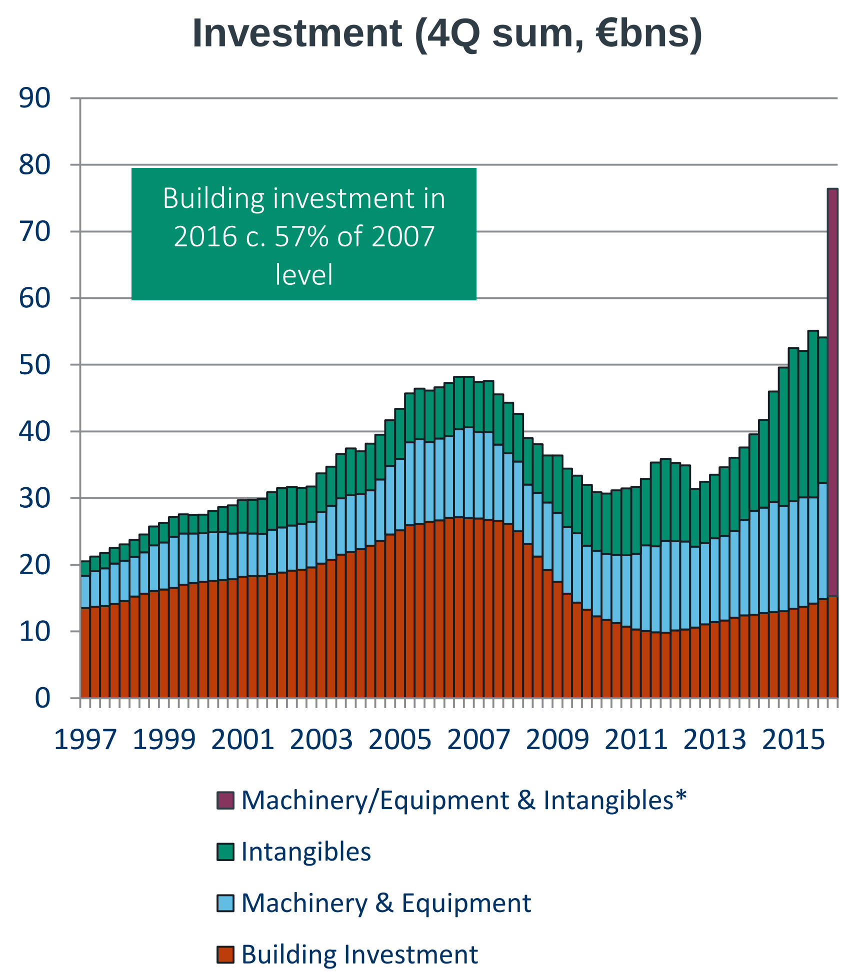
*Contract manufacturing proxy is calculated by taking the difference between the monthly International trade exports statistics and the National Accounts/BOP measure for goods exports. The monthly data is based on the actual volume of goods flowing through Ireland's various ports/airports whereas the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

Investment distorted by multinationals importing IP into Ireland

- Investment is now above the pre-crisis level due to MNCs importing intangibles in 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 11.2% in 2016 highlighting pent up demand for housing.
- **However, building investment is a much smaller part of overall investment - in 2016 Q4 it was c.57% of the unsustainable 2007 level.**



Source: [CSO](), NTMA analysis

**due to confidentiality some data for Q4 2016 has been restricted*

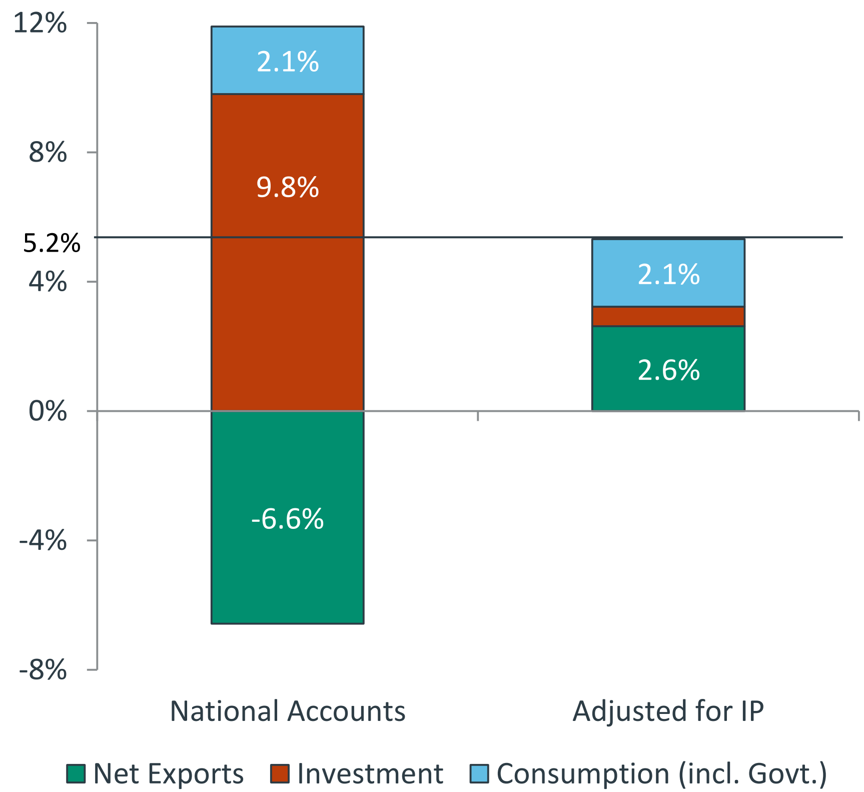
IP imports mean components of GDP are distorted as well as the headline figure

Investment and net exports are affected by the presence of IP imports in Ireland.

- MNCs moving IP assets into Ireland lead to an increase in imports and a subsequent decrease in net exports.
- At the same time, there is an offsetting increase in investment.
- **This has no effect on GDP and GNP.**
- In Q4 2016, there was large movements of IP assets into Ireland.
- Excluding this factor gives a better picture of the underlying drivers of GDP growth in 2016.

Source: CSO, NTMA analysis

Contribution to 2016 5.2% GDP growth rate by various components



**Investment is reduced by c. €22bn & Net Exports increased by c. €22bn in adjusted case*

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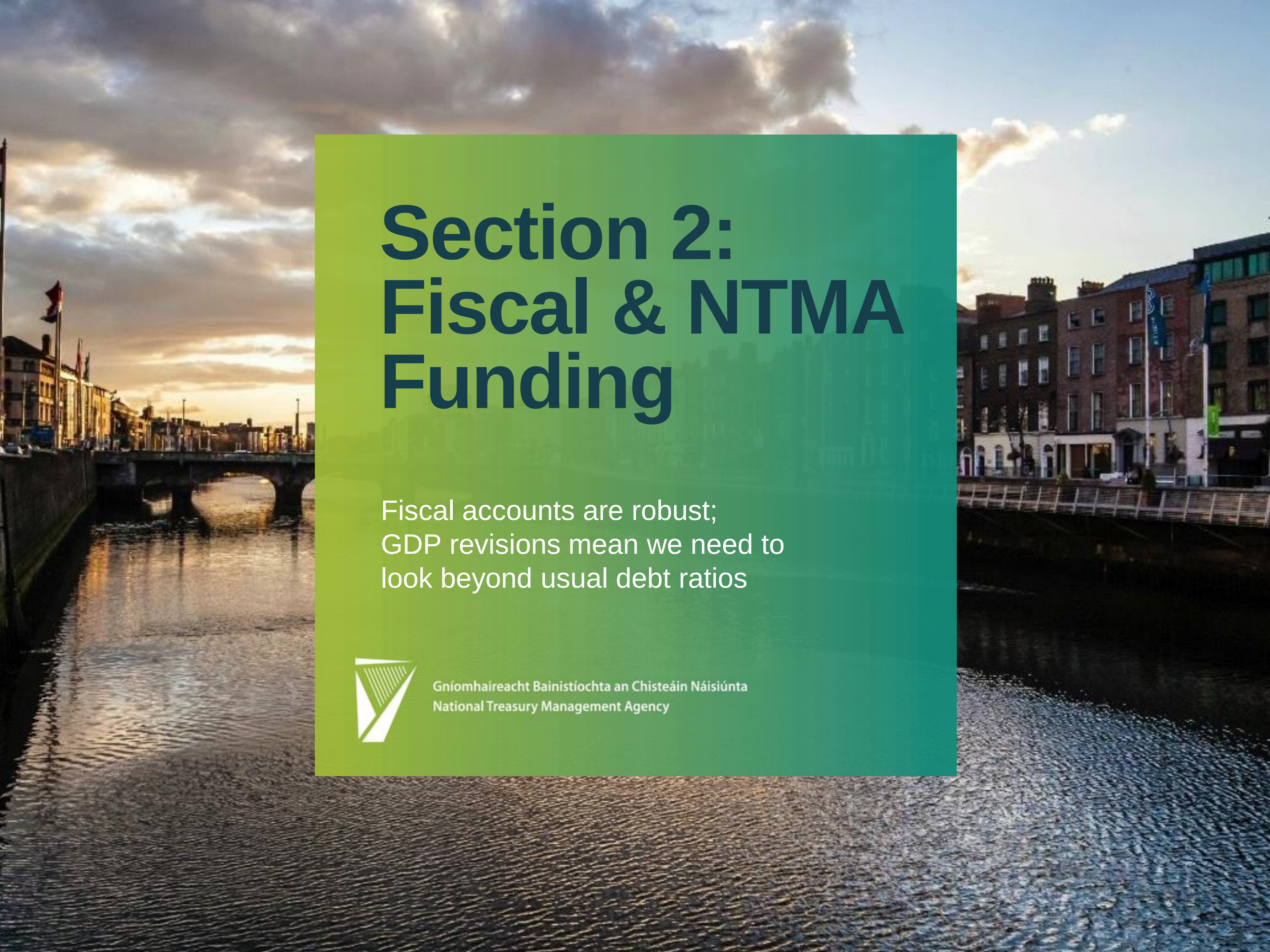

Section 2: Fiscal & NTMA Funding

Fiscal accounts are robust;
GDP revisions mean we need to
look beyond usual debt ratios

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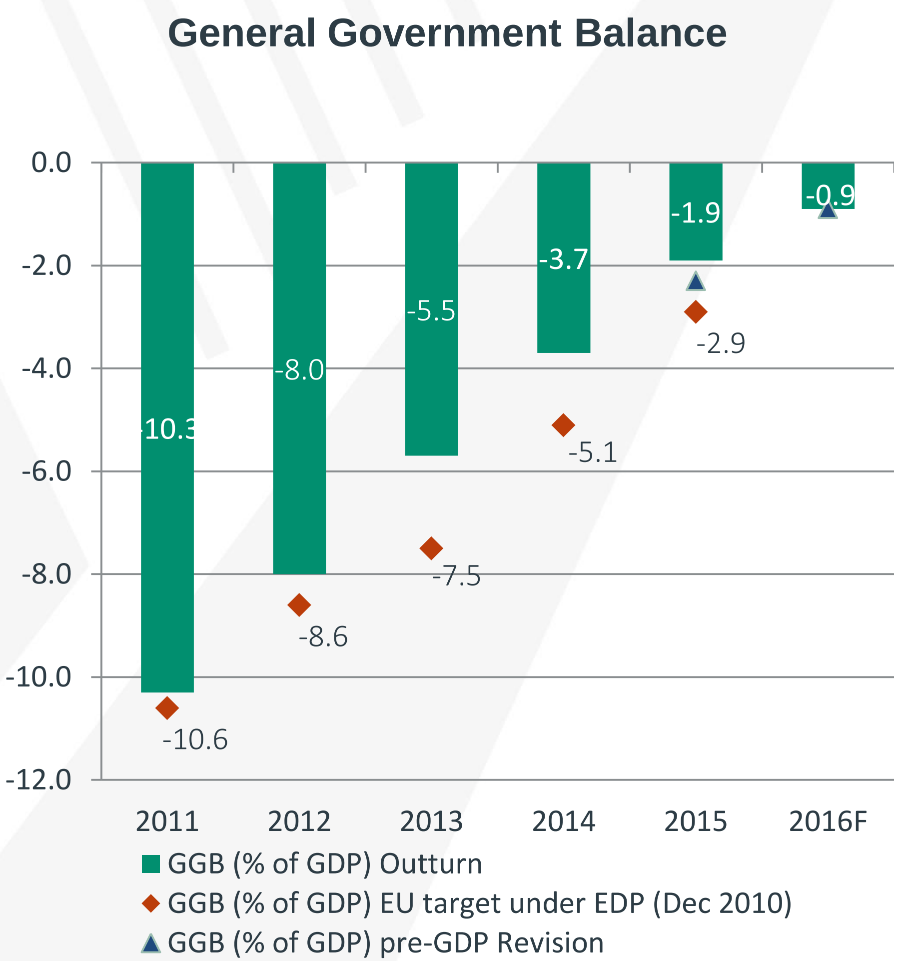
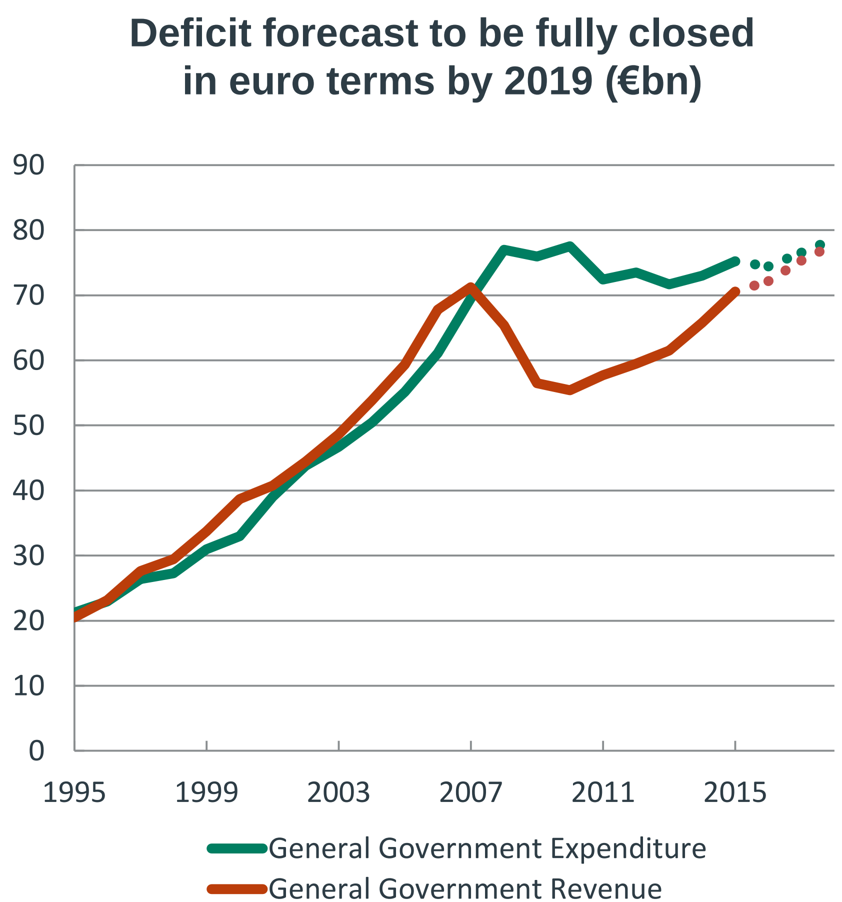
Irrespective of GDP moves, Ireland has had five straight years of fiscal outperformance

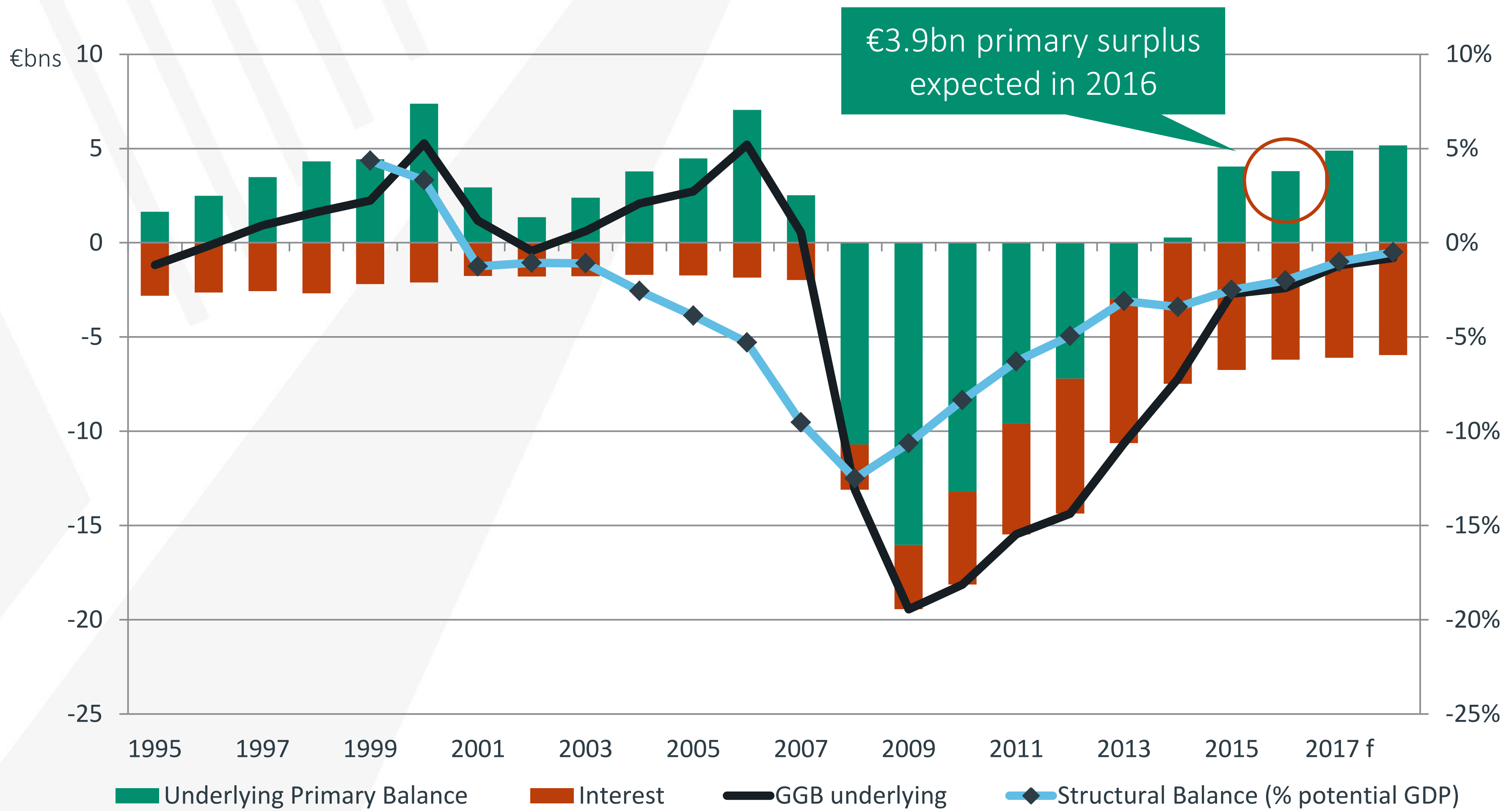




Source: Department of Finance, CSO

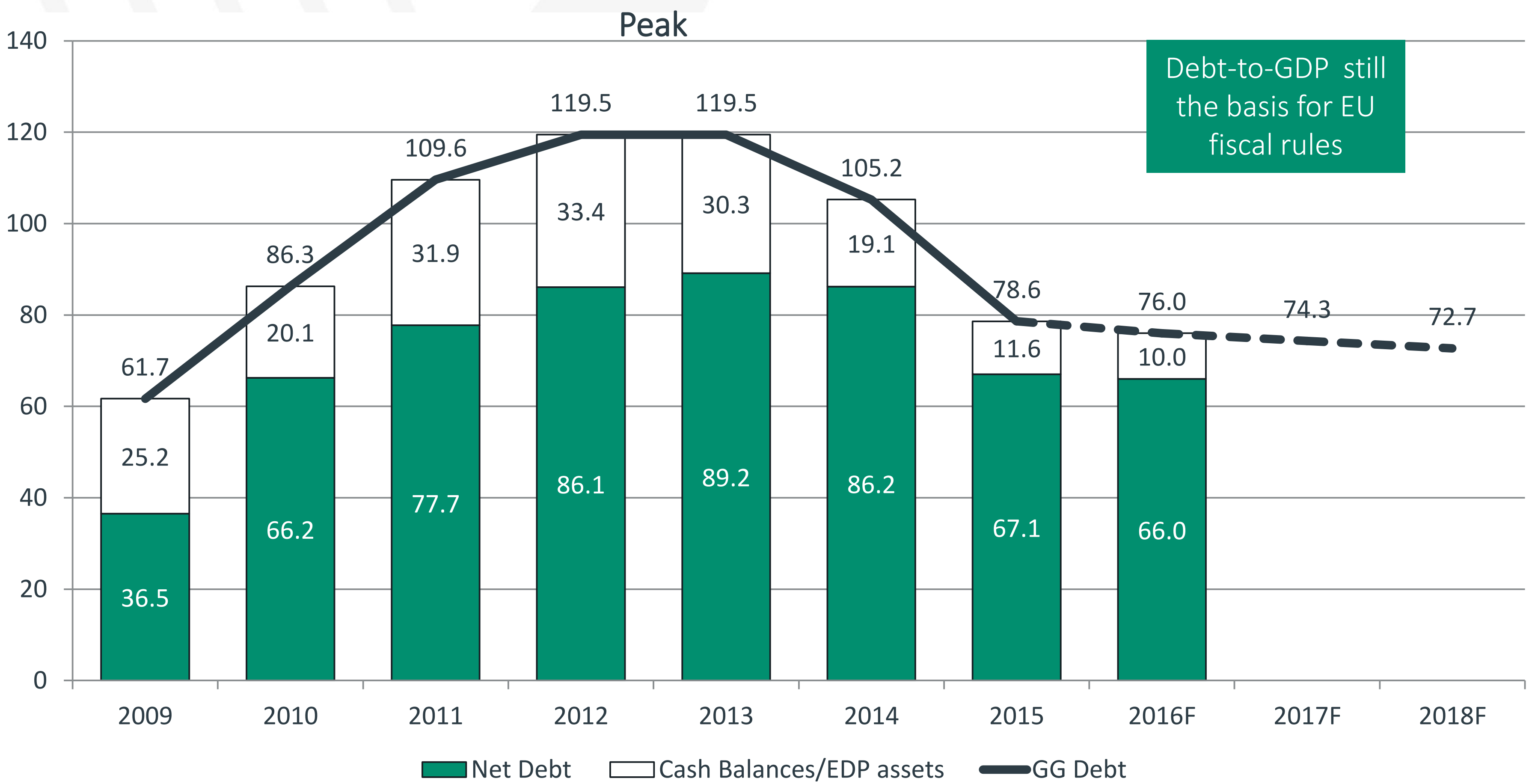
**2016 = DoF forecast*

Ireland has confirmed debt sustainability: debt is falling naturally through "snowball" effect



