Ireland: Domestic Strength Challenged by External Risks

Underlying growth remains healthy, but external risks are mounting

December 2016

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 have little information content as a result. By all other metrics Ireland’s economy is growing, but at a slower pace than in 2015. Underlying real domestic demand rose 3.2% yoy in Q3 2016 .
  - At the same time, employment is expanding; unemployment was down to 7.3% in November – a cyclical low.
  - Consumer spending and investment have recovered. Car sales rose 18.1% yoy in Jan-Nov 2016. There is pent up demand for investment e.g. housing supply undershoots 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 the full impact.

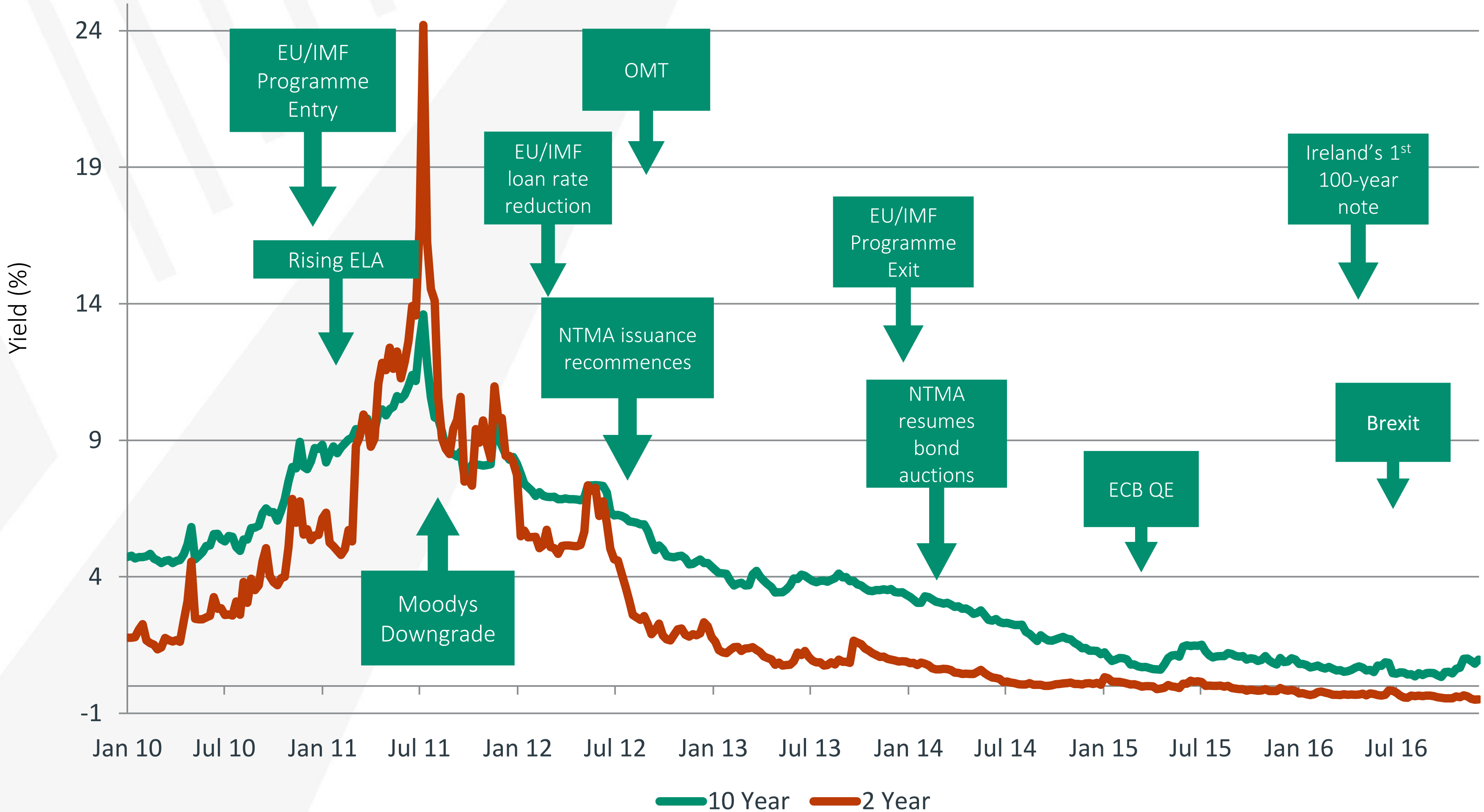
- **Government debt and deficit metrics are also distorted by GDP revisions; analysis should include other measures of Ireland’s debt serviceability**
  - Government debt-to-GDP is expected to fall to 76% in 2016; the GG deficit to 0.9%. The inflated GDP denominator means other metrics of debt serviceability 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 to end-November 2016 were steady and spending has been restrained with the exception of health expenditure.

Funding in 2017: €9-13 billion – up on 2016 low level

- **Funding Plan for 2017**
  - NTMA plans to issue between €9-13billion of long-term bonds over the course of 2017.
  - The NTMA will issue a statement at the beginning of each quarter outlining the auction plans for that quarter.
  - It also intends to hold at least one syndicated bond deal during the year.

- **€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%. A further €1.75bn of the bond was auctioned in Feb and April below 1%.
  - 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 September and October, we tapped the 2026 bond twice for €1bn at yields of 0.33% and 0.495%.
  - In November, we issued €750m of the 2030 bond was auctioned (yield 0.978%).
  - The investor base continues to expand: In January international investors bought 87% of the bonds on offer, led by the UK (32%), the Nordics (13%) and Germany (11%).
  - Among investor categories, the bias of the deal was to real money: asset/fund managers took 37%, banks bought 22% and pension funds/ insurance companies bought 17%.

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



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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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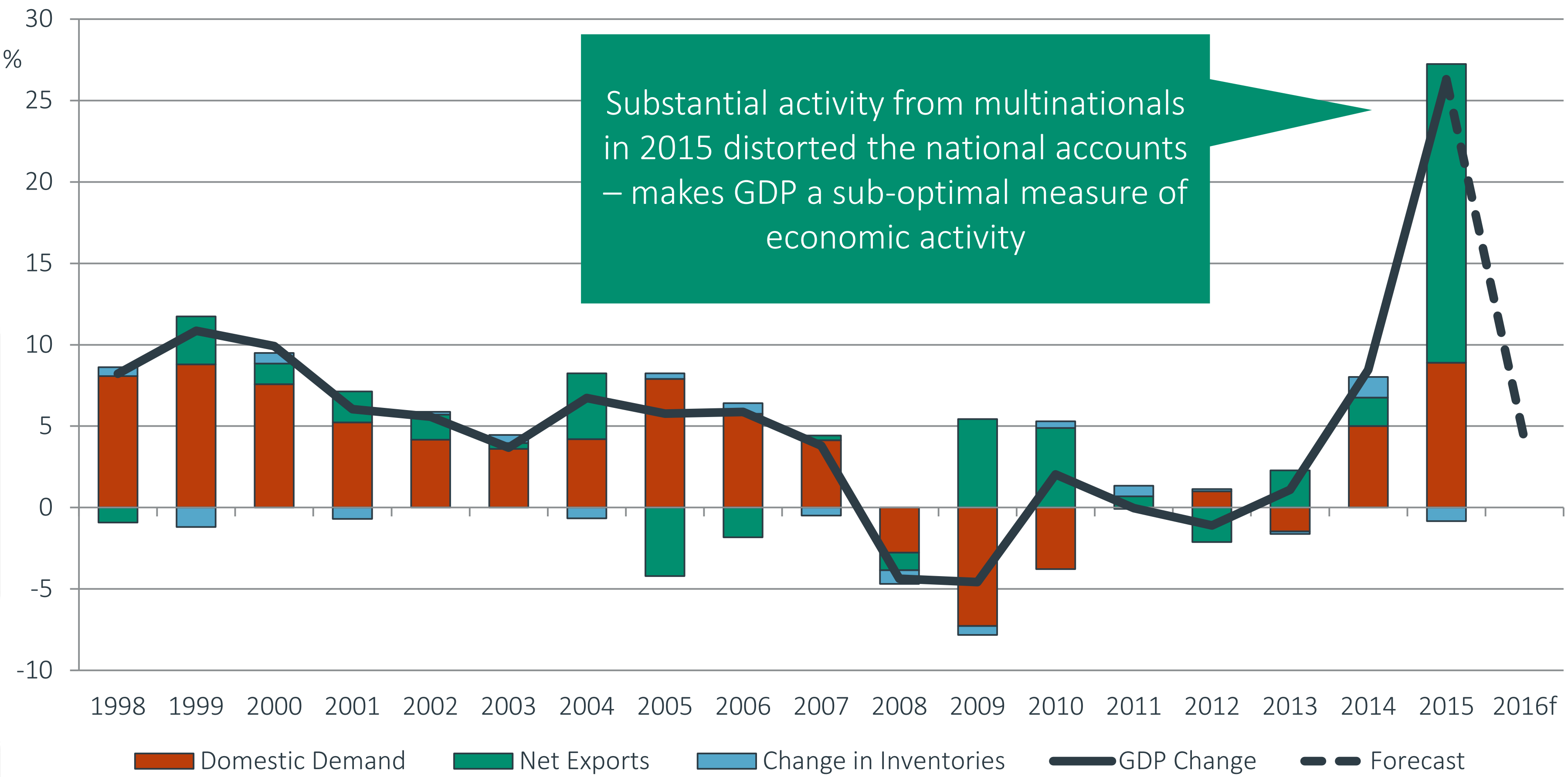
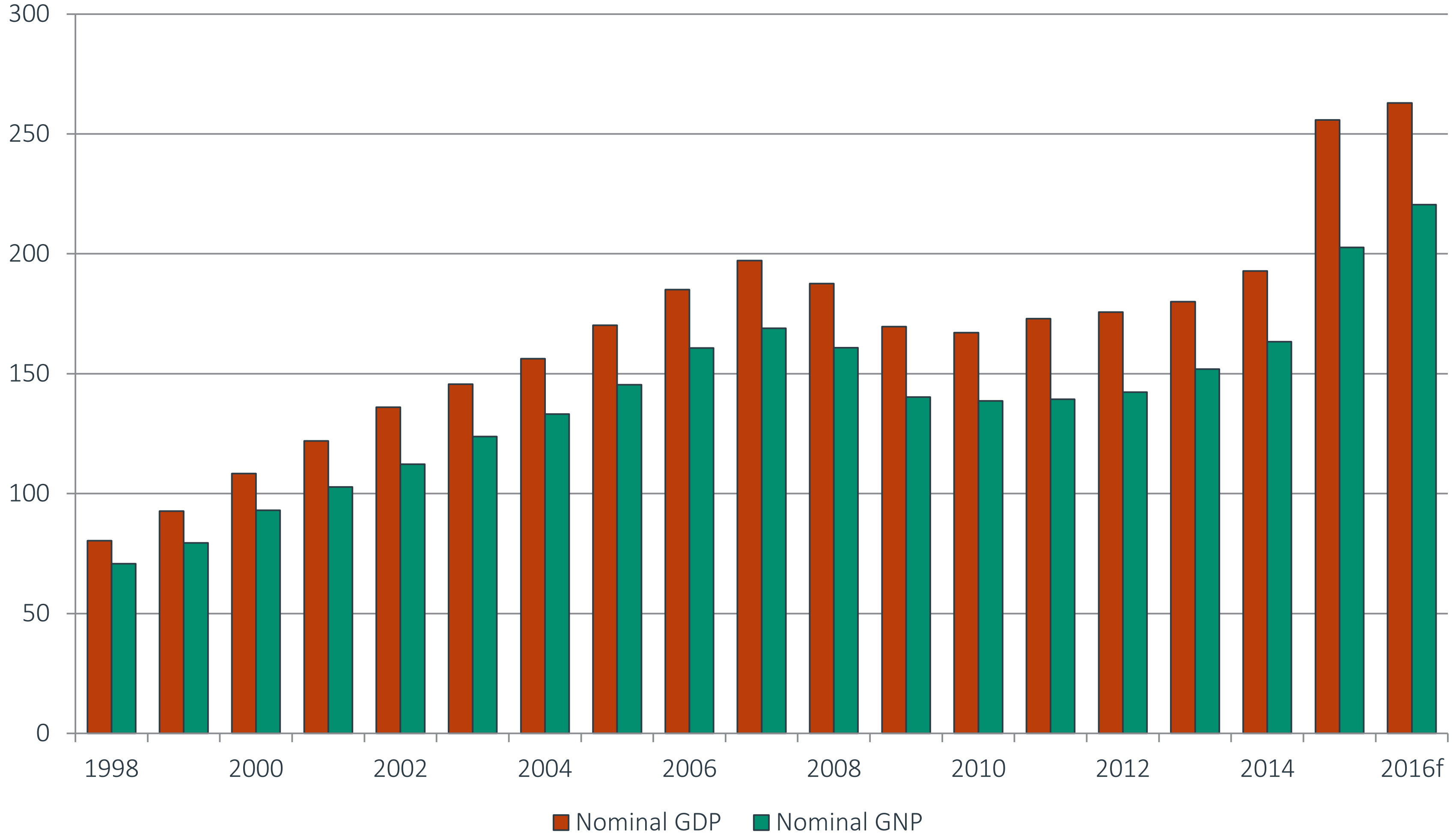
Massive distortions make GDP/GNP poor indicator of economic performance



Source: CSO; Department of Finance

Nominal GDP and GNP (€bn) ballooned in 2015



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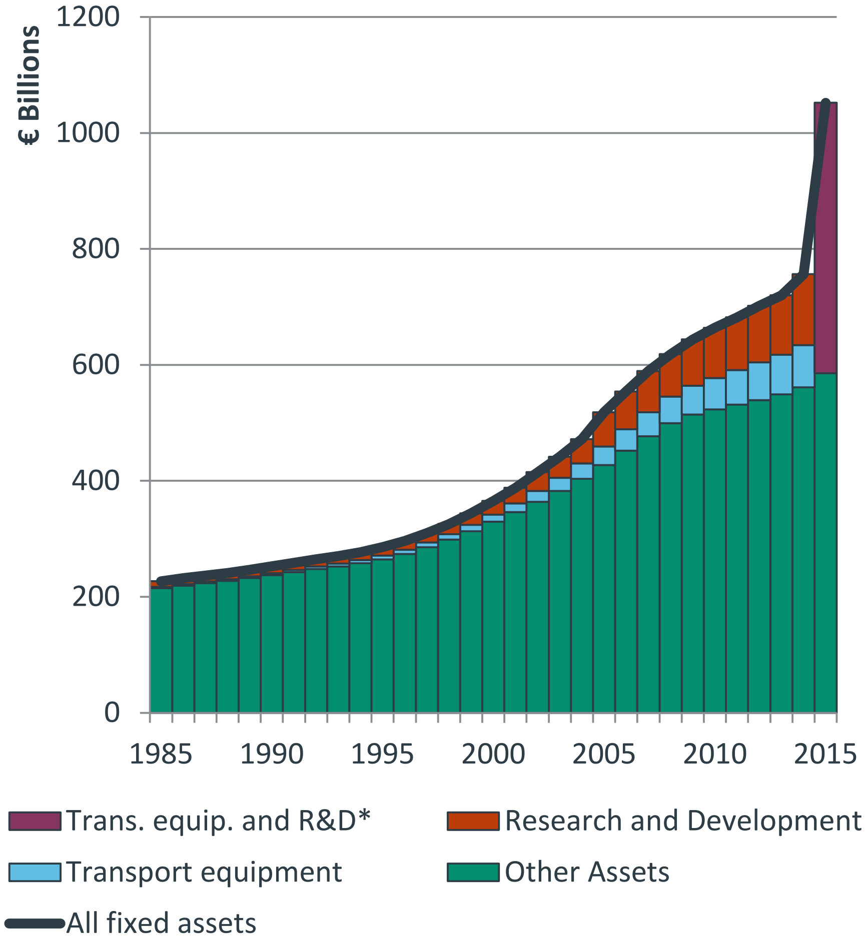
Source: CSO; Department of Finance

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

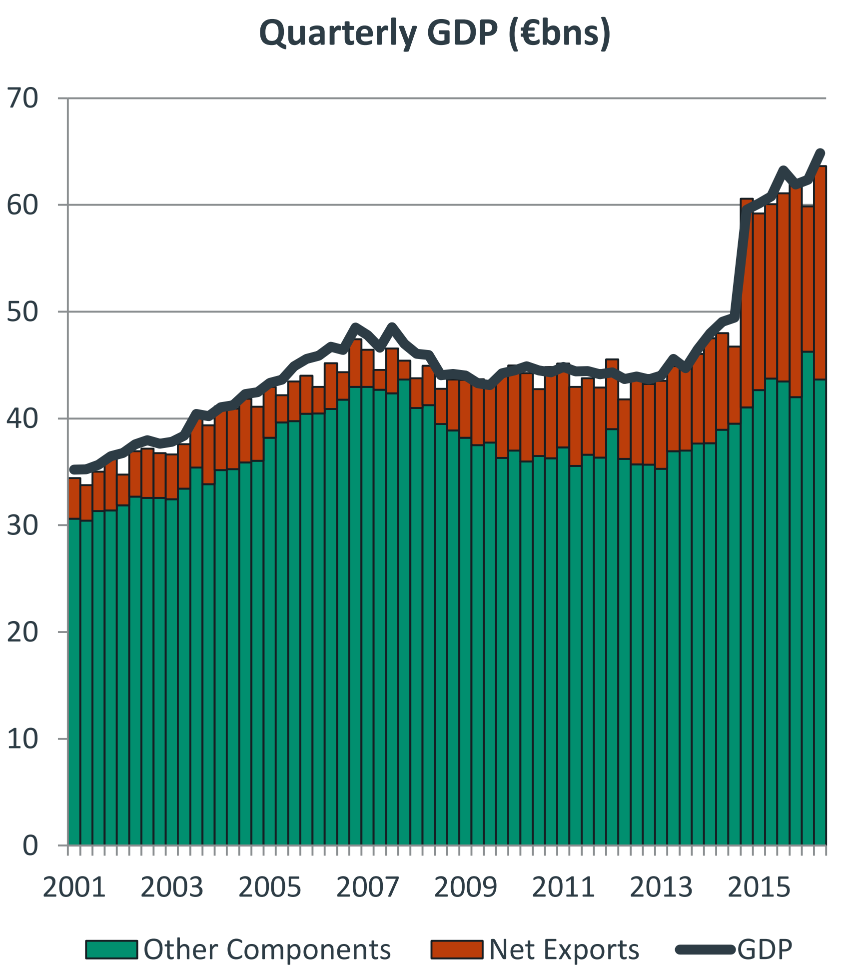


- The capital stock expanded in 2015 by c. €300bn or c. 40%. This is due to:
  - Re-domiciling/inversions of several multinational companies
  - The "onshoring" of IP assets into Ireland by multinationals
  - The movement of aircraft leasing assets in Ireland (smaller impact).
- The transfer of whole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

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

Quarterly data shows step-change in exports

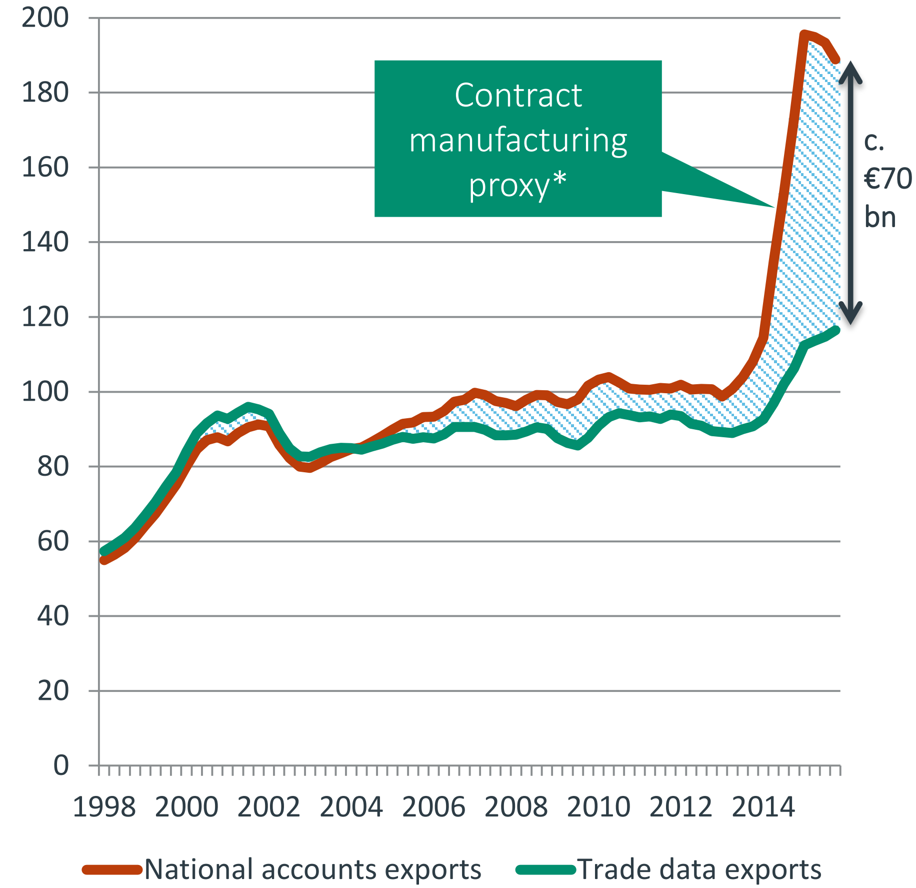
- Goods produced by the additional capital were mainly exported.
- This resulted in a step change in exports in Q1 2015. Exports grew by almost €100bn in 2015.
- Complicating matters, the goods were produced through “contract manufacturing” (explained in detail overleaf).
- The result of contract manufacturing 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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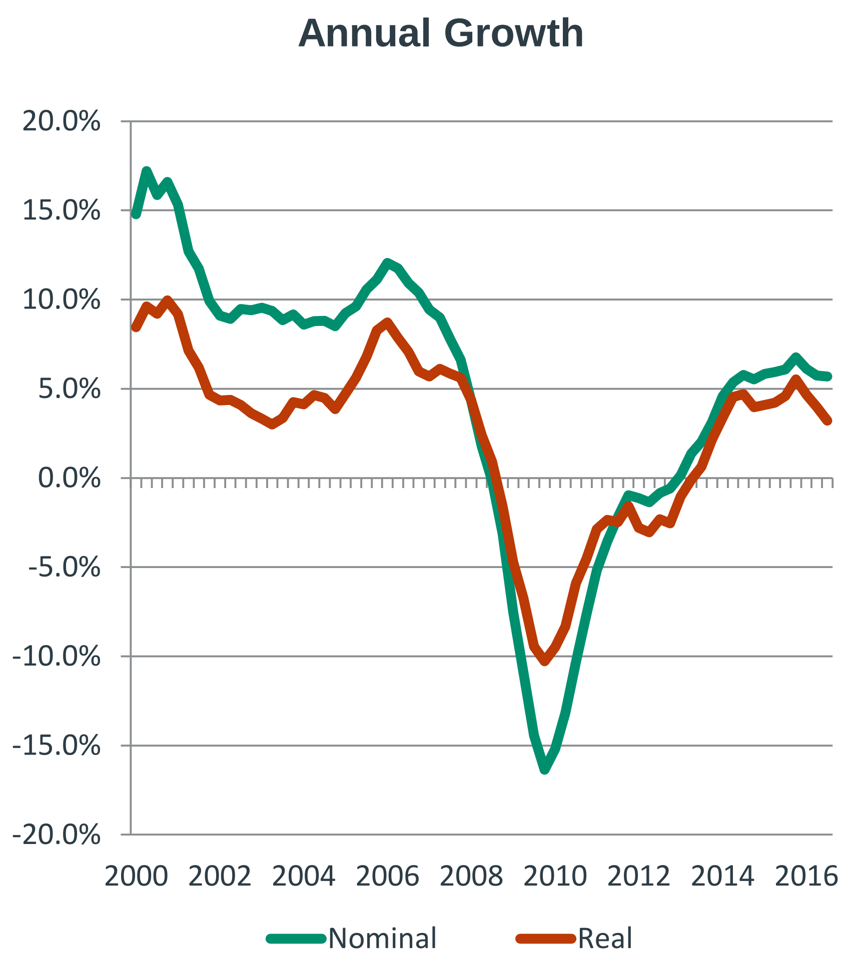
*Contract manufacturing proxy is calculated by taking the difference between the monthly International trade exports statistics and the National Accounts/BOP measure for goods exports. The monthly data is based on the actual volume of goods flowing through Ireland's various ports/airports whereas the national accounts/BOP makes adjustments for, among other items, contract manufacturing.

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

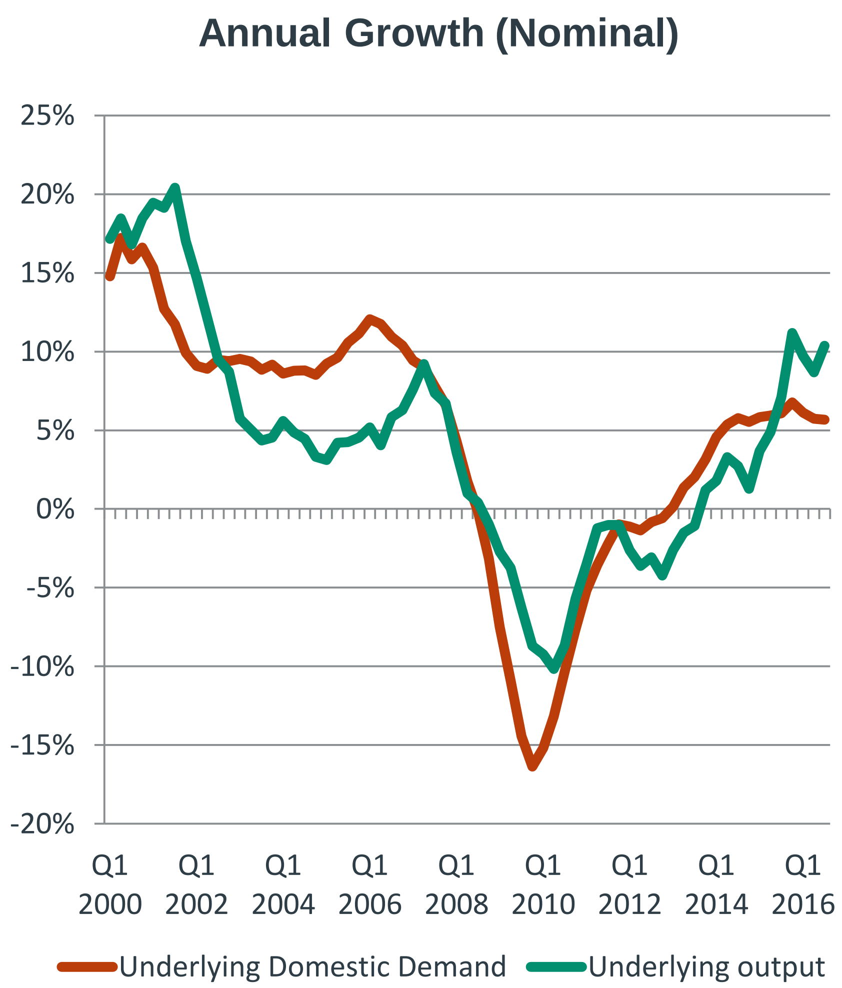
- The measure is constructed to strip out the distorting effects of MNCs.
- Underlying domestic demand (UDD) includes:
  - private consumption
  - government consumption
  - investment less intangibles and transport equipment.
- This measure pegs nominal growth closer to 5.7% at Q3 2016 (y-o-y).
- UDD grew by 3.2% y-o-y in real terms in Q3 2016.



Source: CSO, NTMA calculations

Better measures of economic activity are necessary – we also present "underlying output"

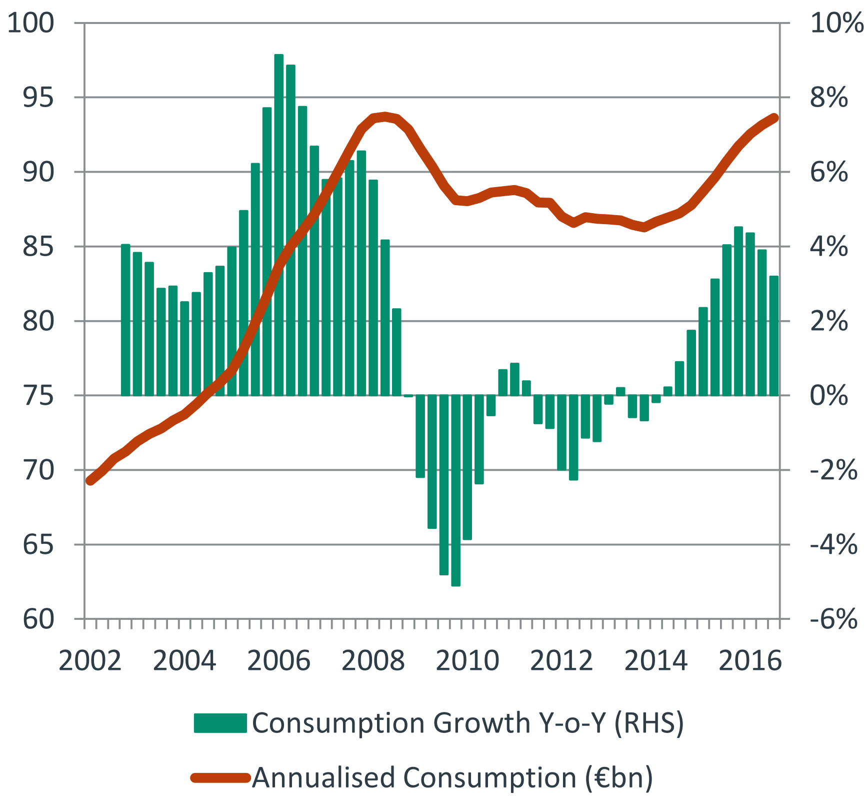
- While MNC distort net exports, a large degree of exports/imports are legitimate and should be counted in our economic activity.
- "Underlying output" incorporates a new measure for exports and imports alongside UDD (discussed on pg. 14).
- The adapted exports and imports strips out:
  - a proxy for contract manufacturing
  - operating leasing
  - royalty payments
  - research and development services
  - computer services transactions.
- This measure pegs nominal growth closer to 10.4% at Q3 2016. Measure is not available in real terms.



