

## **C04: Implications of Solvency II / Basel III for traditional and non traditional asset classes**

# **Risk and Investment Conference Leeds**

28 June 2012

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# Working Group Objectives

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- “A workshop presentation on the implications of Basel III and Solvency II on long term investment markets.”
- In the meantime we have had some short term issues:
  - Sovereign debt crises
  - Banking crises
  - Solvency II timing
  - Loose monetary policy everywhere
  - And we are not sure which rules to use?

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# Workshop Objectives

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- Provide some high level background on Basel III
- Identify some key differences to Solvency II
- Asset market interactions – a simplified model
- An insurance illustration looking at traditional assets
- Share some thinking on Solvency II impacts on traditional assets
- Brainstorm some alternative asset challenges/opportunities

## In summary

Theme	Description
<b>Less intermediation</b>	Cost of every door has increased. Insurers to directly access markets where possible.
<b>Alternatives</b>	More efficient as sources of both Beta and Alpha depending on the institution's own views and modeling.
<b>Comparative advantage</b>	Distinct habitats form for banks vs insurers vs pension funds within credit.
<b>Credit management</b>	Downgrade, spreads/default interactions relatively more important. Potential for pro-cyclicality.
<b>Non regulatory impacts</b>	Issues not directly linked to regulation will often dominate, eg. Sovereign crisis, insurers search for economically more attractive investment and bank financing costs.

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# Similarities between Solvency II and Basel III

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- Problems and acronyms
- Varying timelines
- No-one is really “happy”

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# Basel III – Introduction and key focus areas

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- Purpose is to improve key areas
  - Capital
  - Risk Weighted Assets (RWA)
  - Leverage
  - Liquidity
- Basel II.5 (already in force in Europe) key areas
  - Capital for trading book, includes a Stressed VaR measure
  - Summer 2012 BIS consultation – Fundamental review of trading book capital requirements
  - Trading book capital measures - e.g. VaR versus expected shortfall (to better capture ‘tail risk’)

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# Basel III - Additional Focus on Systemic Risks

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- Capital
  - Quality of capital raised - focus on common equity
  - Quantity of capital raised - to absorb losses
  - Additional capital buffers for the 27(or so) Systemically Important Financial Institutions (SIFIs) “too big to fail” aka “too big to jail”
- Improved coverage of risk, particularly for capital market activities
- Leverage ratio to contain build up of excessive leverage
- Liquidity standards to improve bank resilience to short term stress and improve long term funding
- Timing
  - Implementation and transitional from 1 January 2013 to 1 January 2019 but many countries accelerating local rules
  - CRD IV package includes the CRD(Pillar 2) and the CRR (Pillar 1 and 3)) is the European implementation law



# Basel III - overview

## Basel Committee on Banking Supervision reforms - Basel III

Strengthens microprudential regulation and supervision, and adds a macroprudential overlay that includes capital buffers.