Source: [CSO](); Eurostat; IMF

Gross Government debt likely fell to 76.0% of GDP by the end of 2016 - inflated GDP distorts metric



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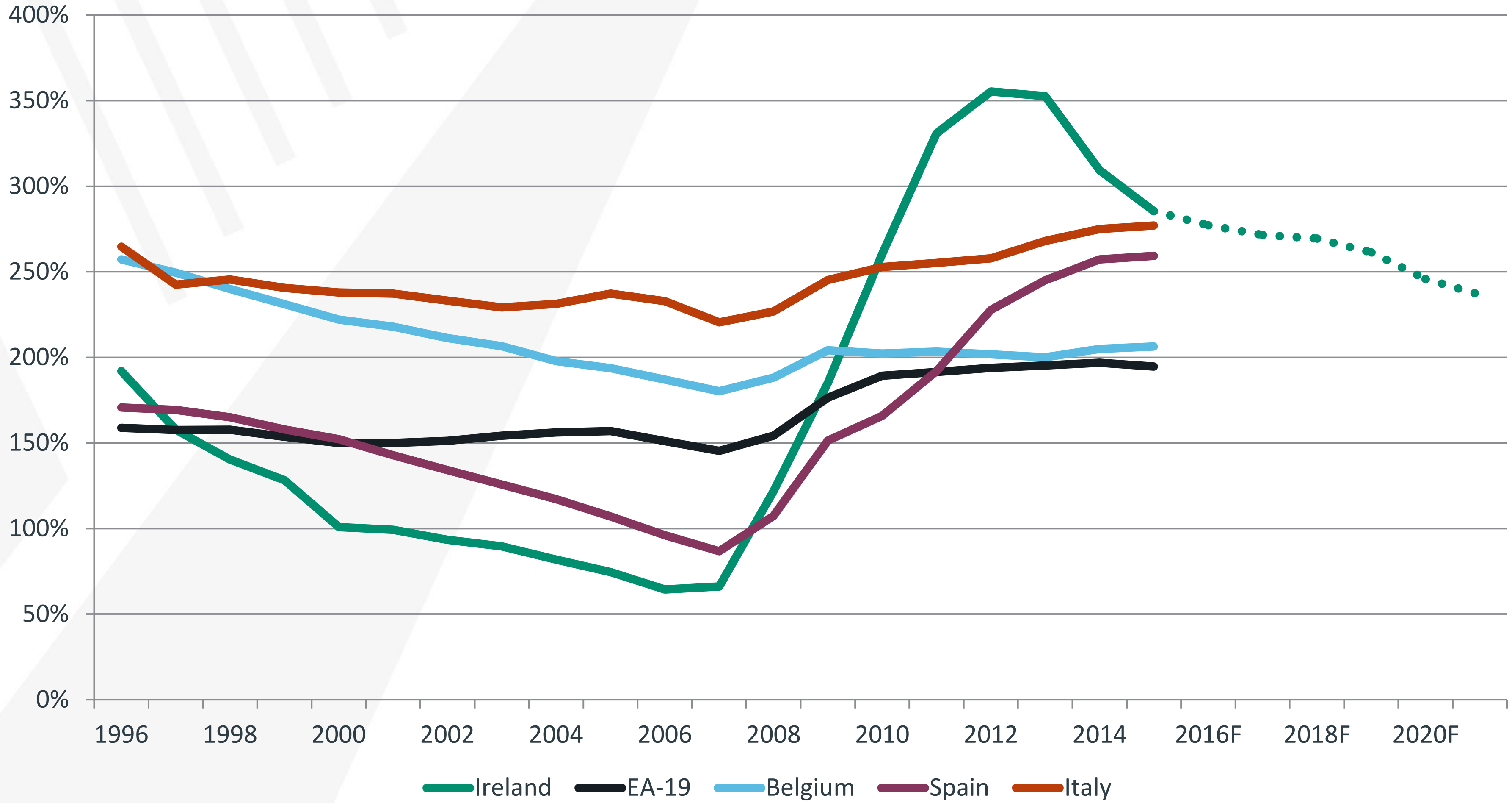
Source: CSO; Department of Finance

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



Source: CSO; Department of Finance

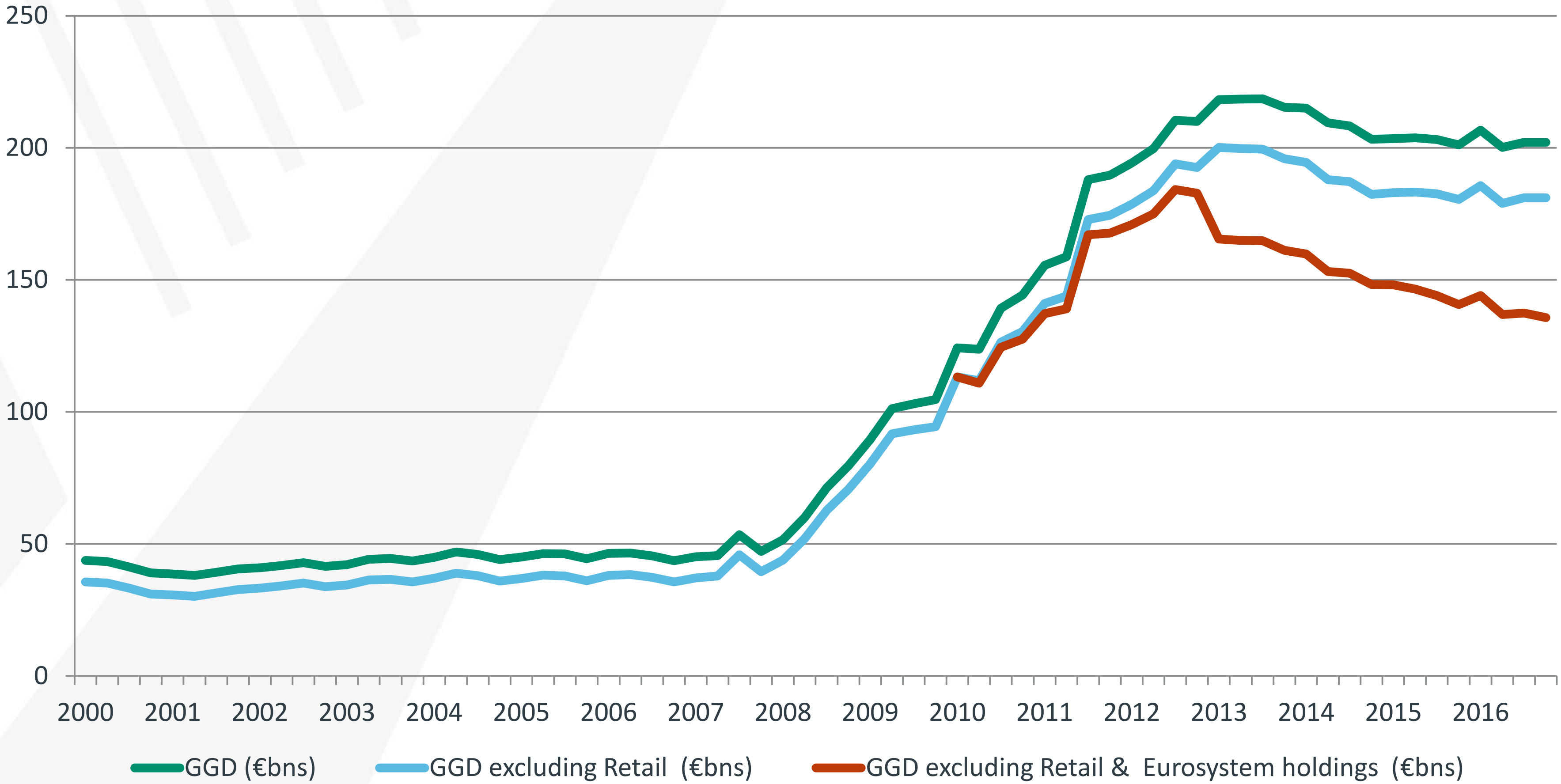
Better to use broad range of debt serviceability metrics

2015	Gross GG debt to GDP %	GG debt to GG revenue %	GG interest to GG revenue %	Net Debt to GG Revenue %
Greece	176.9	367.9	7.9	
Portugal	129.0	294.1	10.4	257.6
Ireland*	78.7 (76.0)	285.5 (277.2)	9.6 (8.6)	243.1 (240.6)
Cyprus	108.9	278.8	7.3	231.0
Italy	132.7	277.0	8.7	251.4
Spain	99.2	259.3	8.0	223.5
UK	89.2	227.3	6.1	137.0
Belgium	106.0	206.4	5.7	181.5
EA19	90.7	194.7	5.2	
EU28	85.2	189.3	5.1	
Slovenia	83.2	184.5	6.6	29.0
France	95.8	179.9	3.8	163.3
Austria	86.2	170.6	4.7	99.4
Germany	71.2	159.5	3.6	114.9
Netherlands	65.1	151.3	2.8	123.5
Slovakia	52.9	124.0	4.2	103.8
Finland	63.1	113.7	2.2	32.6

Source: Eurostat, NTMA calculations

* Ireland's projected 2016 figures (from Budget 2017) in brackets

Large proportion of Irish debt stock held by “sticky” sources



Source: CSO, ECB, NTMA Analysis
Retail includes State Savings and other currency and deposits. The CSO series has been altered to exclude the impact of IBRC on the data.
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.

EU fiscal rules set the “tramlines” for Ireland’s fiscal policy

2016 – 2019 Preventive Arm

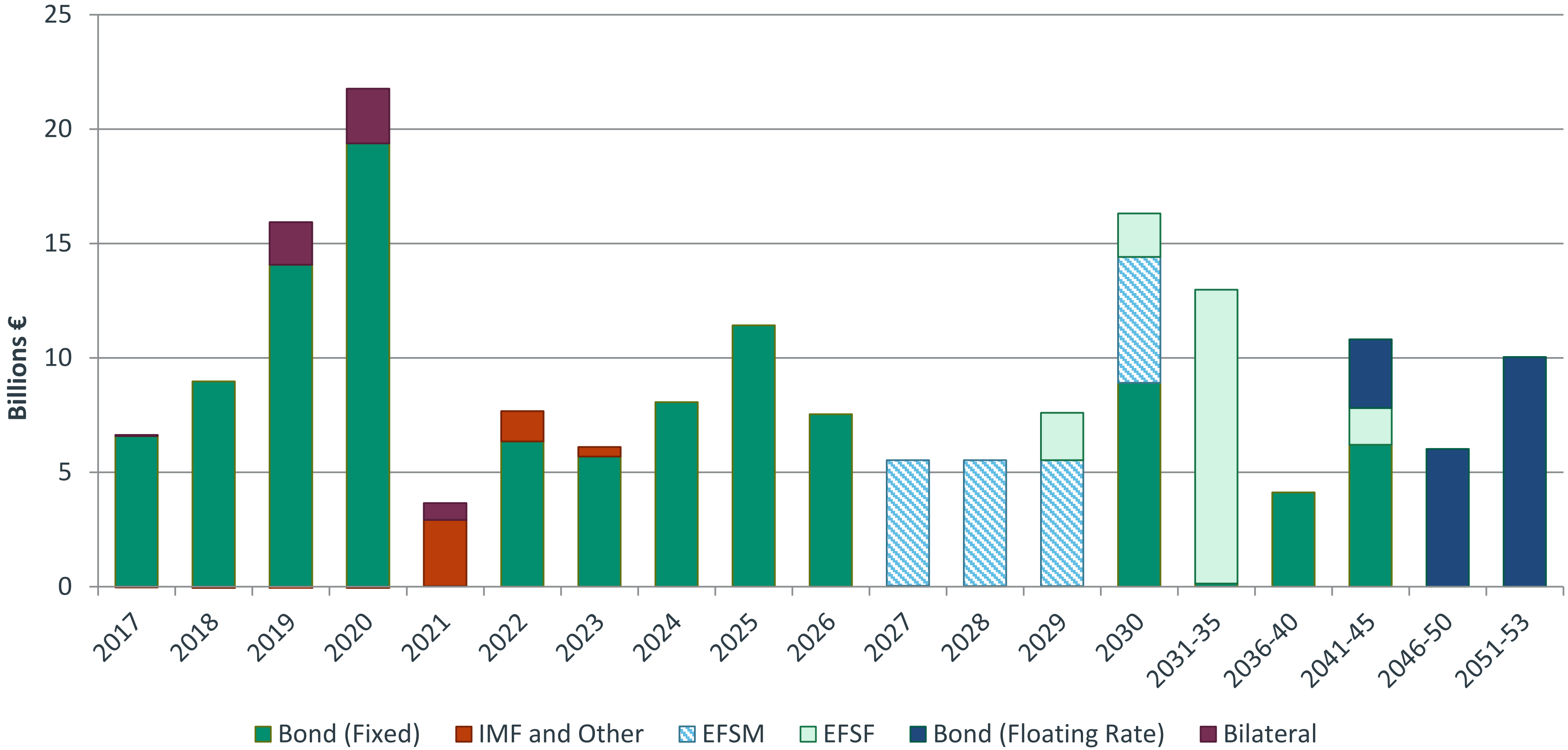
Objective:
Balanced budget in structural terms

Requirements of Preventive Arm

1. Ireland must improve its structural balance by 0.6% of GDP in 2017 and meet its medium-term objective of -0.5% of potential GDP structural balance by 2018.
2. Ireland must comply with the Expenditure Benchmark. The Benchmark explicitly sets the rate at which public expenditure can grow in the absence of revenue-raising measures.

Adherence to these rules will be judged ex-post. The revised GDP data may hamper the judgement of Ireland’s performance under the SGP

Maturity profile – modest refinancing in 2017 and 2018

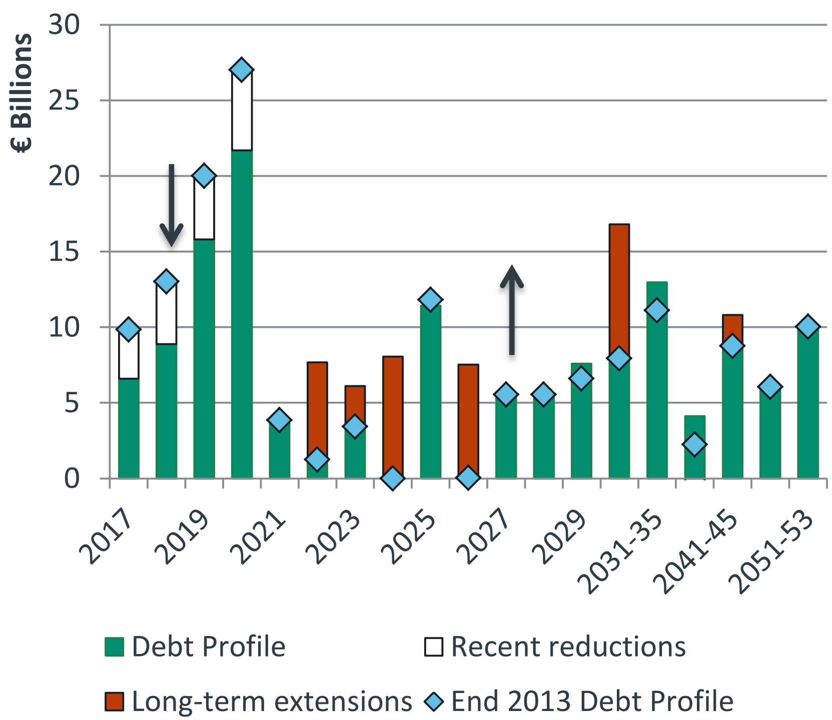


Source: NTMA

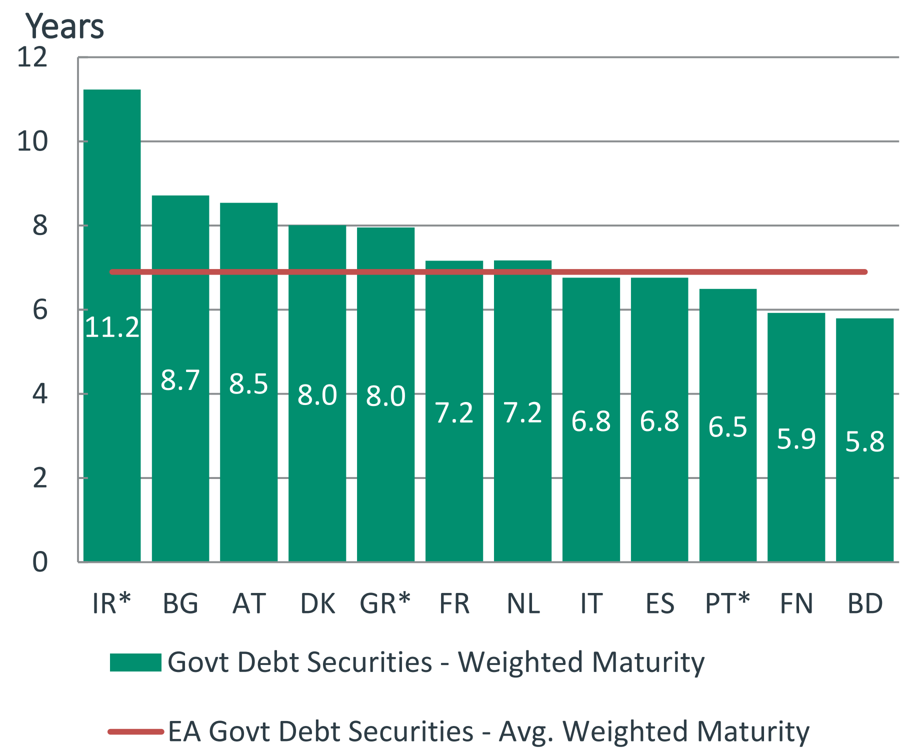
Note: EFSM loans are subject to a 7-year extension that will bring their weighted-average maturity from 12.5 years to 19.5 years. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the EFSM loan maturity dates in the 2027-31 range although these may be subject to change.

We improved our 2017-2020 maturity profile significantly in recent years

Various operations since 2013 have led to an extension of maturity…



…Ireland compares favourably to other European countries

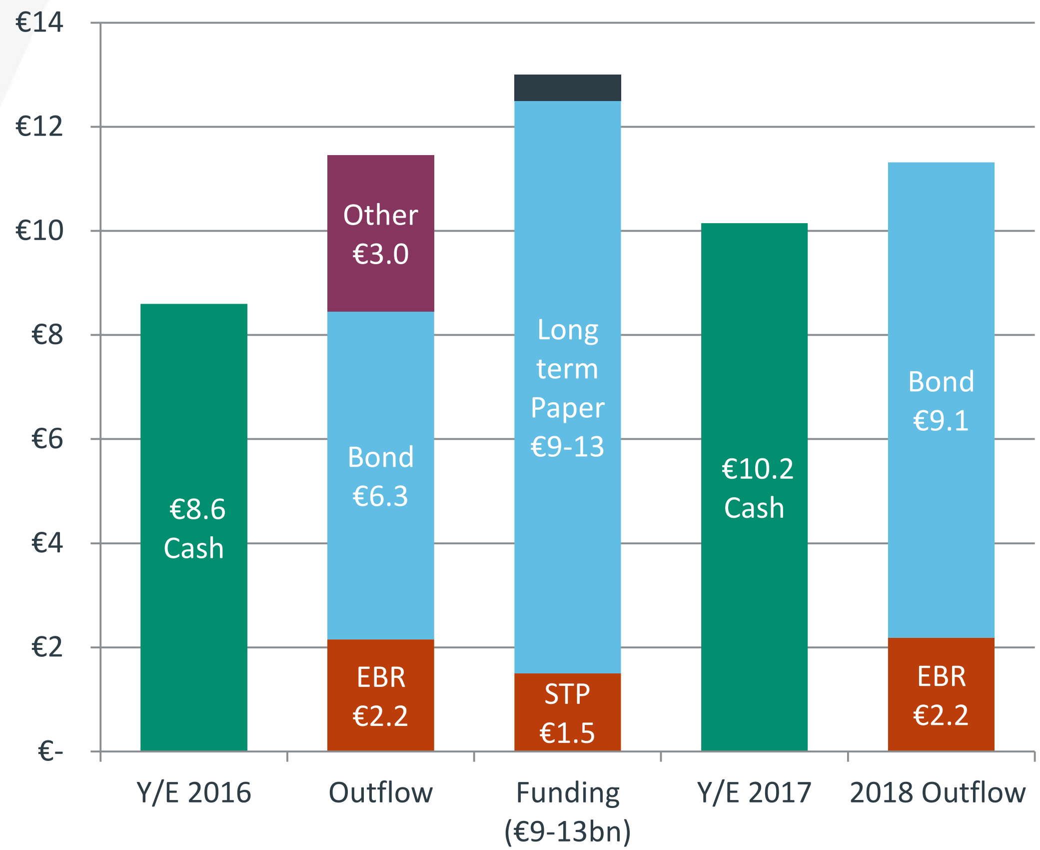


Source: NTMA; ECB

**excludes programme loans. Ireland's maturity including these loans is still c.11 years.*

NTMA funded approximately three to four quarters in advance; 2017 issuance to be larger than 2016

- With only two major redemptions in 2016/17 issuance was lower in 2016 than in recent years.
- Our next bond redemption will be in October 2017 - €6.3bn.
- NTMA expects to issue €9-13bn worth of long term bonds in 2017. By March 9th, the NTMA has already issued €6.5bn in 2017.
- Exchequer cash balance at end 2016 was €8.6bn.