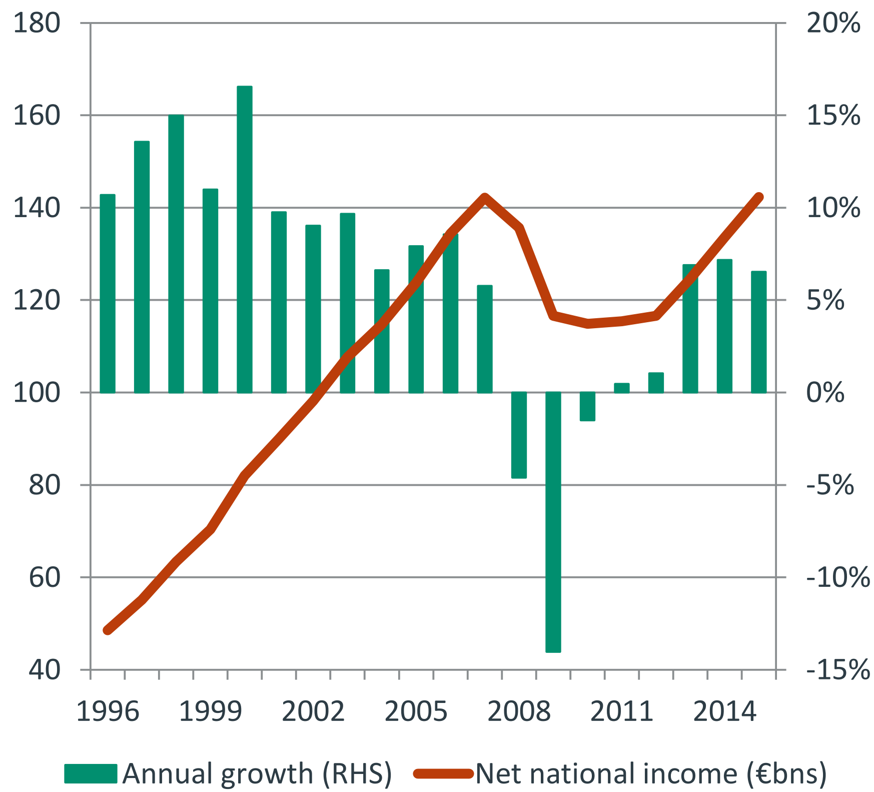
Source: CSO, NTMA calculations

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

Private consumption grew at 3.2% y-o-y in 2016 Q3…



…Net National Income: 6.5% y-o-y in 2015



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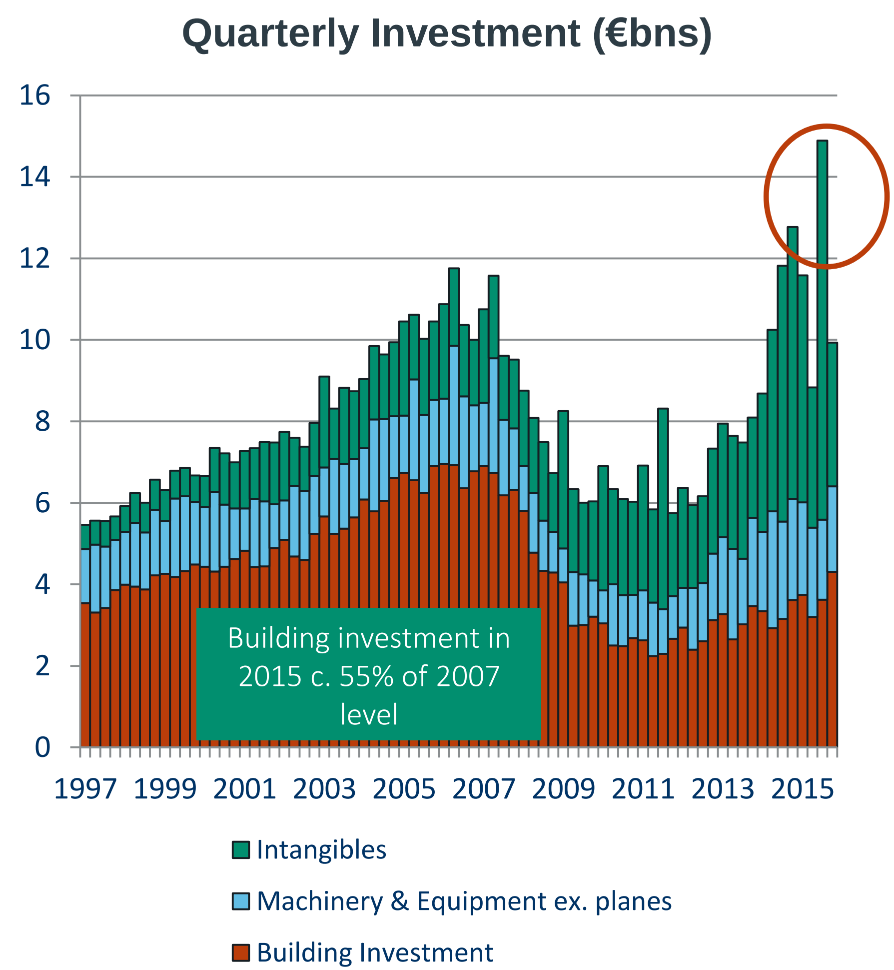
Source: CSO,

Investment (in €bns) above pre-bubble levels; composition is different however

- Investment in recent quarters above the pre-crisis level, mainly due to intangibles.
- **Building investment is now a much smaller part of overall investment - in 2016 Q2 it was c.55% of the unsustainable 2007 level.**
- Intangible investment has become a much larger component of Ireland's investment picture as Ireland has become an ICT hub.
- Some of this impacts the real economy but the recent sharp increase in investment in intangibles overstates Ireland's position.



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Source: CSO, NTMA analysis

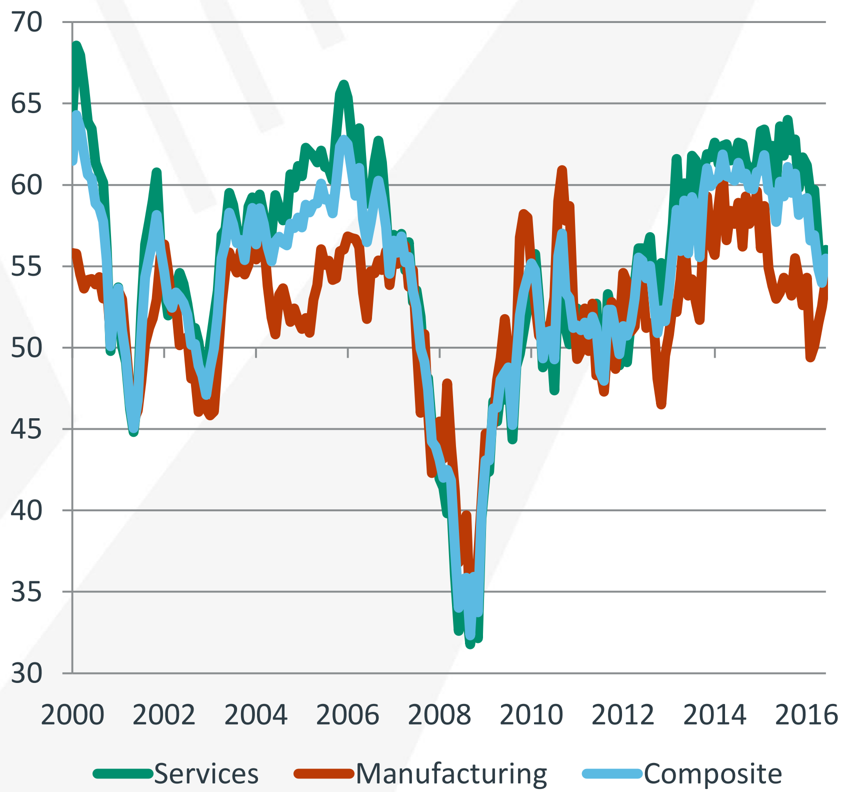
Comparison of economic activity metrics

Measures	Growth rate 2015	Growth rate Q3 2016	EA average Q3 2016
GDP (real)	26.3%	9.8%	1.8%
GNI (real)	18.7%	-	-
Underlying output (nominal, see page 15)	11.2%	10.4%	-
GG Revenue	7.2%	5.6%*	2.7%*
UDD (nominal, see page 14)	6.8%	5.7%	-
UDD (real)	5.5%	3.2%	-
Consumption (real)	4.5%	3.2%	1.9%
Employment	3.1%	2.8%	1.8%*

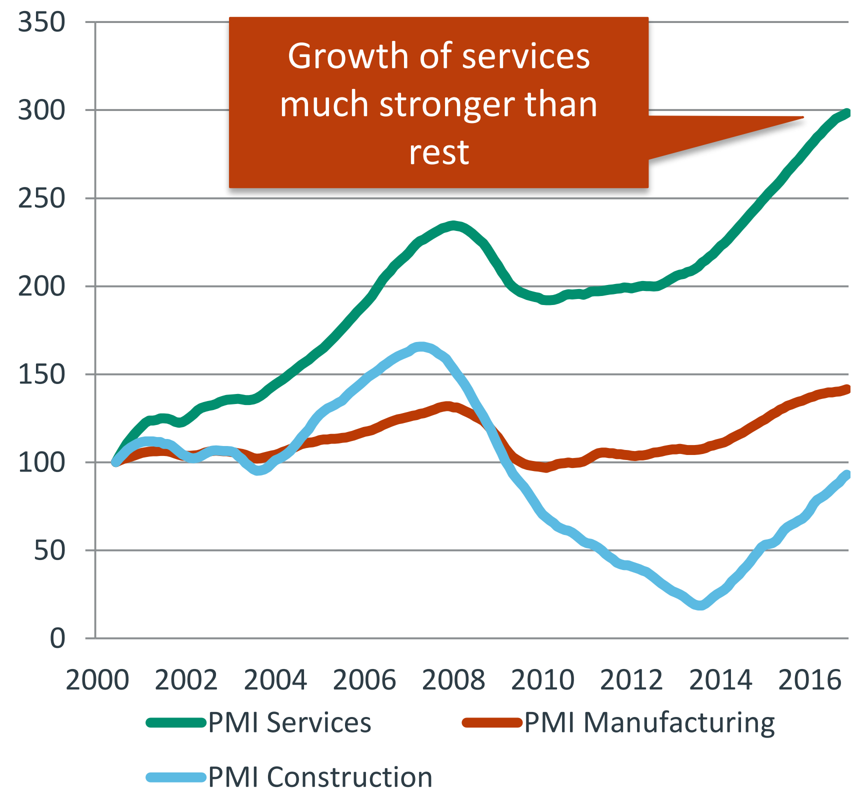
*Source: CSO, Eurostat, NTMA calculations (four-quarter sum annual growth rates used) *Q2 2016 data*

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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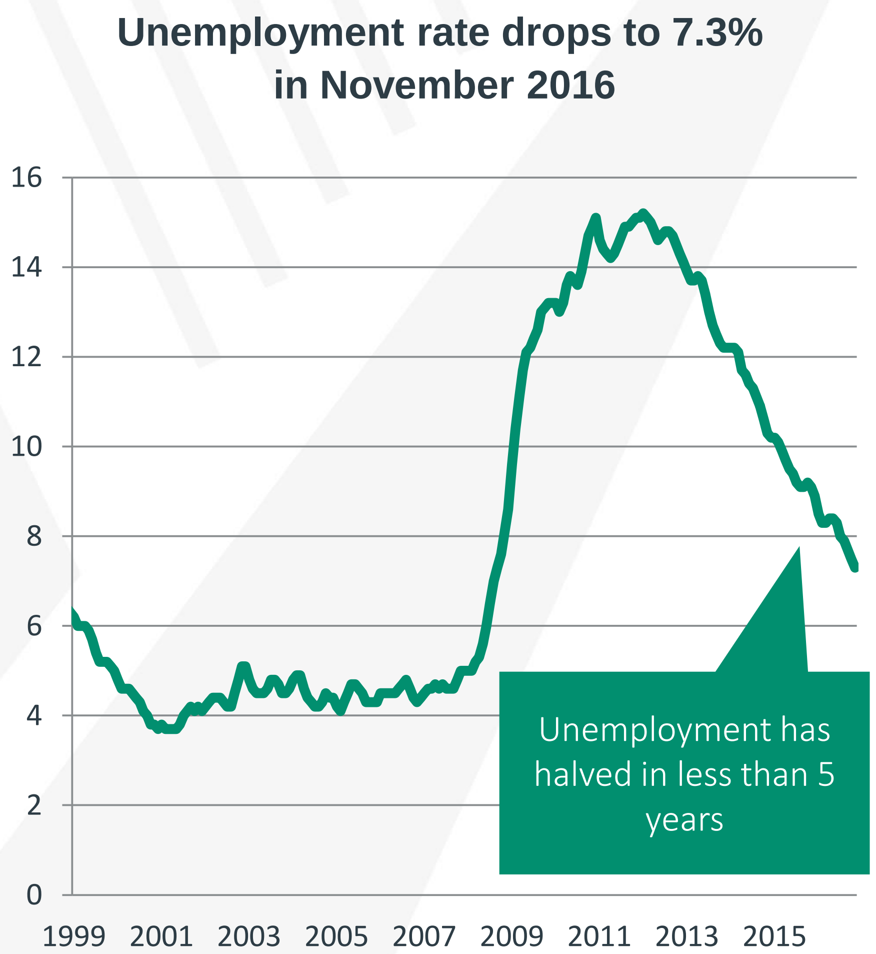
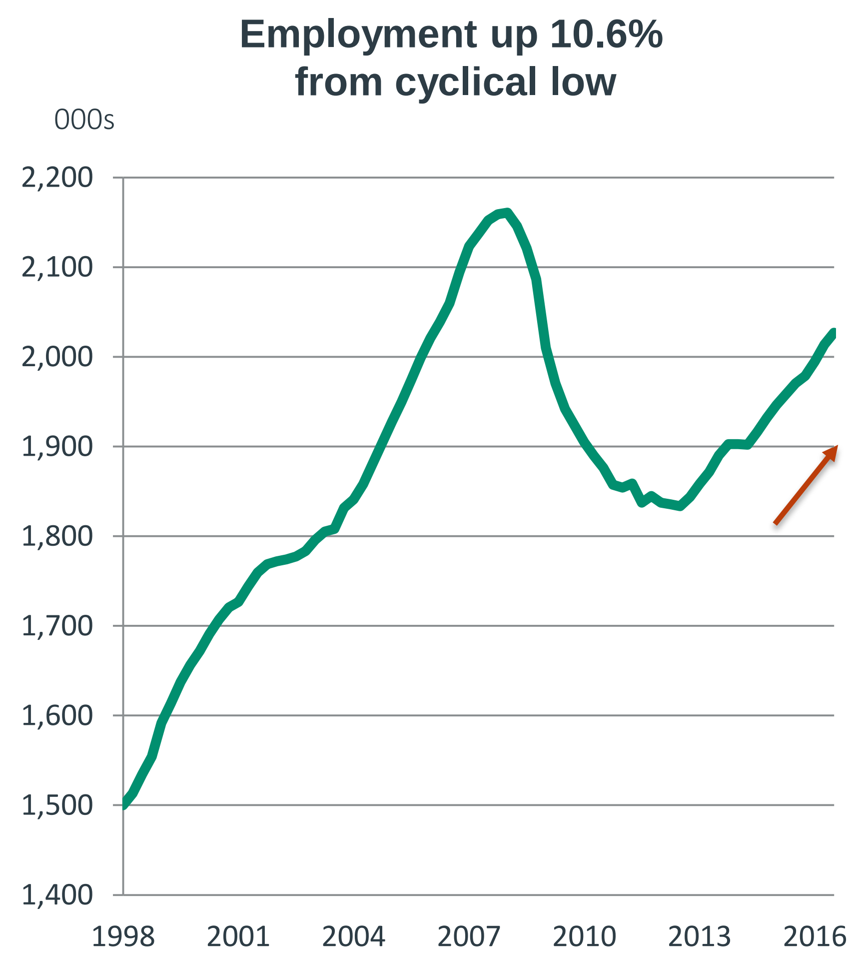
Source: Markit; Bloomberg; Investec ; NTMA workings

Labour market has rebounded since 2012; unemployment continues to fall





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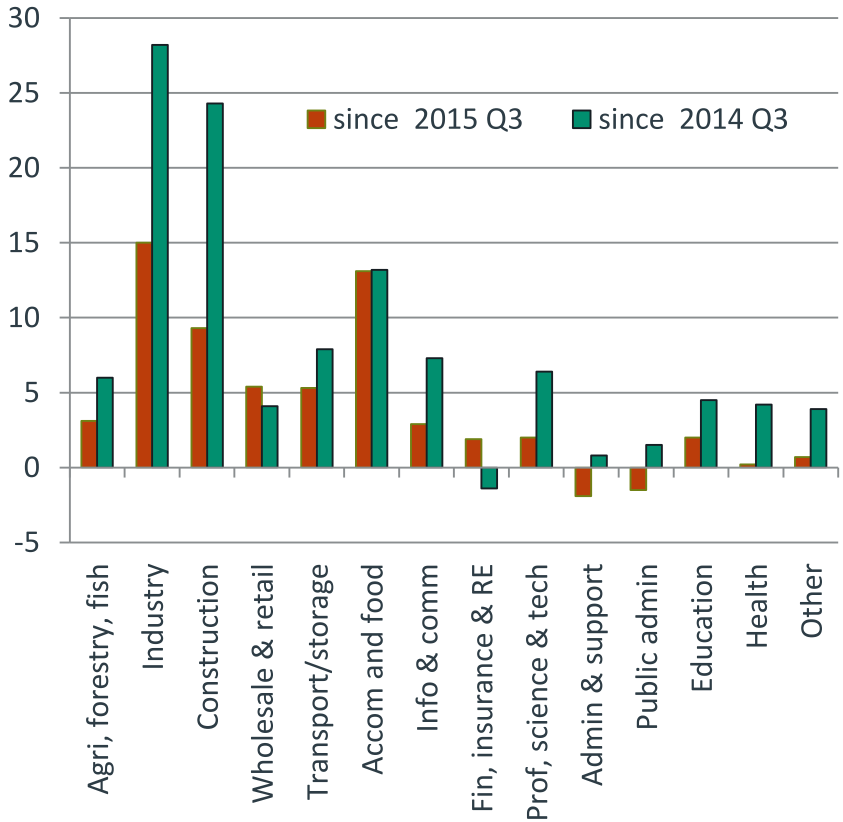
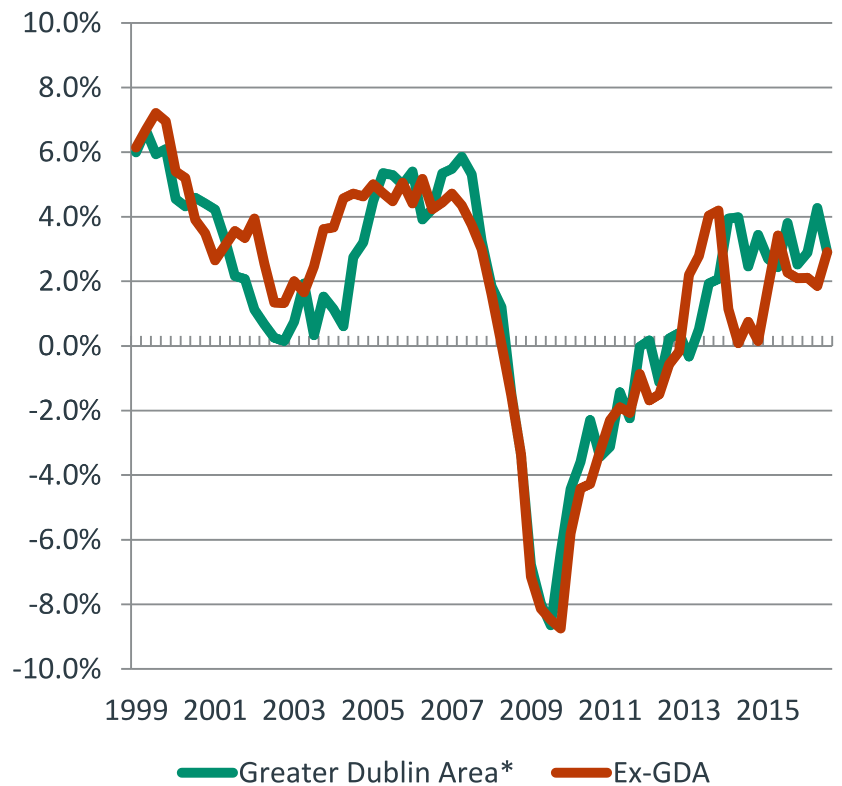
Source: CSO

Employment growth is now broad based by sector and region

Twelve out of 14 sectors have seen employment growth in year to Q3 2016 (000s)



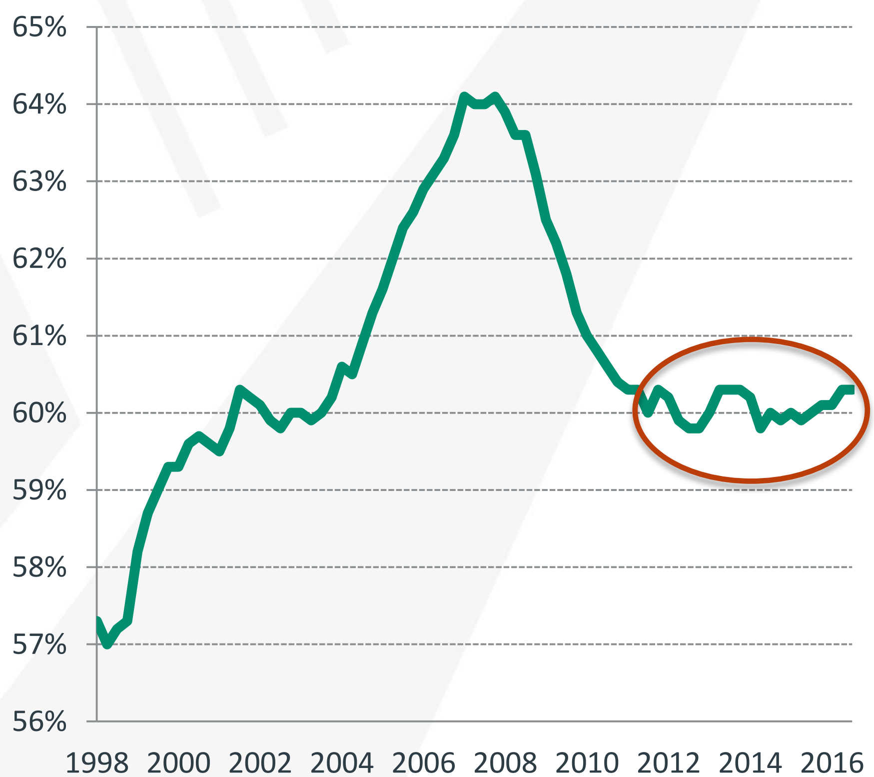
Employment growing across all regions in Ireland – faster in Greater Dublin Area*



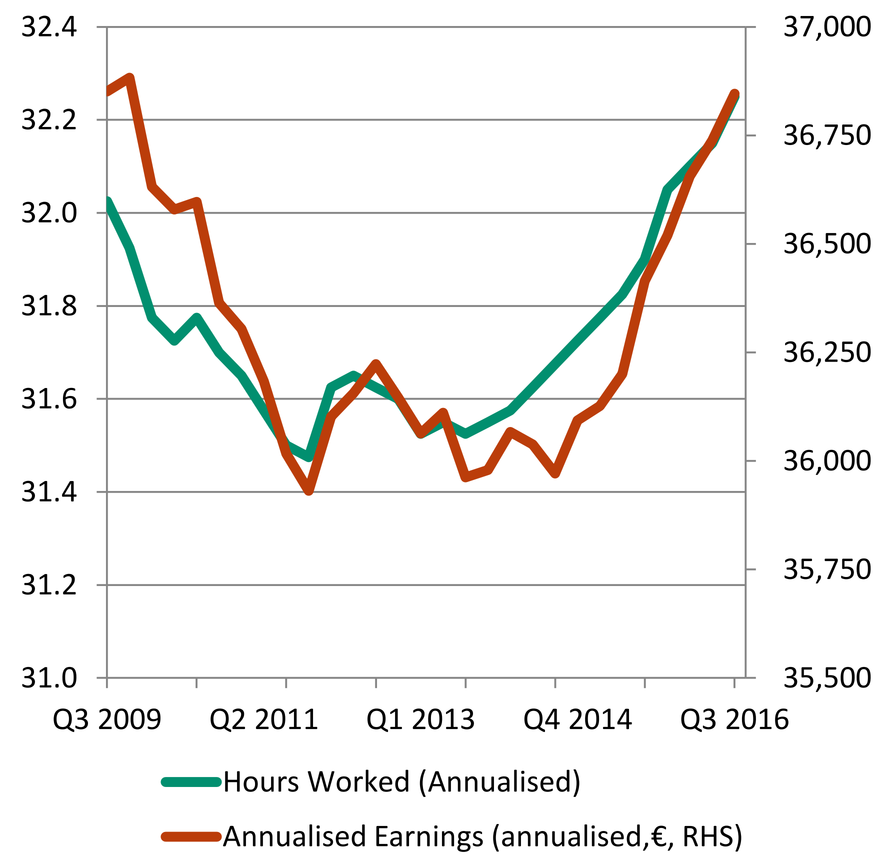
* Greater Dublin Area = Dublin, Meath, Wicklow and Kildare

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



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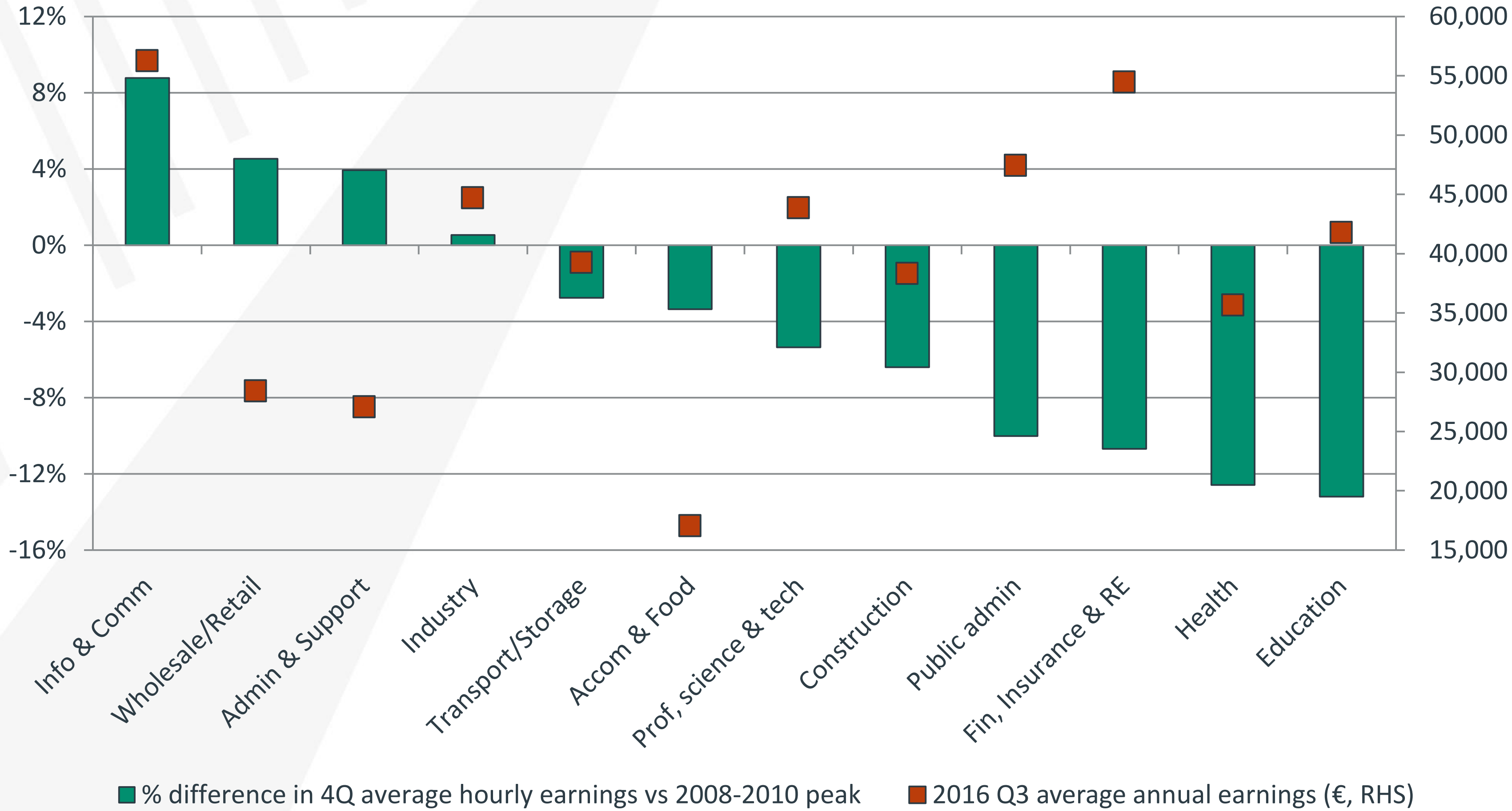
Source: CSO

Wide disparity in wages across sectors



Source: CSO, NTMA analysis

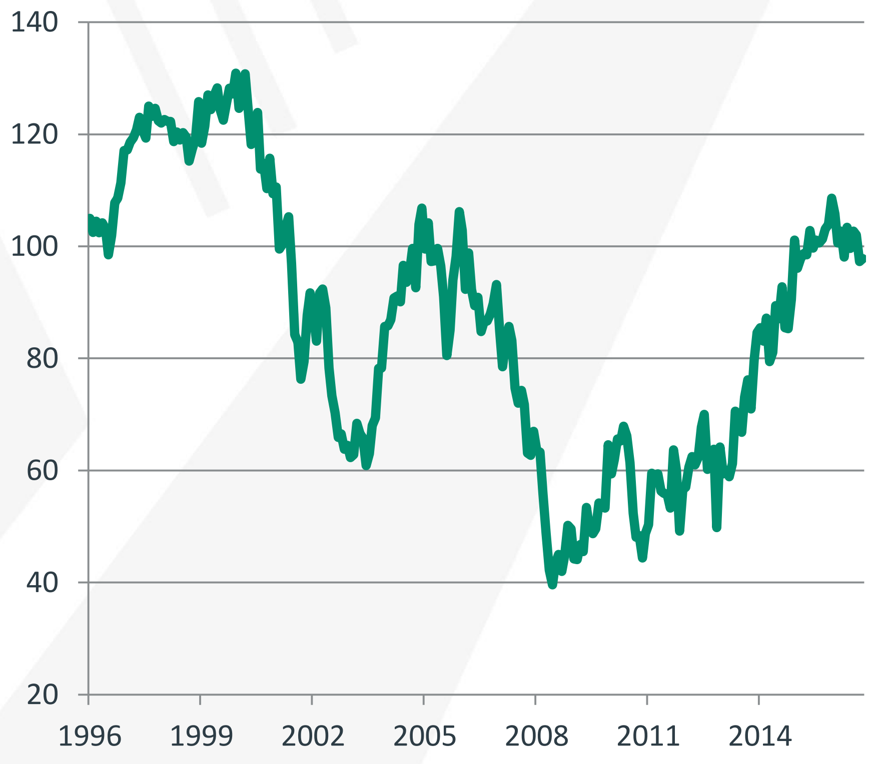
Unemployment falling across Europe; falling faster here

	Q4 2013 %	Q4 2014 %	Q4 2015 %	Q3 2016 %
Germany	5.1	4.9	4.5	**4.1**
Netherlands	7.6	7.2	6.7	**5.8**
Sweden	8.0	7.8	7.1	**7.0**
Ireland	12.2	10.4	9.1	7.9
Belgium	8.5	8.5	8.6	**8.2**
EU 28	10.7	10.0	9.0	**8.5**
France	10.2	10.5	10.2	**10.3**
Euro area	11.9	11.5	10.5	**10.0**
Portugal	15.4	13.5	12.3	**10.9**
Italy	12.4	12.8	11.6	-
Spain	25.8	23.7	21.0	**19.4**
Greece	27.6	25.9	24.4	-

