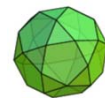
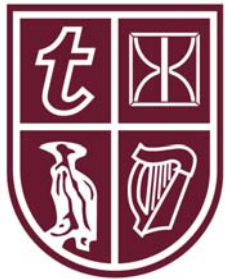


Possible Unintended Consequences of Basel III and Solvency II

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Agenda



- Similarities and differences between
 - Banks and insurers
 - Basel III and Solvency II
- Possible unintended consequences of Basel III and Solvency II

Presentation based on Al-Darwish, A., Hafeman, M., Impavido, G., Kemp, M. and O'Malley, P. (2011). *Possible Unintended Consequences of Basel III and Solvency II*. **IMF Working Paper**

- Available at: <http://www.imf.org/external/pubs/cat/longres.aspx?sk=25149.0>
- Views expressed are those of the authors, not necessarily those of the IMF or IMF policy

Overview of paper



- Basel III (globally active banks) and Solvency II (all EU insurers)
 - Both well advanced and have much in common
 - But different histories, driving forces and business models of industries being regulated lead to substantive differences in detail
 - Substantially independent development but largely coincident implementation timing
- Paper seeks to engage financial and regulatory community to consider possible unintended consequences, including:
 - Cost of capital
 - Funding patterns and interconnectedness
 - Product and/or risk migration
- Paper focuses on Pillar 1 aspects (minimum capital requirements)

Typical bank and insurer business models differ



	Banks	Insurers
Monetary role industry mainly fulfils	A means of payment in exchange for goods and services	A store of value, permitting deferred consumption and smoothing
Other roles	Financial services	Risk pooling
Comparative advantage	Screen and finance short-term projects	(as investors) invest long-term and gain from illiquidity premium
Core business activities	Largely asset-driven, often supported by leveraged balance sheets	Mainly liability-driven, less leveraged and often less exposed to 'runs'
Exposure to systemic risk from any one firm?	Higher	Lower
Risk that safety net costs fall on government?	Higher (more 'essential' to current economic activity)	Lower

Although noteworthy overlaps (and conglomerates!)

