National Treasury Management Agency

IRELAND'S STRONG GROWTH IS UNDENIABLE

GDP exaggerates the size of the economy, yet Government debt service capacity is improving and unemployment is below 8%

July 2016

Index

SUMMARY

Ireland’s 100 year note issuance indicative of country’s turnaround

Ireland’s headline numbers distorted; underlying growth strong but Brexit will slow pace

- **The level of Ireland’s GDP and GNP is exaggerated by new multinational companies’ activity; behind the headline numbers, Ireland is growing faster than every other euro area country**
  - Ireland’s economy grew by 26.3% real and 32.4% nominal in 2015. The National Accounts are distorted by several companies 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 strongly. Underlying nominal domestic demand is closer to 6%.
  - At the same time, employment is expanding; unemployment was down to 7.8% in June.
  - Consumer spending and investment have recovered. Car sales rose almost 25% in H1. There is pent up demand for investment e.g. housing supply undershoots demand.

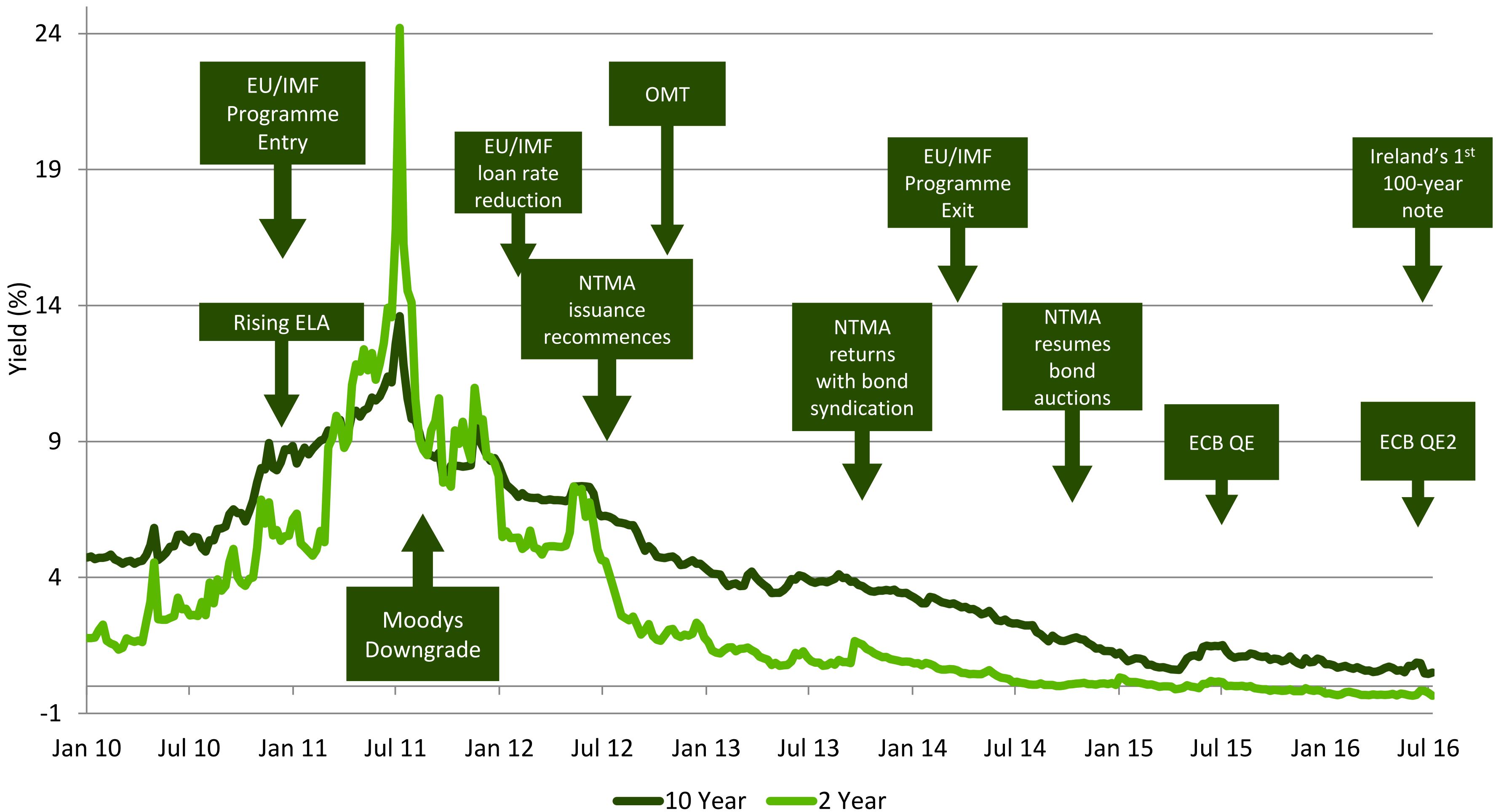
- **Brexit will slow Irish growth in H2 2016, 2017**
  - The UK may enter recession after its vote to leave the EU: for every 1% drop in UK GDP Ireland’s may fall by 0.3-0.8%. Growth this year will not be much affected, 2017 may see the impact.

- **Government debt and deficit metrics are also distorted by GDP revisions; focus should turn to other measures of Ireland’s debt serviceability**
  - Government debt-to-GDP was revised down to 78.7% and the GG deficit was 1.8% in 2015. The inflated GDP denominator means other metrics of debt serviceability are required.
  - Debt-to-GG Revenue (285%), interest as % of revenue (9.6%) and the average interest rate on Ireland’s debt (below 3.4%) are more apt measures for comparison with other sovereigns.
  - Excluding the distortions, Ireland’s fiscal picture is improving. Ireland is in primary surplus, revenue data for H1 2016 were strong and spending has been restrained in the main.

Funding is light in 2016; €5.6 of €6-10bn max complete

- **Funding Plan for 2016**
  - NTMA planned to issue €6-10 billion of long-term bonds over the course of 2016
  - Funding is light thanks to small GG deficit and October 2017 is the next bond redemption
- **€5.6bn issued so far this year**
  - 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%.
  - On May 12th, €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 had a yield of 2.35%.
  - Our next scheduled bond auction is on September 8th, as per the NTMA's Q3 statement
  - The investor base continues to expand: In January international investors bought 88% 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 hoovered 17%.
- **2015 was a strong year for the NTMA**
  - We raised €13bn from a stated range of €12-15bn at the outset of 2015.
  - The NTMA completed the early repayment of IMF loans in 2015. A total of €18bn worth of loans was refinanced: total interest cost savings could exceed €1.5bn (0.8% of GDP) over five years. The NTMA issued its first ever 30-year bond in February 2015.

Ireland's happy bond market story has lots of milestones



Source: Bloomberg (weekly data)

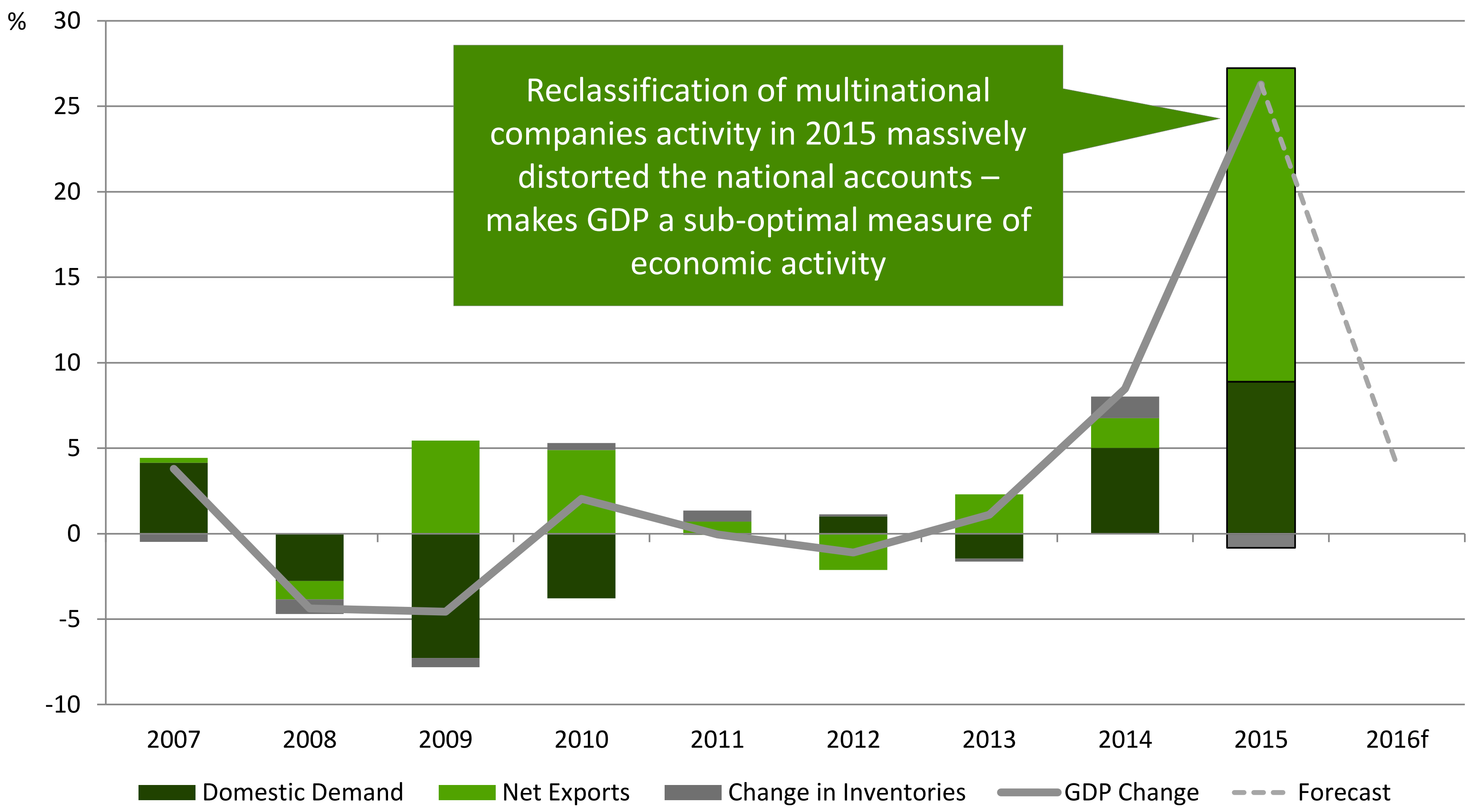
Ireland: A grade from all major credit rating agencies

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

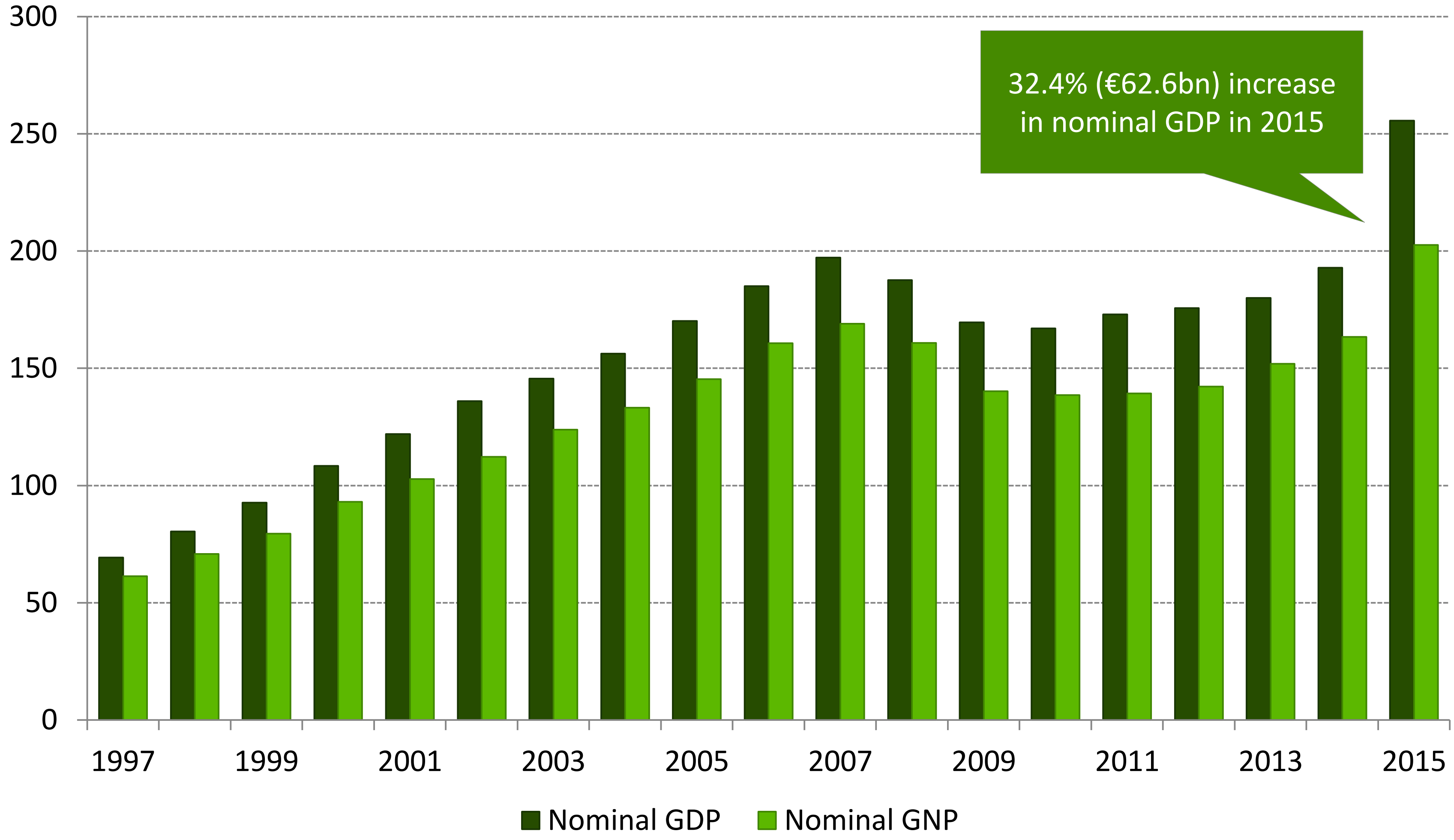
Headline GDP/GNP are misleading following recent revisions; Employment and consumption better reflect reality

Massive distortions make GDP/GNP poor indicator of economic performance



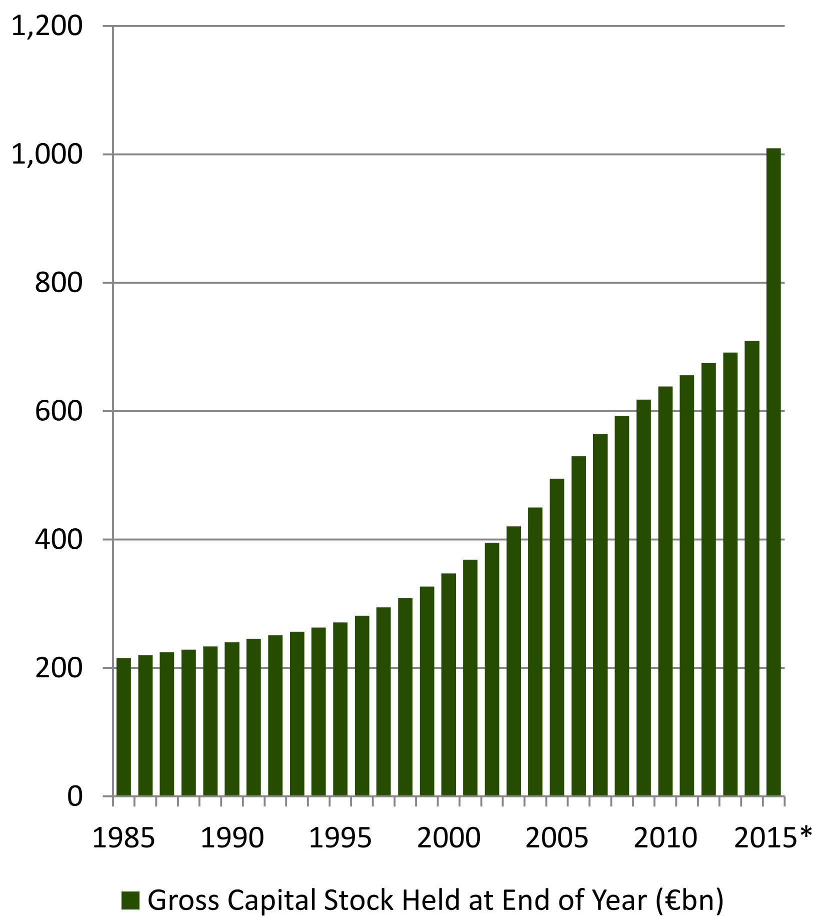
Source: CSO; Department of Finance

Nominal GDP and GNP (€bn) ballooned in 2015



Source: [CSO]

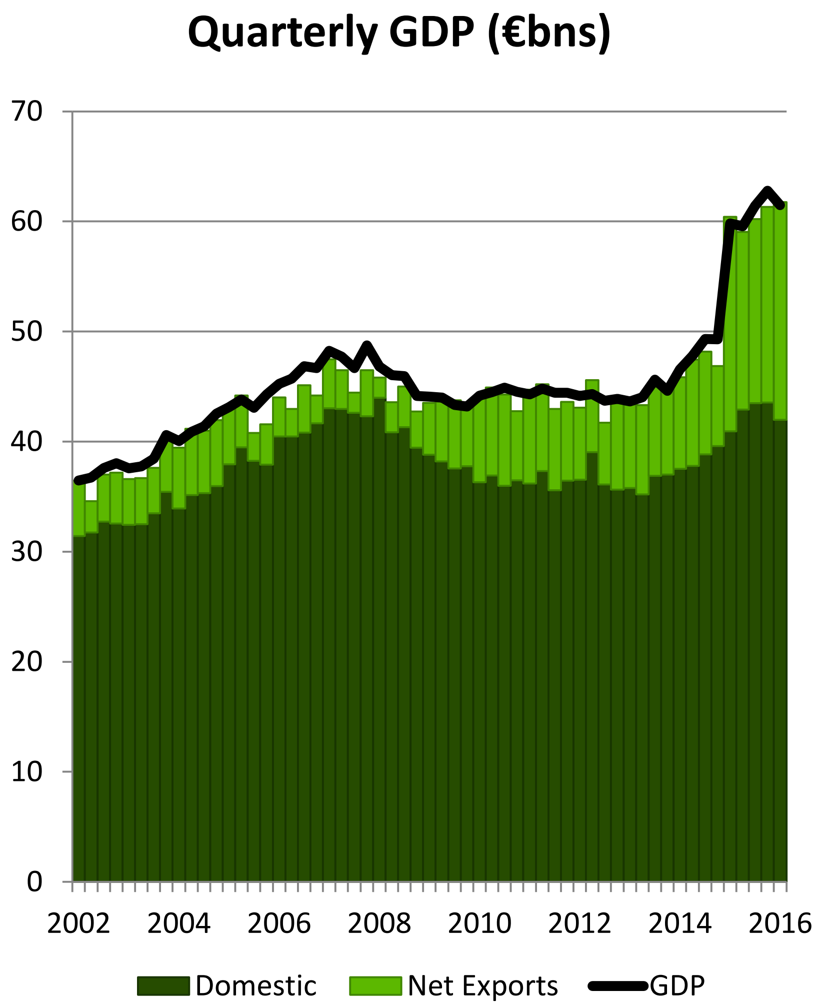
Reclassification of several companies as resident in Ireland in 2015 led to step change in capital stock



Source: CSO *preliminary estimate

- Whether by re-domiciling or by inverting, the reclassification of several large companies as Irish resident expanded the capital stock in 2015 by c. €300bn or c. 40%.
- The transfer of whole entities of this size is not something seen before in Ireland.
- It is important to note that the reclassification only affects the stock and is not included in the flow data (i.e. investment).
- The capital stock will have likely increased naturally through other investment. The reclassification will have dwarfed this growth however.

Quarterly data shows step-change in net exports

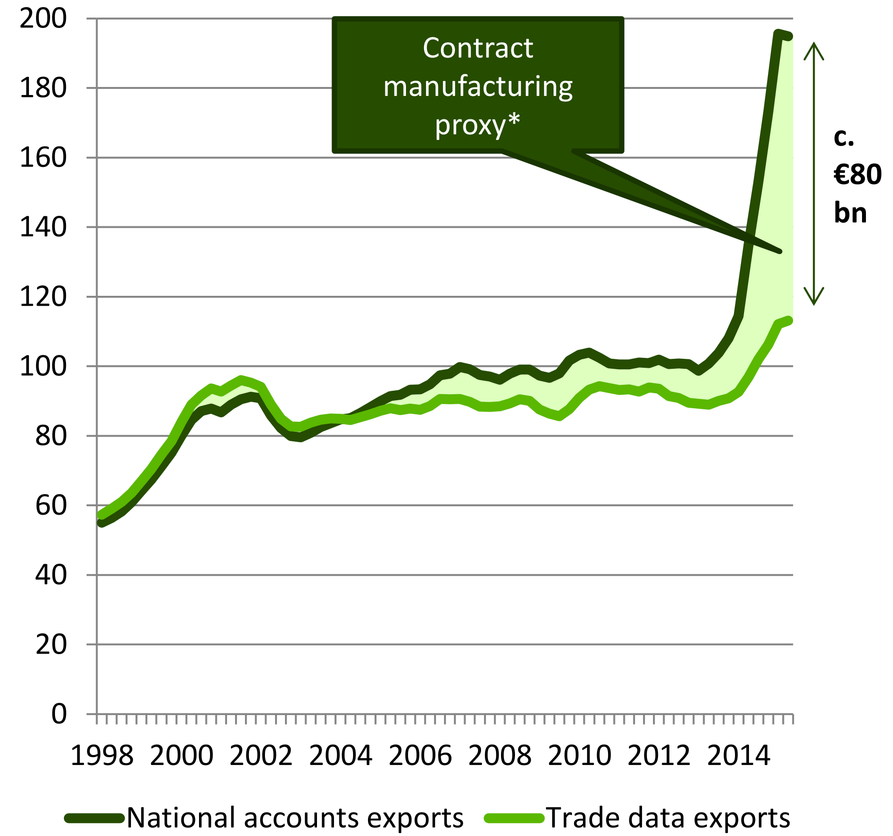


Source: CSO; NTMA workings

- The goods produced by the additional capital were mainly exported.
- This resulted in a step change in net exports Q1 2015. Net exports grew by 102.4% in 2015
- Complicating matters, the goods were produced through "contract manufacturing" (explained in detail overleaf).
- The result of contract manufacturing is this goods export is recorded in the Irish Balance of Payments even though it was never produced in Ireland. Irish GDP is inflated as a result.
- There is little or no employment effect in Ireland from this contract manufacturing.

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

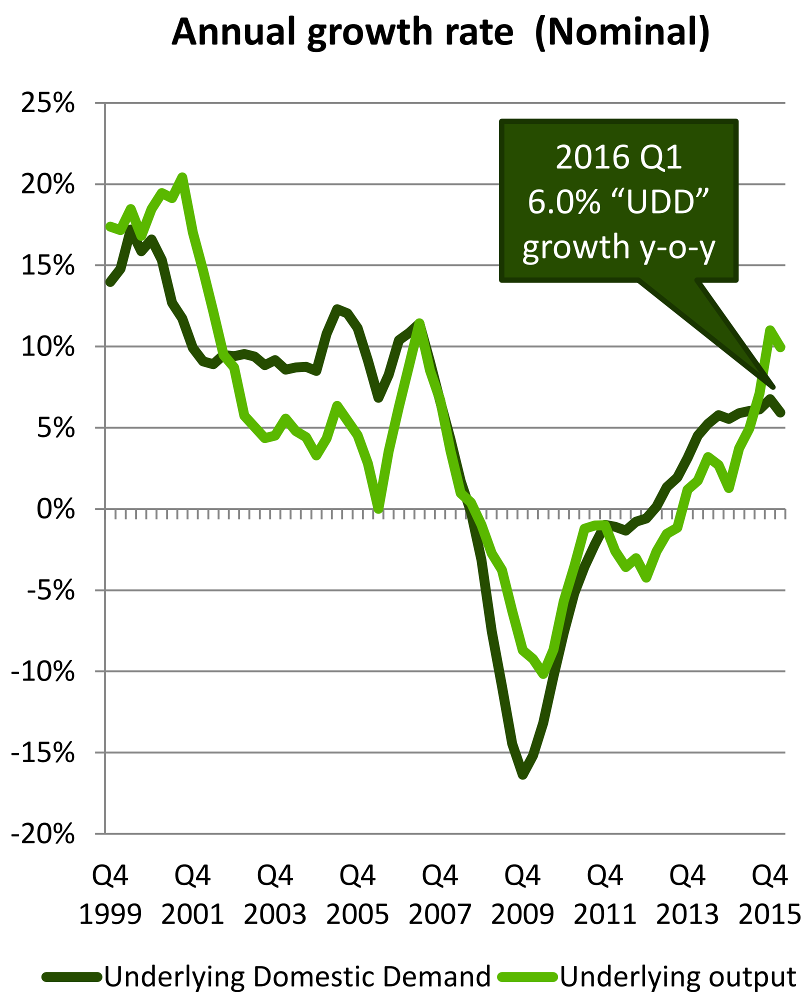
- CM occurs where a company in Ireland engages another abroad to manufacture products on its behalf
- Crucially, no change of economic ownership is deemed to occur. Instead, the foreign contract manufacturer supplies a manufacturing service to the Irish entity and never takes ownership of the product being produced. When the product is sold abroad, a change of economic ownership takes place between Ireland and the country of the buyer of the product.
- 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 since the company would send royalties back to its parent as a royalty import. However now that the parent is here, Ireland's GDP is artificially inflated.



Source: CSO, NTMA Calculations

*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 DD" and "underlying output"

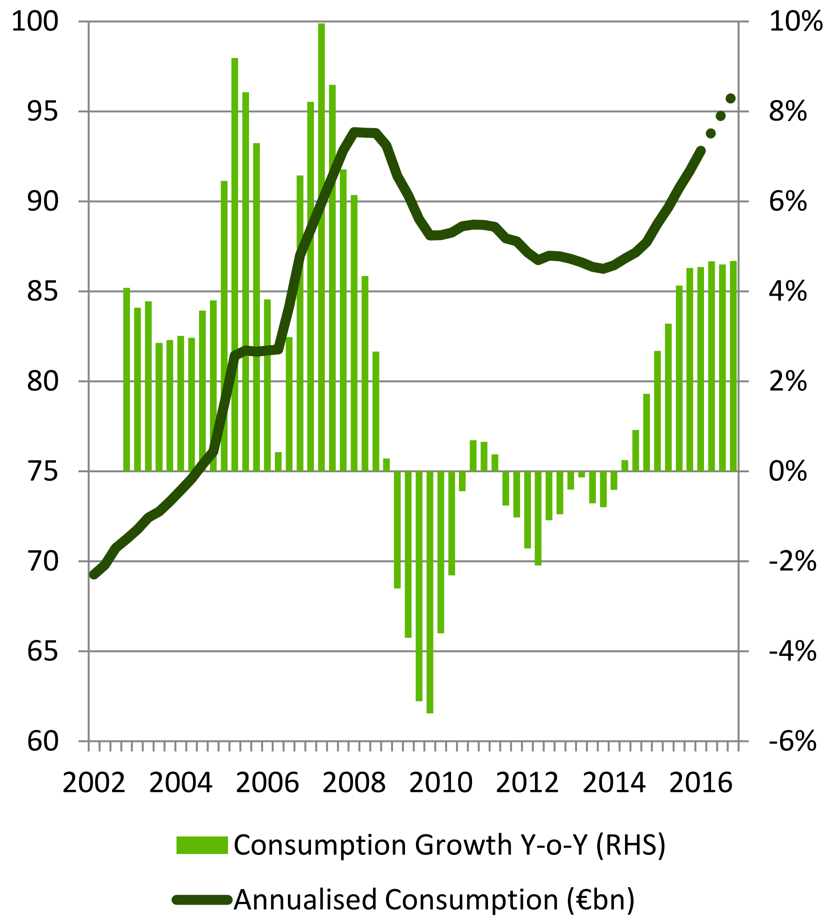


- Measures are constructed to strip out the distorting effects of MNCs
- On a current price basis, underlying domestic demand (UDD) includes:
  - private consumption
  - government consumption
  - investment less intangibles and transport equipment.
- Our "underlying output" incorporates a new measure for net exports alongside underlying domestic demand
- The adapted net exports 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 11% at end-2015.