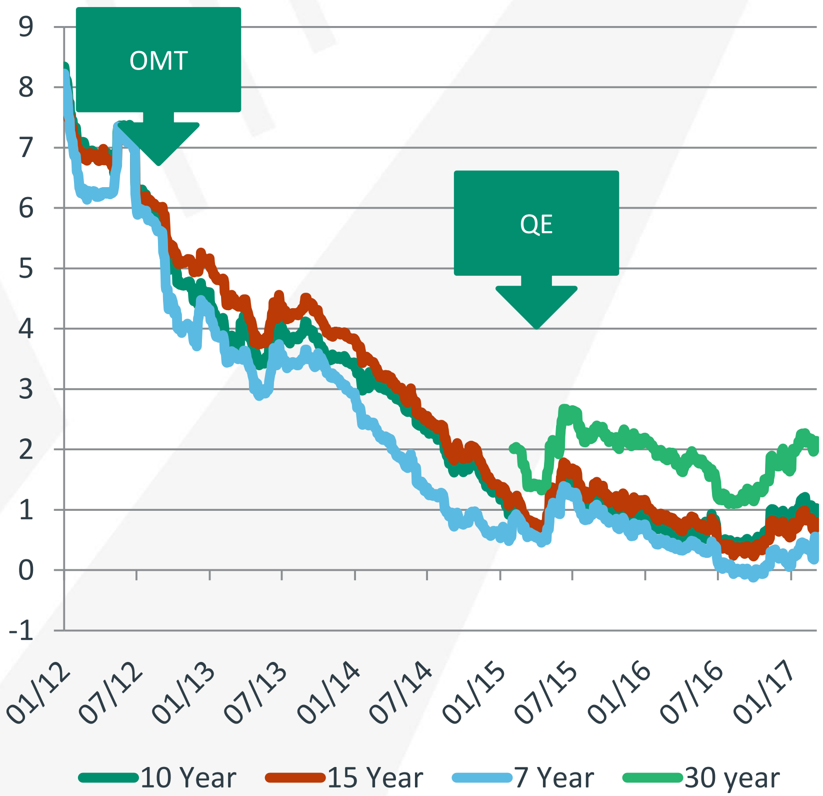


Source: NTMA

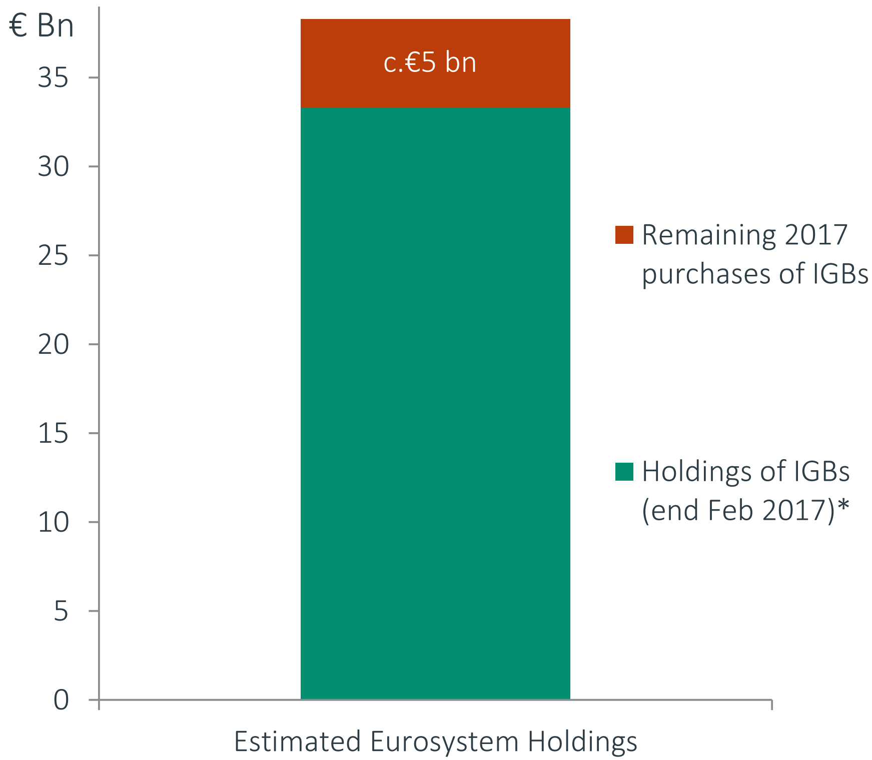
- EBR is the Exchequer Borrowing Requirement (Department of Finance estimate)
- Cash balances excludes non-liquid asset classes such as Housing Finance Agency (HFA) Guaranteed Notes.
- Other Outflows includes contingencies, including for potential bond purchases.
- Other Funding includes Retail (State Savings).
- Rounding may occur.

ECB action has helped Ireland's bond performance

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



Purchases of Irish Govt. bonds under PSPP will slow in 2017 but still significant



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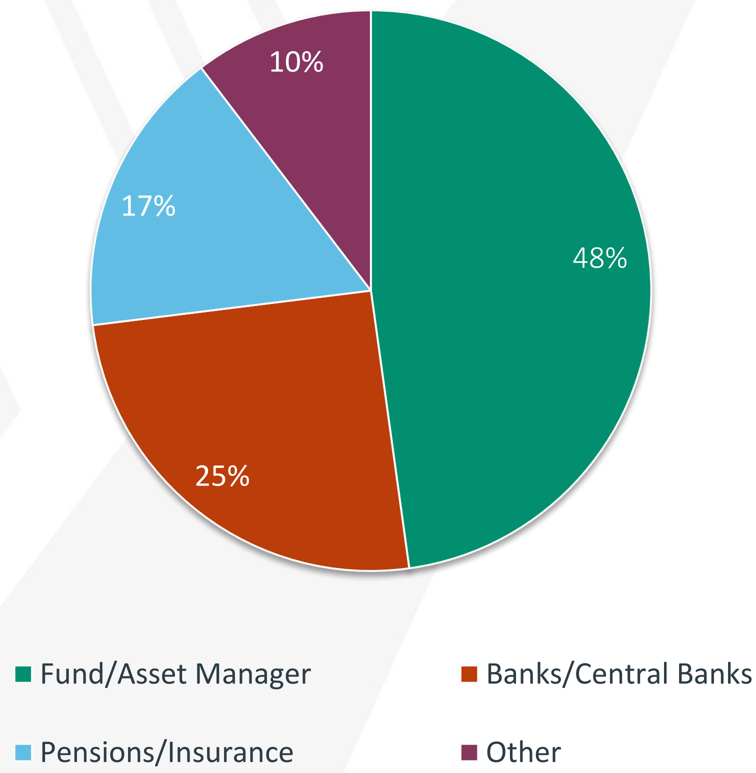
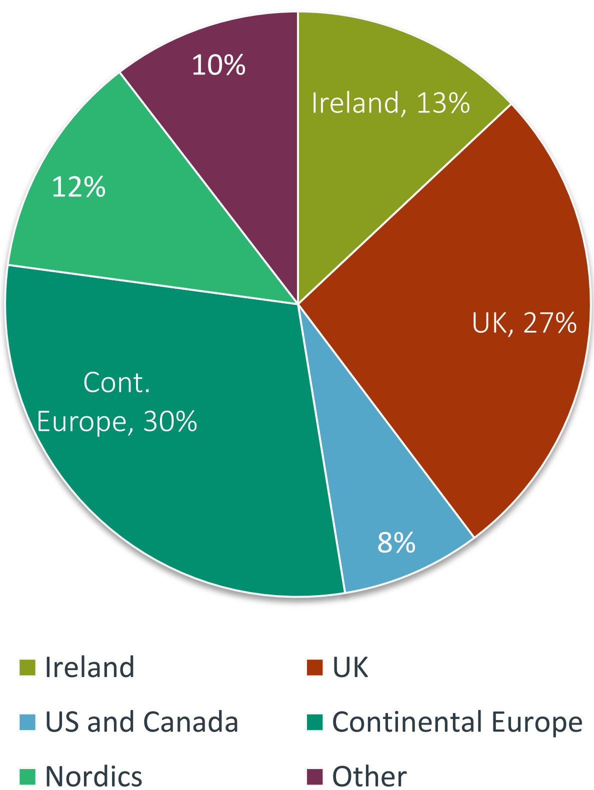
Source: DataStream, Bloomberg; ECB, NTMA Analysis
**Holdings within Eligible PSPP universe (1-30 yrs) . The CBI holds other bonds outside the PSPP window.*

Investor base for Government bonds is wide and varied

Investor breakdown: Average over last 8 syndications



Country breakdown: Average over last 8 syndications



Source: NTMA

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 that allowed stateless companies to book sales and production in this State. This provision was closed on December 31st 2014.
- Although the ruling centres on tax guidance dating back as far back as 1991, Apple will only pay the taxes forgone for the period 2003-14 inclusive: EC law means the ruling only applies to the ten years preceding its first enquiry (2013) into Apple's tax affairs.
- **Apple is appealing the ruling as will the Irish Government.** We expect this process to be lengthy. Pending the outcome of the appeal, Apple is expected to pay approximately €13bn plus interest to the Irish Government, which is expected to sit in escrow.
- This case has nothing to do with Ireland's corporate tax rate. It relates to advice regarding one element of the corporate tax code which has since been eliminated. In its press release the EC stated: **"This decision does not call into question Ireland's general tax system or its corporate tax rate".**
- 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.

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

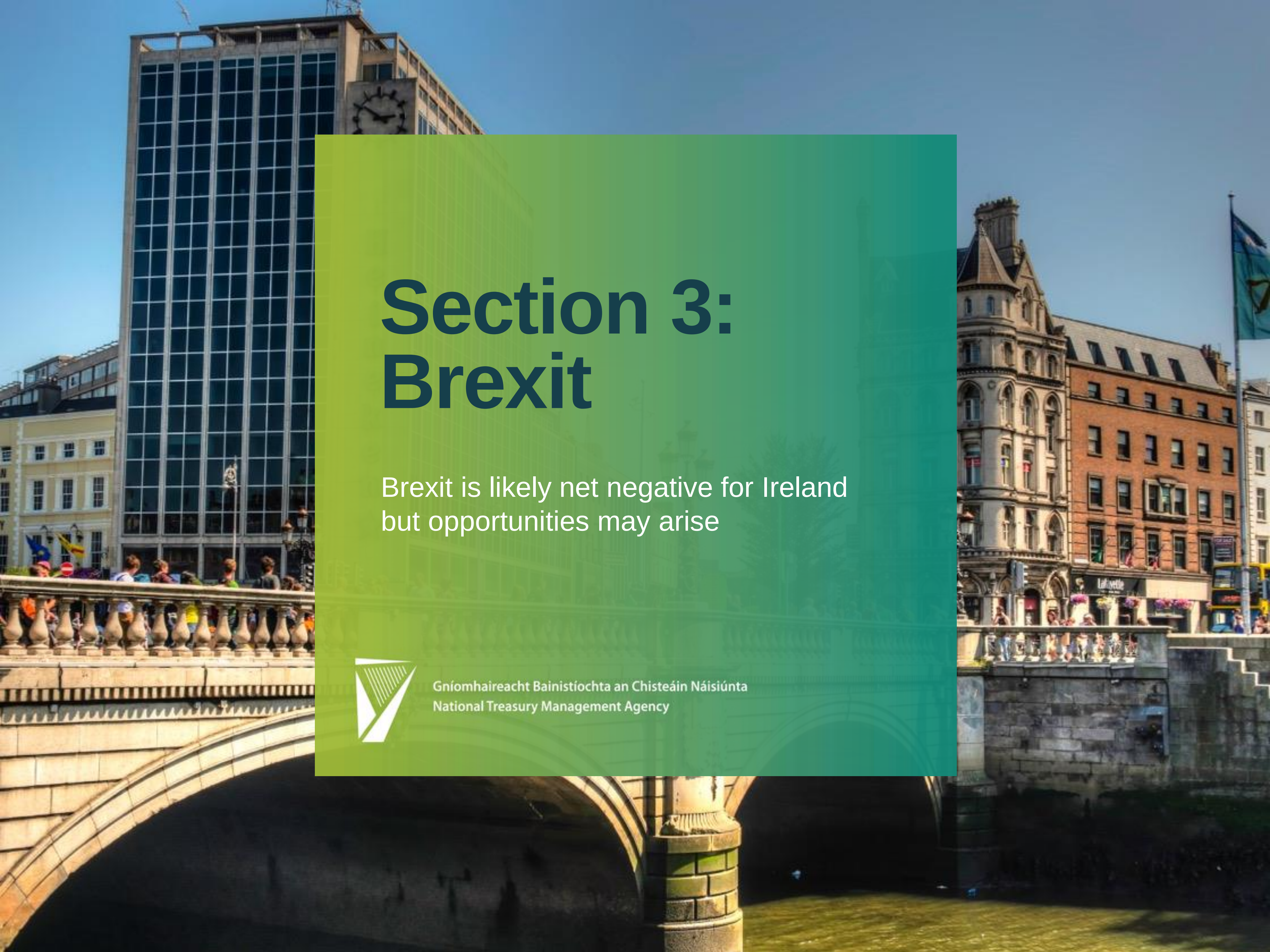
€ Billion				
End quarter	Dec 2013	Dec 2014	Dec 2015	**Dec 2016**
1. Resident	51.7	50.8	50.8	**54.6**
(as % of total)	(46.6%)	(43.7%)	(40.6%)	**(44.9%)**
– Credit Institutions and Central Bank*	49.2	45.9	46.9	**51.1**
– General Government	2.2	1.6	0.8	**0.5**
– Non-bank financial	-	2.9	2.8	**2.7**
– Households (and NFCs)	0.4	0.4	0.3	**0.3**
2. Rest of world	59.3	65.5	74.2	**67.1**
(as % of total)	(53.4%)	(56.3%)	(59.4%)	**(55.1%)**
Total MLT debt	111.0	116.3	125.1	**121.6**

Source: CBI

Breakdown of Ireland's General Government debt

€ Billion	2011	2012	2013	2014	2015	2016 Q3
Currency and deposits (mainly retail debt)	58.4	62.1	31.4	20.9	20.7	21.3
Securities other than shares, exc. financial derivatives	94.0	87.3	112.7	119.1	125.6	126.0
- Short-term (T-Bills, CP etc)	3.8	2.5	2.4	3.8	1.2	5.3
- Long-term (MLT bonds)	90.2	84.8	110.3	115.3	124.4	120.7
Loans	37.3	60.6	71.3	63.3	54.9	54.9
- Short-term	0.6	1.9	1.4	1.3	1.1	0.5
- Long-term (official funding and prom notes 2009-12)	36.8	58.7	69.8	62.0	53.8	54.4
General Government Debt	189.8	210.0	215.3	203.3	201.1	202.1
EDP debt instrument assets	55.2	58.7	54.6	36.8	29.6	*28.4*
Net Government debt	134.5	151.3	160.7	166.5	171.5	173.7

Source: [CSO (Q3 2016)]



Section 3: Brexit

Brexit is likely net negative for Ireland but opportunities may arise

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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%

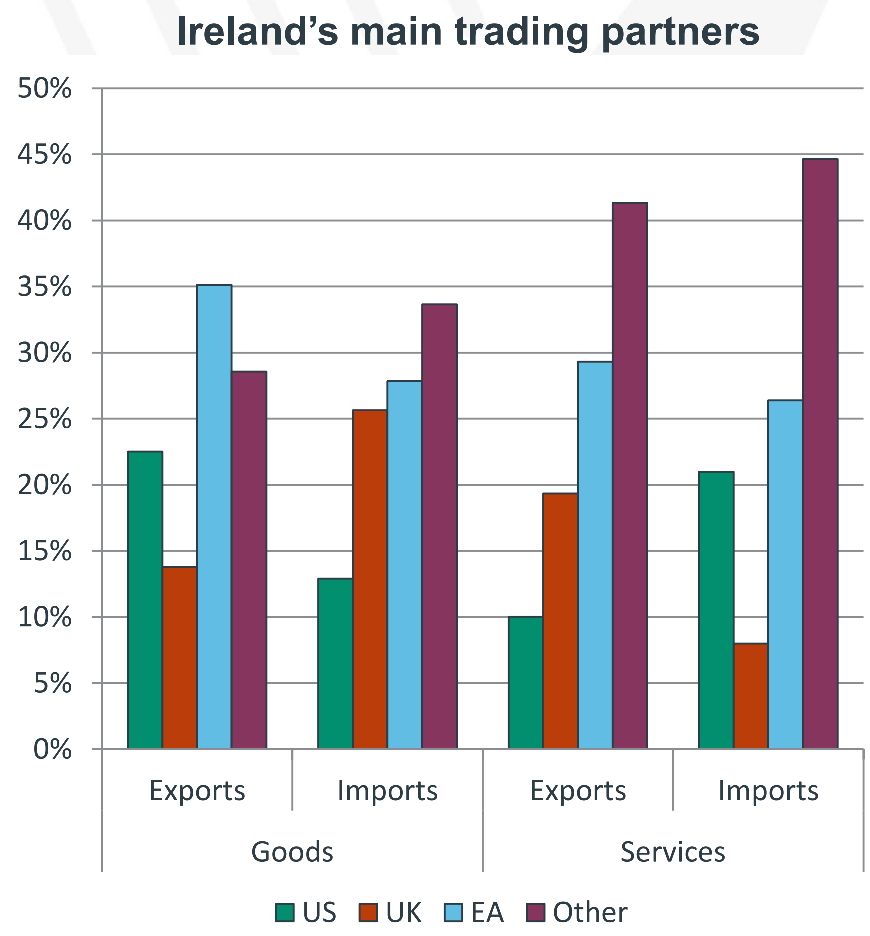
Cons

- 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
- EU political situation may deteriorate
- Banking sector likely to suffer because of its UK operations
- Political economy (border?, ally on direction of EU economic policy)
- Regions suffer (agriculture, tourism), while Dublin may benefit (via FDI that leaves Britain)

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 25-30% 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 17% 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 (2015)

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

- Lawless and Morgenroth (2016) have conducted analysis of the trade effects of applying the WTO tariffs for external EU trade to UK trade - i.e. a significant "hard" Brexit scenario.
- By matching over 5200 products to the WTO tariff applicable to external EU, the authors find that such an outcome would result in significantly different impacts on trade across countries. Ireland would be the hardest hit.
- Also given the heterogeneity of tariff levels, some sectors in Ireland would be disproportionately affected: food and textiles especially.
- This scenario analysis may overstate the eventual outcome on Irish/UK trade from Brexit, but it is not implausible were negotiations to end in deadlock.

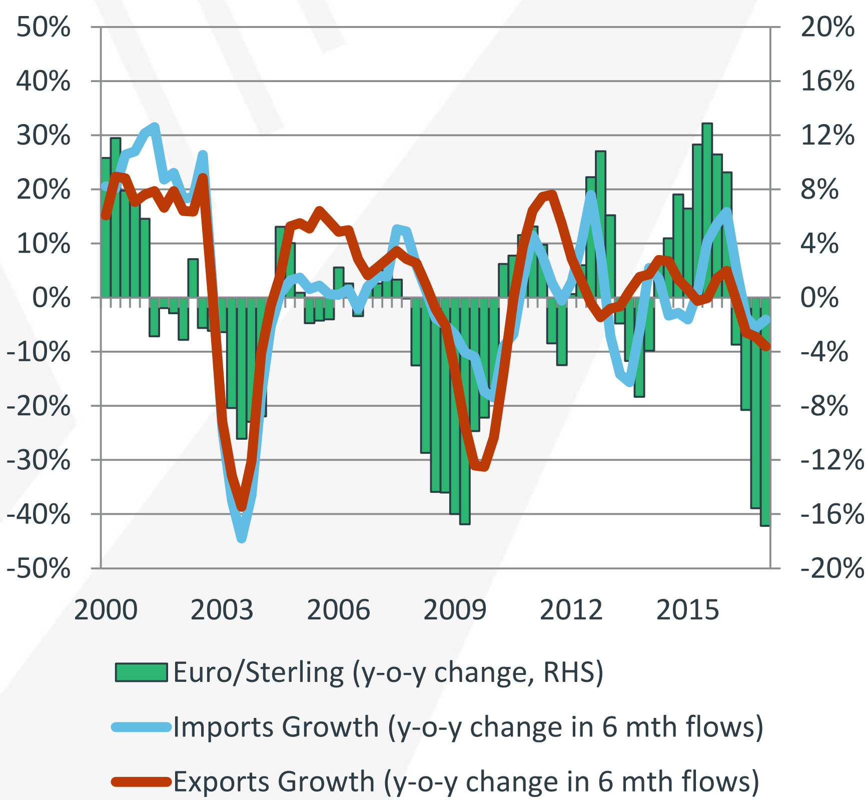
Estimated Trade Reductions in "WTO rules Hard Brexit" Scenario

	% 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

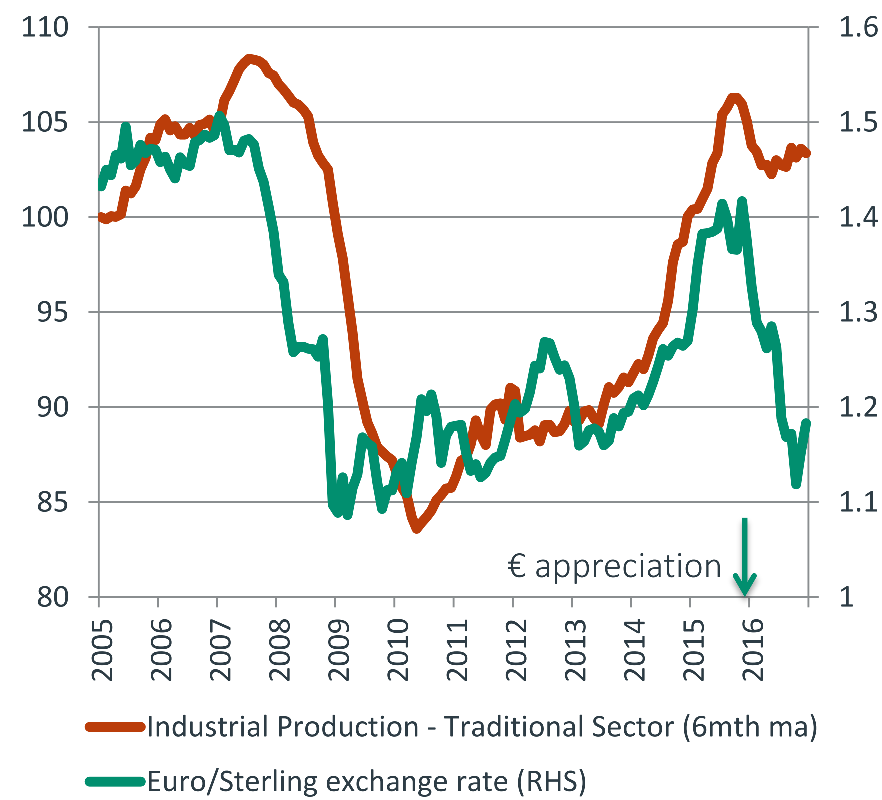
Source: ESRI Research 2016

Effects of Brexit already visible from currency impact

IE/UK trade has slowed since early 2016 on back of currency moves…



…as has traditional manufacturing*; much more to come?



Source: CSO; DataStream

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*Traditional Sector includes all manufacturing excluding chemicals and pharmaceuticals, computer, electronic, optical and electrical equipment, reproduction of recorded media and medical and dental instruments and supplies

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.

