

**U.S. Group Capital Methodology Concepts Discussion Paper
ComFrame Development and Analysis (G) Working Group
November 16, 2014**

Overview

This paper has been prepared by NAIC staff in order to document the deliberative thinking that has taken place since the last ComFrame Development and Analysis (G) Working Group (CDAWG) meeting and to provide the conceptual underpinnings of a risk-based group capital standard for internationally active U.S. insurance groups. The thinking and concepts on this issue will evolve over time as the assessment of options and practical application continues. The topics reflected in this document are not all-inclusive; this paper has been provided for review and input from state insurance regulators and interested parties in order to help move this work forward.

From the NAIC's perspective, the goal of a group capital standard is to enhance the regulatory toolbox of U.S. state insurance regulators by providing an indicator of the financial strength of the consolidated group and to be a valuable addition to the existing assessment of group risks and capital adequacy. It would complement (rather than replace or diminish) the primary regulatory focus on the financial strength of the insurance legal entities and the information provided through ORSA and Form F. The U.S. system of insurance regulation would continue to focus on policyholder protection at both the legal entity and group level. It would benefit policyholders broadly by providing additional information on solvency within a larger group context, and contribute to financial stability by providing insight into the potential weaknesses within insurance groups. It would help shape, and provide outcomes consistent with, group capital standards being developed internationally.

Group capital requirements would be established at the holding company of the insurance group. Some proponents of group capital requirements may argue that "excess capital" residing at the legal entity can be freely moved to the holding company to allow for better capital mobilization. However, U.S. state insurance regulators continue to maintain that legal entity supervision takes precedence over any group capital needs. The degree of alignment between group capital requirements and legal entity requirements is certainly an issue for future discussion.

Background

In light of a number of international developments and workstreams, in early 2014 the NAIC established the CDAWG to provide technical and strategic input on the IAIS' ComFrame, including any group capital developments. In this context, the CDAWG is now exploring group capital concepts that would be appropriate for U.S. based internationally active insurance groups. The CDAWG is collaborating in these efforts as well as those taking place at the international level with other parties, including the U.S. Treasury (FIO) and Federal Reserve Board (Fed) and key stakeholders, as appropriate.

As part of the CDAWG meeting held on Sept. 19, 2014, a number of group capital proposals from interested parties were submitted and discussed. The NAIC has further reviewed and analyzed the submitted proposals. In order to make sure the details in these proposals were fully understood, the NAIC had additional discussions with those who submitted proposals where need be. Review and analysis of these proposals were also informed by other events, such as the IAIS Observer Hearing in October. A summary of the submissions and what was learned can be seen in Annex I.

There are currently two potential group capital methodologies being explored: *RBC Plus* and *Cash Flow*. In reviewing them, U.S. state insurance regulators may want to consider:

- **whether the output would provide a meaningful group perspective on capital adequacy that would complement the legal entity view;**
- **the practical aspects of developing and implementing a consolidated approach using such a design; and**
- **the relative recognition and compatibility considerations of other U.S. financial regulators and the international supervisory community, as well as views of other interested parties.**

RBC Plus

“RBC Plus” utilizes selected design features from the existing legal entity RBC framework. The accounting basis for this methodology is the insurance group’s U.S. GAAP accounts. GAAP provides an audited consolidated balance sheet, which is an appropriate starting point for a group capital calculation. It is recognized that some insurers who do not currently file GAAP statements would need to make adjustments to statutory accounts in order to approximate a U.S. GAAP balance sheet.¹ GAAP accounts are more accepted internationally (than U.S. statutory) and are likely to be the basis for capital rules used by the Federal Reserve. In addition, there are prospects in the future for further convergence between FASB and the IASB which would result in even greater alignment with IFRS.

RBC Plus would not be an aggregation of individual entities’ RBC requirements, nor does it necessarily assume the same risk factors from the current RBC formula. Rather, the determination of required capital measures would recognize the consolidated balance sheet as its starting point and require diversification allowances across the group that have to be harmonized with the overall calibration levels determined appropriate for the group.

