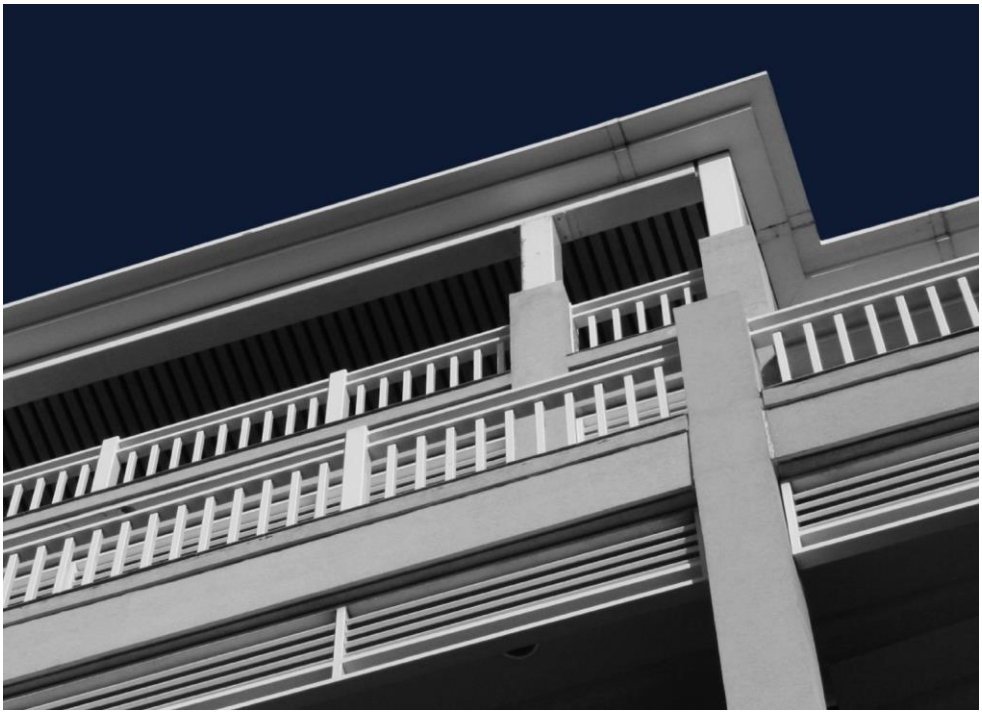
BMA
BERMUDA MONETARY AUTHORITY

A REVIEW OF BERMUDA INSURERS' SOLVENCY SELF-ASSESSMENT REPORT

MARCH 2019



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FOREWORD

The Bermuda Monetary Authority (BMA or the Authority) was among the first jurisdictions requiring insurers[1] to provide an assessment of their own risk and solvency requirements (Solvency Self-Assessment[2]) as part of their annual filings.[3] The primary purpose of the Solvency Self-Assessment (SSA) exercise is to allow insurers to incorporate an analysis of the firm's internal capital needs into their risk management frameworks. It also ensures that both capital needs and available capital resources are considered in the development of business strategies and decision-making over the near and long term, including factoring in the impact of catastrophic shocks.

From the BMA's vantage, the SSA provides the insurer's perspective of the capital resources (both quantity and quality) necessary for it to achieve its business strategies and remain solvent given its risk profile. It also allows the Authority to gain insights about the risk management, governance procedures and documentation surrounding this process.

In an effort to continuously foster prudent risk management practices among Bermuda insurers, the BMA recently conducted a thematic review of the SSA practice in Bermuda. The main objective of this exercise was to identify and highlight best practices and areas of improvement surrounding the design, implementation and use of insurer's SSA's. This report gives an overview of the results from this exercise with the aim of providing practical feedback to insurers to encourage them to continue enhancing their SSA practices. Furthermore, the report re-emphasises the BMA's commitment to high standards of transparency.

Overall, the results of this exercise showed that since the introduction of the SSA requirement in 2012, the design, implementation and use of SSA within the Bermuda insurance market, has matured progressively. Broadly, the results evidenced a strong relationship between insurers' risk assessments, governance structures and processes, and levels and composition of internal capital. The majority of insurers were able to demonstrate that their capital levels, quality of capital and risk management procedures and policies were commensurate with their risk profiles and ability to deal with impacts from future external changes to their risk and solvency position. On the other hand, the results identified weaknesses in other insurers' SSA frameworks.

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[1] For the purpose of this report, insurers refers to both insurance and reinsurance companies including groups.

[2] Bermuda's Solvency Self-Assessment framework comprise of the Commercial Insurer's Solvency Self-Assessment (CISSA) required on an individual insurer basis and the Group Solvency Self-Assessment (GSSA) on a group basis where the BMA is the Group Supervisor. The SSA is a governance, risk management and solvency assessment exercise with its findings documented in a report for the Board and Senior Management, and is submitted to the Authority annually. In this report, SSA refers to both the process and the reported findings.

[3] The assessment of insurers' own risk and solvency is widely known as Own Risk and Solvency Assessment (ORSA).

The BMA will continue to assess the development of the SSA in Bermuda, and where necessary, provide appropriate feedback and/or recommendations to enhance risk management practices among Bermuda insurers. The primary target audience of this report is Bermuda insurers; however, the SSA best practices highlighted in this report also apply to insurers outside the Bermuda market.

Craig Swan

Managing Director, Supervision (Insurance)

Key Findings

The Authority acknowledges that in general, insurers have improved their Solvency Self-Assessment (SSA) since the regime was instituted in 2012. Overall, the results showed that Bermuda insurers continue to address feedback received from the Authority, in addition to incorporating their own determined enhancements. The following are the key findings from this thematic review:

- ***Robustness of SSA:*** The BMA noted that the SSA framework differs between classes of insurers where insurers that are more complex have more robust processes than smaller and less complex insurers. The results also showed that the level of sophistication of the SSA framework increases relative to the insurer's business growth and risk profile
- ***Evolution of Economic Capital Modelling:*** Over the years, more insurers are looking for ways to improve the quality of their internal capital model for risk management purposes. The Authority has seen insurers continuously challenging their existing tools and models, address their limitations and place more emphasis on model validation
- ***Application of SSA as a risk management tool***: In some instances, it appeared that insurers were not applying the SSA as a risk management tool but purely as a compliance process to meet regulatory requirements. Insurers should be able to demonstrate that SSA is utilised as a risk management tool in the management of day-to-day operations. There should be an alignment of components within their risk management framework, particularly capital management, risk metrics, strategic planning and decision-making
- ***Purpose of Economic Capital Modelling***: In some cases, there was a misalignment in the application of risk modelling relative to the insurers' business. Insurers need to have risk modelling tools proportionate to the nature, scale and complexity of their risk profile and business model. These models should be approved and signed off by the Board of Directors (Board). The models should be fit for purpose and have documented model change processes and annual independent validation procedures
- ***Role of stress testing****:* The majority of groups and large commercial insurers indicated that they apply stress tests (including reverse stress tests) as part of their risk management process. However, a number of insurers, especially in the smaller commercial classes, have still not adopted bespoke reverse stress testing (*note*: the Authority prescribes a high-level reverse stress test that these instead opt to do). There is a variation of how these tests are conducted but the Authority expects the scenarios used and the robustness of the process and documentation are commensurate with insurer's risk profile. All large commercial insurers and groups should adopt reverse stress testing

- ***Prospective aspect of the self-assessment:*** The risk management process should be continually improving and evolving. The BMA expects that insurers apply an appropriate forward-looking perspective and time horizon in their SSA consistent with their business plan that articulates emerging risks, potential business opportunities and developments. The document should also describe areas where the insurer believes that it needs to improve its risk management practices
- ***Board and Senior Management Use:*** While most insurers indicated that the SSA is reviewed at least annually by the Board and Senior Executives, we noted a few cases where the review is ad-hoc. The SSA should be useful to the Board and it should be evidently clear how it affects their decision-making process. It is expected that at a minimum the governance and risk management processes be clearly articulated in the SSA report. Further, a good SSA provides an honest perspective of an insurer's risk management framework including areas the insurer is looking to improve upon. The Authority expects the Board to review the SSA at least annually and after material changes in strategy, business model, or financial position

A Review of Bermuda Insurers' Solvency Self-Assessment Practice Report

This report contains insights derived from reviews of SSA reports for different classes of insurers regulated by the BMA. In the report, expectations surrounding the SSA frameworks are highlighted, in addition to best practices and areas for improvement observed from the review of SSA reports.

