Basel III versus 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 on:
  - Cost of capital
  - Funding patterns and interconnectedness
  - Product and/or risk migration

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: www.imf.org/external/pubs/cat/longres.aspx?sk=25149.0 or see www.nematrian.com/presentationlibrary.aspx. Views expressed are those of the authors, not necessarily those of the IMF or IMF policy

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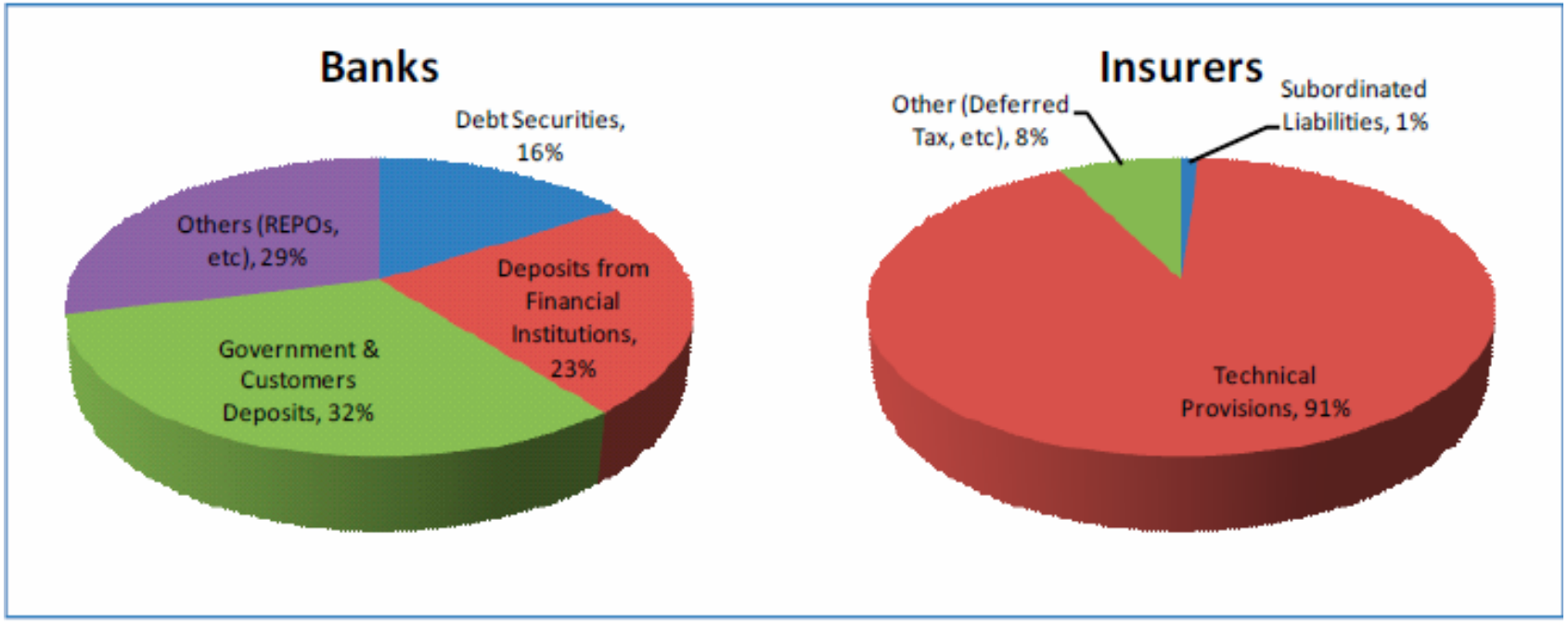
Typical bank and insurer business models differ

