**Meeting Between Federal Reserve Staff
and Representatives of MetLife, Inc. (MetLife)
July 15, 2013**

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Summary: Representatives of MetLife met with Federal Reserve staff to discuss alternative approaches to calibrating minimum capital ratios for large insurance companies. The alternatives focused on comparability of insurance and banking regulatory capital. The attached document was distributed.

Calibration of minimum capital ratios for the Aggregated Activities Based Approach

July 15, 2013

Introduction

- During our last meeting we discussed a proposed alternative framework to the Basel regulatory regime – an Aggregated Activities Based Approach (AABA)

- The discussion highlighted two key aspects of AABA that require further development
  1. How to determine the equivalency of capital across different regulatory regimes (e.g. is $1 of US Risk-based capital equivalent to $1 of UK solvency capital?)
  2. How to calibrate minimum capital ratios for AABA that provide a comparable level of solvency protection as the Basel minimum ratios (pre- and post-stress)

- This document presents a series of conceptual approaches that provide input into the second issue, the calibration of minimum capital ratios equivalent to the Basel ratios

  - While the approaches provide input into a plausible range for the minimum ratios, these parameters should not be interpreted as a formal proposal

  - Applying these approaches to a broader and deeper set of industry data would provider a fuller set of input data to the calibration

Minimum capital ratios need to be established for AABA that are comparable both in form and substance to the Basel ratios

- To enable comparisons with banks and meet regulatory objectives, AABA requires the same four minimum capital ratios as Basel (shown at right)

- This document focuses on the Tier 1 common ratios; similar techniques could be used for the Tier 1 and Total capital ratios

- The techniques presented in this paper aim to set the AABA minimums such that they provide an equivalent level of solvency protection as the Basel minimums provide for banks

Minimum capital ratios

	Basel[1]	AABA
Post-stress Tier 1 Common	5%	
Tier 1 Common (starting ratio)	7%	*Focus of analysis today*
		TBD
Tier 1 capital (starting ratio)	8.5%	
Total capital (starting ratio)	10.5%	

1. Starting ratios (pre-stress) include 2.5% conservation buffer, and are after phase-in period

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We developed and applied three approaches to inform the AABA minimum capital ratios; use of these inputs will require triangulation and judgment

1 **"Market-implied" approach**

Calibrate through credit default swap spreads – similar CDS spreads imply equivalent default risk and capital levels

Triangulation and judgment

2 **"Regulatory intervention" approach**

Calibrate based on similar triggers for regulatory intervention across banking and insurance
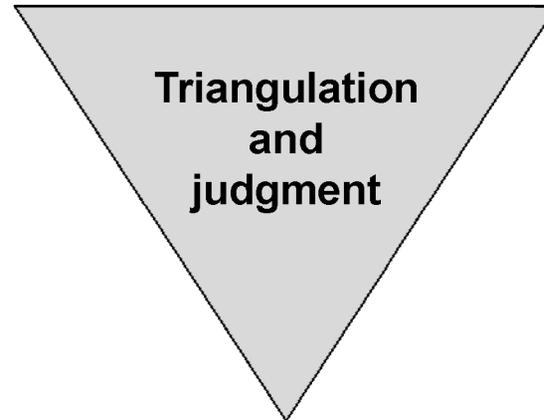
3 **Empirical approach/"what-if" analysis**

Calibrate empirically – identify levels that resulted in insurer distress/insolvencies by applying approach pro-forma to crisis

Each approach offers a different perspective in calibrating the minimum AABA ratios

Approach	Rationale for approach	Steps to apply the approach
1 **"Market-implied"** *Based on CDS spreads*	• CDS spreads provide a market view of holding company financial health • Pre- and post-stress AABA ratios for insurers of similar health as banks can be compared to the bank ratios	• Measure pre/post-stress capital ratios of SIFI banks (Basel) and insurers (AABA) • Ascertain CDS spreads of SIFI banks and insurers • Scale the AABA results to reflect (1) different CDS spread levels and (2) level of bank capitalization beyond minimum ratios
2 **"Regulatory intervention"** *Based on regulatory trigger levels*	• Indicates the absolute minimum capital ratios prior to regulatory intervention – directly comparable between banks (Basel) and insurers (statutory)	• Determine regulatory intervention levels for Basel and statutory regimes • Measure pre/post-stress Basel minimum capital ratios as % of regulatory intervention level • Scale the statutory regulatory action level by the equivalent ratios as Basel[1]
3 **Empirical/ "what-if" analysis** *Based on pro-forma historical ratios[2]*	• Insurer's AABA capital ratios during the crisis indicate an approximate 'ceiling' on post-stress thresholds (since they survived a downturn at those ratios)	• Calculate historical pro-forma AABA ratios for SIFI designees under the Fed's purview (including ~2008) • Evaluate historical AABA ratios during crisis and during "good years" to guide calibration of AABA minimums