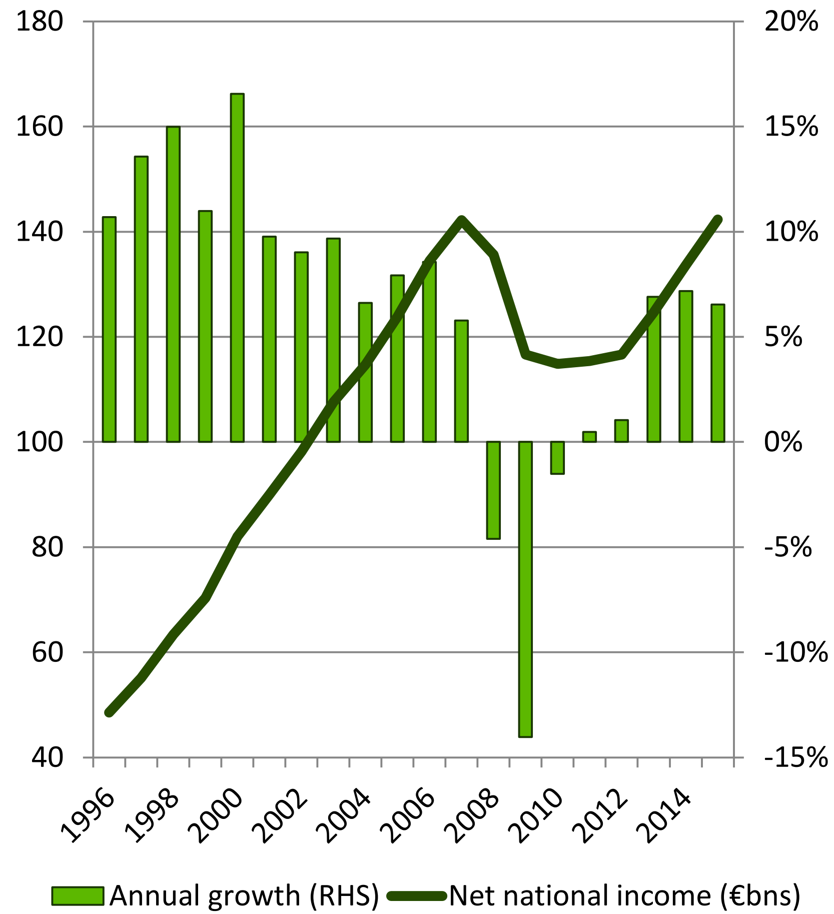
Source: CSO, NTMA calculations

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

Private consumption grew at 4.5% y-o-y in 2015…



…Net National Income: 6.5% y-o-y



Source: CSO, Department of Finance forecasts

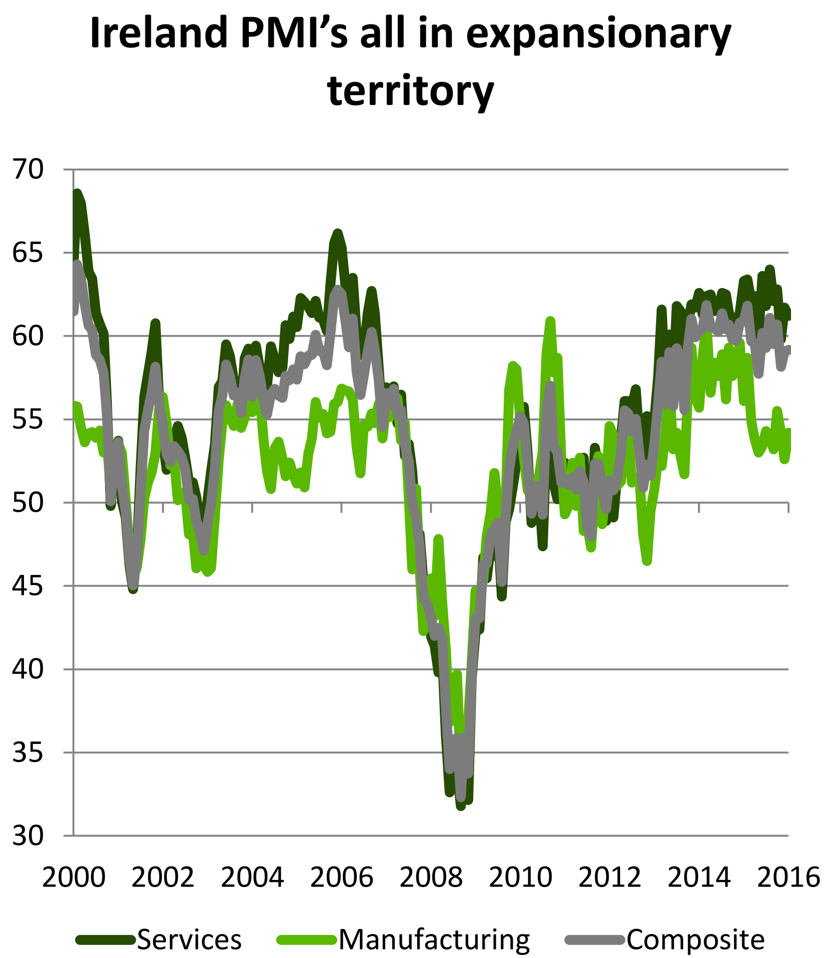
Comparison of economic activity metrics

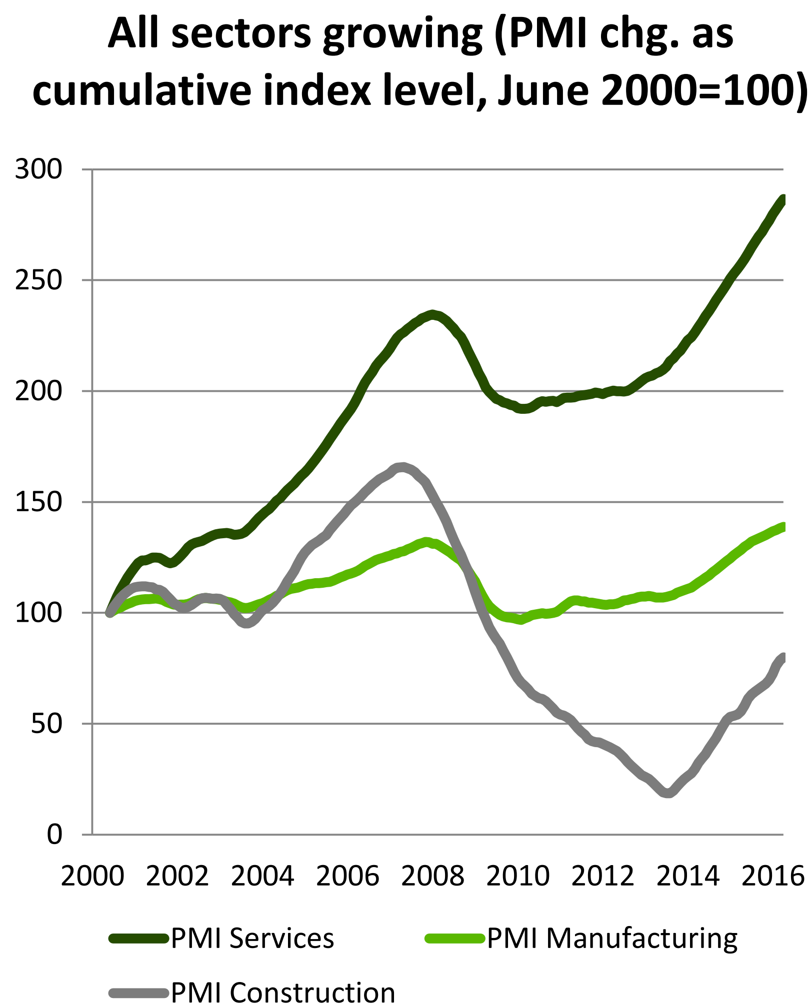
Measures	Growth rate for 2015	EA average
GDP (real)	26.3%	1.9-2.0%*
GNI (real)	18.7%	1.5%
Underlying domestic demand (nominal)	6.8%	-
Underlying output (nominal: see page 14)	11.0%	-
Consumption (real)	4.5%	1.6%
Employment	3.1%	1.0%
Net National Income	6.5%	-
GG Revenue	7.3%	2.5%

Source: CSO, Eurostat, NTMA calculations

* rough estimate including Irish GDP revisions

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

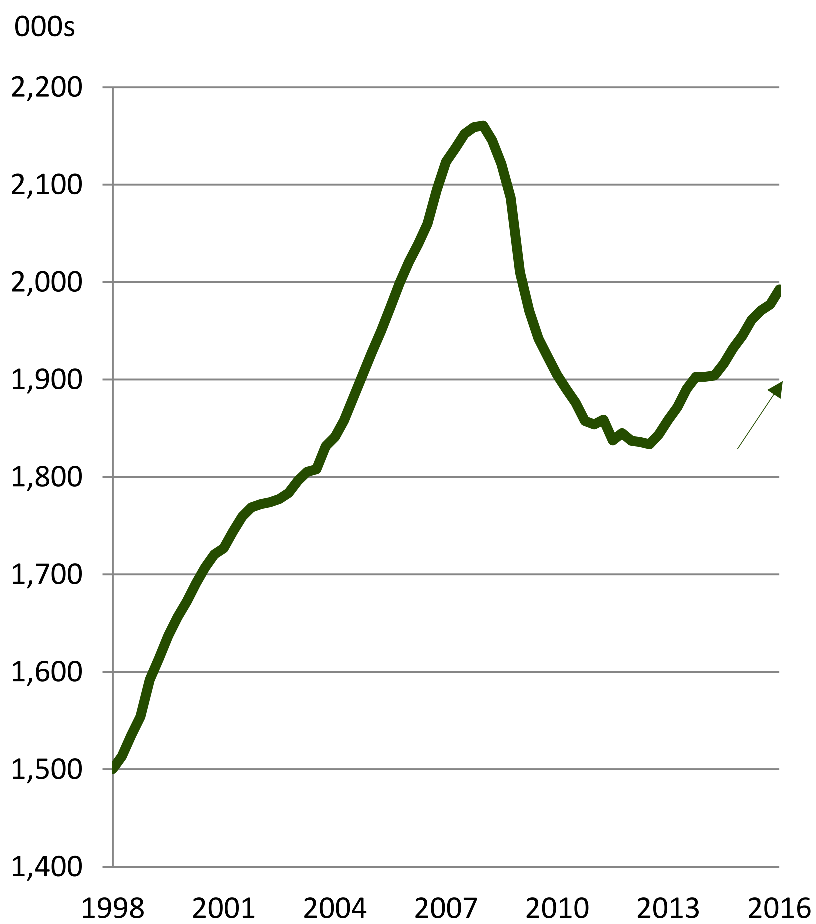




Source: Markit; Bloomberg; Investec ; NTMA workings

Labour market has rebounded since 2012

Employment up 8.4% from cyclical low

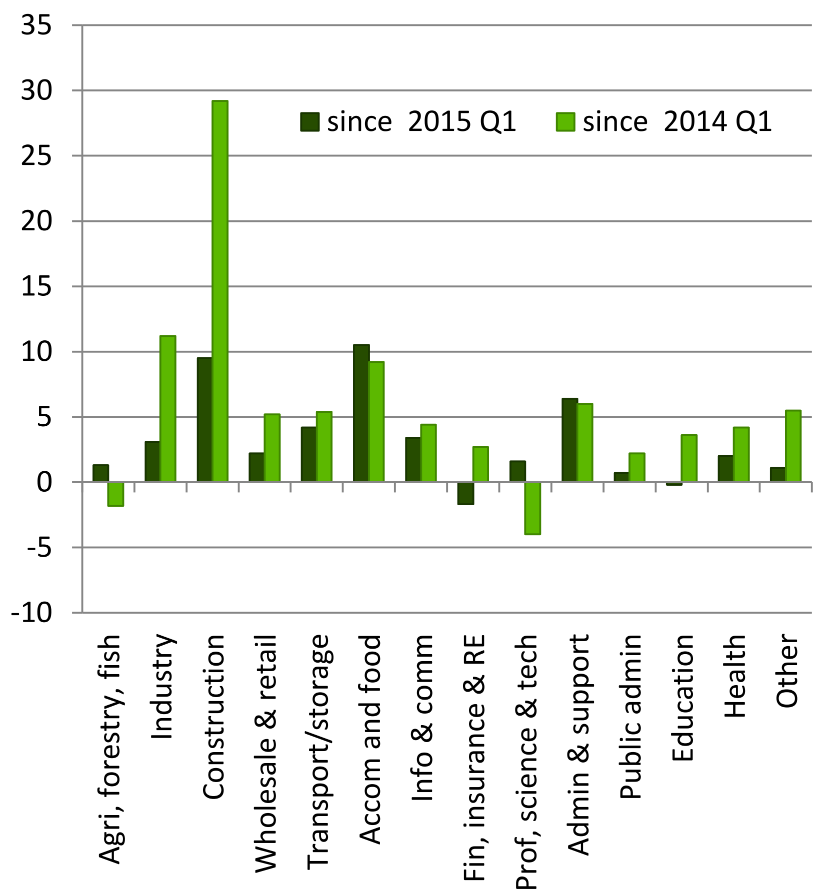


Unemployment rate at 7.8% in June 2016

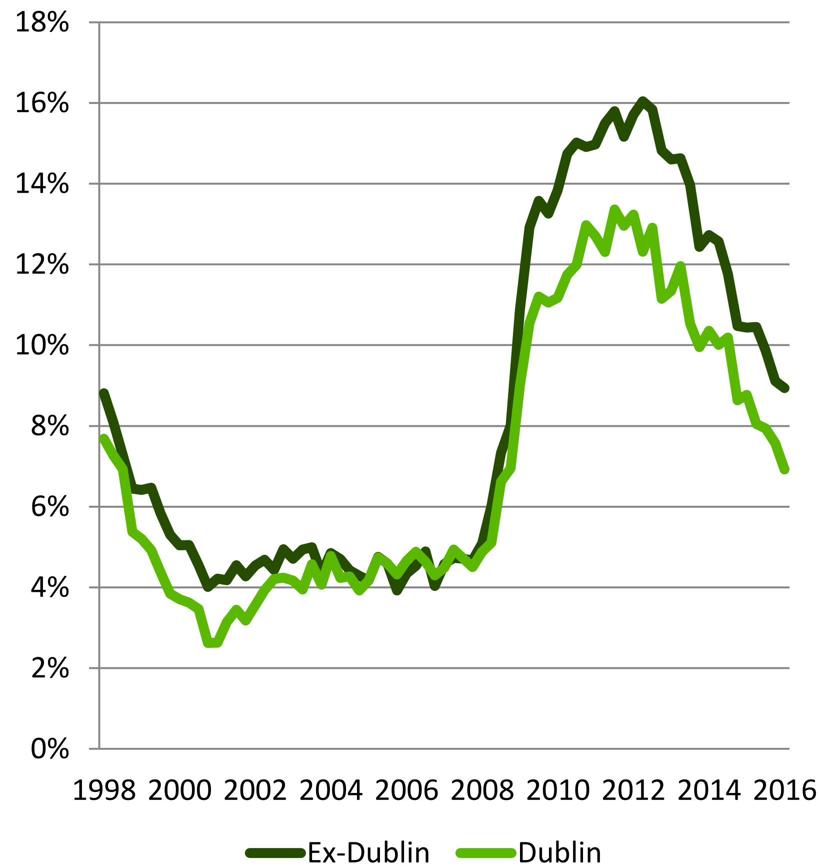
Source: [CSO]

Employment growth is broad based by sector and region

12 out of 14 sectors have seen employment growth in last year (000s)



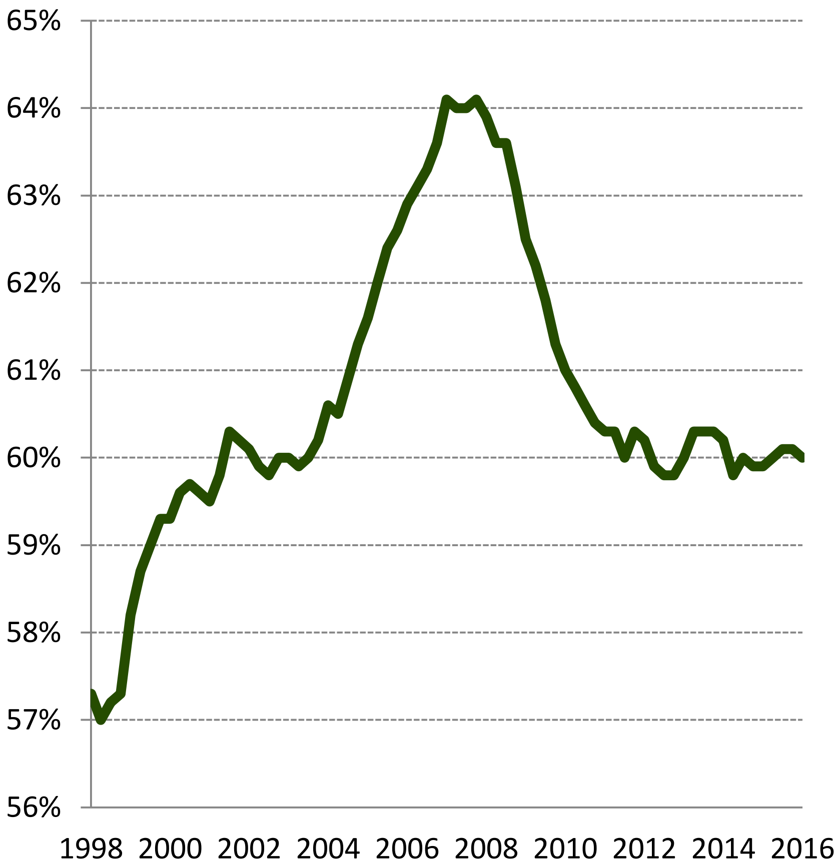
Unemployment falling across all regions in Ireland



Source: [CSO]

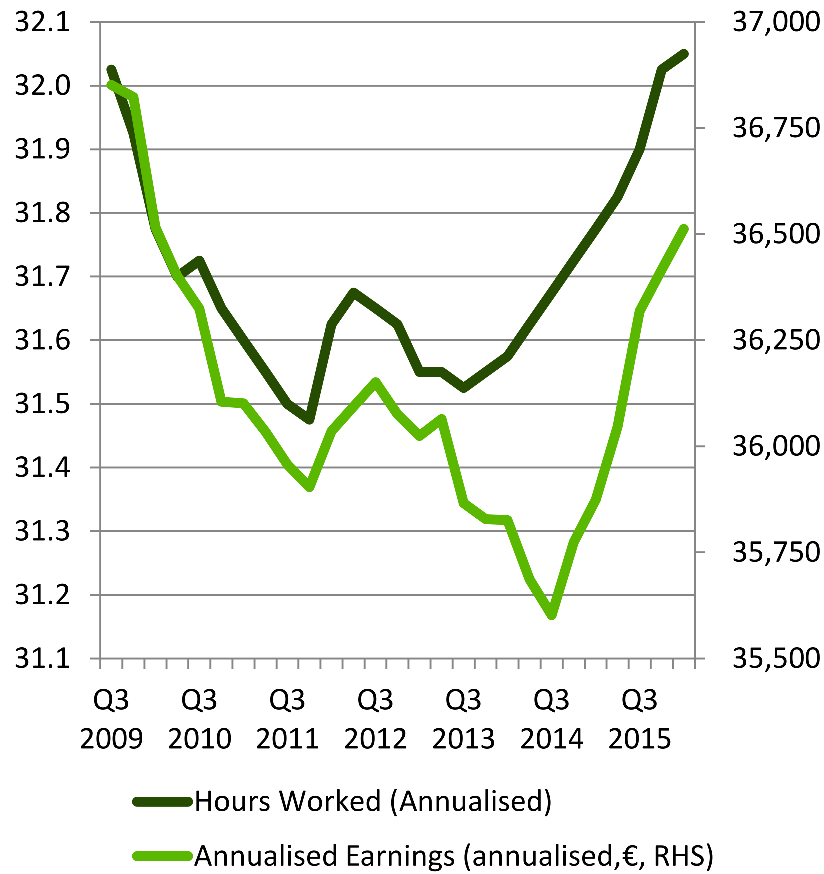
Labour participation has not yet recovered – similar to US; Wages only now rising, pointing to slack in market

Participation rate hovering around 60%



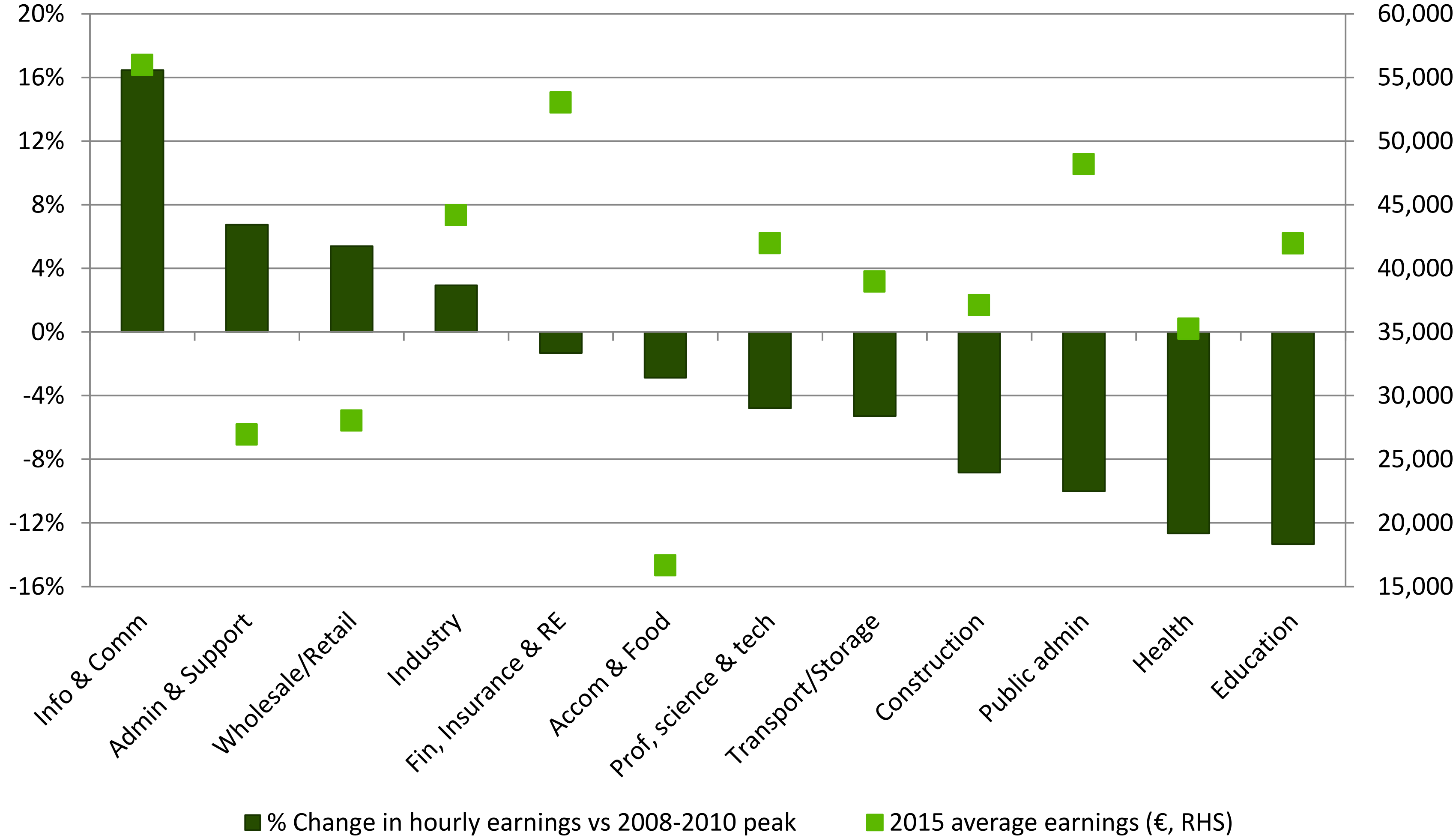
Source: [CSO]

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



Source: [CSO]

Wide disparity in wages across sectors



Source: CSO, NTMA analysis

Unemployment falling across Europe; falling faster in Ireland

	Q4 2013	Q4 2014	Q4 2015	May 2016*
Germany	5.0	4.8	**4.5**	4.2
Netherlands	7.5	7.1	**6.6**	6.3
Ireland	11.8	10.0	**8.7**	7.8
Belgium	8.5	8.6	**8.7**	8.4
EU28	10.6	10.0	**9.1**	8.6
France	10.1	10.8	**10.6**	9.9
Euro Area	11.9	11.6	**10.6**	10.1
Italy	12.7	13.3	**12.0**	11.5
Portugal	15.5	13.6	**12.4**	11.6
Spain	25.7	23.7	**20.9**	19.8
Greece	27.8	26.1	**24.4**	

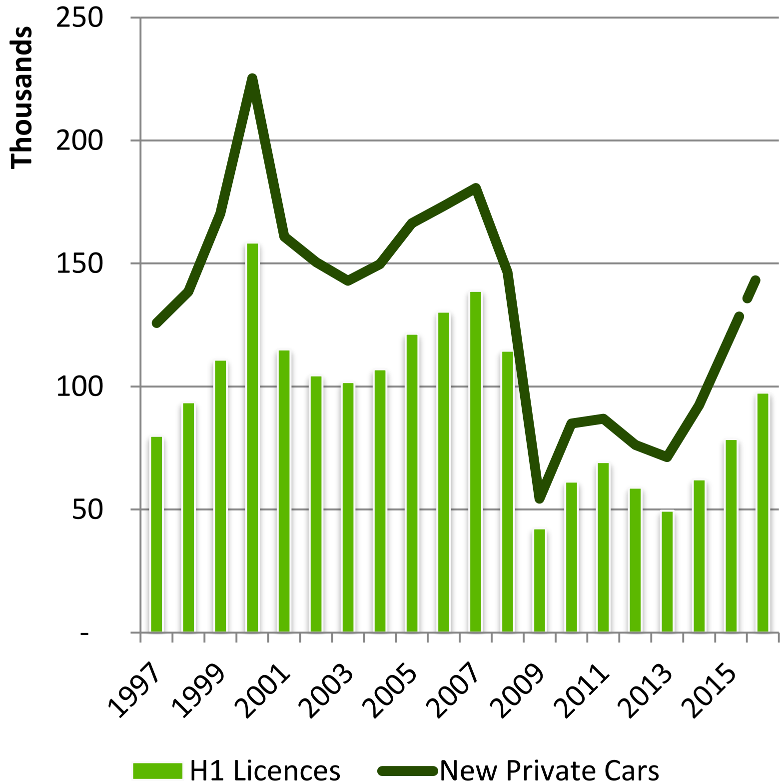
Source: CSO; Eurostat *Monthly series which may be subject to revision over time

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

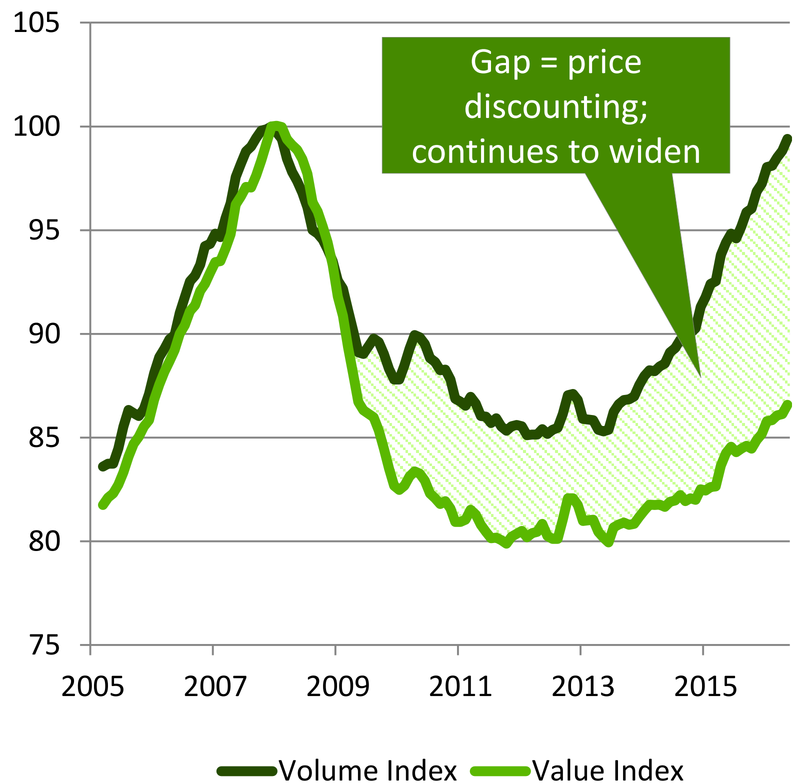
Source: KBC, ESRI, CSO; Eurostat

… car sales and core retail are seeing the benefit

New car licences - 23.9% increase in first half of 2016



"Core"* retail sales jump (peak=100)

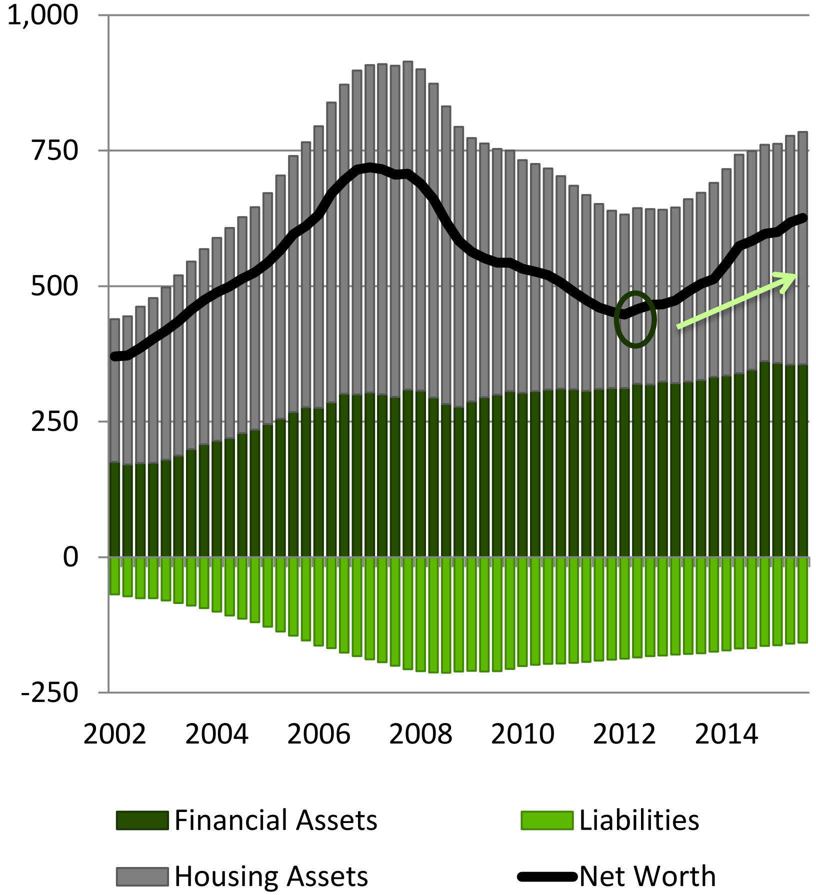


Source: CSO (licences) CSO (retail sales)