	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

They also have different funding bases (excluding equity) …



Source: IMF Staff calculations on CEA data

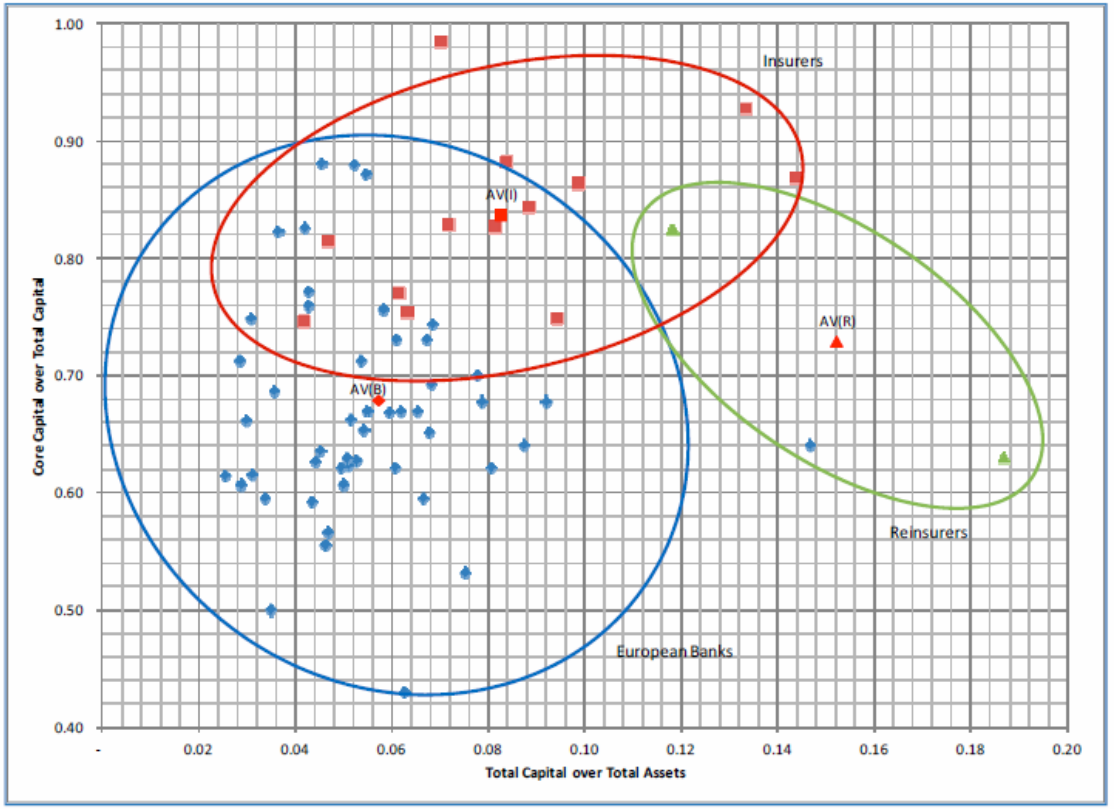
Showing percentages of total liabilities (excluding equity)

- 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



Source: SNL and IMF Staff estimates

For banks: Total Capital = Regulatory Capital; Core Capital = Core Tier 1 capital

For insurers: Total Capital = Total Equity + Subordinated Debt; Core Capital = Total Equity

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, but counter-cyclical versus what?

And different perspectives on Pillar 1 versus Pillar 2

- Insurers often pay less attention to Pillar 1 and more attention to Pillar 2 than banks
  - Banks are currently often more capital constrained than insurers on a Pillar 1 basis
- Banks often enjoy liquidity underpins from their central bank
  - Part of the deposit protection arrangements that have developed over the last century or so
- N.B. IMF Working Paper concentrates on Pillar 1 position (easier to analyse)

Although some business overlaps (and conglomerates!)

- Investment / savings products, e.g.:
  - Investment bonds
  - Term deposits offered by banks and term-certain annuities offered by insurers
- Protection products
  - Investment guarantees and options written by investment banks versus variable annuities written by insurers
  - Trade finance offered by banks and surety bonds offered by nonlife insurers
- Both write CDS
- And both may be subsidiaries of each other or of holding companies spanning both sectors

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Basel III and Solvency II: Different histories and drivers

	Basel III	Solvency II
Underlying source	Regulator(s) (BCBS)	EU Commission (c.f. CRD IV)
Coverage	Globally active banks	All EU insurers
Legal status	Must be transposed into local legislation	EU Directive
Main drivers	Refines Basel II in reaction to recent financial crisis - Raised capital requirements (and quality of capital) - Harmonised liquidity standards - Capital buffer	- Harmonise across Europe - Create comprehensive principles-based regulatory framework - Make capital requirements more risk-responsive and in line with underlying economic capital
Transition period	Relatively long	Shorter but has been growing
Further reforms?	E.g. BCBS reviewing trading book and securitizations	Broader in scope than Basel III, but still many details outstanding

Basel III and Solvency II Capital Tiering (Pillar 1) (1)