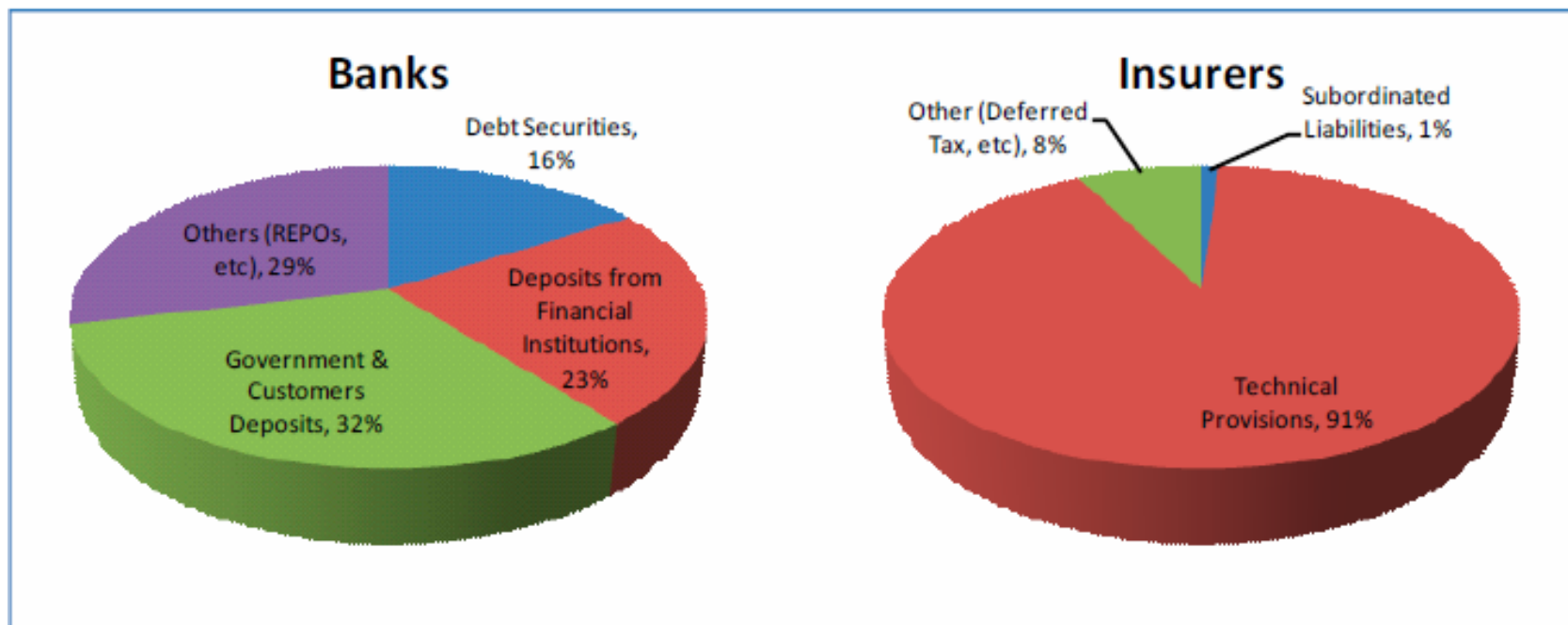


- Investment / savings products, e.g.:
 - Investment bonds
 - Term deposits offered by banks
 - Term-certain annuities offered by insurers

- Protection products
 - Investment guarantees and options written by investment banks versus variable annuities written by insurers
 - CDSs written by both banks and insurers
 - Trade finance offered by banks and surety bonds offered by nonlife insurers

- Differences in tax and capital treatment create product and capital arbitrages

Different funding bases (excluding equity)



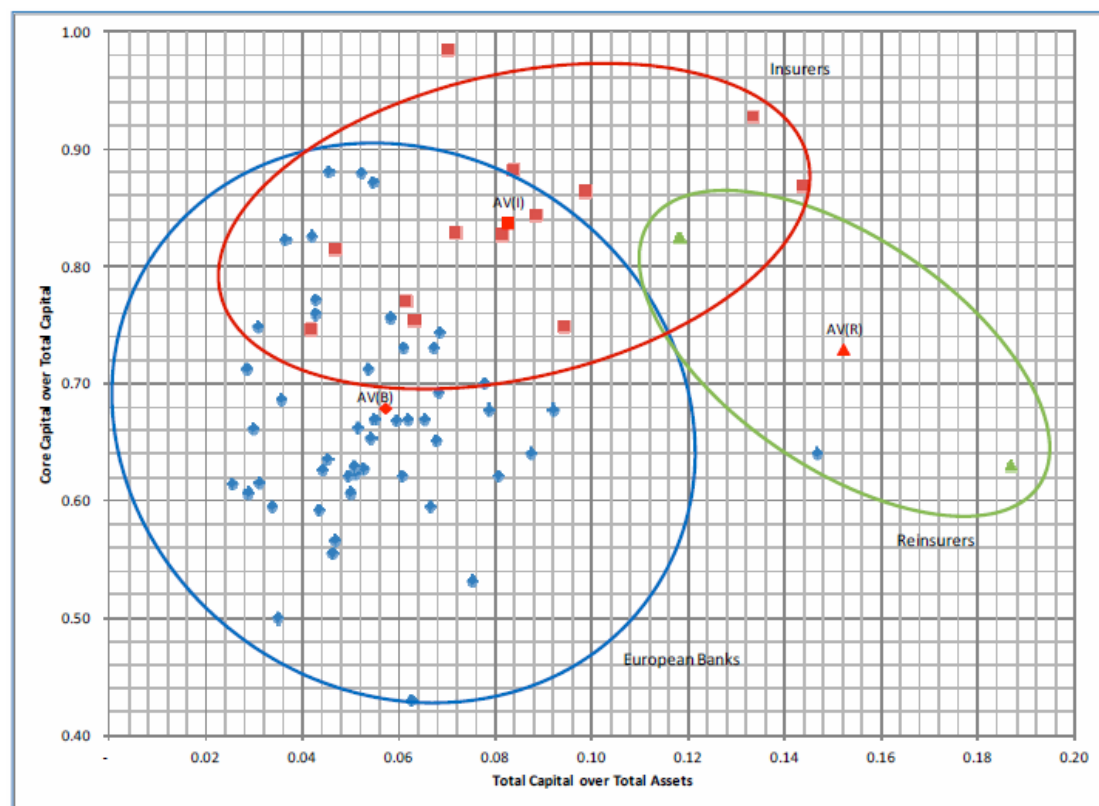
- Banks more interconnected (at individual firm level)