1. AABA will depend on multiple regimes, so the calibrated ratio can be pro-rated based on size of book (or other metric) in each jurisdiction
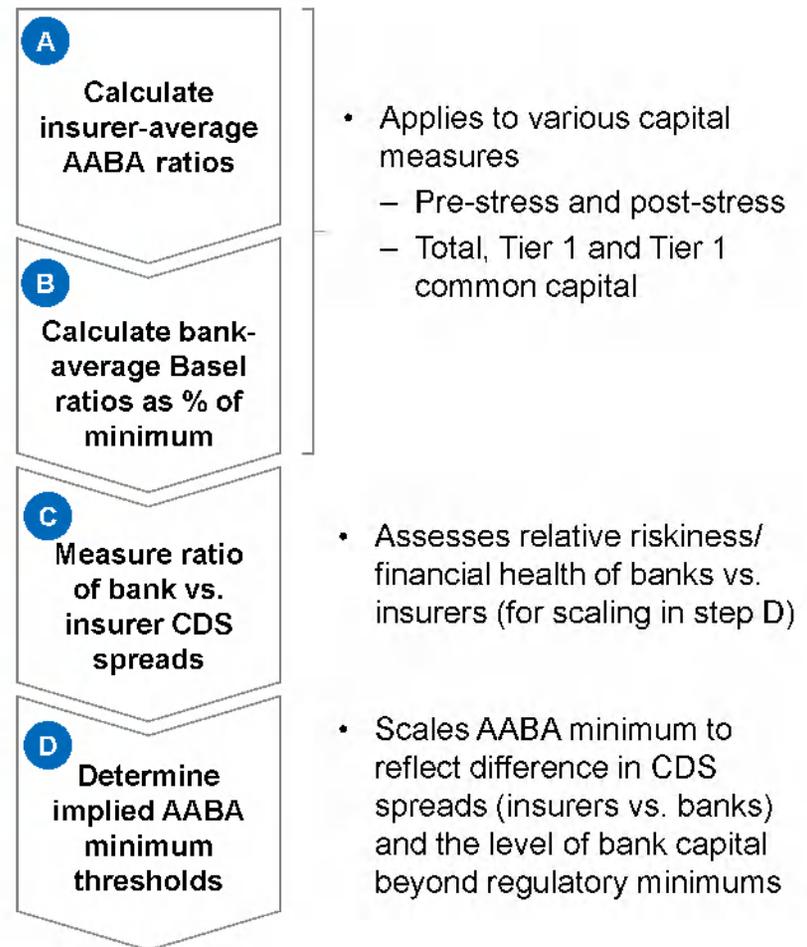2. Requires further data collection from insurers

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❶ "Market-implied" approach
Approach relies on CDS spreads to provide a view of relative solvency risk

- Credit default swaps provide a market view of a company's credit risk – it is a market indicator for the financial health and level of capitalization of the holding company

- CDS spreads enable comparison of a bank's Basel capital ratios with an insurer's AABA aggregated ratio – minimum AABA ratios can be calibrated this way

  - If a bank and insurer have the same CDS spreads, then one may expect the bank's Basel capital ratios to be comparable to the insurer's AABA ratio

- While there are limitations to this approach (e.g. other non-capital factors also affect CDS spreads), it provides a market-implied first-order approximation of the AABA minimum ratios

Approach to calibrating using CDS spreads

A Calculate insurer-average AABA ratios

- Applies to various capital measures
  - Pre-stress and post-stress
  - Total, Tier 1 and Tier 1 common capital

B Calculate bank-average Basel ratios as % of minimum

C Measure ratio of bank vs. insurer CDS spreads

- Assesses relative riskiness/ financial health of banks vs. insurers (for scaling in step D)

