

---

# **Possible Unintended Consequences of Basel III and Solvency II**

**Malcolm Kemp**

**Presentation to Milliman Forum, London**

**3 October 2011**

- 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

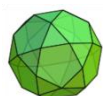
- Basel III (globally active banks) and Solvency II (all EU insurers)
  - Both well advanced and have much in common
  - But different histories, driving forces and business models of industries being regulated lead to substantive differences in detail
  - Substantially independent development but largely 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

4

	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!)

---

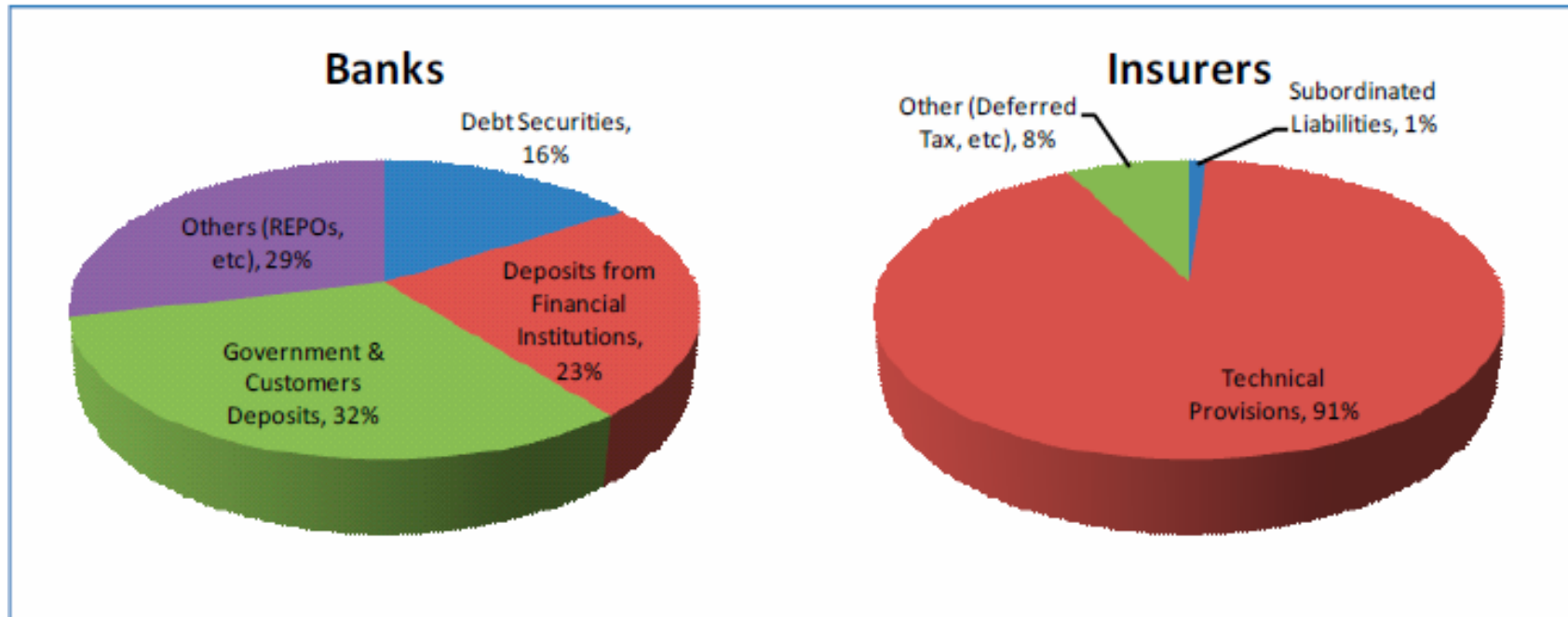
5

- 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)

6



Source: IMF Staff calculations on CEA data

Showing percentages of total liabilities (excluding equity)

- Banks more interconnected (at individual firm level)

