

# Building the New Economy: Asset Creation in a World of Zeroes

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“Money, money  
everywhere,  
Nor any drop to  
invest...”

With apologies to Samuel Taylor Coleridge’s  
“Rime of the Ancient Mariner”

## High performing businesses aligned to growth drivers

### ASSET MANAGEMENT

	Operating Profit (£m)	
	H1 2015	H1 2014
<b>Legal &amp; General Investment Management</b>	176	149
• Over \$1 trillion of assets		
<b>Legal &amp; General Retirement</b>	280	188
• Over £46bn of assets		
<b>Legal &amp; General Capital</b>	115	102
• £4.8bn of shareholder assets		
<b>TOTAL</b>	<b>571</b>	<b>439</b>

### INSURANCE

	Operating Profit (£m)	
	H1 2015	H1 2014
<b>Legal &amp; General Insurance</b>	192	179
• Retail protection GWP £545m		
• Group protection GWP £229m		
• General insurance GWP £164m		
<b>Legal &amp; General America</b>	40	43
• Term assurance business		
• \$80m net cash in H1		
<b>TOTAL</b>	<b>232</b>	<b>222</b>

### DIRECT INVESTMENTS

- 48% stake in CALA Homes: UK top-ten house builder, record profit before tax of £51m.
- Urban regeneration in partnerships:
  - Leeds - £160m
  - Cardiff - £400m
  - Bracknell - £240m
  - PGGM Joint venture - £745m
  - English cities find partnership
- Pemberton SME lending - €547m AUM

Group-wide direct investments H1 2015 (£bn)

6.2

### SAVINGS

	Operating Profit (£m)	
	H1 2015	H1 2014
<b>Mature Savings</b>	51	55
• £35bn of mature assets		
<b>Digital Savings</b>	(1)	(1)
• £75bn of platform assets		
<b>TOTAL</b>	<b>50</b>	<b>54</b>

## Predictable Cash Generation, Driven by Management Action

DIVISIONS	2014 OPERATIONAL CASH £m	2015 GUIDANCE £m	2015 KEY ACTIONS
LGR	292	340	<ul style="list-style-type: none"> <li>• Creation of international business</li> <li>• Growth in direct sales and lifetime mortgages</li> </ul>
Insurance excl. GI	286	290	<ul style="list-style-type: none"> <li>• Reduce unit costs</li> <li>• Profitably grow the non-growing businesses e.g. Group protection</li> </ul>
Savings <sup>1</sup>	127	135	<ul style="list-style-type: none"> <li>• Reduce unit costs</li> <li>• Improve platform profitably</li> </ul>
LGA	46	50	<ul style="list-style-type: none"> <li>• Reduce unit costs</li> <li>• Help establish LGR in the US</li> </ul>
LGC	162	170	<ul style="list-style-type: none"> <li>• Create private rental sector as asset class</li> <li>• Accelerate urban regeneration e.g. RIO, Walthamstow</li> </ul>
LGIM <sup>1</sup>	275		<ul style="list-style-type: none"> <li>• Accelerate US and Asian growth</li> <li>• Accelerate retail and DC growth</li> </ul>
GI	46		<ul style="list-style-type: none"> <li>• Build direct distribution channel</li> <li>• Evaluate new lines of business</li> </ul>
Group debt costs	(112)	(116)	
Other costs	(21)		
<b>Total operational cash</b>	<b>1,101</b>		
New business surplus	3		
<b>Total net cash</b>	<b>1,104</b>		
<b>Operating costs<sup>2</sup></b>	<b>1,250</b>	<b>1,170<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• 6.4% nominal cost reduction</li> </ul>

1. Workplace savings is excluded from Savings operational cash and cash guidance, and included in LGIM operational cash.

2. Operating costs represent management expenses and project expenditure incurred during the year. This excludes defined benefit scheme costs.

3. Guidance excludes c.£40m restructuring costs to achieve the c.£80m reduction in operating costs.

## ➤ L&G: A clear and focused strategy for a Divergent World

GROWTH DRIVERS	
<b>AGEING POPULATIONS</b>	<ul style="list-style-type: none"> <li>• The world is getting older, people live longer and have not saved enough for retirement</li> <li>• Over 60's have c£1.3trn of housing equity, increasingly used to fill this savings gap</li> <li>• \$10trn of defined benefit liabilities globally, with increasing demand for de-risking solutions</li> </ul>
<b>GLOBALISATION OF ASSET MARKETS</b>	<ul style="list-style-type: none"> <li>• Asset markets around the world are becoming increasingly homogenous</li> <li>• This creates attractive opportunities to grow and internationalise our successful investment management capabilities</li> </ul>
<b>WELFARE REFORMS</b>	<ul style="list-style-type: none"> <li>• Pressure on public finances is moving the provision of welfare from the state to individuals and employers</li> <li>• Shrinking state funding will drive demand for the private provision of protection products</li> </ul>
<b>DIGITAL LIFESTYLES</b>	<ul style="list-style-type: none"> <li>• Changes in digital customer engagement are presenting both opportunities and challenges to all companies</li> <li>• Using digital capabilities to generate scale and efficiency will be key</li> </ul>
<b>BANK RETRENCHMENT</b>	<ul style="list-style-type: none"> <li>• Retrenching banks create opportunities for investors with long term investment horizons to invest in real assets</li> <li>• Real assets provide enhanced risk adjusted returns if executed well</li> </ul>

# Forecasting is really difficult... Even for Smart Central Bankers.

*"No one will lend at a negative interest rate; potential creditors will simply choose to hold cash, which pays zero nominal interest."*

**Ben Bernanke, 2009**

*"I think negative rates are something the Fed will and probably should consider if the situation arises."*

**Ben Bernanke, December 2015**

*"In theory there is no difference between theory and practice. In practice there is."*

**Yogi Berra**

*"They will make it through the storm."*

**Ben Bernanke, January 18 2008**

(Two months before Fannie Mae and Freddie Mac collapsed and were nationalised)

*"I wish I'd been omniscient and seen the crisis coming."*

**Ben Bernanke, December 5 2010**

*"... the impact on the broader economy and financial markets of the problems in the subprime market seems likely to be contained."*