- Concepts are similar:
  - Primary role of capital is 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
  - Some primarily absorb losses on going-concern basis
  - Some also absorb losses on gone-concern basis

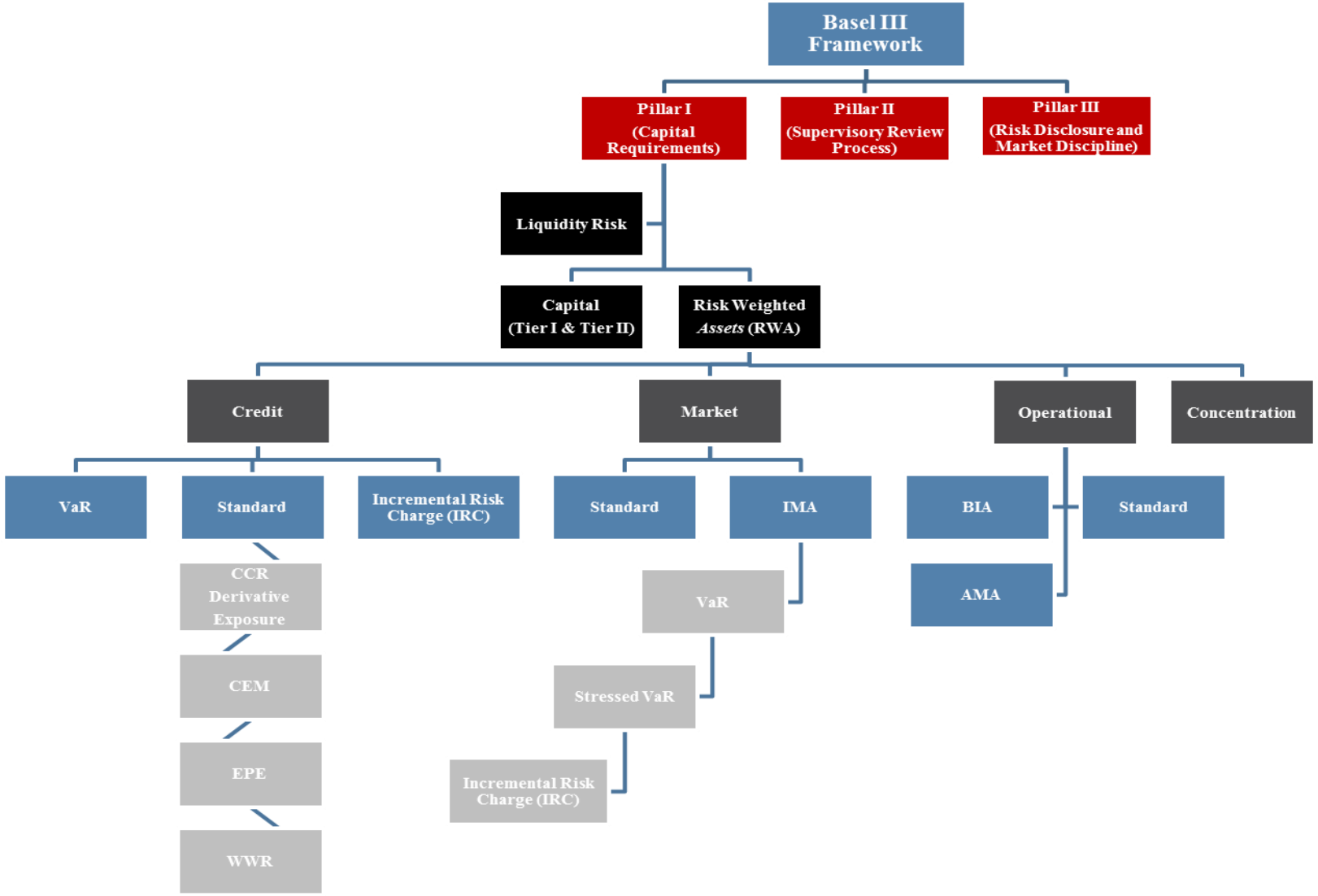
Basel III and Solvency II Capital Tiering (Pillar 1) (2)

- Some differences seem justifiable based on different business models
- Others less easy to justify, including:
  - Tier 3 eliminated under Basel III
    - Tier 3 not in practice used much by insurers
  - Bail-in proposals (but note recent PRA comments on resolution requirements for systemically important insurers)
  - Treatment of dated instruments; Solvency II allows 10 year
  - Coupon cancellation and trigger levels
  - Treatment of expected future profits – banks only recognise if contractually committed
  - Intangibles, deferred tax assets, surplus / deficit in pension scheme