	Capital					Liquidity
	Pillar 1			Pillar 2	Pillar 3	
	Capital	Risk coverage	Containing leverage	Risk management and supervision	Market discipline	
All Banks	<p><b>Quality and level of capital</b> Greater focus on common equity. The minimum will be raised to 4.5% of risk-weighted assets, after deductions.</p> <p><b>Capital loss absorption at the point of non-viability</b> Contractual terms of capital instruments will include a clause that allows – at the discretion of the relevant authority – write-off or conversion to common shares if the bank is judged to be non-viable. This principle increases the contribution of the private sector to resolving future banking crises and thereby reduces moral hazard.</p> <p><b>Capital conservation buffer</b> Comprising common equity of 2.5% of risk-weighted assets, bringing the total common equity standard to 7%. Constraint on a bank's discretionary distributions will be imposed when banks fall into the buffer range.</p> <p><b>Countercyclical buffer</b> Imposed within a range of 0-2.5% comprising common equity, when authorities judge credit growth is resulting in an unacceptable build up of systematic risk.</p>	<p><b>Securitisations</b> Strengthens the capital treatment for certain complex securitisations. Requires banks to conduct more rigorous credit analyses of externally rated securitisation exposures.</p> <p><b>Trading book</b> Significantly higher capital for trading and derivatives activities, as well as complex securitisations held in the trading book. Introduction of a stressed value-at-risk framework to help mitigate procyclicality. A capital charge for incremental risk that estimates the default and migration risks of unsecuritised credit products and takes liquidity into account.</p> <p><b>Counterparty credit risk</b> Substantial strengthening of the counterparty credit risk framework. Includes: more stringent requirements for measuring exposure; capital incentives for banks to use central counterparties for derivatives; and higher capital for inter-financial sector exposures.</p> <p><b>Bank exposures to central counterparties (CCPs)</b> The Committee has proposed that trade exposures to a qualifying CCP will receive a 2% risk weight and default fund exposures to a qualifying CCP will be capitalised according to a risk-based method that consistently and simply estimates risk arising from such default fund.</p>	<p><b>Leverage ratio</b> A non-risk-based leverage ratio that includes off-balance sheet exposures will serve as a backstop to the risk-based capital requirement. Also helps contain system wide build up of leverage.</p>	<p><b>Supplemental Pillar 2 requirements.</b> Address firm-wide governance and risk management; capturing the risk of off-balance sheet exposures and securitisation activities; managing risk concentrations; providing incentives for banks to better manage risk and returns over the long term; sound compensation practices; valuation practices; stress testing; accounting standards for financial instruments; corporate governance; and supervisory colleges.</p>	<p><b>Revised Pillar 3 disclosures requirements</b> The requirements introduced relate to securitisation exposures and sponsorship of off-balance sheet vehicles. Enhanced disclosures on the detail of the components of regulatory capital and their reconciliation to the reported accounts will be required, including a comprehensive explanation of how a bank calculates its regulatory capital ratios.</p>	<p><b>Global liquidity standard and supervisory monitoring</b></p> <p><b>Liquidity coverage ratio</b> The liquidity coverage ratio (LCR) will require banks to have sufficient high-quality liquid assets to withstand a 30-day stressed funding scenario that is specified by supervisors.</p> <p><b>Net stable funding ratio</b> The net stable funding ratio (NSFR) is a longer-term structural ratio designed to address liquidity mismatches. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding.</p> <p><b>Principles for Sound Liquidity Risk Management and Supervision</b> The Committee's 2008 guidance <i>Principles for Sound Liquidity Risk Management and Supervision</i> takes account of lessons learned during the crisis and is based on a fundamental review of sound practices for managing liquidity risk in banking organisations.</p> <p><b>Supervisory monitoring</b> The liquidity framework includes a common set of monitoring metrics to assist supervisors in identifying and analysing liquidity risk trends at both the bank and system-wide level.</p>
SIFIs	<p>In addition to meeting the Basel III requirements, global systemically important financial institutions (SIFIs) must have higher loss absorbency capacity to reflect the greater risks that they pose to the financial system. The Committee has developed a methodology that includes both quantitative indicators and qualitative elements to identify global systemically important banks (SIBs). The additional loss absorbency requirements are to be met with a progressive Common Equity Tier 1 (CET1) capital requirement ranging from 1% to 2.5%, depending on a bank's systemic importance. For banks facing the highest SIB surcharge, an additional loss absorbency of 1% could be applied as a disincentive to increase materially their global systemic importance in the future. A consultative document was published in cooperation with the Financial Stability Board, which is coordinating the overall set of measures to reduce the moral hazard posed by global SIFIs.</p>					