The Authority emphasises that where practical, insurers should incorporate expectations in this report and integrate them in their SSA processes and future submissions. The BMA continues to recommend that insurers adopt enhancements and best practices in risk management recognised globally and contextually within the Bermuda insurance/reinsurance industry. Insurers should also note that there are minimum requirements in legislation that must be complied with.

INTRODUCTION

Report Objective

This report aims to provide feedback and share observations from the thematic review of the SSA practice in Bermuda. It is also intended to reinforce the BMA's expectations by highlighting best practices surrounding the design, implementation and use of an insurer's SSA. The report focuses on the following key areas:

I. **Risk Management Framework - including Risk Appetite, Tolerance Levels and Limits**
II. **Quantitative and Qualitative Assessment - including risk coverage, stress testing and economic capital modelling**
III. **Capital management**
IV. **Use test - including integration of the SSA into the management process and impact on decision-making and governance**

Overview of SSA Framework

Bermuda's SSA framework comprises of the Commercial Insurer's Solvency Self-Assessment (CISSA)[4] and the Group Solvency Self-Assessment (GSSA). The CISSA requirements came into effect on 1 January 2012 and the GSSA requirement came into effect on 1 January 2013. The CISSA and GSSA regulations are embedded within the Insurance (Prudential Standards) Rules and the Insurance (Group Supervision) Rules 2011[5], respectively. The SSA framework provides the Authority with an insurers' perspective of the capital resources necessary to achieve their business strategies and remain solvent given their risk profile, as well as insight into the risk management and governance procedures surrounding these processes.

While the Authority provides minimum criteria for the SSA reports, the precise scope of each insurer's SSA should be tailored to reflect the insurer's size, risk profile, business and unique circumstances. This is important given that the SSA frameworks need to be fit for purpose tools in terms of integration with strategic decision-making, including risk management and governance. The primary aim of the SSA framework is, among other things, to facilitate the following:

[4] Commercial Insurers include classes 3A, 3B, 4, C, D and E.
[5] Insurance (Prudential Standards) (Class 4 and Class 3B Solvency Requirement) Rules 2008;
Insurance (Prudential Standards) (Class 3A Solvency Requirement) Rules 2011;
Insurance (Prudential Standards) (Class C, Class D and Class E Solvency Requirement) Rules 2011
Insurance (Prudential Standards) (Insurance Group Solvency Requirement) Rules 2011

i) Encourage and promote a strong culture of risk management through the alignment of an insurer's solvency needs with its risk profile and business plan

ii) Provide the ability to identify risks that could impact the insurer's solvency needs in a timely manner

iii) Integrate risk and capital management into the decision-making processes, ensuring that internal capital and regulatory needs continue to be met

iv) Enable insurers to better deal with future changes in risk profile, and assess how these changes may affect their capital position and capital management, including sources of additional capital, where necessary

As part of its supervisory mandate, the Authority utilises a range of supervisory tools to review and give feedback on the SSA framework of each regulated insurer. These supervisory tools range from on-site inspection, off-site monitoring, supervisory colleges, and thematic reviews. The ultimate objective of the BMA's supervision is to ensure all insurers operate in a sound and prudent manner in compliance with the relevant regulations, and in line with their risk profile. Where a breach has been identified, depending on its gravity, culpability and or urgency, the Authority will consider, whether, given all of the circumstances, the issue can be resolved by bringing it to the attention of the insurer, or if the matter should be referred to the consideration of enforcement actions.

Methodology

The content of this paper is the result of the analysis carried out by BMA staff**.** The report was produced using aggregated data from the Bermuda Commercial Insurer and Insurance Group Capital and Solvency Returns (CSR) filings for the year ended 31 December 2017. Specifically, the following schedules from the CSR were used as data sources:

a. Schedule IX (a) – SSA Capital Summary (Table 14)
b. Schedule IX (b) – Schedule of SSA General Questions (Table 14A)
c. Schedule IX (c) – Schedule of SSA of Material Risk of the Insurance Group (Table 14B)

"Since the regime was instituted, the Authority had the opportunity to observe the evolution of the Commercial Insurer's and Group's risk management frameworks through the review and thematic comparison of the CISSA and GSSA documentation".

This report lays out the Authority's expectations and observations about different aspects of the SSA framework. The expectation and observation sections include the best practices of the Bermuda insurance market. The observed areas of improvement sections highlight instances where the Authority felt that certain insurer/s have failed to fully meet the requirements/best practice criteria. In order to ensure the findings are comprehensive, the 'areas of improvement' sections include all findings observed about individual insurers regardless of the size of representation of that finding

to the overall market. Therefore, the findings from ‘areas of improvement’ is by no means a representation of the overall Bermuda insurance market.

RISK MANAGEMENT FRAMEWORK: Risk Appetite, Tolerance level

EXPECTATIONS AND OBSERVED BEST PRACTICES

- There is an alignment between risk appetites, tolerances, business plans and the SSA. This alignment extends to the insurer's capital and other non-capital risk mitigants (given current and expected future market conditions) and also takes into account the potential for material adverse developments

- The report contains sufficient information about process, underlying principles, methodologies, key assumptions and sensitivities

- The report should be used by the insurer as a reference for internal targets, capital assessment, the quality/composition of its capital, and overall results relative to risk appetite, risk tolerances, strategic and operational plans and capital management framework

- ***Comparison of Limits***
  - There is a comparison of current gross and net risk limits and tolerances set with historical performance limits. Risk limits are clearly articulated on an operational level. Reports seen as employing best practice entail an articulation of the risk appetite including its key drivers. Where breaches occurred, there is a discussion of corrective actions taken. This includes, but is not limited to, the implications of the breach on the SSA, a timeline and a remediation plan

OBSERVED AREAS OF IMPROVEMENT

- ***Risk Appetite Statements***
  - Some insurers do not provide a comprehensive description of their risk appetite and calibration
  - The rationale on how the risk appetite is derived is sometimes not explicitly articulated based on business and risk strategy
  - In some cases, risk tolerance levels, limits and how they are aligned and adhered to are not adequately described
- ***Business Plans***
  - Some business plans incorporated into the report do not capture planned corporate development activities such as mergers and acquisitions (M&A) even when these are public knowledge via the press. Where insurers are not considering transformative strategic options, e.g. M&A, the Authority expects them to evaluate and articulate the impact of industry developments and/or strategic moves by peers/competitors (e.g. recent or proposed insurance mergers)
- ***Ancillary entities***
  - Some SSA reports include a discussion of ancillary and supporting entities within the corporate structure with the conclusion that these entities do not expose the insurer to significant risk, especially when they are perceived as not bearing risk. In these instances, the report should include a discussion of how potential risks that could stem from these entities are controlled. Being non-risk bearing from an insurance perspective does not automatically infer that the entity does not pose risk to an insurer or group

QUANTITATIVE AND QUALITATIVE ASSESSMENT

RISK COVERAGE

EXPECTATIONS AND OBSERVED BEST PRACTICES

- ***Risk Identification***
  - The SSA entails more than just risk identification. Appropriate attention is given to non-material risks that when combined with other non-material risks become significant
  - The report includes appropriate description of the governance function and evaluation of pertinent risks faced by the insurer and how these risks are mitigated
- ***Risk Evaluation and Measurement***
  - The SSA process should evaluate all reasonably foreseeable, emerging and other relevant material risks that impact an insurer's ability to continue operations
  - The evaluation of risk is assessed in both an operationally normal context as well as potentially stressing situations
  - There is an assessment of emerging risks and topical issues including risks that are difficult to quantify (e.g. reputational risks, strategic risks) and compensating controls
  - The risks identified are measured appropriately (e.g., ensuring that the stress tests are sufficiently robust and aligned to risk appetite and tolerance) and continuously monitored