**Ben Bernanke, March 28 2007**

(4 months before US warning that the sub-prime crisis could cost \$100bn)

*"Like the English batsmen preparing to defend the Ashes, watching carefully and perfectly balanced in the crease ready to play forward or back according to the length of the incoming delivery, so the monetary policy committee will watch the incoming data carefully, ready to adjust policy in either direction in order to keep inflation on track to meet the 2pc target in the medium term."*

**Mervyn King, November 2010**

(As BoE continued to miss its monthly forecast target before effectively abandoning it in 2013)

*"For my own part, I did not see and did not appreciate what the risks were with securitization, the credit ratings agencies, the shadow banking system, the S.I.V.'s — I didn't see any of that coming until it happened."*

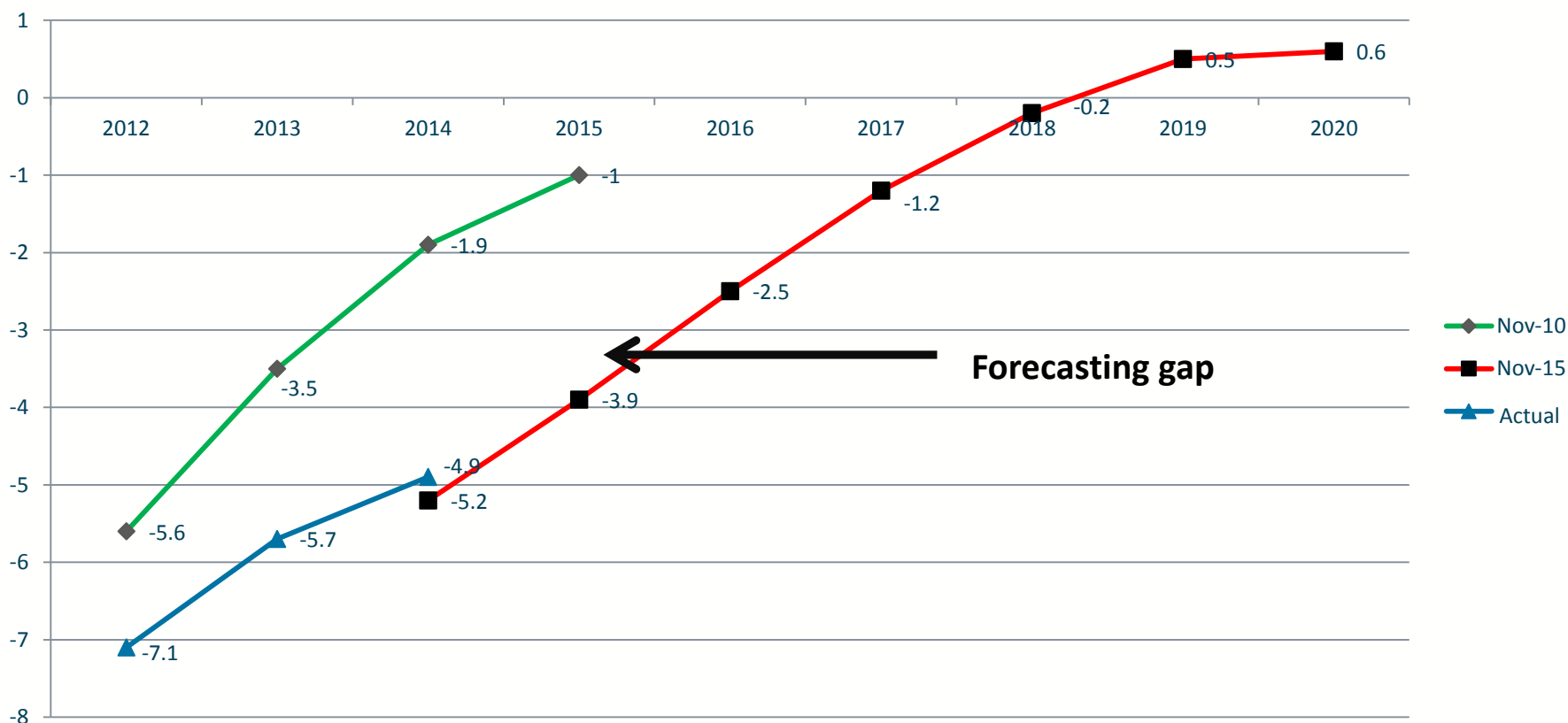
**Janet Yellen**

*"We really can't forecast all that well, and yet we pretend that we can, but we really can't."*

**Alan Greenspan, October 2013**

# Forecast misses: we can't be complacent

## UK Government Borrowing as % of GDP



- Ageing population will force hard decisions on welfare – risk sharing?
- Welfare vs Bond Market: “Clash of the Titans”

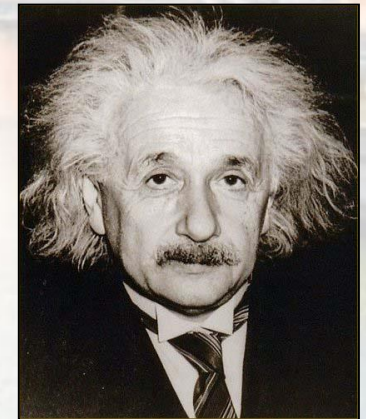


## ➤ Is the global macro economy moving to a digital world of zeros?

		Downside	
	Analogue Economy Paper Money % change	Digital Economy Digital Money % change	
- Economic growth	2 - 4	0	
- Nominal interest rates	4 - 6	0	
- Real interest rates	2 - 3	0	
- Inflation	- Normal - Hyper	3 - 10 10 - 30	0
- Wages	- Nominal - Real - Hyper	4 - 6 2 - 3 10 - 30	0
- Currency	Fixed with "crashes"	Volatile with Competitive devaluations	