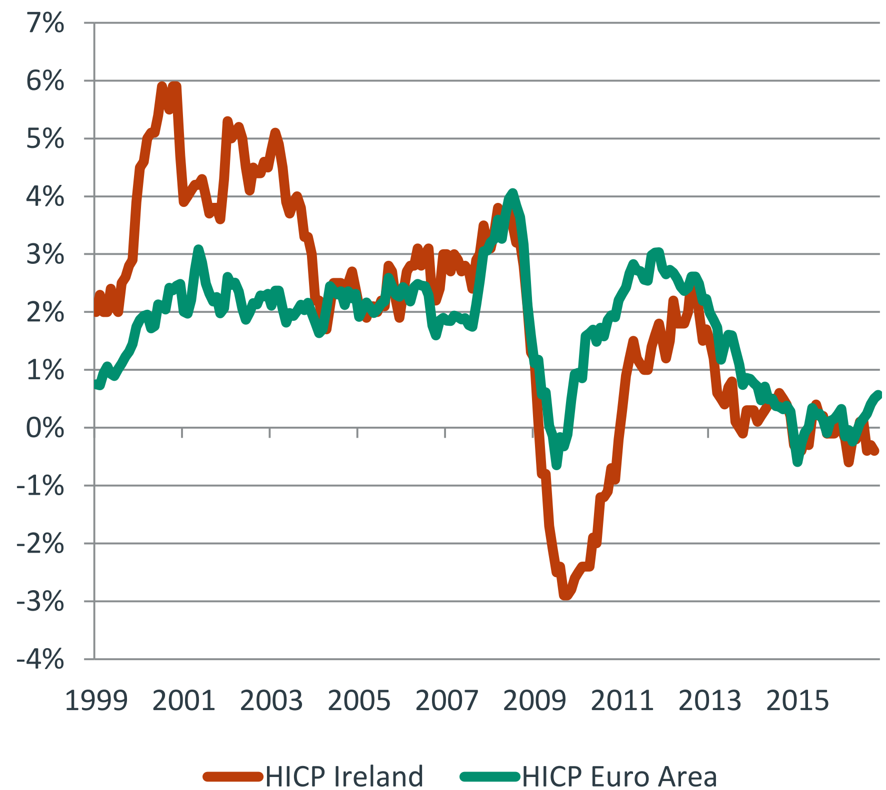
Source: Eurostat

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

Consumer confidence had recovered, though Brexit may have impacted



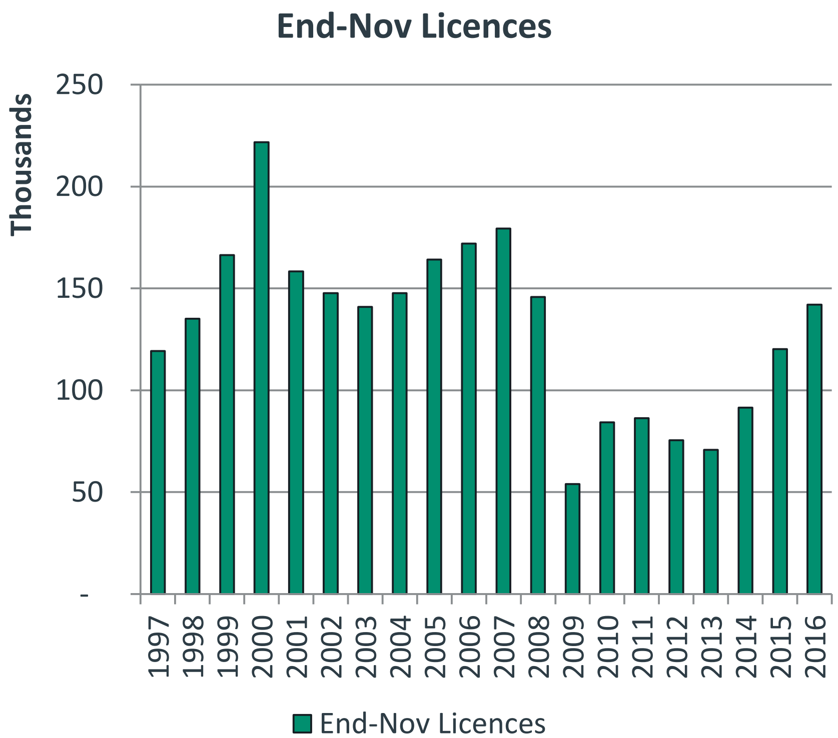
Inflation in Ireland has slowed in recent months on sterling weakness



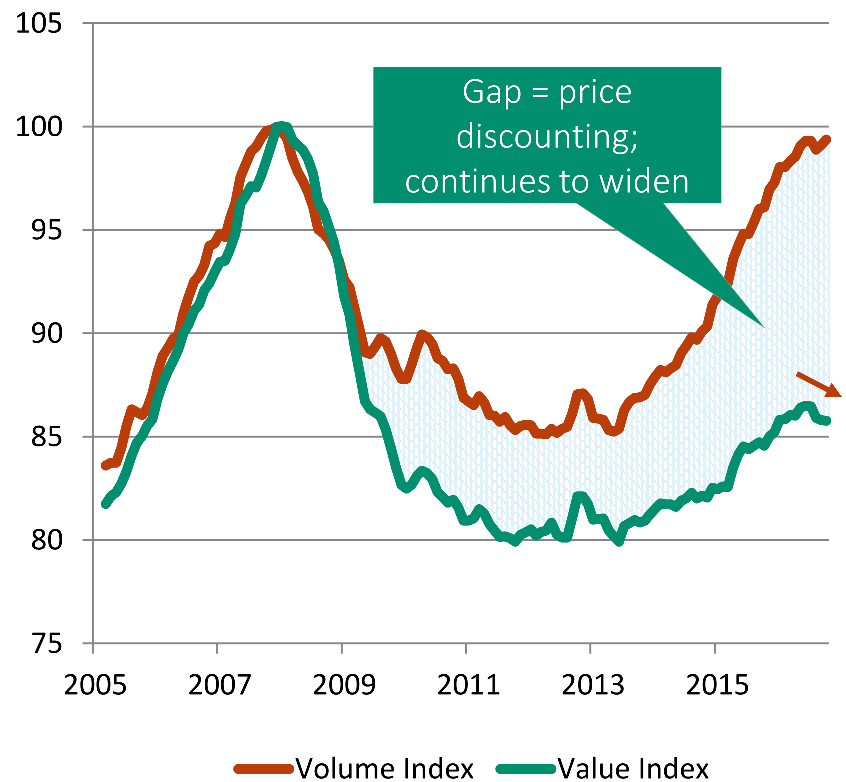
Source: KBC, ESRI, CSO; Eurostat

… car sales and core retail are seeing the benefit despite recent slowdown

New car licences – 18.1% increase in first eleven months of 2016



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



Source: CSO (licences) CSO (retail sales)

**Excluding motor trade; 3 month average used*

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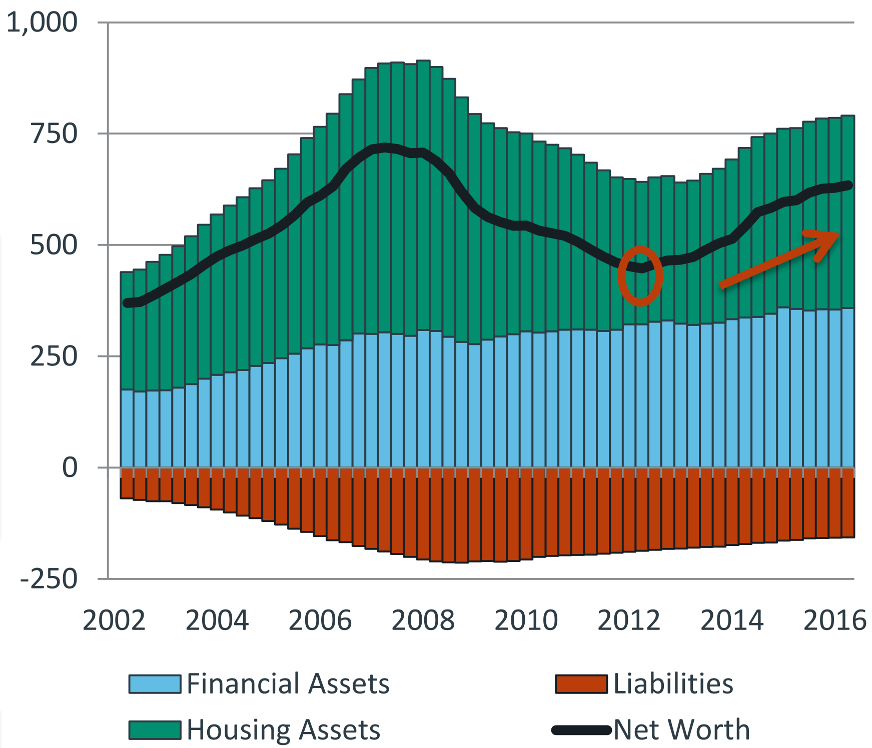
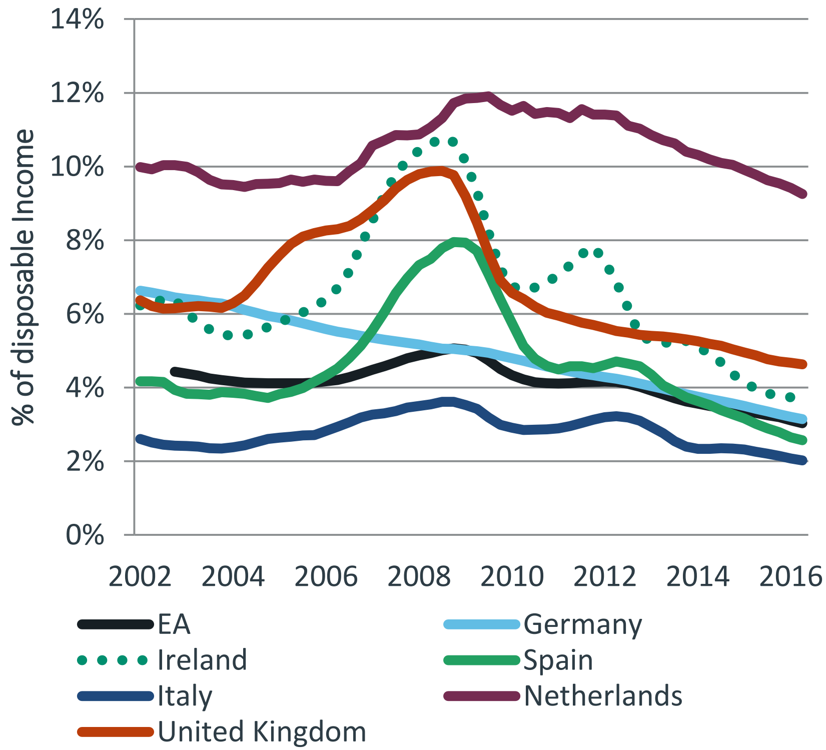
Household deleveraging continues, but at slow pace; Rising house prices bolster household balance sheets

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



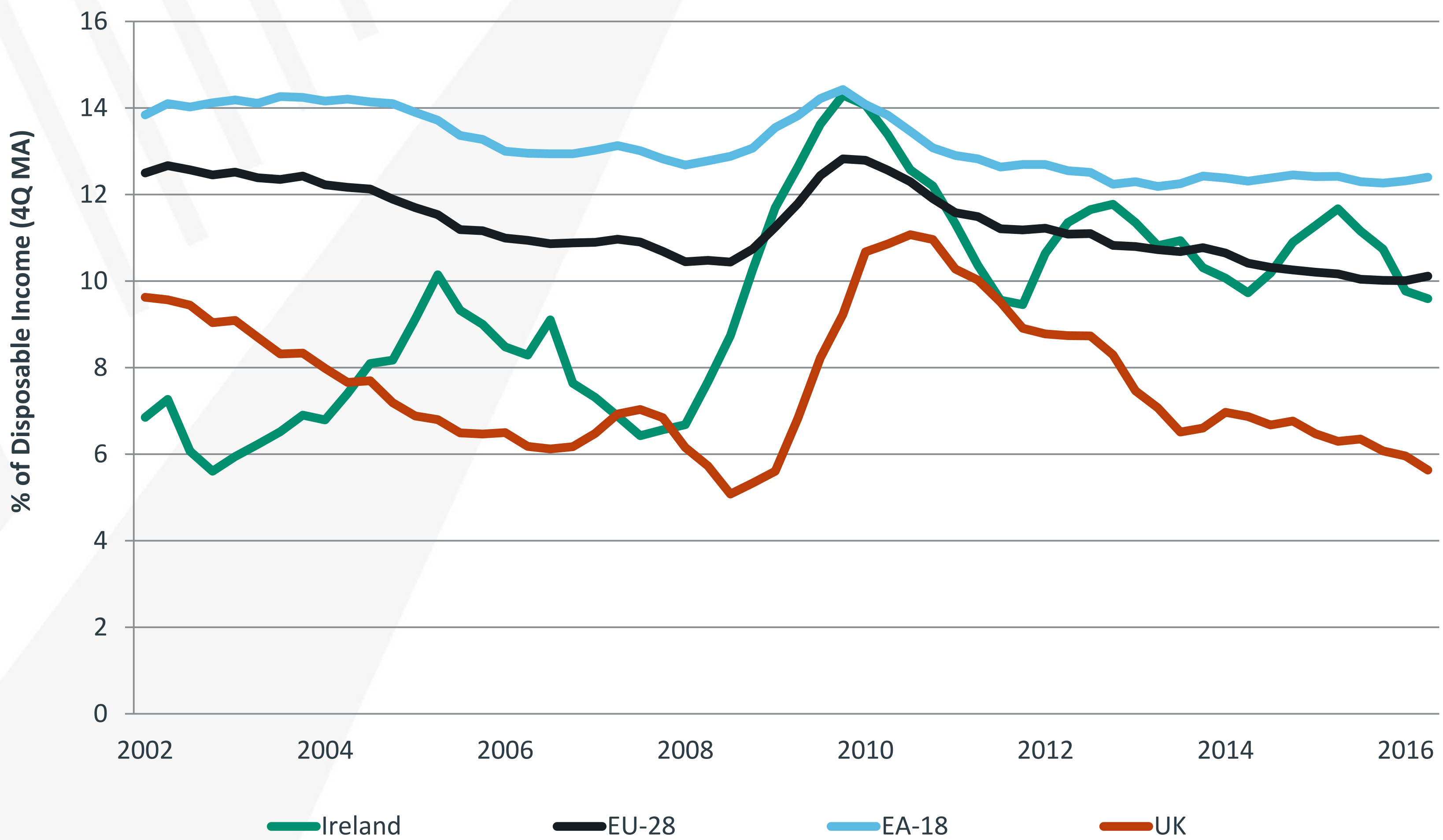
Source: CBI, NTMA Calculations

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

Gross household saving rate is close to the EU average



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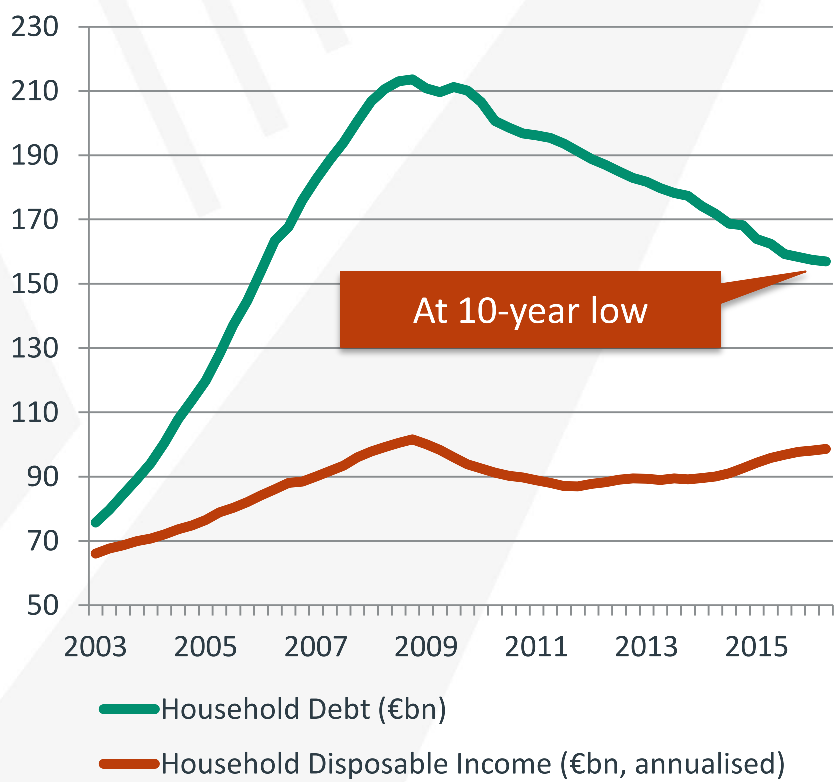
Source: Eurostat, CSO

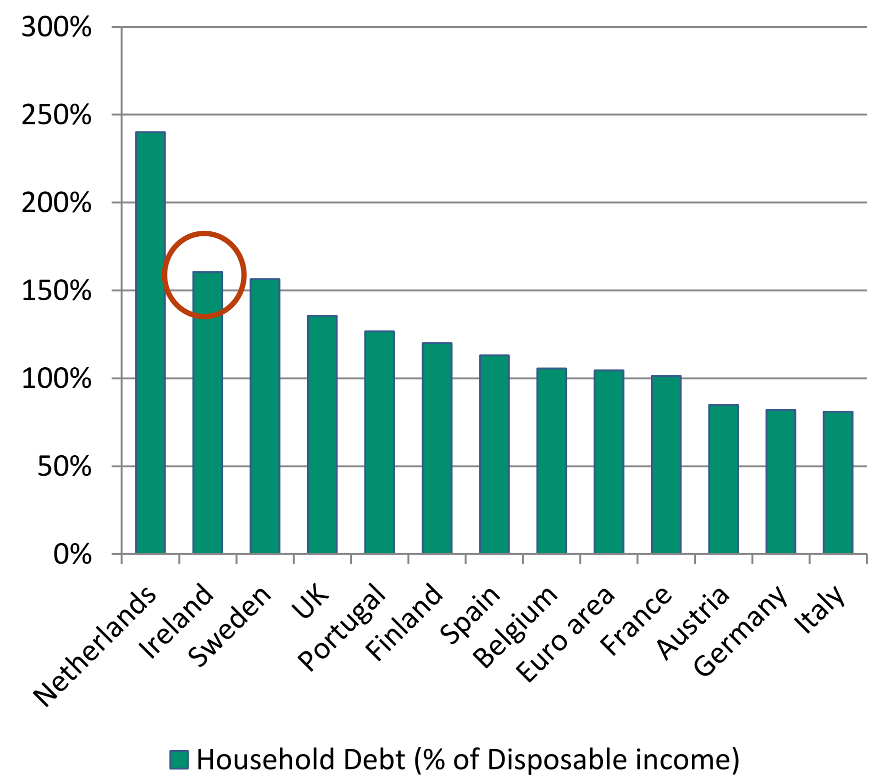
Private debt levels are high but improving

Household debt down €55bn from peak



Source: CBI

Debt to after-tax income* improving (159%) but among highest in Europe



Source: Eurostat

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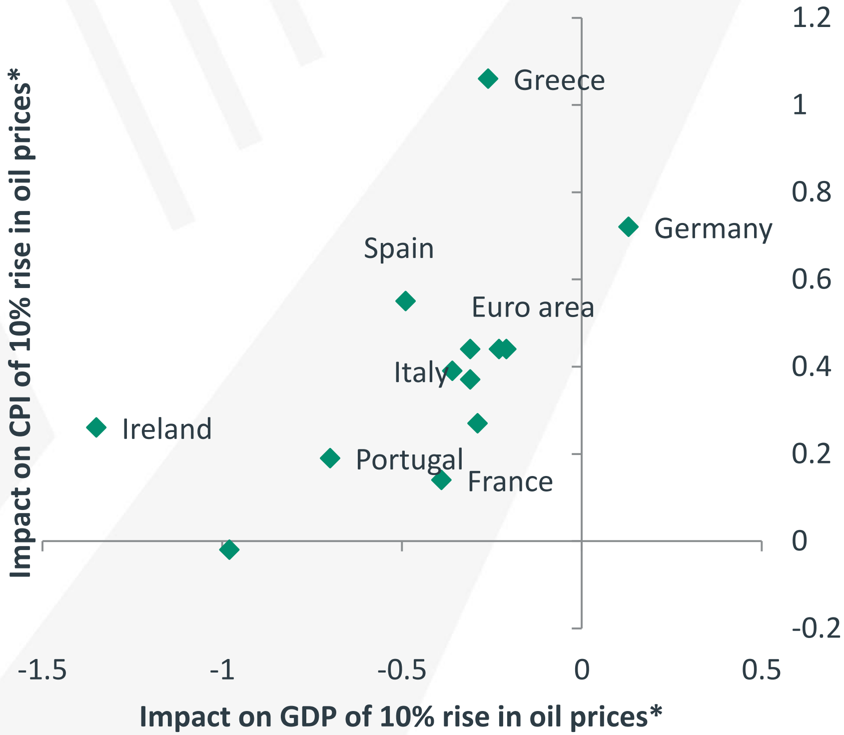
*Measure includes both loans and other liabilities.Excluding other liabilities, debt-to-income ratio is 150%

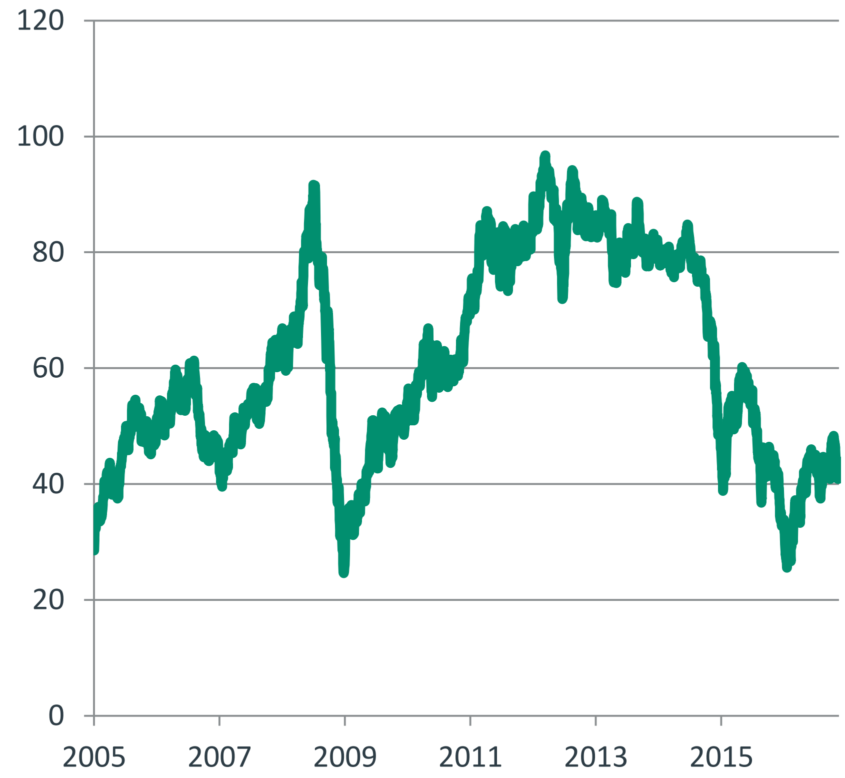
External factors supercharged the economy in 2015; but Brexit FX and oil reversal likely in next 12-18 months

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

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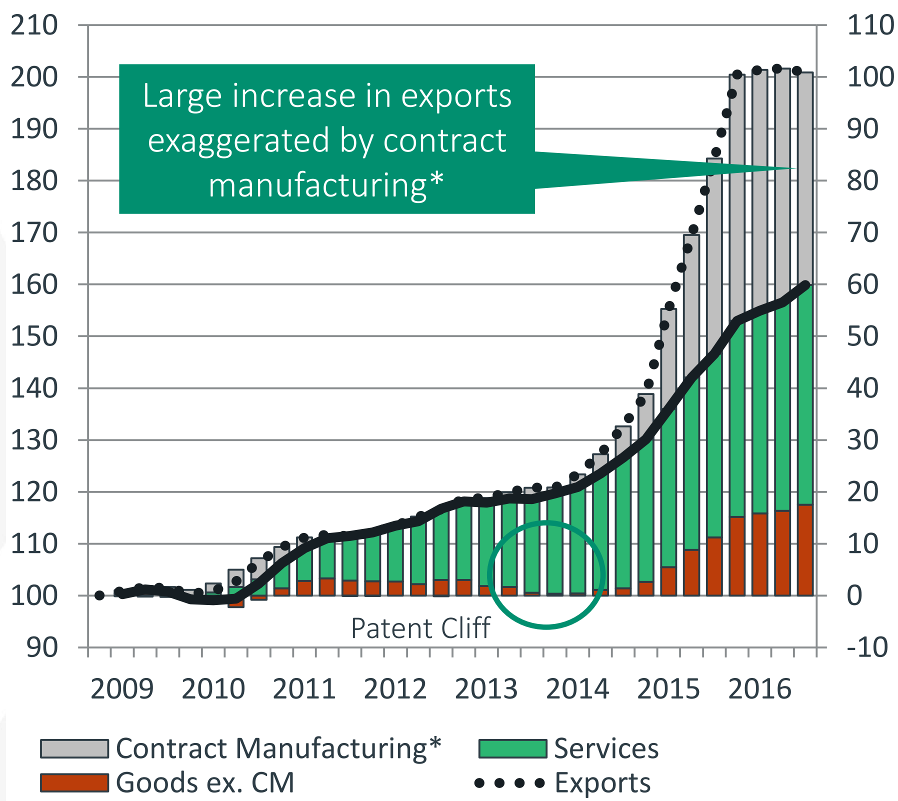
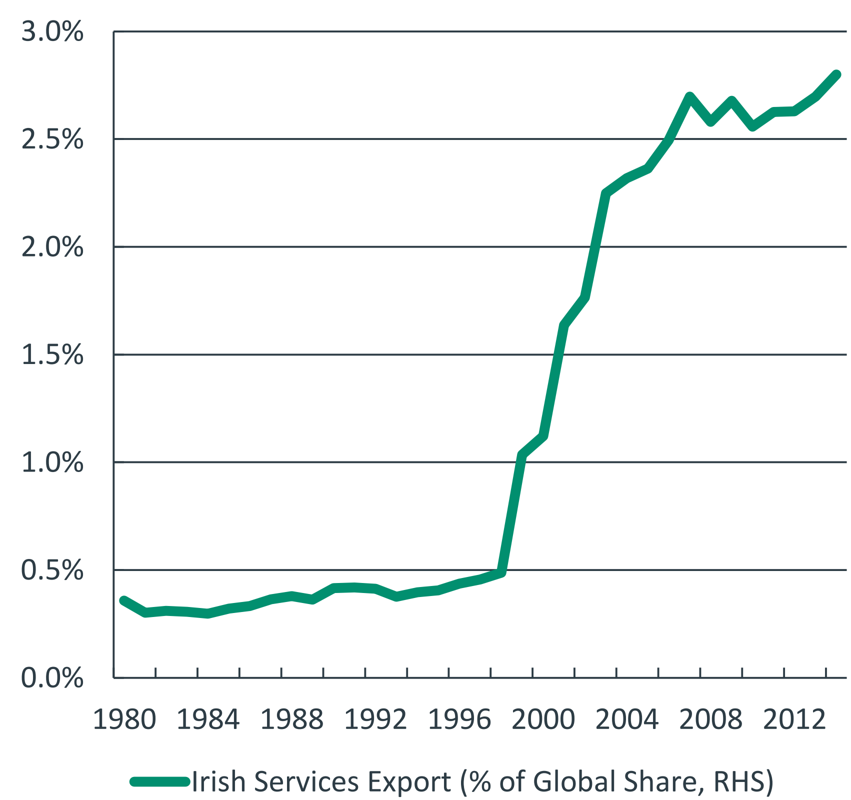
Service exports have been very strong post-crisis; Goods exports excluding contract manufacturing slower