However, the approach would use RBC-type risk factors for asset and liability segments as an appropriate starting point for U.S. insurance business activities and risks. Adjustments and additions would be necessary to recognize risks not currently reflected in U.S. RBC. Although this proposal largely reflects a standard factor based approach on the asset side to account for credit risk, it may incorporate non-factor based elements on the liability side (e.g., the use of partial internal models for variable annuities) to appropriately account for the risk inherent in certain product offerings.

To summarize, the RBC Plus methodology would retain the current valuation basis under U.S. GAAP, would use a consolidated rather than aggregated approach and would retain current segmentation. Thus it would incur less additional ongoing effort and costs than other possible methodologies.

Advantages:

- RBC Plus type methodology would be familiar to U.S. state insurance regulators being based on an existing framework for legal entities which has proven to be effective;
- Largely factor-based methodology should lend itself to verifiable and auditable information;
- Use of U.S. GAAP financial statements provides for an audited consolidated balance sheet;
- Use of GAAP and leveraging off existing RBC elements should help constrain costs for the U.S. industry and state insurance regulators;
- Segmentation of asset and liability risk categories could build on existing RBC segmentation; and
- Relationship of group RBC results to legal entity RBC requirements is likely to be more intuitive.

¹ It is also noted that there are fewer difference between SAP and GAAP for P&C companies.

Drawbacks:

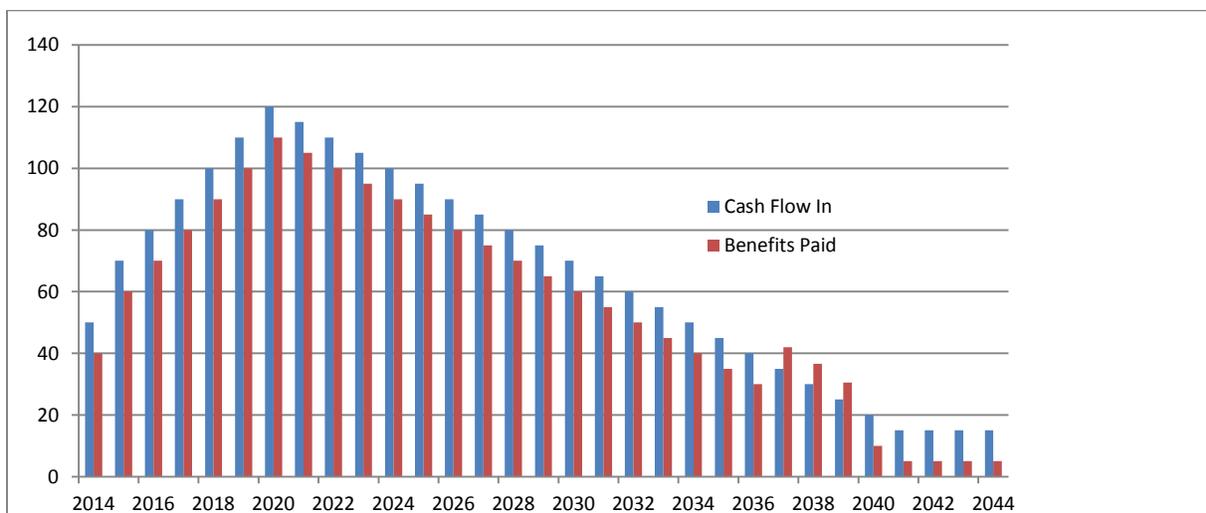
- Upfront resource and time needed to calibrate new factors;
- Not all data elements are readily available; it may be challenging to integrate overseas operations into the methodology;
- Would require significant work to arrive at an appropriate diversification/co-variance approach; and
- Does not use an internationally consistent balance sheet as its starting point which may make it more difficult to meet the objective of the IAIS’ ICS principle on comparability.