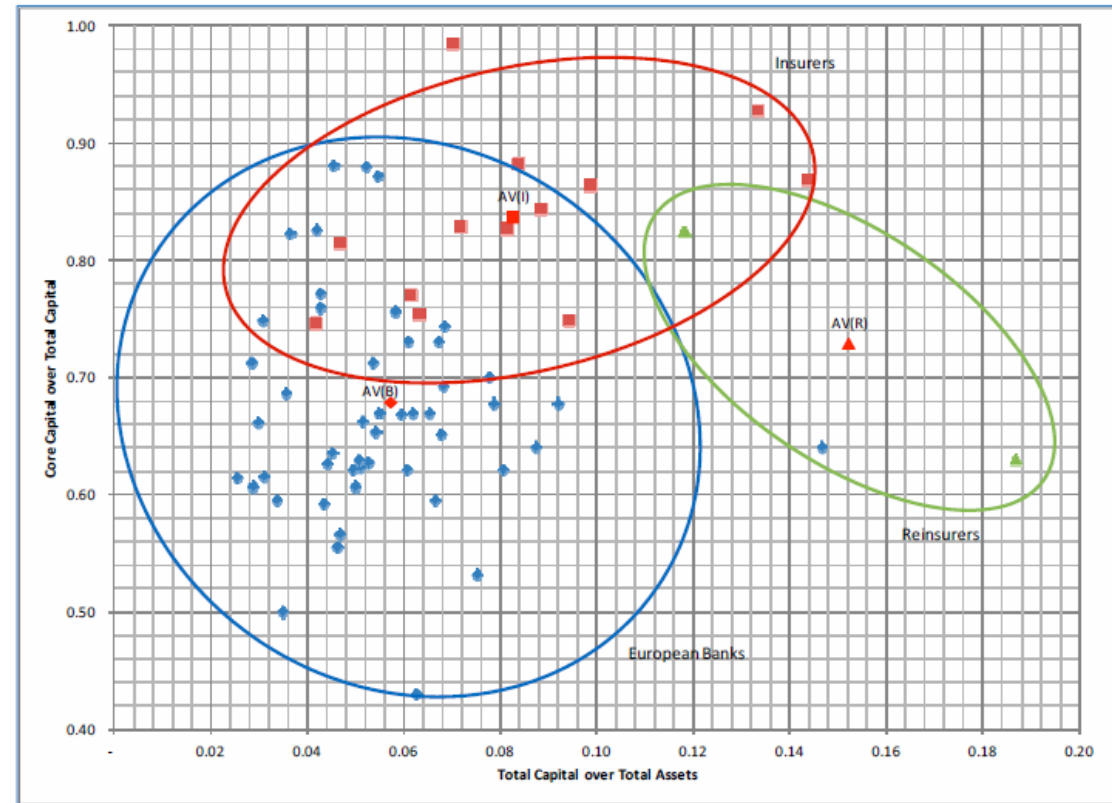


# Different capital levels

7

	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

8

	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 and Solvency II: Different histories and drivers

9

	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	Refines Basel II in reaction to recent financial crisis <ul style="list-style-type: none"><li>- Raised capital requirements (and quality of capital)</li><li>- Harmonised liquidity standards</li><li>- Capital buffer</li></ul>	<ul style="list-style-type: none"><li>- Harmonise across Europe</li><li>- Create comprehensive principles-based regulatory framework</li><li>- Make capital requirements more risk-responsive and in line with underlying economic capital</li></ul>
Transition period	Relatively long	Shorter, once in place
Further reforms?	E.g. BCBS reviewing trading book and securitizations	Already broader in scope than Basel III, but still many details outstanding

- Overarching concepts are similar:
  - Primary role of capital viewed as absorb unexpected losses
  - Both include concept of capital tiering (although different in structure) reflecting effectiveness of different types of capital in different situations
    - But how reliable is valuation of remainder of balance sheet in stressed circumstances?
- Some differences seem justifiable based on different business models
- Others less easy to justify
  - E.g. Tier 3, treatment of dated instruments, bail-in proposals, coupon cancellation and trigger levels more generally, regulatory capital adjustments (including those at group level)
  - Treatment of expected future profits



# Calculation of Required Pillar 1 Capital

11

- Basel III: same overall methodology as Basel II (i.e. risk-weighted assets)
  - No explicit probabilistic basis to define requirements
  - Standardised approach or internal model
  - New requirements to contain leverage and liquidity, more stringent on extreme events, additional charges for systemically important financial institutions (SIFIs)
- 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: 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 or better