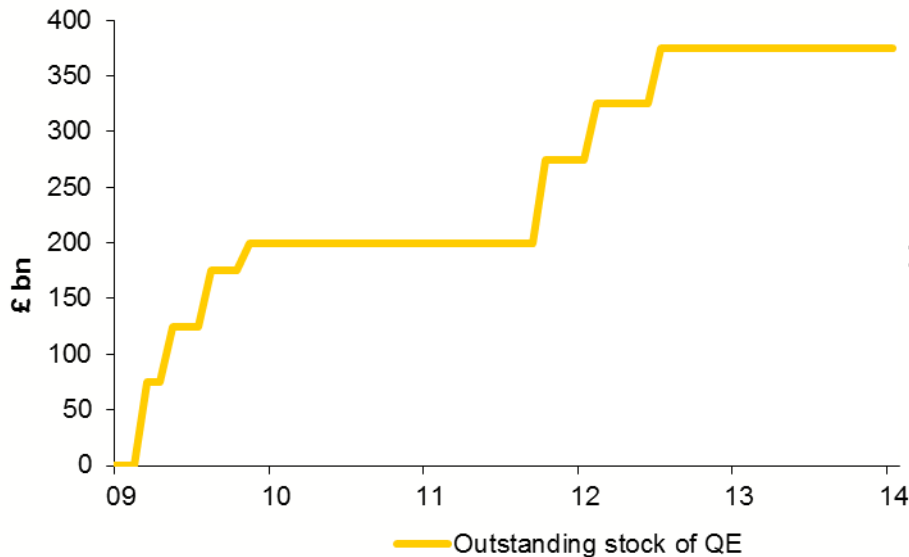
"We cannot solve our problems with the same thinking we used when we created them."

- Albert Einstein

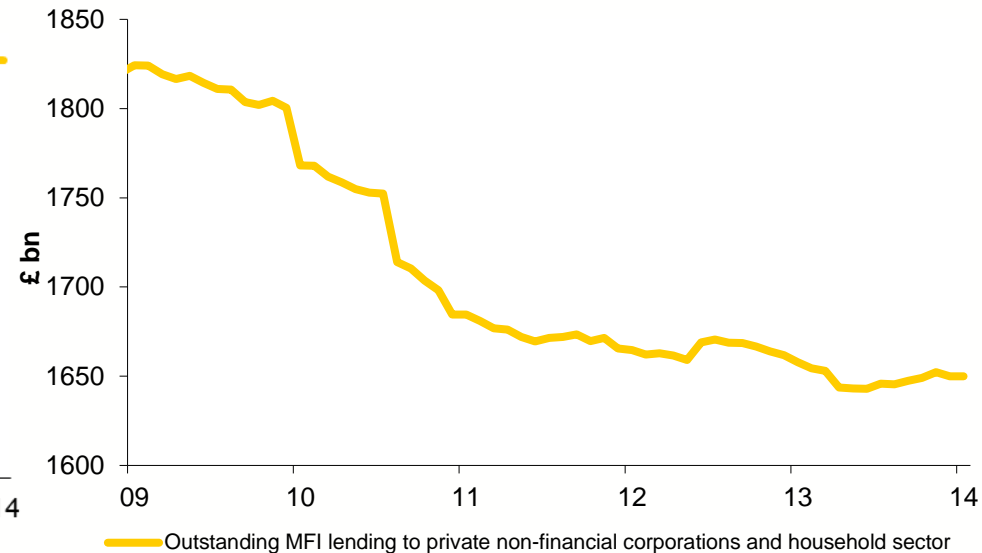


# QE was not a policy for growth, but perpetual zero-coupon financing for governments: negative interest rates next?

The UK's QE 2009-2014



STERLING M4 2009-2014

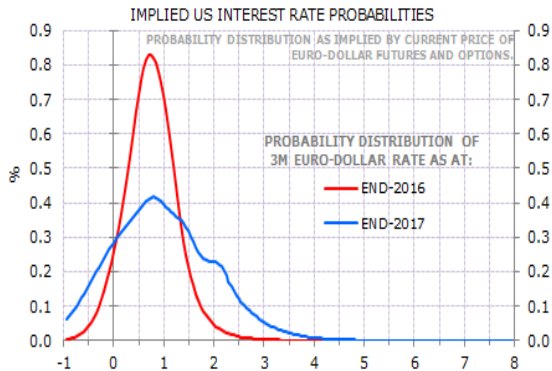


- **QE probably saved us in 2008.**
- **More 'narrow money' doesn't compensate for 'broad money' destruction: if over-indebtedness was the problem, this cannot be the solution.**
- **Two-speed money results in different winners and losers**
- **Do negative rates eliminate the value storage function of money?**
- **Are the laws of economics changed, or just suspended?**

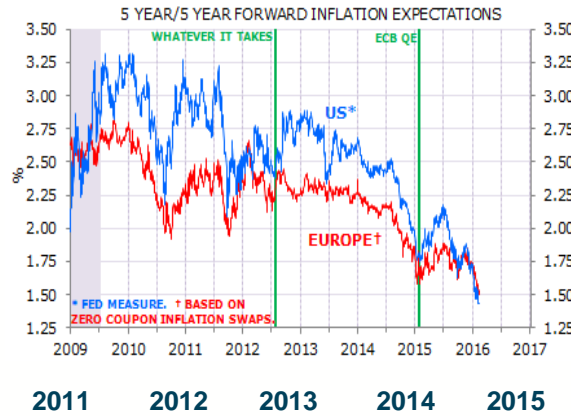


# Three Routes to Zero

## Bond Yields

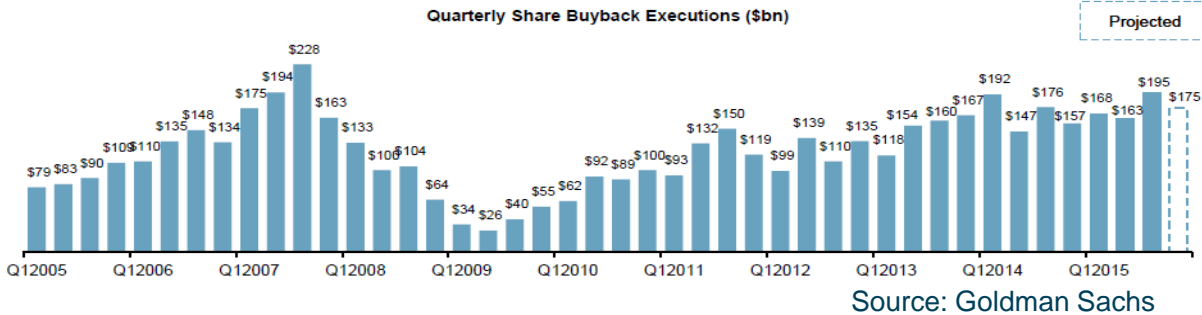


## Inflation



## Share Buybacks

Historical Execution Activity:



Source: Company's SEC quarterly filings, Birinyi Associates  
 Note: May include purchases pursuant to employee stock option programs, tender offers and/or accelerated share repurchase programs.