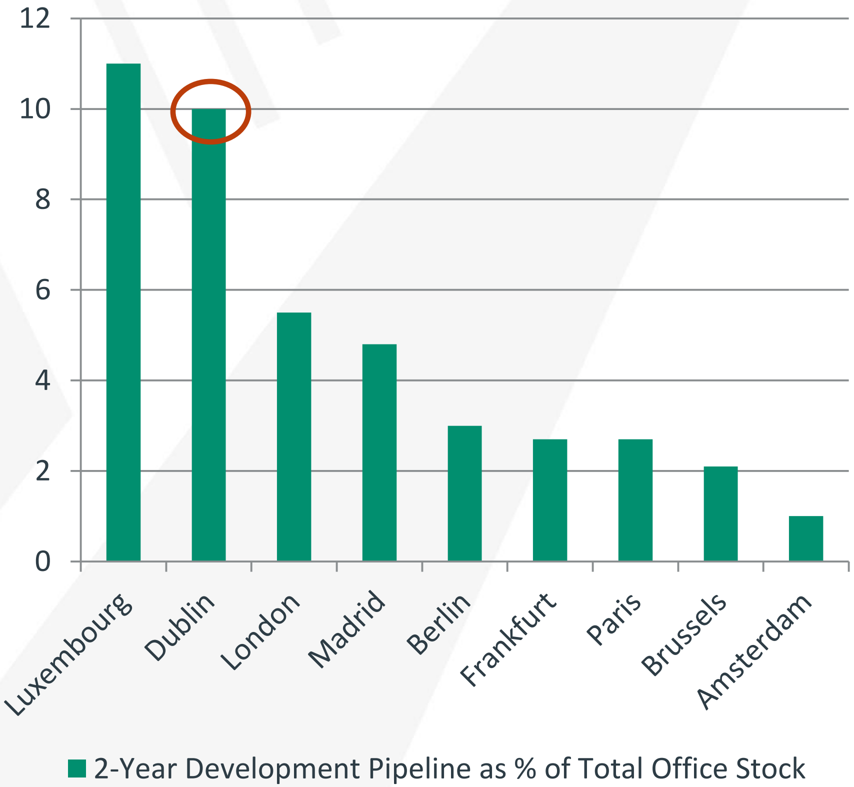
Why choose Ireland

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

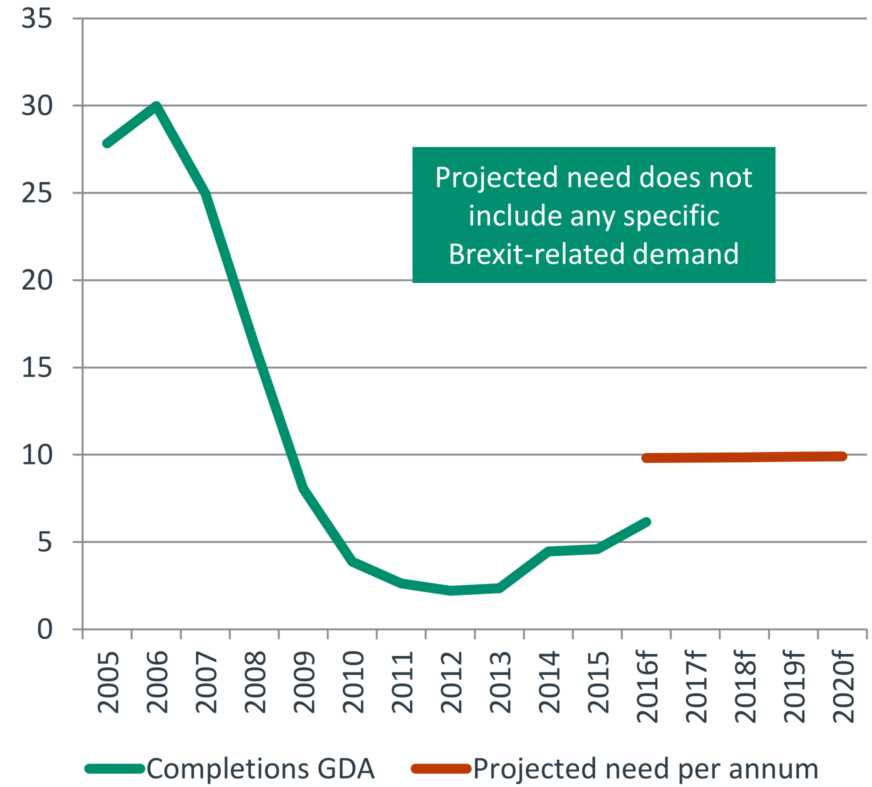
- EU Membership
- Common language (important for US companies)
- Law system (Ireland and UK both have common law structure)
- Pro-business environment
- Corporate tax
- Educated workforce
- Cost competitiveness
- Regulatory environment (financial sector)

FDI: Dublin in particular could benefit

Office space is not an issue for attracting firms to Dublin



Residential property may be a bottle-neck in the short-term (000s)



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Source: CBRE; CSO, NTMA analysis
** GDA = Greater Dublin Area = Dublin, Meath, Wicklow and Kildare*

Other areas that could be negatively affected – energy & labour market

Energy market – likely negative

- Ireland's energy market is heavily reliant on the UK. 90% of Ireland's gas imports are sourced from the UK. A tariff might apply on this trade post-Brexit.
- Differences in regulatory environments in the UK versus the EU may see Ireland stuck trying to serve two sets of regulations. This could mean higher costs in the medium-term.

Labour market – Possible structural change

- In the past, emigration from Ireland to the UK has been high. This has helped normalize the Irish labour market in times of stress. For example, approximately 60,000 people moved from Ireland to the UK between 2011-13.
- If the UK labour market was closed off to Irish emigrants following Brexit, the likely result is upward pressure on unemployment rates and downward pressure on wage rates.
- The ESRI (Irish economic think-tank) estimated the effect of an inflow of 60,000 into the labour force in Ireland i.e. 'non-outflow' due to migration restrictions, shows that unemployment would rise by 0.4% and wages in Ireland would fall by almost 4%.

Section 4: Long term fundamentals

Ireland's long run future looks bright. Key is retaining competitiveness by keeping wages and, hence, costs down

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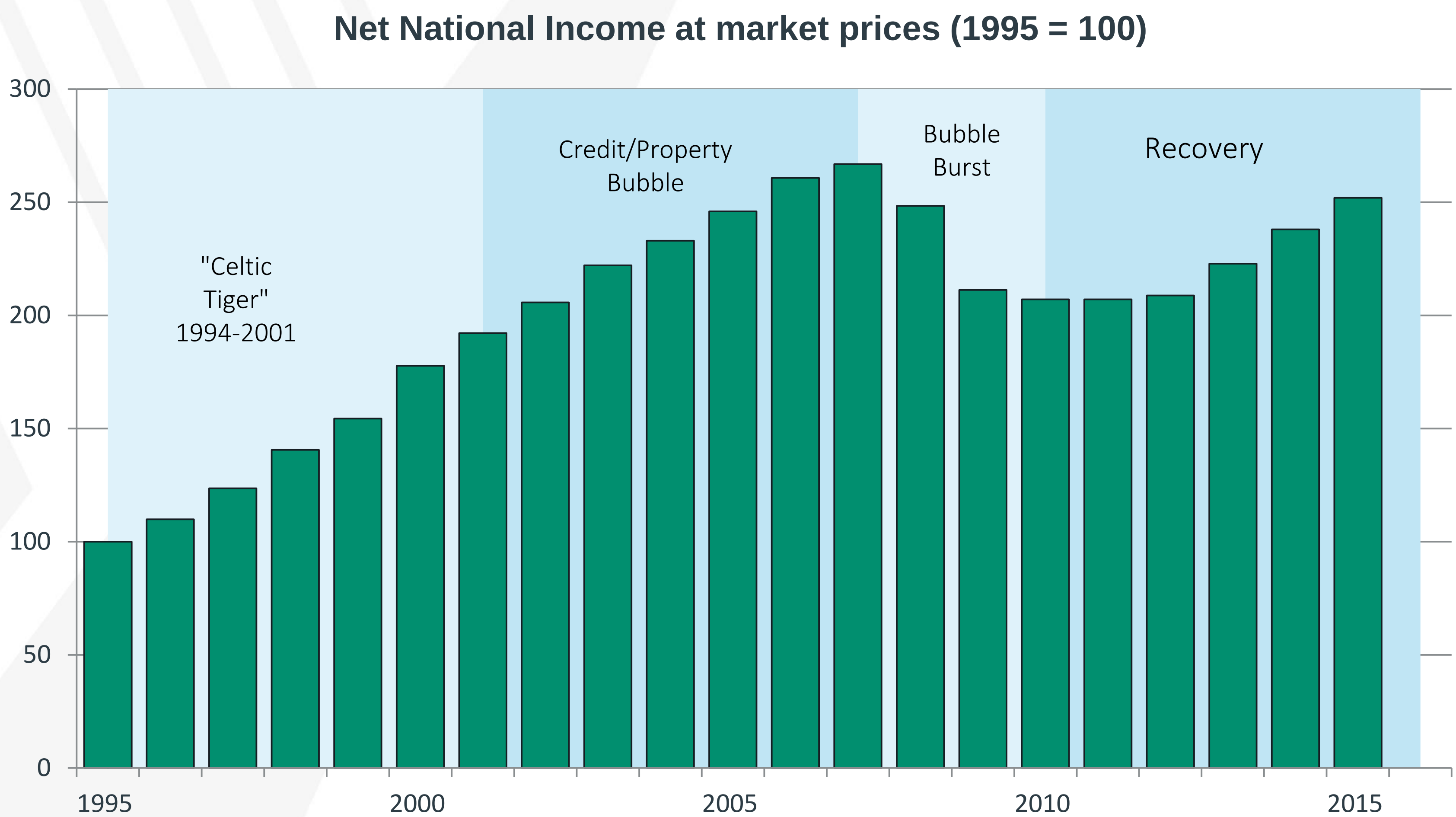
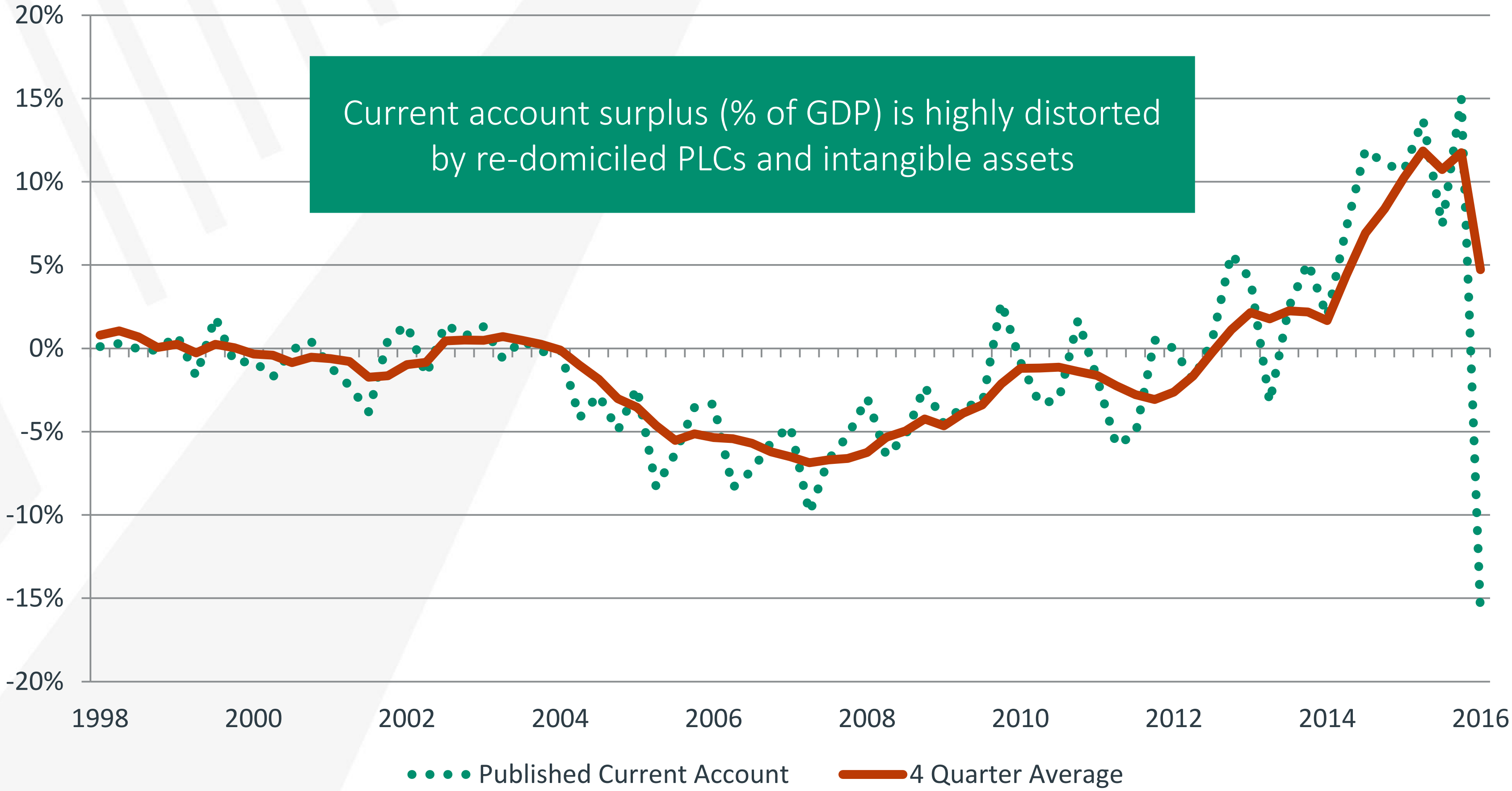
National Treasury Management Agency

Much rebalancing has taken place; NNI per capita surpassed 2005 levels in 2015



Source: CSO

Ireland's current account in surplus but heavily affected by MNC activity and re-domiciled PLCs

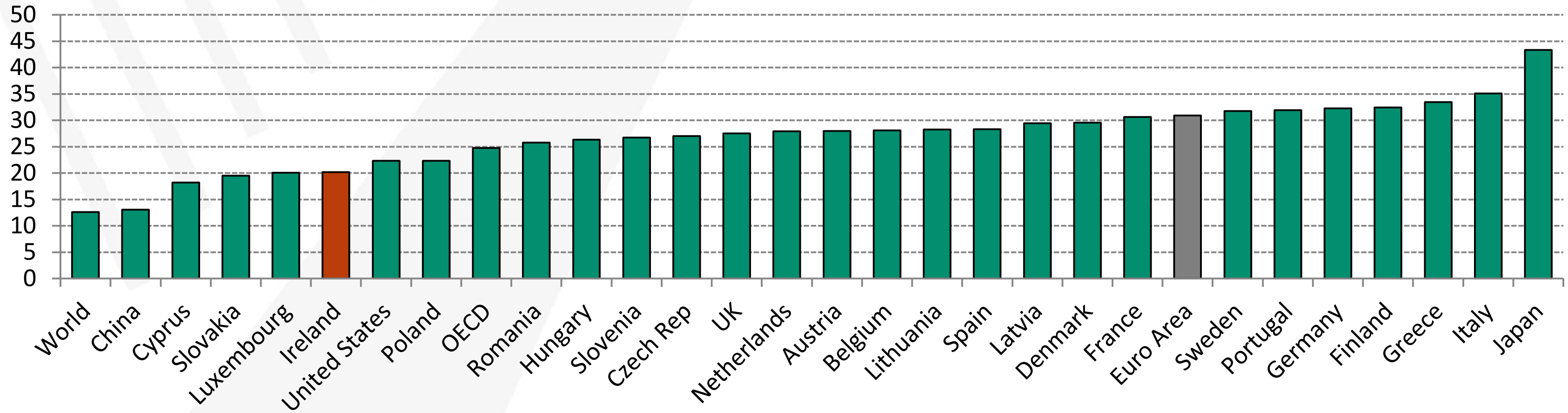


Source: *[CSO](CSO)*

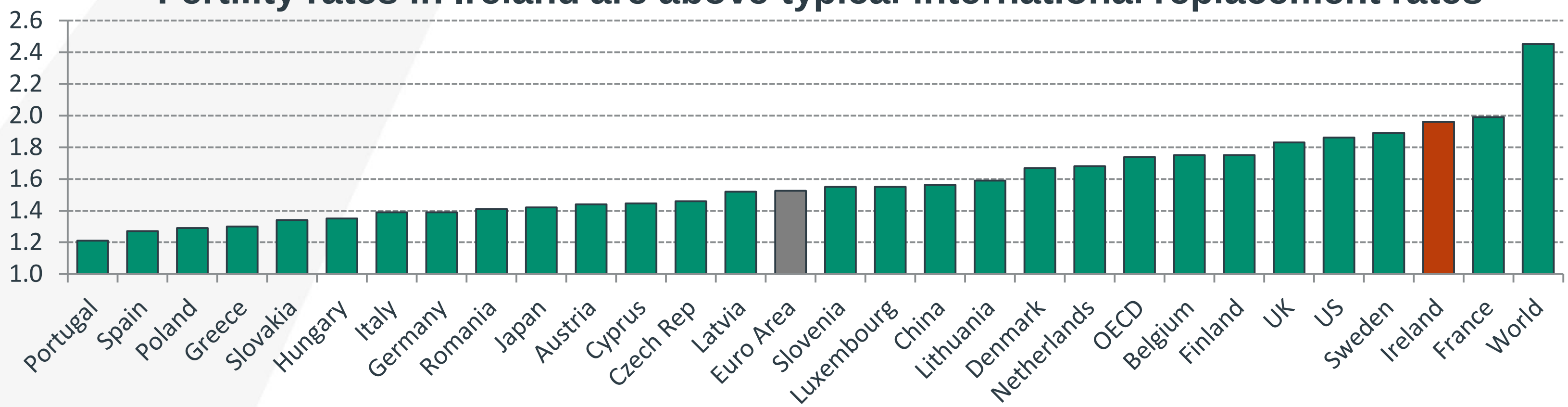
* For discussion on the undistributed profits of redomiciled PLCs see Fitzgerald, J. (2013), 'The Effect of Redomiciled PLCs on GNP and the Irish Balance of Payments'

Favourable population characteristics underpin debt sustainability over longer term

Old age dependency ratio (65+ : ages 15-64) compares well against OECD countries



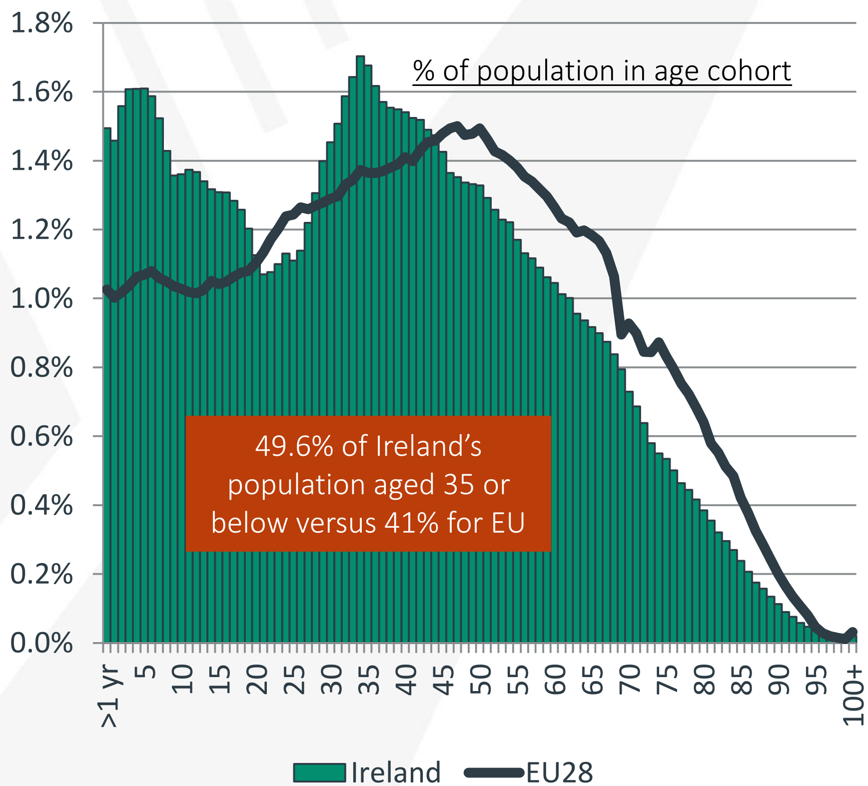
Fertility rates in Ireland are above typical international replacement rates



Source: World Bank WDI (2015 for OAD ratio, 2014 for Fertility)

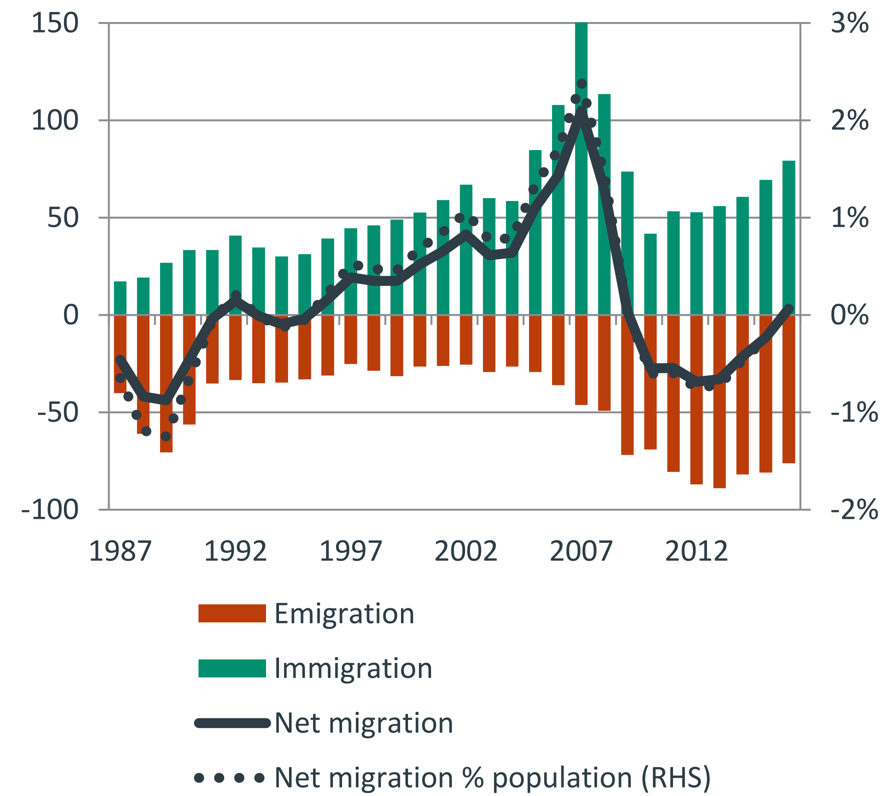
Ireland's population: 4.75m in 2016 – up 170,000 on the 2011 Census