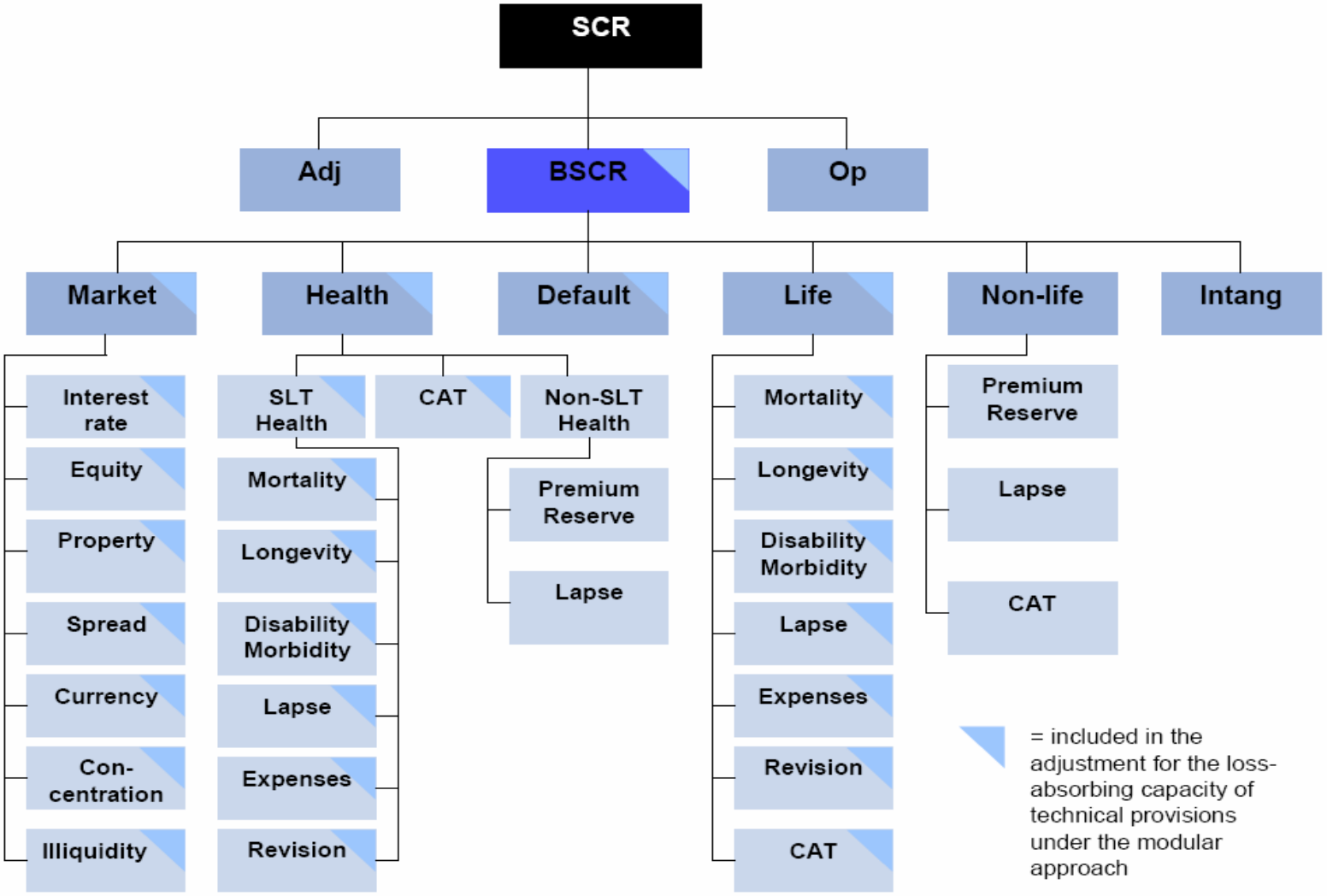
Basel III and Solvency II Capital Requirements

- Both Basel III and Solvency II have risk-based approaches
- Which means:
  - Some components are (conceptually) similar
    - Because some types of risk apply to both business types
  - Some components are (conceptually) different
    - Because some types of risk largely or wholly apply only to one business type
- Banks and insurers both come in many different varieties
  - Both sets of frameworks are sizeable
  - To some extent compete for regulatory and legislative air-time
  - In some cases draw from each other, in other cases are less compatible