*Excluding motor trade; 3 month average used

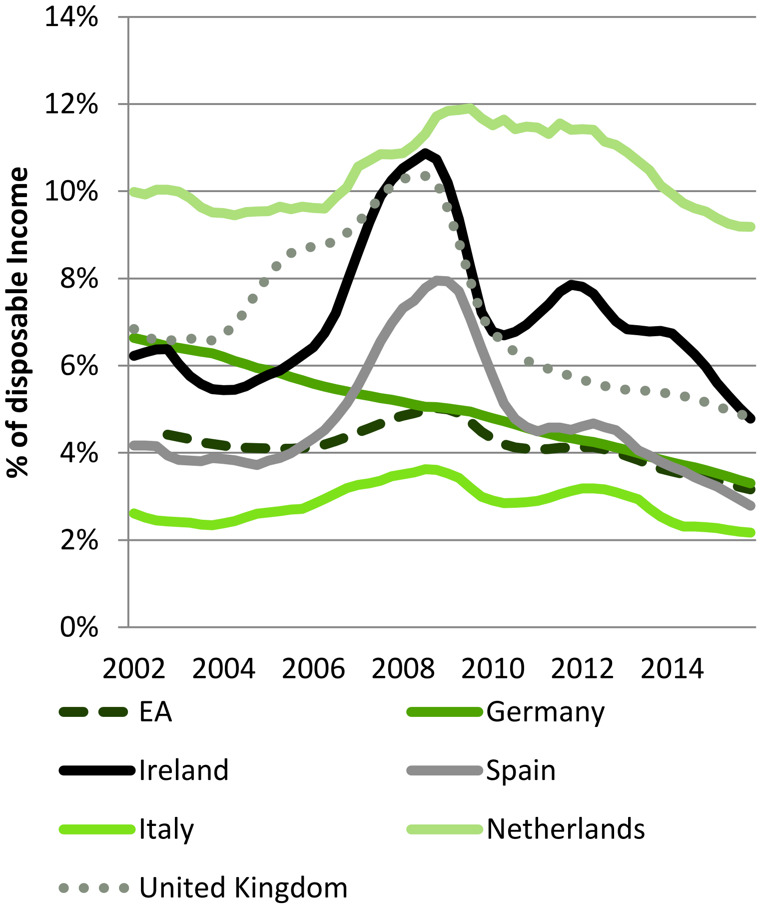
Household deleveraging continues, but at slow pace; Rising house prices bolster HH balance sheets

Household net worth (€bn) improved in 2015 and has underpinned consumer spending



Source: CBI, NTMA Calculations

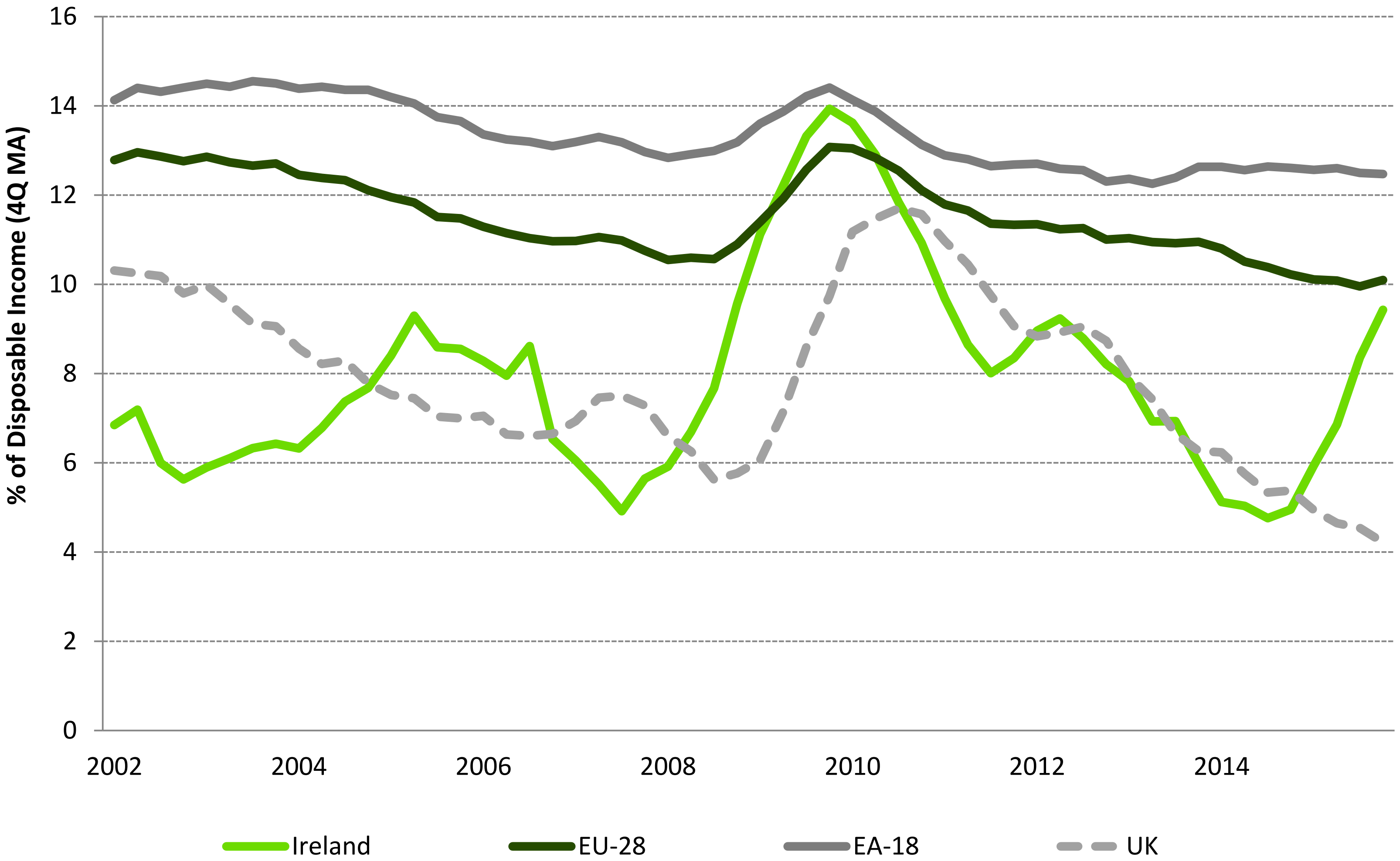
Interest burden on households has been suppressed by tracker mortgages and ECB



Source: CBI, NTMA calculations

Note: Non-trackers bare 80% of the interest burden

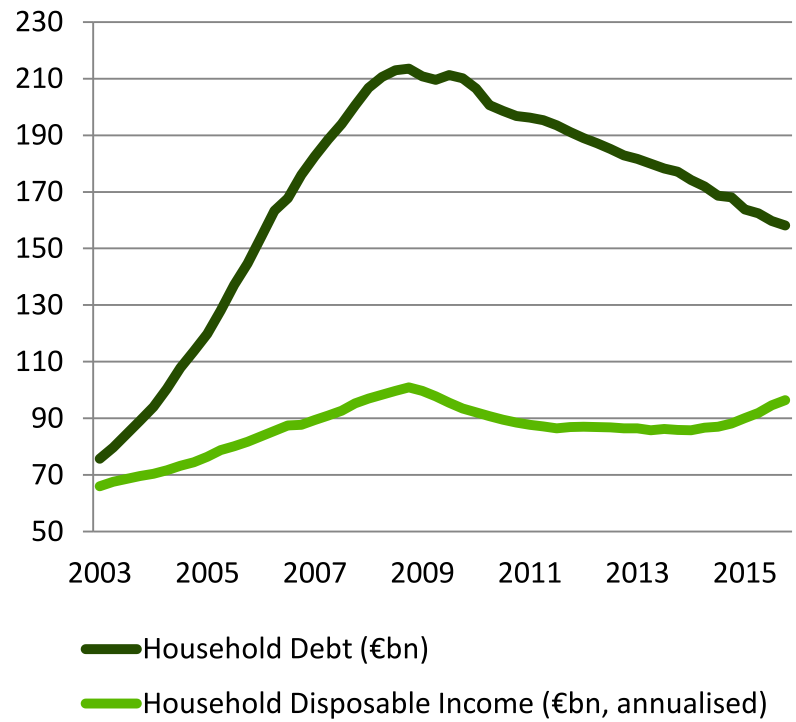
Gross household saving rate increased in 2015



Source: Eurostat, CSO

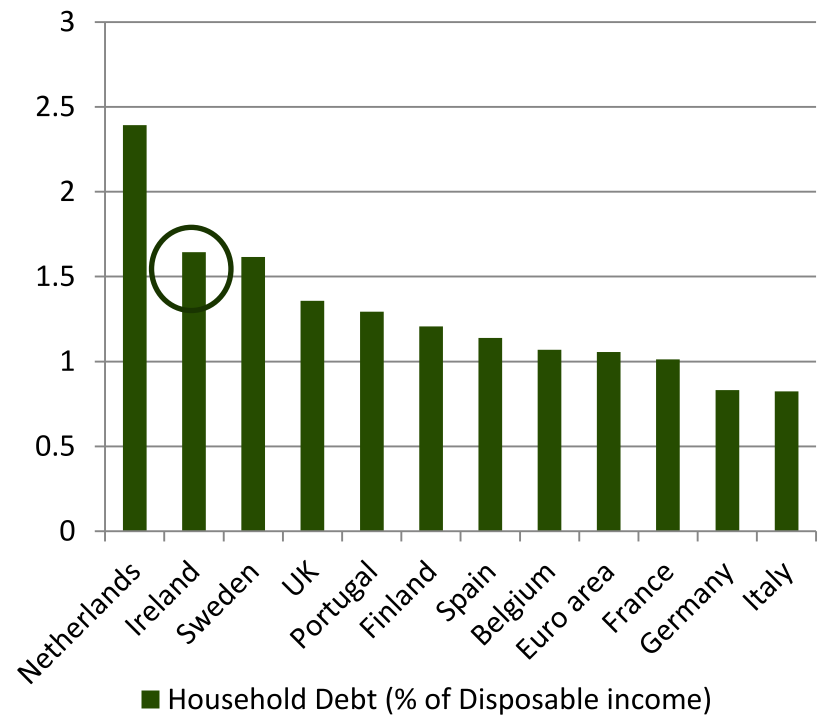
Private debt levels are high but improving

Debt-to-income ratio in Q4 2015 at 164%*, the lowest since Q2 2005



Source: [CBI]

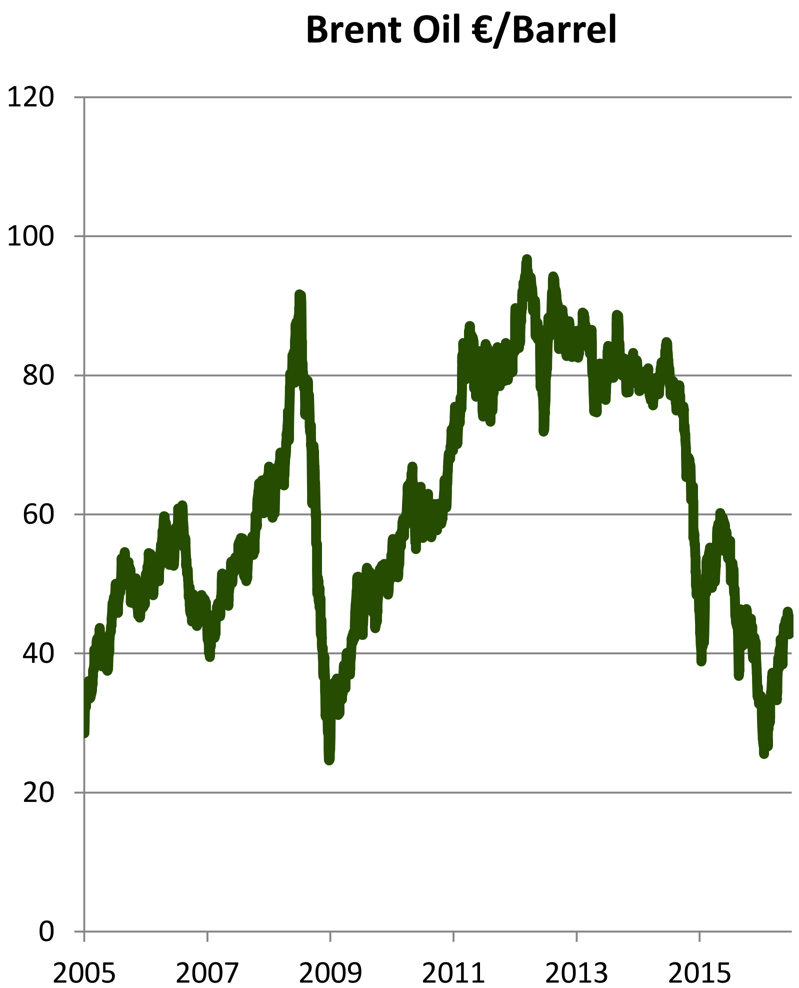
Ratio improving but amongst highest in Europe



Source: [Eurostat]

* Measure includes both loans and other liabilities.
Excluding other liabilities, debt-to-income ratio is 155%

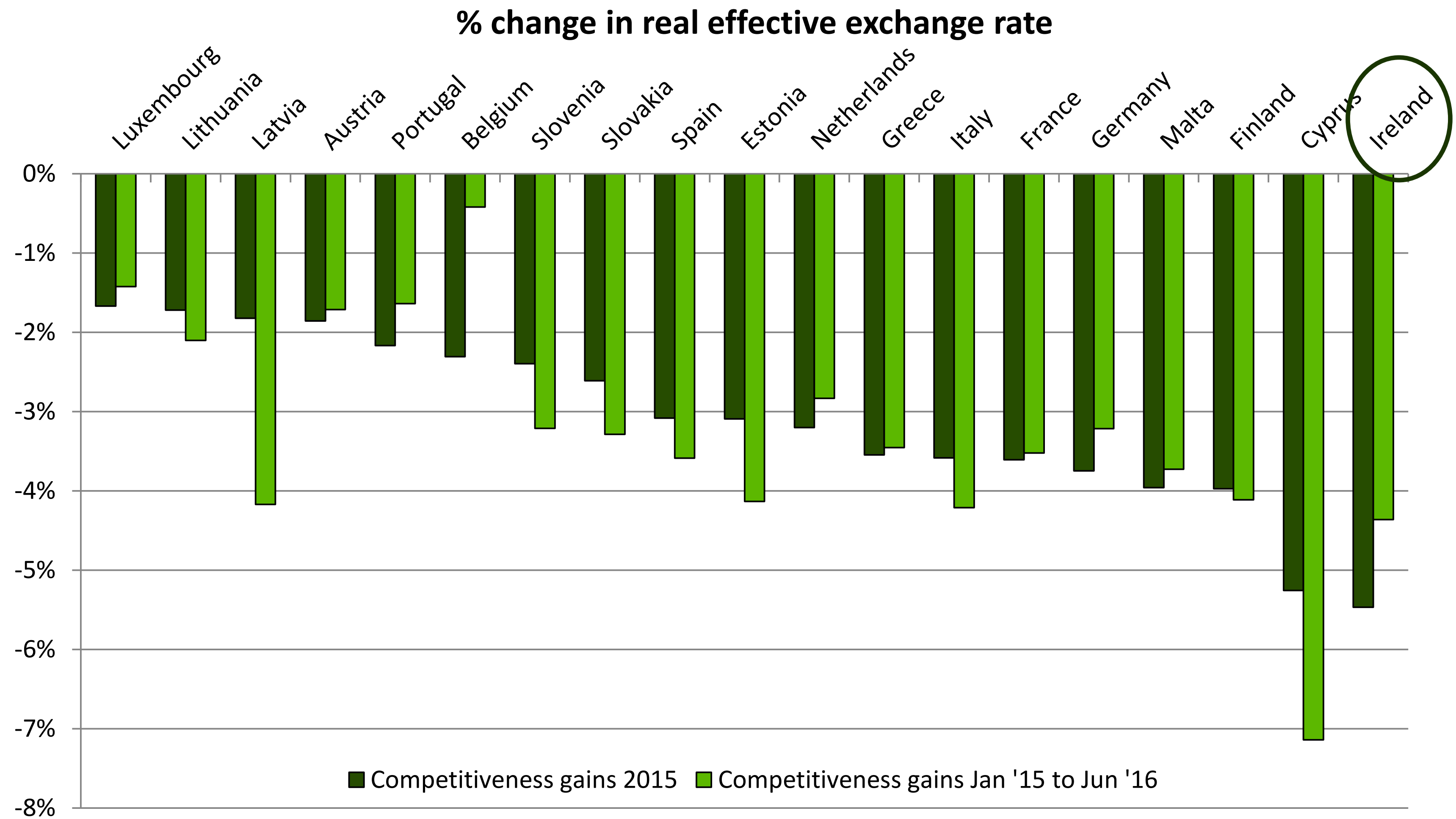
External factors boosted underlying growth in 2015; but Brexit headwind likely in next 12-18 months



Source: Bloomberg

Source: CBI, NTMA workings

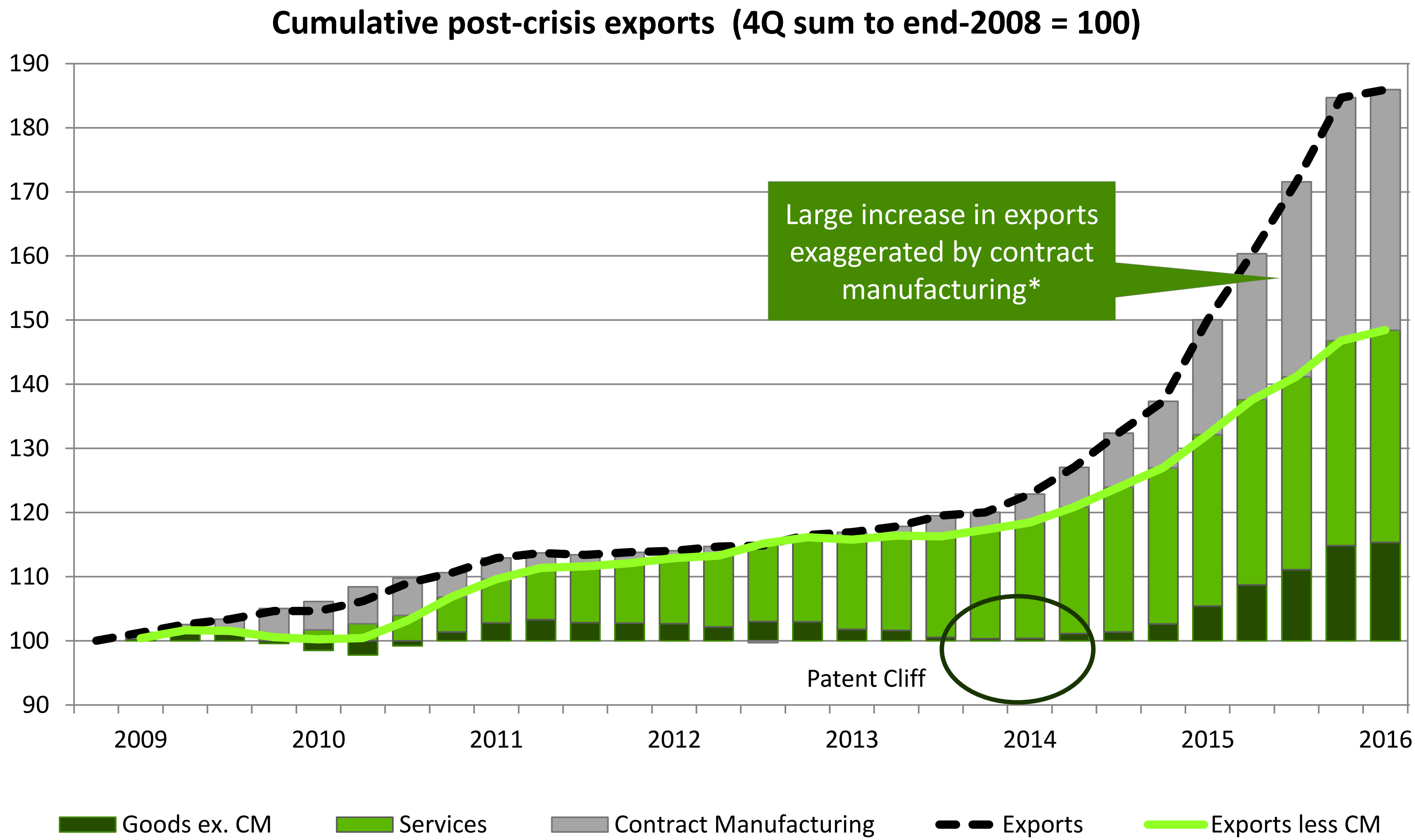
Ireland benefited the most in 2015 from euro depreciation; recent appreciation of €/£ pares this back



Source: Bruegel - 'Real effective exchange rates for 178 countries: a new database'; NTMA Workings

Note: REERs cover business sector excluding agriculture, construction and real estate activities and are calculated against 30 trading partners using fixed weights from Q1 2008. Data available to **Jun 2016**. See Darvas, Z (2012) for more details.

Services exports very strong post-crisis; Goods exports excluding contract manufacturing slower

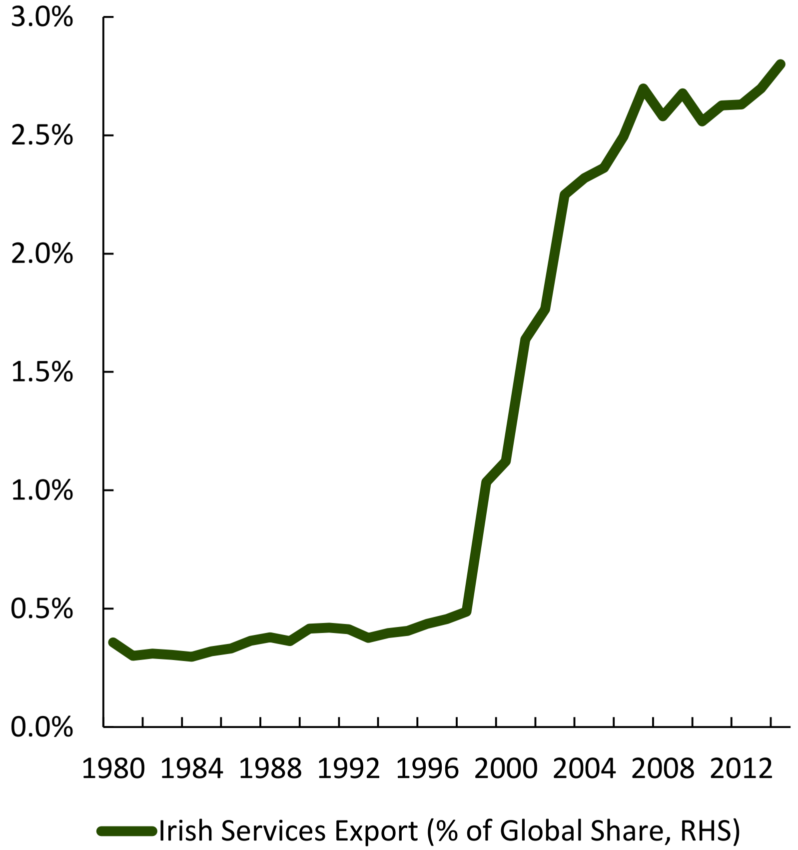


Source: CSO, NTMA calculations

* Contract manufacturing proxy used

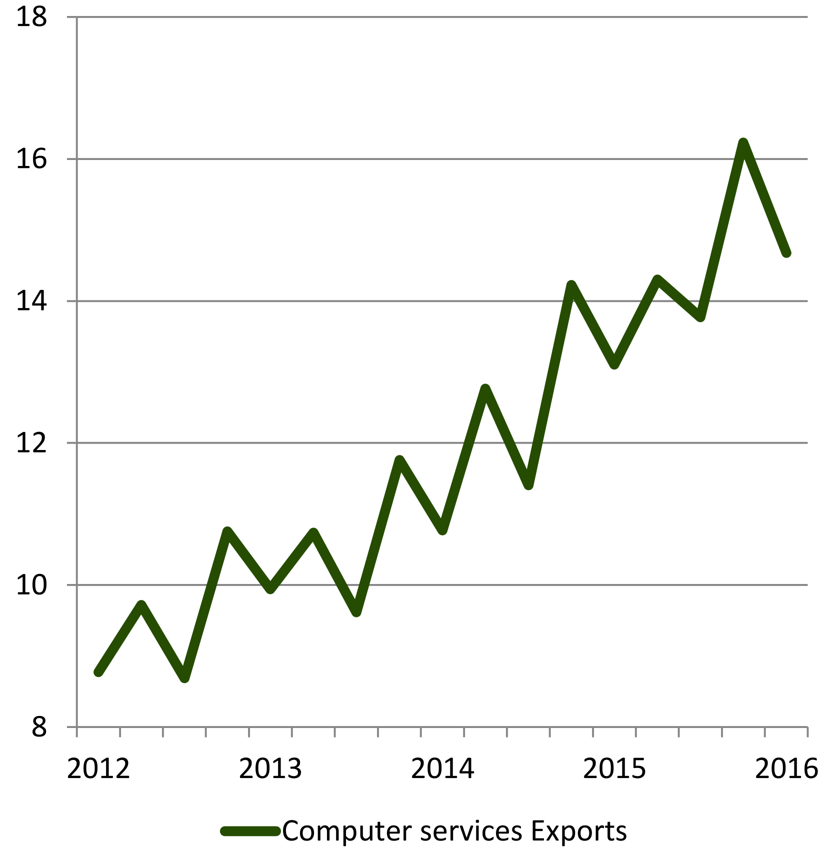
Services exports driven by strong growth in IT services exports

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



Source: World Trade Organisation

IT services exports have growth strongly as major firms have relocated to Ireland

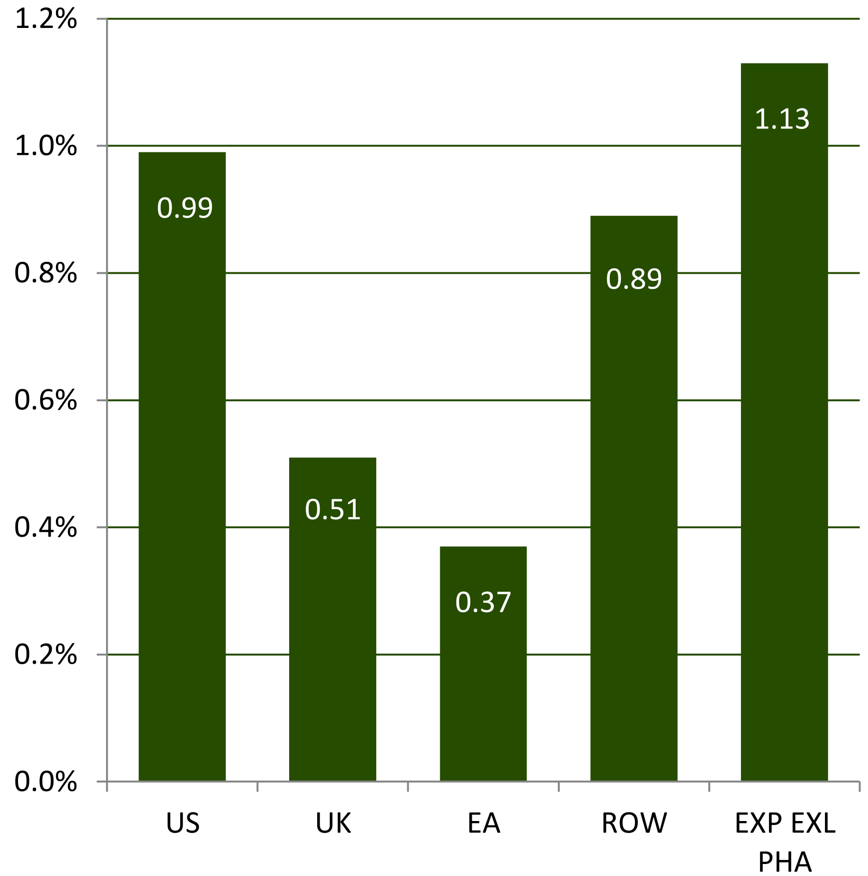


Source: CSO

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 0.5% and to the rest of world is 0.9%. Brexit has the opposite effect on Irish exports.
- The EUR/USD exchange rate has a positive effect (elasticity of 0.37) 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

Response of Irish goods exports to 1% depreciation of the euro

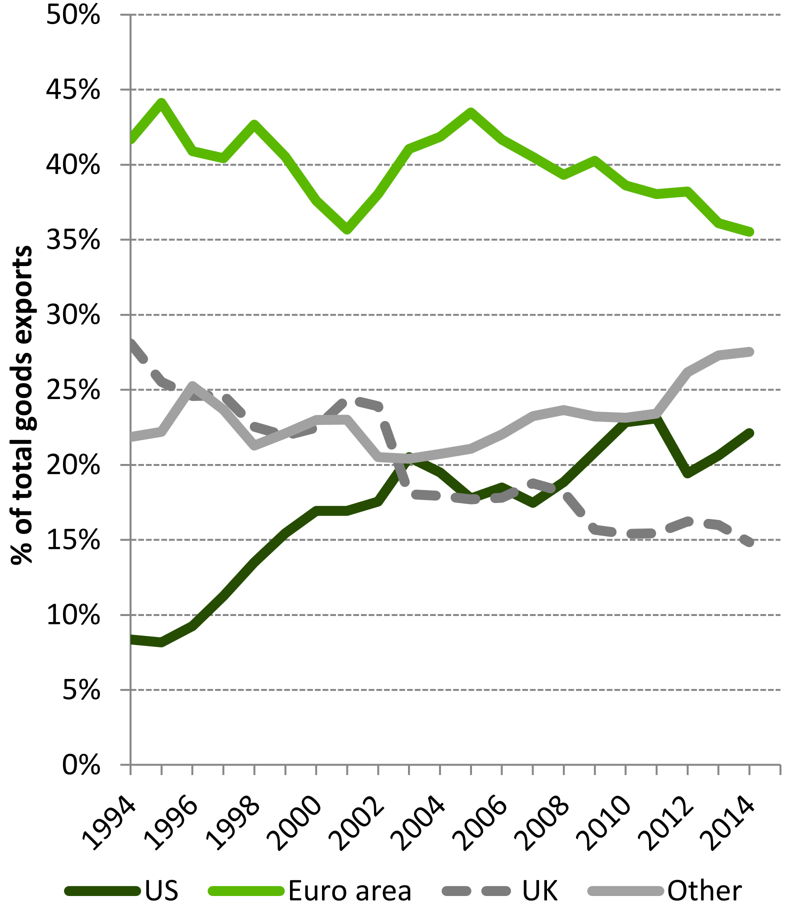


Source: CSO; NTMA empirical analysis

Note: All coefficients significant at 99% level; not affected by contract manufacturing

