
Possible Unintended Consequences of Basel III and Solvency II

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- 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)

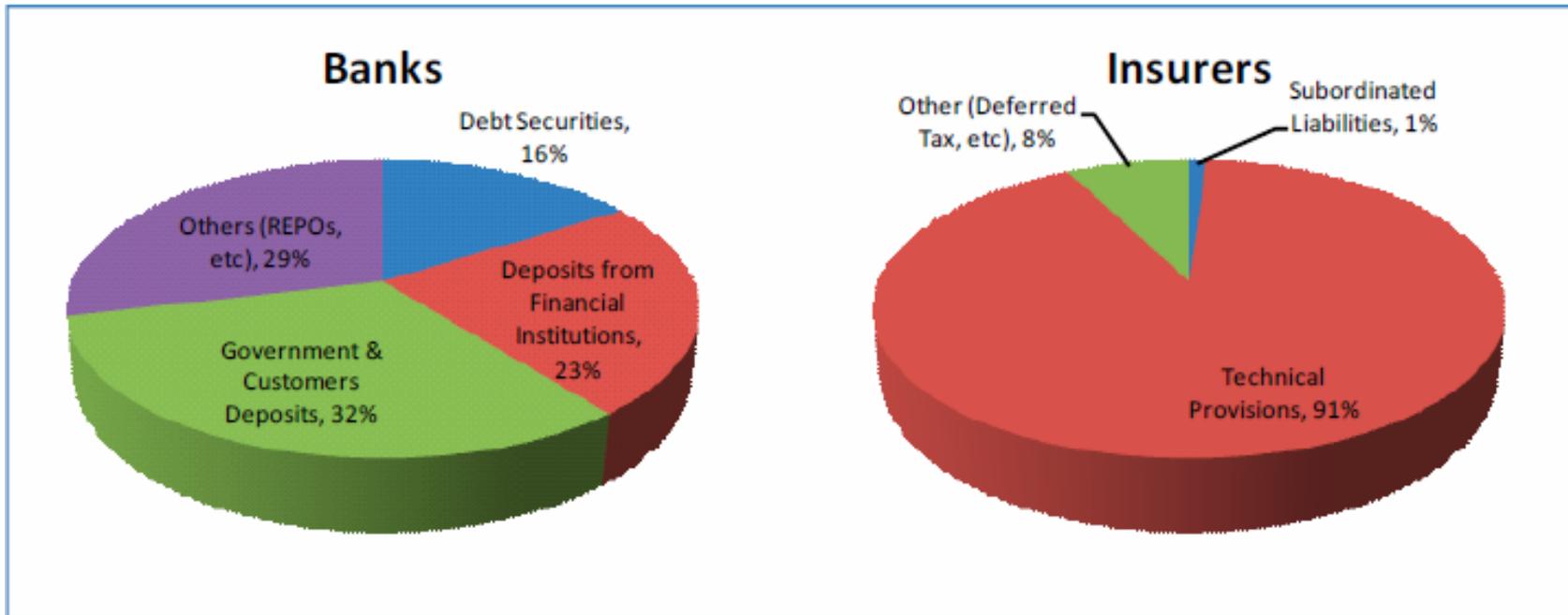
Typical bank and insurer business models differ

| | 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)



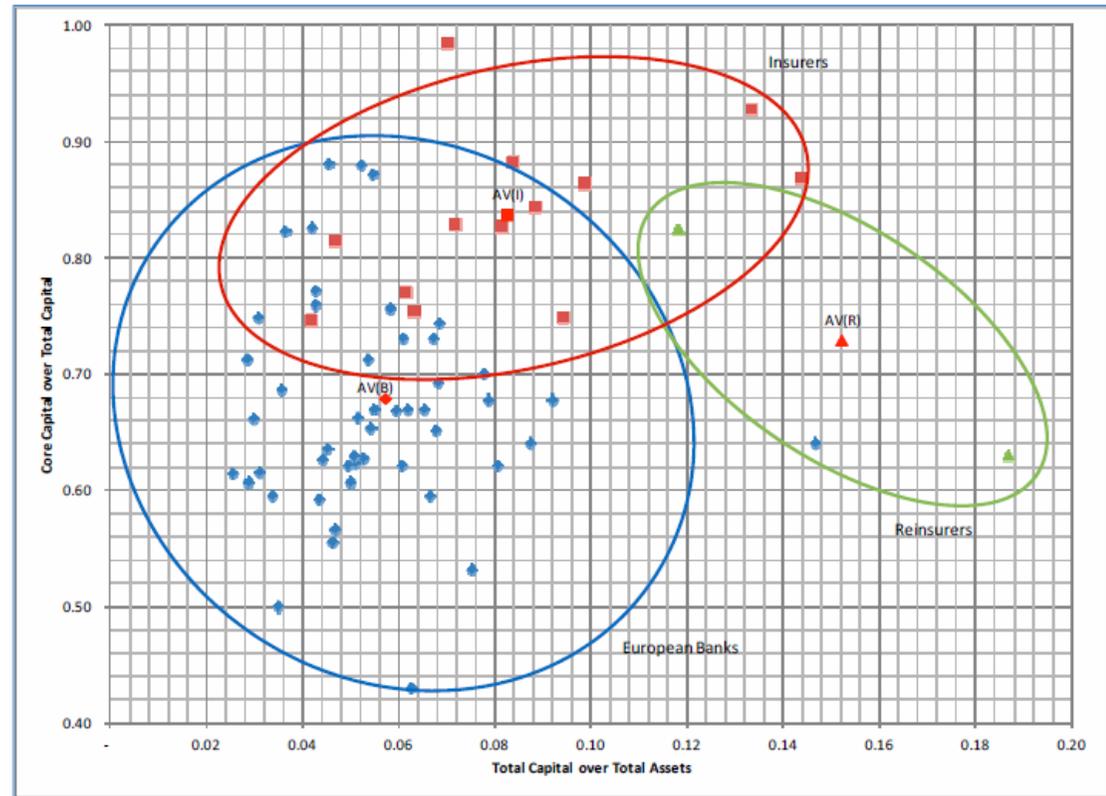
Source: IMF Staff calculations on CEA data
Showing percentages of total liabilities (excluding equity)