Basel III capital requirements



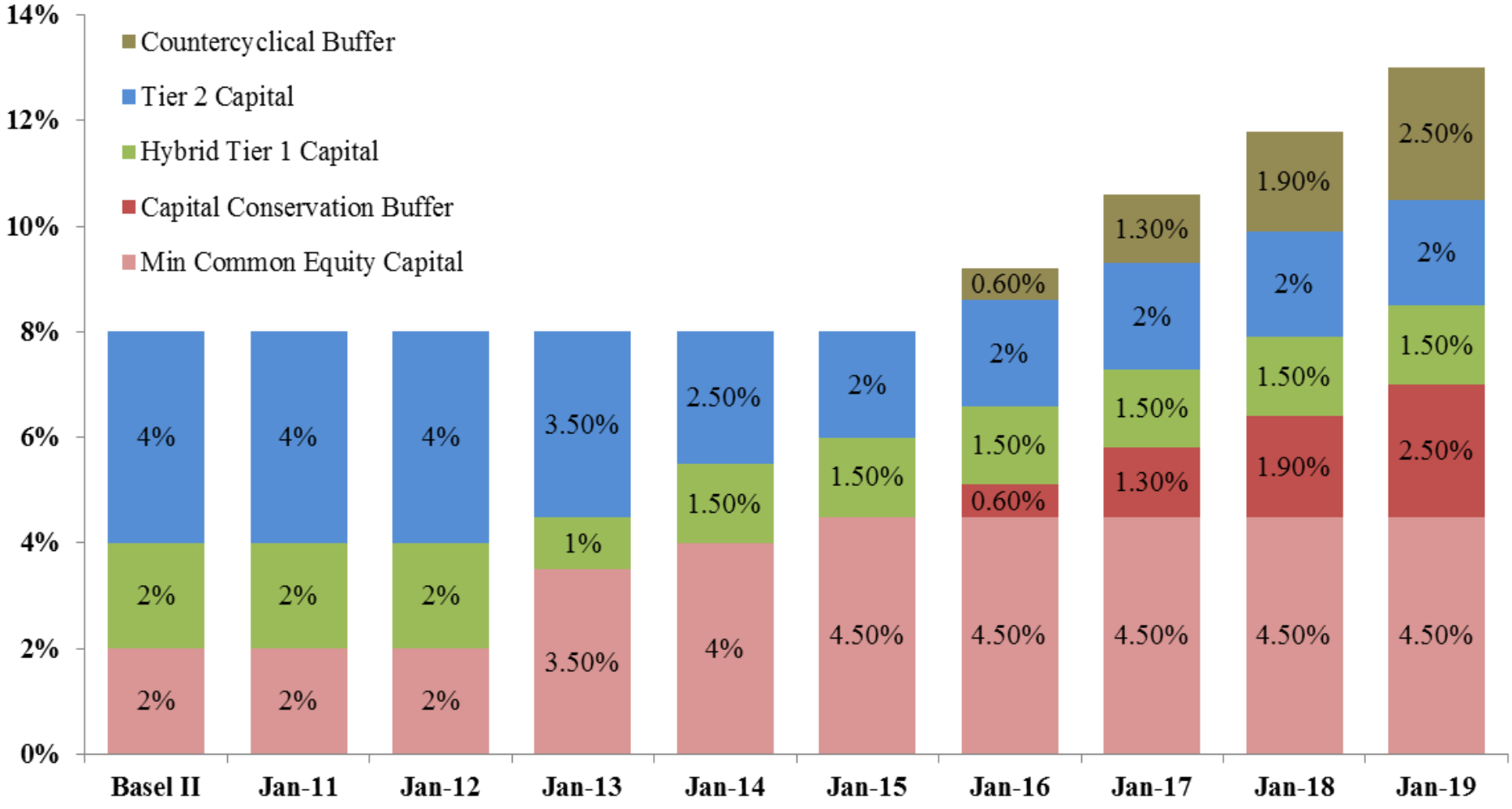
Solvency II SCR: Standard Formula



Basel III capital requirements (1)

- 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
- Locally
  - Varies considerably by country

Basel III capital requirements (2)



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Banking backdrop in Europe 2011 to 2013