Ireland's openness has been critical to Irish success; Brexit is an obvious headwind to export-led growth

Ireland benefits from export diversification by destination



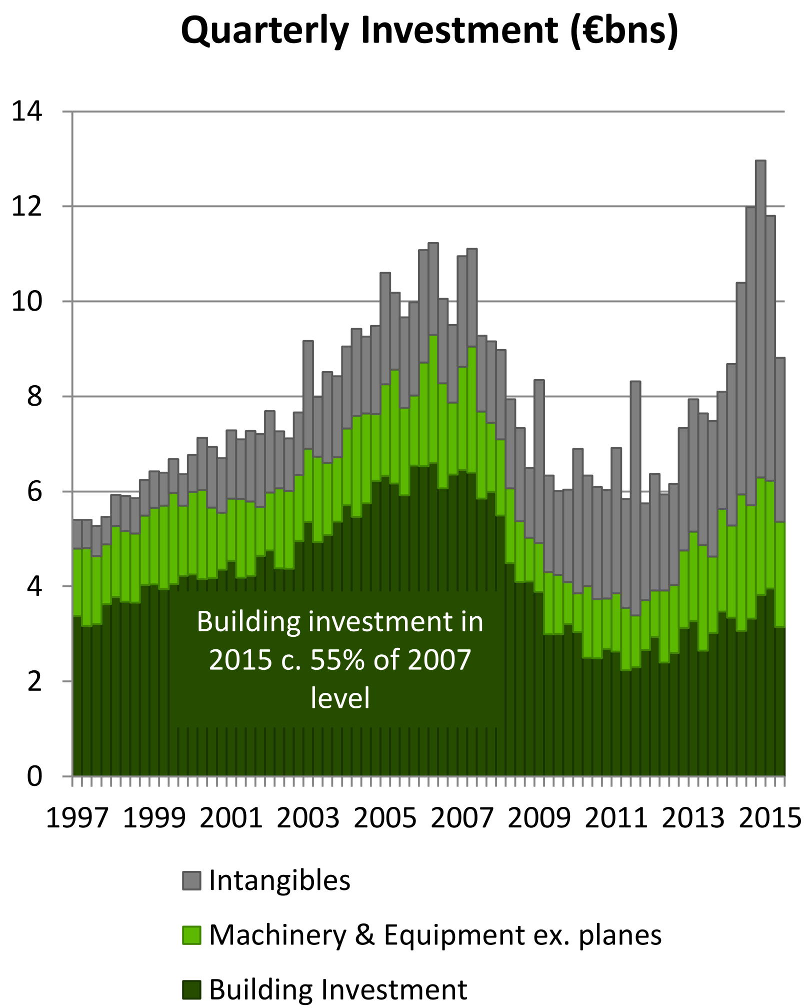
Source: [CSO](CSO)

Breakdown of Irish trading partners % of total

	Goods		Services		Total	
2014	**Exp.**	**Imp.**	**Exp.**	**Imp.**	**Exp.**	**Imp.**
US	22.0%	13.5%	8.3%	25.9%	14.9%	21.5%
UK	14.8%	28.7%	19.8%	10.4%	17.4%	17.0%
EA	35.4%	25.1%	31.8%	30.9%	33.7%	28.8%
China	2.3%	5.7%	1.3%	0.3%	1.9%	2.2%
Other	25.5%	26.9%	38.7%	32.5%	32.2%	30.5%

Source: CSO (2014); Data not affected by contract manufacturing

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

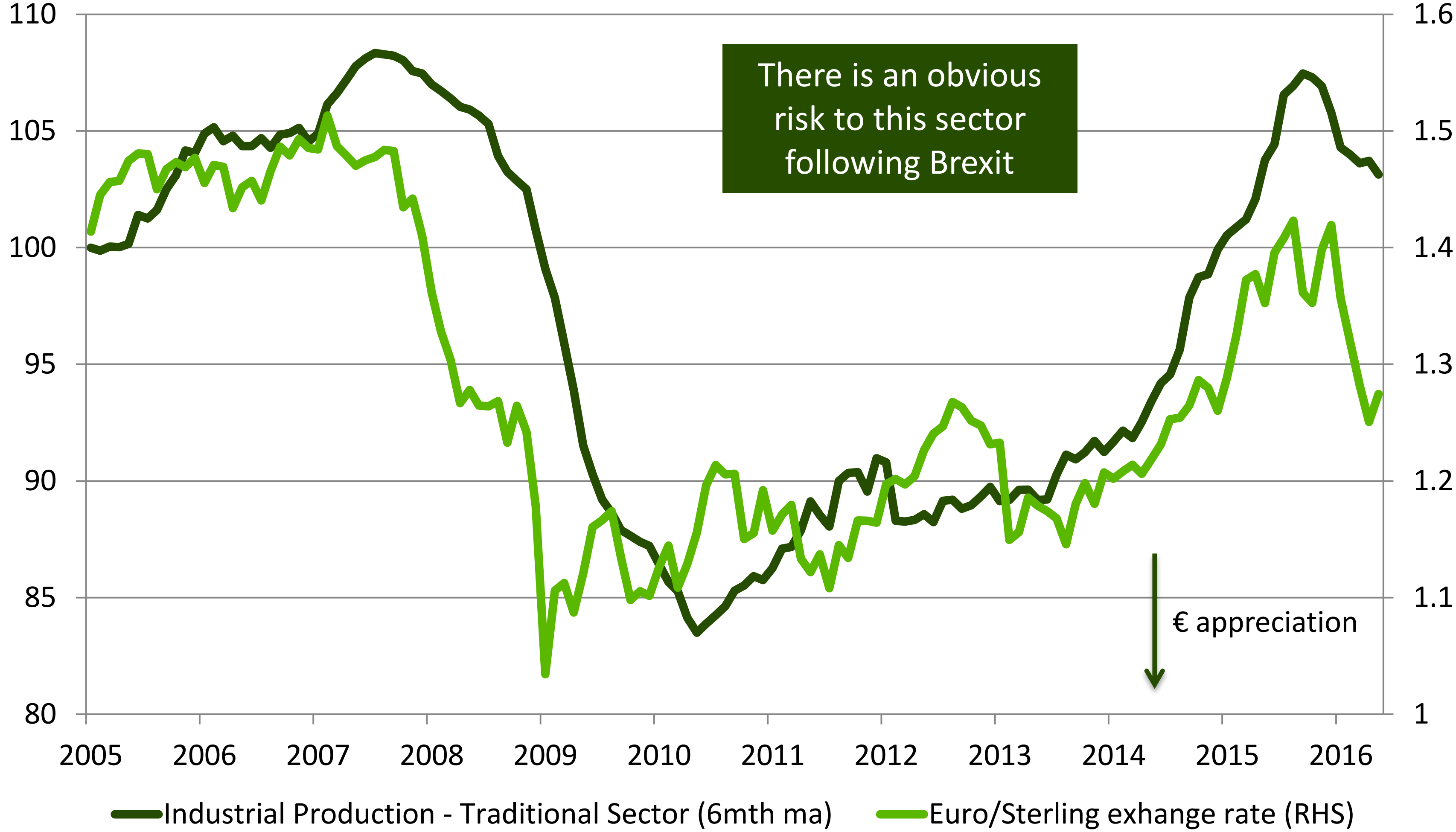


Source: CSO, NTMA analysis

- Investment in 2015 was above the pre-crisis level, mainly due to intangibles.
- Building investment is now a much smaller part of overall investment - in 2015 it was 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 is legitimate but the recent sharp increase in intangibles investment likely overstate Ireland's underlying investment position.

Please note that this quarterly data is volatile and not as reliable as the published annual data.

Traditional manufacturing sector has slowed in face of euro appreciation



Source: [CSO]

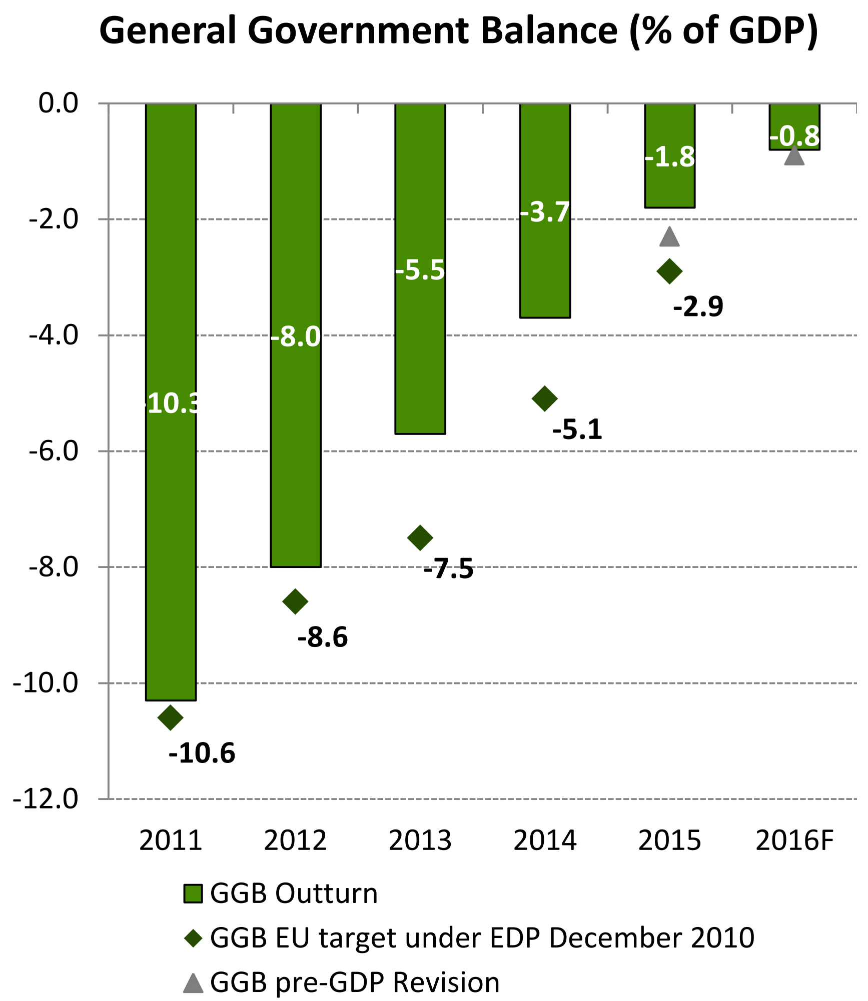
Traditional Sector includes all manufacturing excluding chemicals and pharmaceuticals, computer, electronic, optical and electrical equipment, reproduction of recorded media and medical and dental instruments and supplies

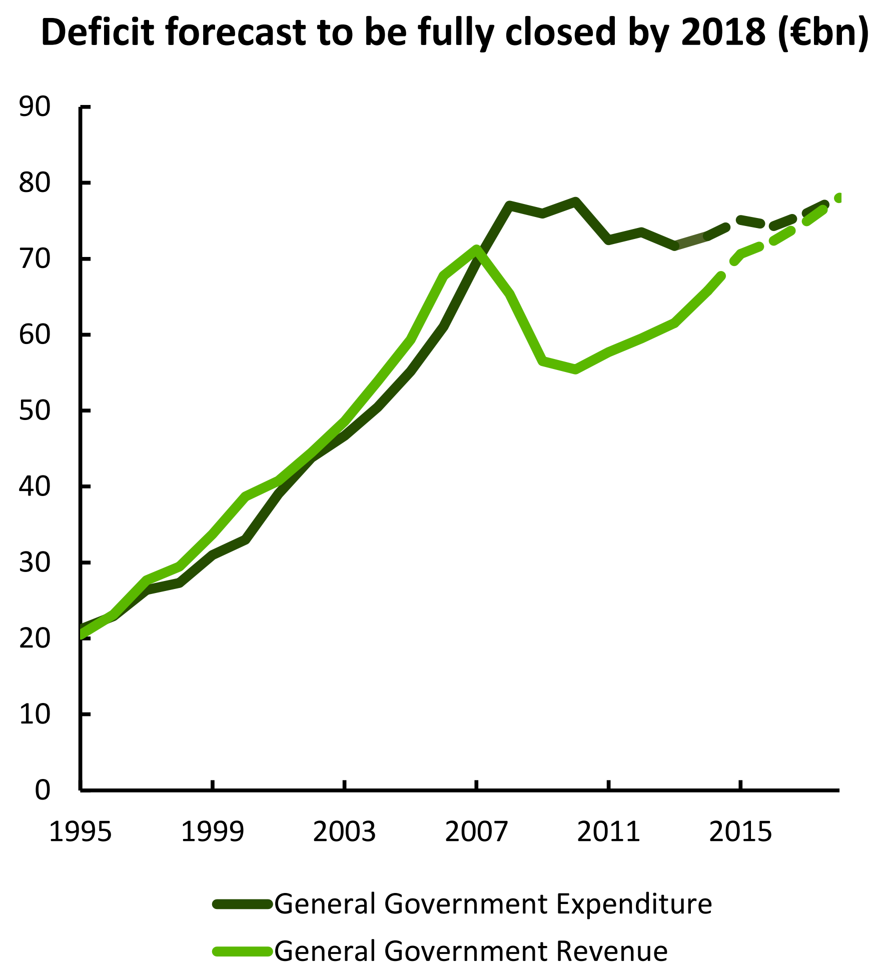
National Treasury Management Agency

SECTION 2: FISCAL & NTMA FUNDING

Fiscal performance is strong; GDP revisions mean we need to look beyond usual measures

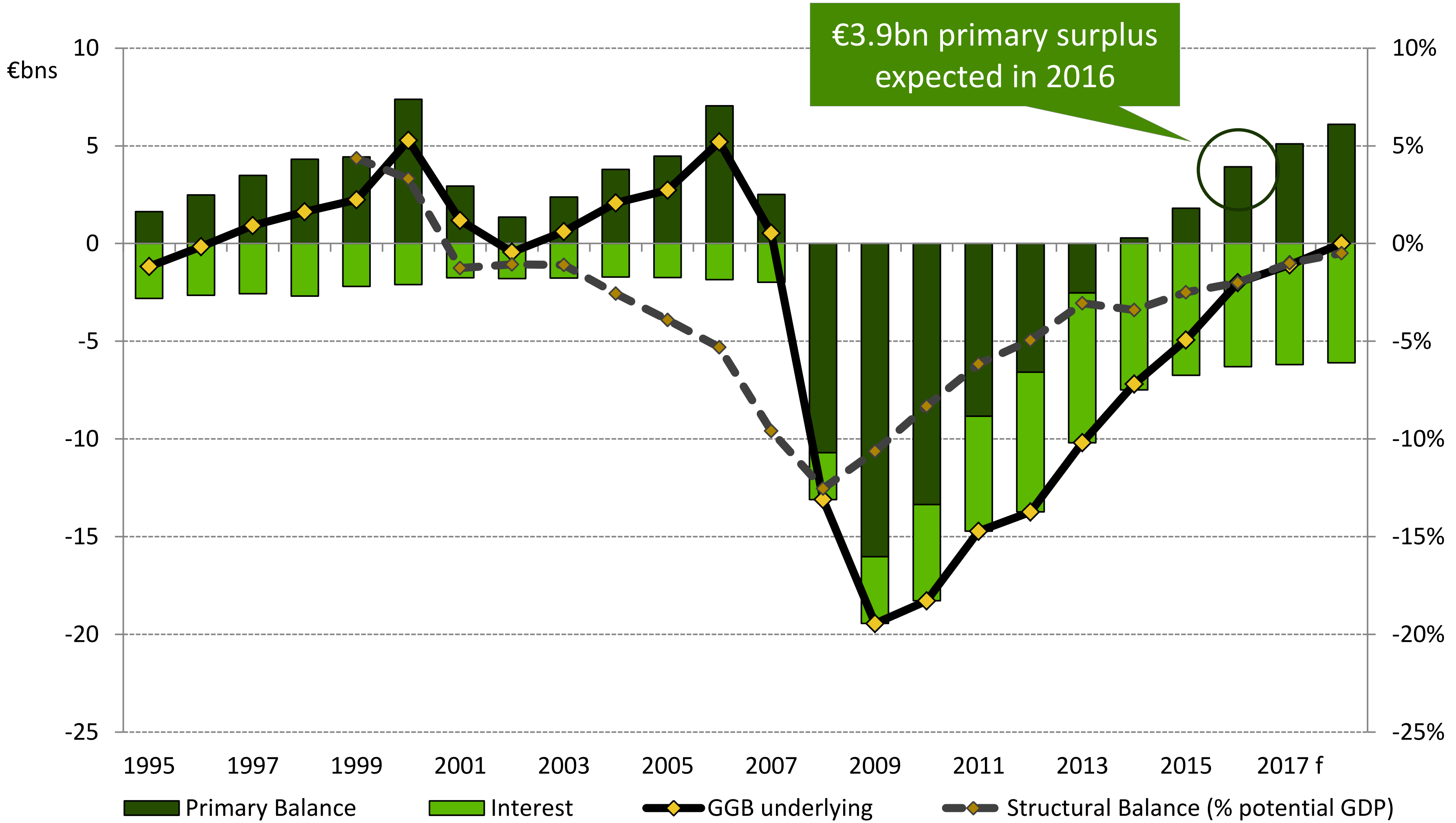
Irrespective of GDP moves, Ireland has had five straight years of fiscal outperformance





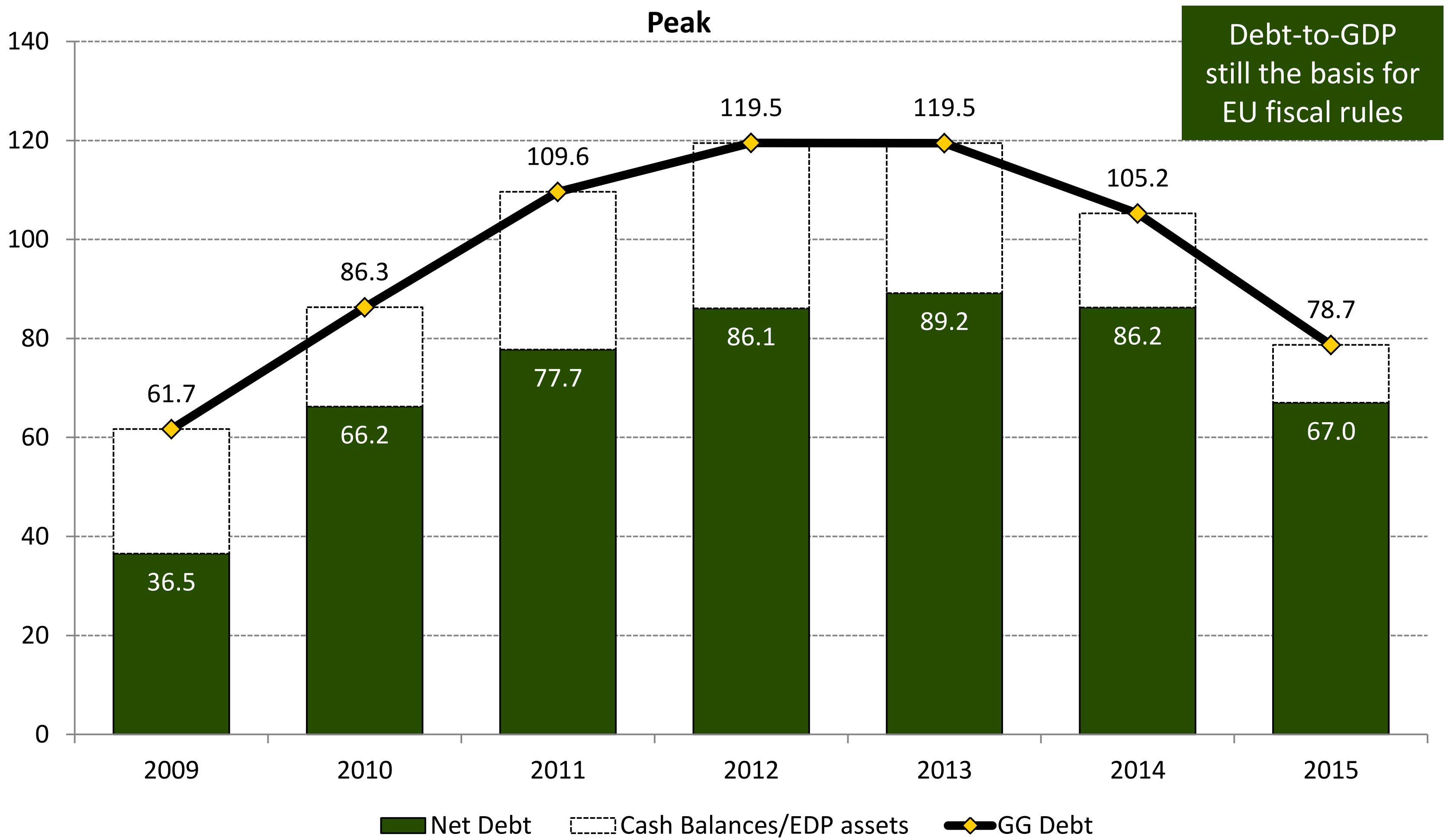
Source: Department of Finance, CSO *2016 = DoF forecast

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



Source: CSO; Eurostat; IMF

Gross Government debt fell to 78.7% of GDP by the end of 2015 due to inflated GDP



Source: CSO; Department of Finance

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

Source: CSO; Department of Finance

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**	**285.5**	**9.6**	**243.1**
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
Sweden	43.4	87.6	1.0	182.1
Denmark	40.2	74.9	3.0	220.6

Source: Eurostat, NTMA calculations

New EU fiscal rules for Ireland – same Government desire to meet them

2011 – 2015 EDP

Objective: Deficit reduction in nominal terms

2016 – 2019 Preventive Arm

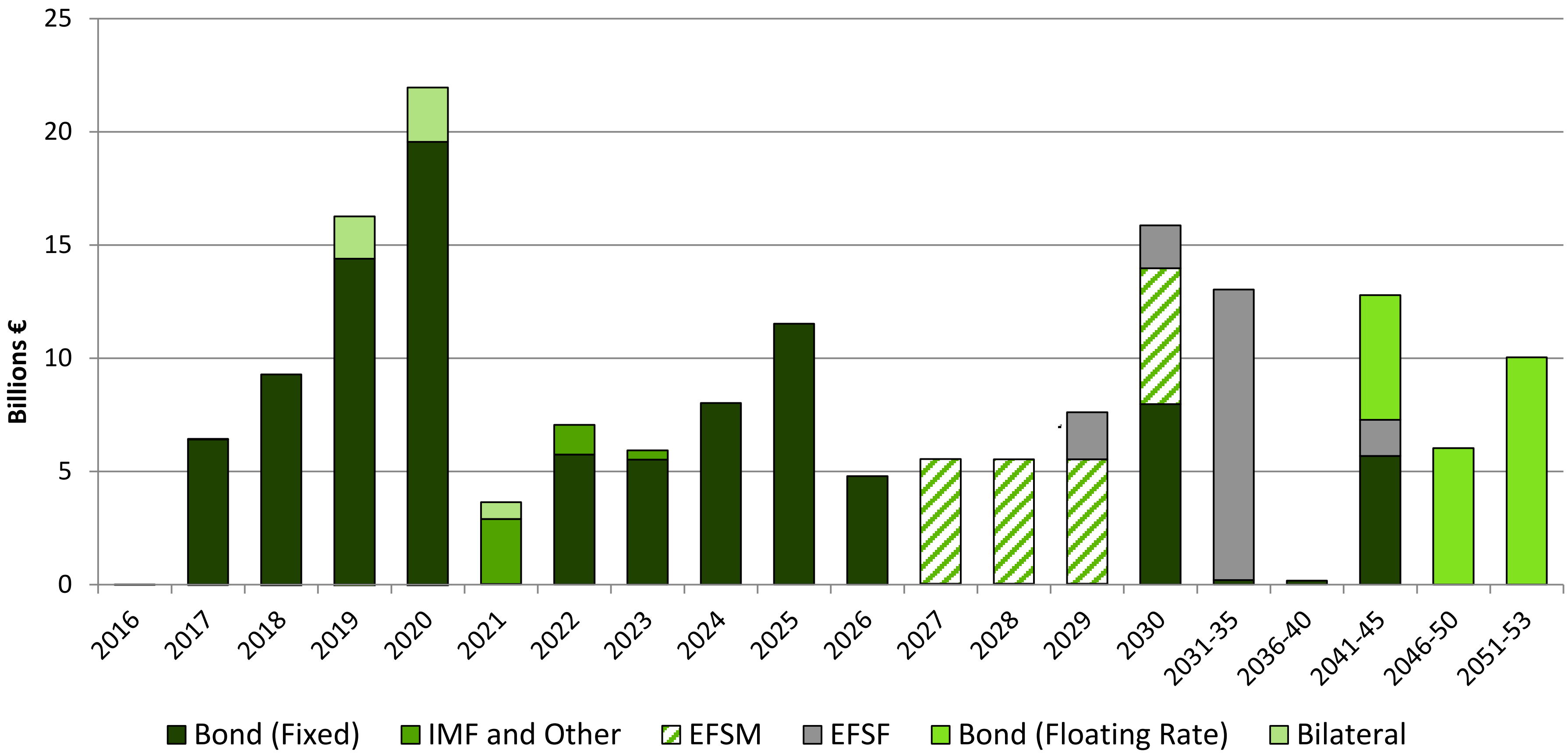
Objective: Balanced budget in structural terms

Requirements of Preventive Arm

1. Ireland must improve its structural balance by 0.6% of GDP in 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. Budgetary plans are laid out to ensure these conditions are met. The revised GDP data may hamper the judgement of Ireland's performance under the SGP

Maturity profile as of H1 2016

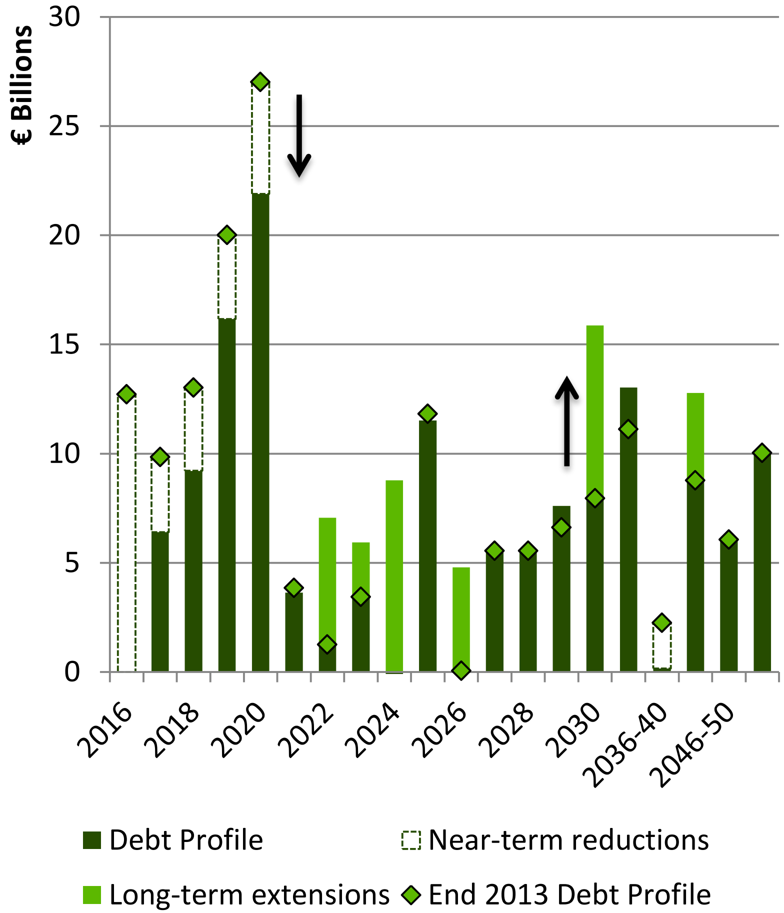


Source: NTMA

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.