OBSERVED AREAS OF IMPROVEMENT

- In some instances, not all reasonably foreseeable risk was evaluated and discussed in the report
- In some cases, risk was merely identified without an attendant holistic discussion of the risk measurement and implications on solvency requirements

STRESS TEST AND ECONOMIC CAPITAL MODELLING

I. Stress test and Scenario Testing

EXPECTATIONS AND OBSERVED BEST PRACTICES

- Insurers incorporate suffient information in their SSA reports on selected scenarios, criteria for selecting such scenarios and the results thereof. This should include:
- Robust stress tests, insightful independent scenarios, and sensitivity analysis that are relevant
- Process for identifying and the reasons for selecting particular scenarios along with clear articulation of any assumptions and methodologies used in the calculation
- Strong ties between the stress and scenario policies and risk profile with review and sign-off by the Board
- There is sufficient discussion about how insurers meet regulatory solvency requirements in their jurisdictions post stress events
- Taking into account the proportionality principle, as the smaller class insurers in general are less complex, it can be appreciated that less complex stress testing may be instituted and justification provided commensurate with risks. However, where a risk has been cited as material, it is expected that appropriate stress testing is developed and assessed and implications on the solvency self-assessment articulated

OBSERVED AREAS OF IMPROVEMENT

- In some instances, the stress testing information presented in the SSA did not adequately identify entities in the organisational structure that would be affected at the subsidiary level

"Stress tests are a vital part of an insurer's risk management. The stress tests introduce forward-looking elements into the capital planning process. Further, it facilitates internal discussion around tail risks and its drivers, exploration of sensitivity to certain events and model validation."

II. Reverse Stress Testing

EXPECTATIONS AND OBSERVED BEST PRACTICES

- ***Reverse Stress Testing***
- Insurers are required to submit key assumptions and scenarios that would cause business failure as determined by bespoke reverse stress test scenarios within the BSCR
- Bespoke reverse stress testing is incorporated within the SSA frameworks and reports
- A bespoke reverse stress in itself does not need to be complex but should be suitable and relevant. The Authority recommends that all large commercial insurers and Groups adopt bespoke reverse stress testing. Small commercial insurers should consider a wide adoption of the tool taking proportionality into consideration

OBSERVED AREAS OF IMPROVEMENT

- As can be observed in **Chart 1**, Bermuda small commercial insurers (Class 3A and C) do not institute bespoke reverse stress testing to a similar extent as the Groups and large commercial insurers (Classes 4,3B, D and E)
- Where bespoke reverse stress testing is not performed, it is expected that the motivations and rationales for not instituting this best practice are adequately explored and justified within the SSA (Note: While not as informative as a reverse stress test that is specifically designed for an insurer (bespoke), the Authority requires that those that do not excercise bespoke reverse stress testing perfom a high level reverse stress test requiring them to calculate the aggregate return period of a loss that would result in a breach of its regulatory capital requirement. Accordingly, some form of reverse stress testing is performed across the entire commercial market) report

Chart 1. Bespoke Reverse Stress Testing Employed by Insurance Class

Source: BMA staff calculations based on regulatory submissions

Use of crisis simulation exercise/test of capital fungibility by groups

OBSERVED AREAS OF IMPROVEMENT

- Given a group's organisational structure it was expected that capital fungibility would have been discussed. However, stress testing results showed this was omitted in some reports

- A key question the Authority expects to be answered from the crisis simulation exercise is: *Is there an adequate mechanism for liquid assets to be transferred within a short period of time to provide support to legal entities in different jurisdictions (fungibility and transferability) when they breach the solvency capital requirements?* To a certain extent this question was not adequately answered upon review of reports and in regulatory discussions

"Stress test results are important not only for management purposes but also to assist regulators to assess the risk profile of the insurer, which drives the intensity of required supervision."

As articulated in the BMA Insurance Digest,[6] the BMA as a group supervisor utilises Supervisory Colleges as a forum to collectively challenge and lead the discussion among the regulators' stress test results. In this forum, there is a collective assessment of stress tests' impact to insurers and their ability to move capital within the group.

[6] http://www.bma.bm/publications/BMA%20INSURANCE%20DIGEST/BMA%20Insurance%20Digest%20June%202018.pdf

III. Economic Capital Modelling and Risk Aggregation

EXPECTATIONS AND OBSERVED BEST PRACTICES

• Economic Capital Modelling

- The Authority acknowledges that insurers do not necessarily need to have an internal capital model within its SSA framework and processes. However, insurers need to have risk/modelling tools proportionate to the nature, scale and complexity of their risk profile and business model. This should enable them to appropriately identify, assess and monitor their risks and capital needs. These tools are expected to evolve and improve so as to ensure they continue to be adequate, as insurers grow and change their risk profile

- The SSA reports explain why the model is/remains fit for the risk profile of the insurer and how it manages its business and risk. This is achieved by having the model approved and signed-off by the Board of Directors and having a documented model change process.

- Insurers have annual, independent model validation processes in place

- Whenever an insurer has an internal capital model embedded within its SSA framework and processes, it is expected to provide an appropriate level of information on the model in the SSA report, including the scope, methodology and assumptions, data and expert judgment, calibration, results, documentation, validation, model limitations and use, so as to enable the understanding of the key aspects of the model, its results and its use within the SSA framework and processes

OBSERVED AREAS OF IMPROVEMENT

• Economic Capital Modelling

- In certain cases, the SSA report did not have an appropriate level of model information. Too little information will limit Senior Management's understanding of the model and its limitations and may lead to model overreliance which could be dangerous. Likewise, too much information in the body of the report may be distracting and harmful to the overall flow and fit for purpose of the report. In these instances insurers should consider using technical appendices

- In some instances, it was observed that when a material change (new lines of business or exits, M&A, etc.) was enacted which would have an impact on business and strategy, there were no changes in the models and tools used. Or where models were updated there was not adequate discussion regarding assumptions and reasonable justification for changes

EXPECTATIONS AND OBSERVED BEST PRACTICES

- ***Risk Aggregation***
- Sound SSA reports provide strong justifications for the method(s) of risk aggregation employed. They also discuss limitations of the method(s) used and how limitations will be compensated

- Insurers and Groups should consider potential concentrations, dependencies and interactions of risks that may cause the total impact to be greater than the impact of the risks considered individually

- Insurers ensure that they have robust processes and tools to aggregate risk data (including off-balance sheet data) in an accurate and timely manner

- The risk data aggregation is adaptable to meet ad hoc data requests from stakeholders and allow assessment of emerging risks

- Appropriate dependency structures should be used to consider the nature and structure of the risks, as well as their materiality in determining capital

- A discussion around parameterisation, methodology, and validation for the most material dependency structures should be included

- How the insurer/group sufficiently addresses risks that may deemed difficult to quantify in the economic capital framework (e.g. reputational, strategic, operational risks) are outlined

- A link between the risk aggregation processes at a legal entity and at group level is established. It is generally expected that the processes are appropriately consistent. Material differences are discussed in the GSSA report

- Risk aggregation is expected in areas outside the determination of SSA capital, for example:

  - Risk aggregation is observed in other areas of the SSA such as, developing stresses (including reverse stress), and scenarios with losses arising from more than one risk area

  - The accumulation of multiple events is discussed

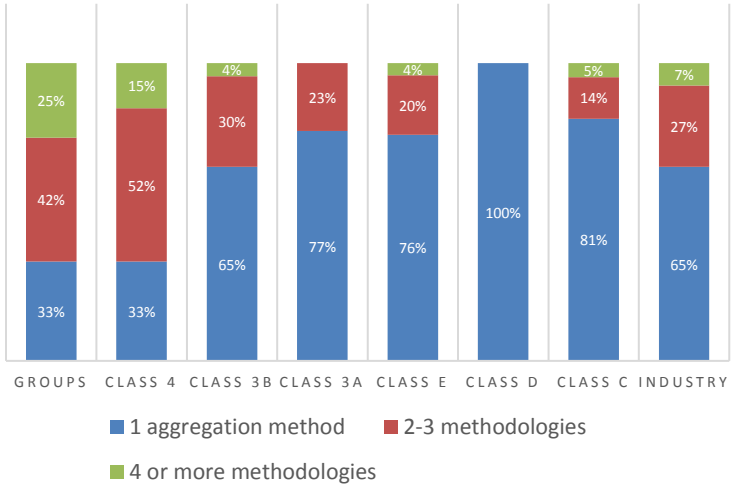
- Within risk management, appropriate monitoring and risk tolerance levels and limits should be set for risk aggregations. For example; *geographical* – i.e. catastrophe losses; *common drivers within risk* – i.e. casualty clash events, accumulations within a single line of business/risk; *common drivers between risks* – i.e. D&O and Cyber Risk