- EBA Risk Dashboard 2013Q3 indicates that over last 2 years:
  - Capital positions have improved significantly
  - Asset quality has deteriorated (i.e. impaired loans and past due loans have increased)
  - Profitability has remained challenging
  - Deleveraging has continued: e.g. some reduction in average loan to deposit ratios
  - Funding conditions have improved
- Basel III: ongoing discussion on leverage ratio standard, extent to which regulatory framework should aim to be risk sensitive vs. not too complex
- Some other regulatory changes: e.g. shadow banking (CNAV money market funds), MIFID, AIFMD/UCITS V, resolution, …

Calculation of required Pillar 1 capital (banks)

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

G-SIBs

- Global Systemically Important Banks
- 29 banks
- “Too big to fail”, based on: 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% and 2.5%
- Will cost of additional capital be offset by lower funding costs?

Calculation of required Pillar 1 capital (insurers)

- Solvency II: absolute and minimum risk-based capital requirements
  - SCR and MCR
  - Explicit probabilistic basis (for SCR)
  - Standardised approach or internal model, stress tests
- ORSA (Pillar 2): 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

- 9 insurers deemed Global Systemically Important by Financial Stability Board in July 2013 based on IAIS criteria *[Note more may follow, as covered only traditional insurers not reinsurers]*
- Views differ about appropriateness
  - “Little evidence.. traditional insurance generates.. systemic risk”
- Non-traditional insurance
  - Financial guaranty insurance, credit default swaps, derivatives trading
  - Variable annuities?
- Subject to enhanced recovery and resolution planning requirements, enhanced group-wide supervision and higher loss absorbency requirements for non-traditional and non-insurance activities

Consequence of decision to have some G-SIIs

Presumes that G-SII's will eventually be subject to higher capital requirements

↓

Requires an agreed common base against which to measure "higher"

↓

Requires a global capital framework (c.f. Basel III)

↓

Hence IAIS proposals for a global **Insurance Capital Standard** (ICS) by 2016
and
straightforward, backstop capital requirements (BCRs) by 2014

Risk Aggregation (Pillar 1)

- Basel III
  - Does not fully reflect importance of diversification or adequately penalise portfolio concentrations
  - 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 via correlation matrices
  - Virtually all types of risk mitigation contracts recognised

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Possible unintended consequences

- Largely independent development processes
- Largely coincident implementation
- IMF Working Paper identified potential unintended consequences in the following areas:
  - Cost of capital
  - Funding patterns and interconnectedness
  - Product and/or risk migration

Cost of capital

- Natural framework is Modigliani-Miller and why it doesn't apply in practice
- General consensus is that changes will lead to higher costs for banks and affect them more than insurers
  - Debt interest deductibility: Affects banks more, as they rely more on debt financing and Basel III more focused on raising capital requirements
  - TBTF/SIFI and implicit deposit protection underpin: Should affect (large) banks more, if Basel III successfully reduces funding subsidy
  - More scope for risk mitigation under Solvency II and Solvency II explicitly promoting use of internal models
- Although some arguments to contrary, e.g. Solvency II a more fundamental change versus current position