- \$6trn of 10-year JGB's now negative
- “Draghi Put” overhangs unstructured banks
- Real Wages and Productivity below 2008 levels

Windfalls for corporates:

- Outsourced production to Asia
- Low tax and interest rates
- Removal of equity through buybacks: 47 authorisations *last week* for \$42bn
- Low real wages, hollowed-out middle management

# Are We Ready for the Second Machine Age?

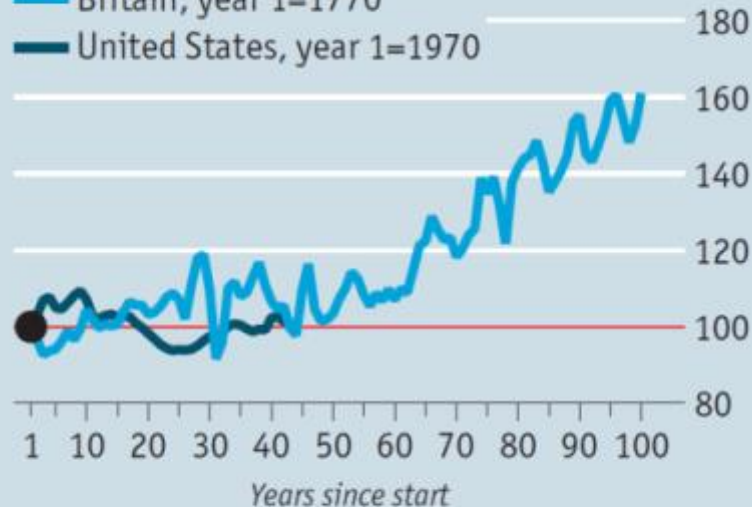
## A history to repeat?

3

Average real wage, year 1=100

— Britain, year 1=1770

— United States, year 1=1970



Sources: "Pessimism Preserved: Real Wages in the British Industrial Revolution" by R.C. Allen (2013); US Bureau of Labour Statistics

## Questions for Policymakers:

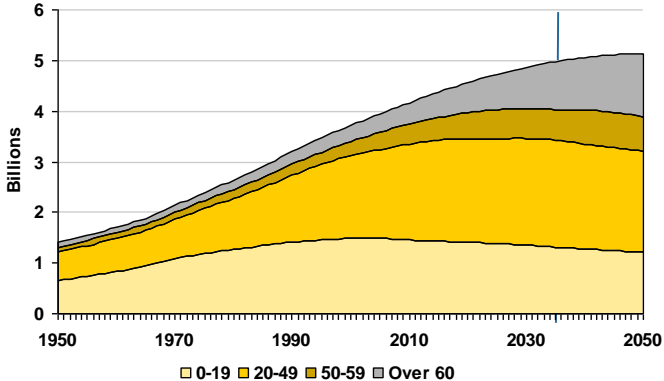
- ▶ What is productivity in a digital world?
- ▶ What are the implications for employment?
- ▶ What are the implications for inequality?
- ▶ Successful businesses will ride the digital wave. Can government respond? If so, how?

# Are We Ready for a Greyer World?

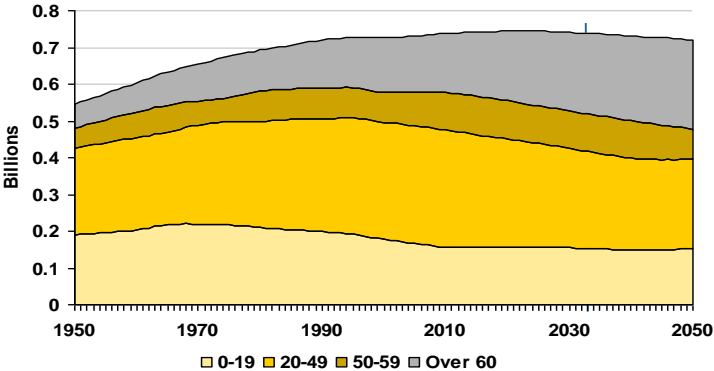
*“The world is becoming grey. Over 60s rising from 600 million to 2 billion by 2050”*