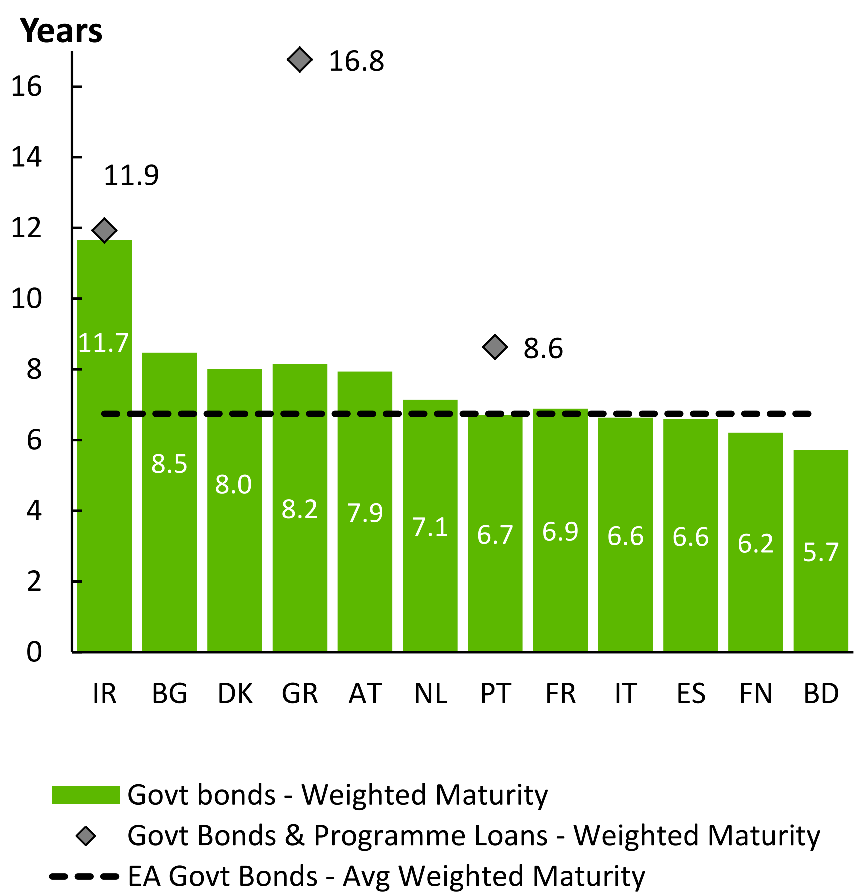
2016-2020 maturity profile improved significantly in recent years

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



Source: NTMA

… with Ireland comparing favourably to other European countries



Source: ECB, NTMA calculations; May 2016 figures

40% of Ireland's government debt has maturity over 10 years

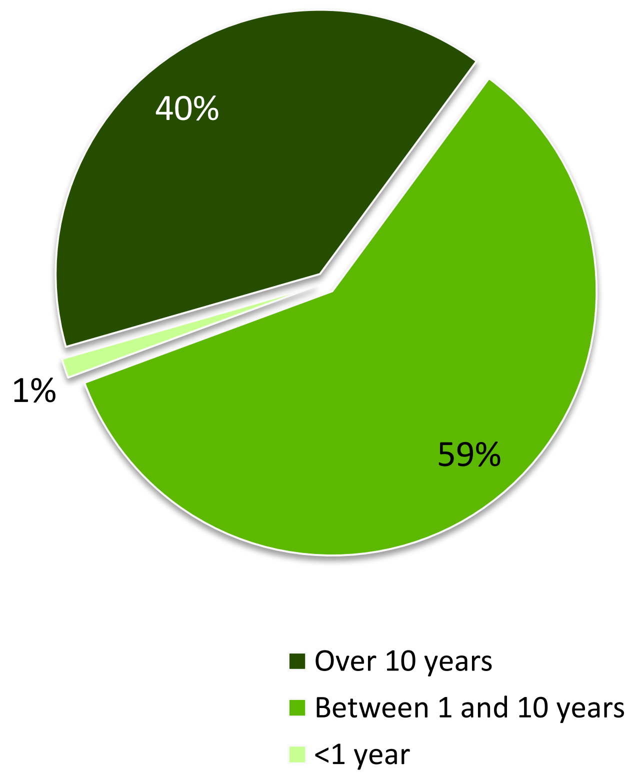
General Government Debt breakdown

	% share	€bn
Retail	10.3%	20.7
Bonds		
Short-term*	0.6%	1.2
Long-term	61.8%	124.4
Loans		
Short-term*	0.5%	1.1
Long-term	26.8%	53.9

*Short-term definition : Bonds issued with a maturity of less than 1 year

Source: CSO (Q4 2015 data), NTMA

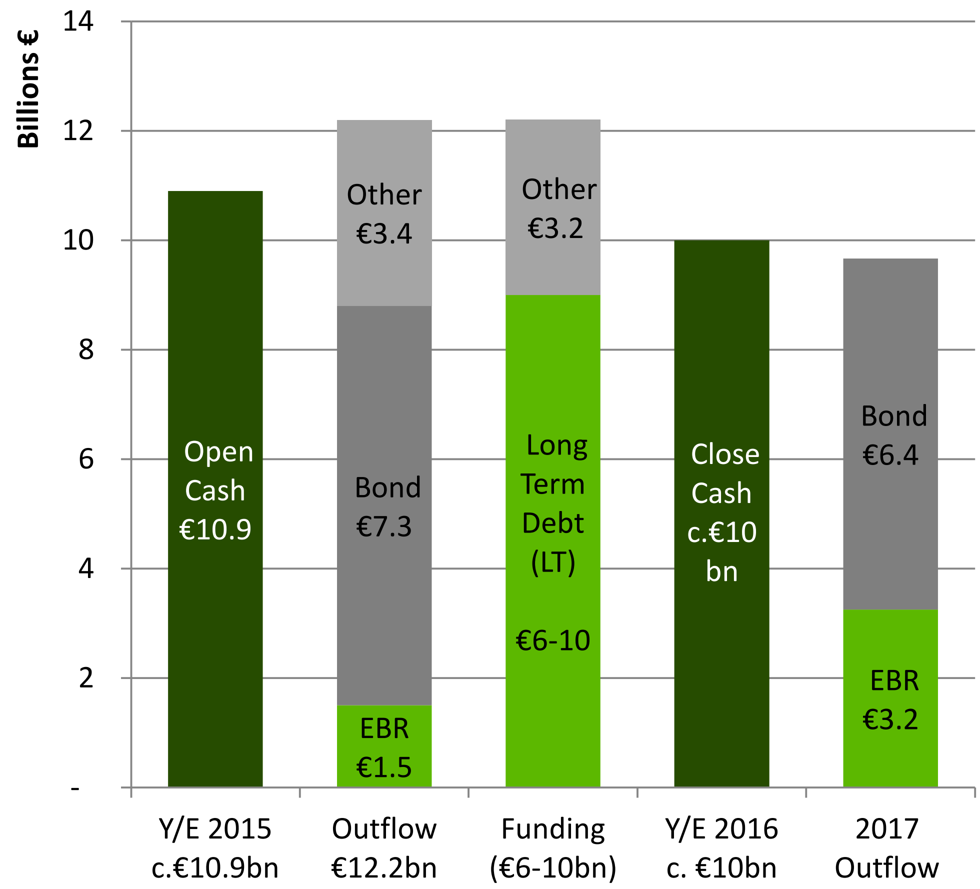
Ireland's maturity profile



Source: NTMA (May 2016)

NTMA has been funding approximately 12 months in advance; Less issuance needed in 2016

- With only two major redemptions in 2016/17 issuance is lower in 2016 than in recent years.
- Our next bond redemption will be in October 2017 - €6.4bn.
- NTMA expected to issue €6-10bn worth of long term bonds in 2016. €5.6bn has already been issued.
- Exchequer had €8.5bn of cash and other liquid assets at end June 2016.

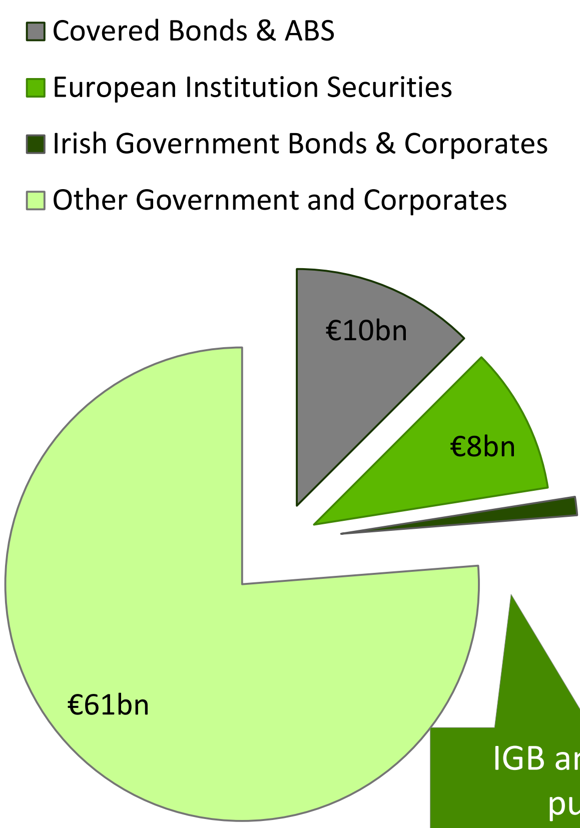


Source: NTMA

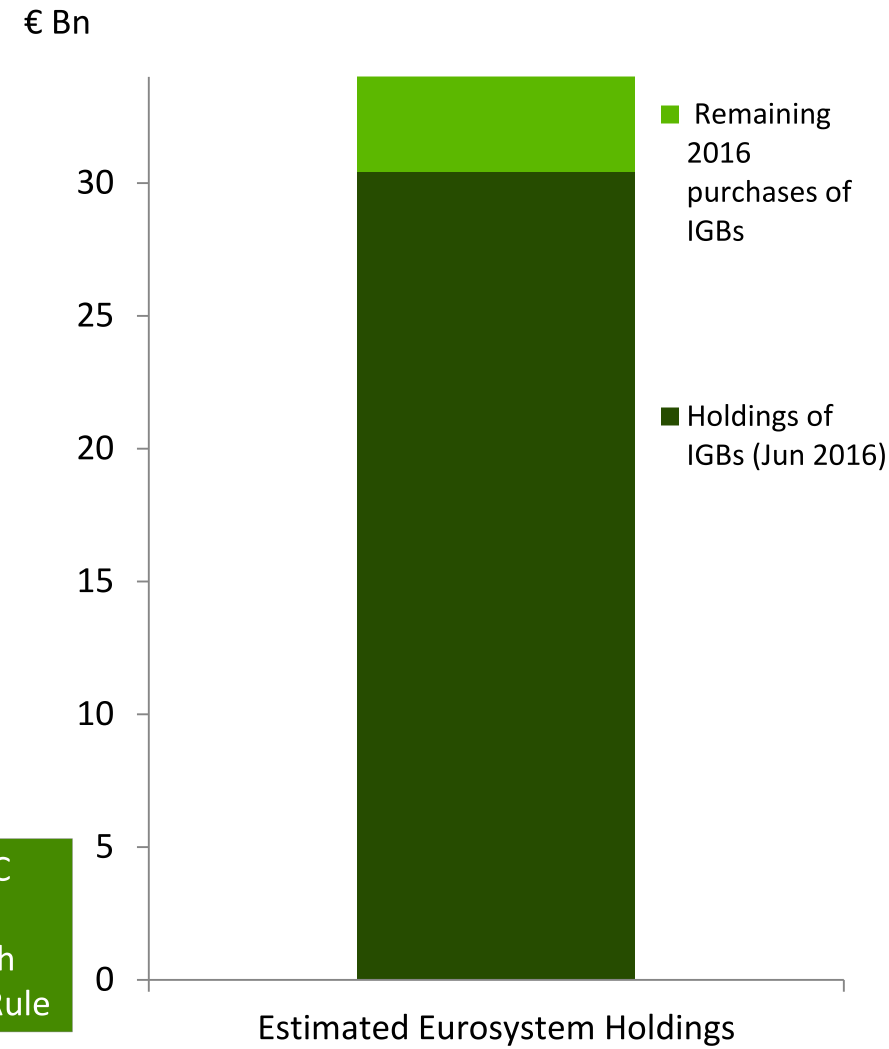
- EBR is the Exchequer Borrowing Requirement
- Cash balances excludes Housing Finance Agency (HFA) Guaranteed Notes and CSA Collateral Funding end-2015 balances . Total Cash and Other Financial Assets at end-2015 were €13.6 billion.
- Other outflows includes contingencies, including for potential bond purchases. Other sources Includes short-term paper, net State Savings (Retail) and other funding.

Central Bank of Ireland set to purchase up to c.€1bn worth of IGBs per month under ECB's expanded QE

Estimated Composition of ECB's QE
€80 billion/month programme



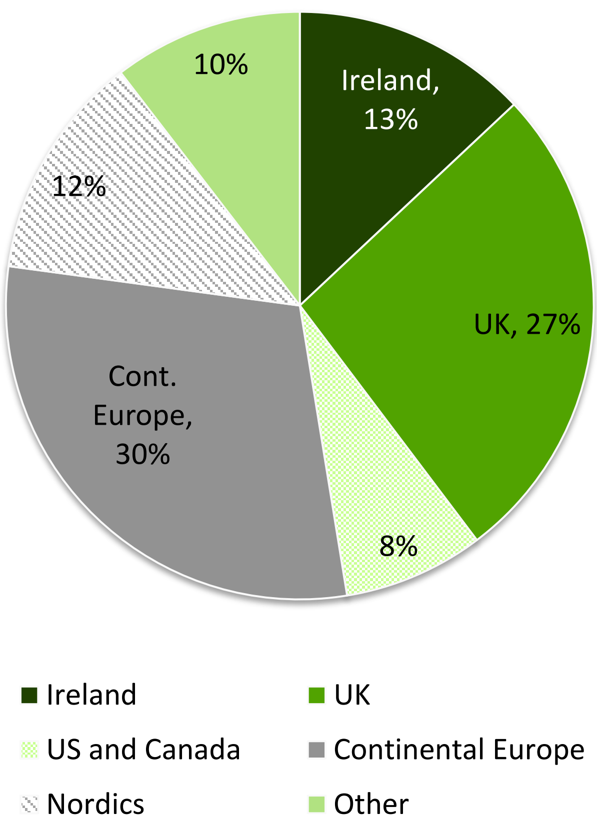
IGB and Irish NFC purchases c.€1bn per month under Capital Key Rule



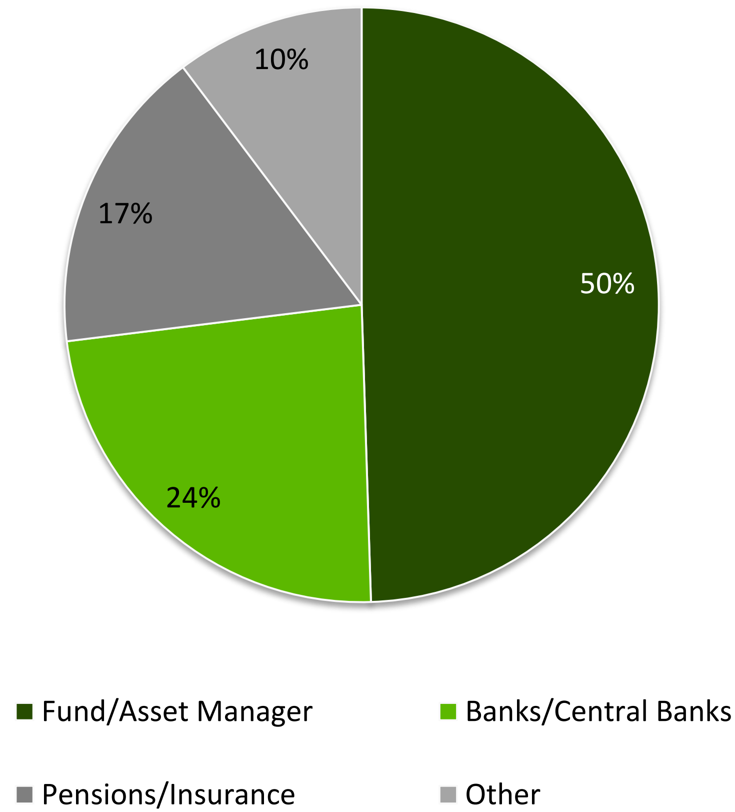
Source: NTMA Analysis; ECB

Investor base for Irish government debt is wide and varied

Country breakdown – Average over last 7 syndications



Investor breakdown – Average over last 7 syndications



Source: NTMA

Greater geographic balance in holdings of Irish Government Bonds (IGBs)

€ Billion

End quarter	Dec 2013	Dec 2014	Dec 2015	Mar 2016
1. Resident	51.7	50.8	50.8	51.4
(as % of total)	(46.6%)	(43.7%)	(40.6%)	(40.4%)
– Credit Institutions and Central Bank*	49.2	45.9	46.9	47.7
– General Government	2.2	1.6	0.8	0.8
– Non-bank financial	-	2.9	2.8	2.6
– Households (and NFCs)	0.4	0.4	0.3	0.3
2. Rest of world	59.3	65.5	74.2	75.9
(as % of total)	(53.4%)	(56.3%)	(59.4%)	(59.6%)
Total MLT debt	**111.0**	**116.3**	**125.1**	**127.3**

Source: CBI

* In March 2013 resident holdings increased significantly thanks to the IBRC Promissory Note repayment (non-cash settlement) which resulted in €25.034bn of long-dated Government bonds being issued to the Central Bank of Ireland on liquidation of IBRC. The CBI also took €3bn of 2025 IGBs formerly held by IBRC. Rounding of figures used.

Breakdown of Ireland's General Government debt

€ million	2011	2012	2013	2014	2015
Currency and deposits (mainly retail debt)	58.4	62.1	31.4	20.9	20.7
Securities other than shares, exc. financial derivatives	94.0	87.3	112.7	119.1	125.6
- Short-term (T-Bills, CP etc)	3.8	2.5	2.4	3.8	1.2
- Long-term (MLT bonds)	**90.2**	**84.8**	**110.3**	**115.3**	**124.4**
Loans	37.3	60.6	71.3	63.3	55.0
- Short-term	0.6	1.9	1.4	1.3	1.1
- Long-term (official funding and prom notes 2009-12)	36.8	58.7	69.8	62.0	53.9
General Government Debt	**189.8**	**210.0**	**215.3**	**203.3**	**201.3**
EDP debt instrument assets	*55.2*	*58.7*	*54.6*	*36.7*	*29.9*
Net Government debt	**134.5**	**151.3**	**160.7**	**166.6**	**171.4**

Source: CSO (end 2015)

SECTION 3: BREXIT

Brexit is likely net negative for Ireland but opportunities may arise

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?

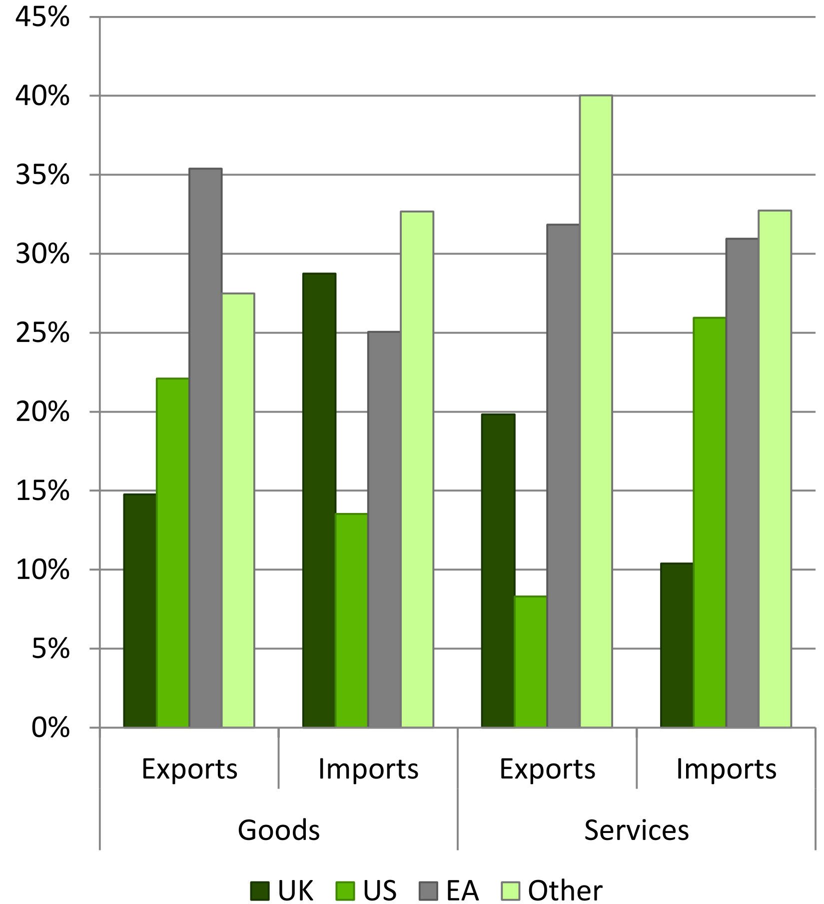
Pros

- 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 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**

Ireland's main trading partners



Source: CSO (2014)

FDI: Ireland may benefit

- **FDI Channel – possibly positive impact**
  - Foreign firms in the UK might consider relocation following Brexit. This may be especially pertinent for firms who use the UK as a base for its EU operations.
  - Ireland could be a beneficiary from this displaced FDI. The chief areas of interest are financial services, business services and 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.

- **Energy Market – likely negative**
  - Ireland's energy market is heavily reliant on the UK. 90% of Ireland's energy 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.

Migration/labour flows might be affected by Brexit

- In the past, large migratory flows from Ireland to the UK have occurred. 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%.

ESRI simulation in which 60,000 person are added to Irish labour force

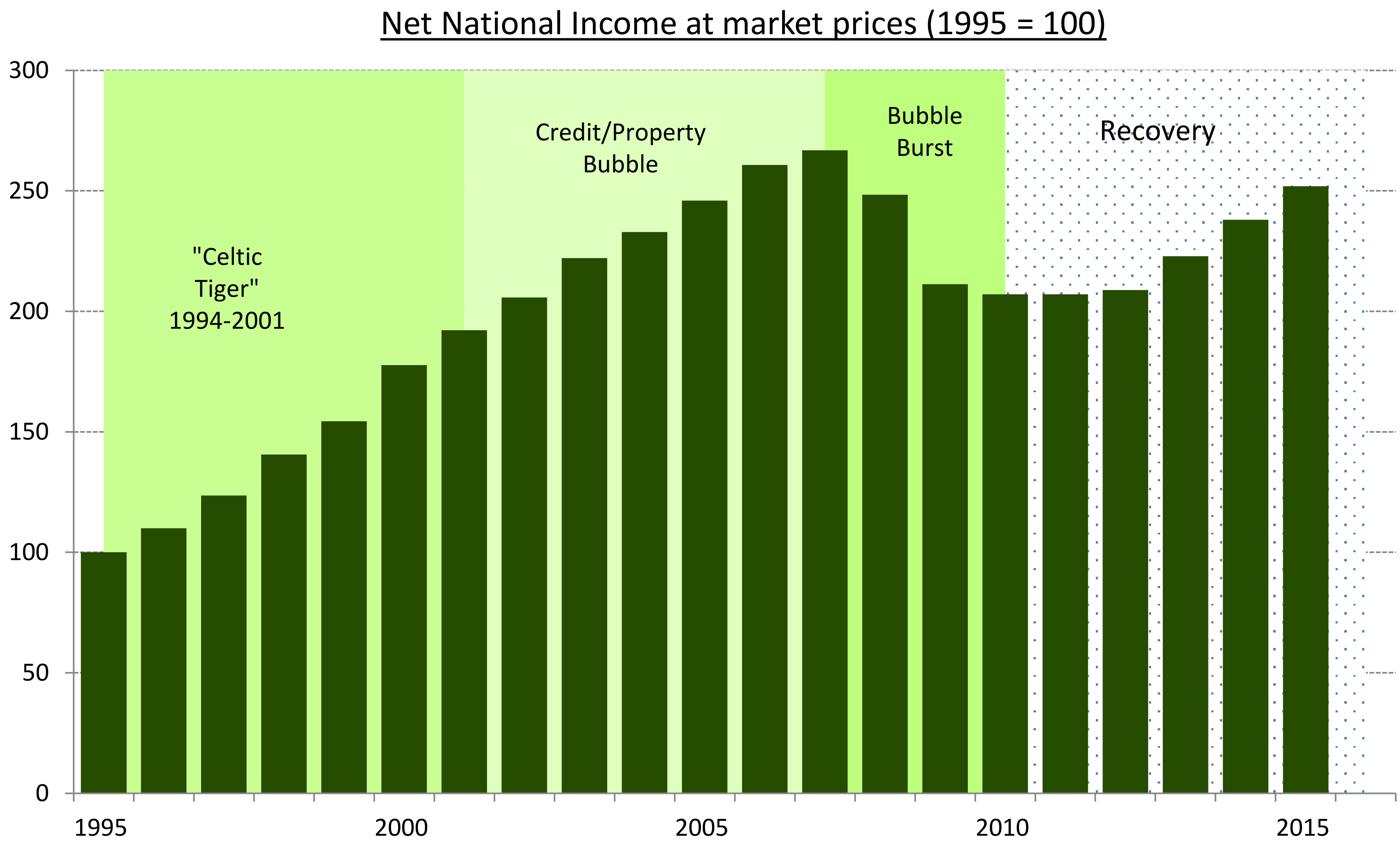
	Low-skilled unemployment adjustment	Low-skilled wages adjustment
	% Change	
Average wage	-3.9	-3.7
High-skilled	-5.0	-4.8
Low-skilled	0.0	0.8
Unemployment rate	-0.4	0.0

Source: ESRI Brexit Report

SECTION 4: LONG TERM FUNDAMENTALS

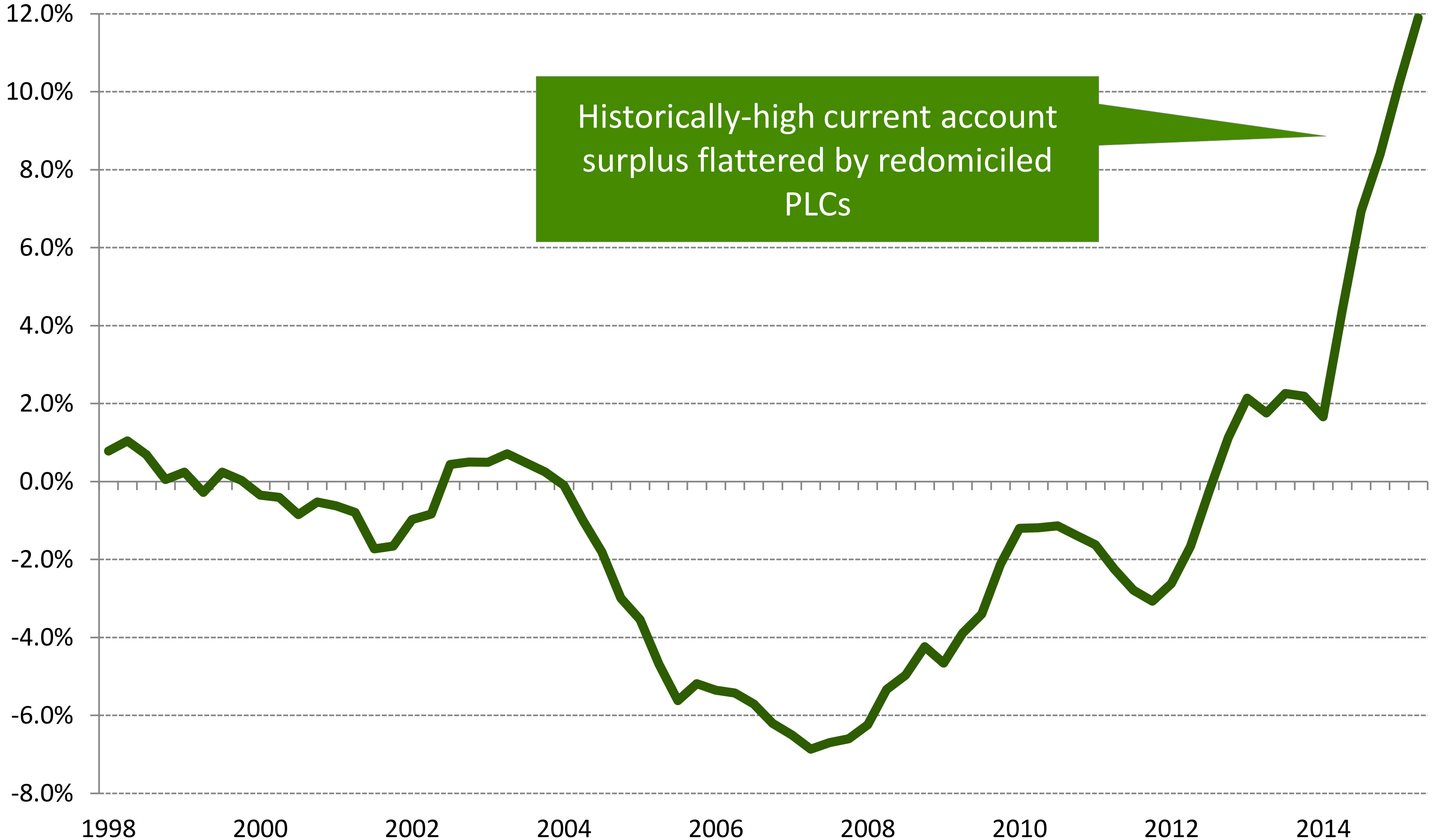
Fundamentals in place but retaining competitiveness is crucial

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



Source: CSO

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



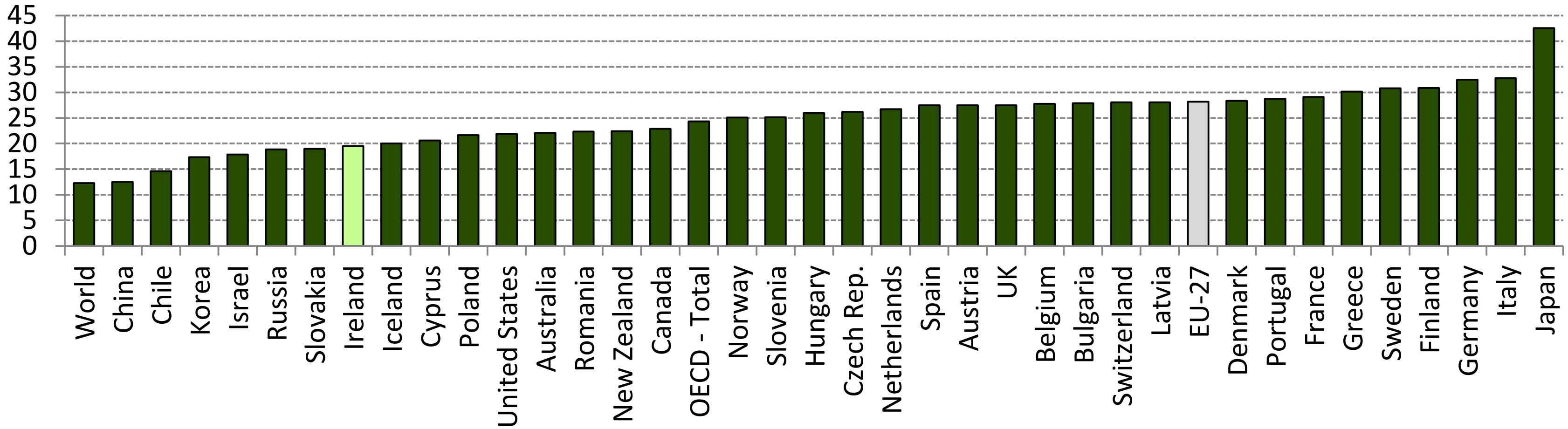
Source: CSO

* 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'