Source: BIS



# Basel III - Capital reforms

Time line	Capital Ratios	Minimum level
1 January 2013	<ul style="list-style-type: none"> <li>- Minimum Common Equity</li> <li>- Minimum Tier 1 Capital</li> <li>- Minimum Total Capital</li> <li>- Minimum Total Capital plus conservation buffer</li> </ul>	<ul style="list-style-type: none"> <li>• 3.5%</li> <li>• 4.5%</li> <li>• 8.0%</li> <li>• 8.0%</li> </ul>
1 January 2019	<ul style="list-style-type: none"> <li>- Minimum Common Equity</li> <li>- Minimum Tier 1 Capital</li> <li>- Minimum Total Capital</li> <li>- Minimum Total Capital plus conservation buffer</li> </ul>	<ul style="list-style-type: none"> <li>• 4.5%</li> <li>• 6.0%</li> <li>• 8.0%</li> <li>• 10.5%</li> </ul>
Between 1 January 2013 and 1 January 2019	<ul style="list-style-type: none"> <li>- Gradual increase in minimum levels to 1 January 2019 levels</li> </ul>	<ul style="list-style-type: none"> <li>• Other – points include:               <ul style="list-style-type: none"> <li>• Phasing out of non-qualifying capital instruments over 10 years</li> <li>• Phasing in of deductions from CET1 (Tier 1 Equity)</li> <li>• Size of the SIFI capital requirement and level of harmonisation</li> </ul> </li> </ul>

# Basel III - Liquidity reforms

Time line	Liquidity Ratios	Description
1 January 2015	The Liquidity Coverage Ratio (LCR) counts liquid assets that can be readily convertible to cash with little or no loss of value. Level 1 assets include cash, government debt. Level 2 include non-financial corporate bonds (haircut 15%) and covered bonds (haircut 15%)	Requires banks to hold sufficient liquid assets (level 1 and level 2) to withstand a short term 30 day stress.
1 January 2018	<p>The NSFR (Net Stable Funding Ratio) – promotes resilience in longer term funding profile. A factor from 0% to 100% is applied to bank assets to estimate Required Stable Funding (RSF)</p> <p>Available Stable Funding (ASF) must be &gt; 100% RSF</p>	Requires banks to hold longer term funding to match assets and liabilities. Available stable funding (ASF) is made up of equity, preference shares and liabilities over 1 years. Each category of ASF is assigned a factor from 0% to 100% to reflect its stability

# Basel III – Leverage Ratio Reforms

Time line	Leverage Ratio	Description
1 January 2018	Ratio: New definition of Tier 1 Capital / Total Exposure  Total exposure should follow the accounting measure of exposure	Minimum level 3% Objectives: i) Constrain build up of leverage in banking sector ii) Reinforce risk based requirements with a simple non risk based 'backstop' measure
Transitional arrangements	Parallel run from 1 January 2013 – 1 January 2017 Tracking the level of the leverage ratio	Bank level disclosure from 1 January 2015

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# Counterparty Risk Capital

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- CVA – Counterparty Valuation Adjustment
- Bank must add a capital charge to cover the risk of mark to market losses on expected counterparty risk to OTC derivatives
- CVA is a function of LGD (loss given default), Spread ( $s_i$ ) and Expected exposure (EE)
- The calculation adds on capital to capture mark to market losses from counterparty spread widening, uncollateralised exposure and wrong way exposure
- Impact is increased capital charges
- April 2012 BIS monitoring exercise indicates CVA risk capital leads to a 7.8% increase in total RWA