- 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
- Although counter-cyclical versus what?

Basel III and Solvency II: Different histories and 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 | Refines Basel II in reaction to recent financial crisis <ul style="list-style-type: none">- Raised capital requirements (and quality of capital)- Harmonised liquidity standards- Capital buffer | <ul style="list-style-type: none">- 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, 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

- 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

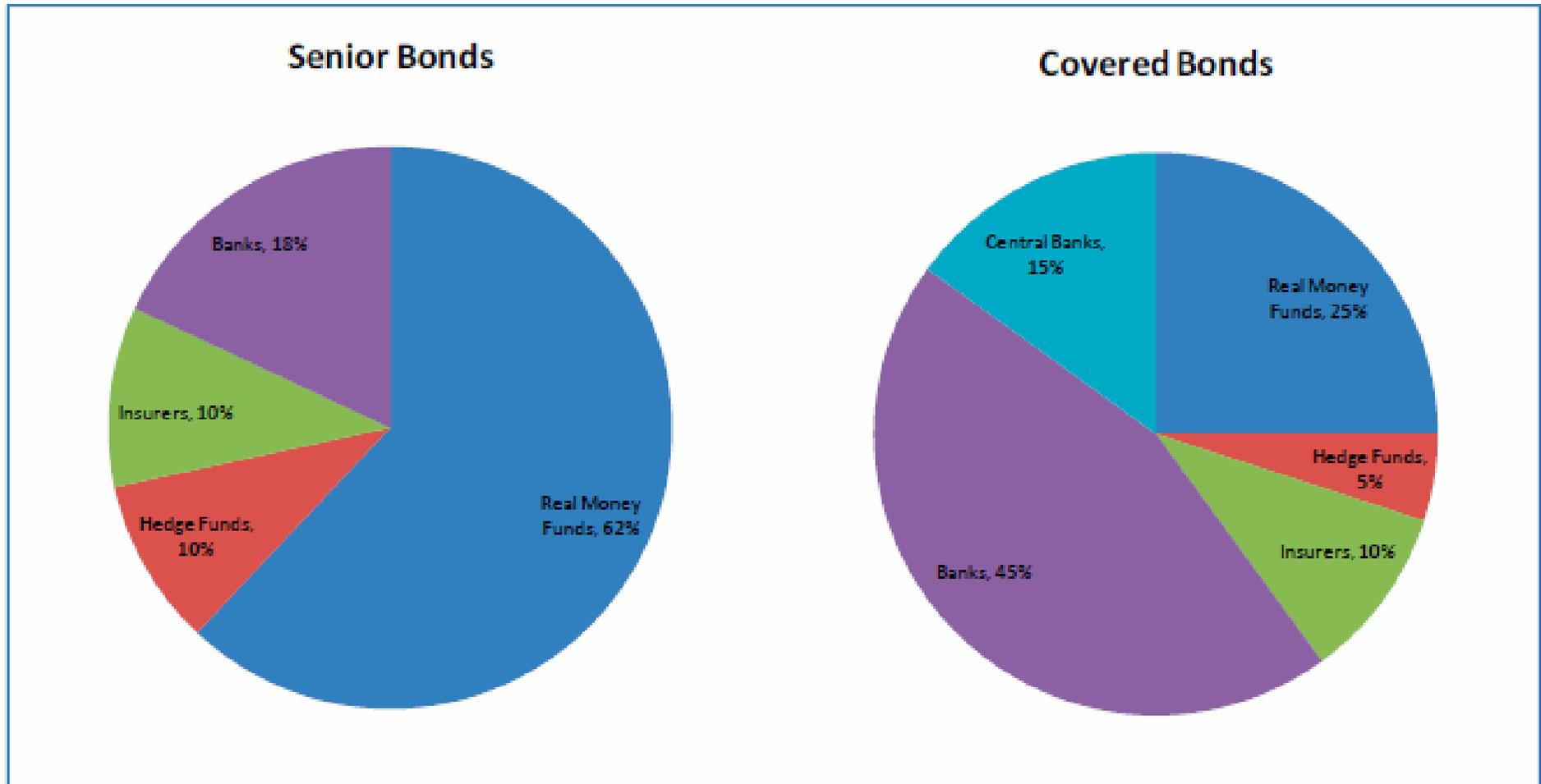
- Natural framework is Modigliani-Miller, rather how it doesn't apply in practice:
 - Debt interest deductibility
 - Should affect banks more than insurers, as banks rely more on debt financing and Basel III more focused on raising capital and improving its quality
 - Information asymmetry (and moral 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



- 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



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 impacted 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

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