WORLD POPULATION GROWTH 1950-2050

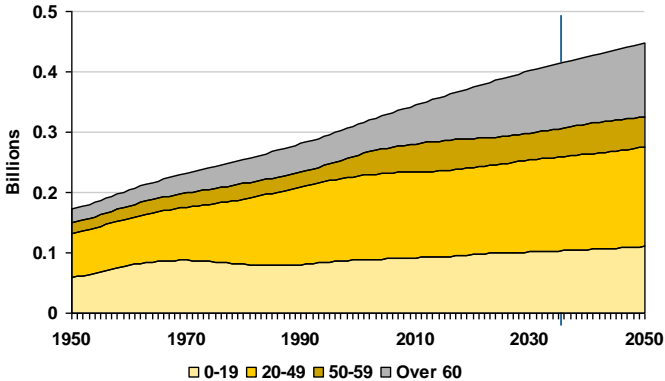
ASIA



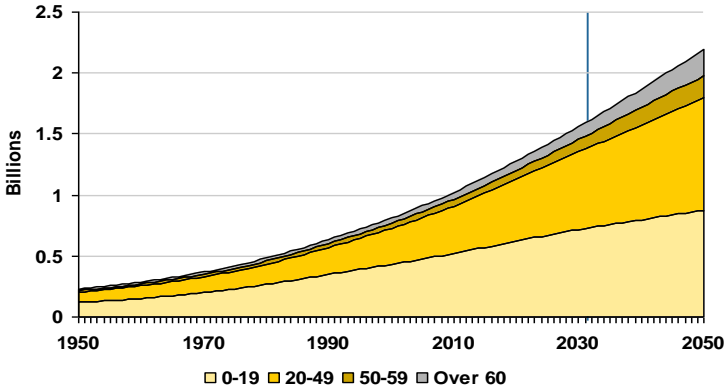
EUROPE



NORTH AMERICA

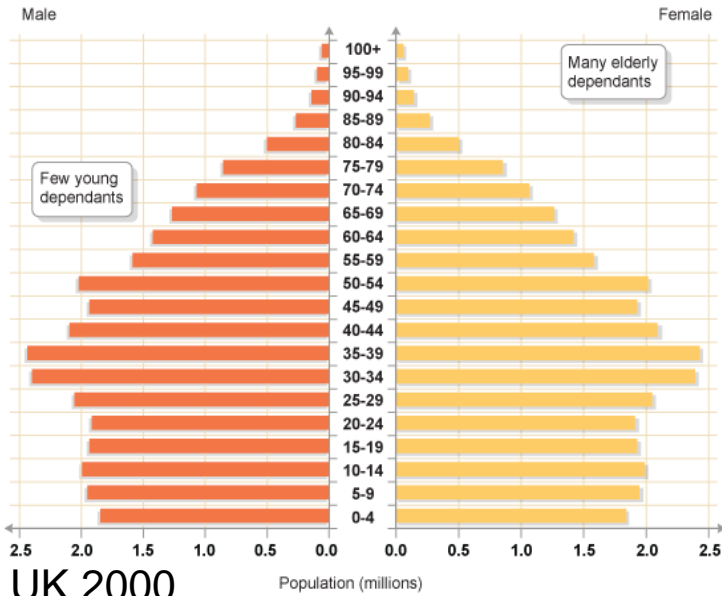


AFRICA

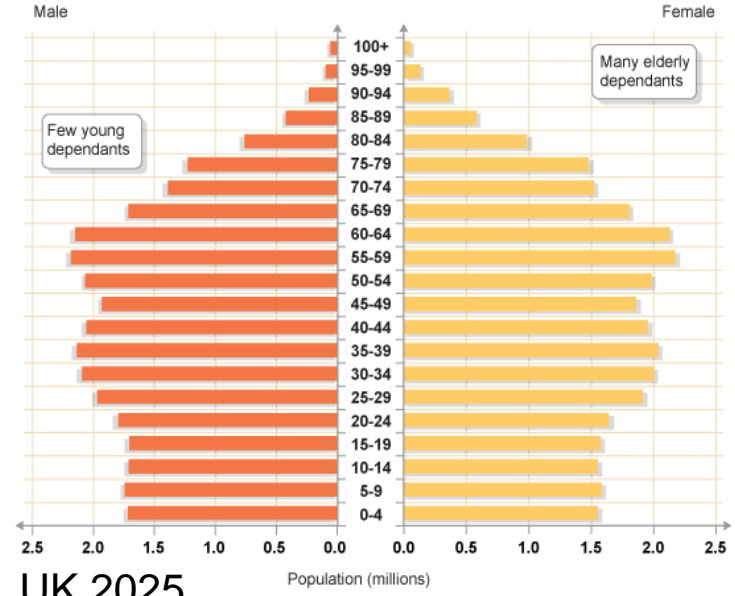


Source: United Nations Population Division, 2010 projections. Total projected world population in 2050 is 9.3 billion.

# Are We Ready for less intergenerational and government support?



UK 2000



UK 2025

Dependency Ratio	1950	2030 (Est)
Japan	12.2	1.8
Germany	7.1	2.1
Italy	8.0	2.3
France	5.8	2.4
UK	5.9	2.9
US	8.1	3.0

## Investment is required to deliver growth; Pension de-risking is required to deliver security

- (1) **DM economies have over-consumed and under-invested – EM economies have under-consumed and over-invested**
- (2) **Public and private investment is too low – we need a change in policy and approach**
- (3) **There has never been so much money, so badly invested:  
We need to invest in the new**
- (4) **Moore's Law is relentless: technology in computing and energy gets exponentially cheaper**

**Positive, Constructive Collaboration is required:  
Governments, Regulators and Business.**



## ➤ Building Digital Cities: part of our £15bn Investment in Infrastructure

“Our Towns and Cities aren’t overbuilt, they’re under-demolished”



Direct Investment programme over five years

# 10:1



Digital infrastructure investment' multiplier: key to economic growth – a collective responsibility

L&G's Investment in a £400m Development - Cardiff



# LONG TERM DIRECT INVESTMENTS BY LEGAL & GENERAL.

Direct investment programme, with £6.3bn invested to date

▶ **£15bn**

## Launching a €250m Renewable Energy Fund:

"By using our balance sheet to pave the way for large scale, long term institutional investment, we are helping revolutionise these technologies to benefit investors, consumers, and wider society."

John Bromley

Head of Clean Energy, LGC

Transport and Logistics:  
£320m, maturities to 30 years

Salford MediaCityUK  
£500m

English Cities Fund  
schemes in Liverpool,  
Plymouth, Canning Town,  
Salford and Wakefield:  
over 5.4m sq ft of mixed-  
use space, brownfield land  
Royal Liverpool University Hospital:  
£429m rebuild

£400m Cardiff city centre  
redevelopment joint venture

Places for people:  
£252m, acquiring 4,000  
homes, building 7,000  
houses, 50 year lease