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



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

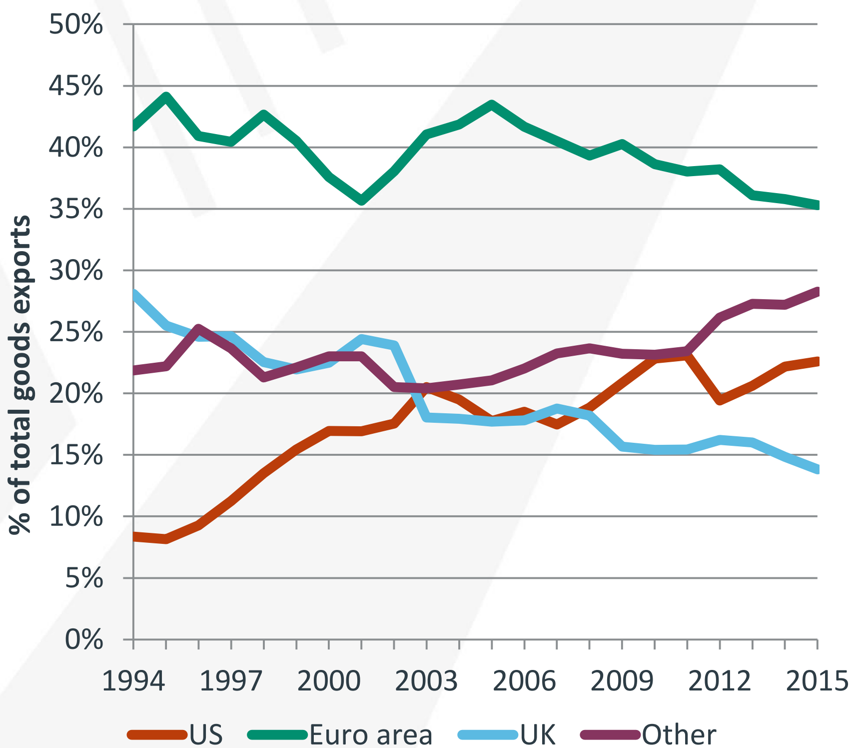
Source: CSO; NTMA empirical analysis

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

Section 2: Fiscal & NTMA Funding

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

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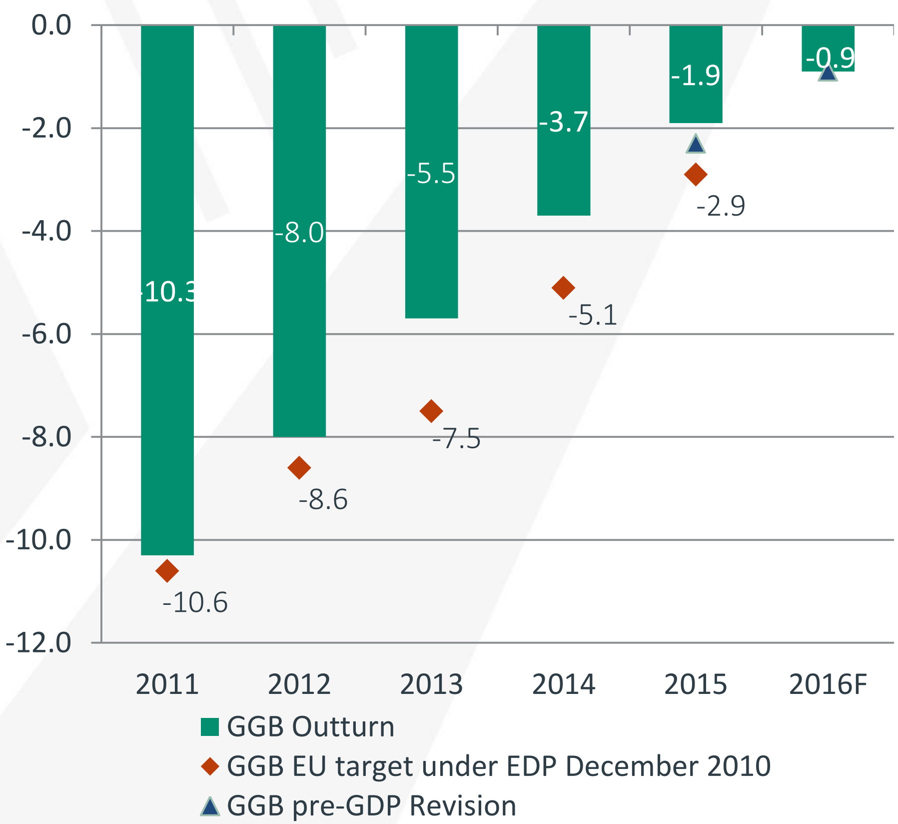
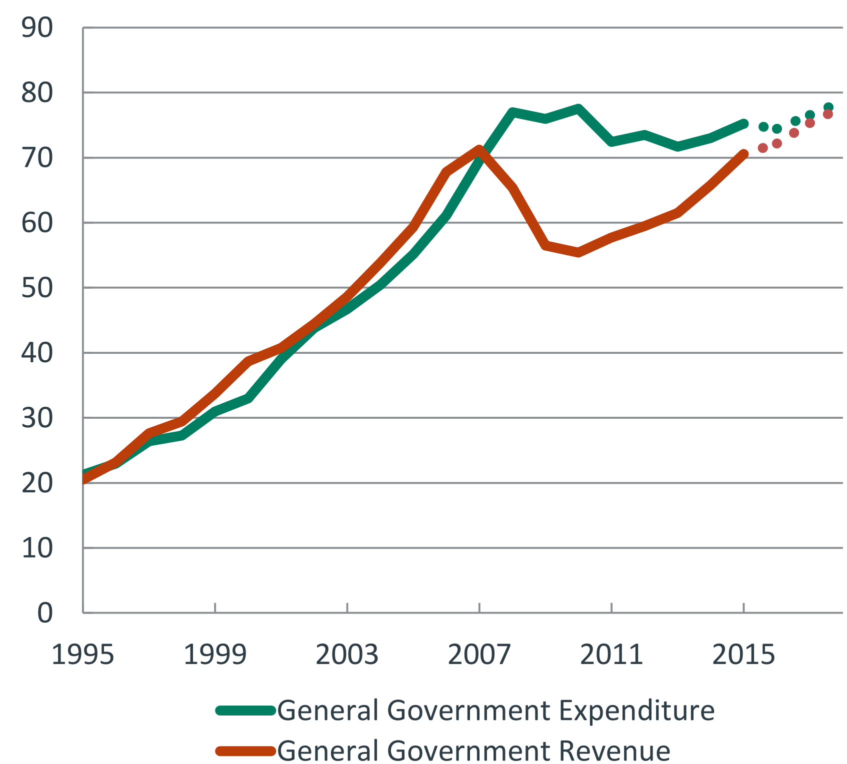
Irrespective of GDP moves, Ireland has had five straight years of fiscal outperformance

General Government Balance (% of GDP)



Deficit forecast to be fully closed in euro terms by 2019 (€bn)



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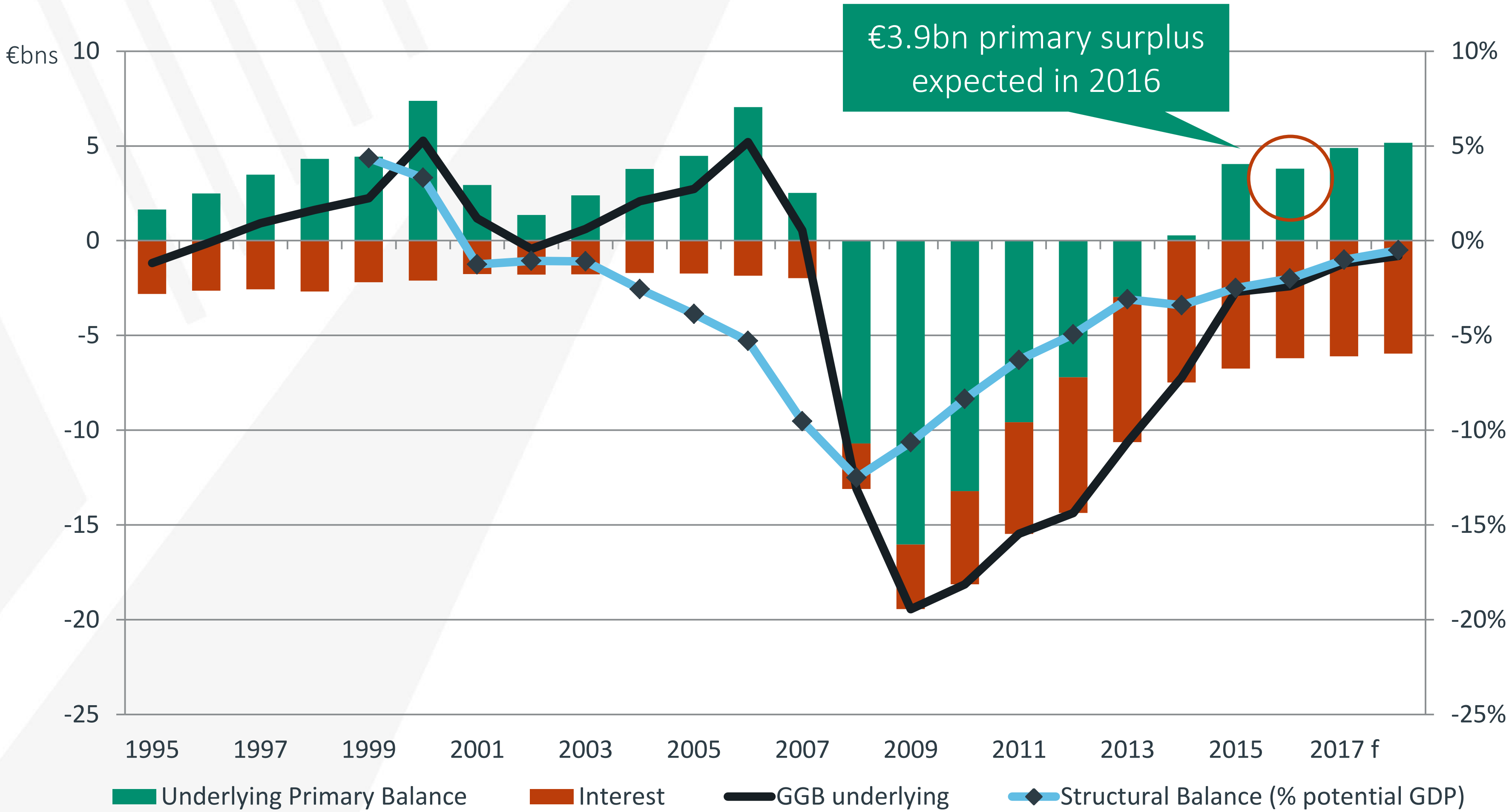
National Treasury Management Agency

Source: Department of Finance, CSO

**2016 = DoF forecast*

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



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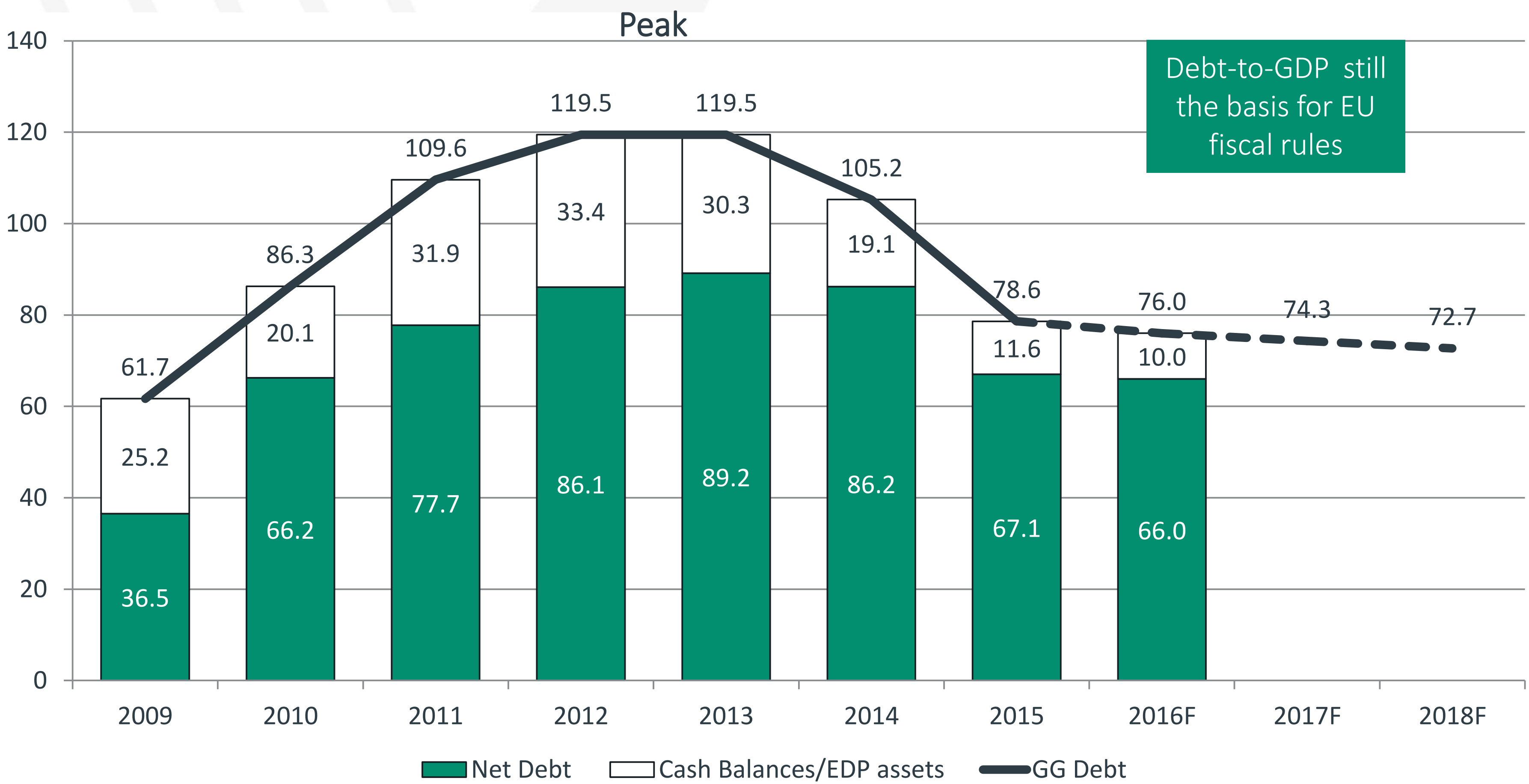
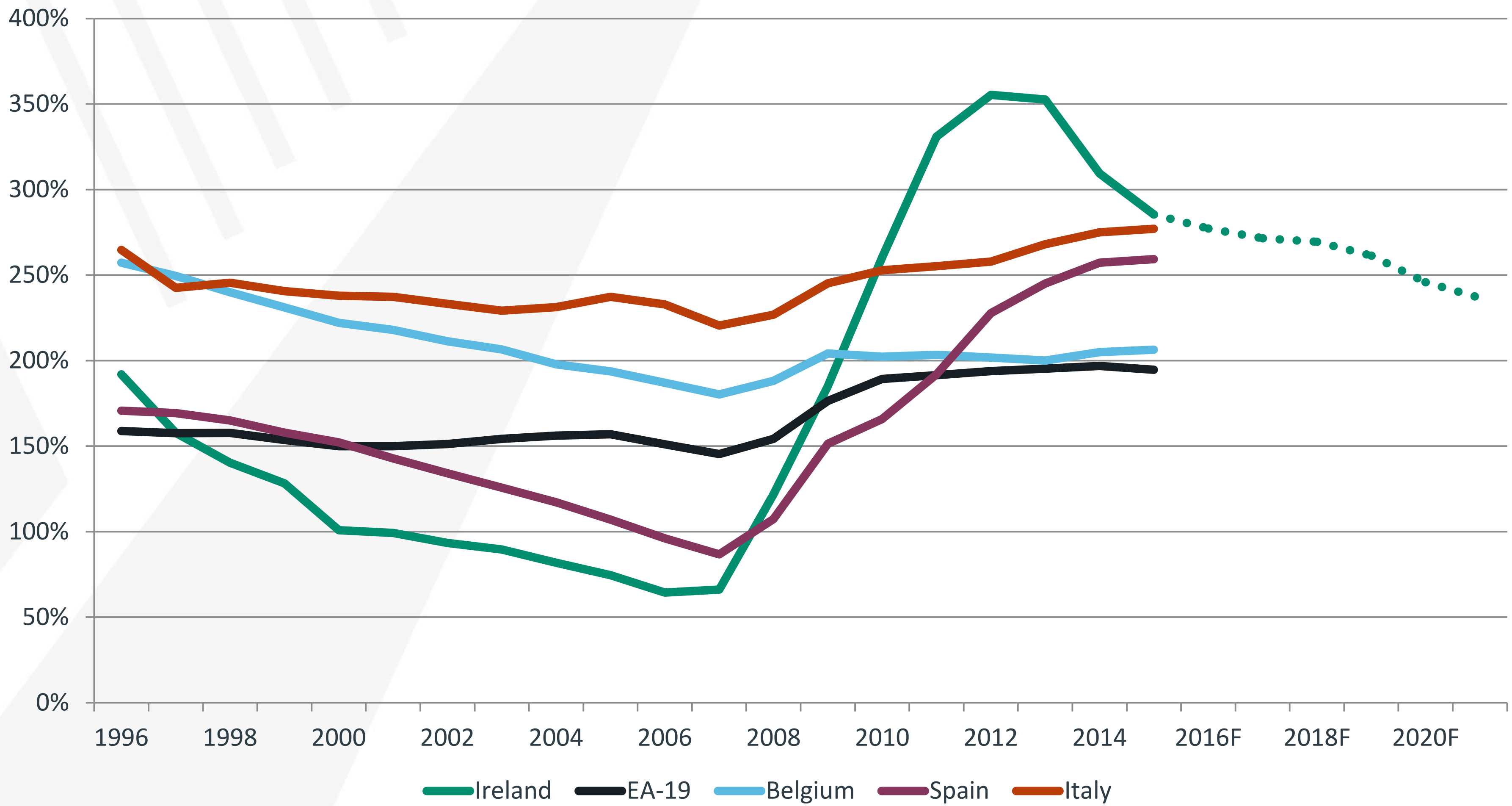
Source: CSO; Eurostat; IMF

Gross Government debt fell to 78.6% of GDP by the end of 2015 - thanks to inflated GDP



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

	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 in brackets*

EU fiscal rules set the "tramlines" for Ireland's fiscal policy

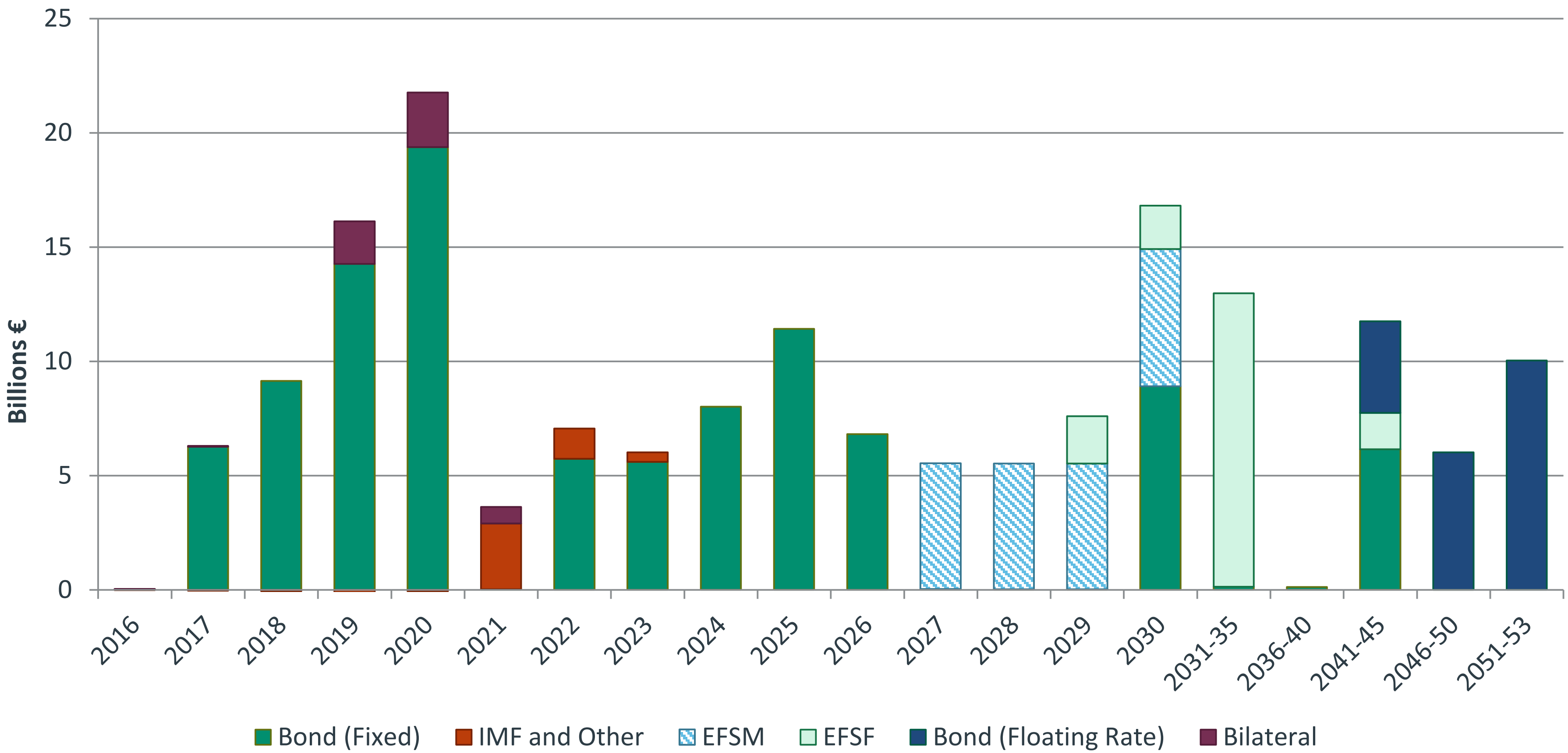
2011 – 2015 EDP	2016 – 2019 Preventive Arm
Objective: Deficit reduction in nominal terms	**Objective:** Balanced budget in structural terms

Requirements of Preventive Arm

1. Ireland must improve its structural balance by 0.6% of GDP in 2016 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

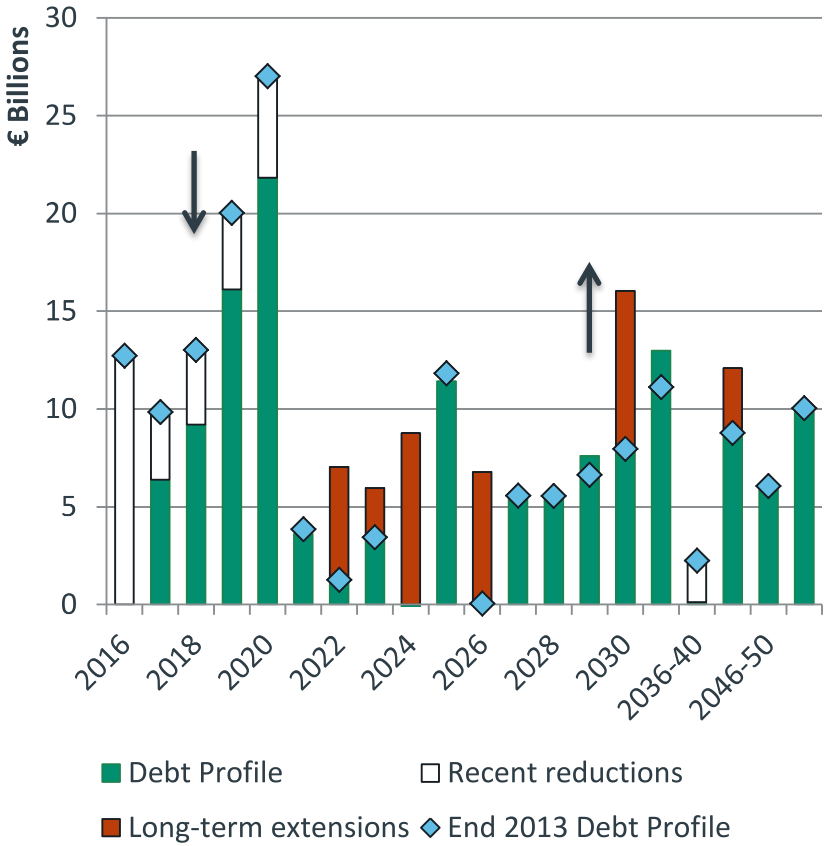


Source: NTMA

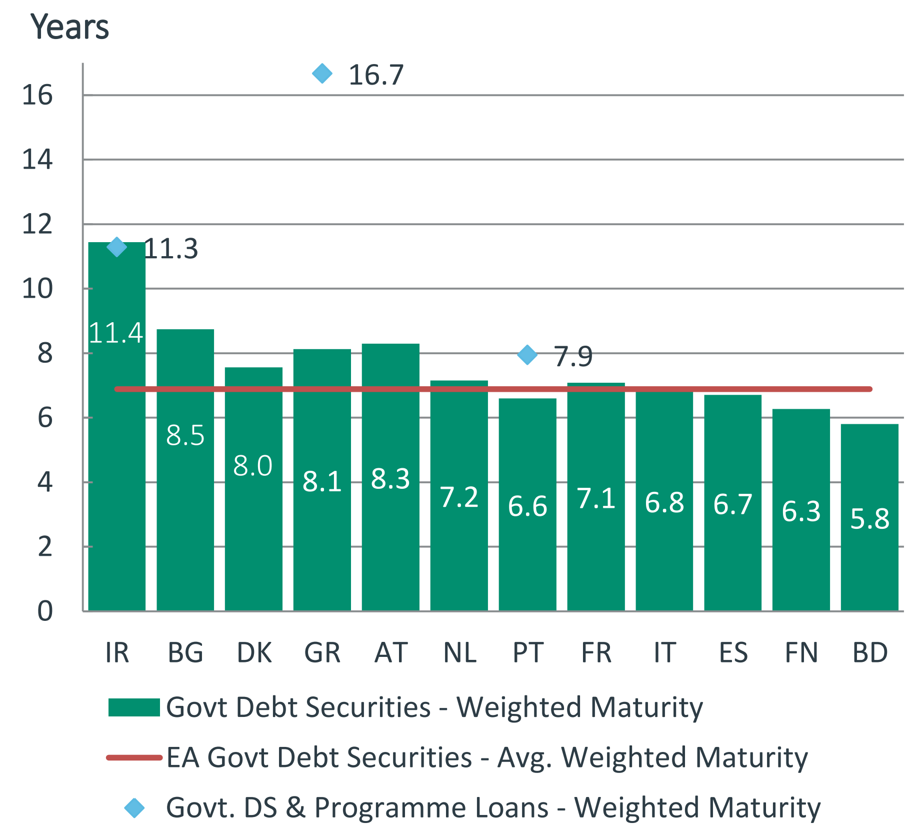
Note: EFSM loans are subject to a 7-year extension that will bring their weighted-average maturity from 12.5 years to 19.5 years. It is not expected that Ireland will refinance any of its EFSM loans before 2027. As such we have placed the EFSM loan maturity dates in the 2027-31 range although these may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

We improved our 2016-2020 maturity profile significantly in recent years

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



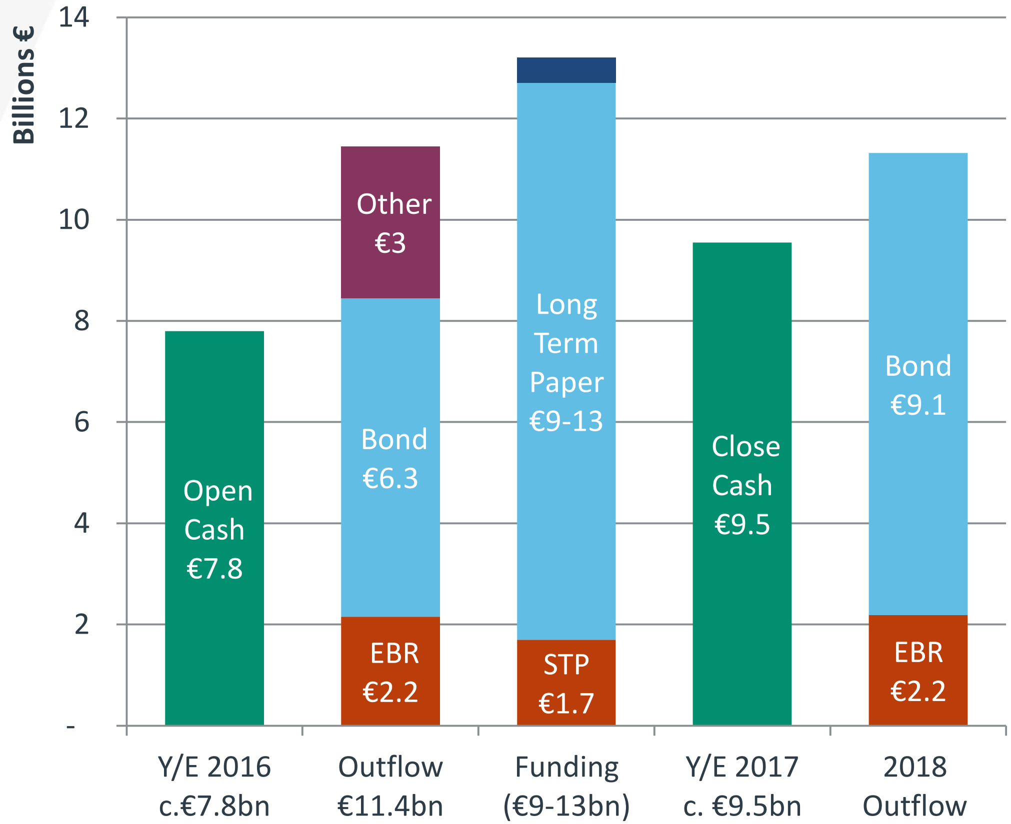
…Ireland compares favourably to other European countries



Source: NTMA; ECB, NTMA calculations

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.
- Exchequer cash balance at end 2016 is likely to be below €8bn.



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.