1. Do U.S. state insurance regulators generally support pursuing an RBC Plus methodology for purposes of developing a group capital requirement? Are the advantages supporting such an approach, or the drawbacks against using such an approach, helpful in reaching a tentative decision on a way forward? Are there other considerations that need to be articulated before moving forward?

Cash Flow

The Cash Flow concept follows the general methodology of asset adequacy testing for insurers. This methodology is being proposed partly in response to the sentiment that an ideal global insurance group capital standard should be accounting independent (i.e., it would be able to perform its function in any accounting environment whether it be IFRS, U.S. GAAP, Japanese GAAP or indeed any other accounting system). The Cash Flow methodology avoids putting assets at either market or book value and eliminates or at least minimizes the use of discount rates that are viewed in a different way in various jurisdictions.

Cash flow in and out would be projected forward on an annual basis as in the chart below. All cash flows attaching to all risks are taken into consideration for both assets and liabilities. The projections would observe the contract boundaries inherent in all accounting systems which would exclude renewals of existing contracts and new business. These cash flows would be stressed to the calibrated level.



Cash Flow would encompass all downstream material entities within the insurance group. However, the discussion that follows addresses only the capital requirements for insurance related elements. It is understood that financial non-insurance matters such as banking and investment management would be

left to the appropriate sector-specific requirements for those elements and that any non-financial matters would be addressed at a later stage by the appropriate authorities.

The income and outgo cash flows would be projected for the lifetime of the policy portfolio under the different scenarios and then compared to the selected scenario (e.g., 99.5 percentile if VaR were selected as the criterion or CTE(90) if T-VaR were the chosen criterion). The greatest cash flow deficiencies would represent the additional reserves (or capital) that the insurer would be required to hold.

Liabilities: Liability outflow would include all material insurance related risks within the insurance group. These risks would all correspond to the risks described in the group ORSA documentation. Regulators would determine the types of stresses most relevant to solvency and financial stability of the insurer, including stresses to economic factors (e.g., interest rates, equity returns and inflation), mortality, catastrophic events, policyholder persistency and health related variables.² The length of the testing period would correspond to the time span of the insurer's liabilities (i.e., stress tests should be performed on a run off basis).

The liability projections would be performed on a stochastic basis³. For the liability projection one would use economic as well as demographic stresses. The elements would be similar to those to be used in Principles Based Reserving (PBR). While the demographic elements are company specific, the economic elements are not unique to the company and may be provided either through the American Academy of Actuaries or through a commercial Economic Scenario Generator (ESG) provider. The demographic elements would be somewhat dynamically driven. For example, an element such as lapses would depend to some extent on the economic scenario, as lapses are likely to increase in times of economic downturn as people seek cash for priority needs and similarly in times of high interest rates when they can obtain higher immediate returns. The liability cash flows would be the entity's stressed best or central actuarial estimate liabilities (cleaned of all margins and provisions for adverse deviation) in order to ensure inter-jurisdictional comparability.

Assets: In order to make the process as accounting independent as possible, the starting assets would not be stated either as market values or amortized values. They would instead be converted into an income stream of interest, dividends and rents to be received. The initial amount of this income stream would be adjusted to take account of market, credit, liquidity, or other shocks that the ESG produced.

Each year the excess of income over outgo would be computed and invested according to the modeled interest rate scenarios (as well as dividends and rents). The process would continue until the liabilities are exhausted or are deemed immaterial. The net accumulated amount plus any of the initial assets that remain (in the normal course of the projection assets such as bonds would be redeemed, called or matured) would then become the ending value of the projection ("x"). Should the cash flow be negative in any year, money would be borrowed at the assumed prevailing rate which is a function of the interest rate scenario being run.

² Using the most relevant potential stresses regulators would develop a set of comprehensive long term stress scenarios calibrated to represent a specified confidence level. Insurers would then be required to run these stress scenarios using internal cash flow models and determine if they would have sufficient cash flows to meet all obligations under each scenario.