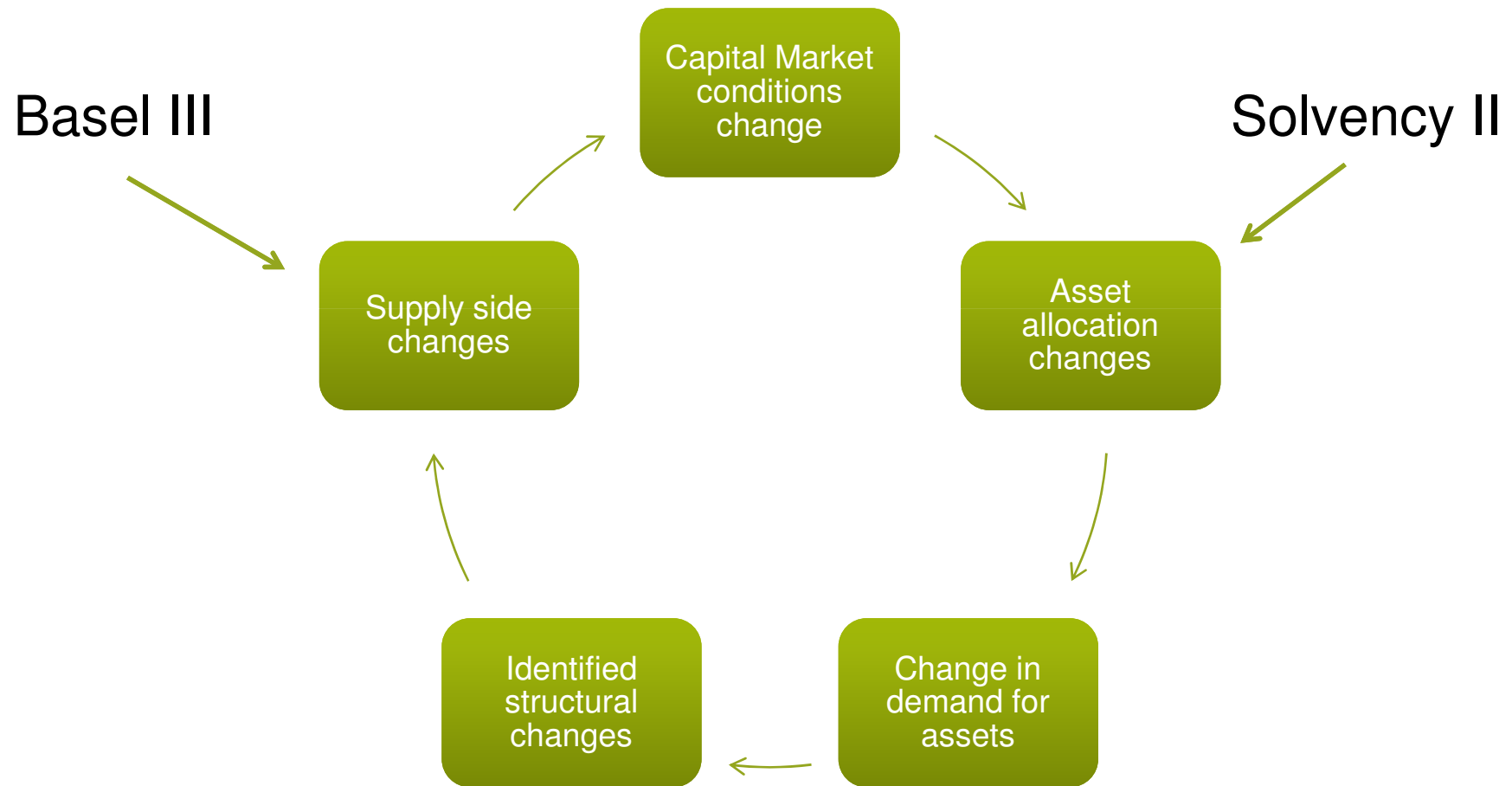
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# Basel III – Long term asset market issues

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- **Higher equity requirements**
  - Raising new capital and retained organic earnings
  - Lower ROE achievable from many activities
  - Business retreat from low ROE activities
- **Liquidity**
  - Banks need for long dated financing to meet NSFR
  - Retail deposits better than institutional
  - Reduction in appetite for taking illiquid positions
- **Greater standardisation**
  - may promote a harmonised approach
  - and introduce new cliffs
- **Impacts on global growth from bank deleveraging**
- **Impacts on bank lending due to capital pressures**
- **Insurance and pensions sector seen as key investors to**
  - Take illiquidity risks
  - Invest in bank's capital instruments
  - Invest in securitised debt

# Simplified Model of Regulatory Impacts





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# Institutional Investors Directly impacted by Regulatory Changes

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- Life offices with various proportions of
  - Long term annuity business
  - Short term risk business
  - Unit-linked/savings business
  - With profit savings and annuity business
- Banks with various proportions of
  - Retail lending
  - Corporate lending
  - Retail deposit funding
  - Wholesale funding
  - Intermediation (investment banking and non proprietary trading)
- Pension Schemes with
  - Different funding levels
  - Different risk tolerances and time horizons