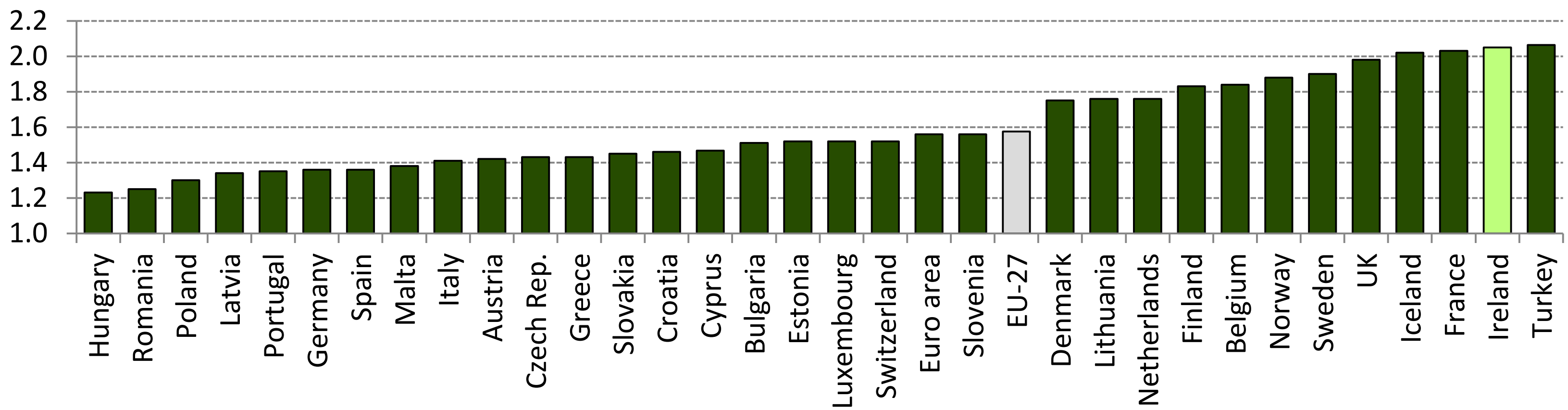
National Treasury Management Agency

Favourable population characteristics underpin debt sustainability over longer term

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



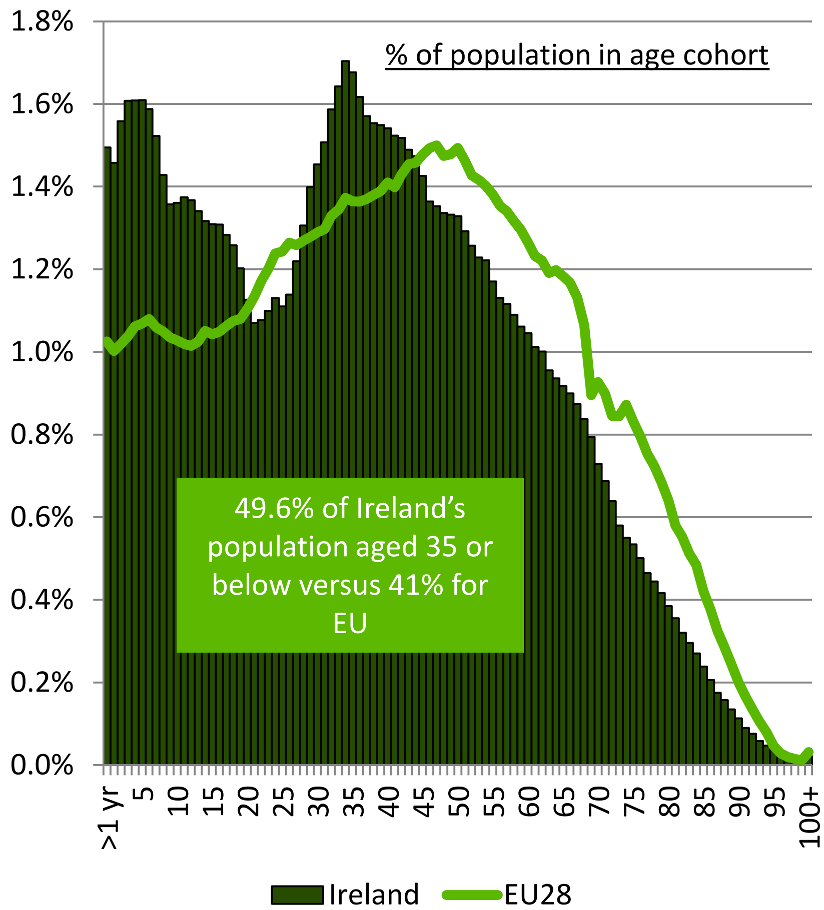
Fertility rates in Ireland are above typical international replacement rates



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

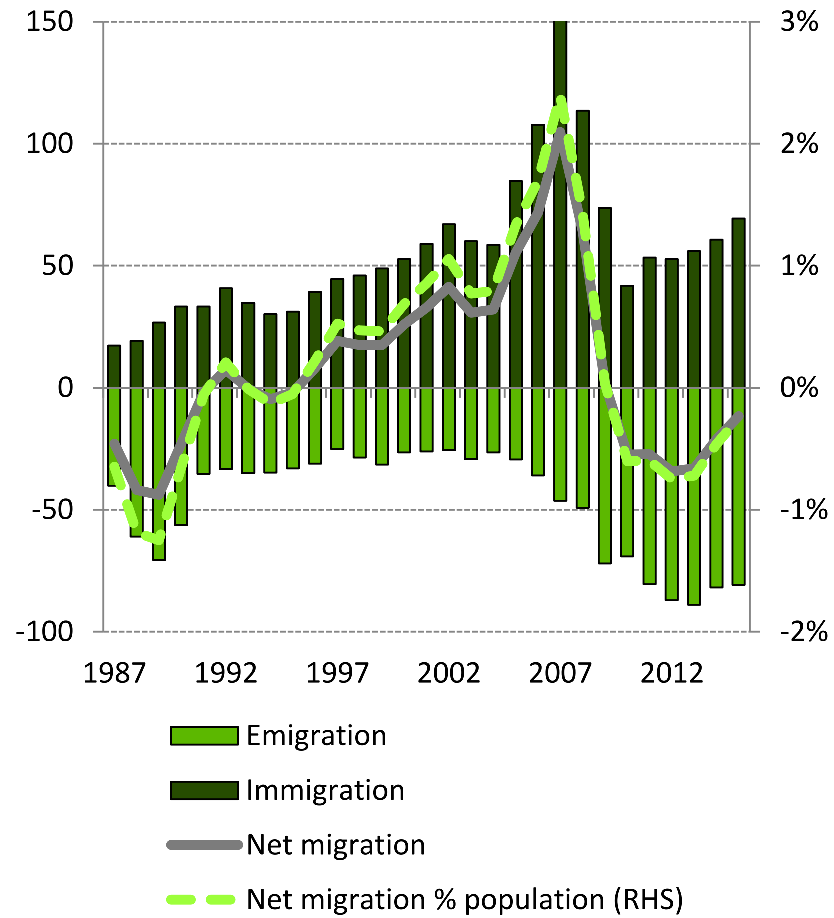
Ireland's population: 4.75m in 2016. Census total was up 170,000 on the 2011 Census

Ireland's population profile healthier than the EU average



Source: Eurostat (2015); [CSO]

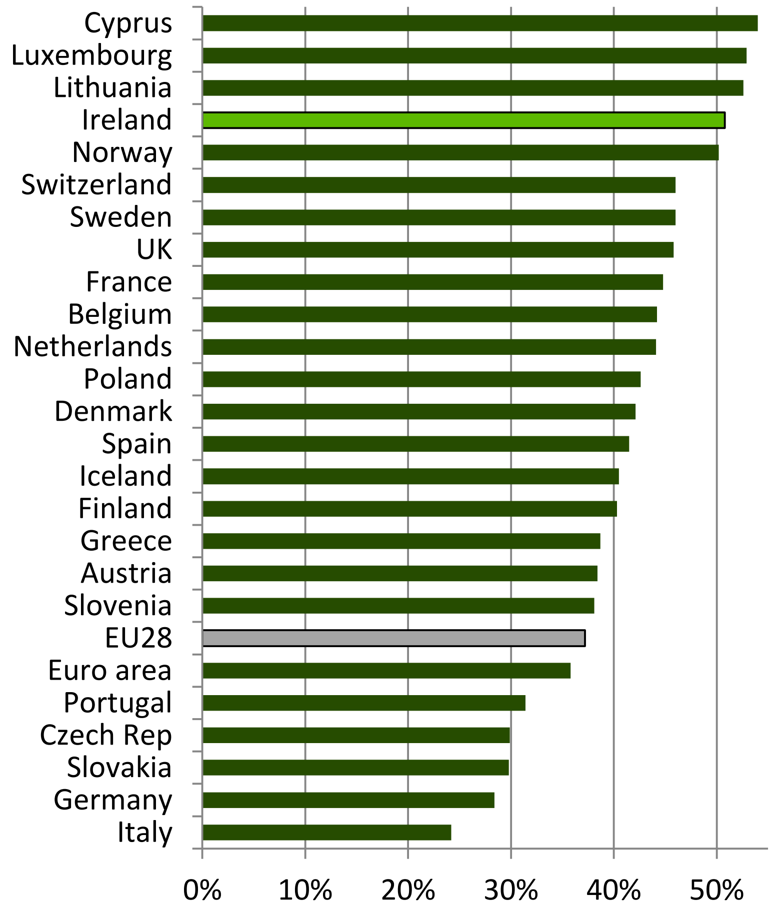
Net migration (000s) negative in recent years but improving alongside economy*



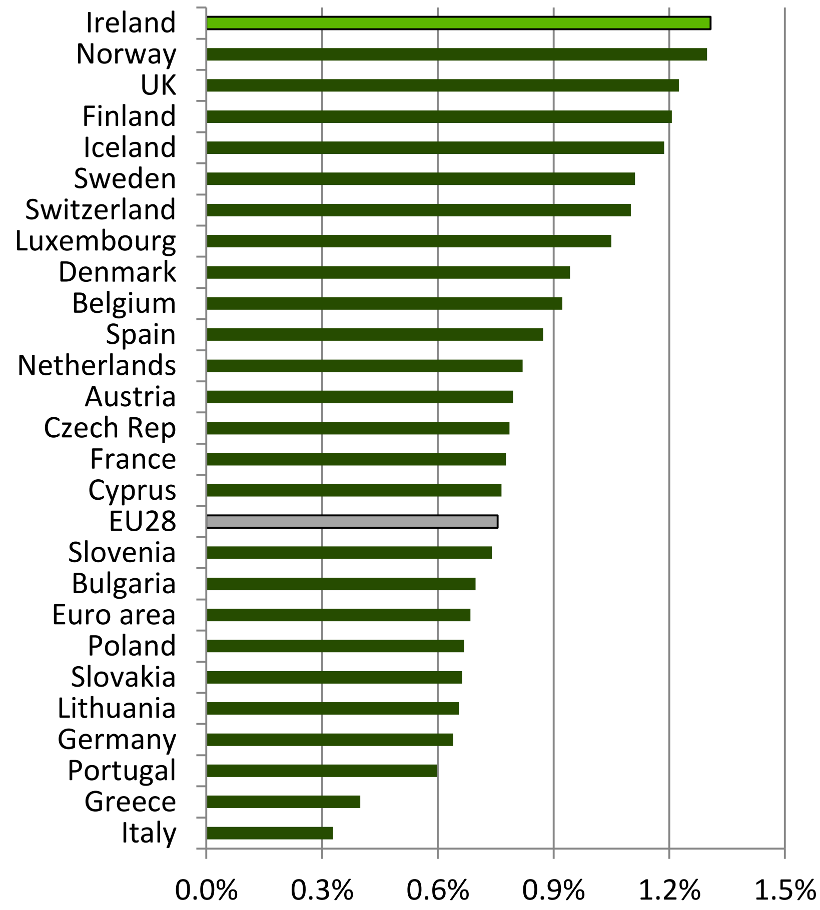
* Preliminary Census 2016 data suggest net migration might have been much lower than these figures indicate. Revisions are expected in the coming months.

Workforce is young and educated - especially so in IT sector

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



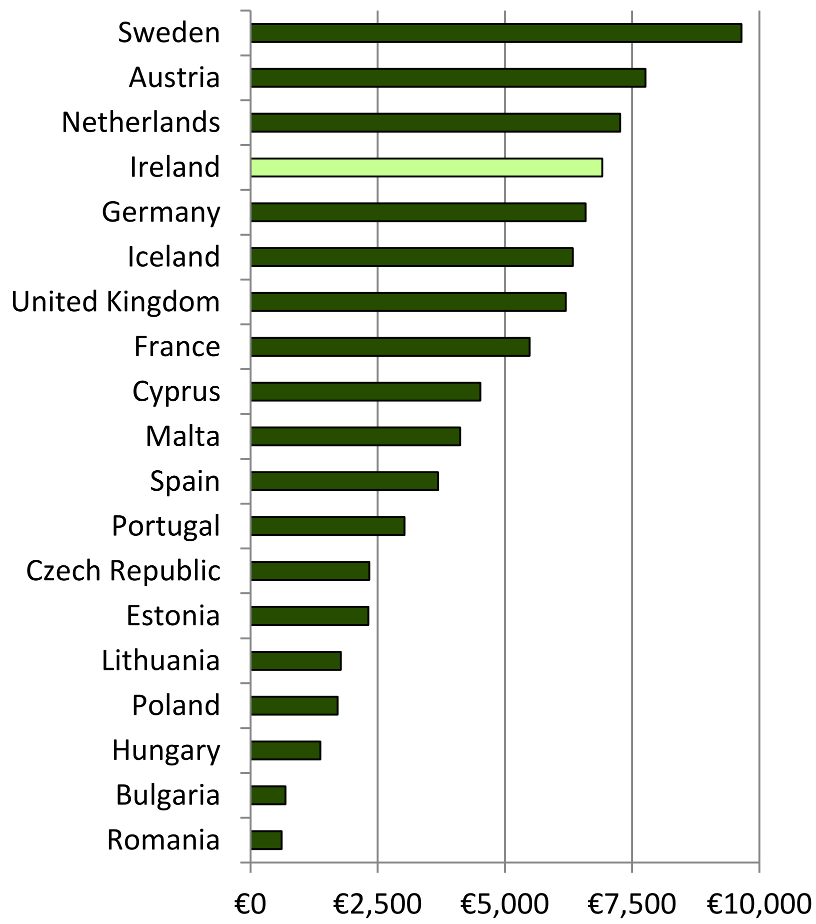
…and the highest % of population working in IT with a third-level degree



Source: Eurostat

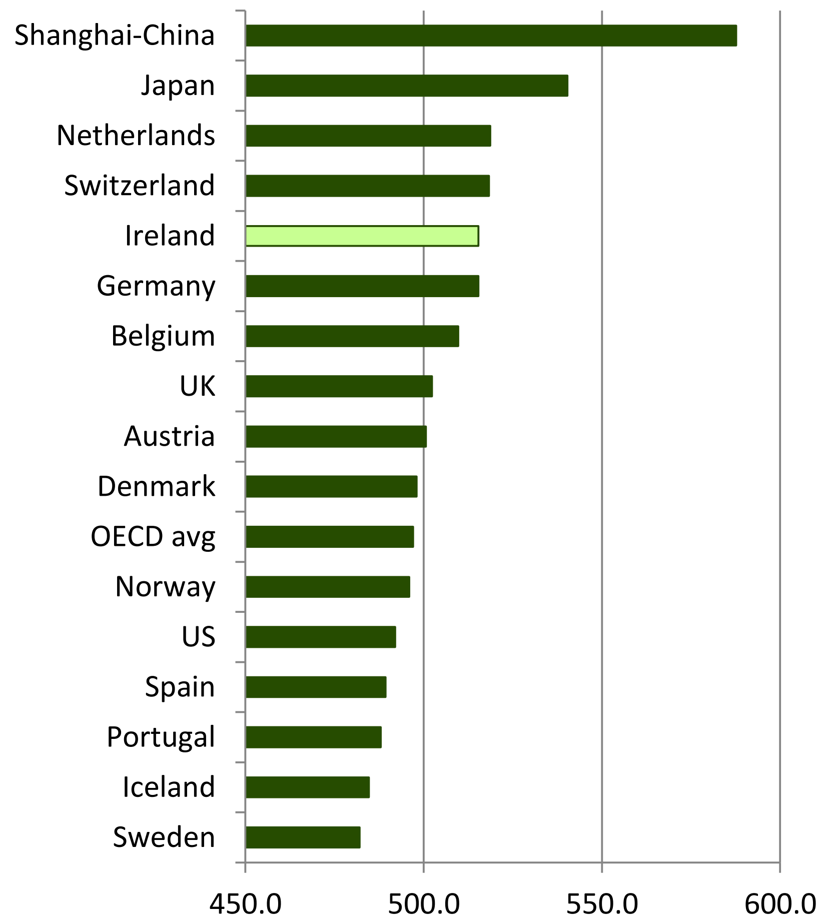
Ireland's education expenditure close to top in Europe – qualitatively competitive also

Public Education Expenditure per person aged less than 23 - Selected European Countries



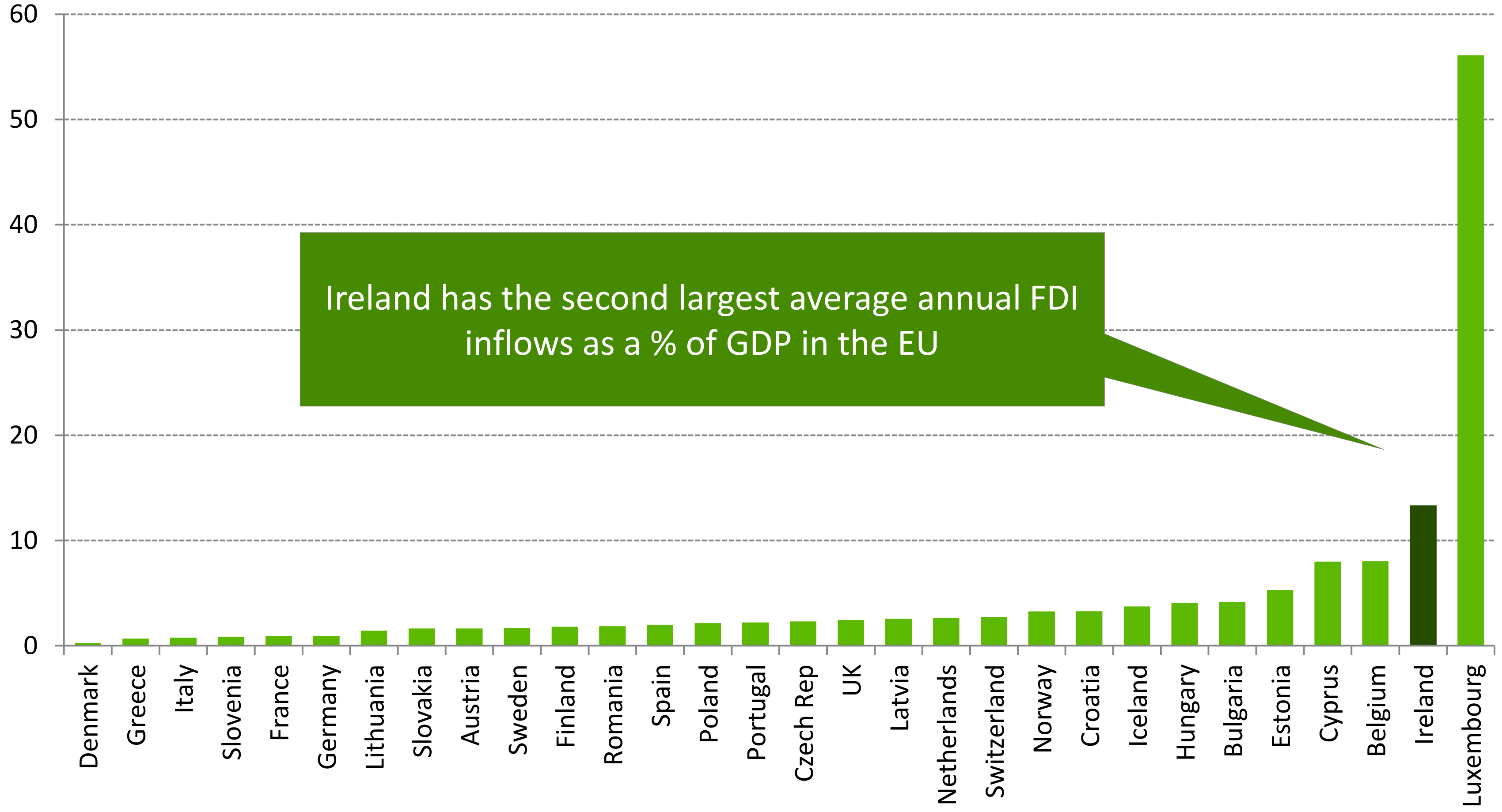
Source: Eurostat (2012)

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



Source: OECD (2012)

Ireland continues to attract foreign investment (average FDI inflows p.a % of GDP, 2009 – 2014)



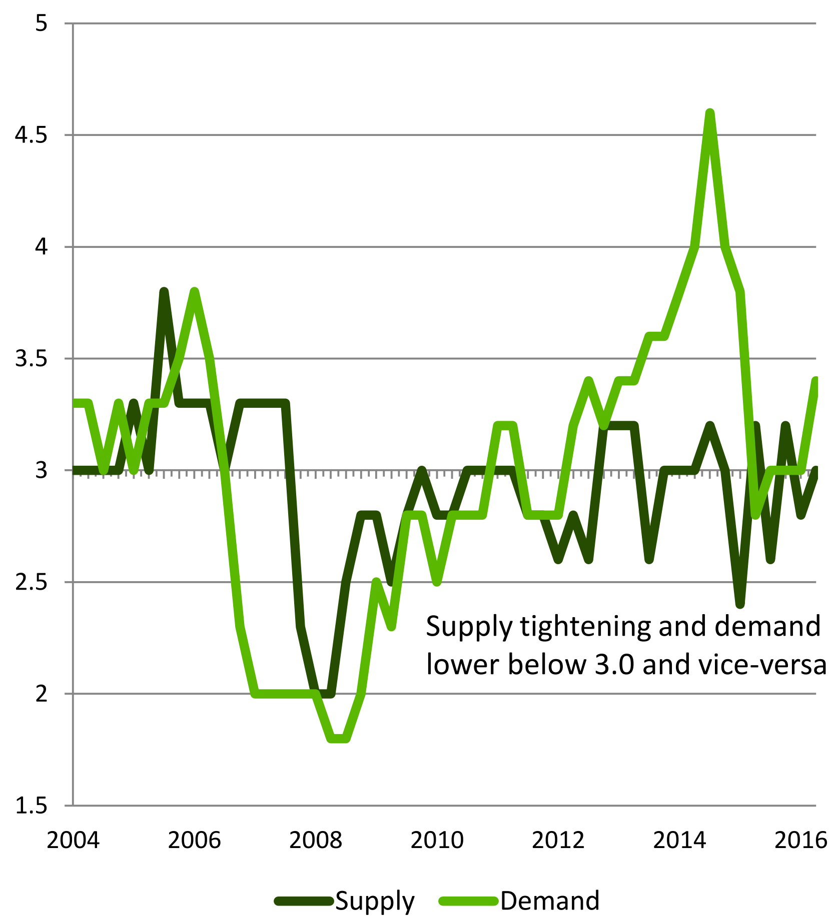
Source: [UNCTADStat]

SECTION 5: PROPERTY

Property prices rising thanks to lack of supply, reasonable starting valuations and strong capital inflows

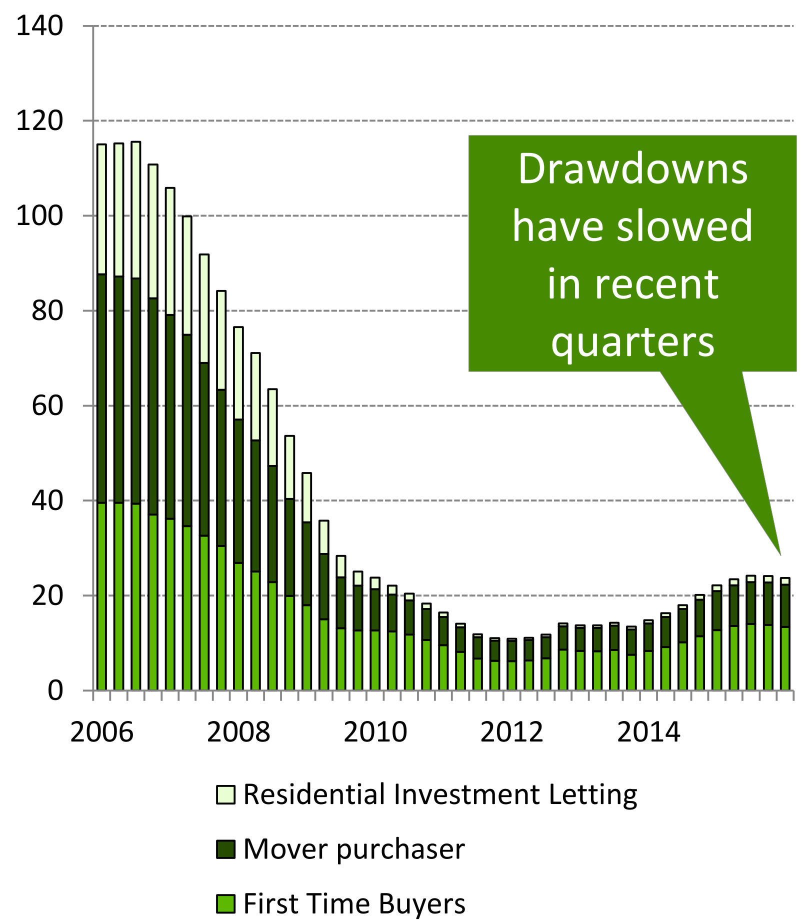
New CBI mortgage rules impacting demand

Demand increased in Q2 2016 after period of restraint following CBI rules



Source: ECB and CBI (Bank lending survey)

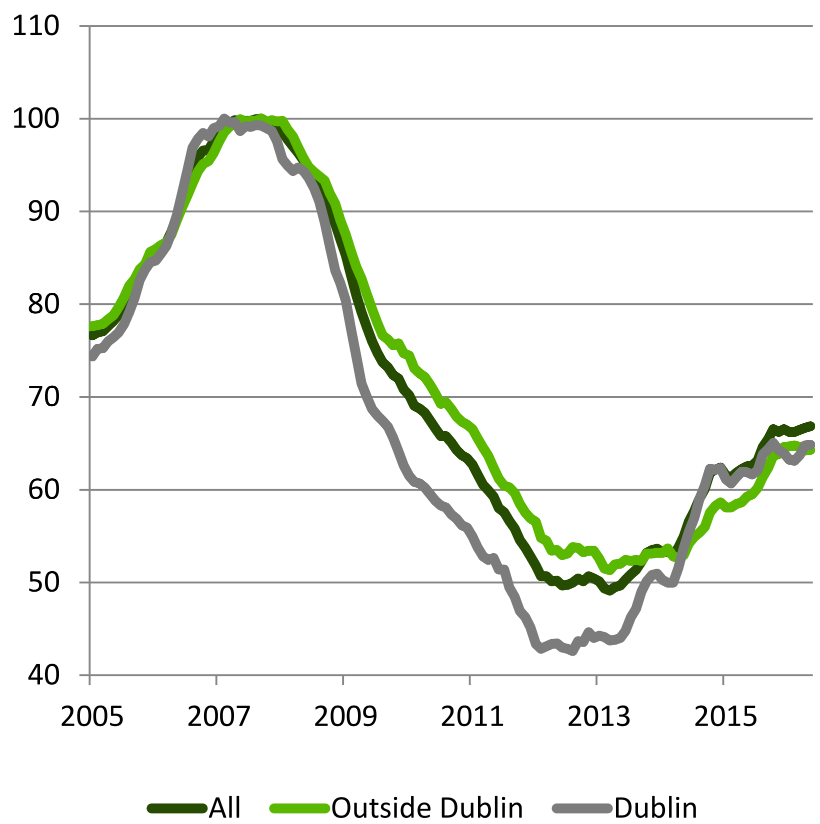
Mortgage drawdowns rise from deep trough ('000s)



