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

## Typical bank and insurer business models differ

<table>
<thead>
<tr>
<th></th>
<th>Banks</th>
<th>Insurers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monetary role industry</strong></td>
<td>A means of payment in exchange for goods and services</td>
<td>A store of value, permitting deferred consumption and smoothing</td>
</tr>
<tr>
<td>mainly fulfils</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other roles</strong></td>
<td>Financial services</td>
<td>Risk pooling</td>
</tr>
<tr>
<td><strong>Comparative advantage</strong></td>
<td>Screen and finance short-term projects</td>
<td>(as investors) invest long-term and gain from illiquidity premium</td>
</tr>
<tr>
<td><strong>Core business activities</strong></td>
<td>Largely asset-driven, often supported by leveraged balance sheets</td>
<td>Mainly liability-driven, less leveraged and often less exposed to ‘runs’</td>
</tr>
<tr>
<td><strong>Exposure to systemic risk</strong> from any one firm?</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Risk that safety net costs fall on government?</strong></td>
<td>Higher (more ‘essential’ to current economic activity)</td>
<td>Lower</td>
</tr>
</tbody>
</table>
They also have 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>
<thead>
<tr>
<th></th>
<th>Average total capital / total assets (%)</th>
<th>% of ‘high-quality’ core capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large European banks</td>
<td>6</td>
<td>67</td>
</tr>
<tr>
<td>Large insurers</td>
<td>8</td>
<td>84</td>
</tr>
<tr>
<td>(worldwide)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large global</td>
<td>15</td>
<td>73</td>
</tr>
<tr>
<td>reinsurers</td>
<td></td>
<td></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 …

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<tr>
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</tr>
</thead>
<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>
</tbody>
</table>

- 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
## Basel III and Solvency II: Different histories and drivers

<table>
<thead>
<tr>
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<th>Basel III</th>
<th>Solvency II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Underlying source</strong></td>
<td>Regulator(s) (BCBS)</td>
<td>EU Commission (c.f. CRD IV)</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</td>
</tr>
<tr>
<td></td>
<td>- Capital buffer</td>
<td>underlying economic capital</td>
</tr>
<tr>
<td><strong>Transition period</strong></td>
<td>Relatively long</td>
<td>Shorter but has been growing</td>
</tr>
<tr>
<td><strong>Further reforms?</strong></td>
<td>E.g. BCBS reviewing trading book and securitizations</td>
<td>Broader in scope than Basel III, but still many details outstanding</td>
</tr>
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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 capital requirements

Countercyclical Buffer
Tier 2 Capital
Hybrid Tier 1 Capital
Capital Conservation Buffer
Min Common Equity Capital

Year:
- Basel II
- Jan-11
- Jan-12
- Jan-13
- Jan-14
- Jan-15
- Jan-16
- Jan-17
- Jan-18
- Jan-19

Percentages:
- Countercyclical Buffer:
  - Basel II: 0%
  - Jan-11: 0%
  - Jan-12: 0%
  - Jan-13: 0%
  - Jan-14: 0%
  - Jan-15: 0%
  - Jan-16: 0%
  - Jan-17: 0%
  - Jan-18: 0%
  - Jan-19: 0%

- Tier 2 Capital:
  - Basel II: 4%
  - Jan-11: 4%
  - Jan-12: 4%
  - Jan-13: 2.5%
  - Jan-14: 3.5%
  - Jan-15: 4%
  - Jan-16: 4.5%
  - Jan-17: 4.5%
  - Jan-18: 4.5%
  - Jan-19: 4.5%

- Hybrid Tier 1 Capital:
  - Basel II: 2%
  - Jan-11: 2%
  - Jan-12: 2%
  - Jan-13: 1%
  - Jan-14: 1.5%
  - Jan-15: 2%
  - Jan-16: 0.6%
  - Jan-17: 1.3%
  - Jan-18: 1.9%
  - Jan-19: 1.5%

- Capital Conservation Buffer:
  - Basel II: 2%
  - Jan-11: 2%
  - Jan-12: 2%
  - Jan-13: 1.5%
  - Jan-14: 1.5%
  - Jan-15: 2%
  - Jan-16: 0.6%
  - Jan-17: 1.3%
  - Jan-18: 1.9%
  - Jan-19: 2.5%

- Min Common Equity Capital:
  - Basel II: 2%
  - Jan-11: 2%
  - Jan-12: 2%
  - Jan-13: 3.5%
  - Jan-14: 4%
  - Jan-15: 4.5%
  - Jan-16: 4.5%
  - Jan-17: 4.5%
  - Jan-18: 4.5%
  - Jan-19: 4.5%
Calculation of required Pillar 1 capital (banks)

- Both Basel III and Solvency II have risk-based approaches

- 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 Systematically 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

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
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
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
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
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 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
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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