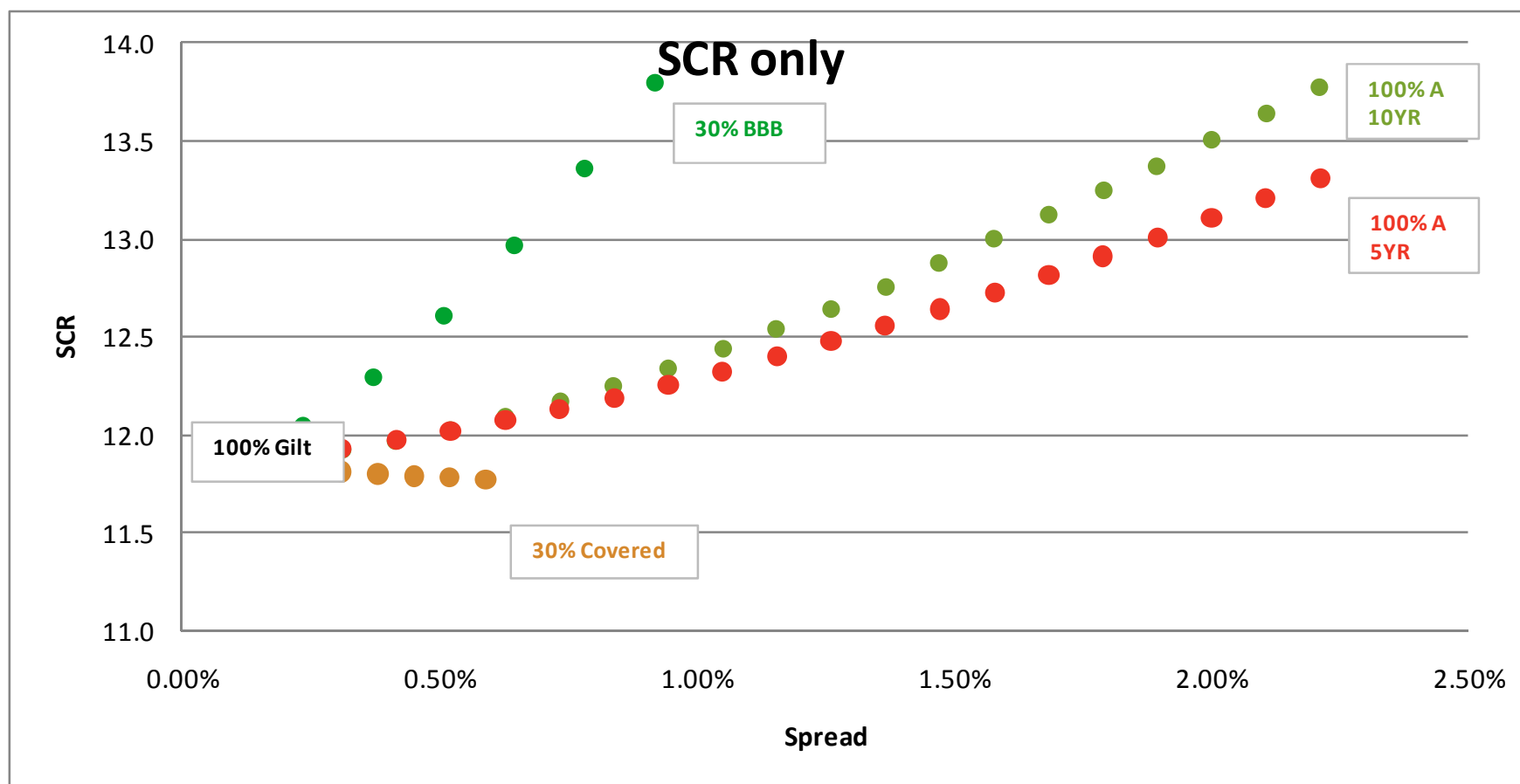
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# Initial traditional asset allocation