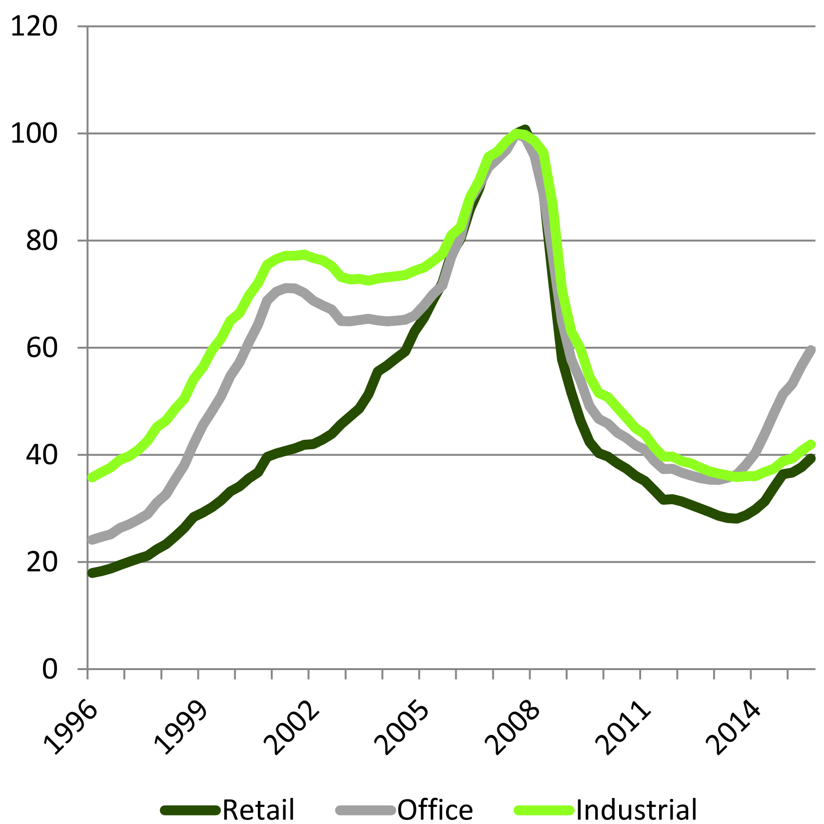
Source: BPFI

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

House prices surge has slowed in recent months



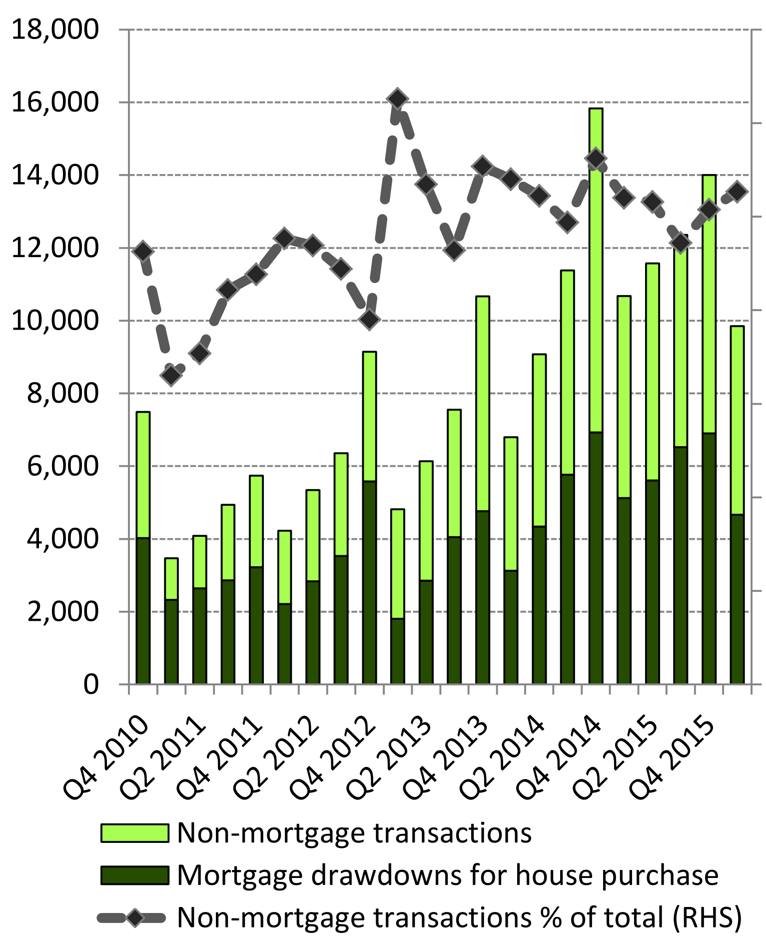
Office leads commercial property



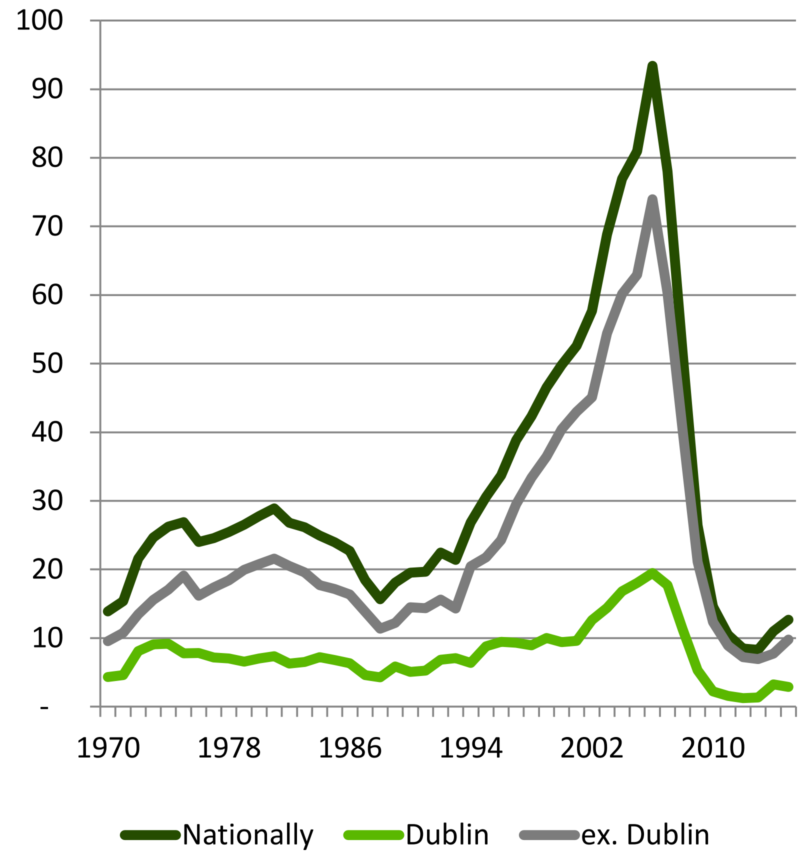
Source: CSO; IPD

Residential market continues to be boosted by non-mortgage purchasers

Non-mortgage transactions roughly 50% of all property transactions



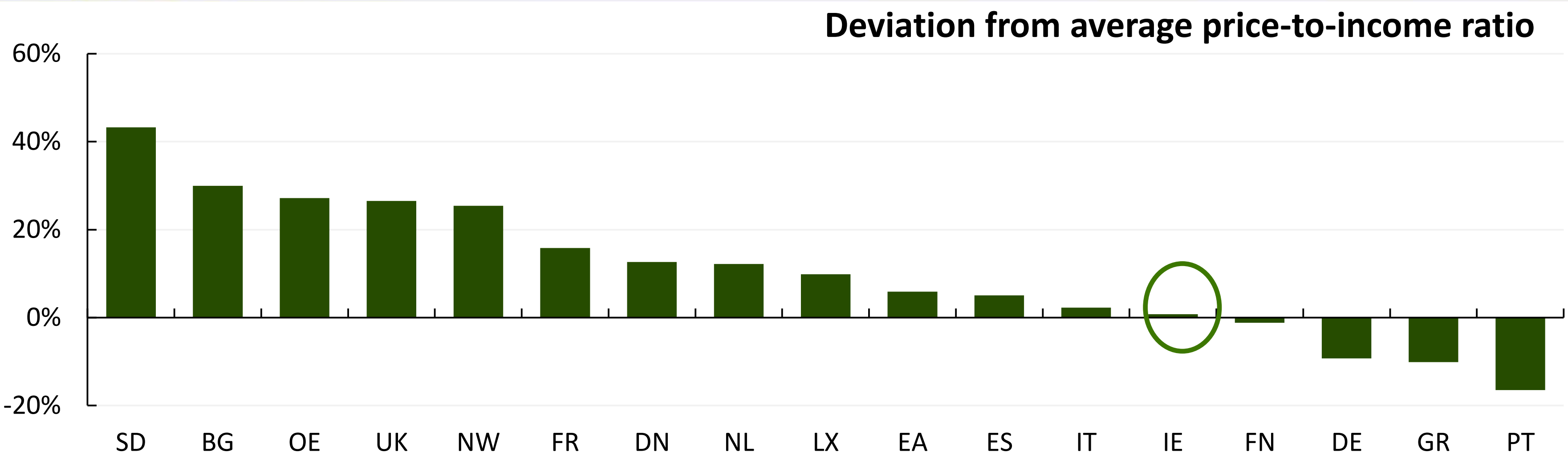
Housing Completions (000's) improving but very low historically

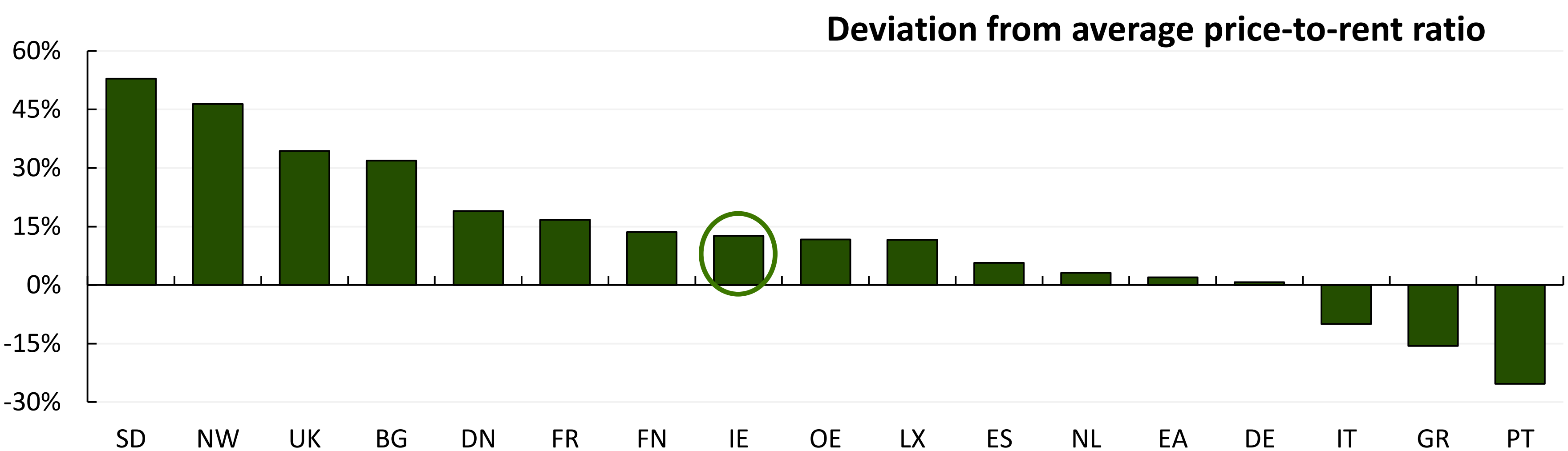


Source: BPFI; Property Services Regulatory Authority; NTMA

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 on income basis versus European countries



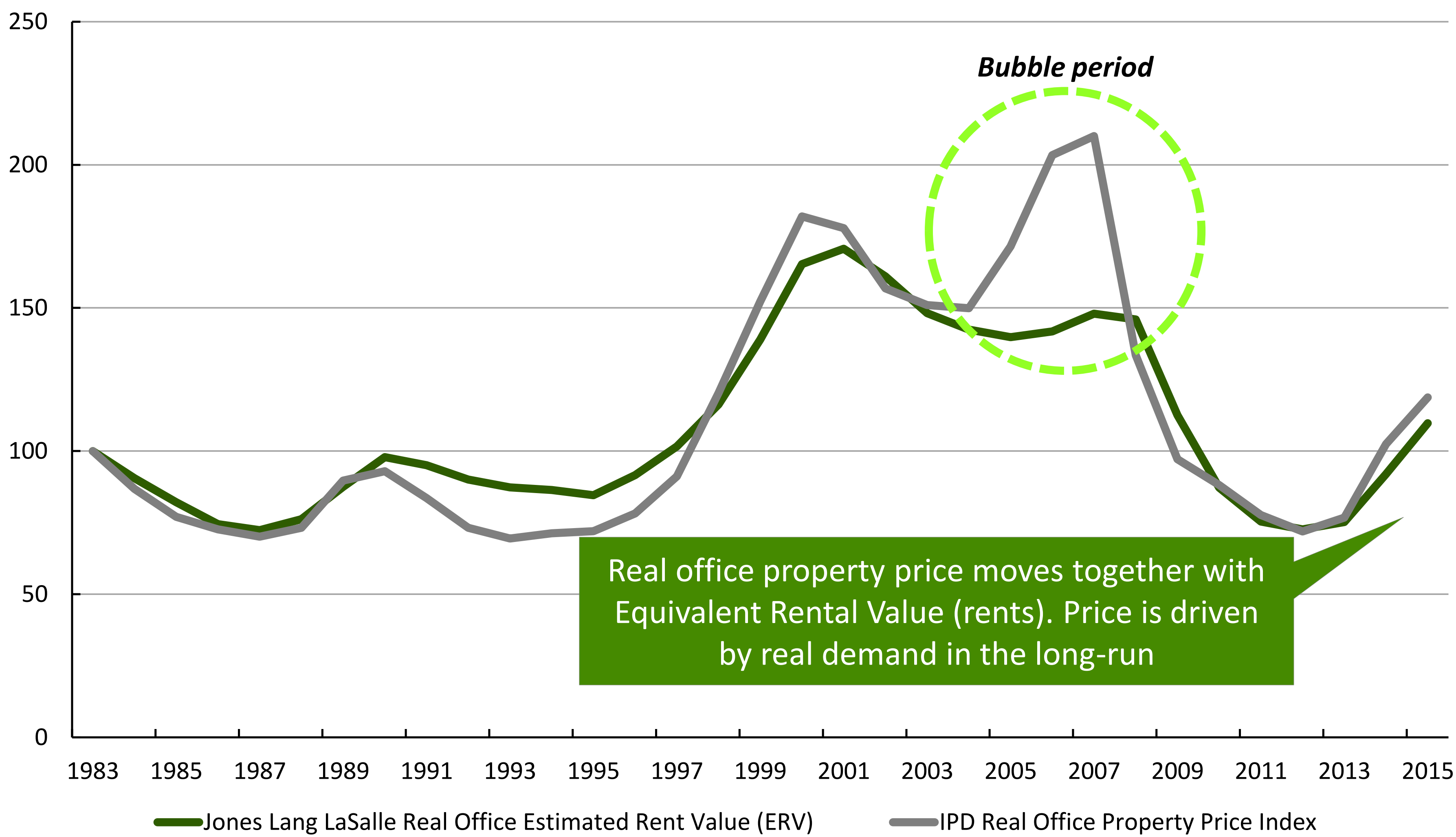


Source: OECD, NTMA Workings

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

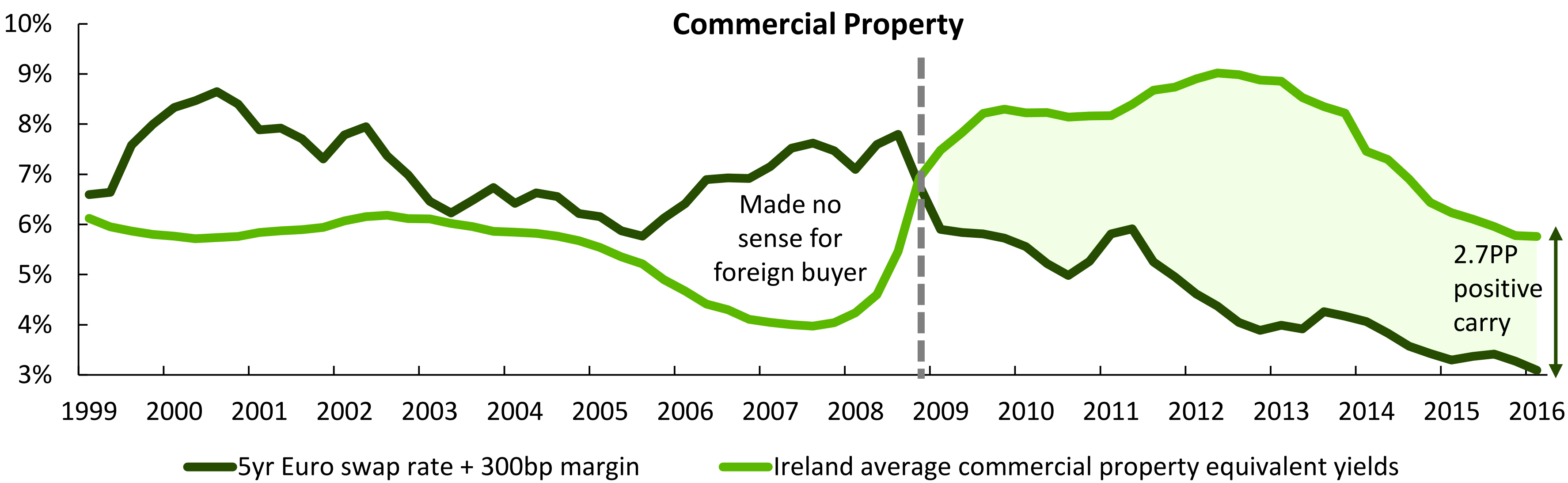
All data updated to Q4 2015

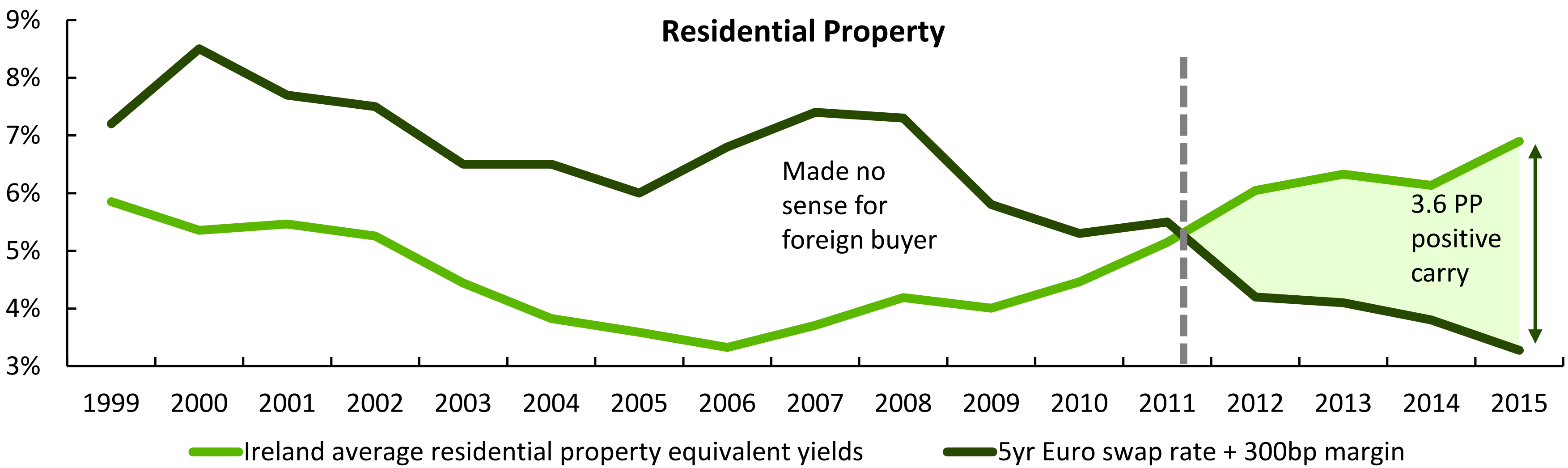
Real commercial property prices down 52% from peak (index 1983 = 100)



Source: Jones Lang LaSalle; IPD; NTMA

Investors interested on "carry trade" grounds





Source: IPD; NTMA

SECTION 6: NAMA

NAMA is set to make a profit of up to €2.3bn on wind-up

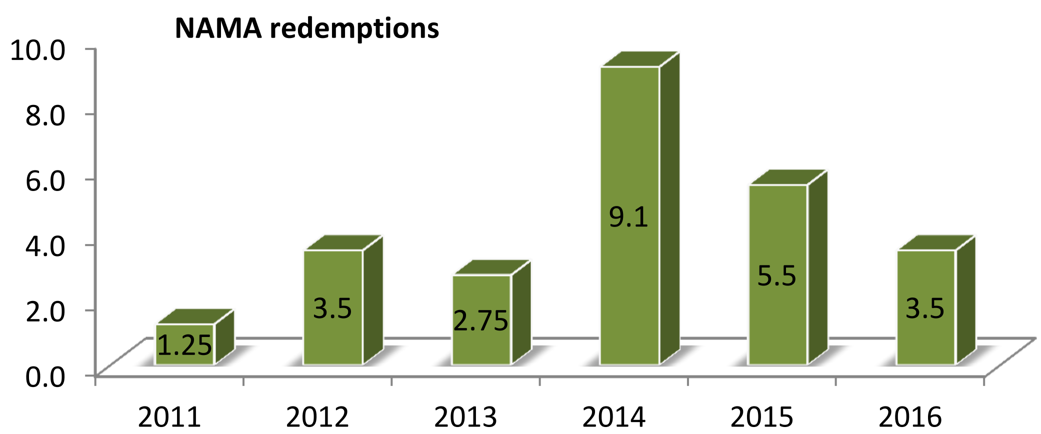
NAMA: 85% of its original debt repaid

- **NAMA's operating performance is strong**
  - Acquired 12,000 loans (over 60,000 saleable property units) related to €74bn par of loans of 758 debtors for €32bn
  - NAMA continues to generate net profit after impairment charges.
- **Repaid €25.6bn (85%) of €30.2bn of original senior debt**
  - NAMA is meeting its senior debt redemption targets ahead of schedule. Originally, a target of 50% of redemptions was set for 2016. The Agency has already met its updated target of 80% of its senior debt redeemed by 2016.
- **NAMA may realise a surplus of up to €2.3bn, according to its management team - if market conditions remain favourable**
- **In October 2015, NAMA announced a new initiative to develop up to 20,000 housing units by 2020.**

NAMA: financial summary
2011 – 2015 Financial results (€m)

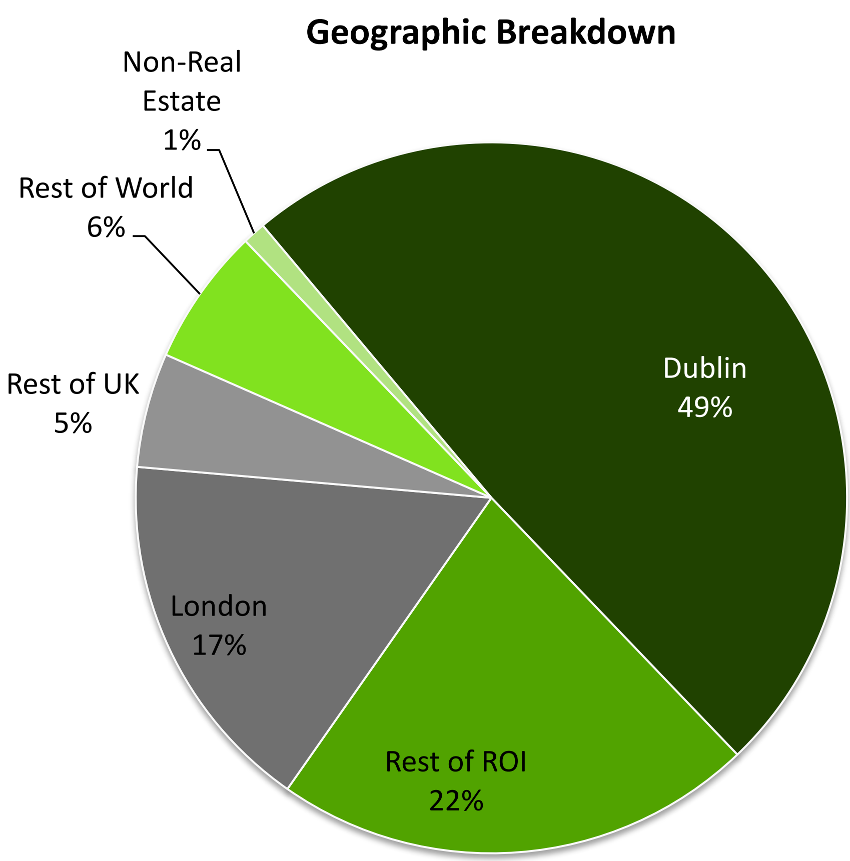
	2011	2012	2013	2014	2015
Net interest income	771	894	960	642	393
Operating profit before impairment	1,278	826	1,198	680	1,769
Impairment charges	(1,267)	(518)	(914)	(170)	86
Profit before tax and dividends	11	308	283	510	1,854
Tax (charge)/credit and dividends	235	(76)	(70)	(52)	(28)
Profit for the year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

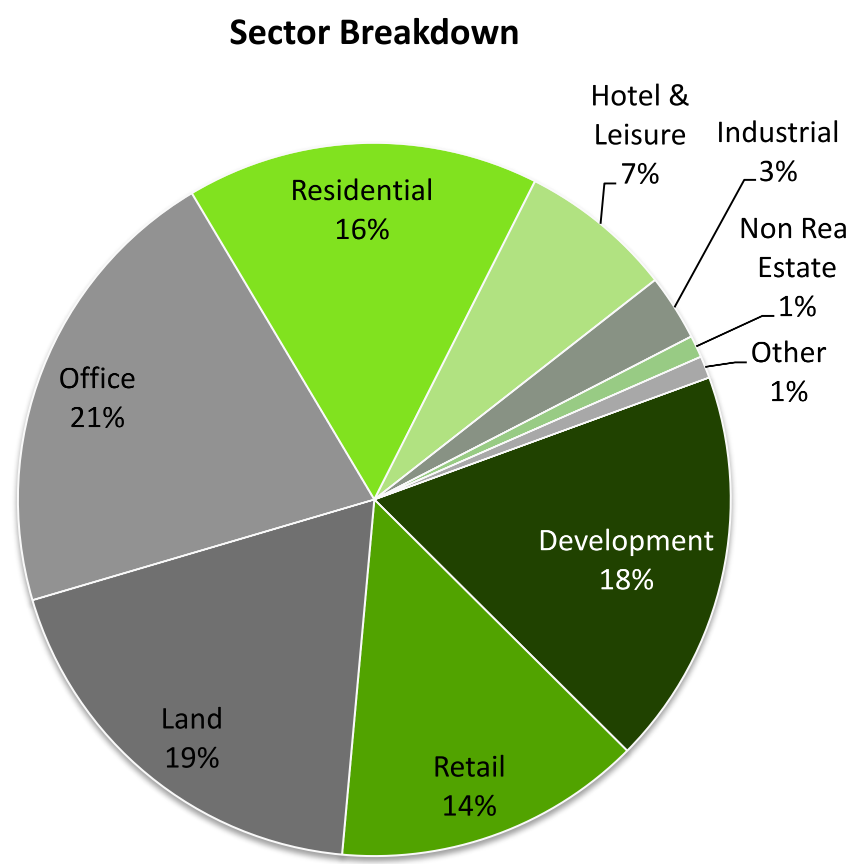
Source: NAMA



- **NAMA continues to generate net profit after impairment charges.**
- 2015 operating profit and impairment charges much improved than previous years
- €3.5bn of NAMA senior bonds redeemed in 2016 bringing total amount redeemed to €25.6bn (85% of its senior debt liabilities)
- **All of €30.2bn in NAMA senior bonds expected to be redeemed by 2018**

Breakdown of remaining NAMA portfolio (€9.6bn, end 2015)





Vast majority of remaining portfolio in Ireland is in Greater Dublin Area or in other urban centres

Source: NAMA

NAMA's residential development funding programme

- **In reaction to the lack of housing supply, NAMA hopes to bring up to 20,000 housing units to the market by 2020 under programme**

- **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)

- **Building progress has been strong so far**
  - 2,800 units completed across 58 developments since 2014
  - Another 3,100 are under construction across 40 developments.
  - Planning permission have been granted for another 5,200.
  - Planning applications have either lodged or will be lodged within 12 months for a further 11,700 units.

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

NAMA: Other strategic initiatives also progressing

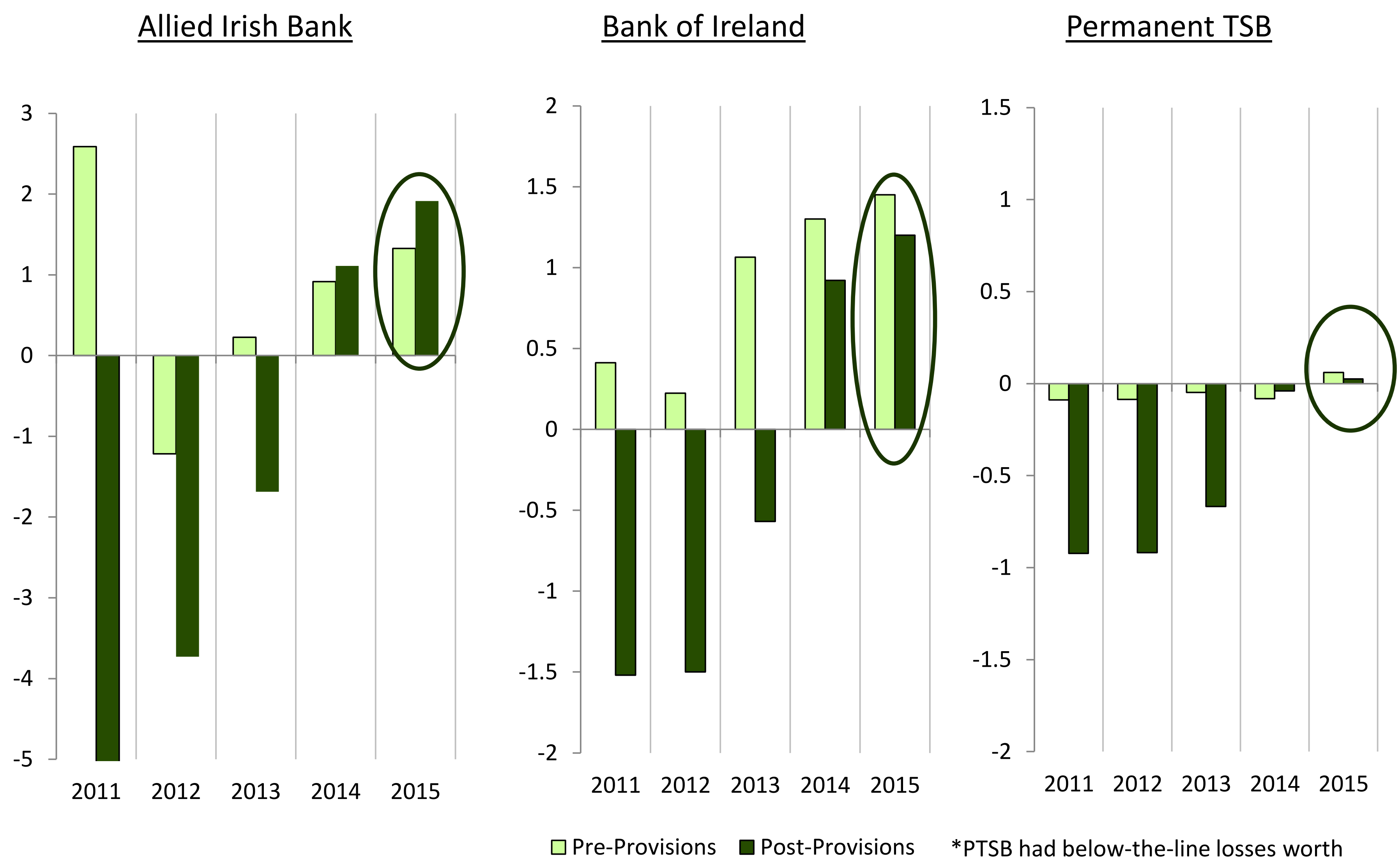
- **Dublin Docklands Strategic Development Zone (SDZ):**
  - A core objective of NAMA's development funding is to facilitate the delivery of Grade A office accommodation in the SDZ.
  - NAMA has an interest in 15 of the 20 development blocks identified in the SDZ and has developed detailed strategies for these blocks.
  - It is estimated that up to 3.8m sq. ft. of commercial space and 2,000 apartments could be delivered in all sites.
  - 47,500 sq. ft. of construction completed with another 1.2m sq. ft. of construction commenced. Planning has been granted on another 1.3m 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-December 2015, 2,500 have been confirmed as suitable by local authorities while 2,000 of those having been delivered.