³ Stochastic projections are currently used in the Asset Adequacy Testing for Life Companies, and stochastic scenarios are required for C3 Phase I (applicable primarily to Annuities and Single Premium Life Insurance products) and for C3 Phase II (applicable primarily to variable deferred and immediate annuity products and variable universal life products that have GLBs). They are anticipated under the Principles Based Approach for reserves for Life Products (VM-20) and for fixed annuity products (VM-22). Please note that the interest scenarios in evaluating interest rate risk (e.g. C3 risk) are designed to approximate the 95th percentile.

Normally the ending balance (x) would be positive and the next step would be to reduce the starting assets by x to see whether the ending value is now zero. If it is not, the process could then be repeated iteratively until zero is reached. The value of the assets ultimately used to get to a zero balance⁴ is “y” out of an initial asset value of “m”. One could then define a sufficiency ratio of m/y. This ratio could be viewed as Total Assets Available divided by Total Assets Required and could be used to rank insurers in some fashion. This ratio would be refined over time as more experience and expertise is gained in this approach. If y is shown to be greater than m then the insurer would be required to craft a plan to cover this shortfall for example by raising additional capital⁵ of y-m.

Ranking the sufficiency ratio would not be straightforward because it would depend on the calibration. If, for example, the calibration is 99.95% then a sufficiency ratio of 1 might be excellent, but if the calibration is 95% a sufficiency ratio of 2 may be desired. Determining appropriate parameters would require experience and expertise.

In practice, companies would be able to determine the material stresses in a given situation in order to optimize their testing just like they did for VACARVM and PBR testing.

In summary, Cash Flow would use internal models (similar to those to be used in PBR) but parameters for such models would be approved by the regulators and include all the risks as shown in the ORSA documentation. In this methodology diversification would be a function of the stresses of the cash flows. While the cash flows would be the central actuarial estimate, the effect of the stresses may vary depending on the inherent allowance for diversification.

Advantages:

- Accounting independent over the lifetime of the cash flows;
- Avoids concerns associated with the proposed market-adjusted balance sheet, particularly related to long-term life insurance liabilities;
- Segmentation independent, which helps in aggregating various international operations;
- Retains the existing valuation basis;
- Life companies are familiar with the methodology as there is an existing structure in place;
- Applies group-wide to all geographical locations and jurisdictions; and
- Inherently encompasses ALM.

Drawbacks:

- Would be significant use of internal models; this is a major shift from existing practices within the current RBC framework;
- Approach may not be as transparent or easily understood compared to a factor-based approach;
- Translation to a comparable capital ratio is not straightforward;
- Defining and calibrating stresses is not an easy task; and
- The scenarios would have to be updated periodically.

⁴ The initial assets would be reduced proportionately, without carving out any specific asset class in order to continue the accounting independent paradigm.

⁵ In the above construction x will always be positive (because negative cash flows were zeroed out by borrowing) and y is net of total borrowing. Note that a positive y says there were enough assets in the model to pay for all the liabilities including loan payoff, but if y is negative there are not enough assets to pay off all liabilities including the total borrowing. The latter situation means the company is not adequately capitalized. This is not a negligible possibility. Currently the additional actuarial reserves put up by life companies is \$11.1 billion – up from \$3 billion before the financial crisis. Most of this additional reserve increase especially over the last 3 years has been due to the low interest rate environment. While generally this was met from existing capital, in some cases it means that groups have had to infuse more capital into their operations (or utilize a captive to generate statutory surplus relief).

2. Do insurance regulators generally support pursuing a Cash Flow methodology for purposes of developing a group capital requirement? Are the advantages supporting such an approach, or the drawbacks against using such an approach, helpful in reaching a tentative decision on a way forward? Are there other considerations that need to be articulated before moving forward?

Additional considerations

NAIC staff has not completed sufficient research to develop a potential hybrid approach, but it is possible that a combination of both the above methodologies could be developed that would reflect a factor-based approach (RBC Plus) as the minimum group capital requirement, coupled with a cash flow/stress testing approach as a complement to the minimum group capital requirement. Some of the same advantages and drawbacks would be present in a hybrid approach with the added cost of building a complementary approach to the RBC Plus approach. A hybrid approach could also be developed which is mostly factor based but uses cash-flow analysis to determine required capital for specific risks.