OBSERVED AREAS OF IMPROVEMENT

- ***Risk Aggregation***
- An area of weakness surrounding risk aggregation is a lack of documentation in the SSA reports regarding aspects of the risk aggregation process including:
  - Critical assumptions where there is professional judgment involved
  - How risk is allocated and aggregated amongst the various entities at a group level
  - Who are the process owners and
  - Whether the process is performed manually or automated
- Aggregation methodologies and the level of sophistication across insurers varies as shown in **Charts 2 and 3**
- **Chart 2** shows the percentage of insurers by license class with more than one aggregation plan
- **Chart 3** shows the different aggregation methodologies and percentage of insurers using them
- Notwithstanding the number and nature of aggregation methods employed, insurers should fully document and validate the appropriateness of their risk aggregation/diversification tools and methodologies relative to their risk profile

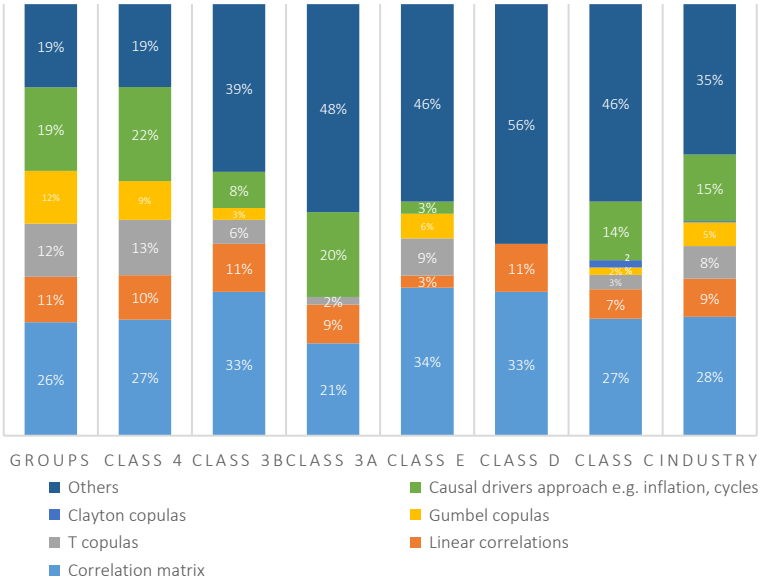
"Risk aggregation can be considered in a number of processes and contexts. The Authority does not require particular methodologies or aggregation tools, nor recommend an ideal number of methodologies to be used to aggregate risk."

Chart 2. Percentage of Methodologies Used to Aggregate Risk



Source: BMA staff calculations based on regulatory submissions

Chart 3. Percentage of Methodologies by Type



Source: BMA staff calculations based on regulatory submissions

CAPITAL MANAGEMENT

I. *Reliance on the Bermuda Solvency Capital Return (BSCR)* [7] *Standard Model*

EXPECTATIONS AND OBSERVED BEST PRACTICES

- When assessing its own capital and solvency needs, insurers consider internal targets before focusing on external constraints such as regulatory or rating related
- Insurers recognise the importance of their internal capital modelling process to their risk management and decision making
- Given that each business is unique, risks and corresponding capital requirements may not be fully reflective of the insurer's risk profile when the BSCR standard formula is used
- Whenever less complex insurers decide to rely on BSCR standard formula to determine its SSA capital, the suitability of BSCR standard formula should be justified. BMA expects that robust stress tests will accompany such "justification"
- Even in less sophisticated cases, stress and scenario testing should still form an integral part of the insurer's process. This is not achieved by simply using the BSCR standard formula or another regulatory or rating agency model

OBSERVED AREAS OF IMPROVEMENT

- Based on observations the BMA discourages:
  - Reliance on the BSCR standard formula for CISSA purposes where the BSCR standard formula is (clearly) not suitable
  - Excessive dependence on the BSCR standard formula even when an insurer has higher capital constraints such as rating agency requirements
- In some instances, insurers have relied solely on the BSCR standard formula in order to determine their required internal capital. Caution should be exercised when taking supervisory models to set internal capital targets even when a margin is added to these targets
- Opaque discussion around how the insurer's risk profile deviates from the BSCR standard formula
- It should also be understood that the SSA process and report are wider than the capital calculation. As a result, the Authority expects a robust SSA report covering the insurer's specific risk management process, even in cases where the BSCR is relied upon

"SSA should help improve risk management. In that regard, placing undue reliance on BSCR standard formula is not suitable. It is expected for insurers, even after taking proportionality into account, to demonstrate their SSA framework and processes are specific to the insurer's own unique risk profile."

[7] The Authority's standard risk-based capital model covers material risks calibrated at 99% Tail Value-at-Risk over a one-year time horizon.

II. SSA Capital

EXPECTATIONS AND OBSERVED BEST PRACTICES

- Insurers are required to report and explain the fundamental differences between their internal view of capital and the regulatory view. The majority of submissions have adequately addressed the major differences (which largely centre on calibrating the models and other fundamental drivers.) The level of insight provided should be proportional to the materiality of the risks being compared and the differences between the two models

- Comparisons between the two methods of capital estimation are done at an intuitively granular level (i.e., only comparing the final capital number is not considered adequately transparent) on a like for like basis

- Where companies elect to utilise the BSCR as their main tool/metric to derive their SSA capital, there is adequate discussion on the appropriateness of using the BSCR for their capital determination

- Commentary is provided on SSA capital completeness, i.e. whether all the risks have been considered and have been reflected appropriately, and include reasons for discussion where this is not the case

- SSAs explain the appropriateness of the capital buffer in establishing solvency needs

- Insurers are encouraged to continue developing methodologies and processes used in deriving their SSA capital

- In their annual submissions, insurers are required to disclose the primary reason(s) for aiming at a disclosed SSA capital amount. The reasons cited are presented in **Charts 4 & 5** below for both large and small class insurers

- Insurers should also ensure that the SSA capital derivation is not produced in siloes but are aligned with the rest of the SSA's tools and processes