SECTION 7: BANKING

Banks have returned to profit; environment has becoming more challenging

All three pillar banks in profit in 2015*

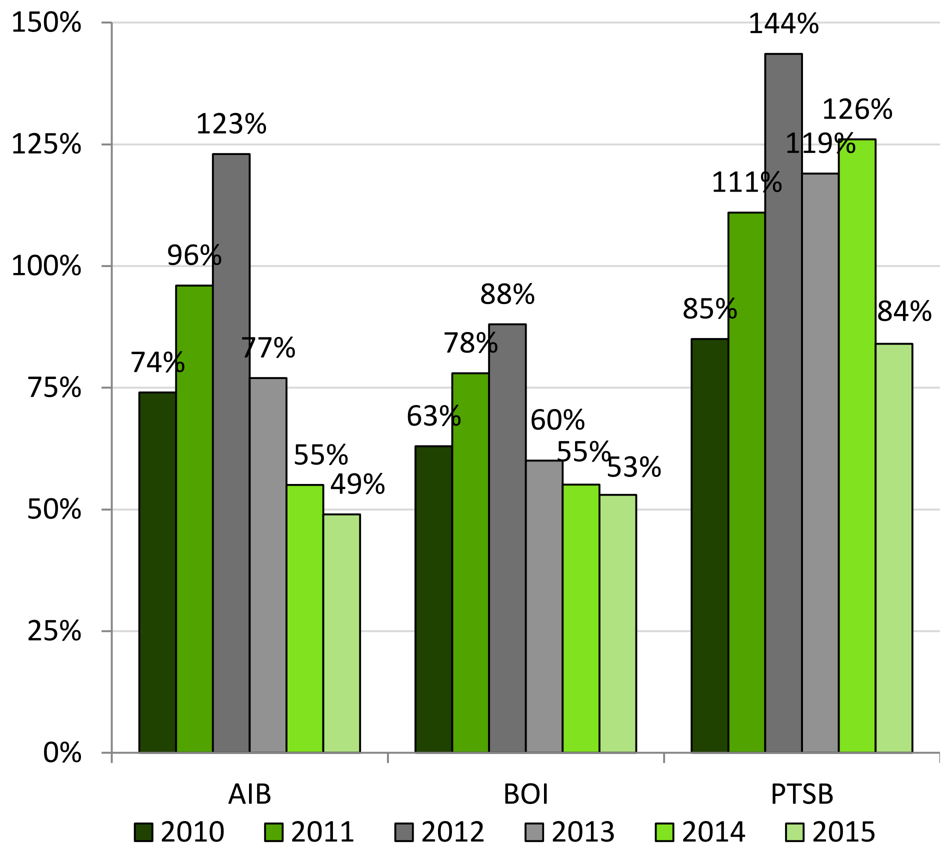


*PTSB had below-the-line losses worth €458m in 2015– operating profit was €26m before these items were included

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

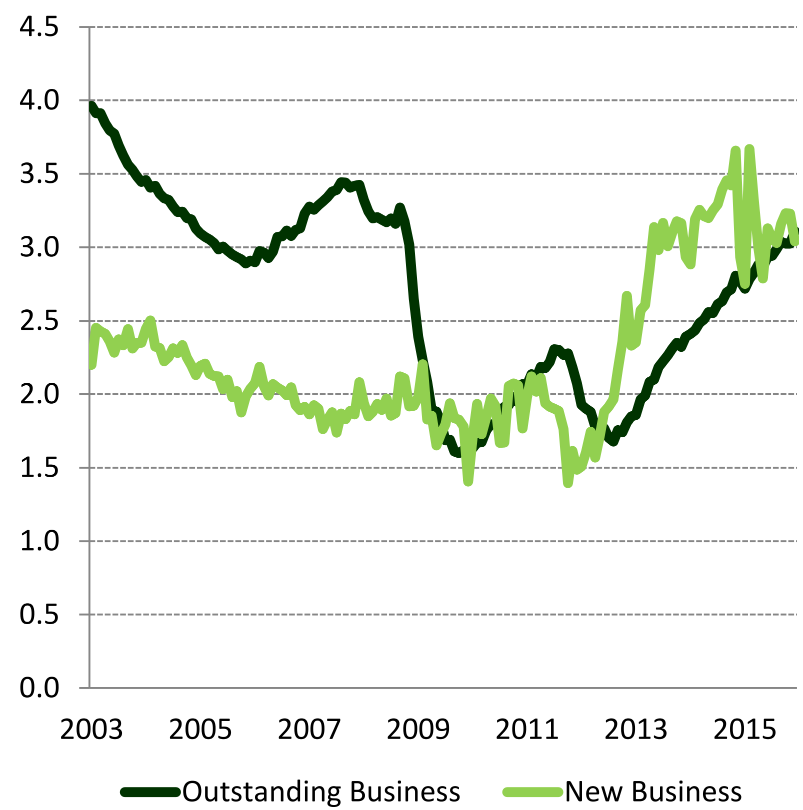
Banks fundamentally rebuild profitability

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.

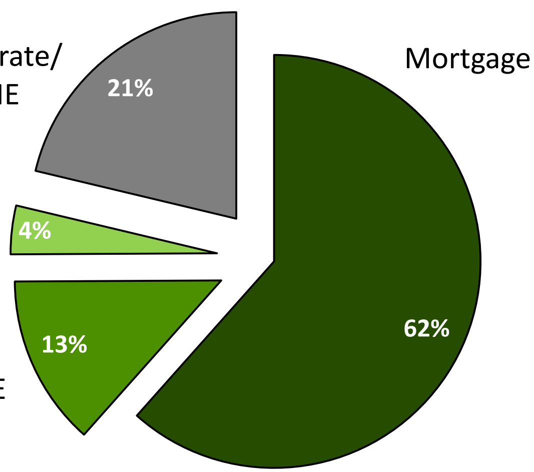
Asset quality continues to improve; impaired loans and provisions fall in 2015

Impaired loans and provisions at PCAR banks (group and three banks)

PCAR Banks (€bn)	Dec-13	Dec-14	Dec-15
Total Loans	208.9	197.1	186.5
Impaired	53.9	43.1	29.0
(Impaired as % of Total)	25.8%	21.9%	15.5%
Provisions	29.4	23.5	14.7
(*Provisions as % of book)*	14.1%	12.0%	7.9%
(Provisions as % of Impaired)	54.5%	54.5%	50.6%

Impaired Loans % (Coverage %)[1] by Bank and Asset					
		Dec-13	**Dec-14**	**Dec-15**	***Book (€bn)***
BOI	Irish Residential Mortgages	14.2(49)	12.6(46)	9.3(52)	25.0
	UK Residential Mortgages	2.4(24)	2.0(23)	1.6(22)	27.9
	Irish SMEs	26.7(50)	25.6(51)	21.9(52)	9.3
	UK SMEs	17.1(50)	16.9(44)	11.1(51)	2.4
	Corporate	7.5(41)	5.6(54)	4.6(59)	9.3
	CRE - Investment	42.3(38)	37.2(46)	28.5(53)	11.4
	CRE - Land/Development	89.3(68)	89.5(74)	84.8(76)	2.0
	Consumer Loans	8.4(90)	6.4(98)	4.1(105)	3.3
		18.5(48)	**18.2(50)**	**11.6(56)**	**90.6**
AIB	Irish Residential Mortgages	23.0(43)	22.6(40)	16.6(38)	34.5
	UK Residential Mortgages	11.3(53)	11.6(59)	10.8(50)	2.4
	SMEs/Corporate	30.0(64)	21.4(68)	11.5(63)	18.3
	CRE	66.7(64)	56.9(62)	37.4(61)	11.5
	Consumer Loans	33.2(81)	27.2(69)	19.9(77)	3.5
		34.9(59)	**29.2(51)**	**18.6(47)**	**70.2**
PTSB	Irish Residential Mortgages	26.0(47)	25.5(46)	23.6(49)	21.5
	UK Residential Mortgages	1.3(85)	1.5(60)	3.9(39)	3.6
	Commercial	68.7(63)	74.0(60)	35.8(69)	0.4
	Consumer Loans	26.0(105)	29.7(94)	27.0(93)	0.3
		23.6(51)	**24.5(51)**	**21.1(49)**	**25.7**

Loan Asset Mix (3 banks Dec 15)

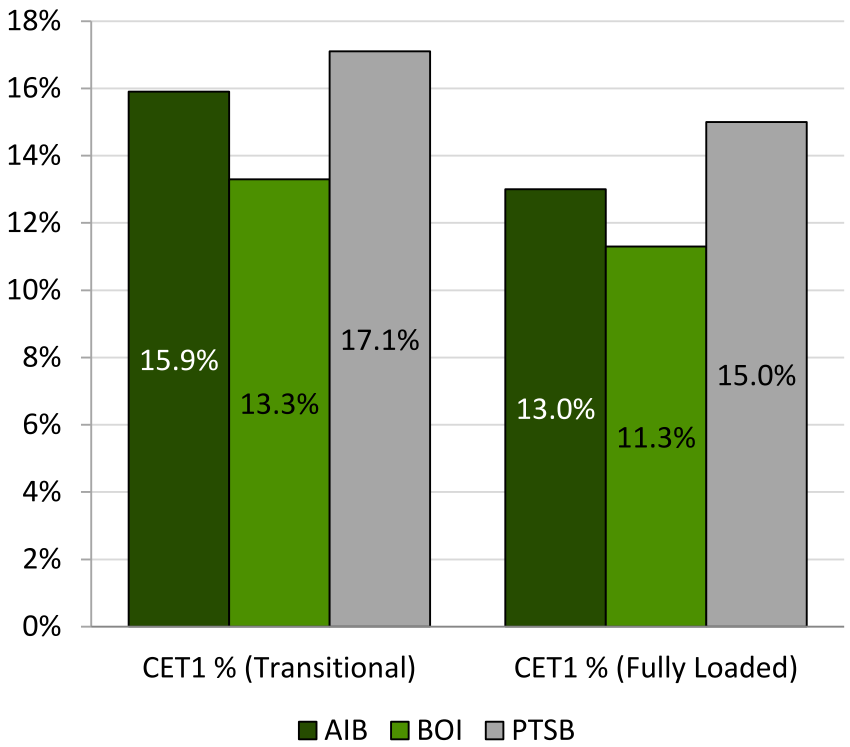


Source: Published bank accounts

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

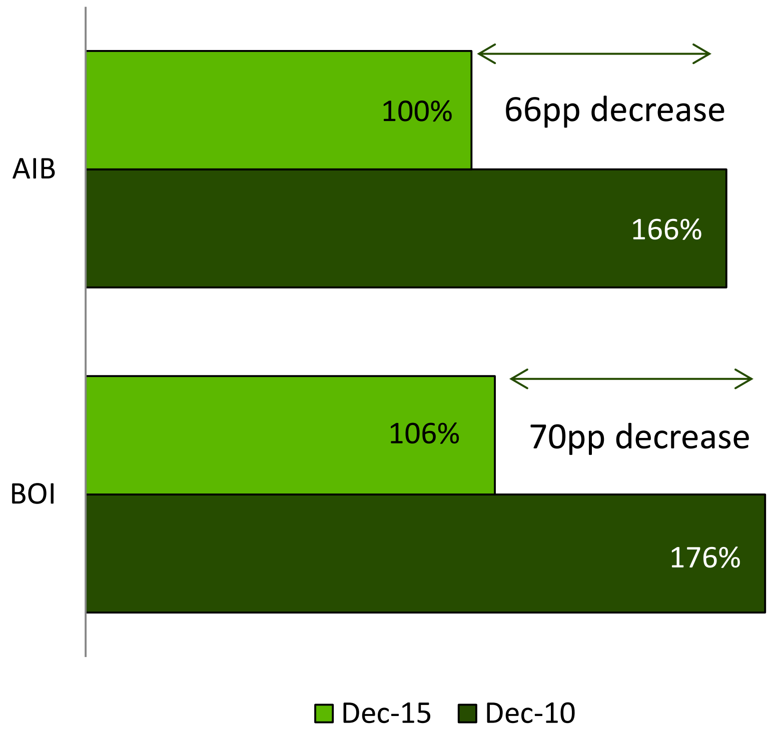
Capital and loan-to-deposit ratios strengthened

CET 1 Capital Ratios (Dec-15)



Source: Published bank accounts

Loan-to-Deposit Ratios (Dec-10 to Dec-15)



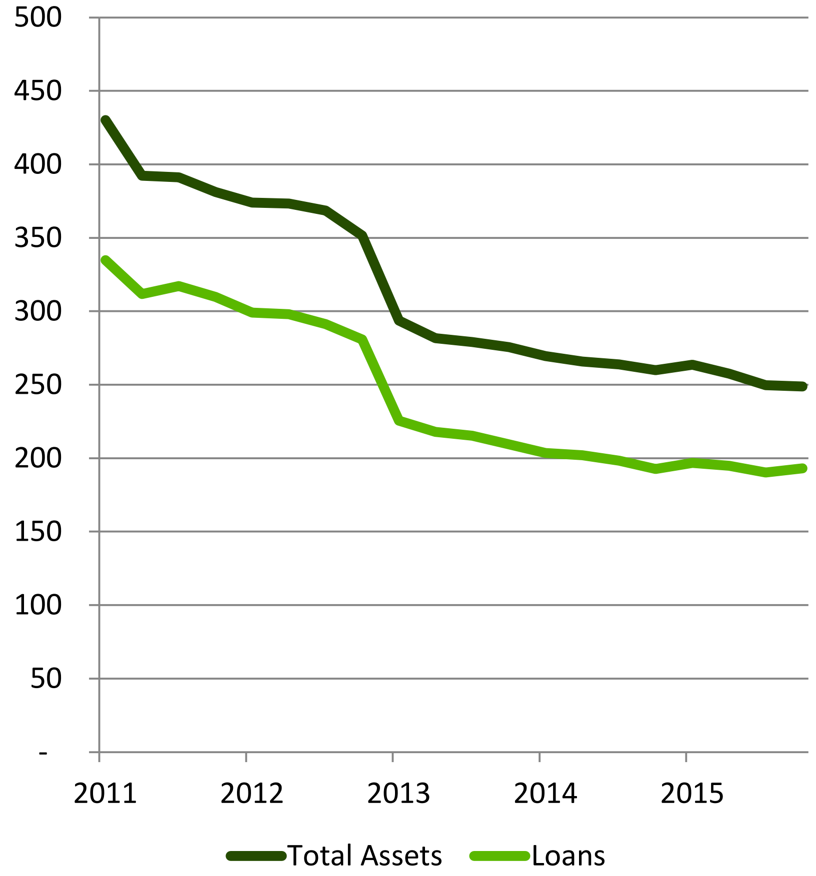
Source: Published bank accounts

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

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 much slimmer and more solid

"Covered" banks (€bns) have deleveraged



Aggregated Balance Sheet end 2015 €bn

Assets	**248.8**
• Loans and receivables	193.1
• Cash & other liquid assets	41.6
• Other	14.1
Liabilities	**225.2**
• Deposits	182.8
• Other Liabilities	42.3
Equity & Minority Interest	**23.6**

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

BofI UK exposure

	End-2015	% of Group Total
Total Income	c. €820m	25%
Credit Outstanding	€39.8bn	44.0%
Operating Profit	€284m	19.6%
Impairment charge	(€139m)	47.0%

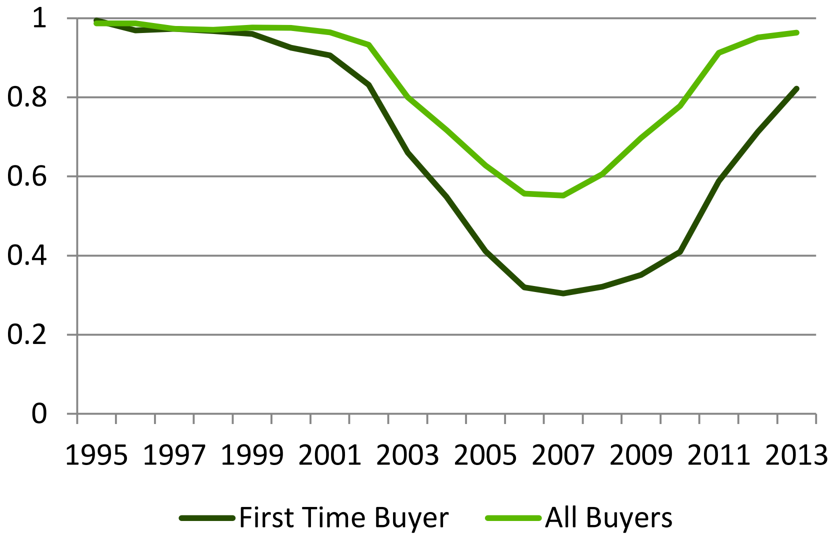
AIB UK exposure

	End-2015	% of Group Total
Total Income	€251m	10%
Credit Outstanding	€11.5bn	16.3%
Operating Profit	€134m	10.5%
Impairment charge	€32m	3.5%

Source: Published bank accounts

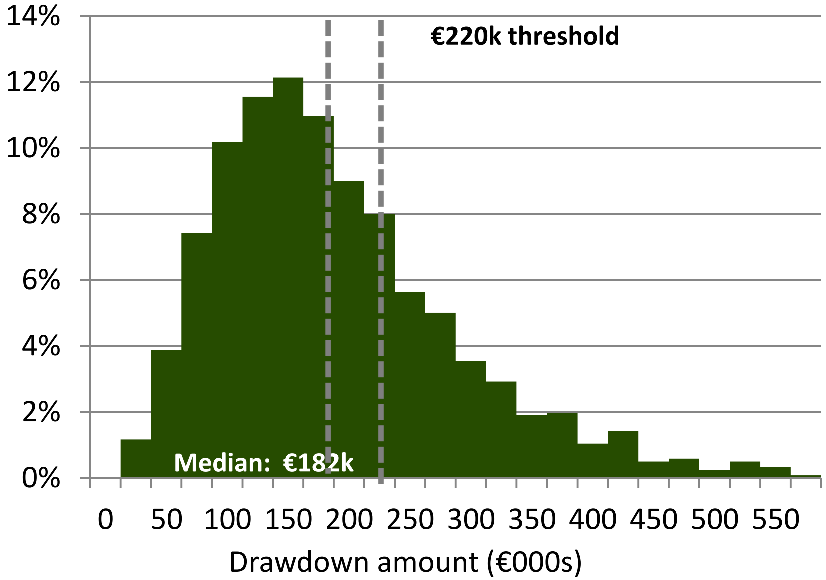
CBI's macro-prudential rules increase resilience of banking and household sector

Proportion of loans below 3.5 times LTI by year



Source: CBI

House price distribution for FTBs in 2014 H1



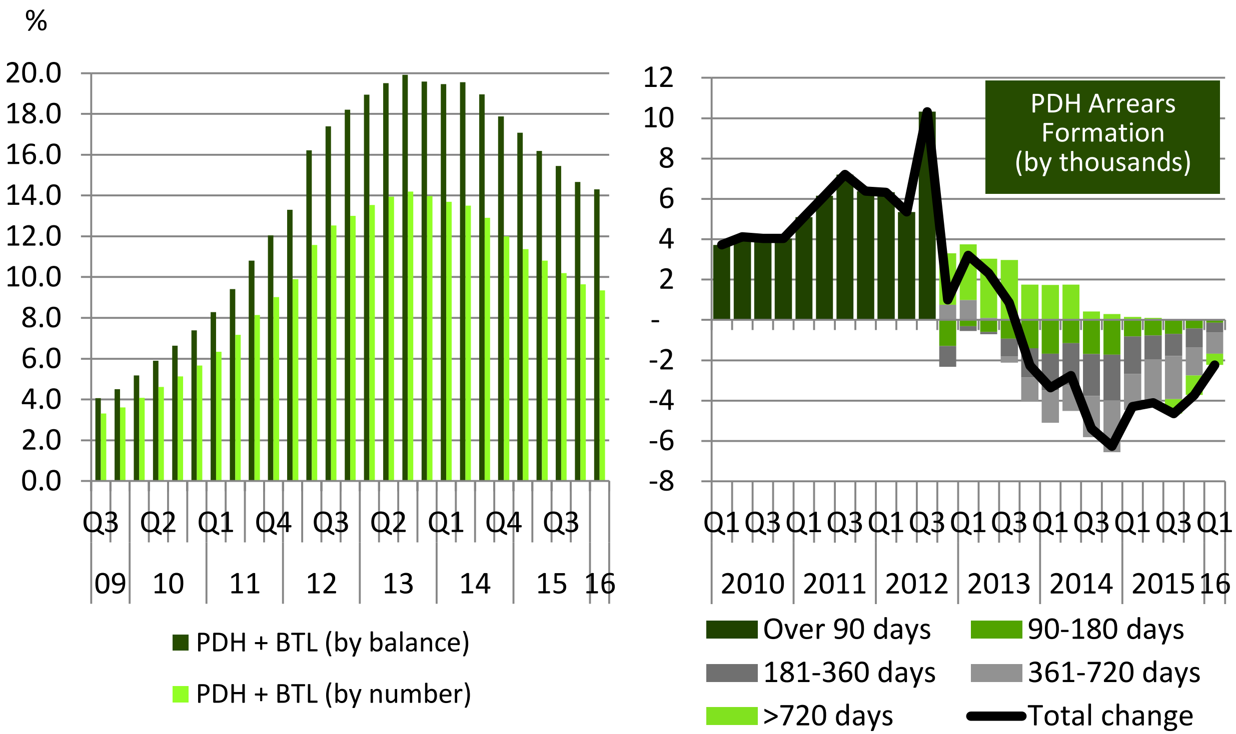
Key lending rules

Banks must restrict lending for primary dwelling purchase above 80 per cent LTV to no more than 15 per cent of the aggregate value of the flow of all principal dwelling loans*
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.

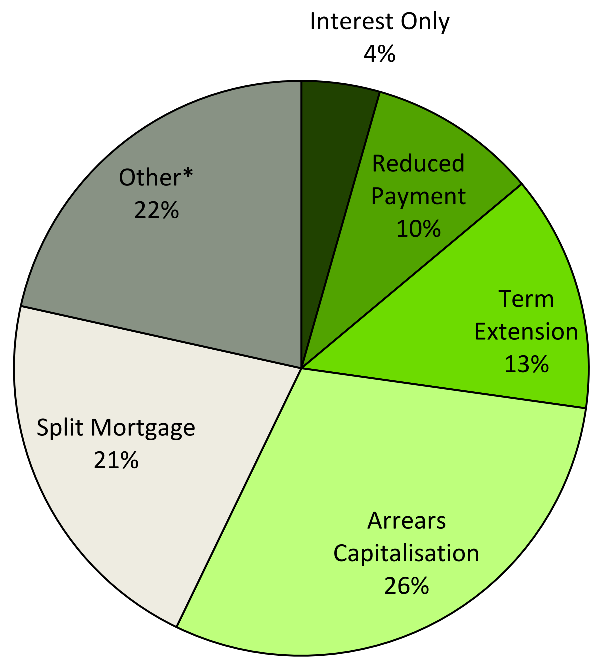
* First time buyers can borrow 90% of the first €220,000 and 80% of the remaining property value

Irish residential mortgage arrears – improving across all maturity categories; still challenging environment

Mortgage Arrears (90+ days)



Total Restructured/Rescheduled Cases



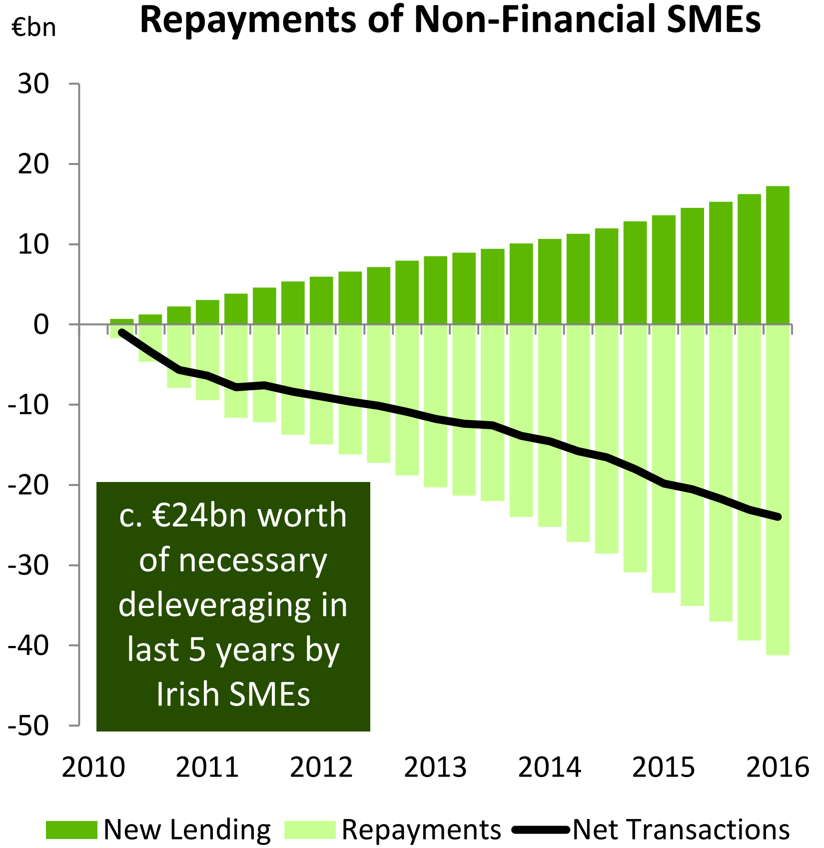
Source: CBI

- PDH mortgage arrears have fallen steady since for 10 quarters. The smaller BTL market (c. 25% of total) has higher arrears but also saw declines in the same period.
- 120K PDH mortgage accounts were classified as restructured at end-March 2016. Of these restructured accounts, 87% were meeting the terms of the restructured arrangement.

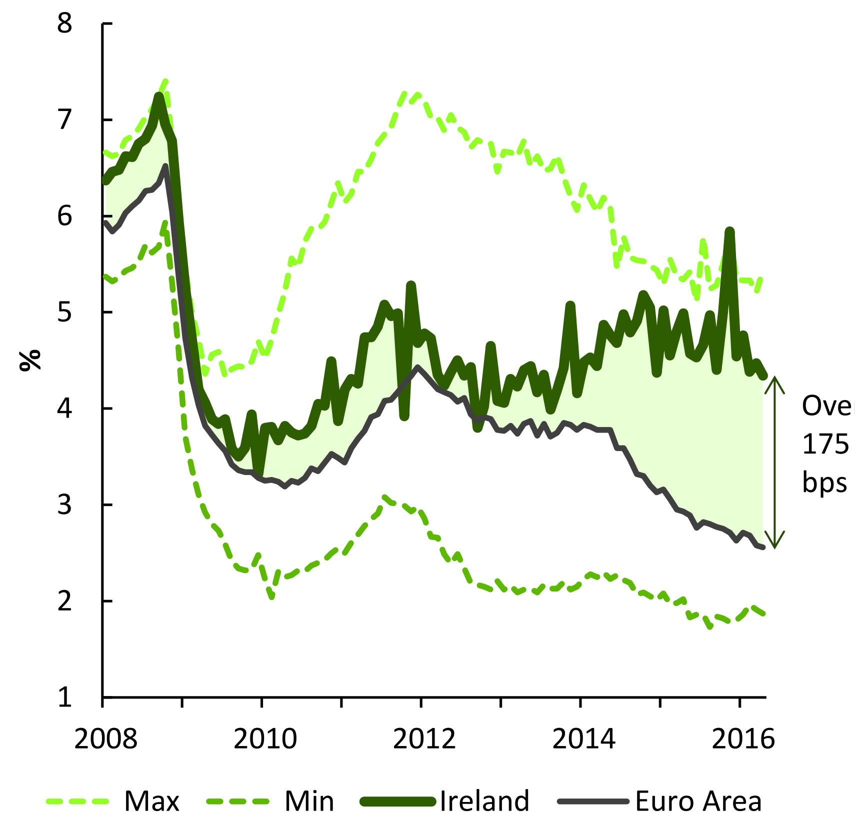
* 'Other' comprises accounts offered temporary Interest rate reductions, payment moratoriums and long-term solutions pending six months completion of payments.

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 175bps over EA average



Source: [CBI](); [ECB]()

National Treasury Management Agency

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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