3. Do insurance regulators support further exploring the development of a hybrid approach for purposes of developing a group capital requirement? Are there specific considerations that need to be explored further before agreeing to further explore the hybrid approach?

ANNEX I

As part of the Sept. 19, 2014 CDAWG meeting, several approaches were suggested by interested parties, which can be generalized as follows:

- Cash flow testing
- Aggregated activities-based approach which starts with the statutory balance sheet; makes some adjustments to move towards comparability; and then aggregates the results
- Starting with either SAP or GAAP and making adjustments
- Market-adjusted approach
- Using economic model

The chart below lists a number of topics that were discussed with respect to the various approaches and summarizes how the views expressed have been considered and taken forward.

Consideration:	Summary of themes from the proposals received	Proposed NAIC approach
Valuation Method/Approach	<p>General concern that Market Adjusted Balance Sheet methodology will constitute another valuation method and therefore generate significant additional work. Favored approaches are both stress testing and enhanced versions of U.S. RBC.</p> <p>One interested party favored a mix of methods where any assets not used in matching liabilities are held at fair value.</p> <p>One interested party took the equivalence approach.</p>	<p>Propose analyzing a cash flow approach and an enhanced RBC.</p> <p>The cash flows would be stressed to specifications associated with designated probability distributions usable by rating agencies and group wide supervisors. This would require a prescribed set of assumptions which should be internally consistent.</p> <p>An enhanced RBC would be more transparent than the current RBC as it would be associated with designated probability distributions in a similar fashion to those associated with the cash flow approach.</p> <p>Approach must take into account local jurisdictional environments.</p>
Risk Sensitivity	<p>General agreement that all material risks should be included. Some companies are more strongly focused on some particular risks.</p>	<p>Propose to include all material risks including operational risk currently contemplated for RBC. See also note on ORSA below.</p> <p>While risk sensitivity is important, any methodology should strive to minimize pro-cyclical volatility.</p>
Accounting Implications	<p>Methodology should be accounting neutral as much as possible.</p>	<p>Propose accounting neutral methodology (in practice this means minimal accounting implications).</p>
Aggregation	<p>Some favor simple aggregation (e.g. add all the RBC numbers from the various</p>	<p>While the current RBC system would continue at the entity level, an RBC Plus</p>

Consideration:	Summary of themes from the proposals received	Proposed NAIC approach
	legal entities); others favor reworking the overall requirements at the group level.	methodology could be constructed on a consolidated basis. The NAIC worked hard to keep an aggregated approach in ICP 17 and it would be the starting point in an RBC-based method. However, there is some agreement around attempting to convert RBC.
Use of Internal Models	About half the proposals specifically favored internal models.	Internal models (and externally crafted models by known providers) are essential to encompass risks such as CAT risk. Models should be approved by supervisors
Role of ALM	Where specifically mentioned, proposals favor including ALM in the mix.	Should include an explicit ALM mismatch requirement for both Life and P&C. This would facilitate an explicit diversification allowance.
Diversification	Generally favor explicit expression of diversification. No specific details such as whether composite companies should get more credit than Life only or P&C only companies.	There should be an explicit diversification allowance. Additional considerations should include: 1) lines of business considerations and 2) geographical diversification.
MOCE	Generally favor all of MOCE being incorporated into core capital.	Give companies full credit for MOCE.
ORSA	Mentioned by a few proposals as a possible tool for identifying risks and risk sensitivity.	Use ORSA tools and Form F to inform risk parameters.
Senior Notes	Interested parties pressed for their inclusion as Core Capital since senior notes would be available to policyholders before any of the capital is returned to the parent. Some companies would accept some restriction on their acceptability.	On consolidation there is no net effect of senior notes, but such notes would continue to be taken into account in entity based capital requirements.
Surplus Notes	Mutual Companies are advocating for their inclusion as Core Capital.	Surplus notes would be counted as capital as currently.