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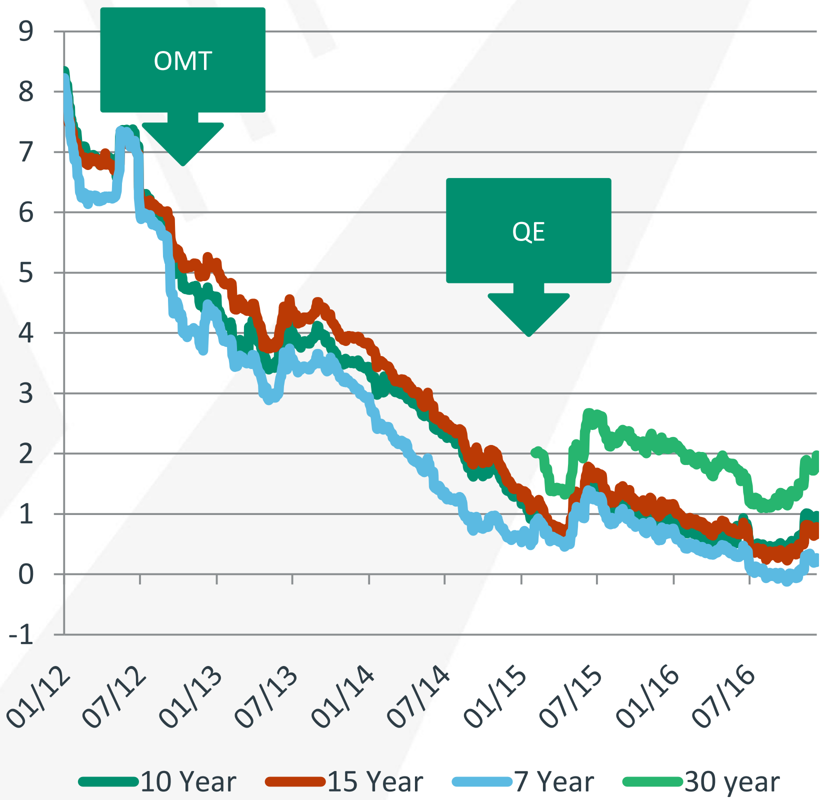
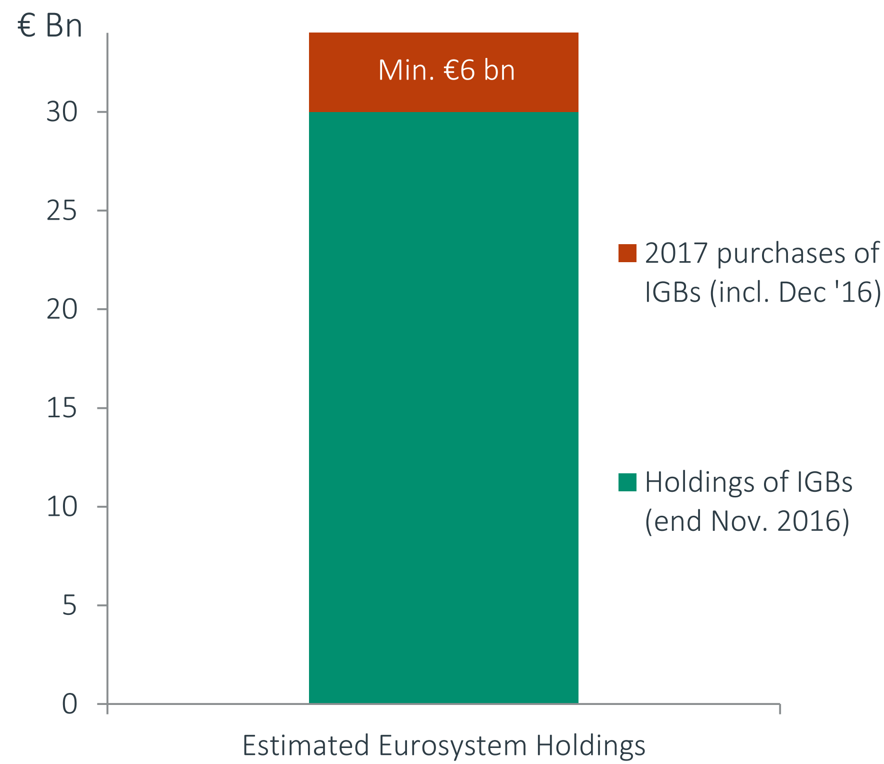
ECB action has helped Ireland's bond performance

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

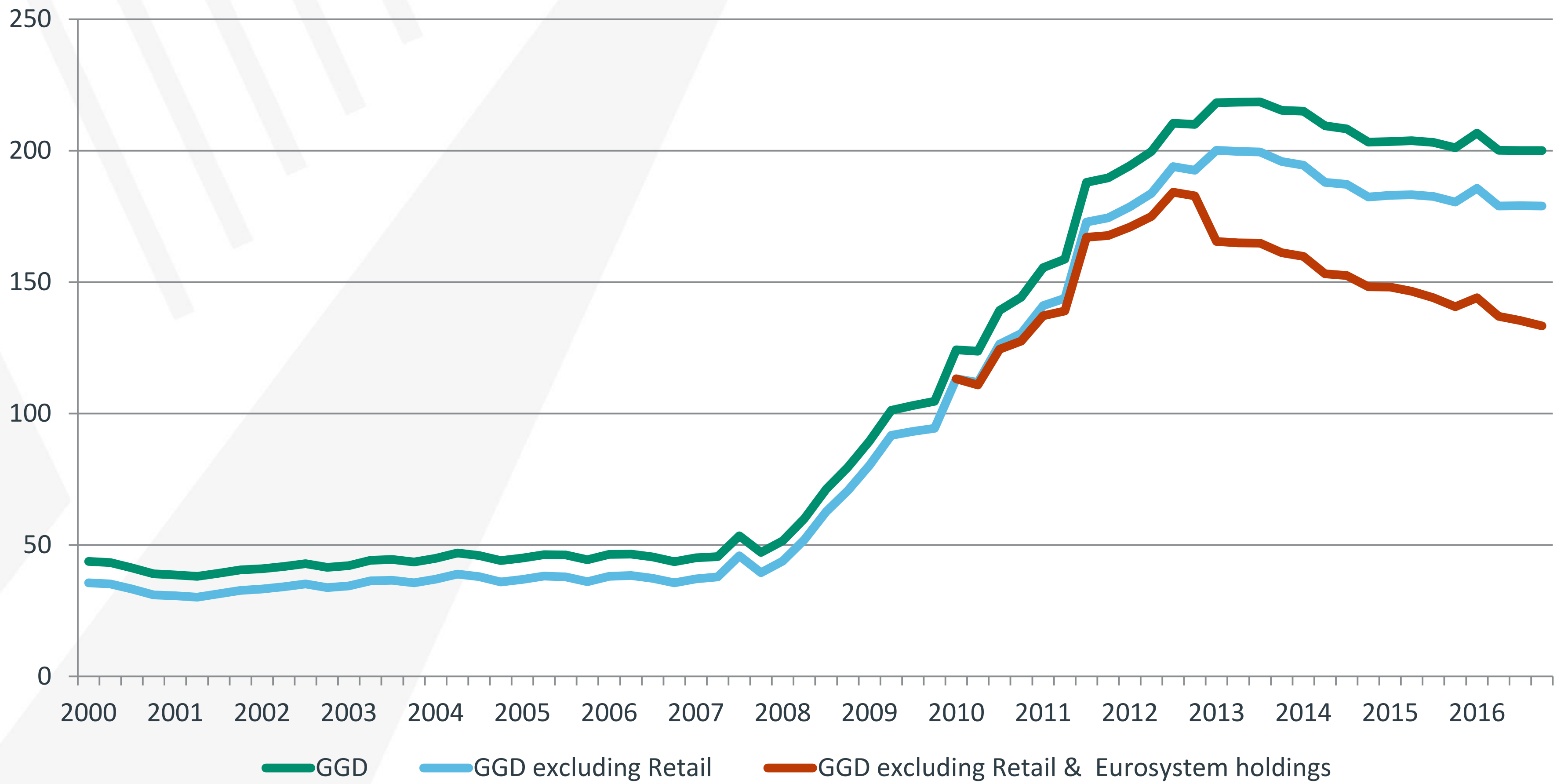


Purchases of Irish Govt. bonds under PSPP will slow in 2017 but still significant



Source: Bloomberg; ECB, NTMA Analysis

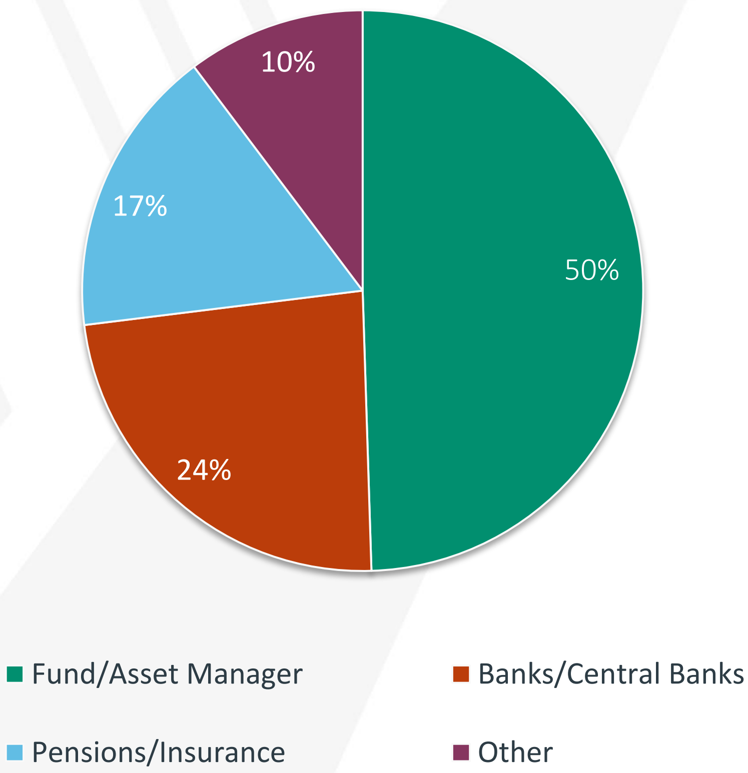
Large proportion of Irish debt stock held by "sticky" sources



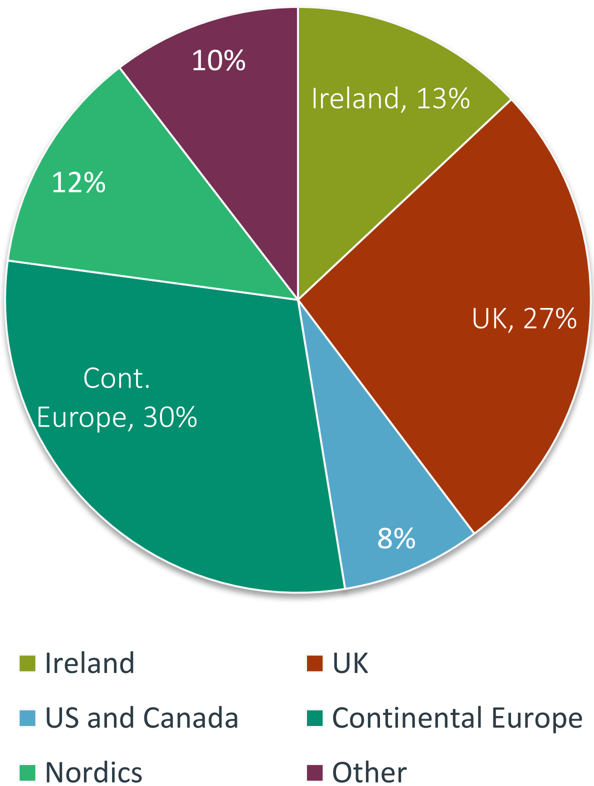
Source: CSO, ECB, NTMA Analysis
Retail includes State Savings and other currency and deposits. The CSO series has been altered to exclude the impact of IBRC on the data.
Euro system holdings include SMP, PSPP and CBI holdings of FRNs. Figures do not include ANFA holdings which are likely to further increase the Eurosystem's holdings.

Investor base for Government bonds is wide and varied

Investor breakdown: Average over last 7 syndications



Country breakdown: Average over last 7 syndications



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Source: NTMA (2016)

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)

€ Billion				
End quarter	Dec 2013	Dec 2014	Dec 2015	**Sept 2016**
1. Resident	51.7	50.8	50.8	**53.1**
(as % of total)	(46.6%)	(43.7%)	(40.6%)	**(43.9%)**
– Credit Institutions and Central Bank*	49.2	45.9	46.9	**49.3**
– General Government	2.2	1.6	0.8	**0.6**
– Non-bank financial	-	2.9	2.8	**2.9**
– Households (and NFCs)	0.4	0.4	0.3	**0.3**
2. Rest of world	59.3	65.5	74.2	**67.9**
(as % of total)	(53.4%)	(56.3%)	(59.4%)	**(56.1%)**
Total MLT debt	111.0	116.3	125.1	**121.0**

Source: CBI

Breakdown of Ireland's General Government debt

€ Billion	2011	2012	2013	2014	2015	2016 H1
Currency and deposits (mainly retail debt)	58.4	62.1	31.4	20.9	20.7	21.1
Securities other than shares, exc. financial derivatives	94.0	87.3	112.7	119.1	125.6	124.1
- Short-term (T-Bills, CP etc)	3.8	2.5	2.4	3.8	1.2	3.5
- Long-term (MLT bonds)	90.2	84.8	110.3	115.3	124.4	120.5
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	0.7
- Long-term (official funding and prom notes 2009-12)	36.8	58.7	69.8	62.0	53.8	54.2
General Government Debt	189.8	210.0	215.3	203.3	201.1	200.1
EDP debt instrument assets	55.2	58.7	54.6	36.8	29.6	*27.8*
Net Government debt	134.5	151.3	160.7	166.5	171.5	172.3

Source: *CSO (Q2 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 = 0.5% 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?, corporate tax ally though still have others in EU)
- UK-based cash house buyers gone?

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 16-17% 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**

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Source: CSO (2015)

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

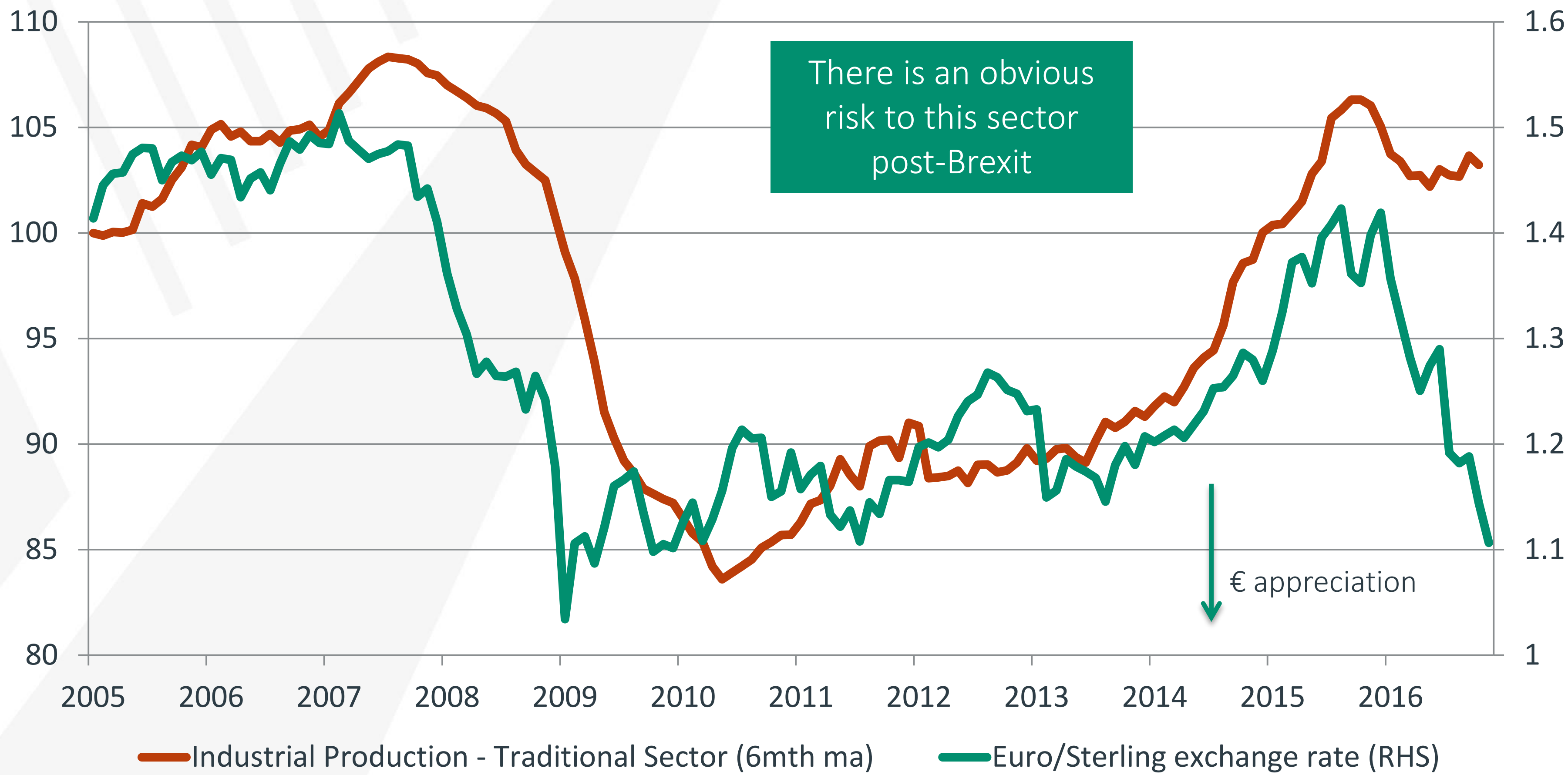
- Lawless and Morgenroth (2016) have conducted analysis of the trade effects of applying the WTO tariffs for external EU trade to UK trade - i.e. a significant “hard” Brexit scenario.
- By matching over 5200 products to the WTO tariff applicable to external EU, the authors find that such an outcome would 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

Traditional manufacturing sector has slowed in face of euro appreciation; much more to come?



Source: CSO; DataStream

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

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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.

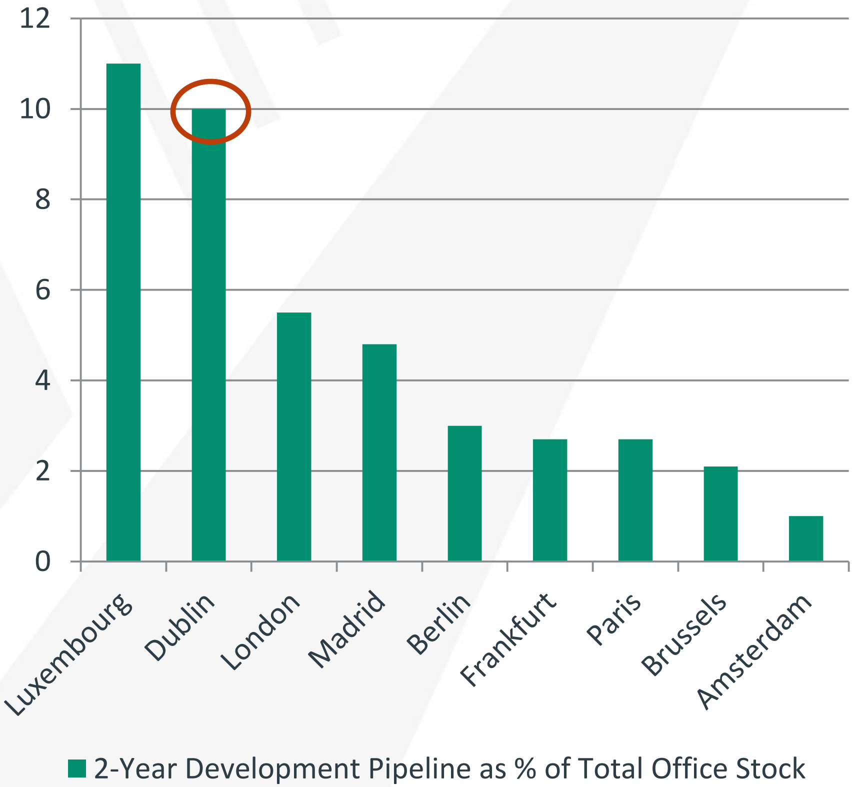
Why choose Ireland

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

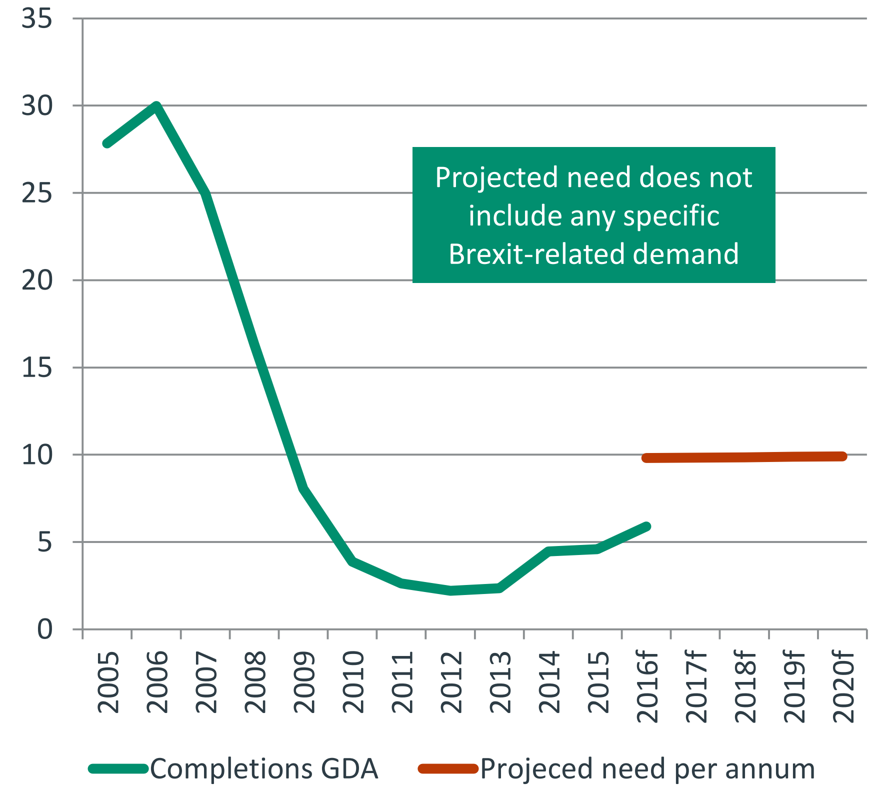
- EU Membership
- Common language (important for US companies)
- Law system (Ireland and UK both have common law structure)
- Pro-business environment
- Corporate tax
- Educated workforce
- Cost competitiveness
- Regulatory environment (financial sector)

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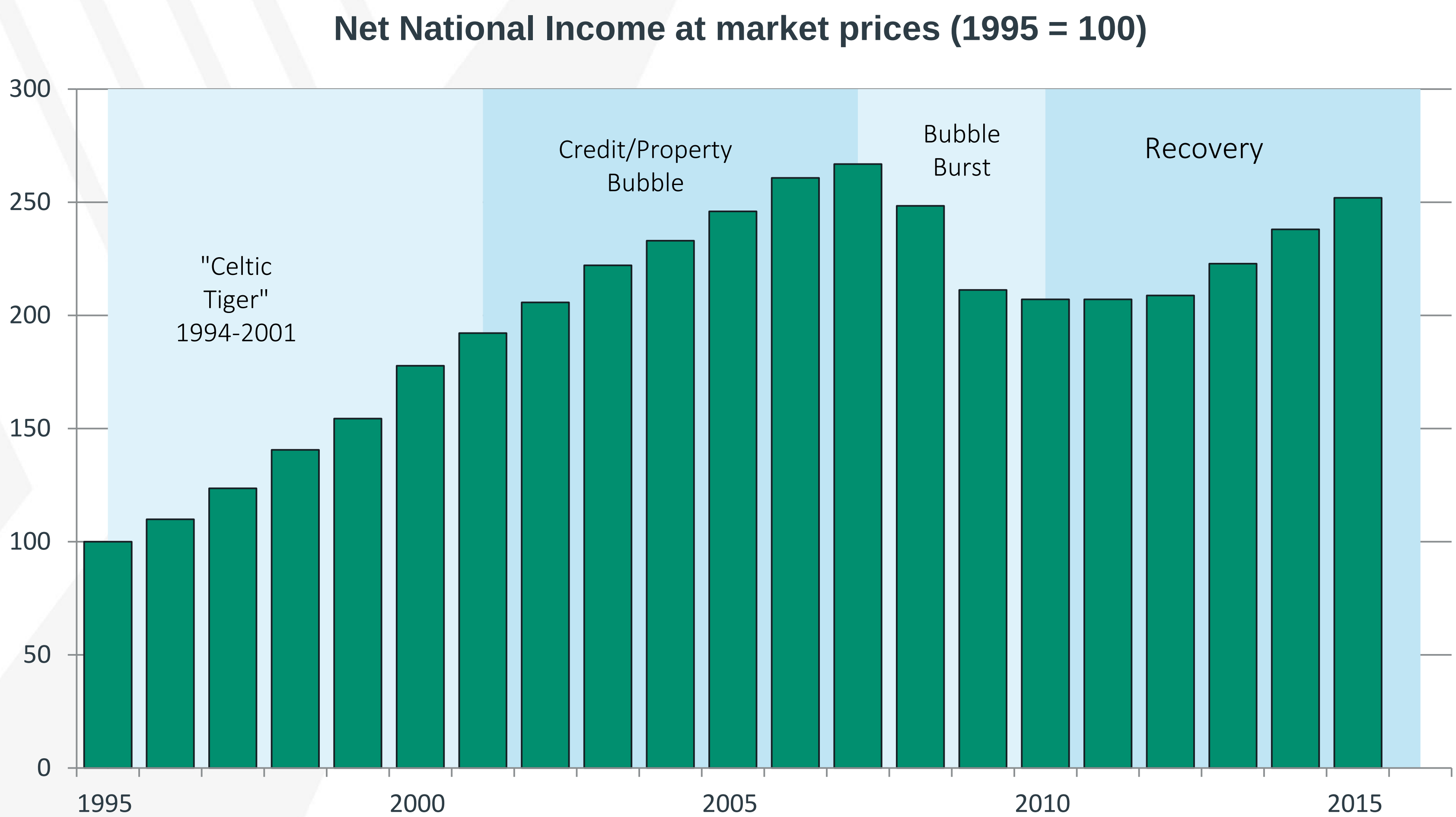
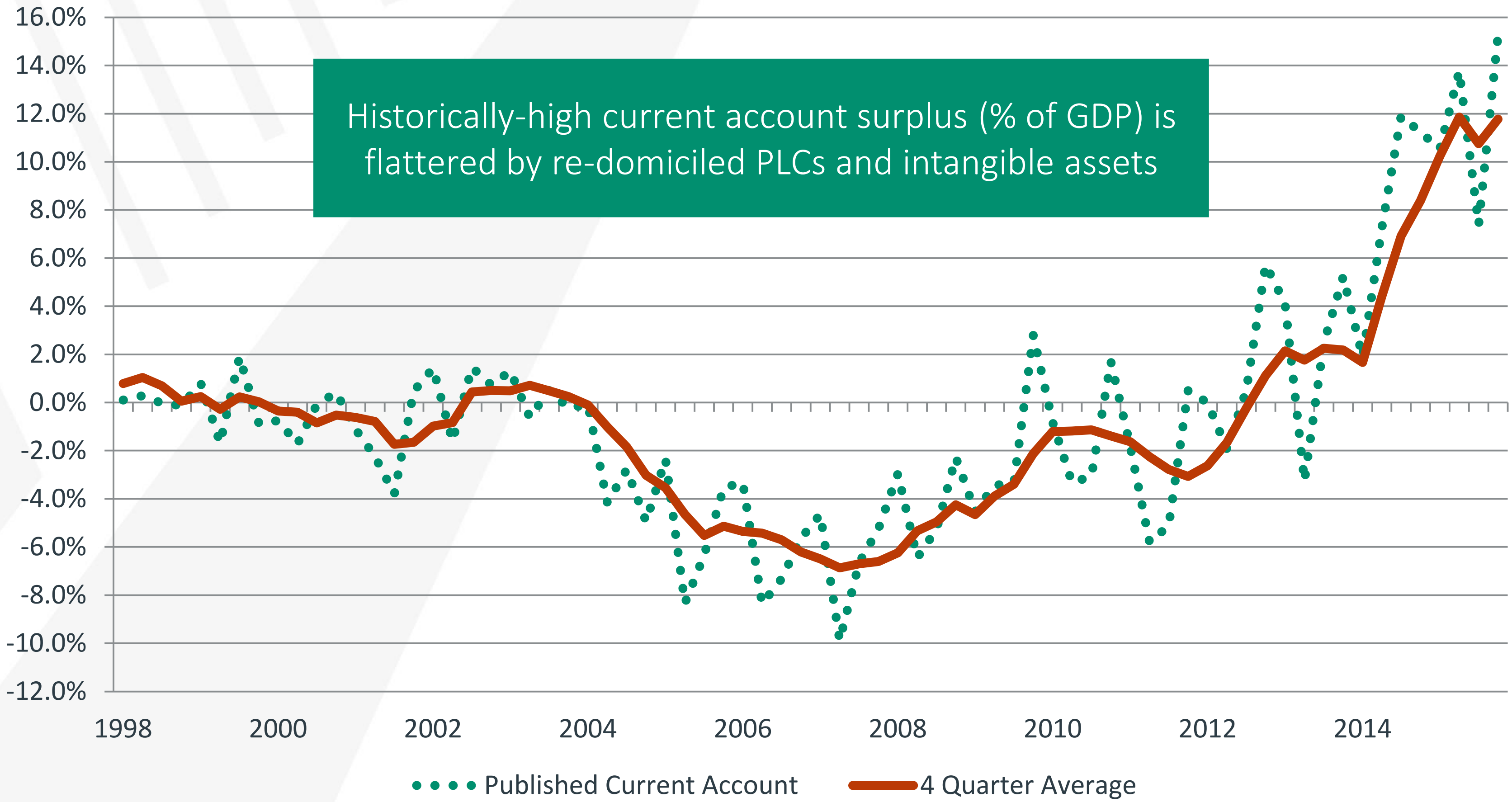
Much rebalancing has taken place; NNI per capita surpassed 2005 levels in 2015



Source: CSO

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

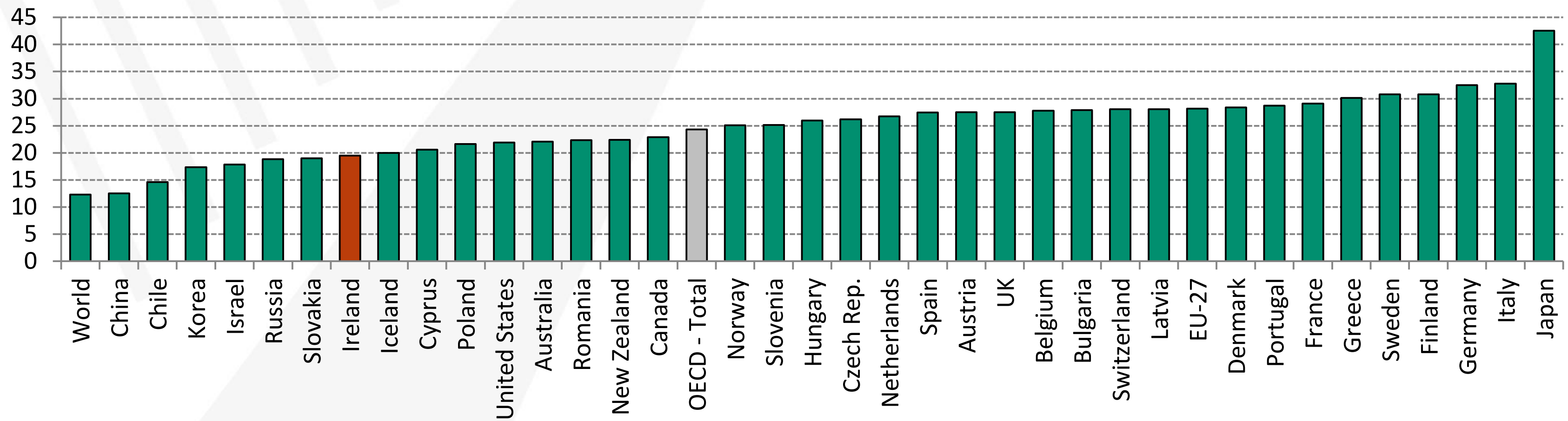


Source: *CSO*

* 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

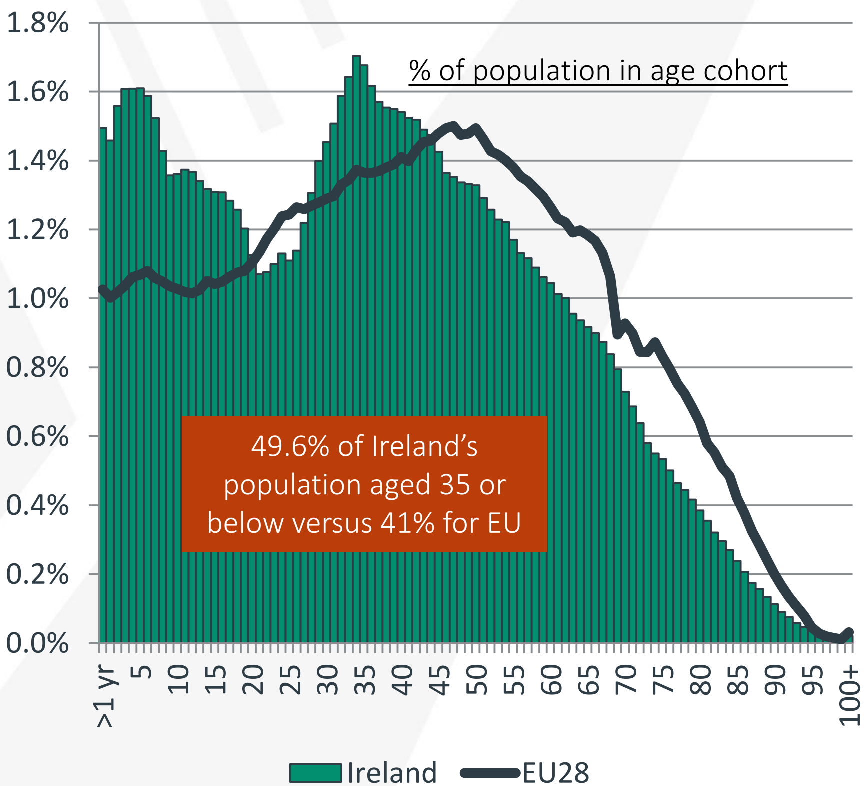


Fertility rates in Ireland are above typical international replacement rates

Source: World Bank WDI (2013); OECD (2014)