## ■ Basel III

- Despite modifications versus Basel II arguably still 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

## ■ Solvency II

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



- Largely independent development processes but largely coincident implementation could lead to unintended consequences in the following areas:
  - Cost of capital
  - Funding patterns and interconnectedness
  - Product and/or risk migration
  - Other potential sources of arbitrage
- To identify which of these are of most concern will require empirical investigation beyond scope of paper

- Natural framework is Modigliani-Miller, rather how it doesn't apply in practice:
  - Debt interest deductibility
    - Should affect banks more than insurers, as banks rely more on debt financing and Basel III more focused on raising capital and improving its quality
  - Information asymmetry (and moral hazard)
    - Should affect (some) insurers more, as Solvency II a more fundamental change (and greater cost for insurers to unwind undesired positions?)
- Also change in value apportionment
  - Impact of leverage on shareholder value
    - Should affect banks more
  - TBTF/SIFI and implicit deposit protection underpin
    - Should affect (large) banks more, if Basel III successfully reduces funding subsidy



# Funding patterns and interconnectedness (1)

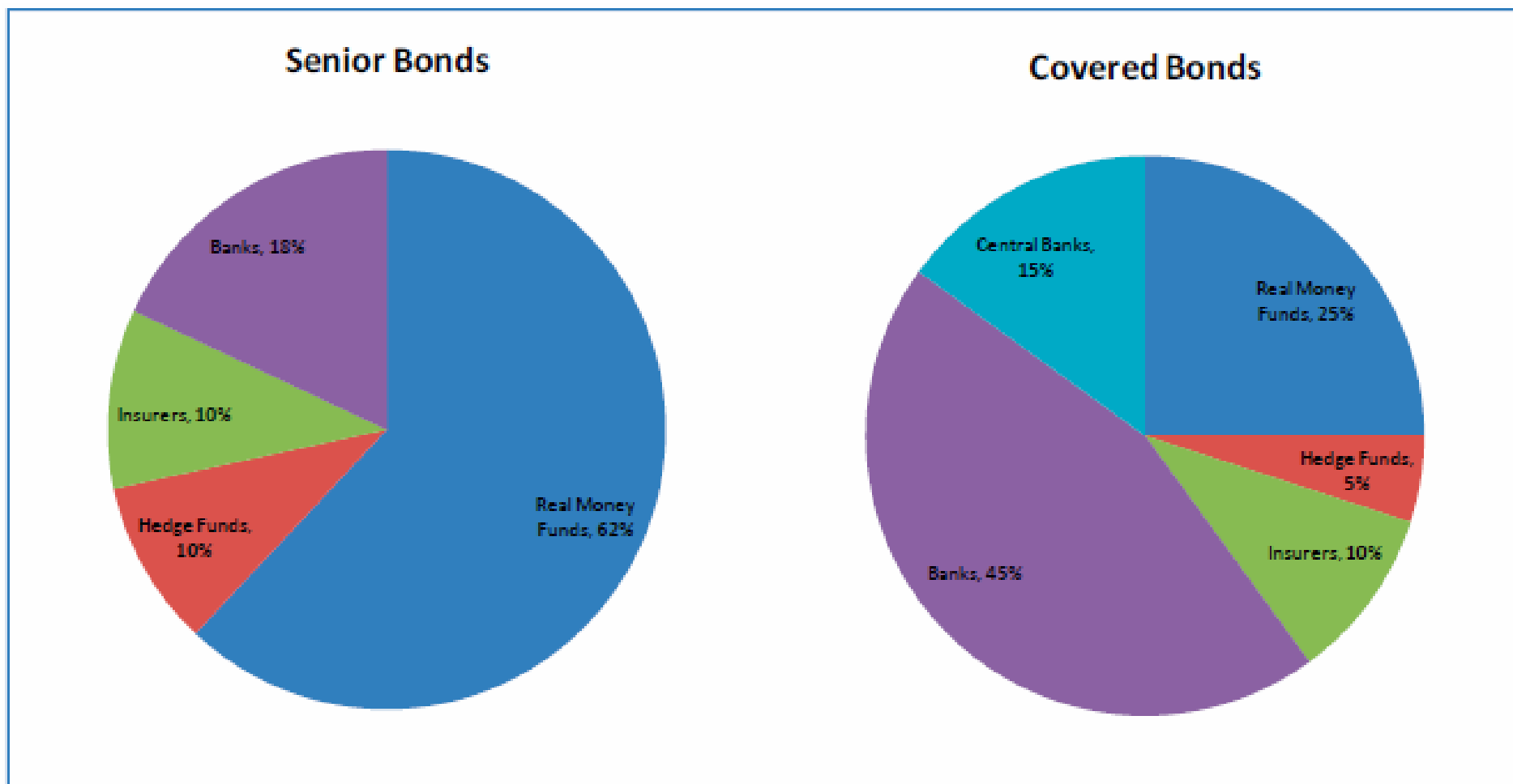
15

- Solvency II could reduce demand for banks' long-term instruments 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
- Interaction with cost of capital
- 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



# Banks' debt funding sources by type of investor

16



Source: Adapted from Bhimalingam and Burns (2011)



- 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 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

- Natural to focus on activities where banks and insurers compete directly
- In some jurisdictions, term certain annuities can attract higher capital requirements than, say, term deposits
  - Although Basel III liquidity requirements may reduce these disparities
- In some jurisdictions, equity investments attract higher capital charges if held in banks than in, say, 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



- Increased cost of capital and greater focus on risk management may also 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 and possible further impact on behaviour of 'long-term' investors
- 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



- Need for communication between insurance and banking regulators
  - And potential need to expand regulatory perimeter
- A key challenge for Solvency II is approach to 'equivalence' with non-EU regimes
- 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

- Substantially independent development but largely coincident implementation timing does introduce 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
- Policy responses should ideally be informed by further empirical investigation into magnitude of impact of unintended consequences

Material copyright (c) [Nematrian](#), 2011 unless otherwise stated.

All contents of this presentation are based on the opinions of the relevant Nematrian employee or agent and should not be relied upon to represent factually accurate statements without further verification by third parties. Any opinions expressed are made as at the date of publication but are subject to change without notice.