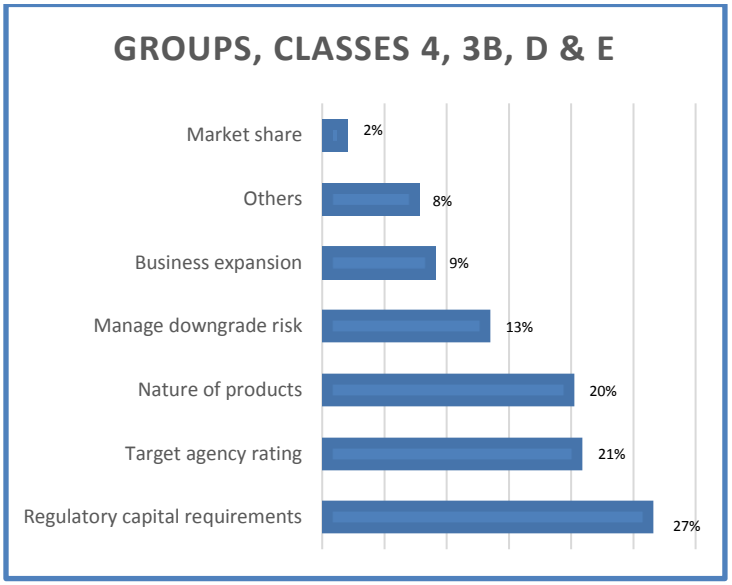
OBSERVED AREAS OF IMPROVEMENT

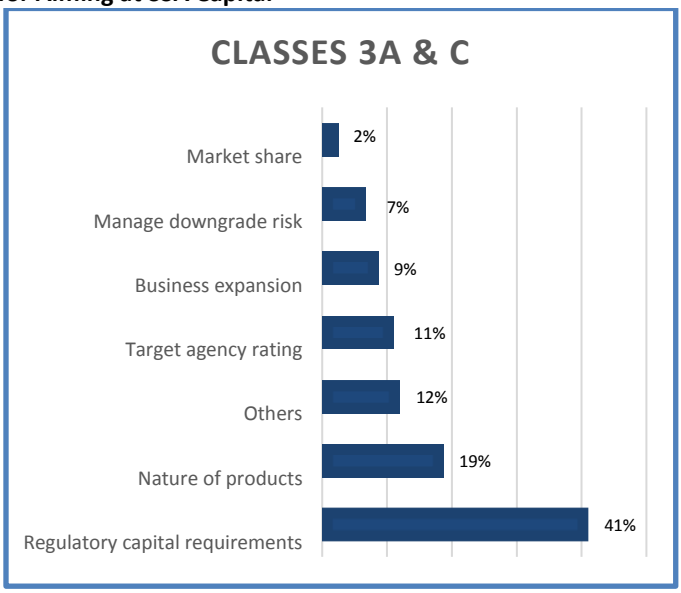
- In some cases insurers chose to use the BSCR standard model without strong justifications for its use

- When justification was provided, there was not an expansive discussion on limitations to using the BSCR given the insurers' business model

- Where insurers used their own model, in some instances a reasonable rationale was not provided for differences between their model and the standard model in material areas of risk

Charts 4 & 5 - Reasons for Aiming at SSA Capital





Source: BMA staff calculations based on regulatory submissions

III. Contingency Capital Plans

EXPECTATIONS AND OBSERVED BEST PRACTICES

- An overview of contingency capital plans were discussed in the SSA report
- The contingency capital plans are developed and documented
- Some expected practices that should be incorporated in the SSA include:
  - Along with identifying sources of possible capital funding, insurers should also discuss the attributes of these sources which might make them a better source under one loss scenario compared to another
  - At a minimum, there is consistency between contingency plans selected within the BSCR schedules and those articulated within the SSA reports
  - Insurers summarise the capital raise process as it is applicable to the insurer and an analysis on why the contingency plans are reasonable
  - A range of likely management actions and contingency plans are presented (with an accompanying discussion of which is most suitable based on management's judgement and given the nature of the stress event/anticipated market conditions)

OBSERVED AREAS OF IMPROVEMENT

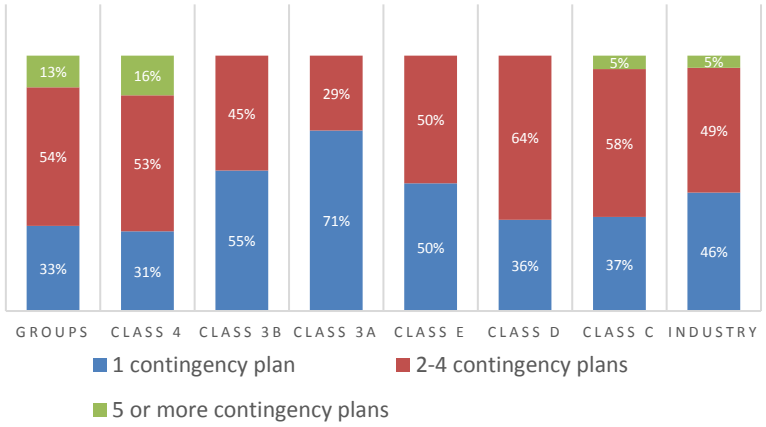
- **Chart 6** outlines the number of contingent capital plans utilised by insurers split by licence class and industry aggregate
- Larger insurers and groups have a wider scope of contingency plans at their disposal
- There is a relationship between the size and complexity of insurers and the breadth of contingency plans cited. However, the BMA expects that the ability to raise capital in stressed circumstances is clearly demonstrated

- **Charts 7 & 8** detail the insurer's sources of liquidity and contingent capital cited by management in their filings. These are not necessarily tied to Bermuda Eligible Capital requirements found in Insurance (Eligible Capital) Rules 2012

- The majority of entities have disclosed reliance on capital injections from the parent as a means to raise capital in adverse circumstances

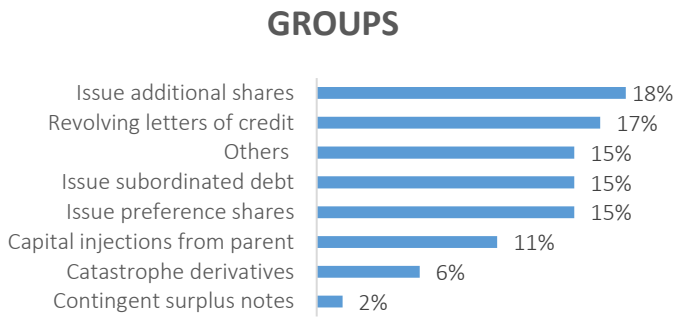
- Some of the reports fell below expectations:
  - The reports failed to provide an adequate description and analysis of sound and reasonable contingency plans for raising additional capital in stressed scenarios
  - In limited cases, no contingency plans were cited which is strongly discouraged by the Authority
  - Where capital injections from the parent is a means that can be exercised, there was a lack of discussion on the willingness and ability of the parent to provide capital. The Authority will continue to challenge the reasonableness of contingency plans disclosed and their plausibility in adverse scenarios

Chart 6 -Number of Contingency Plans Cited

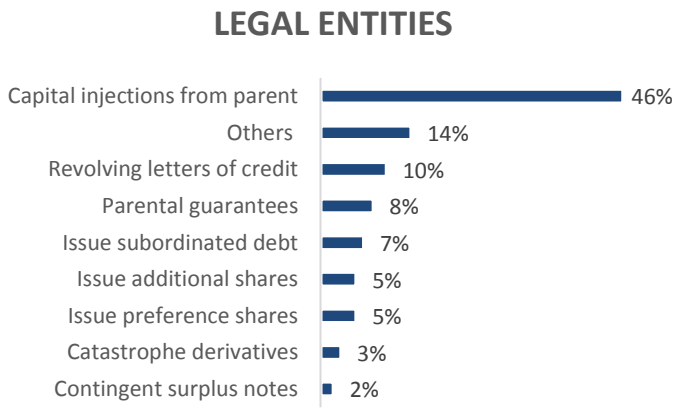


Source: BMA staff calculations based on regulatory submissions

Charts 7 & 8- Sources of Contingency Plans Cited by Management



Source: BMA staff calculations based on regulatory submissions



Source: BMA staff calculations based on regulatory submissions

USE TEST

I. Forward Looking / Incorporating Business Plans & Projection

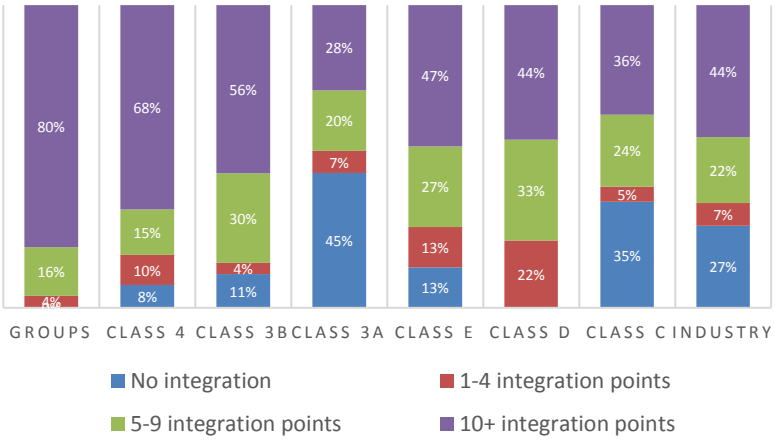
EXPECTATIONS AND OBSERVED BEST PRACTICES

- The SSA report and its underlying information are integrated into the insurer's strategic planning and risk management processes
- There is a strong linkage between the SSA's use and the business planning process with observed consistency regarding the period of planning for the SSA and business planning
- There should be adequate documentation of how the results of the review are embedded into the business and influence management decisions and strategy (among other things) including the extent to which information from the SSA is used to take into account the proportionality principle
- SSA is meant to be an assessment that is short, medium and long term in nature. Thus, it should incorporate a balance of both tactical and strategic elements
- In discussing the use test, the SSA should allow the user to develop a good understanding of the insurer, its business model and risk profile
- The SSA should be useful to the Board and it should be evidently clear how it impacts their decision-making process
- At a minimum, the governance and risk management processes should be clearly articulated in the SSA report
- A good SSA provides an honest perspective of the insurer's risk management framework including areas the insurer is looking to improve
- The SSA is a useful document as opposed to one that is only produced in order to satisfy regulatory requirements