Ireland's population profile healthier than the EU average



Source: Eurostat (2015); CSO

Net migration (000s) negative in recent years but improving alongside economy*



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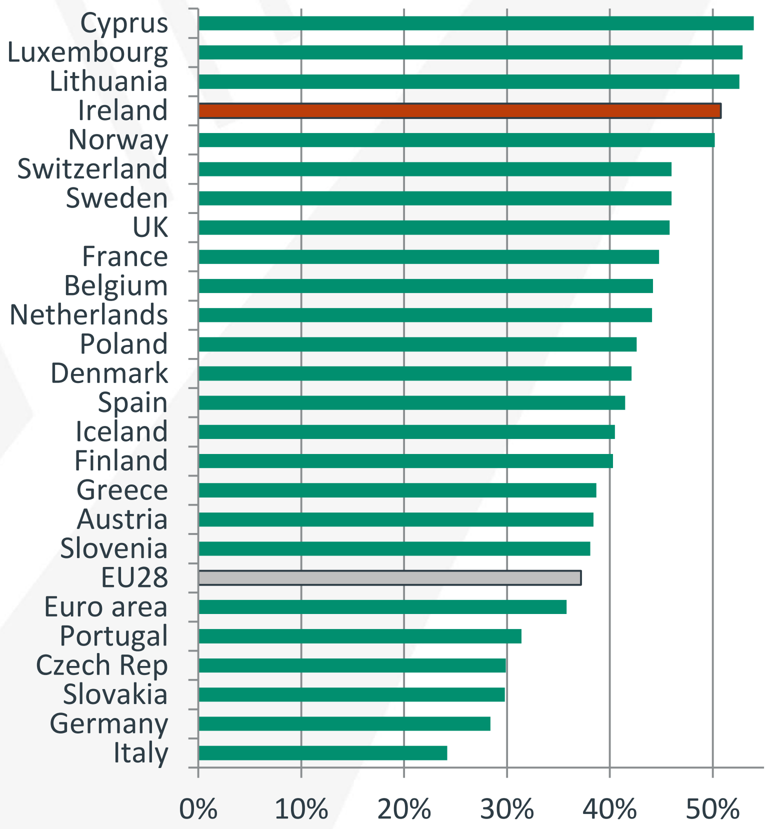
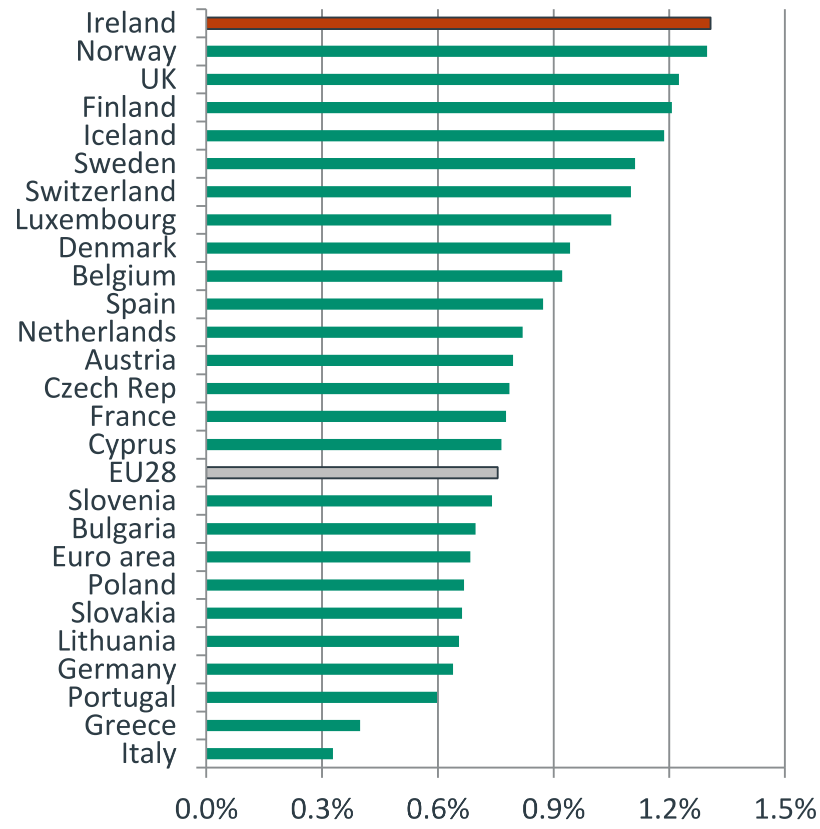
- Preliminary Census 2016 data suggest net migration might have been much lower in 2011-12 than these figures indicate. Revisions are expected in the coming months.

Workforce is young and educated - especially so in IT

Ireland has one of the largest % of 25-34 years old with a third-level degree…



…and the highest % of population working in IT with a third-level degree



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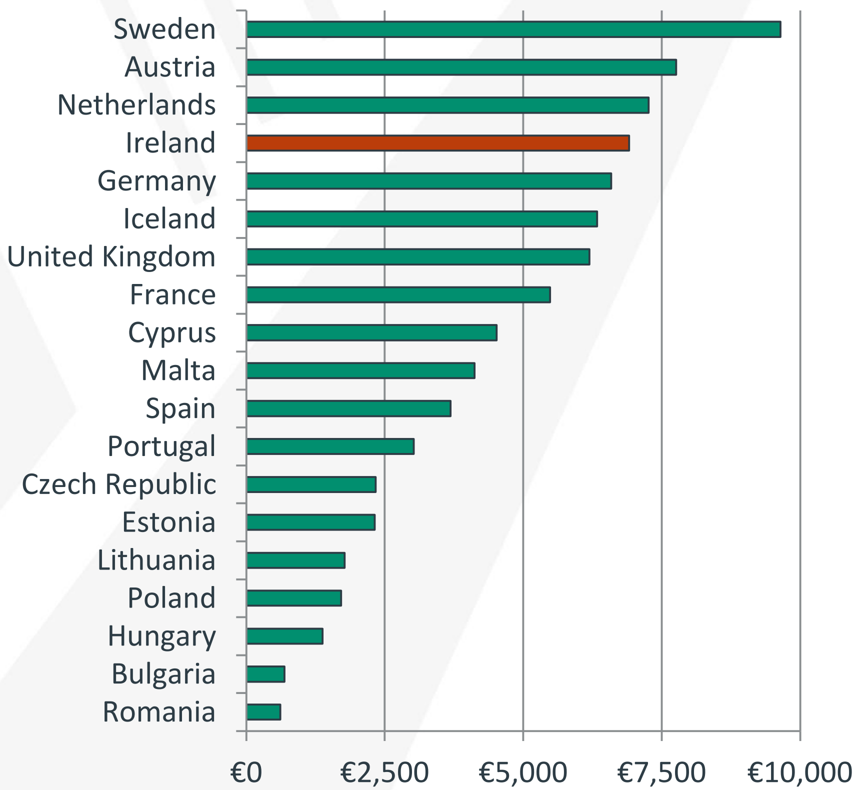
National Treasury Management Agency

Source: Eurostat

Ireland’s education expenditure close to top in Europe – qualitatively competitive also

Public Education Expenditure per person aged less than 23

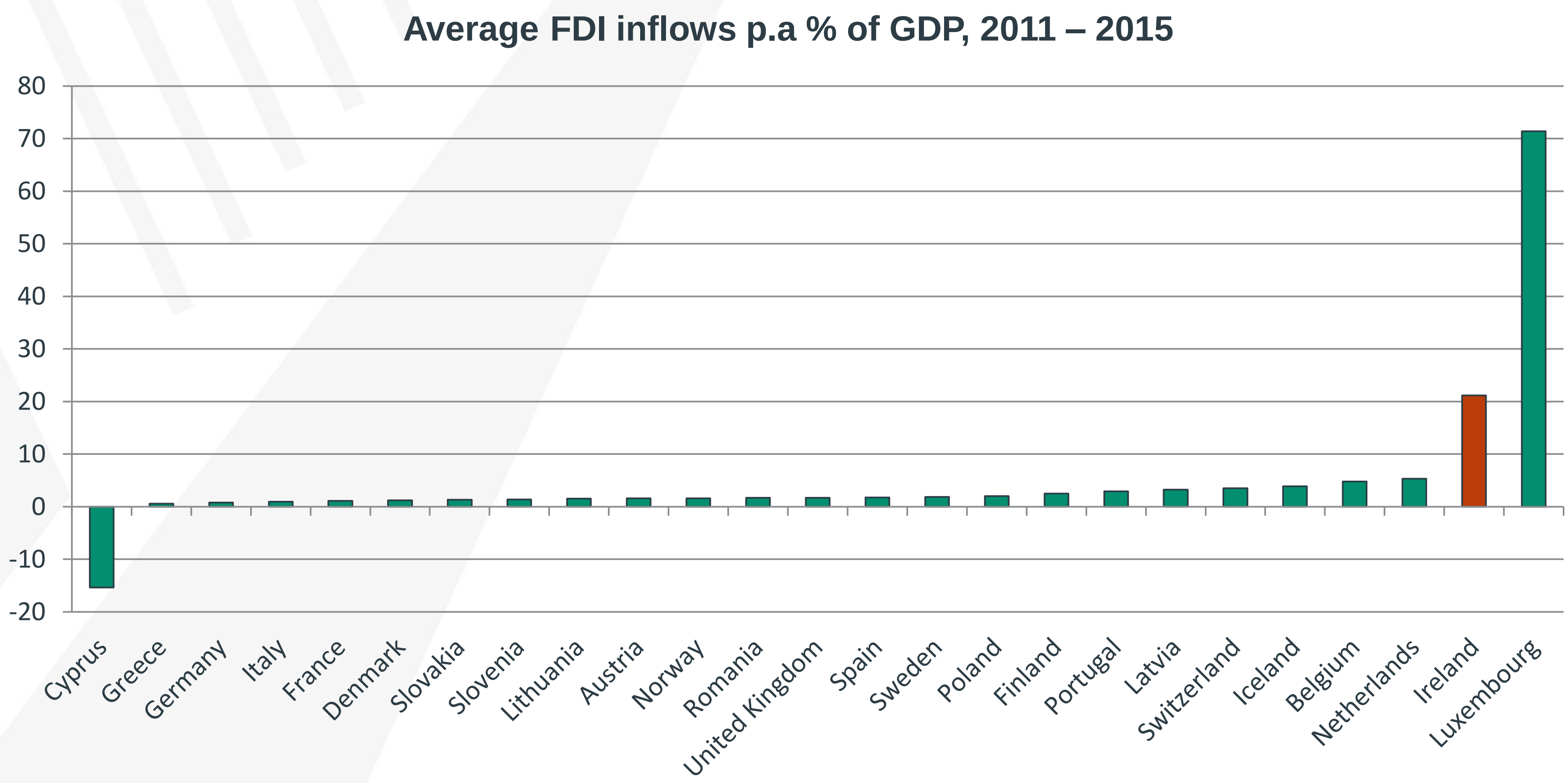


Source: Eurostat (2012), - Selected European Countries

Average PISA score for selected countries across maths, reading and science

Source: [OECD (2015)]

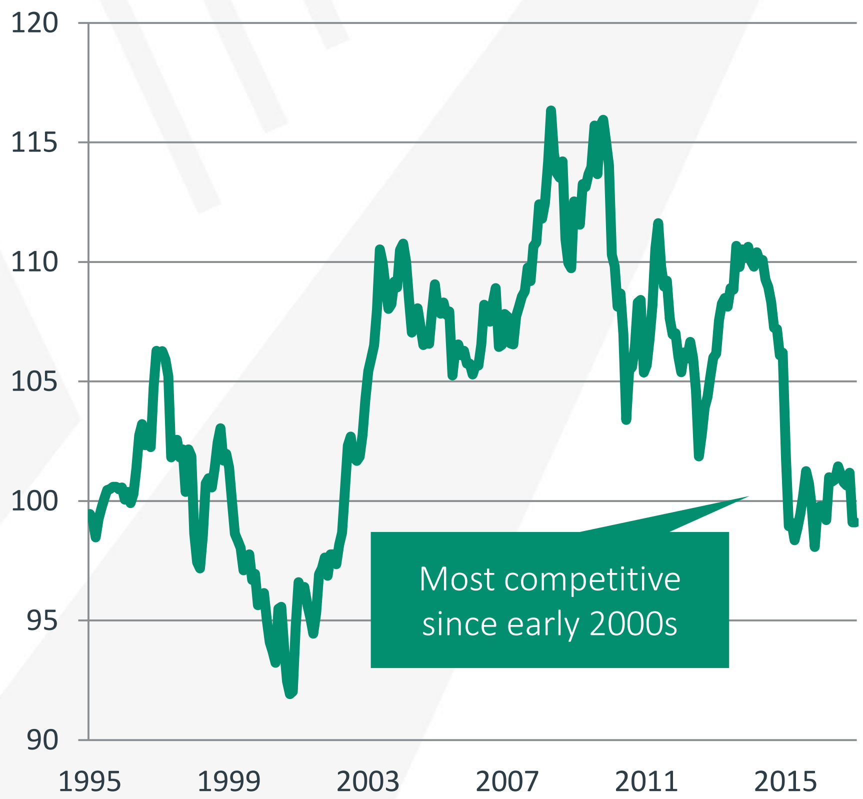
Ireland continues to attract foreign investment



*Source: Unctad (UN) database * Malta excluded for presentation purposes – average FDI inflow of 143% of GDP over period.*

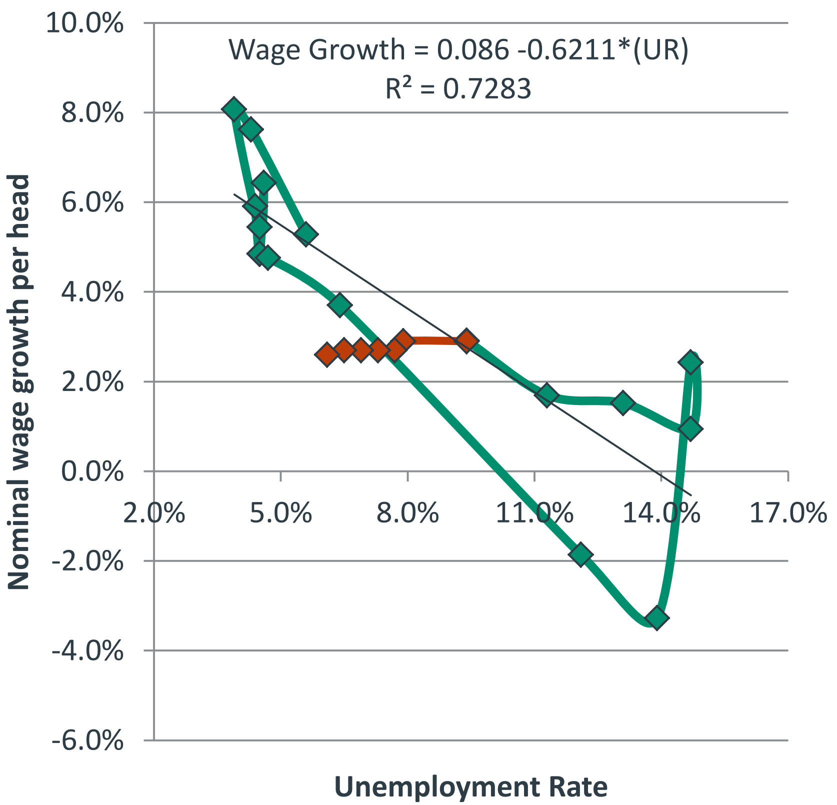
Competitiveness – could become an issue in time…

Real Harmonised Competitiveness Indicator



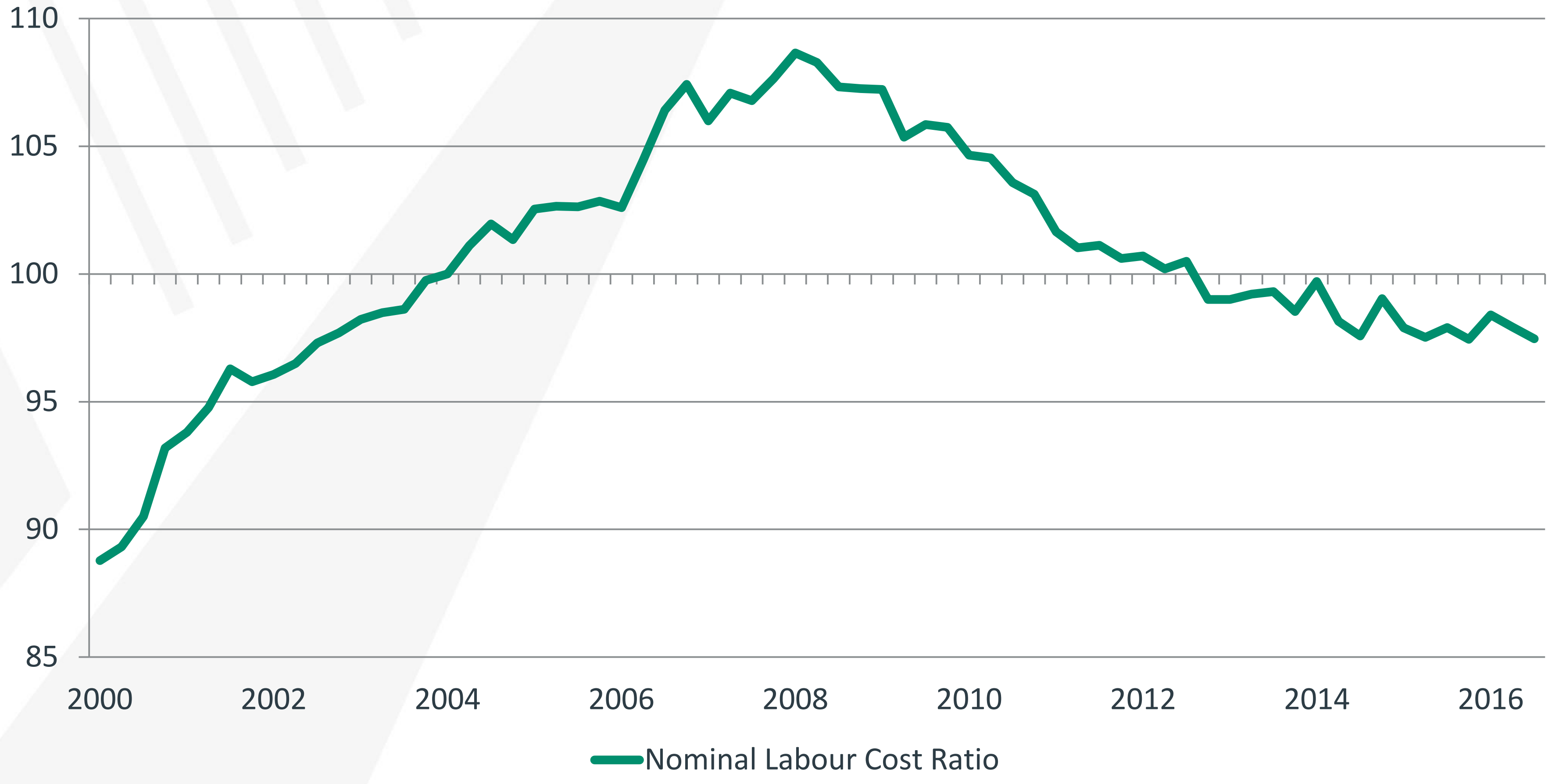
Source: [CBI](),

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

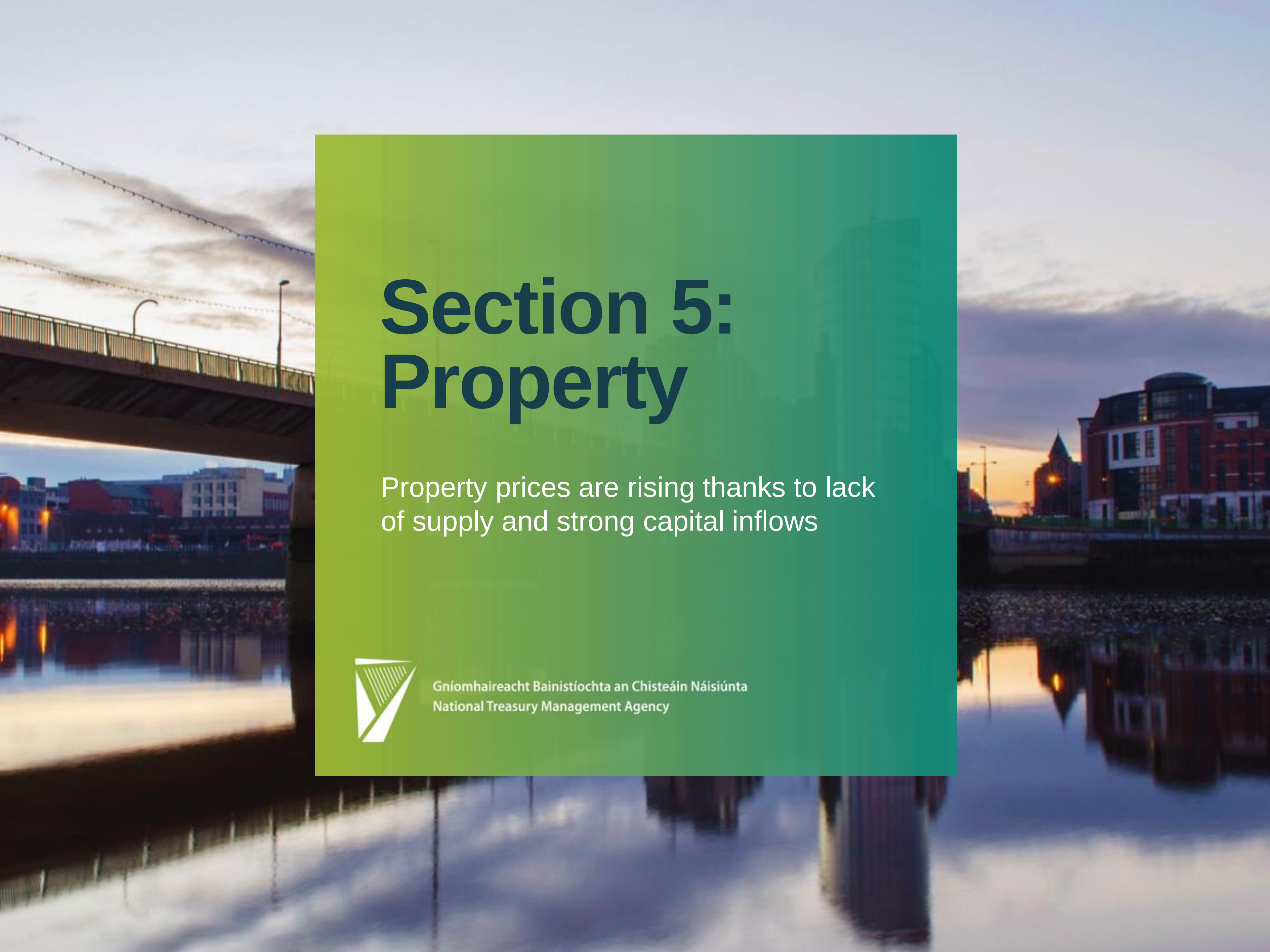


*Source: CSO, NTMA analysis *red dots are Budget 2017 forecasts (2017-2021); Non-Agriculture employment /wage data*