Different capital levels



	Average total capital / total assets (%)	% of 'high-quality' core capital
Large European banks	6	67
Large insurers (worldwide)	8	84
Large global reinsurers	15	73

N.B. Ideally comparison should adjust for risk, e.g. by reference to VaR at the same confidence level and time horizon



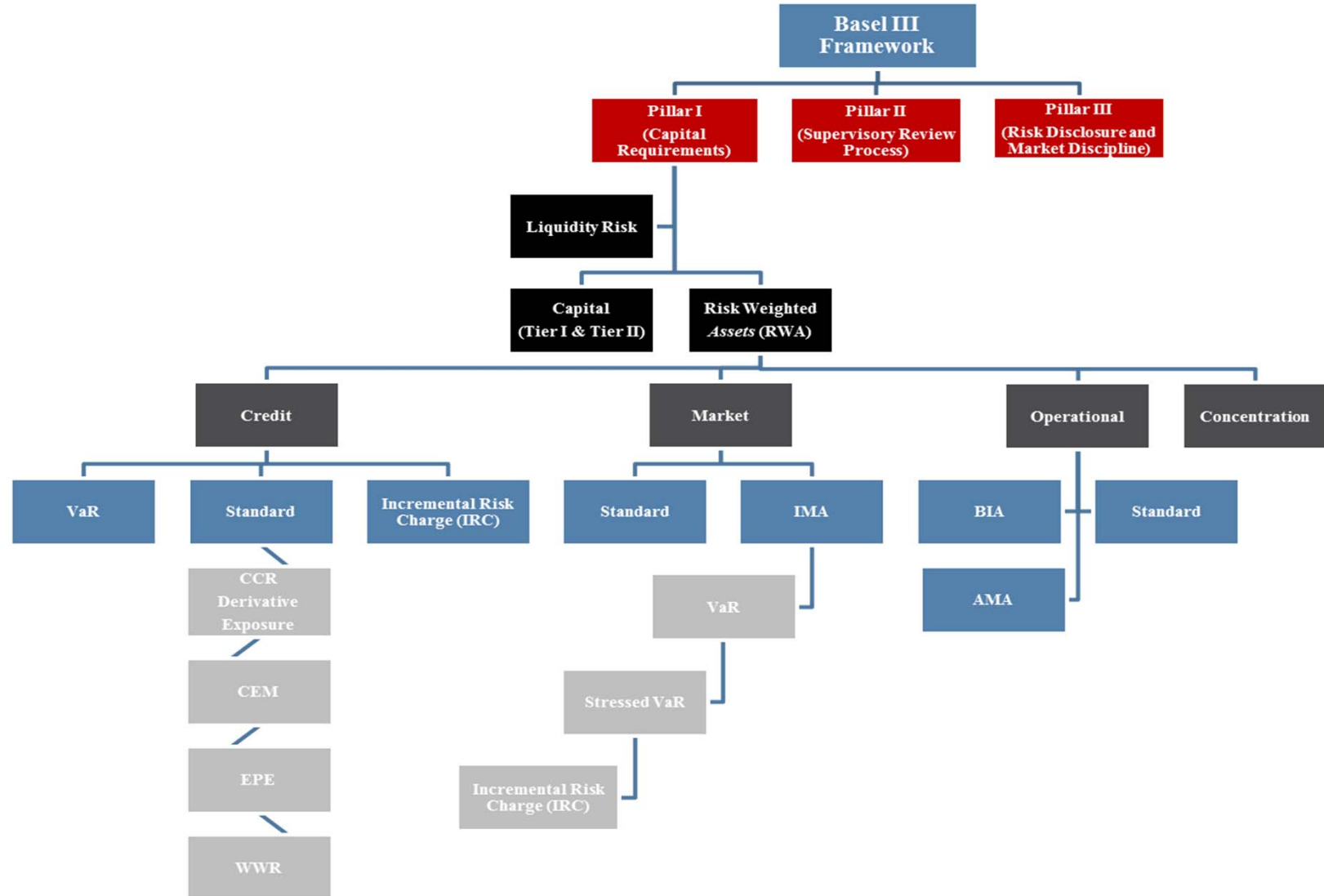
Different accounting bases



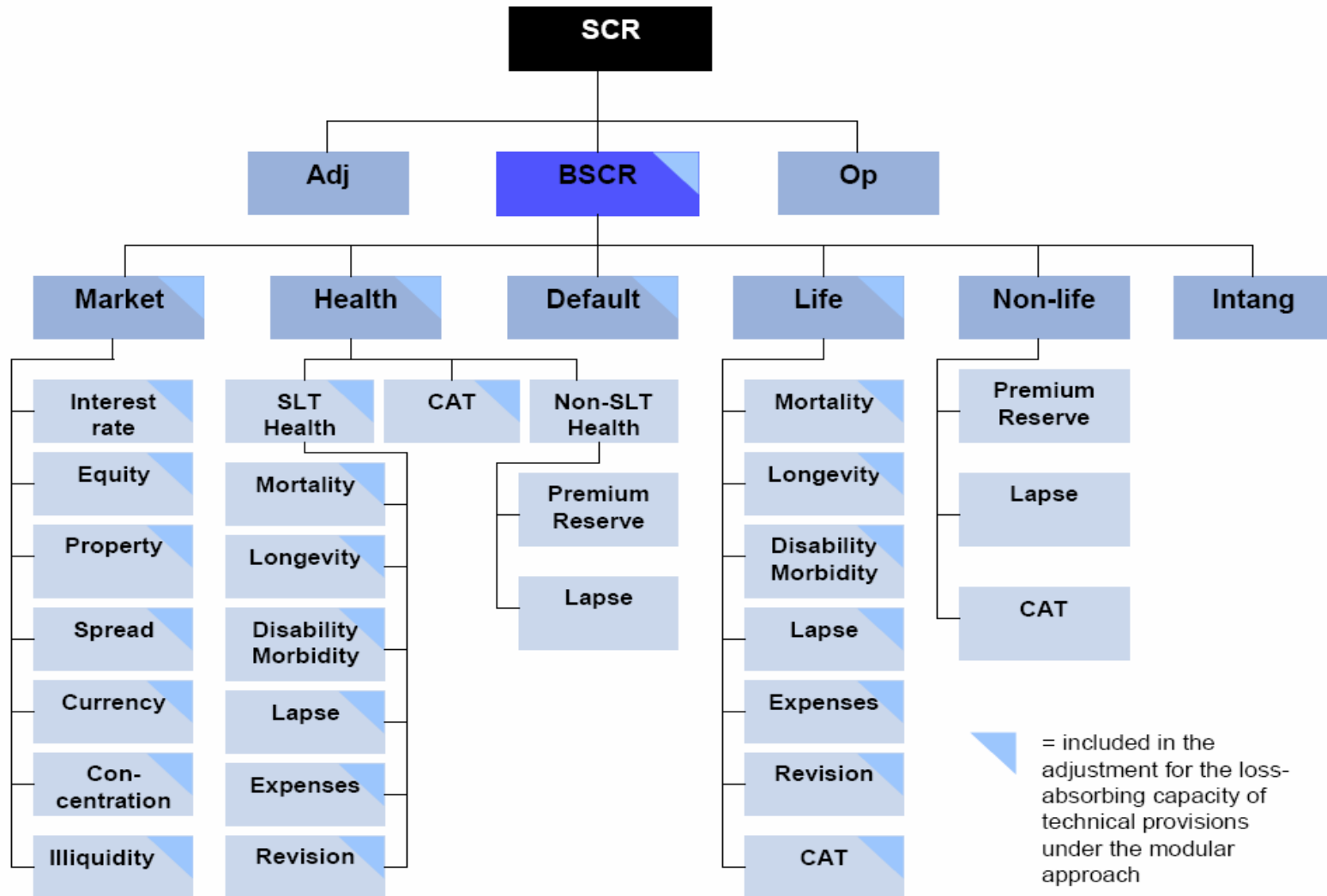
	Banks	Insurers
Assets	Often IFRS, bank loans deemed financial instruments, IAS 39, loan provisioning generally retrospective, IFRS 9 amortised cost or fair value	Solvency II uses market consistent, i.e. fair, values (and less reliance on general purpose accounting)
Liabilities	Also typically at amortised cost or fair value	Transfer/settle cost, approximated by best estimate + risk margin or MV of replicating portfolio, more prospective
Own credit risk	Basel III will effectively disallow benefit previously available under Basel II	No