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- Consider:
  - Simplified annuity book
  - Market conditions as at end of April 2012
  - Level 2 Draft Implementation Measures based on October 2011 information
- And the winner was....
  - Optimal regulatory capital portfolio effectively a portfolio of mostly A rated bonds along with relevant duration and inflation hedges

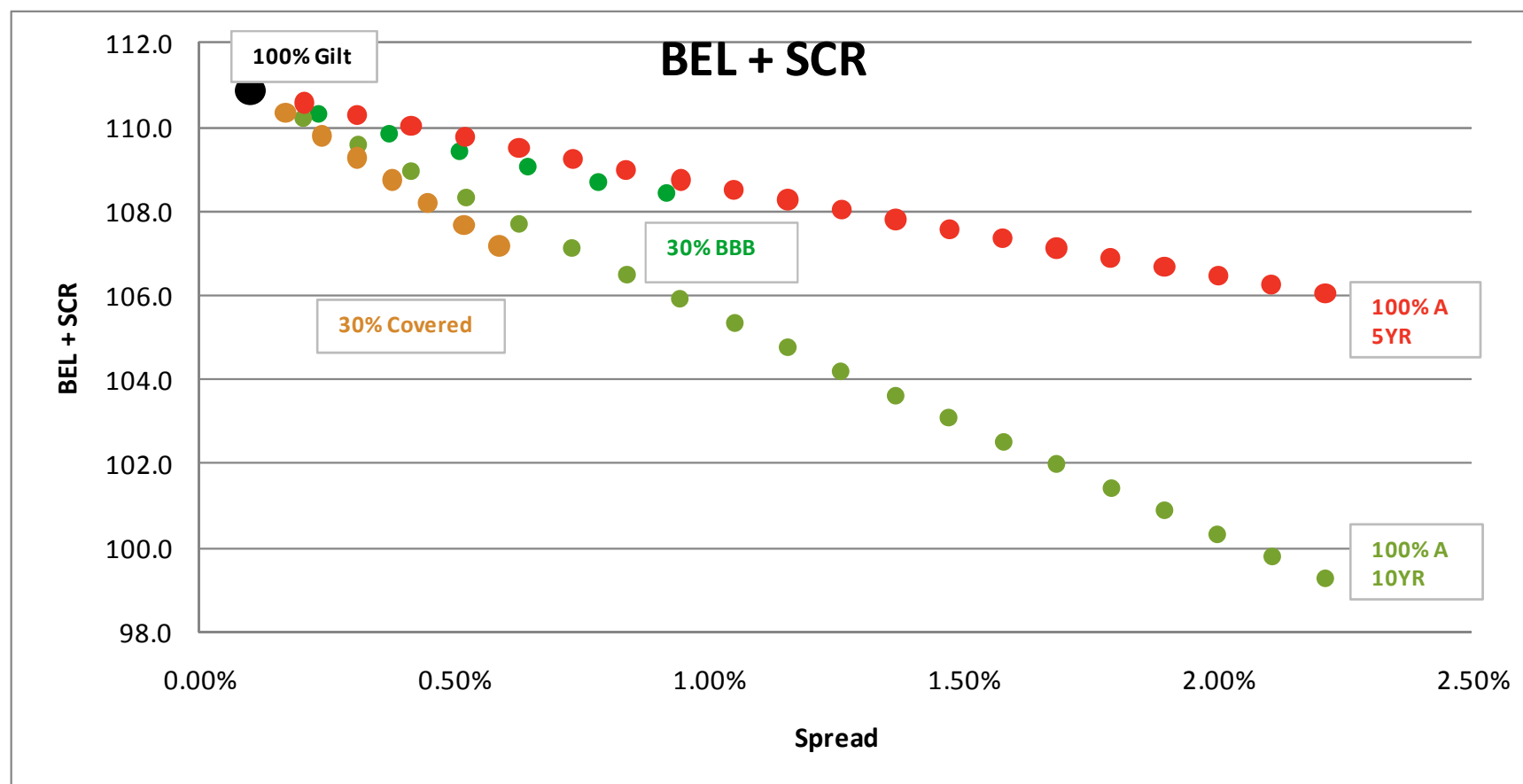
# Solvency Capital Requirement Only



Calculation based on Level 2 Draft Implementation Measures based on October 2011 information, including matching premium with no capping of BBB spread.