…although currently, Ireland's nominal labour costs are back below that of EA counterparts



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



Section 5: Property

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

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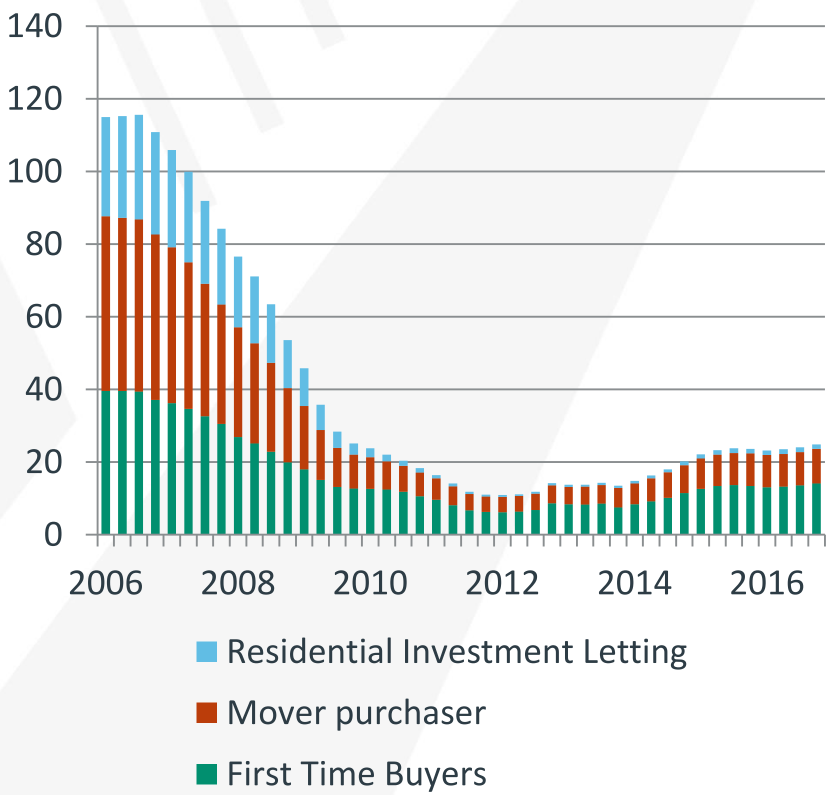
National Treasury Management Agency

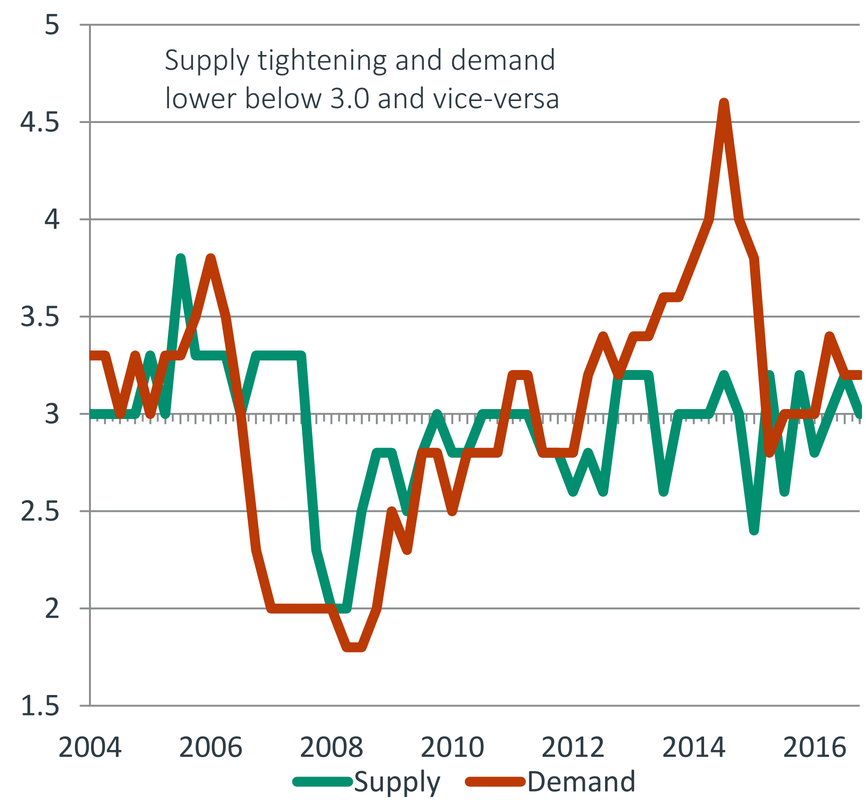
Demand has picked up again having cooled in 2015; Amendments to CBI rules likely to spur further demand

Mortgage drawdowns rise from deep trough (000s)



Source: BPFI   **4 quarter sum used*

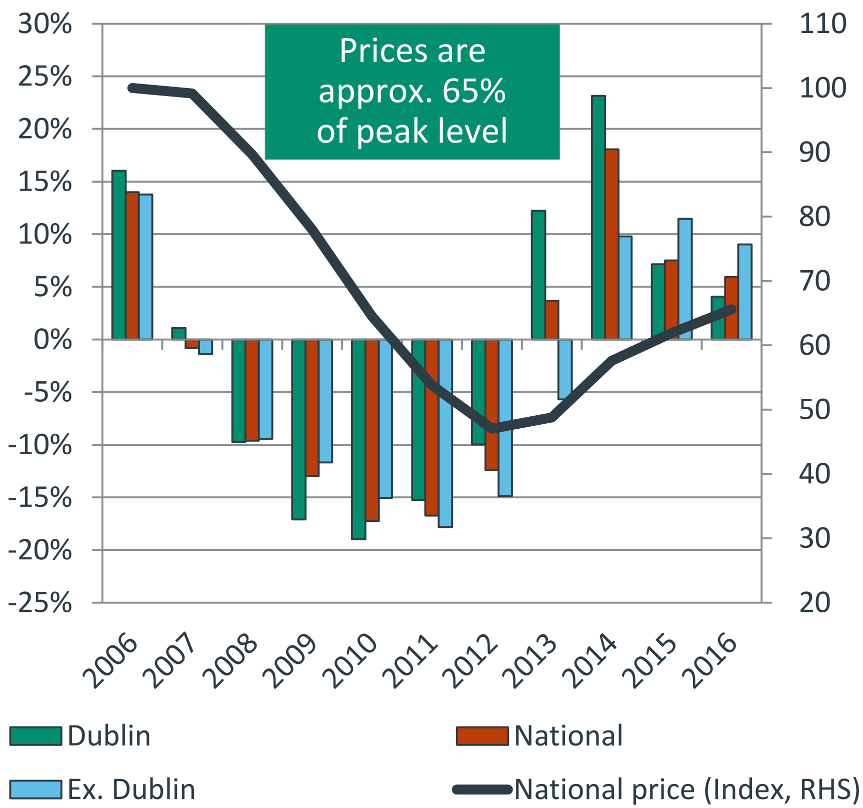
Demand increased in Q2/Q3 after period of restraint following CBI rules



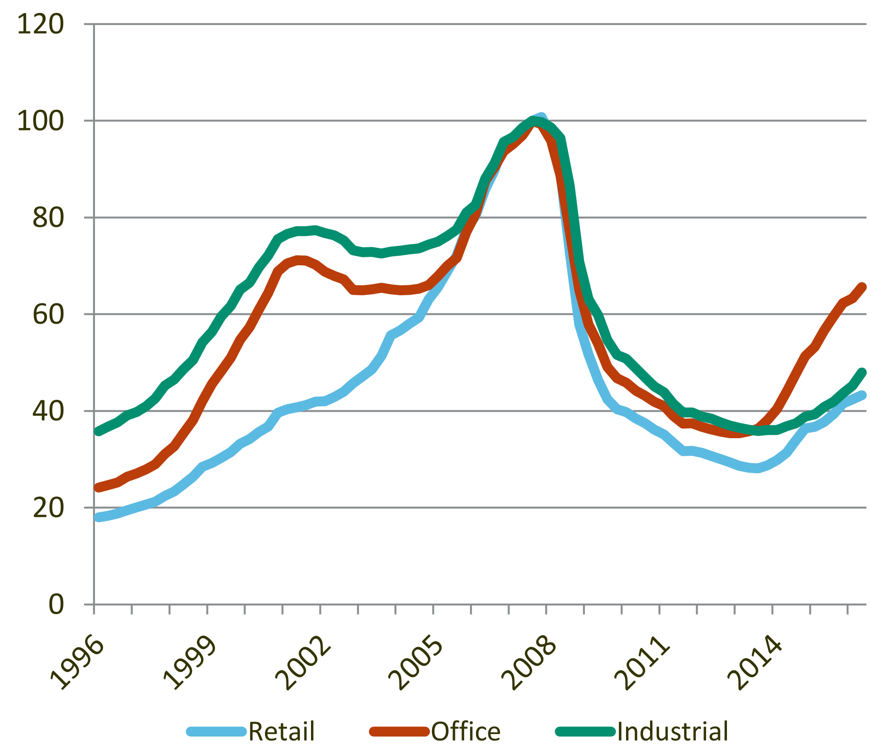
Source: ECB and CBI (Bank lending survey)

Property prices have rebounded since 2012 (peak = 100 for all indices)

House price recovery (y-o-y % change)



Office leads commercial property



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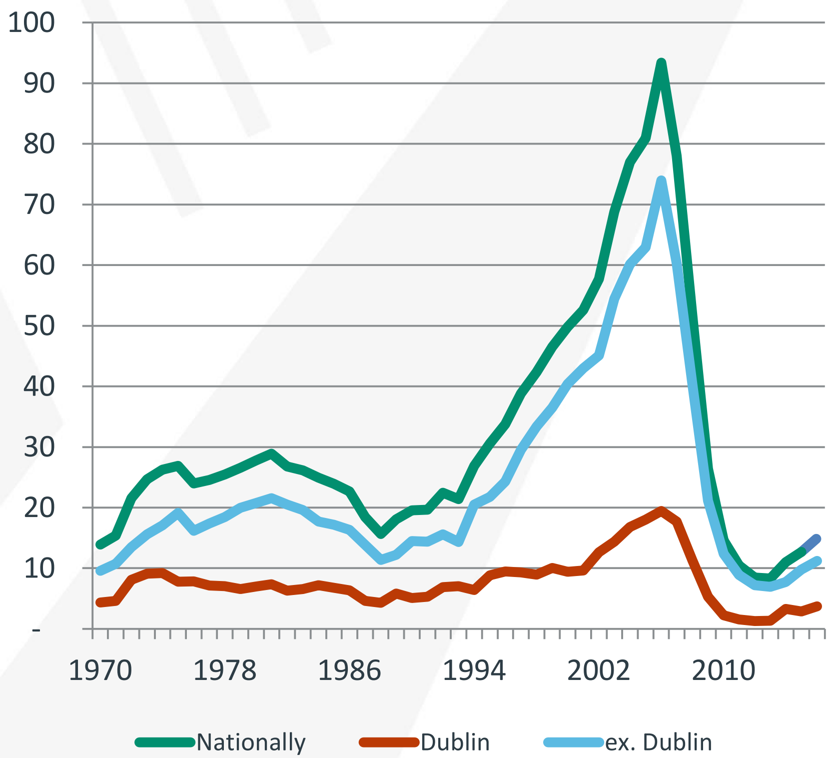
Source: CSO (averaging of price index used for annual figures); IPD

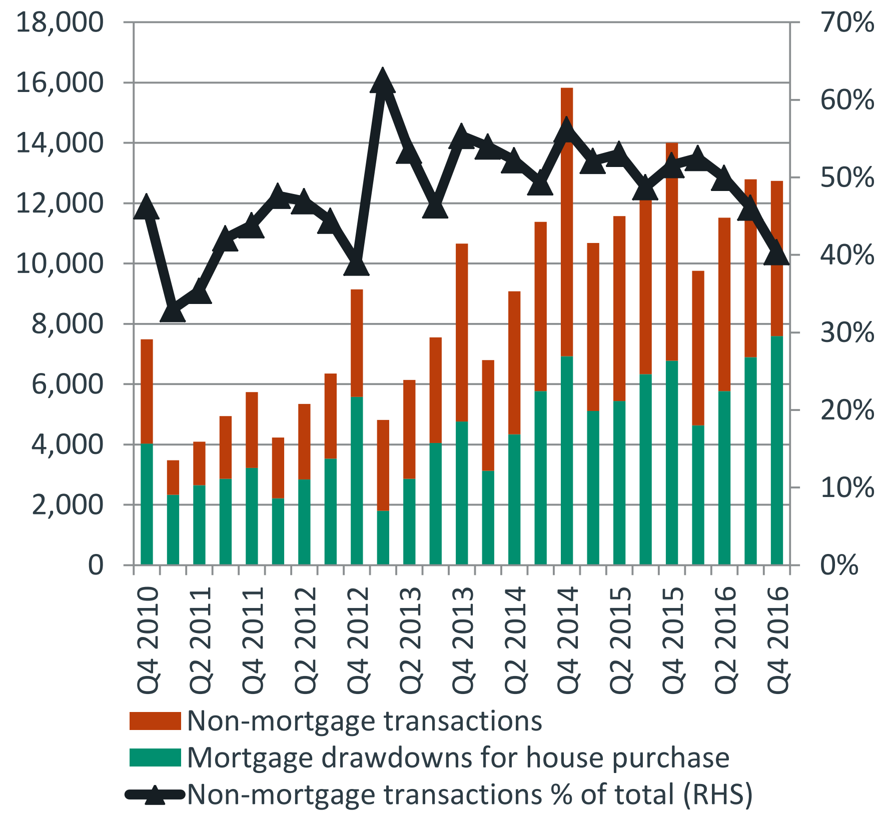
Residential market continues to be boosted by non-mortgage purchasers although impact has lessened

Housing Completions to be above 14,000 in 2016 but low historically (000s)



Source: DoHPCLG, BPFI; Property Services Regulatory Authority

Non-mortgage transactions still important but falling to 40% of transactions



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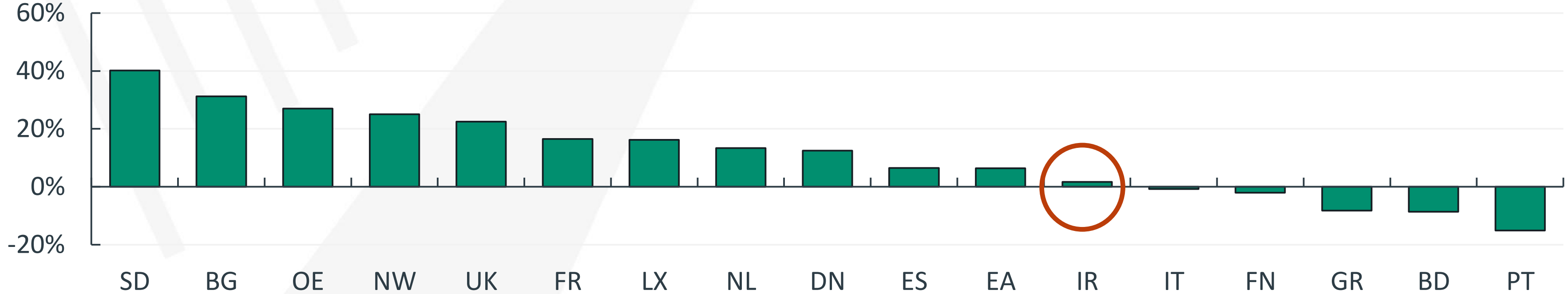
Note: Non-mortgage transactions are implied by difference between total transactions on property price register and BPFI mortgage data

Irish house price valuation is still attractive relative to other European countries

Deviation from average price-to-income ratio



Deviation from average price-to-rent ratio

Source: OECD, NTMA Workings

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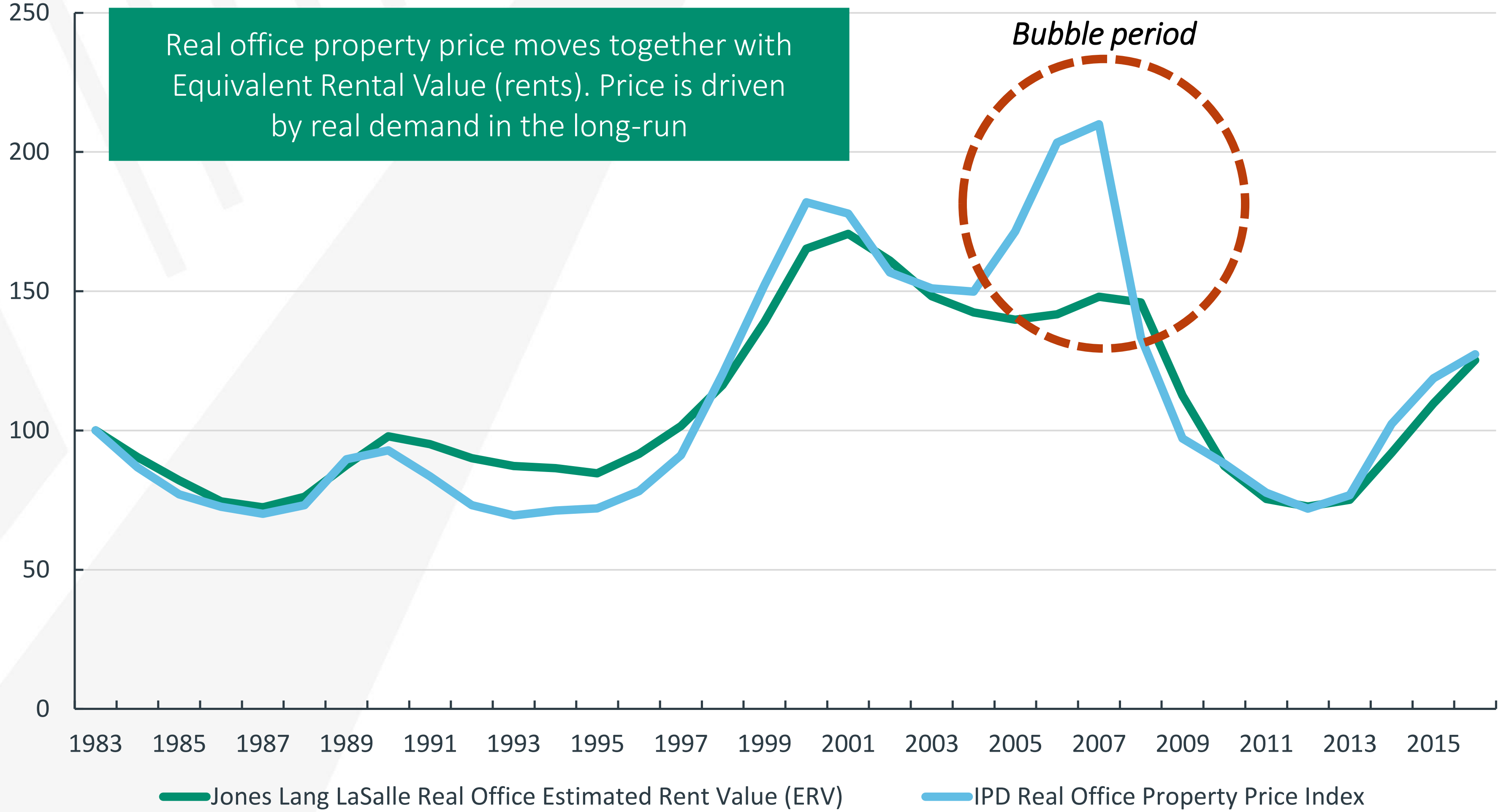
Note: Measured as % over or under valuation relative to long term averages since 1980. All data updated to Q1 2016

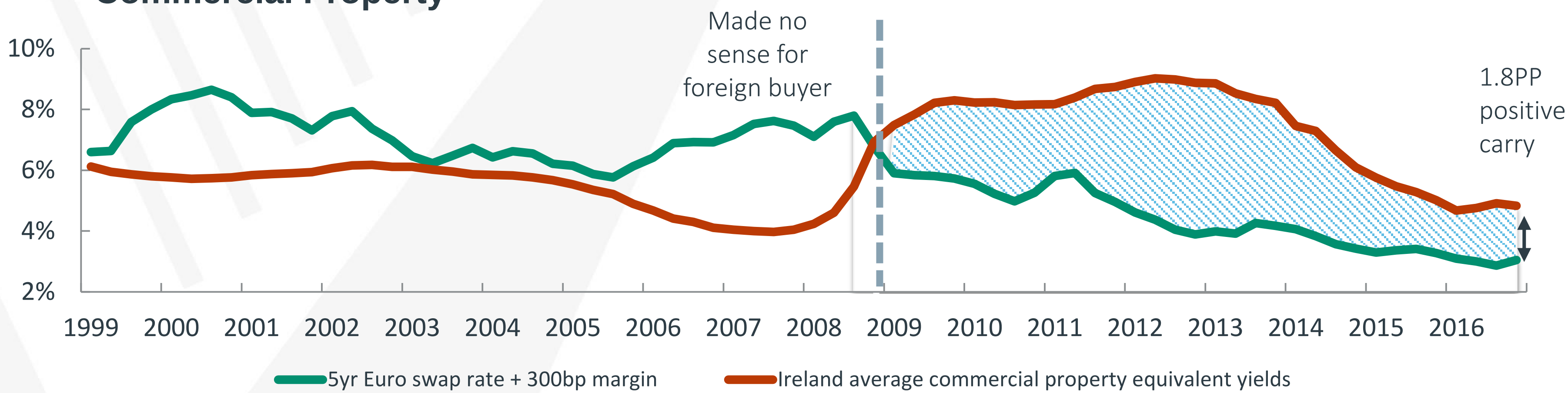
Real commercial property prices down 40% from peak (index 1983 = 100)



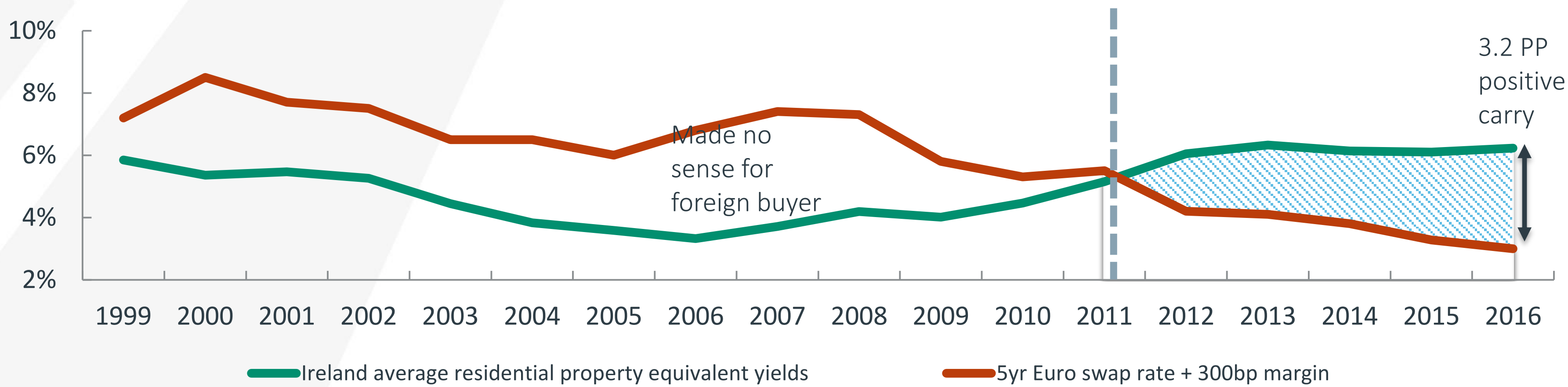
Source: IPD; NTMA

Investors may still be interested on "carry trade" grounds

Commercial Property



Residential Property



Source: IPD; NTMA

Section 6: NAMA

NAMA has repaid 95% of its senior debt; it forecasts a profit of over €2bn subject to market conditions

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National Treasury Management Agency

NAMA: 95% of its original senior debt has been repaid

- **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 €28.7bn (95%) of €30.2bn of original senior debt**
  - NAMA is meeting and exceeding its senior debt redemption targets well ahead of schedule. It remains on course, subject to market conditions, to redeem all senior debt (€30.2 billion) by end-2017 and its subordinated debt (€1.6 billion) by 2020.

