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


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  - Funding patterns and interconnectedness
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## 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 mainly fulfils</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><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 from any one firm?</strong></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 (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 …

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>Assets</strong></td>
<td>Often IFRS, bank loans deemed financial instruments, IAS 39, loan</td>
<td>Solvency II uses market consistent, i.e. fair, values (and less reliance on general purpose accounting)</td>
</tr>
<tr>
<td></td>
<td>provisioning generally retrospective, IFRS 9 amortised cost or fair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>value</td>
<td></td>
</tr>
<tr>
<td><strong>Liabilities</strong></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><strong>Own credit risk</strong></td>
<td>Basel III will effectively disallow benefit previously available under Basel II</td>
<td>No</td>
</tr>
</tbody>
</table>
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
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
## Basel III and Solvency II: Different histories and drivers

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<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 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 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>
</tbody>
</table>
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

- Basel III Framework
  - Pillar I (Capital Requirements)
  - Pillar II (Supervisory Review Process)
  - Pillar III (Risk Disclosure and Market Discipline)
  - Liquidity Risk
    - Capital (Tier I & Tier II)
      - Credit
        - VaR
        - Standard
          - CCR Derivative Exposure
        - Incremental Risk Charge (IRC)
        - CEM
        - EPE
        - WWR
      - Market
        - Standard
        - IMA
          - VaR
          - Stressed VaR
          - Incremental Risk Charge (IRC)
  - Risk Weighted Assets (RWA)
    - Operational
      - BIA
      - Standard
    - Concentration
      - AMA
Solvency II SCR: Standard Formula

- SCR
  - Adj
    - Market
      - Interest rate
      - Equity
      - Property
      - Spread
      - Currency
      - Concentration
      - Illiquidity
    - Health
      - SLT Health
      - Mortality
      - Longevity
      - Disability Morbidity
      - Lapse
      - Expenses
      - Revision
    - Default
      - CAT
      - Non-SLT Health
      - Premium Reserve
      - Lapse
      - Expenses
      - Revision
  - BSCR
    - Life
      - Mortality
      - Longevity
      - Disability Morbidity
      - Lapse
      - Expenses
      - Revision
      - CAT
    - Non-life
      - Premium Reserve
      - Lapse
    - Intang
      - CAT

- Op

- Adjusted for the loss-absorbing capacity of technical provisions under the modular approach.
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)
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 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 Systematically 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-SII's

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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- Similarities and differences between
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- Possible unintended consequences of Basel III and Solvency II on:
  - Cost of capital
  - Funding patterns and interconnectedness
  - Product and/or risk migration
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
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
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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