- More retrospective (hence stable in the short term) for banks than insurers
- Relevant to design of counter-cyclical elements
- Although counter-cyclical versus what?

Basel III Capital Requirements



Solvency II SCR – Standard Formula



Basel III & Solvency II: Different histories, drivers



	Basel III	Solvency II
Underlying source	Regulator(s) (BCBS)	EU Commission
Coverage	Globally active banks	All EU insurers
Legal status	Must be transposed into local legislation	EU Directive
Main drivers	<p>Refines Basel II in reaction to financial crisis</p> <ul style="list-style-type: none"> - Raised capital requirements (and quality of capital) - Harmonised liquidity standards - Capital buffer 	<ul style="list-style-type: none"> - Harmonised across Europe - Principles-based regulatory framework - Risk-responsive capital requirements
Transition period	Relatively long	Shorter but growing
Further reforms?	E.g. BCBS reviewing trading book and securitisations	Broader in scope than Basel III, but still many details outstanding

Basel III and Solvency II Capital Tiering (Pillar 1)



- Concepts are similar:
 - Primary role of capital to absorb unexpected losses

- Capital tiering:
 - Effectiveness of different types of capital in different situations
 - How reliable is valuation of remainder of balance sheet in stressed circumstances?

- Different types of capital
 - Absorb losses on going-concern basis
 - Absorb losses on gone-concern basis

Basel III and Solvency II Capital Tiering (Pillar 1)



- Some differences justified given different business models
 - Ancillary Own Funds justified given lower exposure to runs?

- Others less easy to justify, including:
 - Tier 3 eliminated under Basel III
 - Bail-in proposals
 - Treatment of dated instruments; SII allows 10 year
 - Coupon cancellation and trigger levels
 - Treatment of expected future profits – banks only recognise if contractually committed
 - Intangibles, deferred tax assets, surplus in pension scheme