OBSERVED AREAS OF IMPROVEMENT

- Majority of licensed entities cited that the SSA process is integrated to their enterprise risk management framework
- In some cases, insurers are only producing one year forecast of their capital which is not aligned with the time horizon in their business plan
- **Chart 9** represents the split between licence classes and SSA integration into insurers' strategy, risk management and governance frameworks relative to those without reported integration
- **Chart 12 in Appendix I** further breaks down how the SSA and the underlying information was reported as being used
- The Authority discourages a lack of embeddedness of the SSA and will look to see improvements on this front in future reports

Chart 9. Cited "Uses" of SSA Embeddedness



Source: BMA staff calculations based on regulatory submissions

II. Impact on Decision Making, Governance & Oversight

EXPECTATIONS AND OBSERVED BEST PRACTICES

- The SSA reports serve as a primary indicator of the effectiveness of the insurer's risk management and its overall risk culture
- The SSA is considered an integral part of management's decision-making process
- There is a commitment from the Board and Senior Executives to recognise its importance such that they ensure the following:
  - There is a strong governance and control framework surrounding the process
  - There is adequate resources available to support the process
  - The risk management team produce comprehensive documentation that outlines its risk assumptions, the detailed measurement and allocation of risk, and ensuring the meaningful application of the SSA as part of day-to-day decision making
  - SSA results are transparent and not biased in order to be useful for making business decisions

EXPECTATIONS AND OBSERVED BEST PRACTICES (cont'd)

- The SSA report specifies that ownership and approval of documents rests with the Board. The outcomes should be for the benefit of the Board in understanding the robustness of the insurer's current and prospective solvency. The SSA report should draw on regular reporting to the Board Risk Committees

- Key decisions and actions taken as a result of the SSA process are documented

- The SSA should be prepared and/or reviewed by Senior Management who are involved in the SSA process. This should entail those who are fairly close to the risk and well versed on how the view of risk aligns with capital requirements and achieving strategic objectives

- The SSA is approved by the Board and both the Chief Risk Officer and Risk Committee and evidenced by meeting minutes

- The insurer should be able to justify the adequacy and the frequency of the process and preparation of report

OBSERVED AREAS OF IMPROVEMENT

- **Chart 10** reveals the extent to which the SSA process is clearly documented and regularly updated for changes in strategic direction, the risk management framework, and market developments

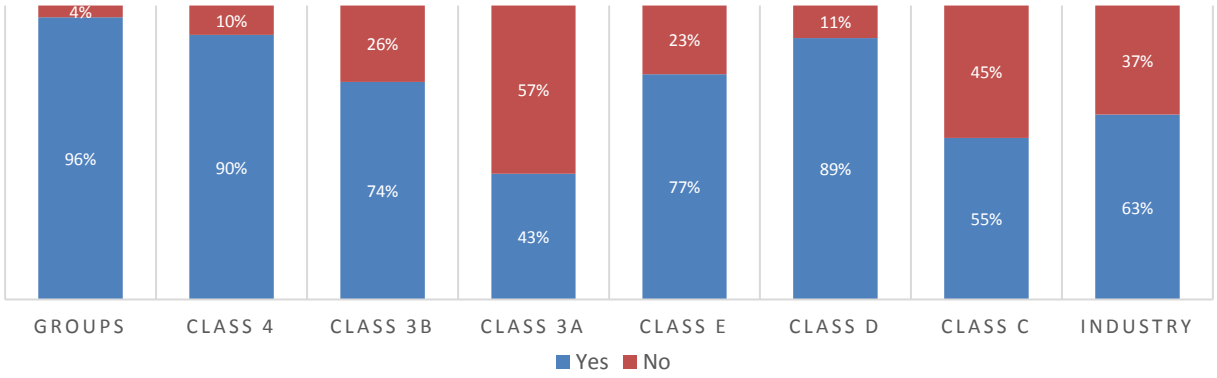
- During our reviews it was noted in certain cases that the frequency of review, governance and oversight were not commensurate to the risk profile of the insurer

- While the Authority does not require insurers to provide supporting documentation to confirm the responses in the schedules, the Authority expects that the insurer will be able to demonstrate that reviews and discussions surrounding the SSA took place (e.g. as can be inferred from minutes, etc.) when requested

- **Chart 11** is a representation of reported SSA review frequency. **Chart 13 through 16 in Appendix 1** further outlines the model validation, and evaluation of model assumptions that are related to Board and Senior Executive review

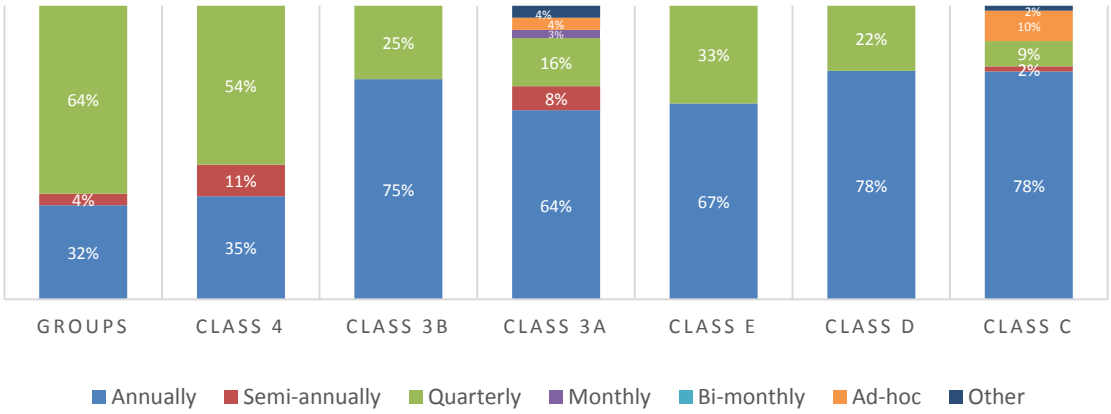
- In some instances, the preparation of the SSA report appears to be outsourced. Thus, the reports have the tone of warranting compliance rather than ensuring the document reflects the actual processes and business operations. In such cases, the SSA framework ends up not being a useful tool for evaluating risks and capital

Chart 10. Strategic Changes Reflected in SSA [Schedule IX(b) #3]



Source: BMA staff calculations based on regulatory submissions

Chart 11. SSA Review Frequency by the Board and Senior Executives [Schedule IX(b) #4]



Source: BMA staff calculations based on regulatory submissions

REPORT STRUCTURE

EXPECTATIONS AND BEST PRACTICES

- The Authority does not prescribe the time horizon of the SSA but the report should be aligned to normal planning horizons and risk management practices should be clearly articulated
- There should be consistency between the risk profile and the risk management framework
- The SSA report clearly articulates the document owner
- The SSA report has document control to highlight significant changes to prior versions and reviews