Based on liability value of 100 before application of matching premium, 9.1 longevity risk and 2.7 operational risk.

# Combined SCR and Best Estimate Liability



Calculation based on Level 2 Draft Implementation Measures based on October 2011 information, including matching premium with no capping of BBB spread. Based on liability value of 100 before application of matching premium, 9.1 longevity risk and 2.7 operational risk.

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# Challenges with Solvency II focus for business

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- Leads to an arbitrage of metrics used in model
- Model does not reflect “downgrade risk”
- Ratings are based on default assessment (and potential recovery) - they are not a risk measure
- Solvency II is about solvency not necessarily about running a business efficiently – it is only one of the risk measures to the business
- Insurers need to develop their own economic measure for risk and use to determine suitable allocation – not one based on Solvency 2 optimisation

Asset allocation switches not just driven by regulation so much deeper dive into credit required...

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# A deeper dive into credit in order to determine high level portfolio construction

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- Absolute rates
- Relative spread by rating
- Relative spread by sector
- Downgrade risk
- Historic default risk
- Expected defaults
- Illiquidity versus Credit risk
- ...and correlations of all the above!



Economic  
credit risk  
and return  
measures



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# Management of Downgrade Risk

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Downgrade risk requires careful management and means large allocation shifts to optimise S2 capital alone are unlikely

- **Management challenges**
  - Solvency II cliff edge on credit
  - Lack of liquidity as downgrades occur
  - Historic modeling assumes buy and hold of credit
  - Pro-cyclicality
- **Management opportunities**
  - Greater active management
  - Modeling of cyclical overlays to historic transition of rating experience
  - Prophylactic liquidity arrangements to exit positions following downgrade
  - Use of leading indicators to downgrade risk
  - Structures for BBB / assets with prepayment

# Traditional credit comparison

	Insurance	Banks
<b>Preferred rating</b>	AA to A	Indifferent
<b>Duration</b>	Long for annuities	Short for lower grade and longer for higher grade
<b>Sector</b>	Uncorrelated	Not financial
<b>Downgrade risk to be avoided</b>	From A to BBB	Across all ranges
<b>Structure</b>	Simple, no prepayment	Indifferent
<b>EU Sovereigns</b>	No charge	Zero for AAA/AA, then increasing

- Bank charges less duration dependent and are generally lower
- Subject to matching premium treatment for insurers

# Opportunities compared to traditional credit

Asset	Typical lower charge
Commercial mortgages	Bank
Residential mortgages	Insurer
Infrastructure debt	Bank
Private placements	Bank
Structured credit	Bank
Covered Bonds	Bank
Equity release	?
Funding trades	?

- **Banks need less capital than insurers for most credit risks**
- Preferred habitats form in credit due to **comparative advantage** in a capital (and opportunity) constrained world
- Impact on these markets as much driven by market funding conditions than regulatory charges for banks
- **Residential mortgages** and **EU Sovereign debt** stand out as relatively more favorable for insurers, but subject to internal models. **Structured credit** relatively less attractive for insurers

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# Buying forward spread ?

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- Investor agrees to take future issuance at a fixed spread
- Issuer has certainty on spread and so pays a premium
- Issuer doesn't need to lock in long interest rates

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# Equity charges

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- **“Other equity” basket**
  - An insurer can invest 10% in equities or have 2% invested in a 5x leveraged equity fund
  - The leveraged equity fund has a much lower capital charge
  - Efficient global equity exposure by way of futures markets
- **Equity hedging**
  - Potential for substantial increase in SCR under equity falls as With Profit guarantees bite and PV of AUM charges fall. As with credit, potential for pro-cyclicality
  - Greater use of equity hedges

## In summary

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## Questions or comments?

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Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenters.