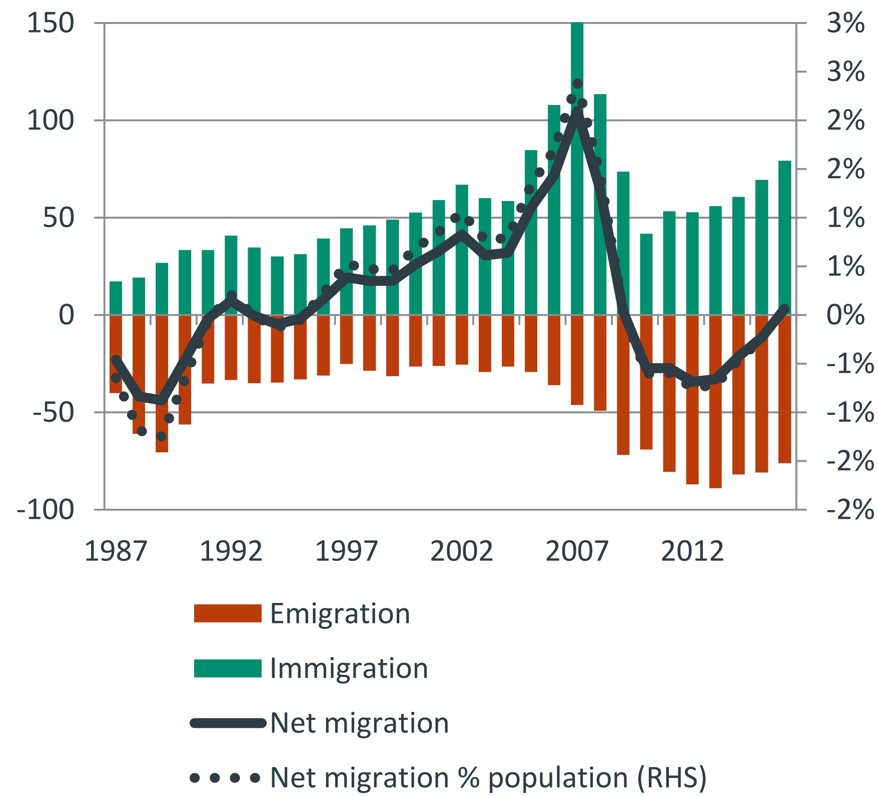
Ireland's population: 4.75m in 2016 – up 170,000 on the 2011 Census

Ireland's population profile healthier than the EU average



Source: Eurostat (2015); [CSO]

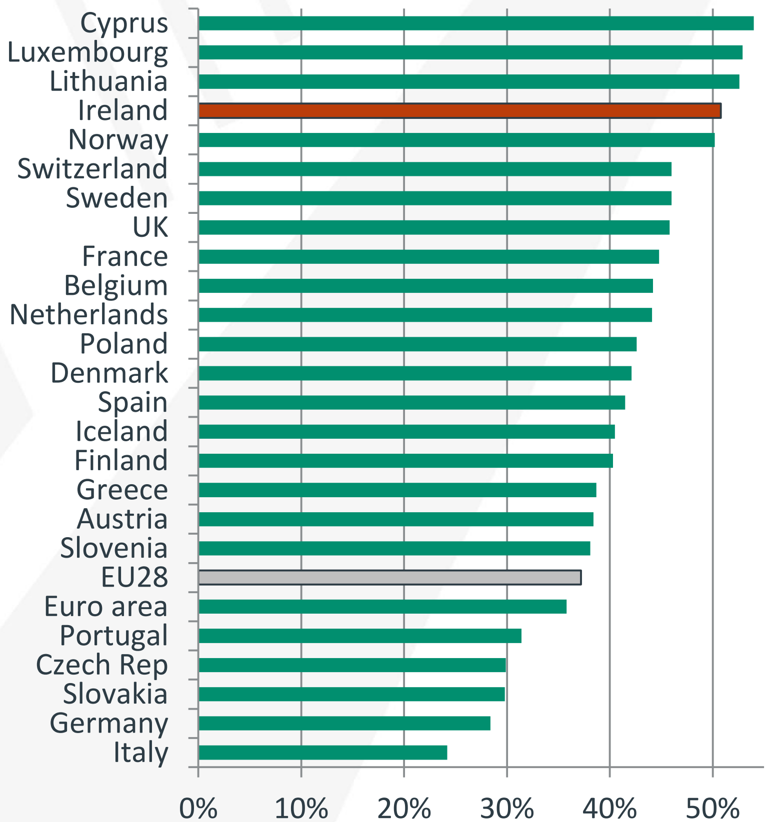
Net migration (000s) negative in recent years but improving alongside economy*



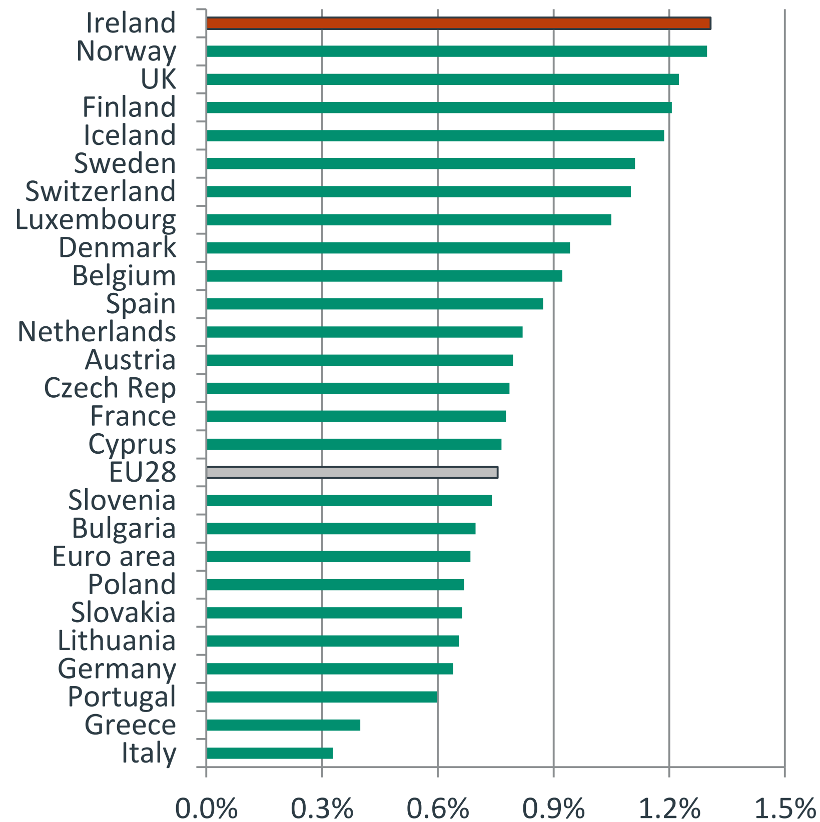
- Preliminary Census 2016 data suggest net migration might have been much lower in 2011-12 than these figures indicate. Revisions are expected in the coming months.

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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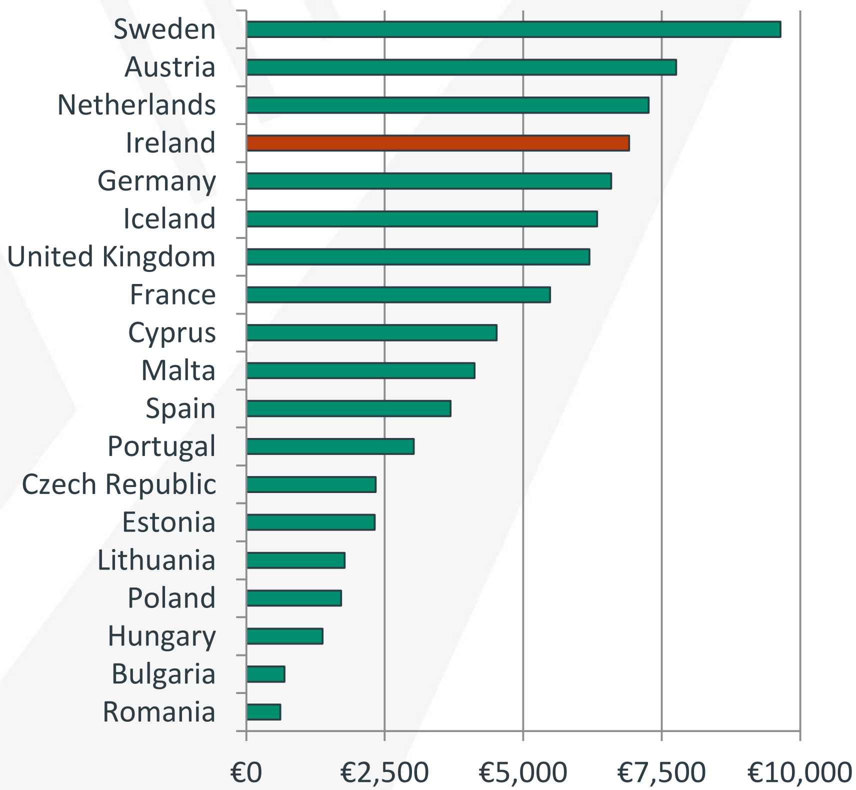
Source: Eurostat

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

Public Education Expenditure per person aged less than 23

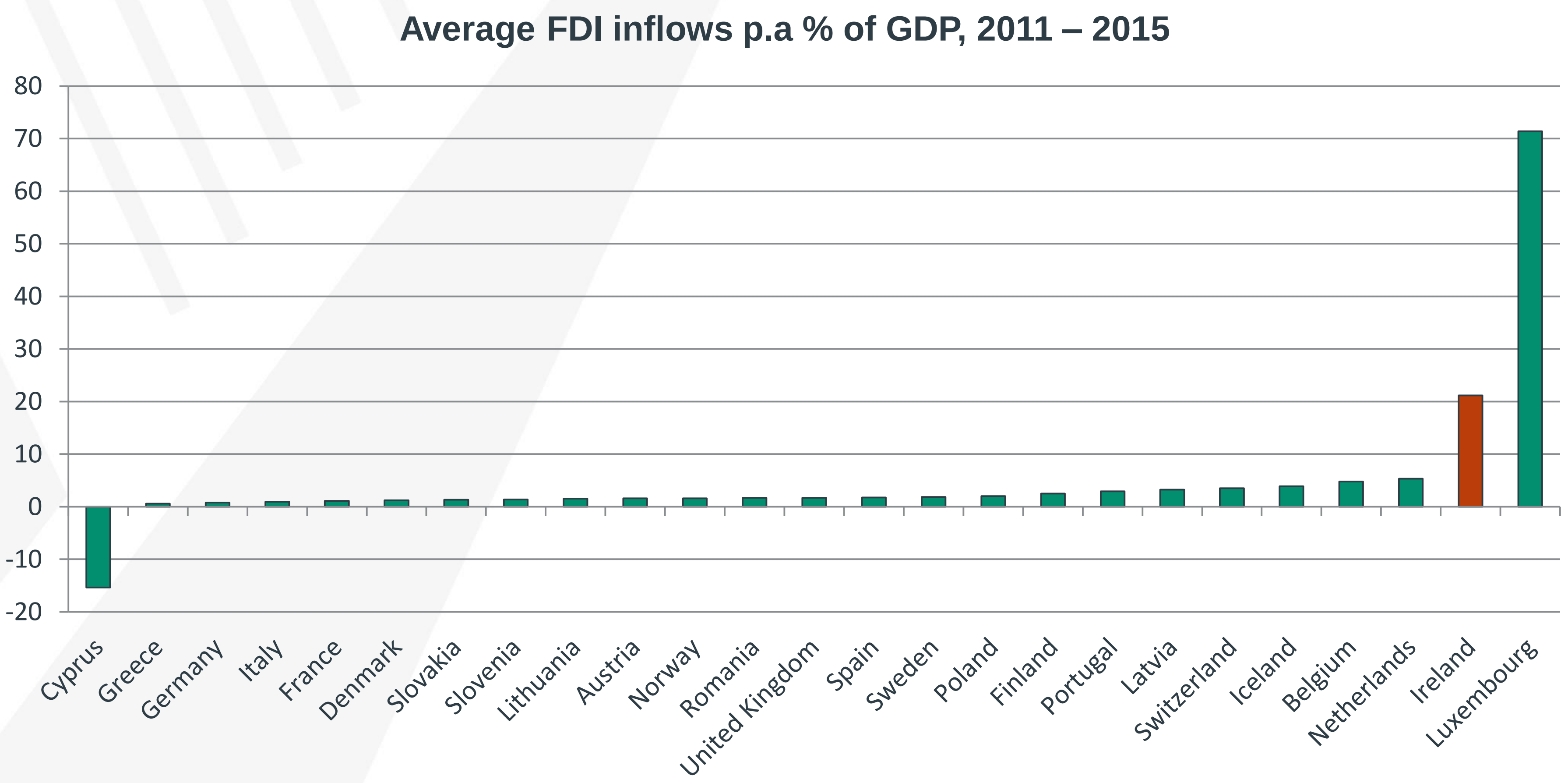


Source: Eurostat (2012), - Selected European Countries

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.*

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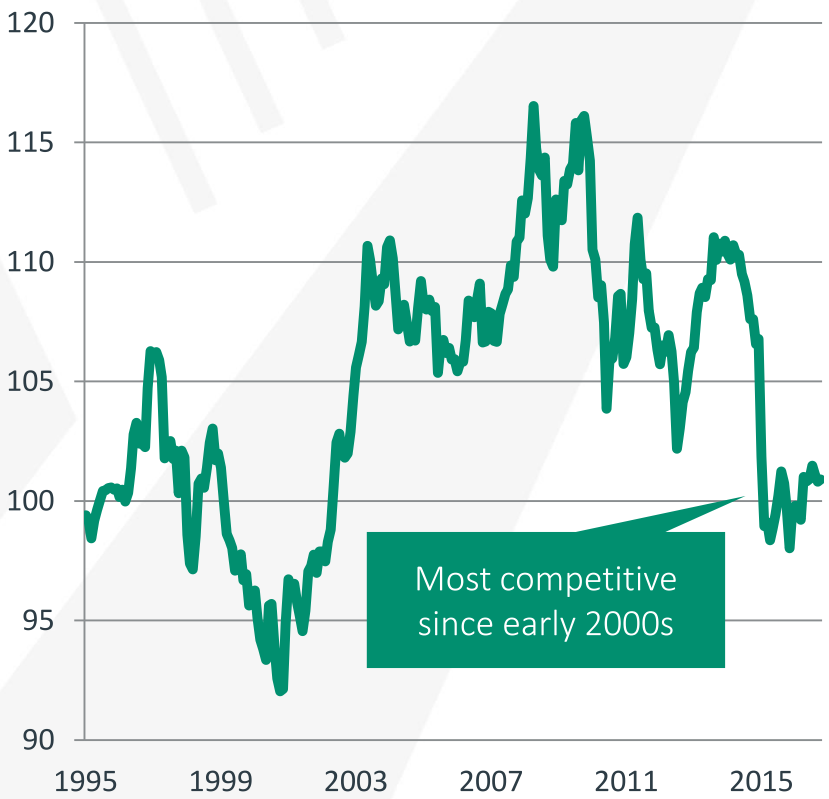
Competitiveness – could become an issue in time

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*

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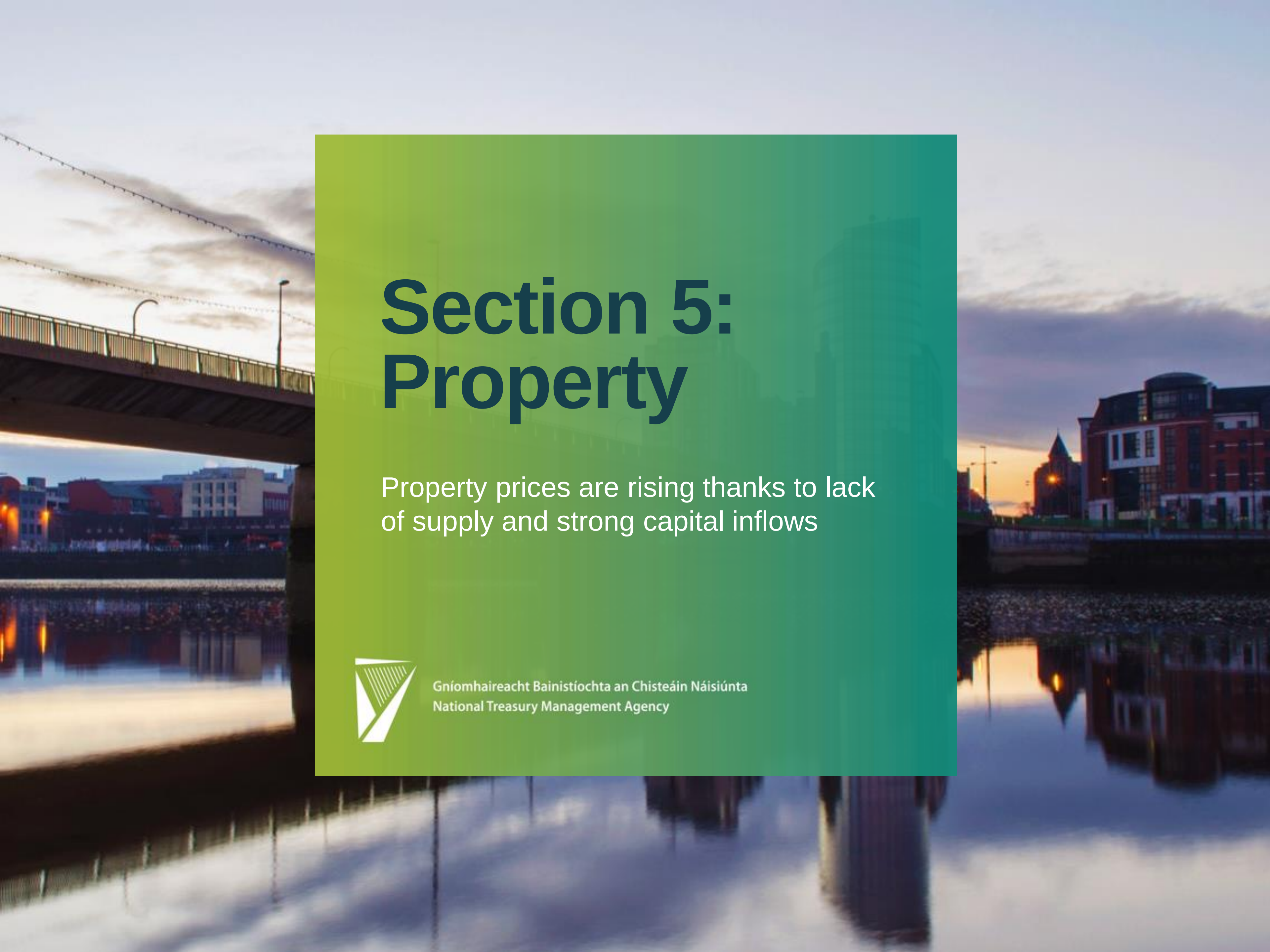

Section 5: Property

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

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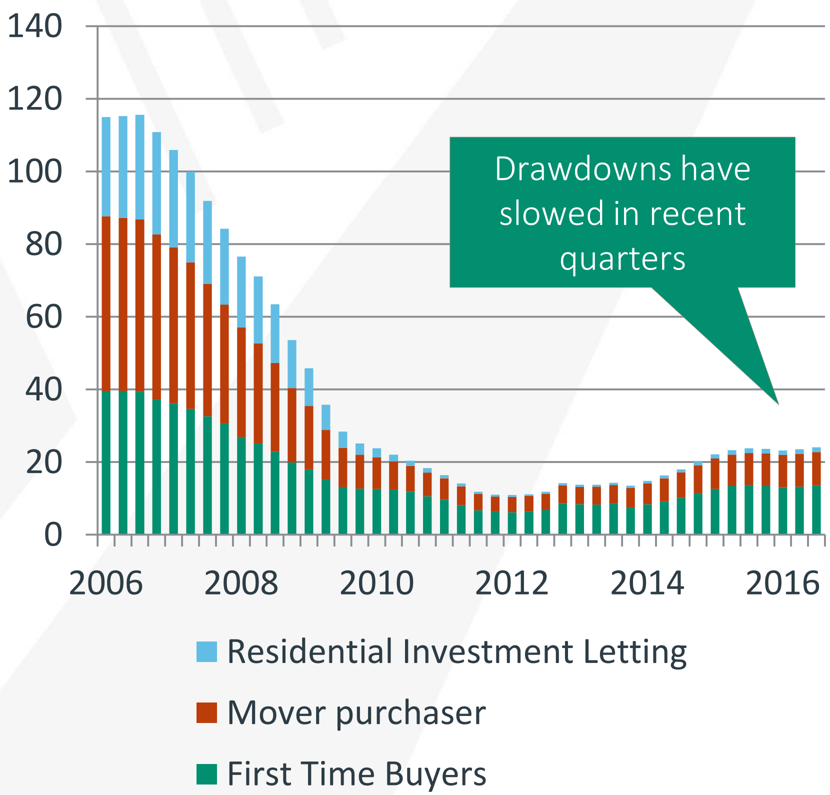
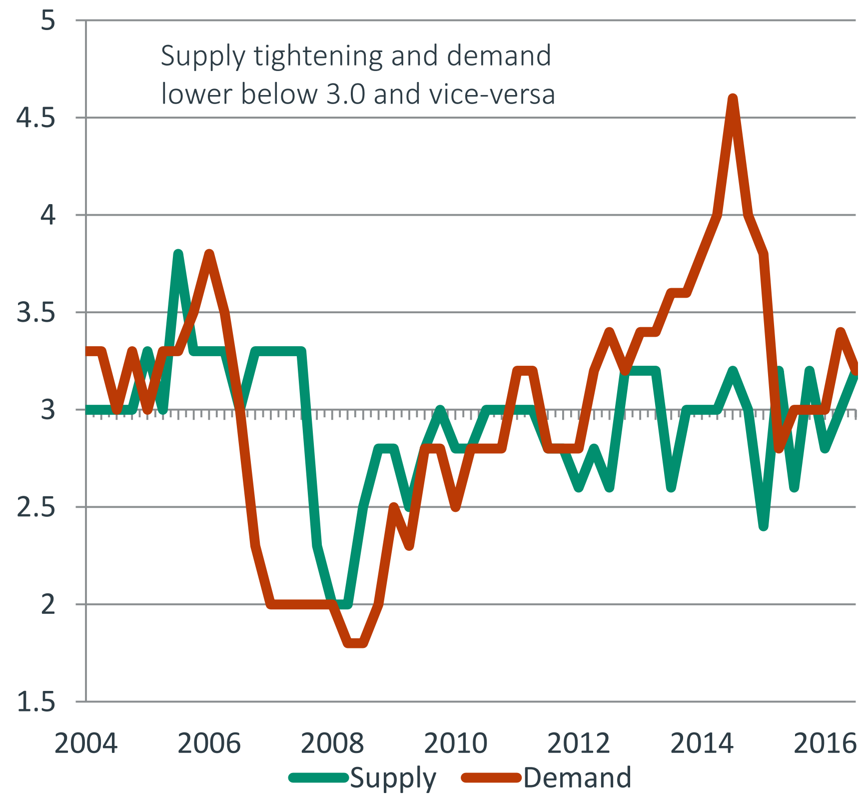
Demand has picked up again having cooled in 2015; Amendments to CBI rules likely to spur further demand

Mortgage drawdowns rise from deep trough (000s)



Source: BPFI **4 quarter sum used*

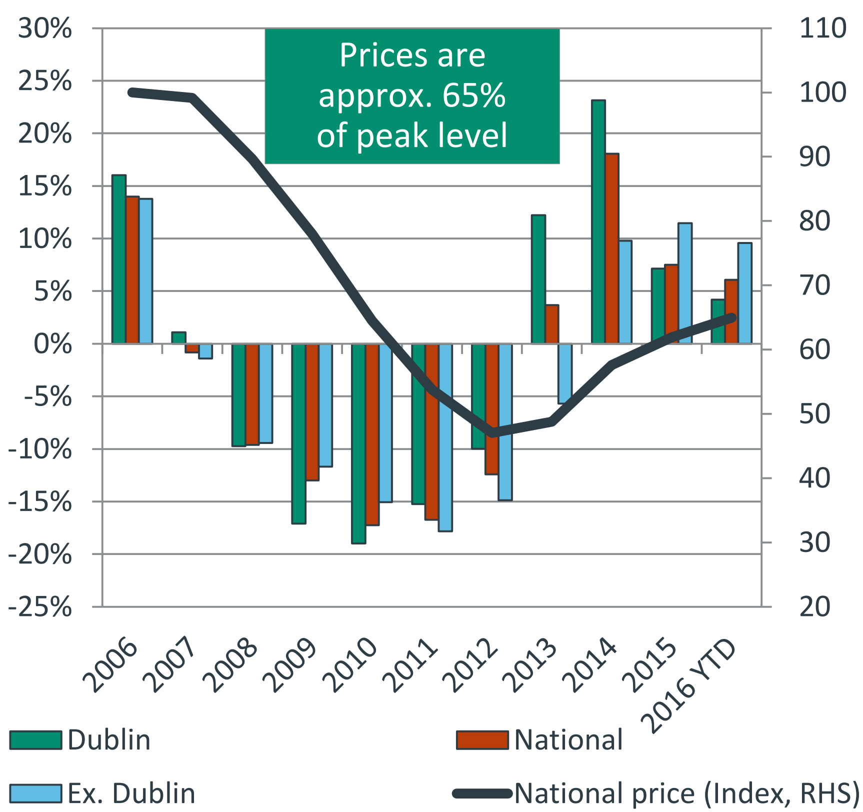
Demand increased in Q2/Q3 after period of restraint following CBI rules



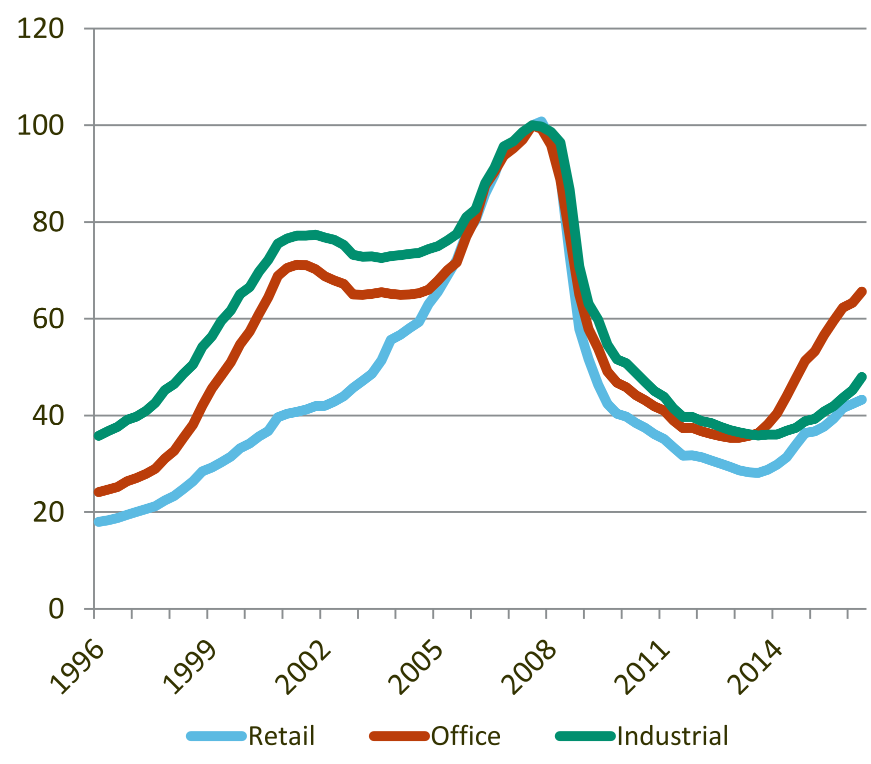
Source: ECB and CBI (Bank lending survey)

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

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



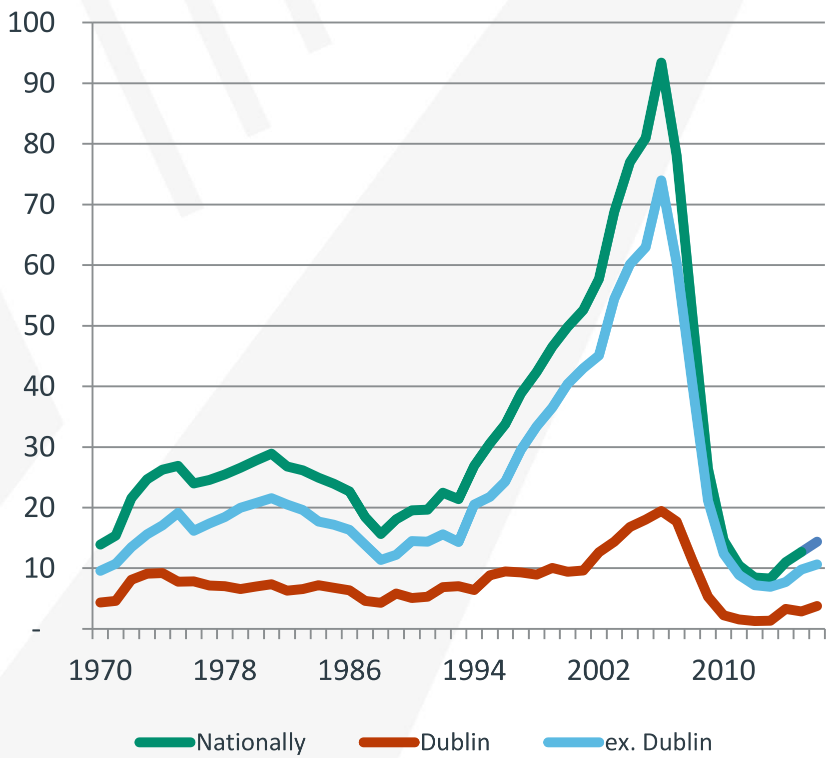
Office leads commercial property



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

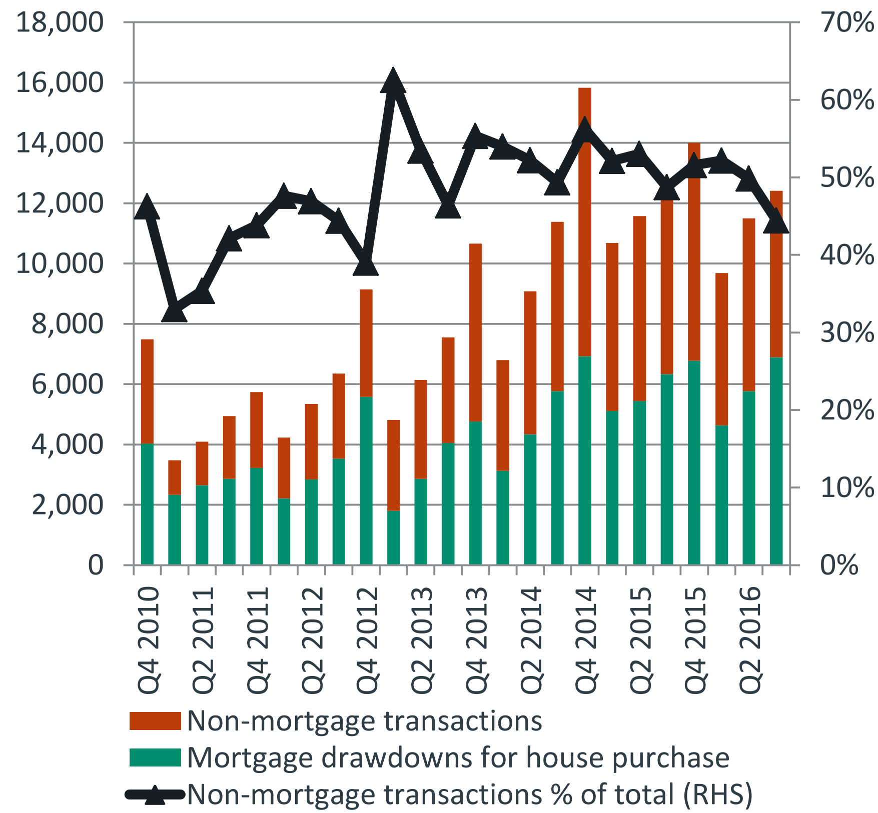
Residential market continues to be boosted by non-mortgage purchasers