D Determine implied AABA minimum thresholds

- Scales AABA minimum to reflect difference in CDS spreads (insurers vs. banks) and the level of bank capital beyond regulatory minimums

1. Starting ratios (pre-stress) include 2.5% conservation buffer, and are after phase-in period

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① "Market-implied" approach
Illustrative example for post-stress Tier 1 common capital

Q4 2012	Banks[1]	InsureCo[2] (example)	
Post-stress Tier 1 common capital ratios	Basel: 7.2%[3]	AABA ratio: ~220% (example)	**Ⓐ** *Determine insurer stressed AABA ratio*
Post-stress Tier 1 as % of min. required (7.2% / 5.0%)	143% **Ⓑ**	*Determine bank post-stress Tier 1 common ratios as % of min. 143% = 7.2% / 5.0%*	
5-year CDS spreads (bps)[4]	113	~125	**Ⓒ** *Compare CDS spreads of banks vs. insurers*

InsureCo CDS ~12% higher

Minimum Tier 1 common AABA aggregated ratio

$$= \frac{220\%}{143\%} \cdot \frac{125}{113} = 170\%$$

Ⓓ *Calibrate the AABA minimum thresholds*

- Start at AABA ratio (220%)
- Adjust AABA ratio for proportion of average bank capital beyond min. required (143%)
- Adjust for different CDS levels between banks and insurers

Assumes for same CDS level, banks and insurers have same ratios above the minimums

1. Average of Bank of America, Citi, Morgan Stanley, JP Morgan, Wells Fargo; Goldman Sachs, Capital One, Ally Financial, American Express
2. Representative example insurer, post-stress; Ideally, the SIFI insurer-average would be used instead of a single insurer data-point
3. Source: Federal reserves stress test results 2013
4. Source: Datastream

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"Regulatory intervention" approach
Approach presumes that multiplying minimum capital amounts provide equivalent improvements in solvency risk ratios across frameworks

	Basel – Tier 1 capital ratios		Statutory – RBC Ratios	Japan FSA – Solvency margin ratio	Solvency II – Solvency Capital Requirement (SCR)
Typical operating range	8%–10%		300%–500%	600%–800%	140%–175% SCR[2]
Pre-stress minimum	7%[1]	Minimum (starting ratio)	~175%	~350%	~175% SCR
Post-stress minimum	5%	Initial remediation	~125%	~250%	~125% SCR
					Implied insurer equivalents
Regulatory triggers – current ratios	4%	Recovery	100% Company action level	200% Improvement plan required	100% SCR Austerity measures & improvement plan
					Anchor
	3%	Resolution/ recovery	50% Regulatory action level (current ratio)	100% Severe austerity measures (e.g. to dividends, bonuses)	MCR (25% to 45% SCR) Regulatory intervention

1. With capital conservation buffer
2. Typical ranges targeted by insurers; based on Oliver Wyman experience

- Insurance capital rules set minimums in a manner that is similar to bank rules
  - Company action levels (US RBC) require a company to submit a plan
  - Regulatory action levels (US RBC) establish when a regulator must take action
- Insurance capital rules are applied at regulated subsidiary level and not at the holding company, but can reasonably be extended
- The appropriate minimum capital ratios for AABA could be calibrated based on a comparison of bank vs. insurer regulatory triggers
- Further, typical operating capital ratios can be used as a sanity check for this comparison
- *Differences in implied minimum capital ratios suggest that the AABA minimum for an individual insurer would need to reflect mix of business by geography*

Empirical approach/"what-if" analysis
Approach presumes that the lowest capital ratios of institutions who survived the crisis should represent a "ceiling" on minimum ratios

- The Fed can request pro-forma calculation of AABA ratios for SIFI designees under its purview

- Such "back-testing" would provide a view of how insurers performed during the crisis; the Fed can examine

  1. AABA ratios of insurers that failed/ nearly failed

  2. AABA ratios of insurers that remained healthy and continued to write new business without government support

- This would provide an indication for the post-stress minimum ratios

  - Specifically, minimum thresholds should be set no higher than the lowest AABA ratio of the insurers that remained healthy during the crisis