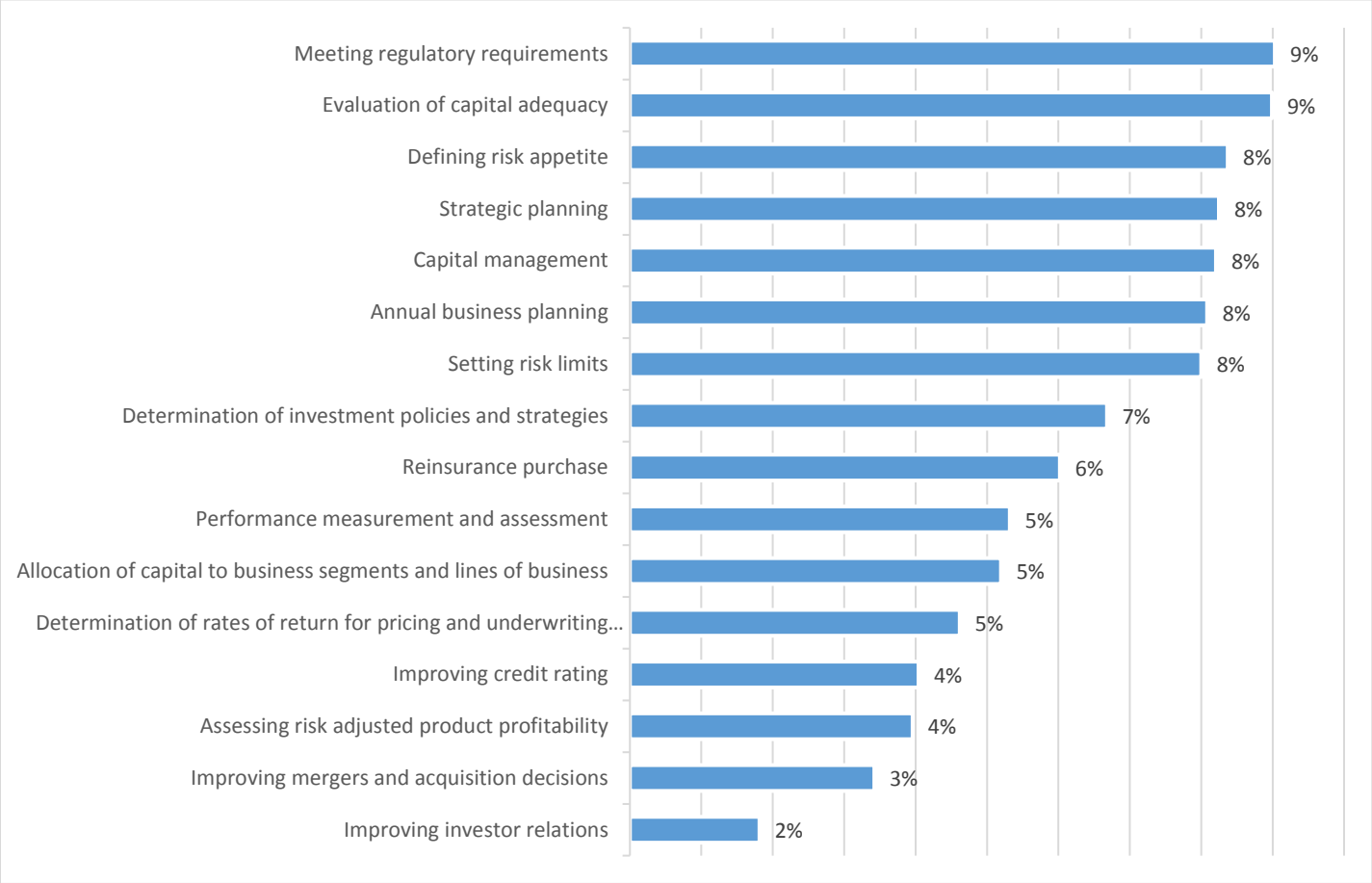
OBSERVED AREAS OF IMPROVEMENT

- In some instances, it has been observed that the SSA reports cite information from other reports. It is encouraged that the report be a self-contained document. If important information is cited in other documents (such as a insurer's risk management framework) it is expected that the document or a detailed summary is included as an appendix and appropriate references be included in the SSA. However, it is expected that informational content that is central to the assessment is included directly in the report
- Having a well-articulated executive summary especially in cases where the SSA documentation is lengthy and the ability of the report to distil complex concepts in an understandable manner appears to differentiate between good and bad SSA reports

If you would like to find out more about this report, please contact: enquiries@bma.bm.

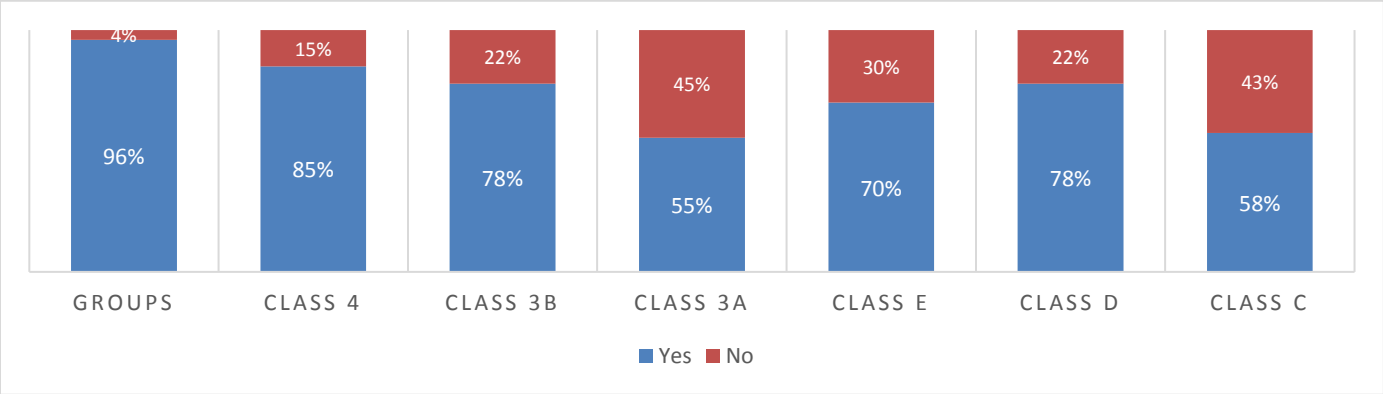
Appendix I

Chart 12. SSA Use Cases for Decision Making



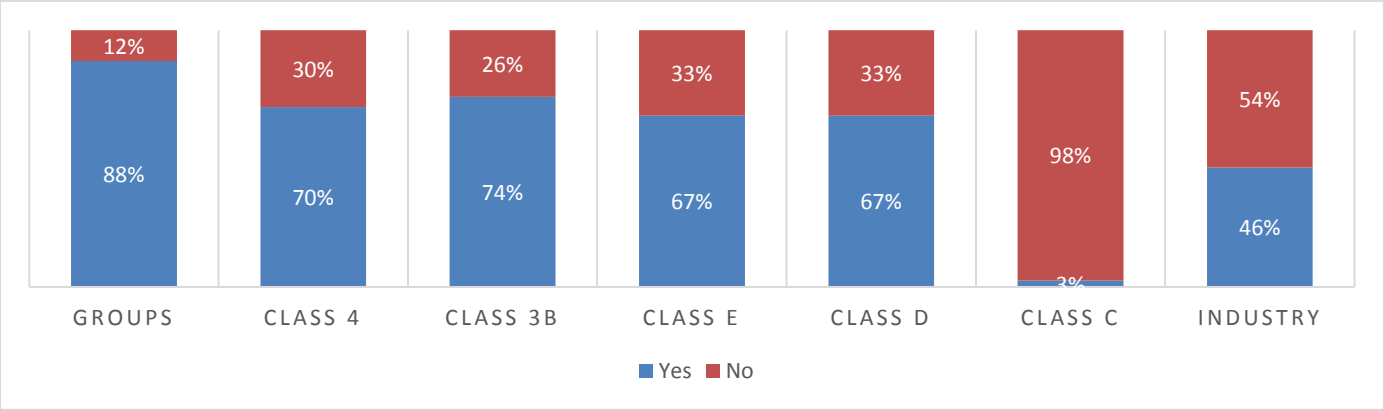
Source: BMA staff calculations based on regulatory submissions