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



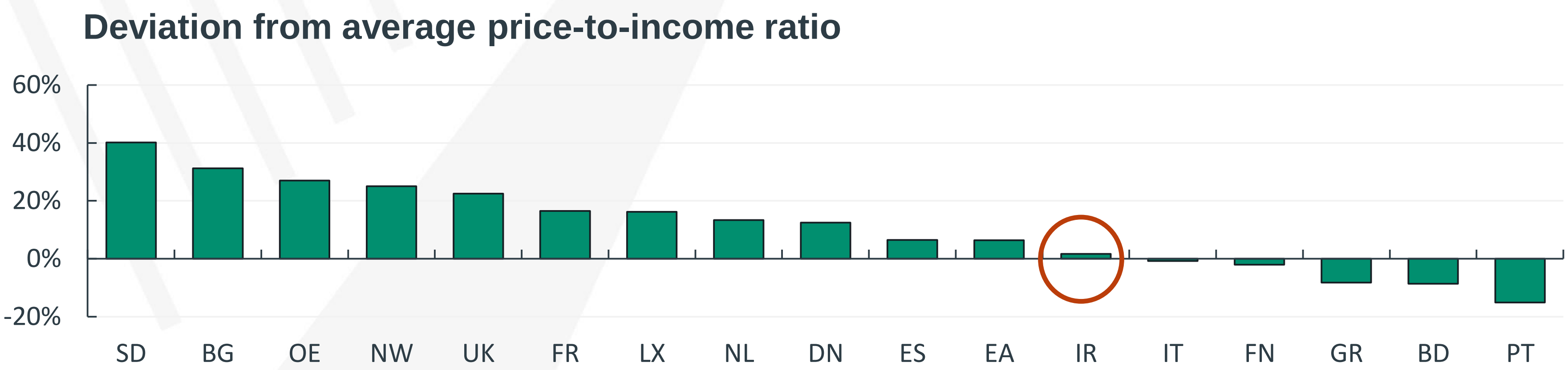
Source: DoHPCLG, BPFI; Property Services Regulatory Authority

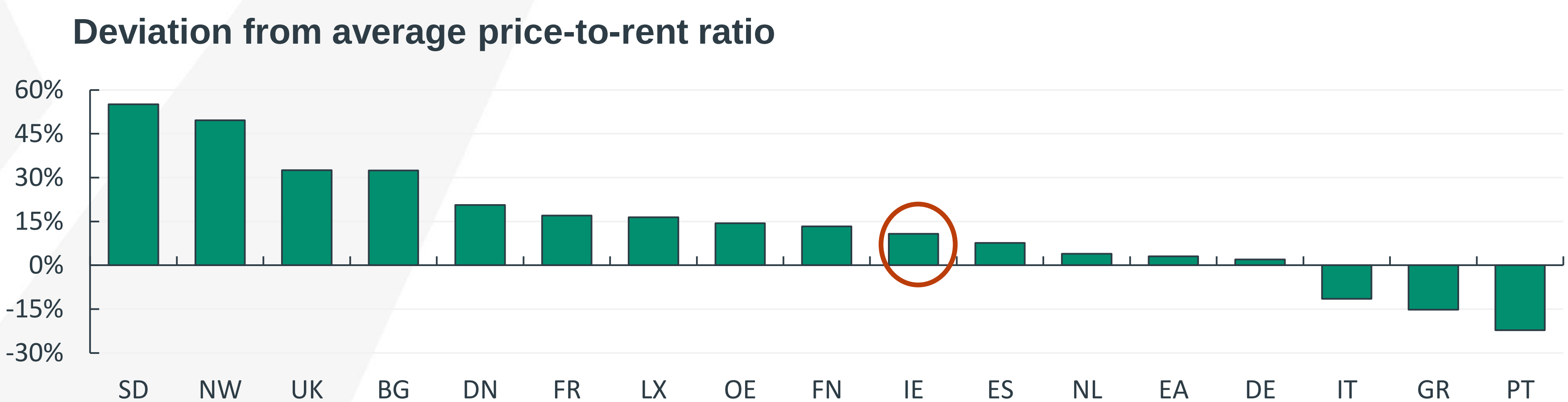
Non-mortgage transactions close to 50% of all property transactions



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

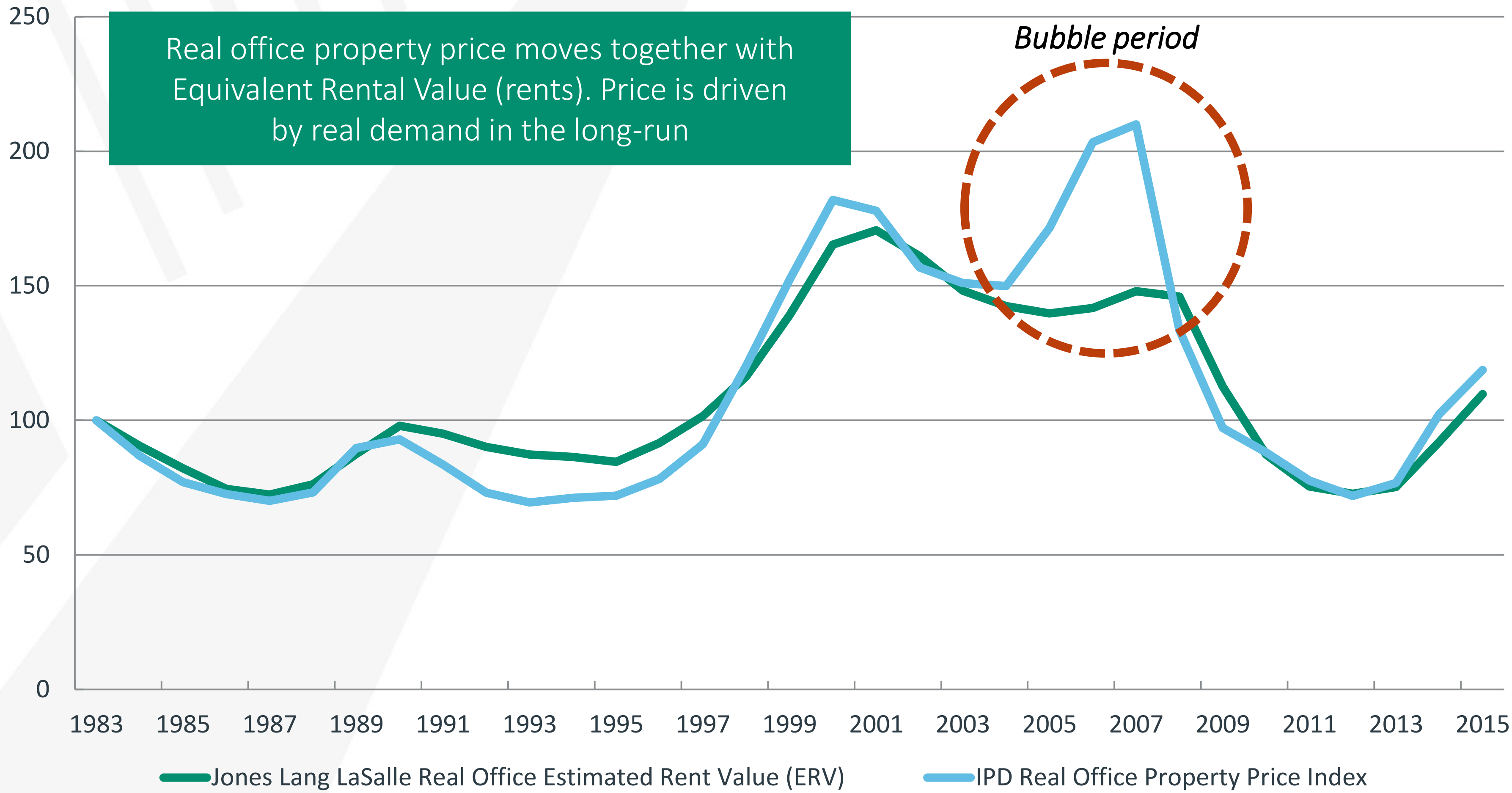




Source: OECD, NTMA Workings

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 52% from peak (index 1983 = 100)



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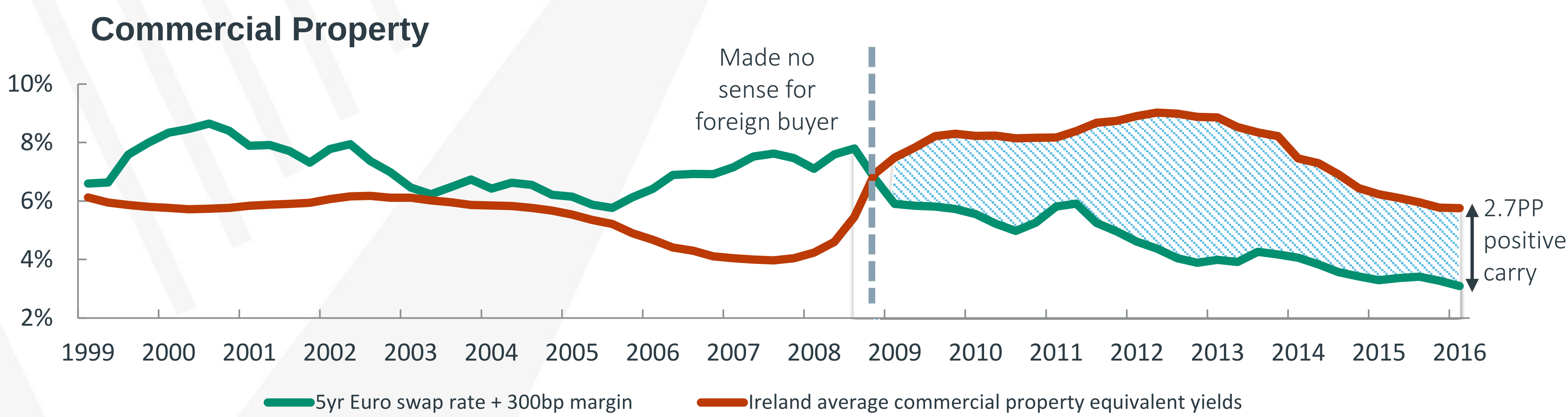
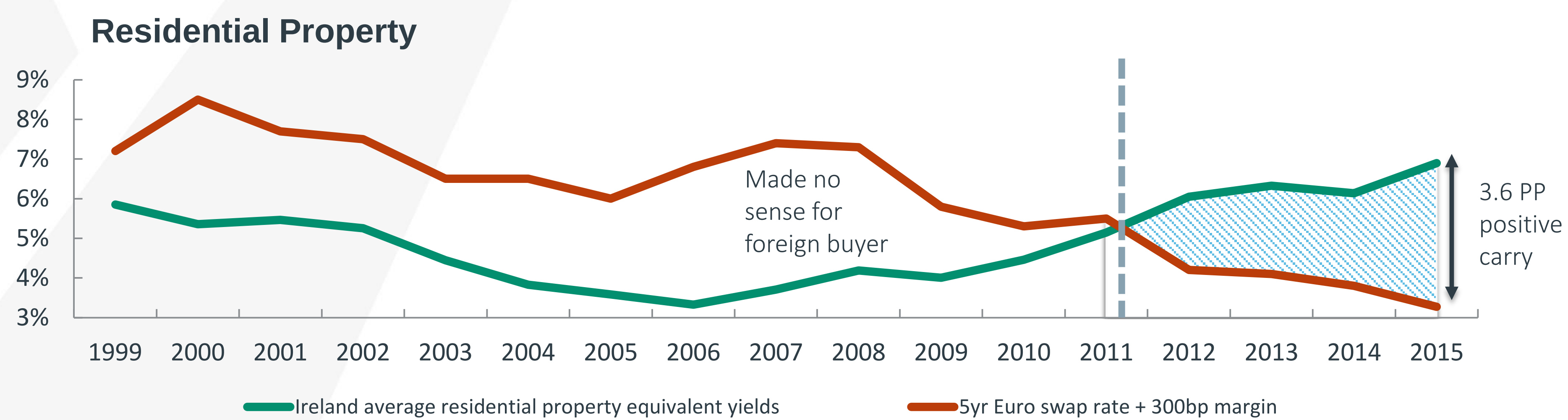
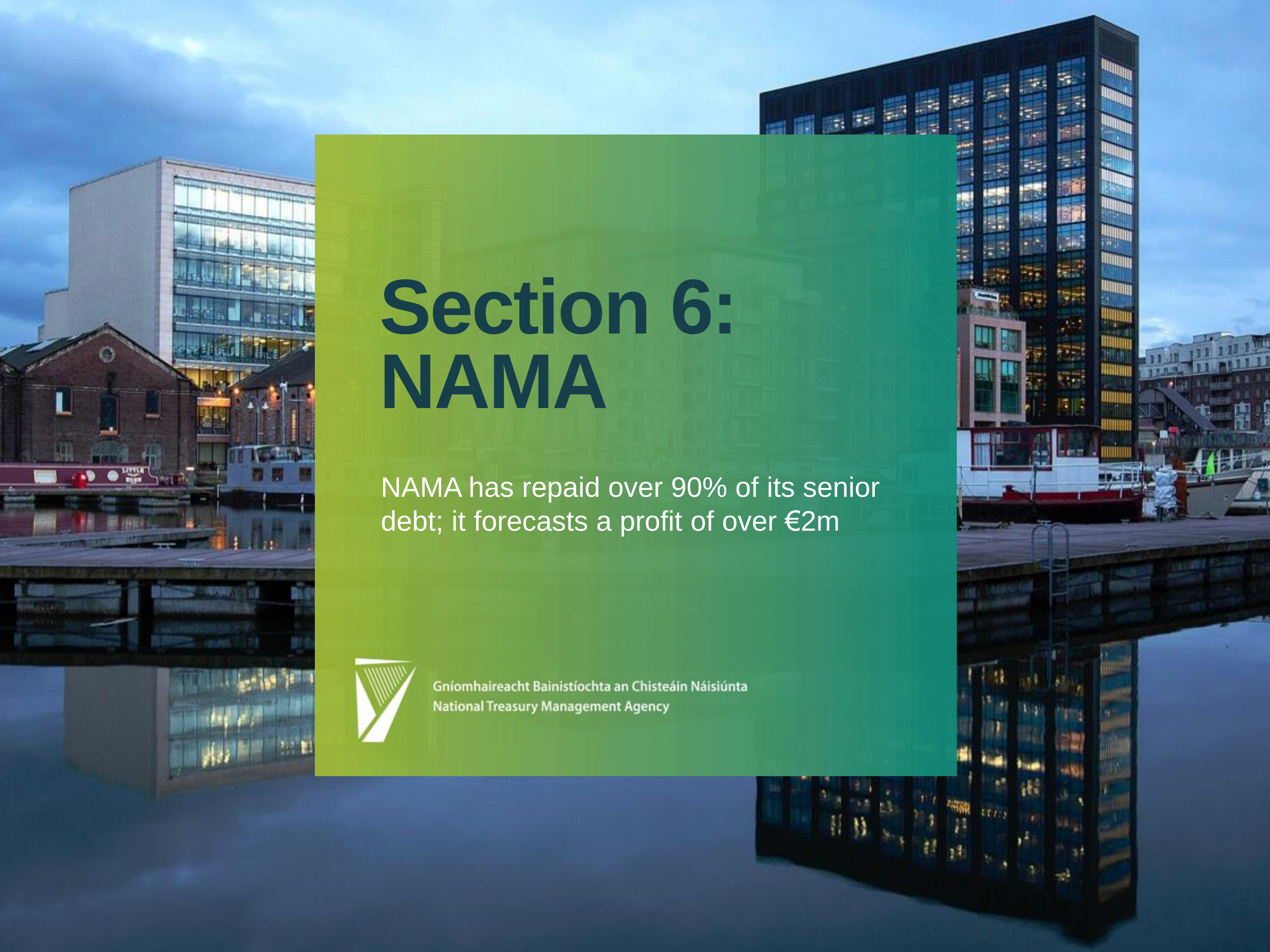
Source: IPD; NTMA

Investors may still be interested on "carry trade" grounds





Source: IPD; NTMA



Section 6: NAMA

NAMA has repaid over 90% of its senior debt; it forecasts a profit of over €2m

Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

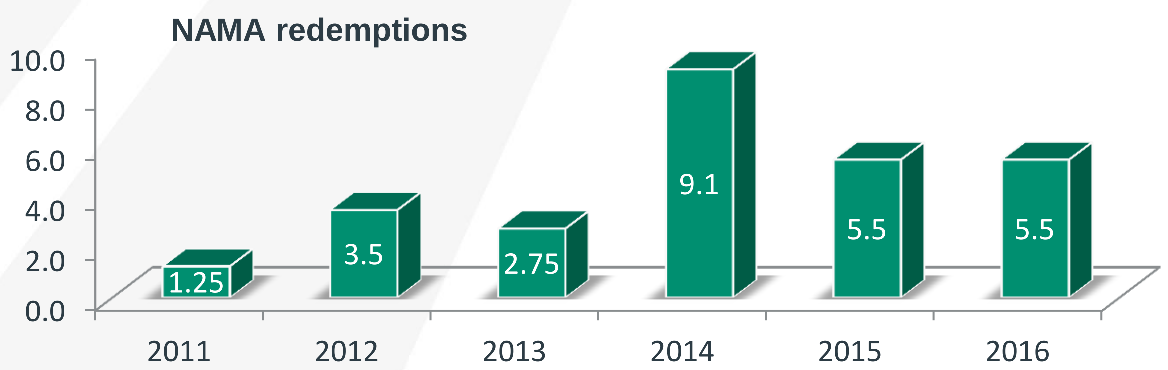
NAMA: 91% of its original debt has been repaid

- **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 €27.6bn (91%) of €30.2bn of original senior debt**
  - NAMA is meeting and exceeding its senior debt redemption targets well ahead of schedule and remains firmly on course to meet its ultimate target of redeeming all of its senior debt by 2018 – two years ahead of the schedule originally set when NAMA began its operations.
- **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

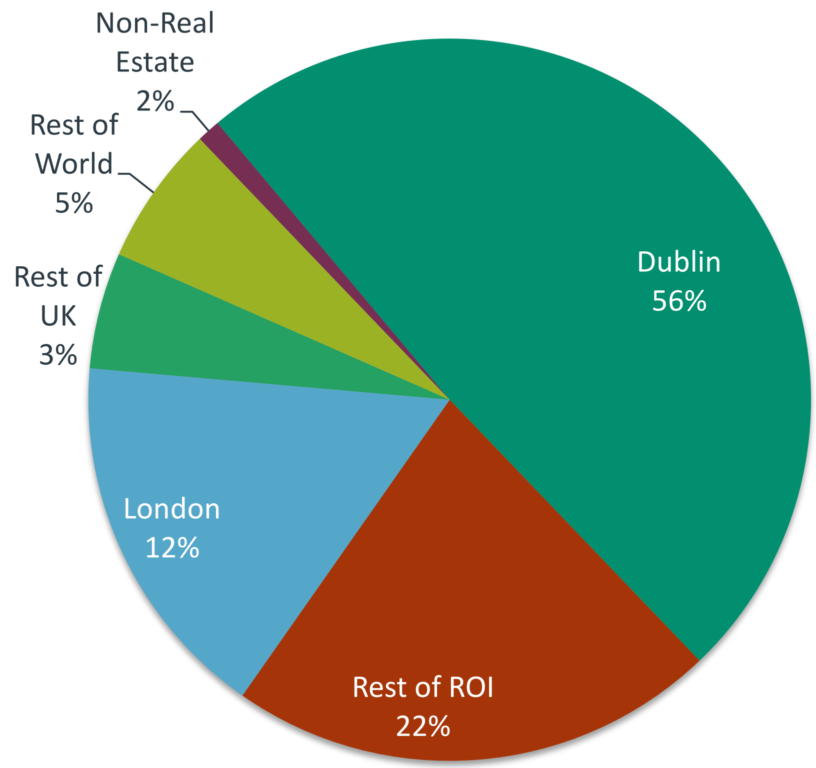
Source: NAMA



- NAMA continues to generate net profit after impairment charges.
- 2015 operating profit and impairment charges much improved than previous years
- €5.5bn of NAMA senior bonds redeemed in 2016 bringing total amount redeemed to €27.6bn (91% of its senior debt liabilities)
- All of €30.2bn in NAMA senior bonds expected to be redeemed by 2018

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**
  - 3,630 units completed since the start of 2014
  - Another 1,870 are under construction; 1,200 have funding approved but not yet under construction*
  - Planning permission have been granted for another 7,500
  - Planning applications lodged for a further 3,700 units

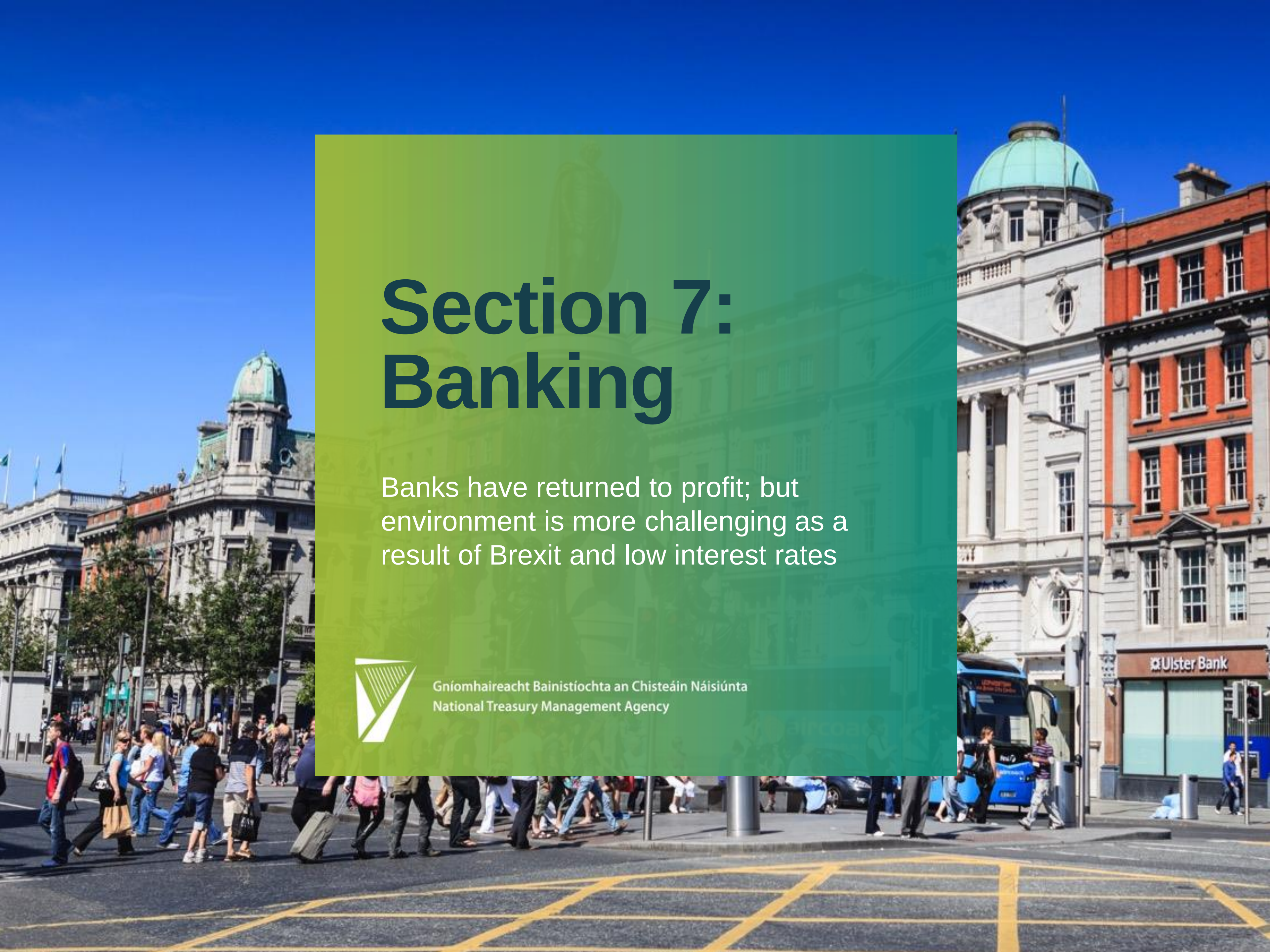
- **Existing NAMA commitments are unaffected by this new programme**
  - Plans for all senior debt to be repaid by end 2017 or early 2018 and subordinated debt repaid by March 2020 are still in train.

*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 4m sq. ft. of commercial space and 2,000 apartments could be delivered in all sites.
  - 47,500 sq. ft. of construction completed with another 1.4m sq. ft. of construction commenced. Planning has been granted on another 1.1m sq. ft.

- **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-September 2016, 2,713 have been confirmed as suitable by local authorities while 2,291 of those having been delivered.



Section 7: Banking

Banks have returned to profit; but environment is more challenging as a result of Brexit and low interest rates

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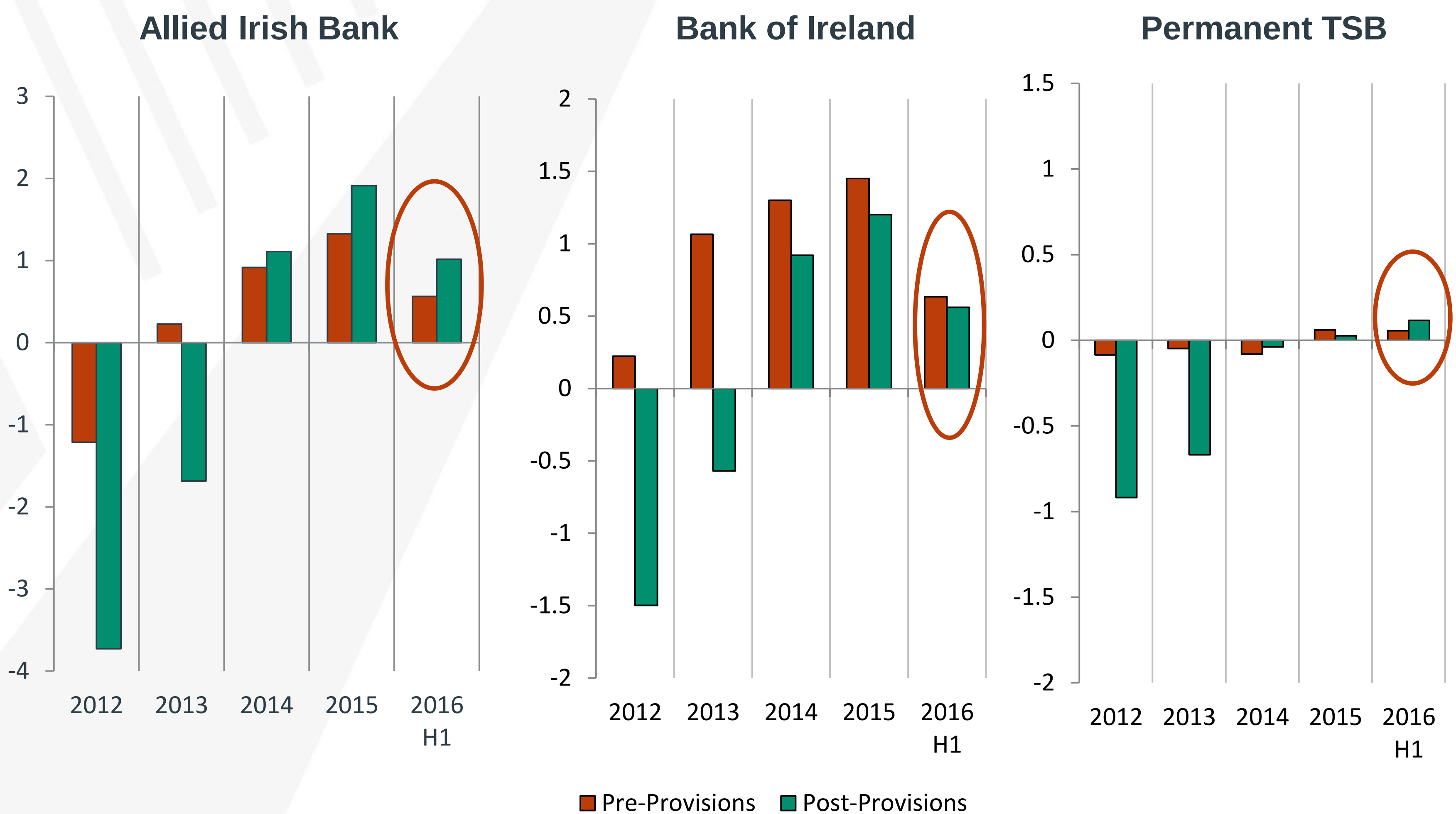
National Treasury Management Agency

All three pillar banks in profit for at least 18 months



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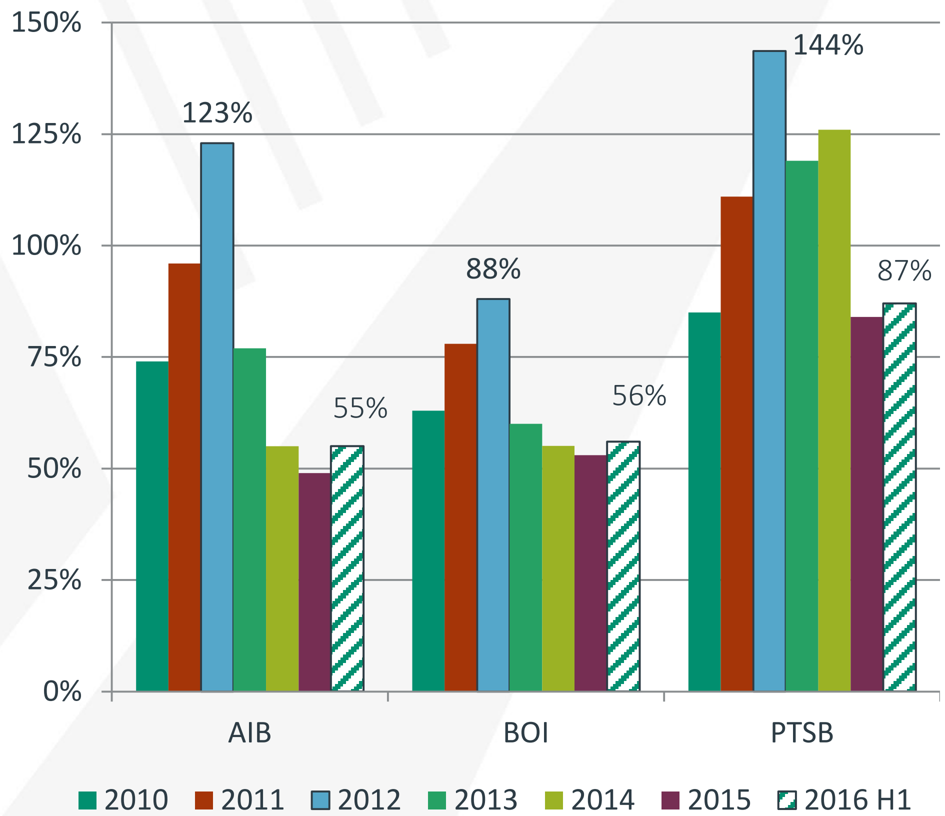
Source: Annual reports of banks - [BOI](), [AIB](), [PTSB]()