Representative example

InsureCo pro-forma AABA ratios (estimates)[1]
Pre-stress ratios; 2008 – 2012
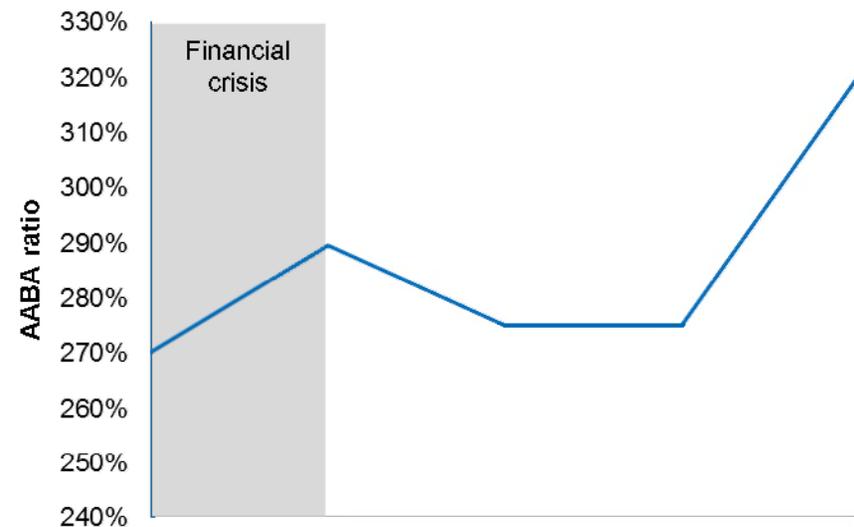
New Life business $BN (1st year/single premium)	2008	2009	2010	2011	2012
	45	30	35	55	35

InsureCo's experience suggests that the stressed minimum should be considerably lower than ~270% (2008 ratio) given it continued to write large volumes of new business during the crisis (whereas struggling insurers often cease writing new business)

1. Representative example insurer

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No single approach is ideal to determine the minimum AABA ratios, however the three data points can be used to establish a reasonable range of ratios

	Approach	Analysis results – Tier 1 common		Comments
		Pre-stress minimum	Post-stress minimum	
1	**"Market-implied"** *Based on CDS spreads*	• ~220%	• ~170%	• InsureCo's CDS spreads are slightly higher than bank average – minimums are scaled up accordingly
2	**"Regulatory intervention"** *Based on regulatory trigger levels*	• ~175% (US RBC)	• ~125% (US RBC)	• Other statutory minimums can be scaled in similar way • AABA minimum should be pro-rated by share of business under each jurisdiction/regime
3	**Empirical/"what-if" analysis** *Based on pro-forma historical ratios*	• N/A[1]	• Below ~270%	• InsureCo's 2008 ratio was ~270% while it continued to write large volumes of new business

1. For background, our representative InsureCo operated between ~270% and ~320% from 2008 to 2012. This provides a reference point for operating AABA ratios during both normal and adverse business climates
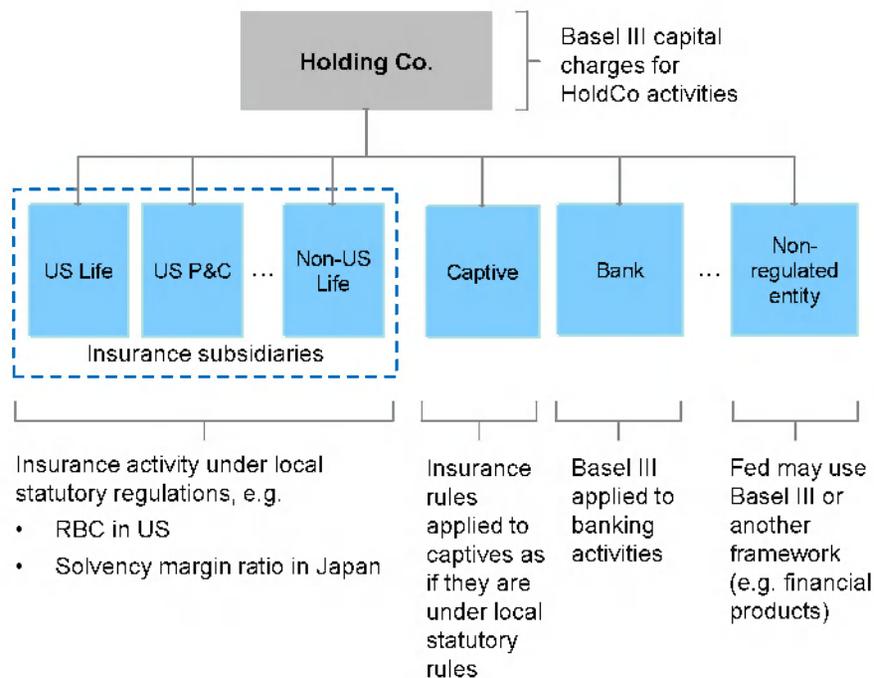
Appendix – Recap of the Aggregated Activities Based Approach