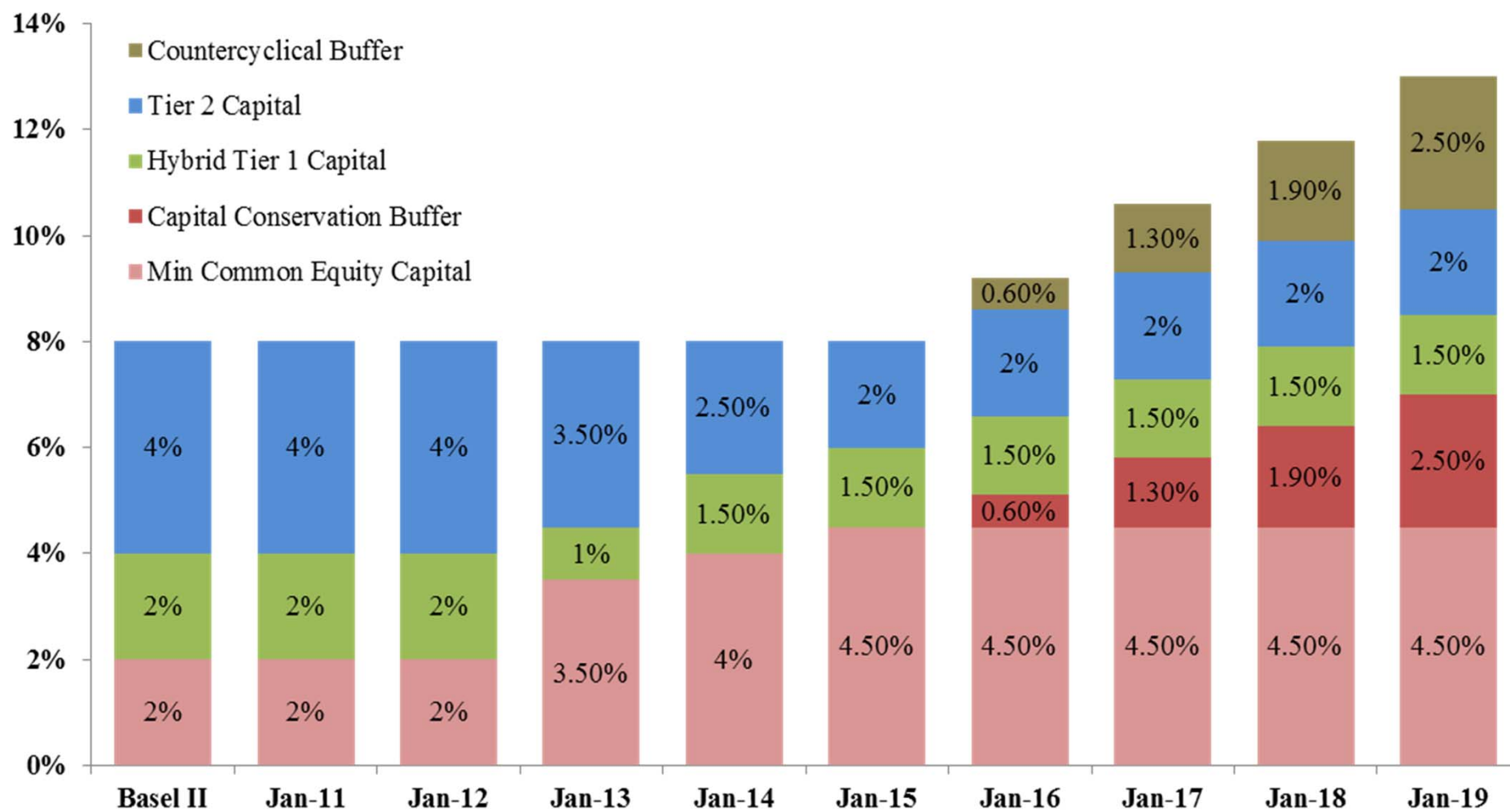
Basel III Capital Requirements



“Banks may need an extra €3-4 billion to meet capital requirements”

- Matthew Elderfield, Head of Financial Regulation, Central Bank of Ireland
 - Elimination of deferred tax assets of €5 billion
- Globally
 - QIS study 30 June 2011
 - Capital shortfall of €518 billion for 7% common equity target
 - LCR shortfall of €1.76 trillion (3% of total assets)
 - NSFR shortfall of €2.78 trillion

Basel III Capital Requirements



Calculation of Required Pillar 1 Capital



- Both Basel III and Solvency II have risk-based approaches
- Basel III: same methodology as Basel II
 - No explicit probabilistic basis to define requirements
 - Standardised approach or internal model
 - Standards considerably strengthened
 - Strengthens requirements for extreme value events
 - New requirements in respect of leverage and liquidity
 - Additional charges for systemically important financial institutions (SIFIs)

G-SIBs



- Global Systematically Important Banks
- 29 banks too big to fail
- Indicators
 - Size, interconnectedness, complexity, lack of substitutability, global scope
- Negative externalities
 - Implicit support and moral hazard
- Aim is to reduce probability of failure and impact of failure
- Additional capital requirements of between 1% & 2.5%
- Will cost of additional capital be offset by lower funding costs?