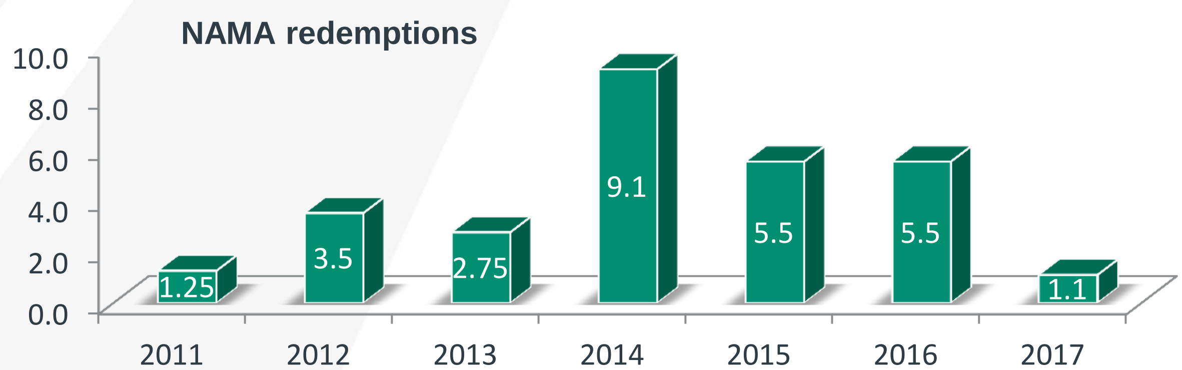
- **NAMA remains on course to deliver a surplus for Irish taxpayers which is currently estimated within a range of €1.6bn to €2.3bn, according to its management team - if current market conditions remain favourable.**

- **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: 2011 – 2015 financial results

€m	2011	2012	2013	2014	2015
Net interest income	771	894	960	642	393
Operating profit before impairment	1,278	826	1,198	680	1,769
Impairment charges	(1,267)	(518)	(914)	(170)	86
Profit before tax and dividends	11	308	283	510	1,854
Tax (charge)/credit and dividends	235	(76)	(70)	(52)	(28)
Profit for the year	246	232	213	458	1,826

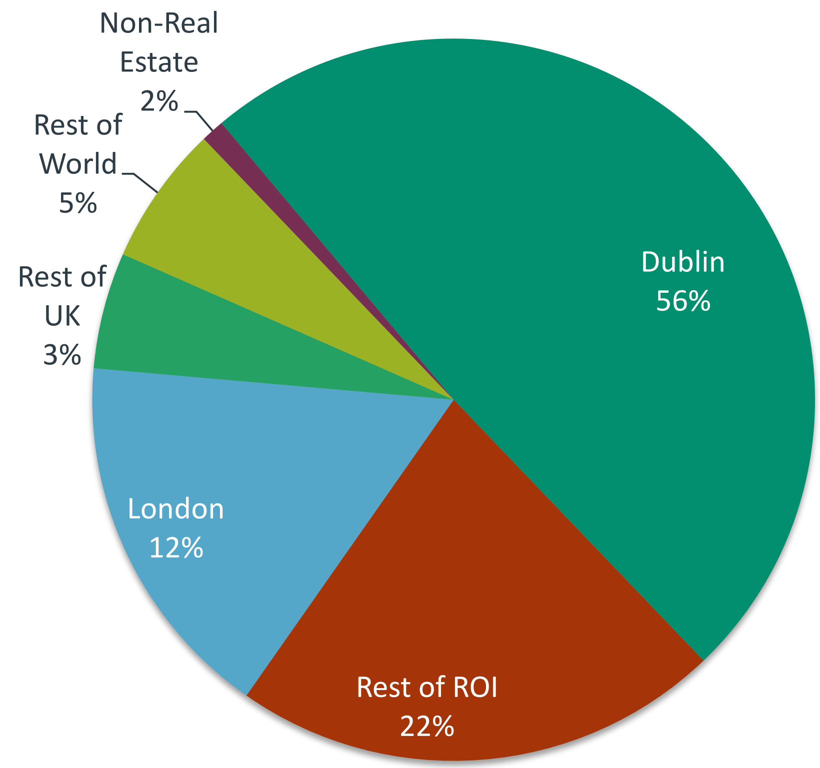
Source: NAMA



- NAMA continues to generate significant cash through disposal activity and non-disposal income.
- €5.4 billion in cash was generated in 2016.
- NAMA expects to generate a substantial profit in 2016.
- €1.1bn of NAMA senior bonds redeemed in 2017 brings total amount redeemed to €28.7bn (95% of its senior debt liabilities)
- All of €30.2bn in NAMA senior bonds expected to be redeemed by 2017

Breakdown of remaining NAMA portfolio is Dublin-centric

- At end-June 2016, NAMA's remaining portfolio contained €7.2bn worth of assets.
- Vast majority of remaining portfolio in Ireland is in Greater Dublin Area or in other urban centres.
- NAMA's exposure to Brexit is minimised as it had already disposed of the majority of its UK assets



Source: NAMA

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, 25% apartments
  - 93% of units in Greater Dublin Area (Dublin, Wicklow, Kildare & Meath)

- **Progress of its building programme has been strong so far**
  - 4,700 units completed since the start of 2014;
  - Another 1,037 under construction with 1,111 will soon to be*;
  - Planning permission have been granted for another 7,300;
  - Planning applications lodged or will be lodged in 2017 for a further 11,000 units

- **Existing NAMA commitments are unaffected by this new programme**
  - Plans for all senior debt to be repaid by end 2017 and subordinated debt repaid by March 2020 are still in train.

*The units in this category are a combination of residential projects for which funding has been approved and preparations are under way to commence construction in Spring 2017. It also includes funding for developments where the next phase of residential construction will start once an earlier phase is completed.

NAMA: Other strategic initiatives are also progressing

- **Dublin Docklands Strategic Development Zone (SDZ):**
  - A core objective of NAMA's development funding is to facilitate the delivery of Grade A office accommodation in the SDZ.
  - NAMA has an interest in 15 of the 20 development blocks identified in the SDZ and has developed detailed strategies for these blocks.
  - It is estimated that up to 3.25m sq. ft. of commercial space and about 1,350 residential units could be delivered.
  - 47,500 sq. ft. of commercial space completed with another 1.4m sq. ft. of construction commenced. Planning has been granted on another 1.15m sq. ft.
  - By end-2016, 82% of the original Docklands SDZ was under construction, or received planning, or had been sold with the benefit of planning permission.

- **Social Housing:**
  - A SPV – NARPSL – was established by NAMA to expedite social housing delivery. It acquires residential units from NAMA debtors and receivers and leases them directly to approved housing bodies (Department of the Environment, Community and Local Government; and the Housing Agency).
  - By end-2016, 2,748 have been confirmed as suitable by local authorities while 2,378 of those having been delivered.

Section 7: Banking

Banks are now profitable; but environment is more challenging as a result of Brexit and low interest rates

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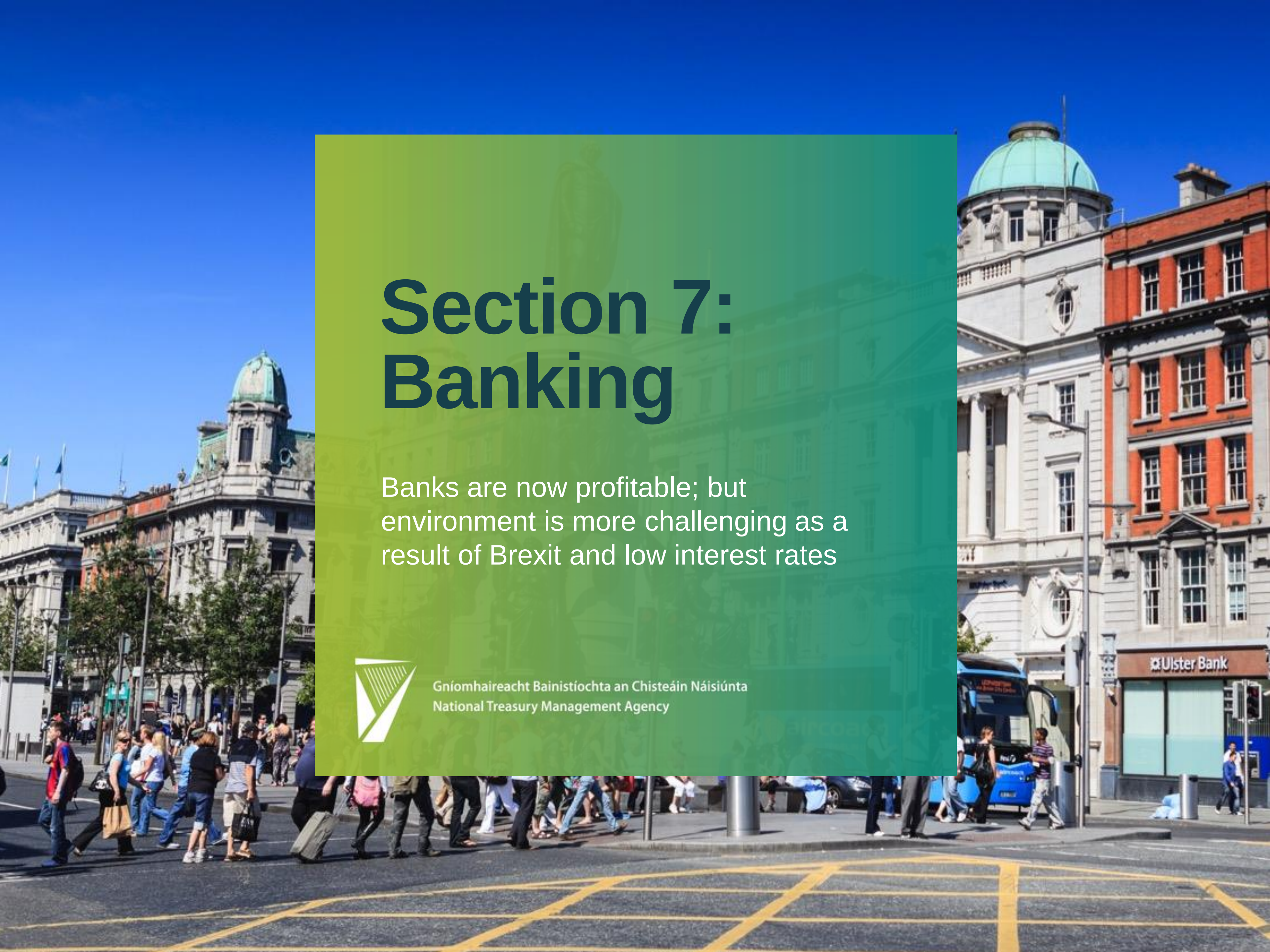
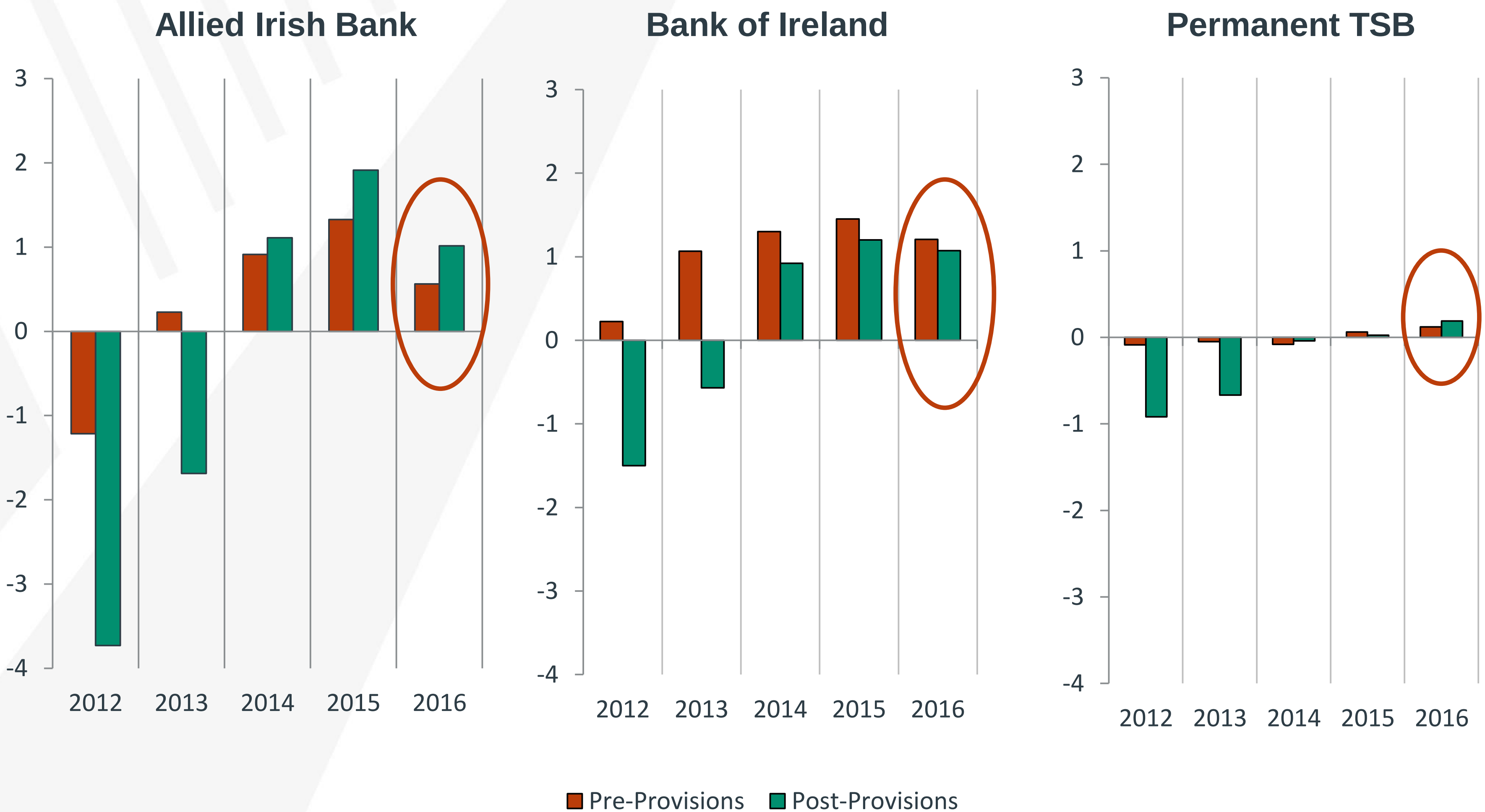


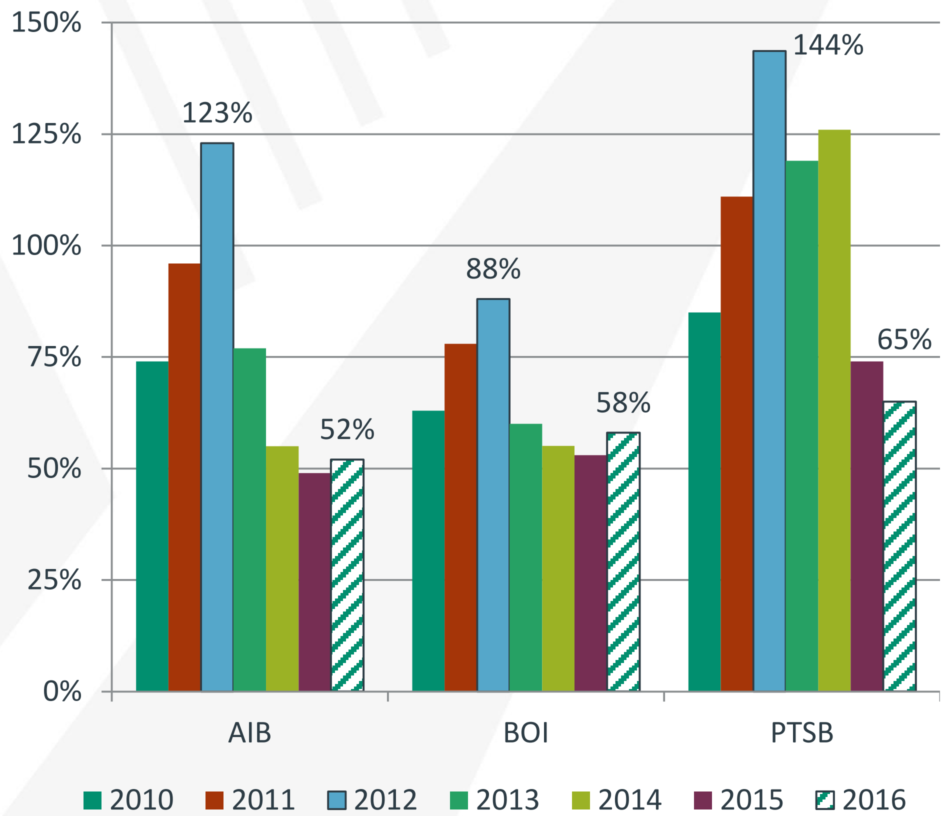
All three pillar banks in profit for at least 24 months



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

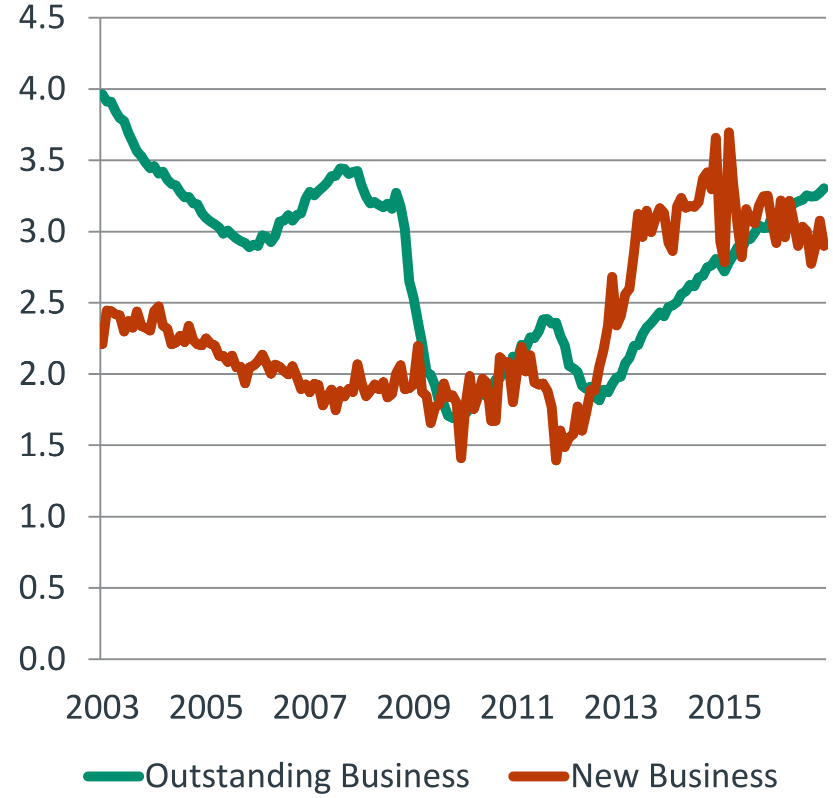
Banks fundamentally rebuild their profitability