Description and rationale for the proposed alternative framework

- The proposed alternative extends and enhances the European Group Supervision approach to meet the Fed's goals to capture holding company assets and non-insurance subsidiary capital requirements, and to support stress testing

- The approach aggregates available and required capital based on a regulatory regime specifically tailored to the financial activities and risks of all entities within the holding company structure

  - Available and required capital for regulated subsidiaries are based on regulatory frameworks tailored to the activity of the entity (e.g. application of a statutory framework to insurance activities and a banking approach to banking activities)

  - Available and required capital for hitherto non-regulated entities may be determined using an approach selected by the Fed that reflects the unique activities of the entity (e.g. extending Basel approach to asset management activities)

AABA measures capital based on existing regulations tailored to activities of each entity

Illustration of regulations applicable to each entity within the activities based approach

Holding Co.

Basel III capital charges for HoldCo activities

US Life | US P&C | ... | Non-US Life

Insurance subsidiaries

Captive | Bank | ... | Non-regulated entity

Insurance activity under local statutory regulations, e.g.
- RBC in US
- Solvency margin ratio in Japan

Insurance rules applied to captives as if they are under local statutory rules

Basel III applied to banking activities

Fed may use Basel III or another framework (e.g. financial products)

Comments

- Aggregated activities based approach works in four high-level steps

1. Sum the available[1] and required capital for each entity, based on the appropriate regulatory framework applicable to the business activity

2. Adjust for holding company double leverage and capital requirements

3. Sum up the above to determine the aggregated activities based capital ratio
   - Similar to Basel, different ratios and thresholds can be applied to differentiate by quality of capital

4. Apply prescribed stress scenarios to the aggregated activities based capital ratio

- A similar form of this approach is already used by European country regulators to evaluate large insurers

- The issues to address with this approach are
   - Ostensibly reduced comparability between insurance and banks
   - Requirement for the Fed to gain familiarity with statutory reserve capital regimes and/or put in place a mechanism to establish equivalency between US RBC and other jurisdictions

1. Note that available capital is differentiated by quality of capital – i.e. Tier 1 common, Tier 1 and total capital

Capital ratios are derived by summing the subsidiary capital, adjusting for double leverage and adding back non-subsidiary assets of the HoldCo

Worked example

1 **Sum the available and required capital for each subsidiary**

2 **Adjust for holding company double leverage and capital requirements**

3 **Determine aggregated activities based capital ratio**

US Insurance entities
Required capital: 100
Available capital: 500

Non-US Ins. entities
Required capital: 100
Available capital: 500

Other subs
(e.g. Asset management)
Required capital: 100
Available capital: 200

Unconsolidated holding company balance sheet

Assets
Assets: 300

Liab. and equity
Sub. debt[1]: 200
Other debt: 500
Total debt: 700
Total equity: (400)

Preferred stock[2]: 100
Total common eq.: (500)

Aggregated activities based capital ratio

Required capital: 300
Tier 1 com: 1200 – 500 = 700
Tier 1 total: 800
Total capital: 1,000

Tier 1 common = 233%
Tier 1 = 266%
Total = 333%

- European approach applies an equivalency test for non-EU domiciled insurers
- Required capital defined as the minimum regulatory capital level that triggers a regulatory action

- Determine which debt instruments qualify as Tier 1 or Tier 2 capital
- Deduct HoldCo debt from HoldCo assets (excluding investments in subsidiaries) to adjust for double leverage

- Required capital: sum of required capital at subsidiaries
- Available capital: sum of available capital in subs and adjusted HoldCo equity (excluding investments in subsidiaries)
  – Differentiated by quality of capital: Tier 1 common, Tier 1 and total

4 **The Fed could apply stress scenarios to the aggregated activities based capital ratios**

1. Tier 2 instrument
2. Tier 1 instrument

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