Any investment material contained in this presentation is for Investment Professionals use only, not to be relied upon by private investors. Past performance is not a guide to future returns. The value of investments is not guaranteed and may fall as well as rise, and may be affected by exchange rate fluctuations. Performance figures relating to a fund or representative account may differ from that of other separately managed accounts due to differences such as cash flows, charges, applicable taxes and differences in investment strategy and restrictions. Investment research and analysis included in this document has been produced by Nematrian for its own purposes and any investment ideas or opinions it contains may have been acted upon prior to publication and is made available here incidentally. The mention of any fund (or investment) does not constitute an offer or invitation to subscribe to shares in that fund (or to increase or reduce exposure to that investment). References to target or expected returns are not guaranteed in any way and may be affected by client constraints as well as external factors and management.

The information contained in this document is confidential and copyrighted and should not be disclosed to third parties. It is provided on the basis that the recipient will maintain its confidence, unless it is required to disclose it by applicable law or regulations. Certain information contained in this document may amount to a trade secret, and could, if disclosed, prejudice the commercial interests of Nematrian or its employees or agents. If you intend to disclose any of the information contained in this document for any reason, including, but not limited to, in response to a request under the Freedom of Information Act or similar legislation, you agree to notify and consult with Nematrian prior to making any such disclosure, so that Nematrian can ensure that its rights and the rights of its employees or agents are protected. Any entity or person with access to this information shall be subject to this confidentiality statement.

Information obtained from external sources is believed to be reliable but its accuracy or completeness cannot be guaranteed.

Any Nematrian software referred to in this presentation is copyrighted and confidential and is provided “as is”, with all faults and without any warranty of any kind, and Nematrian hereby disclaims all warranties with respect to such software, either express, implied or statutory, including, but not limited to, the implied warranties and/or conditions of merchantability, of satisfactory quality, or fitness for a particular purpose, of accuracy, of quiet enjoyment, and non-infringement of third party rights. Nematrian does not warrant against interference with your enjoyment of the software, that the functions contained in the software will meet your requirements, that the operation of the software will be uninterrupted or error-free, or that defects in the software will be corrected. For fuller details, see license terms on [www.nematrian.com](http://www.nematrian.com). Title to the software and all associated intellectual property rights is retained by Nematrian and/or its licensors.