Cost income ratios improve dramatically



Source: Annual reports of Irish domestic banks

Net interest margins recover %

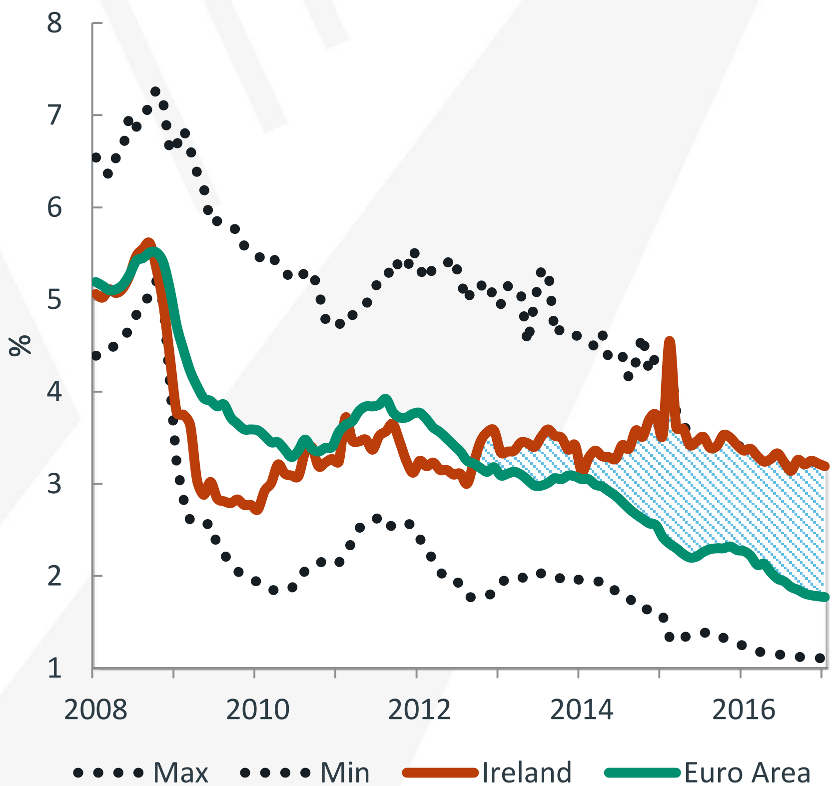


Source: CBI, NTMA Calculations

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

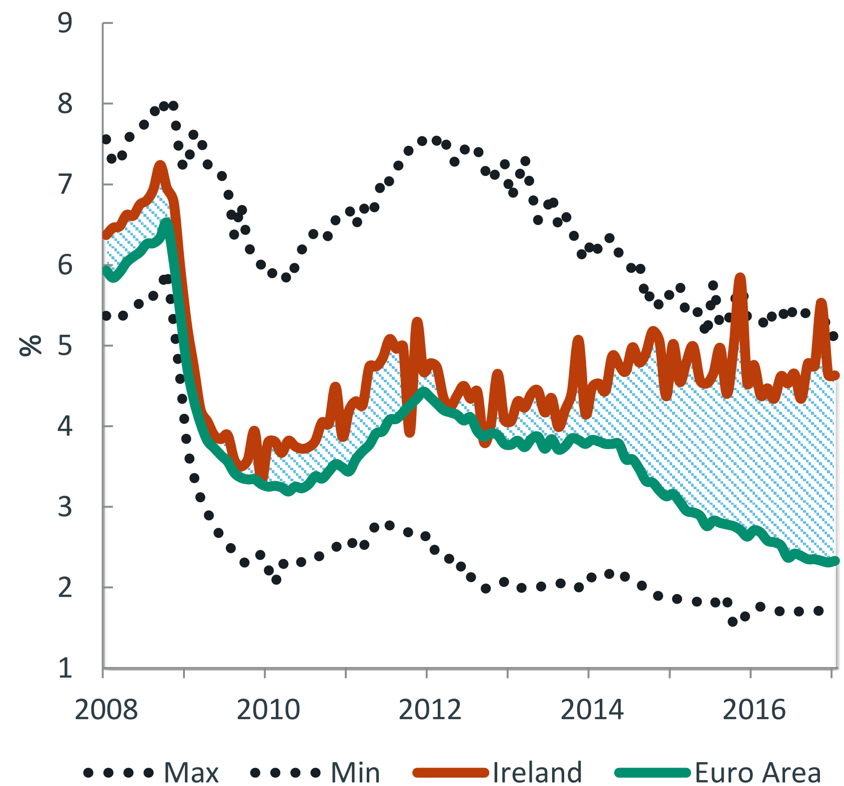
Profitability aided by higher interest rates than EA peers

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



Source: ECB

Rates on SME loans* over euro area average

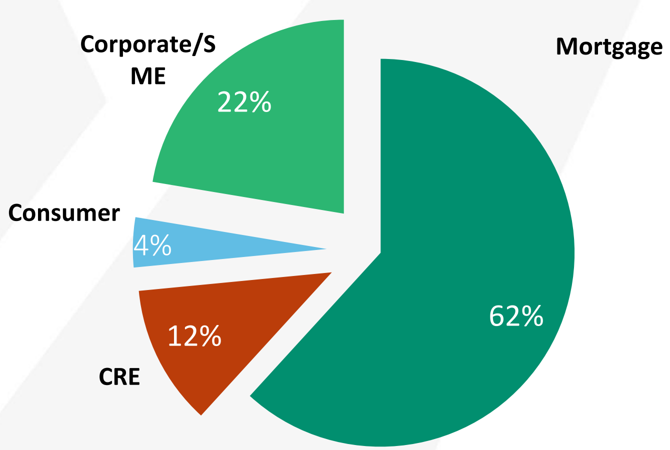


*SME loans proxy of loans <1year and <€1m to Non-Financial Corporates

Asset quality continues to improve; impaired loans and provisions fall in 2016

All 3 PCAR Banks (€bn)	Dec-14	Dec-15	Dec-16
Total Loans	197.1	186.5	168.9
Impaired	43.1	29.0	21.0
(Impaired as % of Total)	21.9%	15.5%	12.4%
Provisions	23.5	14.7	10.4
(Provisions as % of book)	12.0%	7.9%	6.2%
(Provisions as % of Impaired)	54.5%	50.6%	49.5%

Loan Asset Mix (three banks Dec 16)



Source: Published bank accounts

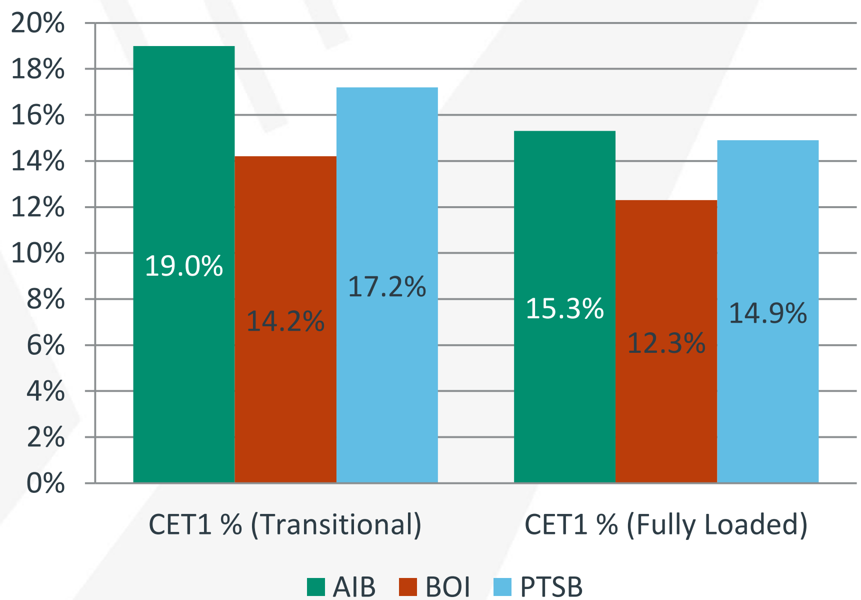
Impaired Loans % (Coverage %)[1] by Bank and Asset

		Dec-14	Dec-15	Dec-16	*Book (€bn)*
BOI	Irish Residential Mortgages	12.6(46)	9.3(52)	6.9(54)	24.3
	UK Residential Mortgages	2.0(23)	1.6(22)	1.4(23)	23.9
	Irish SMEs	25.6(51)	21.9(52)	17.0(54)	8.8
	UK SMEs	16.9(44)	11.1(51)	7.6(53)	1.9
	Corporate	5.6(54)	4.6(59)	43.5(63)	9.3
	CRE - Investment	37.2(46)	28.5(53)	22.7(57)	9.3
	CRE - Land/Development	89.5(74)	84.8(76)	69.6(73)	1.0
	Consumer Loans	6.4(98)	4.1(105)	2.7(94)	3.6
		18.2(50)	11.6(56)	8.4(56)	82.4
AIB	Irish Residential Mortgages	22.6(40)	16.6(38)	13.1(44)	33.4
	UK Residential Mortgages	11.6(59)	10.8(50)	10.8(46)	1.8
	SMEs/Corporate	21.4(68)	11.5(63)	8.0(60)	17.5
	CRE	56.9(62)	37.4(61)	29.0(53)	9.4
	Consumer Loans	27.2(69)	19.9(70)	13.9(58)	3.1
		29.2(51)	18.6(47)	14.0(44)	65.2
PTSB	Irish Residential Mortgages	25.5(46)	23.6(49)	23.4(49)	20.7
	UK Residential Mortgages	1.5(60)	3.9(39)	0.0(0)	0
	Commercial	74.0(60)	35.8(69)	29.6(113)	0.2
	Consumer Loans	29.7(94)	27.0(93)	22.3(88)	0.3
		24.5(51)	21.1(49)	23.1(51)	21.3

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

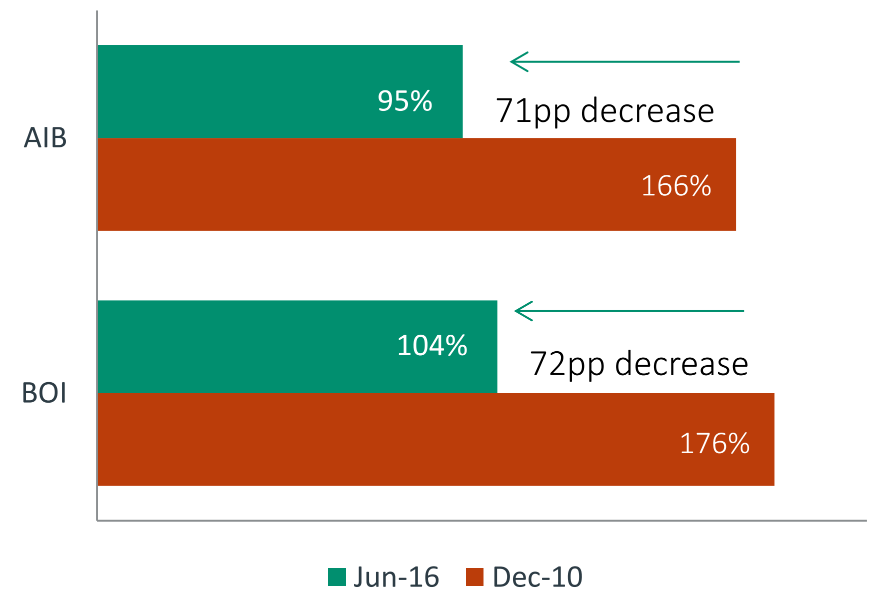
Capital and loan-to-deposit ratios have been strengthened

CET 1 Capital Ratios (Dec-16)



Source: Published bank accounts

Loan-to-Deposit Ratios (Dec-10 to Dec-16)



Source: Published bank accounts

- Common equity tier 1 capital ratios at the PLAR banks remain well above minimum requirements.

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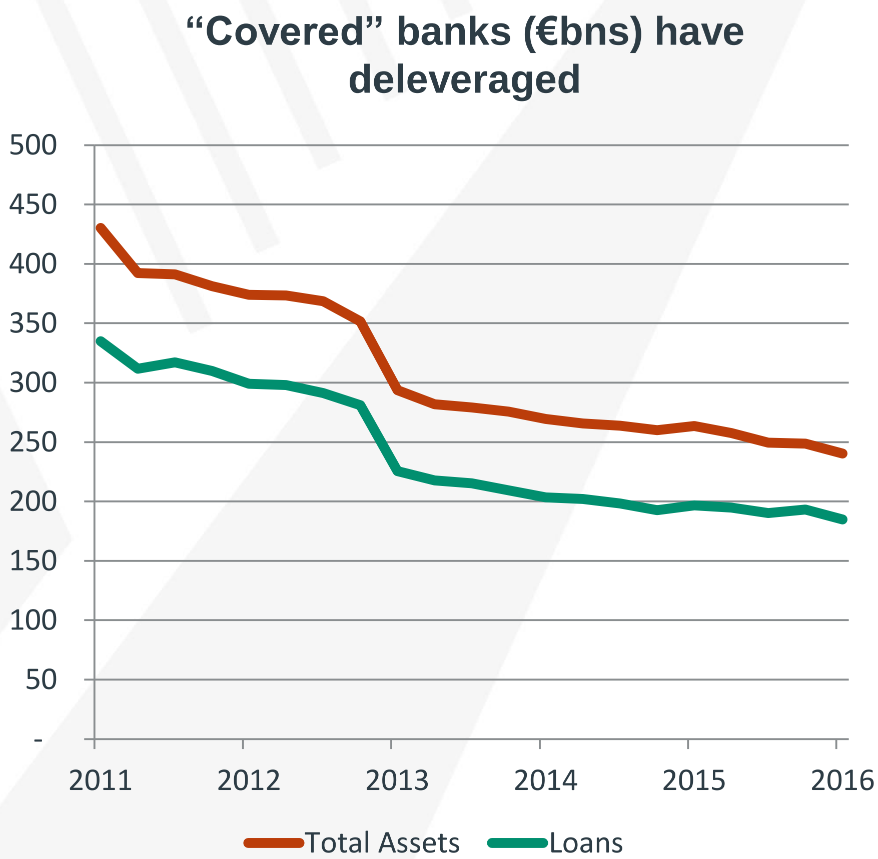
Note: “Transitional” refers to the transitional Basel III required for CET1 ratios which came into effect 1 January 2014. “Fully loaded” refers to the actual Basel III basis for CET1 ratios.
* The fully loaded CET1 ratios exclude the 2009 preference shares.

Aggregated balance sheet of the "Covered" banks is much slimmer and more solid



Source: CBI

Aggregated Balance Sheet end Q3 2016 €bn	
Assets	230.2
• Loans and receivables	176.1
• Cash & other liquid assets	38.1
• Other	16.0
Liabilities	206.9
• Deposits	170.1
• Other Liabilities	36.8
Equity & Minority Interest	23.3

Note: Banks included in this measure are outlined here; Balance sheet calculated on consolidated basis

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%

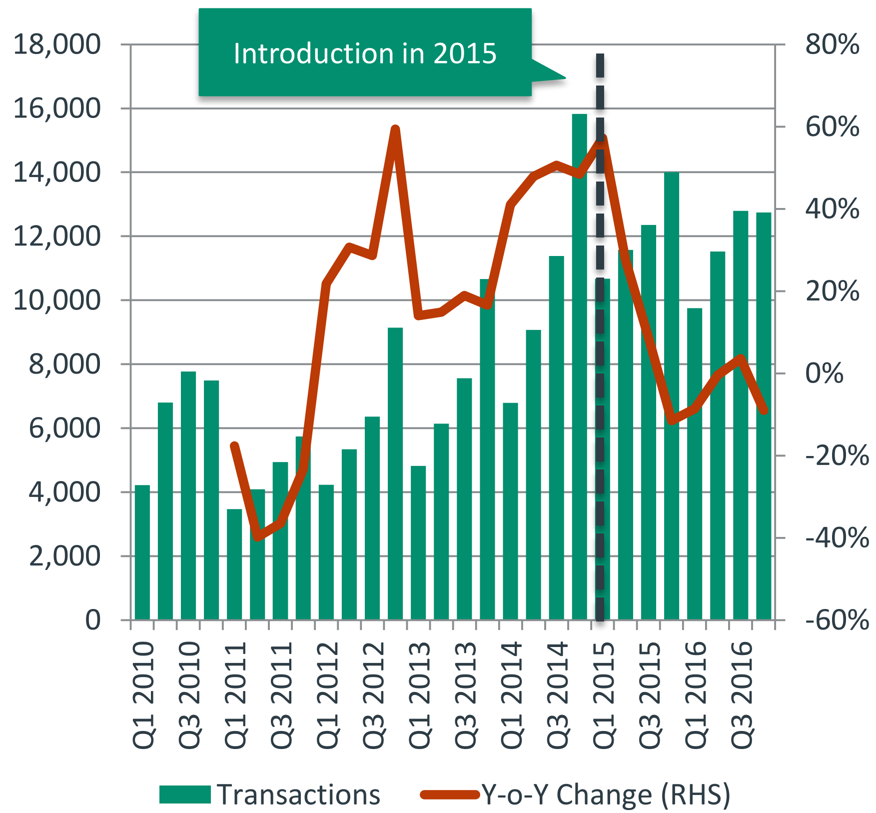
Source: Published bank accounts

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
- Banks must limit Buy-to-Let loans (BTL) above 70 per cent LTV to 10 per cent of all BTL loans.

Market is likely to pick up in coming months following amendments

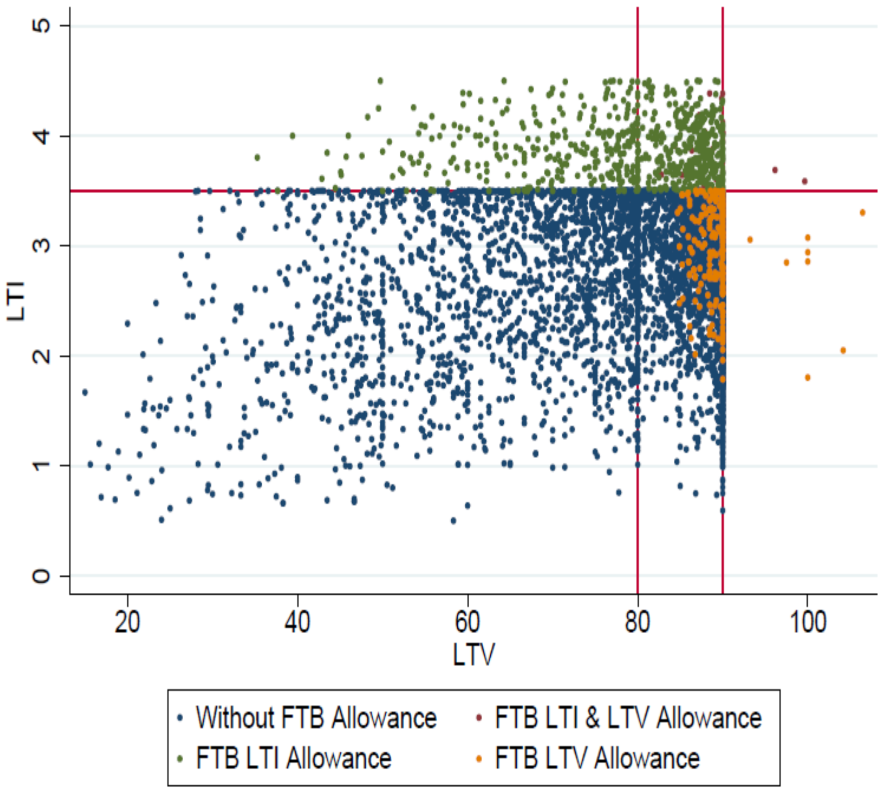


Source: Residential Property Price Register

For H1 2016, 11% of value of new PDH lending exceeded the LTV cap; 12% exceeded the LTI cap

Loan Distribution to First Time Buyers

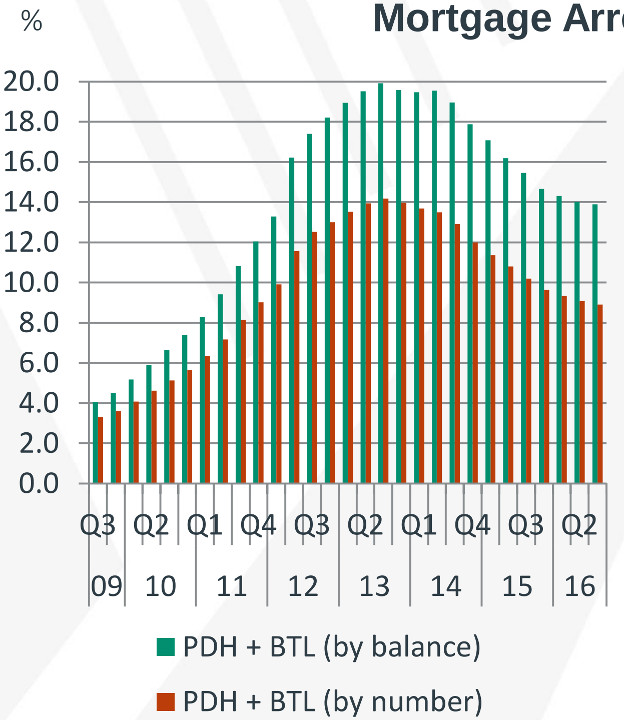
H1 2016

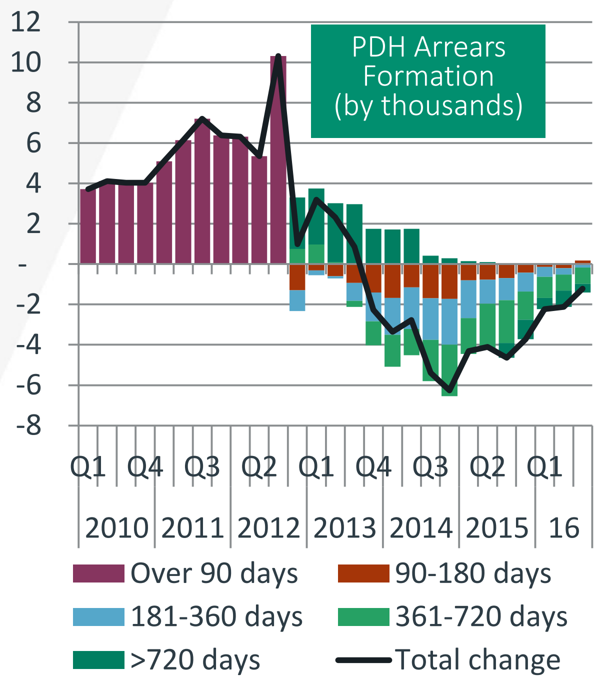


Mean Loan Characteristics by Borrower Type H1 2016		
	FTB	SSB
Loan Size €	180,011	211,662
Property Value €	244,320	380,752
Loan-to-Value (%)	78.6	66.2
Income €	65,944	105,473
Loan-to-Income	2.9	2.4
% of New Loans	56.5	37.1

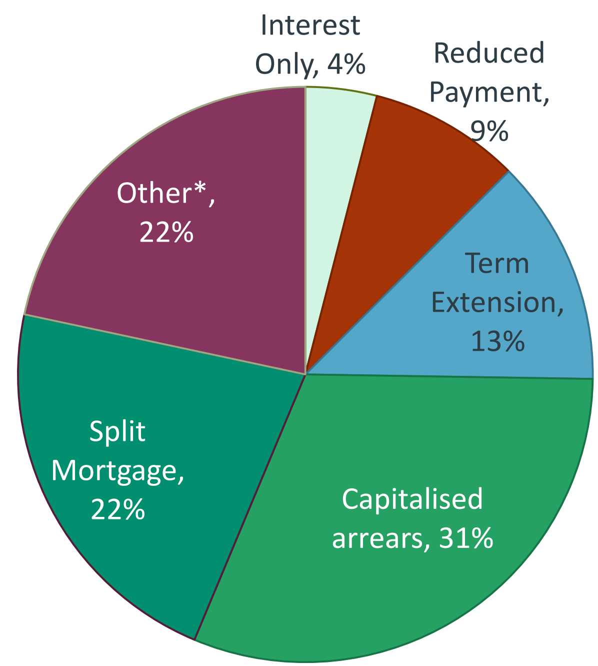
Irish residential mortgage arrears are improving across all duration categories; environment still dysfunctional

Mortgage Arrears (90+ days)





Total Restructurings



Source: CBI

- PDH mortgage arrears have fallen steadily for 12 quarters. The smaller BTL market (c. 25% of total) has higher arrears but also saw declines in the same period.
- 121K PDH mortgage accounts were classified as restructured at end-September 2016. Of these restructured accounts, 88% 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.

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