Calculation of Required Pillar 1 Capital



- Solvency II: absolute & risk-based capital requirements
 - SCR and MCR, explicit probabilistic basis (for SCR)
 - Standardised approach or internal model
 - ORSA: serves several purposes, including model risk
 - Greater public disclosure if SCR not covered, and more explicit deferral of payments on capital instruments qualifying for Tier 2

G-SIIs



- Global Systematically Important Insurers
- IAIS consulting
- “Little evidence.. traditional insurance generates.. systemic risk”
- Reinsurance considered as traditional insurance
- Non-traditional insurance
 - Financial guaranty insurance, Credit default swaps, Derivatives trading
 - Variable annuities?
- Indicators:
 - Size, global activity, **interconnectedness, non-traditional activities, substitutability**

Risk Aggregation (Pillar 1)



- **Basel III**

- Does not fully reflect importance of diversification or adequately penalise portfolio concentrations (“portfolio invariance”)
- These features can instead be introduced by the supervisor
- Some types of risk mitigation contracts recognised (mainly credit risk mitigation)

- **Solvency II**

- Greater explicit recognition of diversification effects and risk interdependencies
- Correlation matrices used
- Virtually all types of risk mitigation contracts recognised



Possible unintended consequences

- Largely independent development processes

- Largely coincident implementation

- Could lead to unintended consequences:
 - Cost of capital
 - Funding patterns and interconnectedness
 - Product and/or risk migration
 - Other potential sources of arbitrage

Cost of capital



- Natural framework is Modigliani-Miller
 - Why it doesn't apply in practice

- Higher costs for banks
 - Debt interest deductibility
 - Affects banks more, as banks rely more on debt financing and Basel III more focused on raising capital requirements
 - TBTF and implicit deposit protection underpin
 - Should affect (large) banks more, if Basel III successfully reduces funding subsidy
 - More scope for risk mitigation under SII
 - Capital deductions more stringent under Basel III
 - SII explicitly promoting use of internal models

Cost of capital



- Higher cost for insurers
 - Could affect insurers more, as SII a more fundamental change
 - Greater cost for insurers to unwind undesired positions?
 - No/limited market for many insurance liabilities

Funding patterns and interconnectedness (1)



- SII could reduce demand for banks' long-term instruments
- At time when banks most need to issue them
 - Concern shared by regulators and market participants
 - Solvency II standard formula SCR credit spread risk requirement depends (roughly proportionately) on rating and on duration
 - EEA sovereign bonds (and equivalents) are zero rated irrespective of credit rating
- Basel III likely to affect banks' demand for and supply of certain types of debt
 - Covered bonds favoured relative to unsecured

Funding patterns and interconnectedness (2)

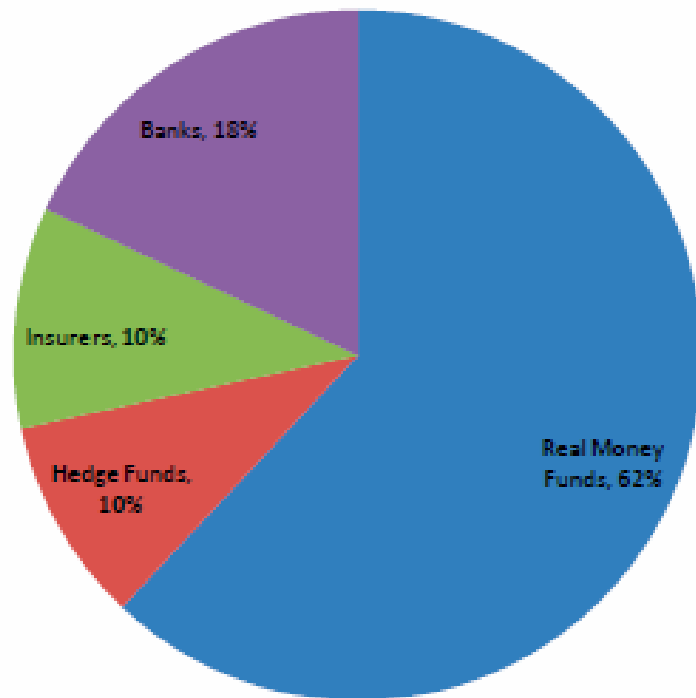


- Although:
 - ‘Long-term’ for banks may differ from ‘long-term’ for insurers
 - Insurance demand is liability driven (e.g. unit-linked, participating business)
 - Insurers are not the main buyers of bank senior unsecured and covered bonds
- Basel III prompting new hybrid structures
 - Closer to equity
 - Solvency II not encouraging such investments by insurers