Methodist Care Homes:  
£70m investment, 30 year  
lease

University of Southampton:  
£93m, 1,104 beds, 40 years income

CALA Homes:  
£210m investment (47% stake),  
further £200m for Banner Homes

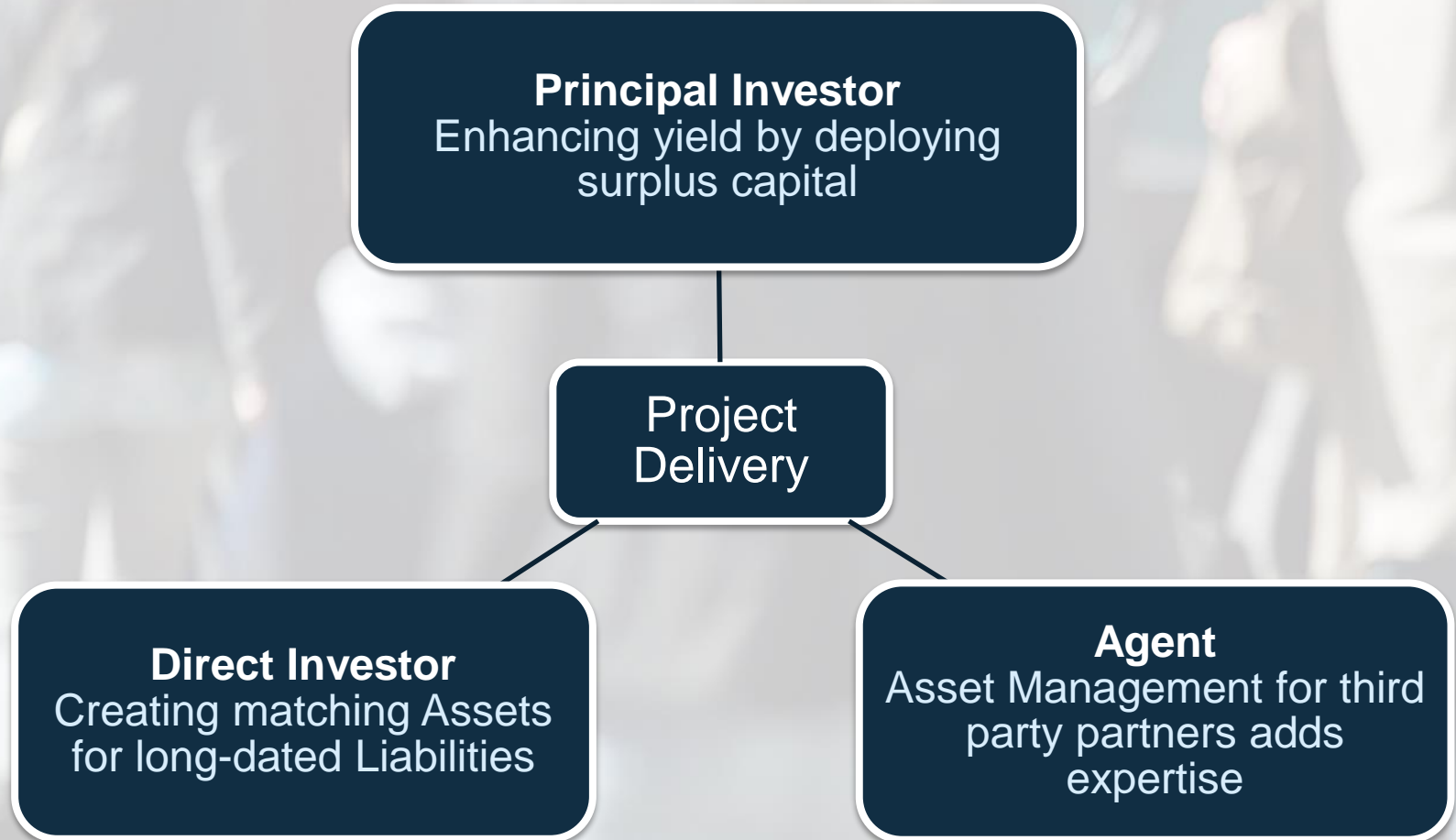
Leeds Thorpe Park  
£162m urban regeneration  
investment

Hyde Housing Group:  
£102m investment  
15 year facility

Thames Valley Housing:  
£40m to fund  
500 affordable homes

Sentinel Housing:  
private placement (

## ➤ Agent–Principal Combination Opens Doors for Slow Money



Partners have comfort through shared economic exposure

## ➤ L&G Retirement – nine sources of profit

1	BACK BOOK FOR CASH	<ul style="list-style-type: none"> <li>Existing £46bn annuity portfolio – expect to generate £340m of operational cash and higher net cash in 2015</li> <li>Asset strategy being optimised with direct Investments and lifetime mortgages</li> </ul>
2	UK CAPITAL LITE FRONT BOOK	<ul style="list-style-type: none"> <li>Evolving to meet anticipated demand with £1.8trn of DB liabilities in the UK</li> </ul>
3	EUROPEAN PENSION RISK TRANSFER	<ul style="list-style-type: none"> <li>Entered market: first 2 transactions executed 2015</li> </ul>
4	US PENSION RISK TRANSFER	<ul style="list-style-type: none"> <li>First deal announced in October 2015, First solo deal January 2016</li> <li>Utilising LGIMA's asset management and LGA's back office capabilities</li> </ul>
5	LONGEVITY INSURANCE	<ul style="list-style-type: none"> <li>£6bn of 3<sup>rd</sup> party longevity reinsurance deals completed to date. E.g. British Aerospace</li> </ul>
6	LIFETIME MORTGAGES	<ul style="list-style-type: none"> <li>£1.3trn of housing equity owned by the over 60's in the UK</li> <li>Long term illiquid asset creation for our annuity fund</li> <li>£200m target exceeded in 2015: "Best Lifetime Lender" Award from Mortgage Strategy</li> </ul>
7	INDIVIDUAL RETIREMENT SOLUTIONS	<ul style="list-style-type: none"> <li>Projected growth in DC will drive demand for simple tax efficient products "to and through" retirement.</li> </ul>
8	SECONDARY ANNUITY MARKET	<ul style="list-style-type: none"> <li>Entry expected in 2017</li> </ul>
9	BACK BOOK ACQUISITIONS	<ul style="list-style-type: none"> <li>Successfully completed £149m Lucida transaction</li> </ul>

## Strong Credit Portfolio; Front- and Back-book Optionality

Legal & General Retirement (“LGR”) annuity bond portfolio analysed by credit rating (unaudited):

At 31 December 2015	Externally rated bonds	Internally rated bonds, direct investments and CDOs	Total LGR bond portfolio
AAA	4.4%	-	4.4%
AA	24.0%	4.0%	28.0%
A	28.5%	4.9%	33.4%
BBB	27.3%	3.7%	31.0%
BB or below	2.6%	0.6%	3.2%
	<b>86.8%</b>	<b>13.2%</b>	<b>100.0%</b>

LGR annuity bond portfolio analysed by sector (unaudited):