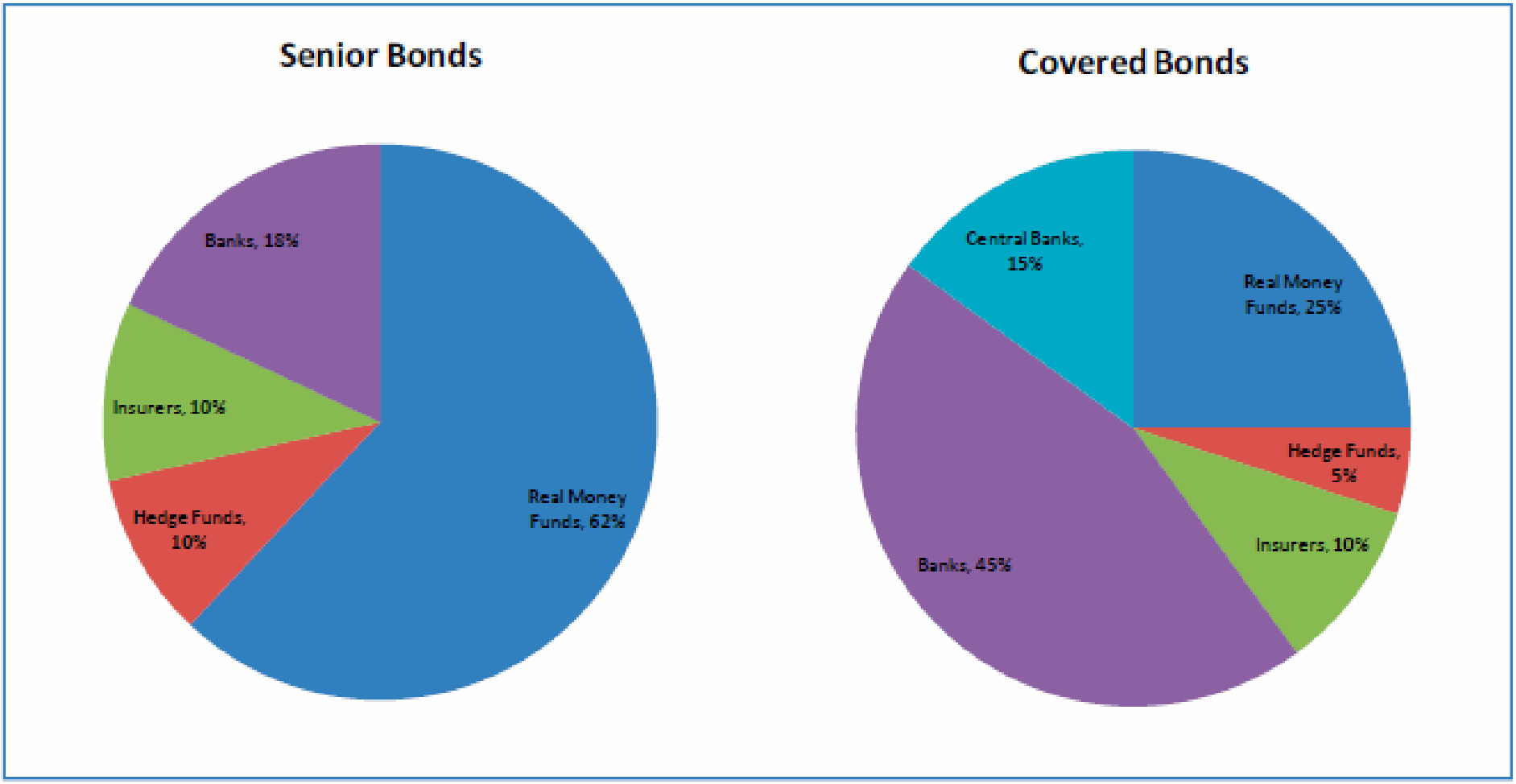
Funding patterns and interconnectedness (1)

- Solvency II could reduce demand for banks' long-term instruments at a 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 (in Pillar 1)
- 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
  - Much insurance demand is liability driven (e.g. unit-linked, participating business)
  - Insurers are not the main buyers of bank senior unsecured and covered bonds
  - Changes in appetite lead to changes in price, hence another take on cost of capital?
- Basel III prompting new hybrid structures
  - Closer to equity
  - Solvency II not encouraging insurers to hold such investments
  - Impact of Basel III on banks’ enthusiasm to hold each others’ debt

Banks' debt funding sources by type of investor



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
  - Because such instruments are viewed favourably by Pillar 1 of both frameworks
- Might be mitigated by e.g. insurer internal models
  - If they capture heterogeneity in credit risk across (EU) sovereigns better than standard formulae
  - But standards for such models have yet to be fully defined

Risk / Product transfers (1)

- There are activities where banks and insurers compete directly
- E.g. term certain annuities can attract higher capital requirements than term deposits
  - Basel III liquidity requirements may reduce these disparities
- E.g. 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 greater focus on risk management may result in increased transfer of risk to customers
  - E.g. increased use of periodical re-pricing of annuities based on mortality experience
  - C.f. shift from DB to DC, possible extension of Solvency II to pension funds
- Or migration away from both sectors
  - Through use of e.g. securitization, reinsurance, shadow banking
  - Replay of Basel II ‘originate and transfer’ business model?
  - Implications for transparency, oversight and ‘equivalence’ between jurisdictions

Policy considerations

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

Summary

- Substantially independent development but largely coincident implementation timing
- Introduces scope for unintended consequences in areas 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
- IMF Working Paper argues that policy responses should be informed by further empirical investigation into magnitude of impact of unintended consequences

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