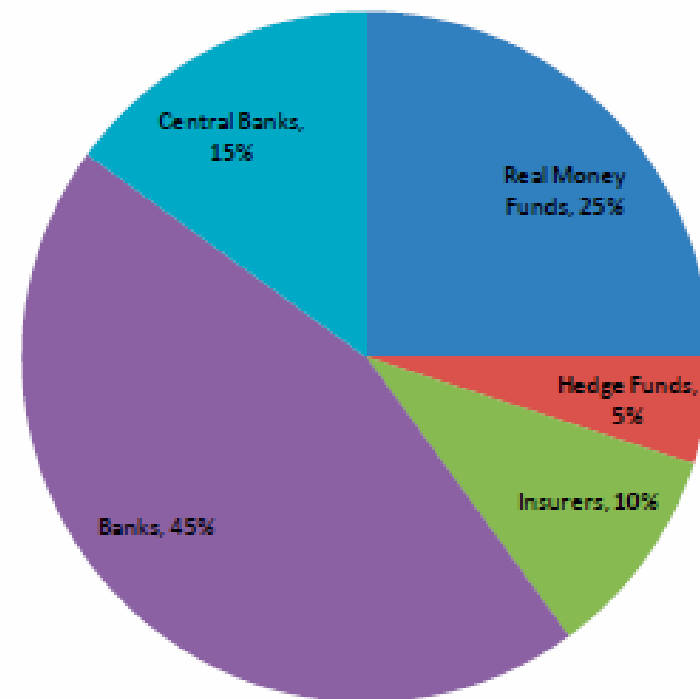
Banks' debt funding sources by type of investor



Senior Bonds



Covered Bonds



Source: Adapted from Bhimalingam and Burns (2011)

Funding patterns and interconnectedness (3)



- Greater concern may be increased interconnectedness via other routes
 - E.g. both industries target the same assets
- Potentially increased demand from both for sovereign debt
 - Such instruments are viewed favourably by both frameworks
- Might be mitigated e.g. by insurer internal models
 - If they capture heterogeneity in credit risk across (EU) sovereigns
 - Standards for such models have yet to be fully defined
- Less incentives for banks to own insurance companies



Risk / Product transfers (1)

- Activities where banks and insurers compete directly

- Term certain annuities can attract higher capital requirements than term deposits
 - Basel III liquidity requirements may reduce these disparities

- Equity investments can attract higher capital charges if held in banks than in non-life insurers
 - Conglomerates may move such assets between subsidiaries (if group level consolidation does not unwind effect)
 - Exacerbated by increased capital requirements being introduced by Basel III



Risk / Product transfers (2)

- Increased cost of capital and focus on risk management may result in increased risk transfer to customers
 - E.g. increased use of periodical re-pricing of annuities based on mortality experience
 - Shift from DB to DC, possible extension of Solvency II to pension funds
 - Possible impact on behaviour of ‘long-term’ investors

- Or migration away from both sectors
 - Through use of e.g. securitisation, reinsurance, shadow banking
 - Replay of Basel II ‘originate and transfer’ business model?
 - Implications for transparency, oversight and ‘equivalence’ between jurisdictions

Policy considerations



- Communication needed between insurance and banking regulators
 - Potential need to expand regulatory perimeter
- A key challenge for Solvency II is approach to ‘equivalence’
- Bank safety nets may be impacted by increased issuance of covered bonds
- Public policy considerations if excessive risk transfer to customers
- Empirical investigation needed into magnitude of unintended consequences

Summary



- Substantially independent development & largely coincident implementation timing

- Introduces scope for unintended consequences such as:
 - Cost of capital
 - Funding patterns and interconnectedness
 - Including linkages via sovereign debt
 - Product and/or risk migration
 - Between banks and insurers, between both and their customers and to elsewhere

- Policy responses should be informed by further empirical investigation into magnitude of impact of unintended consequences