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

  - 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

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

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

<table>
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<tr>
<th></th>
<th>Average total capital / total assets (%)</th>
<th>% of ‘high-quality’ core capital</th>
</tr>
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<tbody>
<tr>
<td>Large European banks</td>
<td>6</td>
<td>67</td>
</tr>
<tr>
<td>Large insurers (worldwide)</td>
<td>8</td>
<td>84</td>
</tr>
<tr>
<td>Large global reinsurers</td>
<td>15</td>
<td>73</td>
</tr>
</tbody>
</table>

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

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

<table>
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<tr>
<th></th>
<th>Basel III</th>
<th>Solvency II</th>
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<tbody>
<tr>
<td><strong>Underlying source</strong></td>
<td>Regulator(s) (BCBS)</td>
<td>EU Commission</td>
</tr>
<tr>
<td><strong>Coverage</strong></td>
<td>Globally active banks</td>
<td>All EU insurers</td>
</tr>
<tr>
<td><strong>Legal status</strong></td>
<td>Must be transposed into local legislation</td>
<td>EU Directive</td>
</tr>
<tr>
<td><strong>Main drivers</strong></td>
<td>Refines Basel II in reaction to recent financial crisis</td>
<td>- Harmonise across Europe</td>
</tr>
<tr>
<td></td>
<td>- Raised capital requirements (and quality of capital)</td>
<td>- Create comprehensive principles-based regulatory framework</td>
</tr>
<tr>
<td></td>
<td>- Harmonised liquidity standards</td>
<td>- Make capital requirements more risk-responsive and in line with underlying economic capital</td>
</tr>
<tr>
<td></td>
<td>- Capital buffer</td>
<td></td>
</tr>
<tr>
<td><strong>Transition period</strong></td>
<td>Relatively long</td>
<td>Shorter, once in place</td>
</tr>
<tr>
<td><strong>Further reforms?</strong></td>
<td>E.g. BCBS reviewing trading book and securitizations</td>
<td>Already broader in scope than Basel III, but still many details outstanding</td>
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Basel III and Solvency II Capital Tiering (Pillar 1)

- 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

- 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
Risk Aggregation (Pillar 1)

- 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
Possible unintended consequences

- 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
Cost of capital

- 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)

- 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)
Funding patterns and interconnectedness (2)

- 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
Risk / Product transference (1)

- 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
Policy considerations

- 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
Summar:

- 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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