	31 Dec 2015
Sovereigns, Supras, Sub-Sovereigns	15.3%
Banks	4.3%
Financial Services	1.9%
Insurance	1.7%
Utilities	11.5%
Consumer Services and Goods & Healthcare	11.6%
Technology & Telecoms	6.7%
Industrials & Oil and Gas	9.9%
Of which - Oil & Gas	5.2%
- Basic Resources	1.2%
- Other Industrials	3.5%
Property	4.8%
Securitisations & Debentures	28.6%
Asset backed securities	1.0%
CDOs	2.7%
	<b>100.0%</b>

- Highly Experienced Team
- No “race to the bottom” for yield
- Portfolio diversification by sector and geography since 2008
- Previously long banks and duration: this has changed
- Reduced exposure to sectors and firms with reasonable probability of default
- Credit default provision now £2.2bn: fivefold increase from 2008
- Long-term investments in real assets enhance risk-adjusted returns
- Portfolio allocation between front and back book allows pricing competitiveness and/or cash optimisation
- Clear choices in delivering capital and risk efficiency



# SUSTAINED DISRUPTION: WHAT'S NEXT

## Housing



- Build to Rent, Build to Sell, Last Time Buyers
- Urban living preferred by older people
- Institutional Private Rental Market
- Modular Construction: disruptive power

## Energy



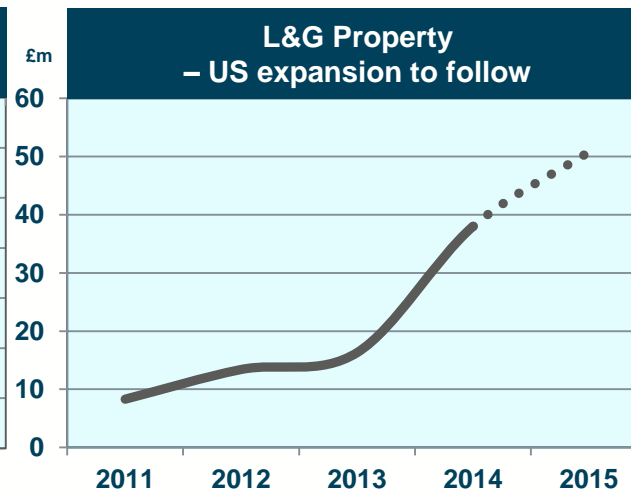
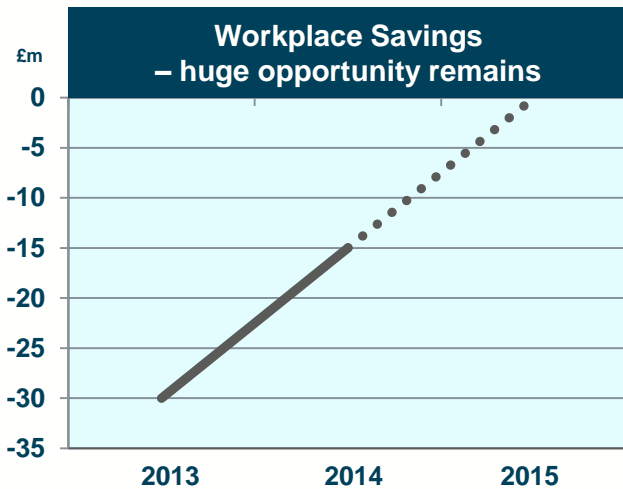
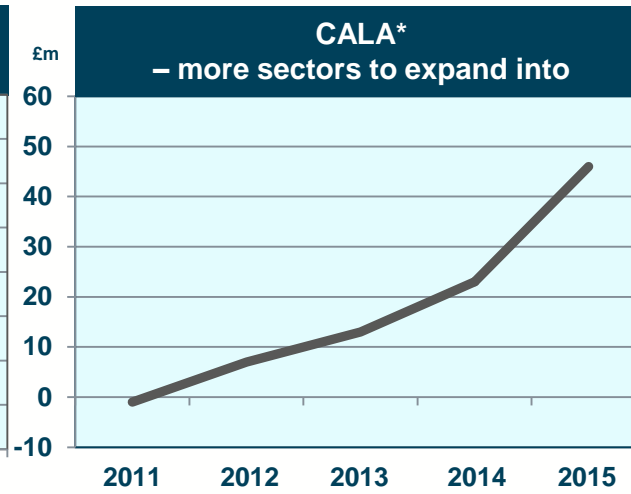
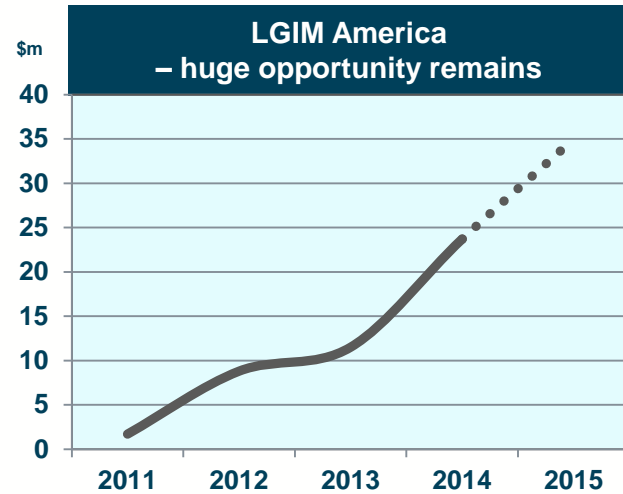
- Solar and Wind: clean, cheap and bigger than shale
- \$1 trillion invested 2009-2014 much more to follow
- Low-carbon is a \$6bn revenue opportunity
- Hybrid and electric vehicles to grow tenfold

## Health and Wellbeing



- Greater digital engagement
- Physical and mental health interventions

## ▶ Building businesses to deliver long term sustainable profit growth



Other J curve businesses:

- LGIM Asia
- Global pension risk transfer
- Lifetime mortgages
- Alternative finance
- Urban regeneration
- Institutional 'Build to Rent'
- Clean energy
- Global DC pensions

Areas with slow run-off include:

- With-profits
- Individual annuities
- Insured savings

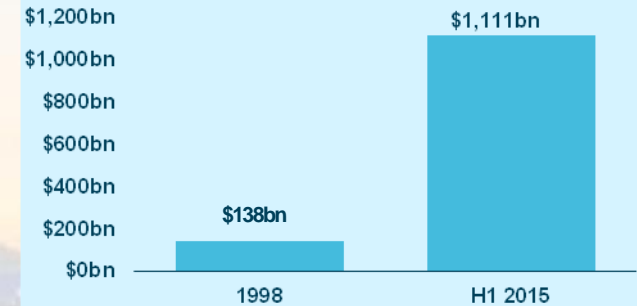
\*Represents Legal & General's share of profits in CALA Homes



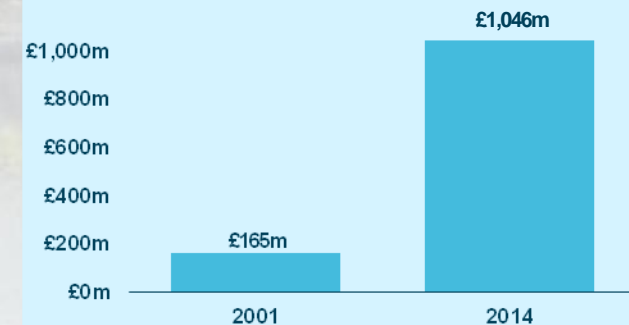
## ➤ L&G: Successful Digital Disruptor in an Analogue Era

- LGIM - AUM has grown from \$138bn in 1998 to \$1.1trn at June 2015
- Market share in UK Protection has grown from 6% to 24%

### LGIM AUM



### Retail Protection GWP



## ➤ L&G: One firm, one set of values, one set of behaviours

### PURPOSE

- Legal & General is one firm, with one set of values, one set of behaviours.
- We are trusted to solve critical issues to help deliver a better society – digitally, financially and socially inclusive, environmentally sensitive.

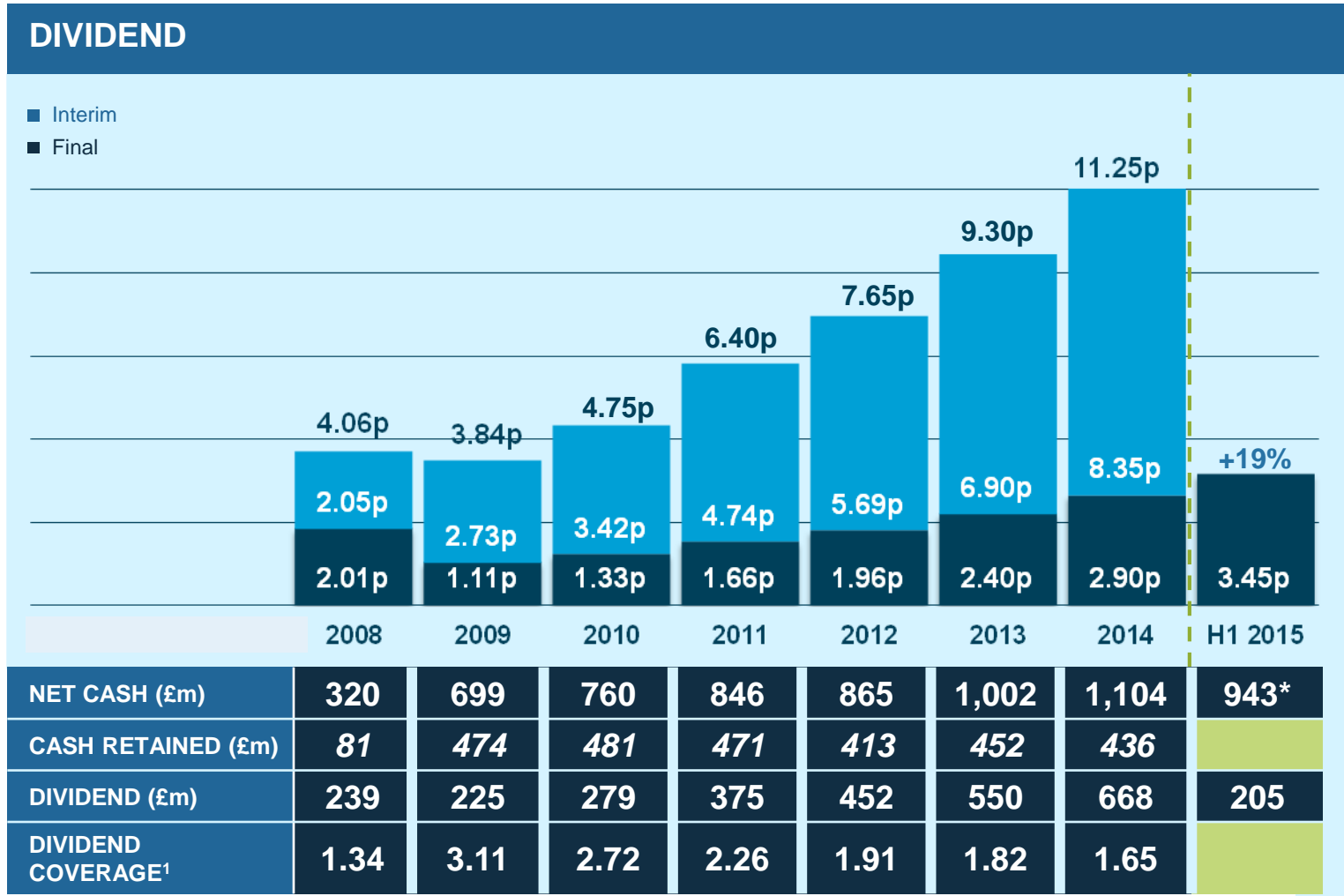
### BEHAVIOURS

- We encourage: deep thinking and excellent execution; intellectual honesty; socialisation of information and transparency; thought leadership
- Everyone understands that teamwork improves outcomes.
- We self generate success and learn quickly from our mistakes.

### BUSINESS PRINCIPLES

- We publish our ethics and values and can be judged by others against the standards we set ourselves.
- Our products and services are economically and socially useful for customers, shareholders and society.
- We understand disruption is a privilege and a responsibility.

## Dividend



\* As at Q3 2015.