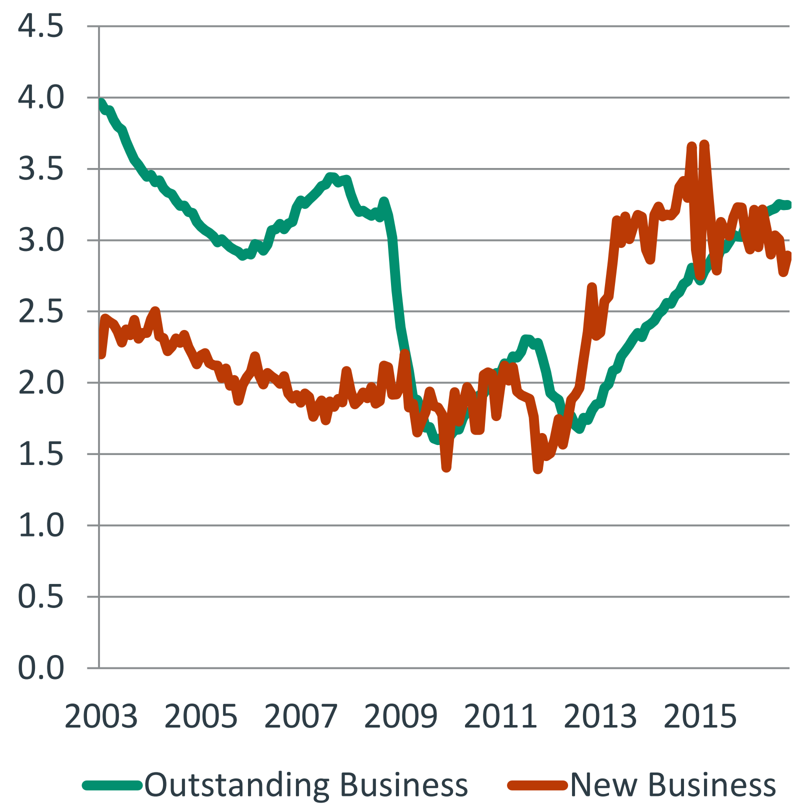
Banks fundamentally rebuild their profitability

Cost income ratios improve dramatically



Source: Annual reports of Irish domestic banks

Net interest margins recover %



Source: CBI, NTMA Calculations

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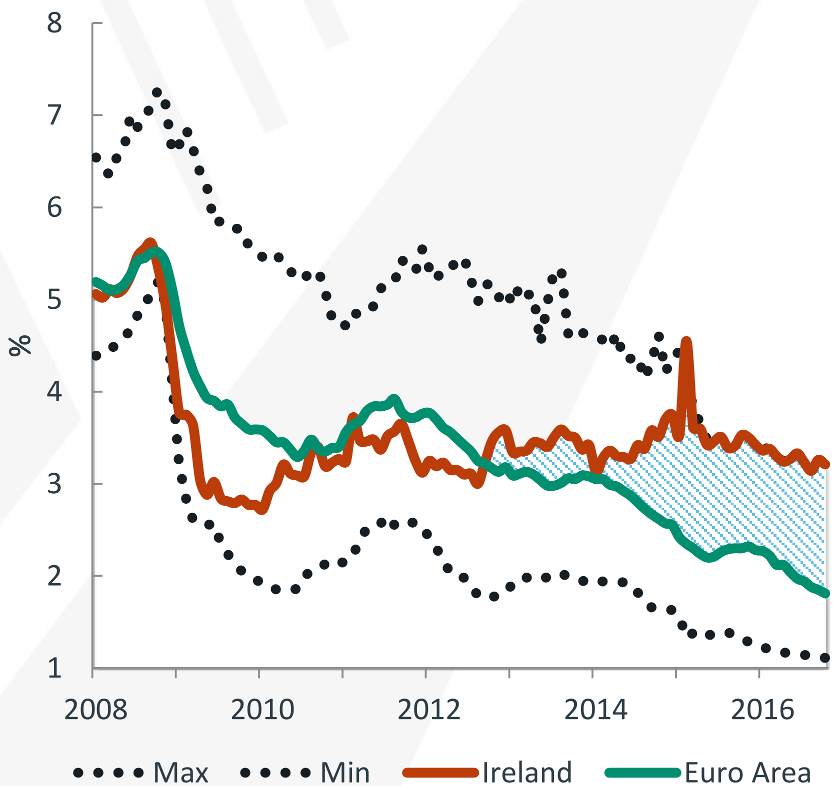
Note: Margins are derived from weighted average interest rates on loans and deposits to and from households and non-financial corporations

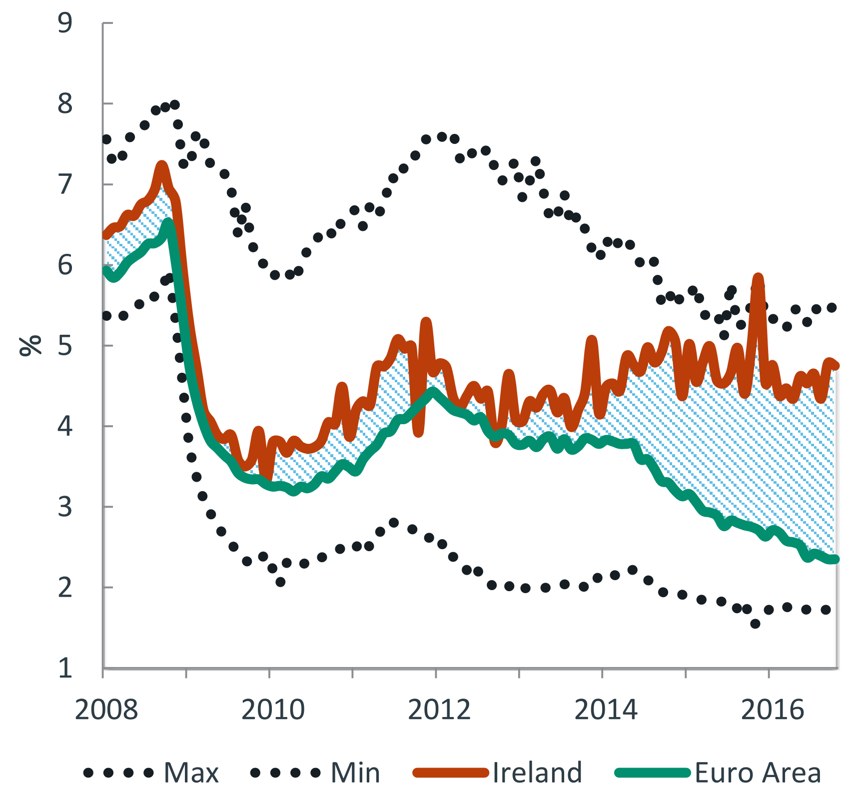
Profitability aided by higher interest rates than EA peers

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



Source: ECB

Rates on SME loans* over euro area average

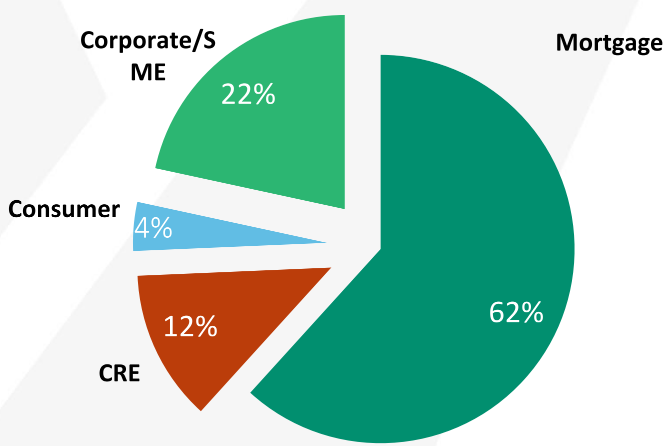


*SME loans proxy of loans <1year and <€1m to Non-Financial Corporates

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

All 3 PCAR Banks (€bn)	Dec-14	Dec-15	Jun-16
Total Loans	197.1	186.5	176.9
Impaired	43.1	29.0	26.2
(Impaired as % of Total)	21.9%	15.5%	14.8%
Provisions	23.5	14.7	12.7
(Provisions as % of book)	12.0%	7.9%	7.2%
(Provisions as % of Impaired)	54.5%	50.6%	48.5%

Loan Asset Mix (Three banks June 16)



Source: Published bank accounts

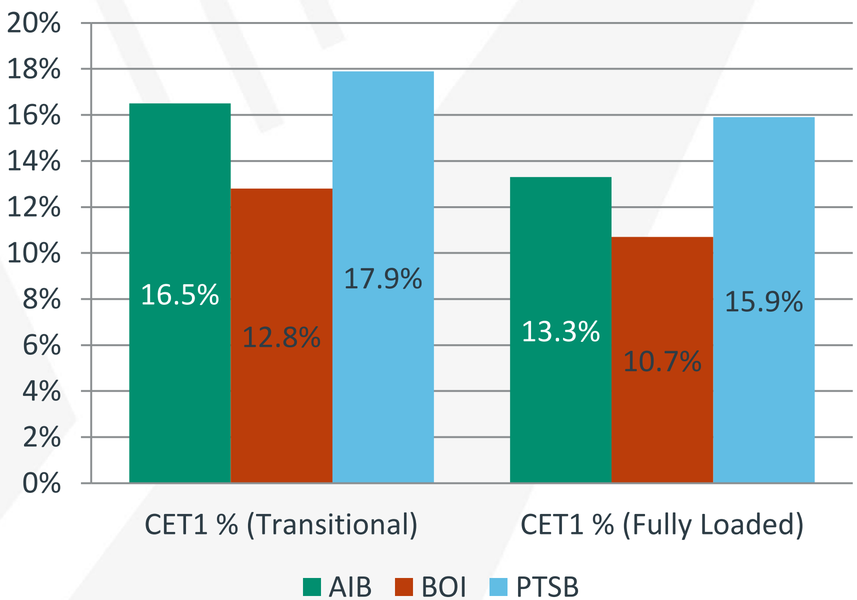
Impaired Loans % (Coverage %)[1] by Bank and Asset

		Dec-14	Dec-15	Jun-16	*Book (€bn)*
BOI	Irish Residential Mortgages	12.6(46)	9.3(52)	10.7(40)	24.6
	UK Residential Mortgages	2.0(23)	1.6(22)	3.7(8)	24.8
	Irish SMEs	25.6(51)	21.9(52)	20(53)	9.2
	UK SMEs	16.9(44)	11.1(51)	8.8(50)	2.1
	Corporate	5.6(54)	4.6(59)	4.2(62)	9.1
	CRE - Investment	37.2(46)	28.5(53)	26.4(54)	10.3
	CRE - Land/Development	89.5(74)	84.8(76)	78.9(75)	1.5
	Consumer Loans	6.4(98)	4.1(105)	3.3(106)	3.6
		18.2(50)	**11.6(56)**	**11.7(49)**	**85.1**
AIB	Irish Residential Mortgages	22.6(40)	16.6(38)	15.0(41)	33.8
	UK Residential Mortgages	11.6(59)	10.8(50)	10.6(51)	2.0
	SMEs/Corporate	21.4(68)	11.5(63)	10.4(55)	17.6
	CRE	56.9(62)	37.4(61)	33.7(56)	10.5
	Consumer Loans	27.2(69)	19.9(70)	19.3(64)	3.3
		29.2(51)	**18.6(47)**	**16.8(47)**	**67.1**
PTSB	Irish Residential Mortgages	25.5(46)	23.6(49)	22.5(50)	21.1
	UK Residential Mortgages	1.5(60)	3.9(39)	3.6(50)	3.1
	Commercial	74.0(60)	35.8(69)	33.7(96)	0.3
	Consumer Loans	29.7(94)	27.0(93)	26.6(86)	0.3
		24.5(51)	**21.1(49)**	**20.3(51)**	**24.7**

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

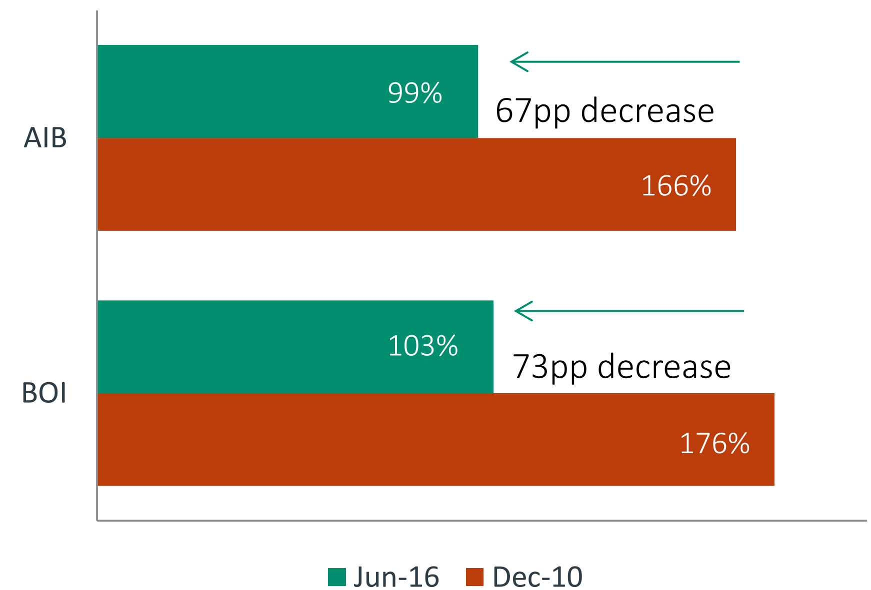
Capital and loan-to-deposit ratios have been strengthened

CET 1 Capital Ratios (Jun-16)



Source: Published bank accounts

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



Source: Published bank accounts

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

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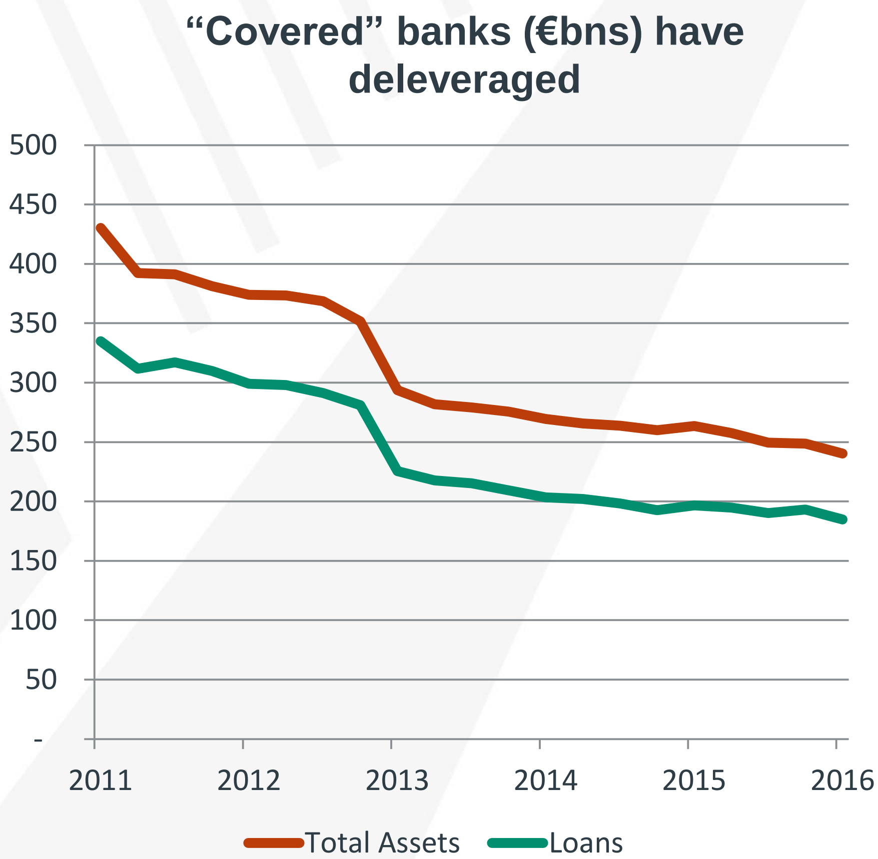
Note: "Transitional" refers to the transitional Basel III required for CET1 ratios which came into effect 1 January 2014. "Fully loaded" refers to the actual Basel III basis for CET1 ratios.
* The fully loaded CET1 ratios exclude the 2009 preference shares.

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



Aggregated Balance Sheet end Q1 2016 €bn	
Assets	240.4
• Loans and receivables	184.7
• Cash & other liquid assets	41.1
• Other	14.6
Liabilities	216.7
• Deposits	175.1
• Other Liabilities	41.7
Equity & Minority Interest	23.7

Source: CBI

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-2015	% of Group Total
Total Income	c. €820m	25.0%
Credit Outstanding	€39.8bn	44.0%
Operating Profit	€284m	19.6%
Impairment charge	(€139m)	47.0%

AIB UK exposure

	End-2015	% of Group Total
Total Income	€347m	13.2%
Credit Outstanding	€11.5bn	16.3%
Operating Profit	€185m	13.9%
Impairment charge	€44m	4.7%

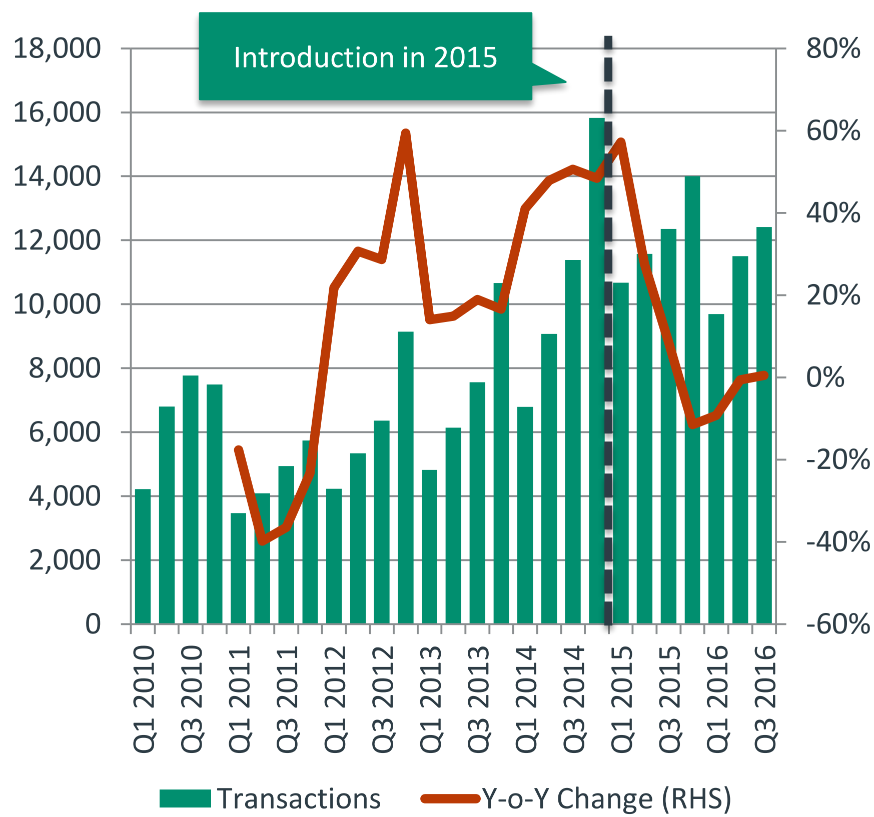
Source: Published bank accounts

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 picking up in recent months

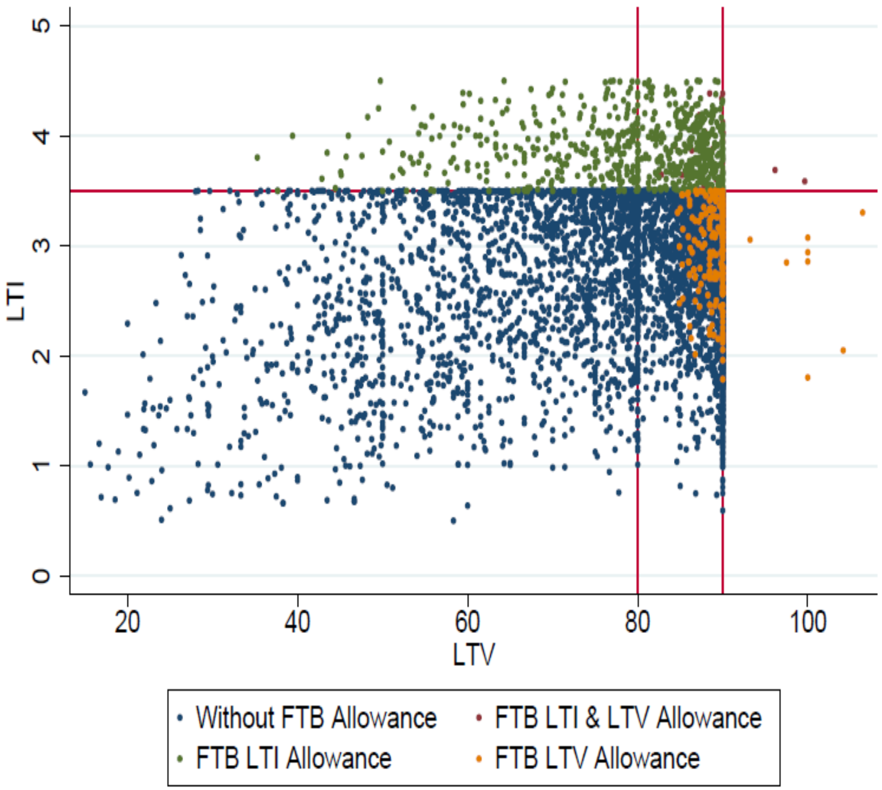


Source: Residential Property Price Register

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

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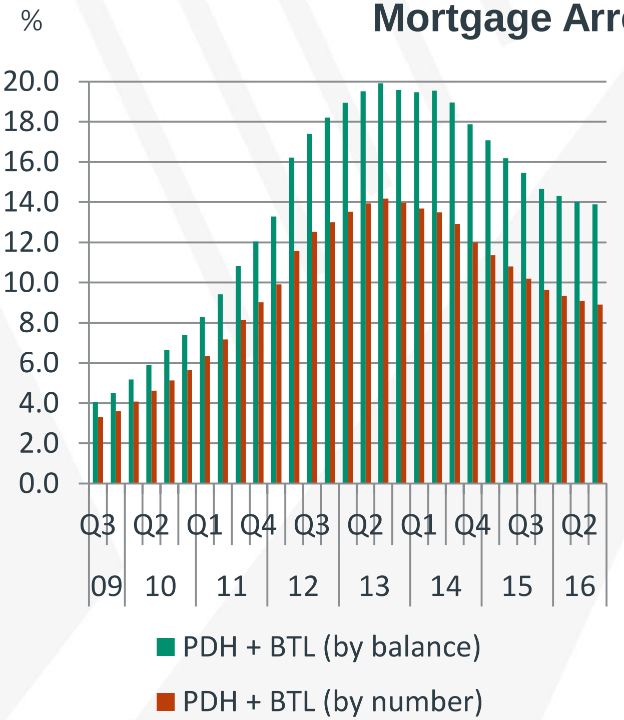
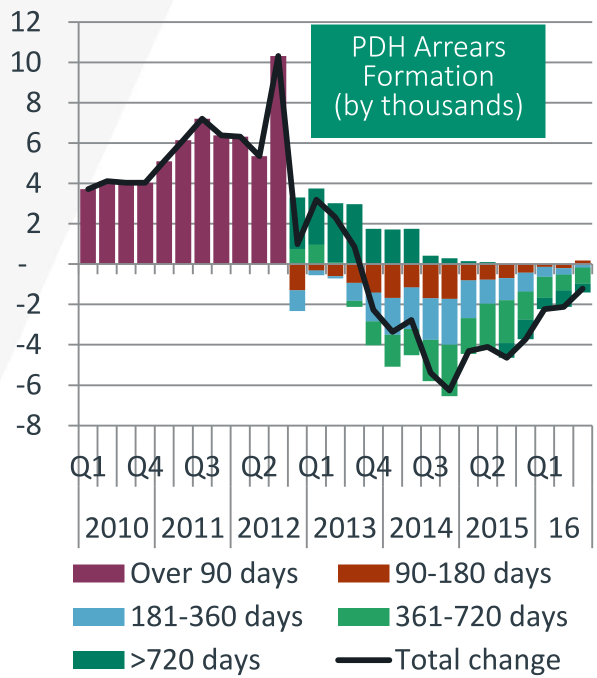
Source: CBI

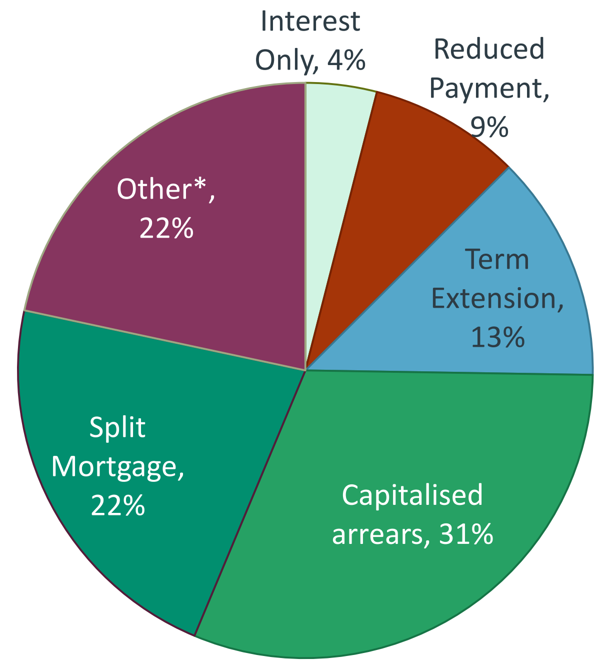
Irish residential mortgage arrears are improving across all duration categories; environment still dysfunctional

Mortgage Arrears (90+ days)





Total Restructurings



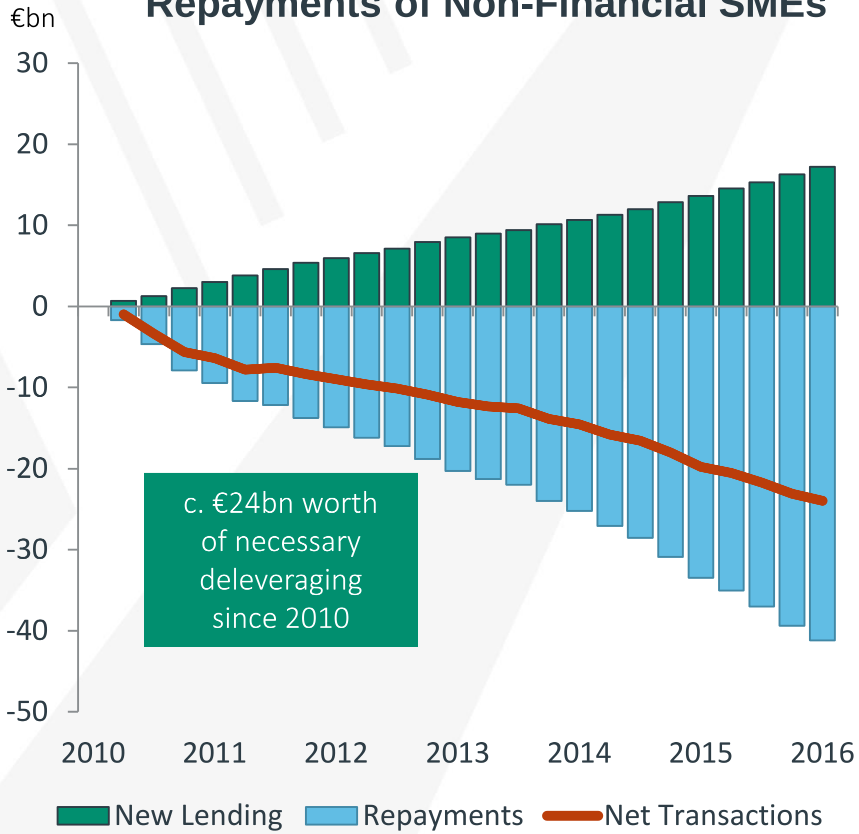
Source: CBI

- 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.

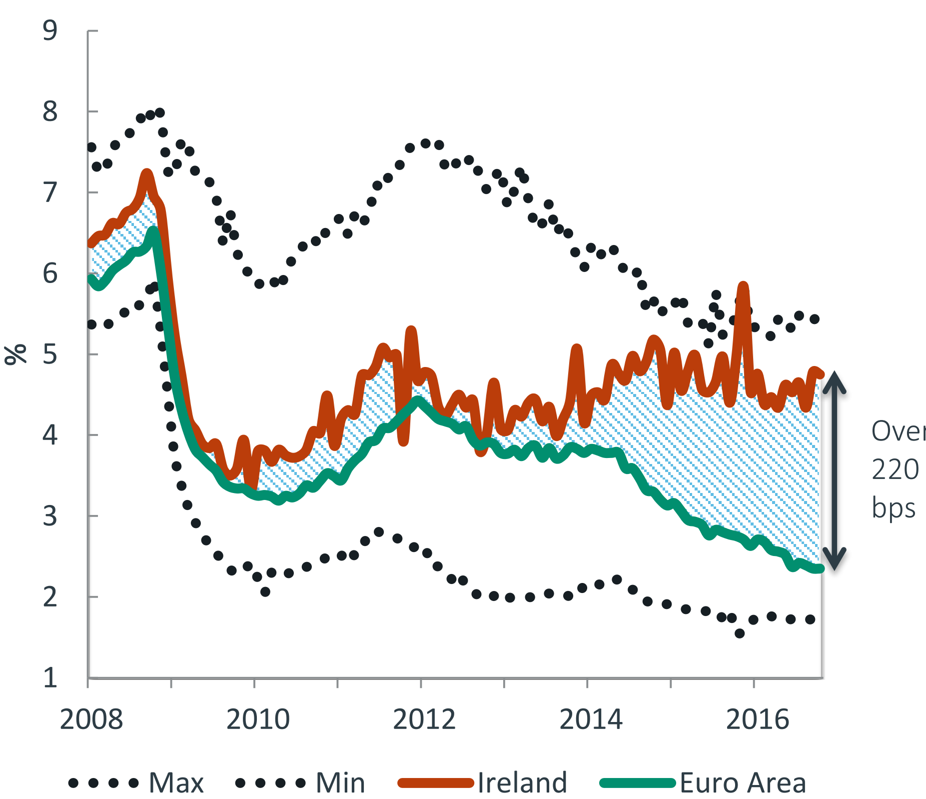
* 'Other' comprises accounts offered temporary Interest rate reductions, payment moratoriums and long-term solutions pending six months completion of payments.

SME deleveraging continuing as dispersion in interest rates persists across EA

Accumulated New Lending and Repayments of Non-Financial SMEs



Rates on loans (<1yr, <€1m) to Irish NFCs over 220bps over EA average



Source: CBI; ECB

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Note: Annualised Agreed Rate is defined by the ECB as 'the interest rate that is individually *agreed* between the reporting agent and the NFC for a loan, converted to an annual basis and quoted in percentages per annum. The rate shall cover all interest payments on loans, but no other charges that may apply.'

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