Chart 13. Independent Verification and Oversight



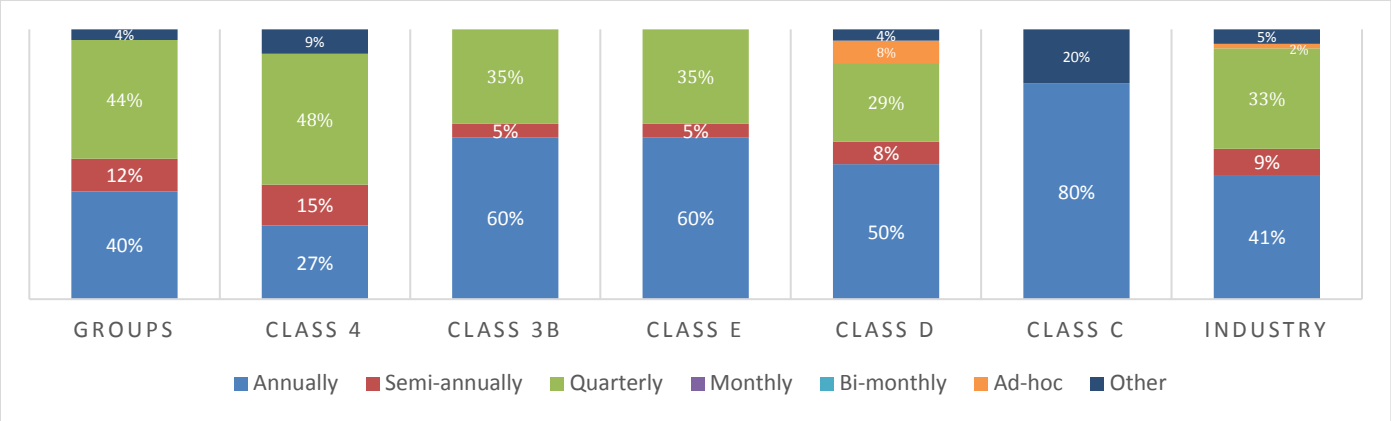
Source: BMA staff calculations based on regulatory submissions

Chart 14. Board and Snr. Mgmt. Approval of the SSA Design, Model and Use



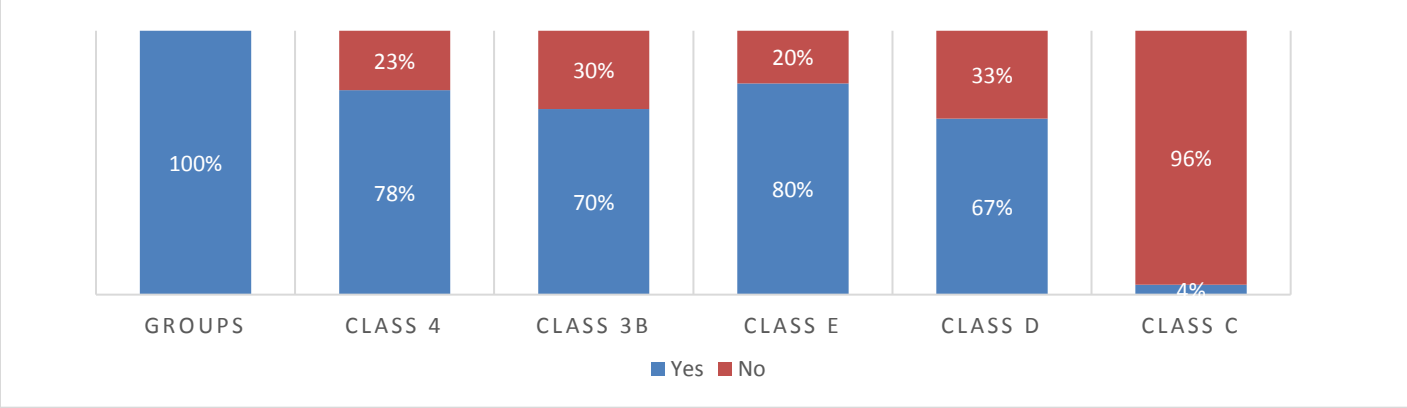
Source: BMA staff calculations based on regulatory submissions

Chart 15. Frequency of Validation Review



Source: BMA staff calculations based on regulatory submissions

Chart 16. Board and Senior Executive's Understanding of the Model's Key Assumptions



Source: BMA staff calculations based on regulatory submissions

Appendix II – Considerations

1. Report style	• *Professional presentation* • *Executive summary* • *Table of Contents* • *Document Control –listing owner and versions last updated. Indicates Board approval*
2. Description of the insurer's business and strategy	• *Should be sufficient to appreciate the nature of the business and its market. Might set out the main points about the market, the main competition, economic background, company structures strategies, etc.* ***A major industry analysis not expected!*** • *Is a business plan present and thoroughly discussed to set the stage?*
3. The identification and assessment of all reasonably foreseeable material risk, including those specified in the Insurance Code of Conduct	• *Does the material risk cited coincide with that listed in the Insurance Code of Conduct?* • *Is there adequate discussion about why certain risks may not be as relevant based on the nature, scale, and complexity?* • *Given the entity's business model, are there risks that may have been omitted?*
4. The identification of the relationships of the material risks with one another, and the quantity and type of capital required to cover the risks	• *Under each risk, is there a discussion about what is driving the capital requirement, also linking to the business plan or planned decisions over the planning horizon?* • *Is there adequate discussion of the reason for changes in required capital?*
5. A description of the insurer's risk appetite, including the limits imposed and how they are enforced, and their key performance indicators	• *Are clear statements of risk appetites present?* • *Do the stated risk appetites, tolerances, and limits seem appropriate to the business model?* • *Is there appropriate risk monitoring process and discussion of breaches of limits (if applicable) and remedial actions and Board oversight?*
6. Assumptions and methodology used to assess and aggregate risks	• *The models used to assess and aggregate risk seems appropriate?* • *Discussion on qualitative risk present in addition to quantitative?* • *Is the data used to do so explicitly stated and deemed to be appropriate and relevant?*

7. A forward looking analysis of the risks faced by the insurer over its planning horizon and an analysis demonstrating the ability to manage its business and capital needs in adverse circumstances and still meet regulatory capital requirements	• *Do stress scenarios seem plausible given the risk profile of the company?* • *Is reverse stress testing included or statements on why not deemed necessary?* • *Are contingency plans (capital injections from parent, debt raise, and floatation of additional shares) comprehensively covered?* • *Are they feasible/achievable given the entity's business model? Any foreseeable constraints (current debt levels, unwillingness or inability of parent, etc.)* • *Is there evidence of revised ratios after the stress event and contingency plans?*
8. An evaluation of whether the insurer has sufficient capital and liquidity available, including an assessment of whether capital is fungible and assets are transferable, to achieve its strategic goals over its planning horizon and any potential adverse consequences if insufficient	• *Is there a clear statement by the entity that there is sufficient capital and liquidity available for the planning horizon (normally in three to five year terms)?* • *Is there a discussion on the fungibility of capital and transferability of capital especially in the event of stress events?*
9. A description of business continuity and disaster plans	• *Are business continuity and disaster recovery plans the company has in place discussed?* • *On assessment, does the description of BCP seem adequate to address risk of business interruption of the entity's operation?*
10. A description of how the results of the self-assessment are integrated into the management and strategic decision making process	• *Is there a clear discussion on how CISSA is embedded and how its results affects the management and Board's decision-making?* • *Is it clear what key decisions have been made because of the CISSA process? Have this been outlined and documented?*
11. The risk measure, time horizon, and confidence level (if any) used to determine the CISSA capital	• *There should be a discussion on how an entity determines its CISSA capital including calibration and adequacy of time horizon. If it has its own/internal model, a clear description of the model and calculation of capital per material risk* • *If the entity uses the BSCR in determining its CISSA capital, is there a statement why it believes that the capital per BSCR is its CISSA capital?*
12. An explanation of the primary reasons for any material deviations between the CISSA capital as it pertains to the risk (if holding capital against the risk) and the regulatory capital charge for the risk, if the deviation is greater than 15%	• *If there is a greater than 15% deviation in the capital charge per risk category in Schedule IX (a) CISSA Capital Summary, an explanation should be provided for such material deviation per risk category*