



FINANCIAL SERVICES  
COMMISSION

# Risk Based Capital for Domestic Insurance Companies

---

## Introductory Paper

THE FINANCIAL SERVICES COMMISSION  
Research & Policy Department

**JUNE 2016**

## Abbreviations

Branch Adequacy of Assets Test	BAAT
Canadian Institute of Actuaries	CIA
Central Bank of Barbados	CBB
Central Bank of Trinidad and Tobago	CBTT
Dynamic Capital Adequacy Test	DCAT
Financial Sector Assessment Programme	FSAP
Financial Services Commission	FSC
Financial Services Commission of Jamaica	FSCJ
International Association of Insurance Supervisors	IAIS
International Accounting Standards Board	IASB
International Capital Standard	ICS
International Financial Reporting Standards	IFRS
Minimum Asset Test	MAT
Minimum Capital Required	MCR
Minimum Capital Test	MCT
Minimum Continuing Capital and Surplus Requirements	MCCSR
Office of the Superintendent of Financial Institutions	OSFI
Prescribed Capital Required	PCR
Regulatory Capital Requirement Ratio	RCRR
Risk Based Capital	RBC
Risk Based Supervision	RBS
Test of Adequacy and Margin Requirements	TAAM

# Table of Contents

Abbreviations .....	1
Introduction .....	3
Overview of the Insurance Sector.....	6
What is Risk Based Capital? .....	8
Types of Risk Based Capital Regimes .....	10
The Canadian Model (MCCSR, MCT, TAAM & BAAT).....	12
The European Model (Solvency I & II).....	16
The IAIS (MCR & PCR).....	18

## **Introduction**

### **Prelude**

As the Financial Services Commission (FSC) continues to improve the regulatory framework of the sectors within its supervisory ambit, one area it intends to modernize is its capital standards by introducing risk based capital (RBC) standards within the insurance industry. The FSC is thus in the initial phase of its programme to implement a RBC framework for licensed insurance companies. During this period and the subsequent consultation phase, discussion will be sought from industry participants within the insurance sector.

This initial discussion paper is thus intended to familiarize the insurance industry with the general types of RBC frameworks being considered ahead of the commencement of the consultation process. This discussion paper is also intended to garner initial feedback and to facilitate respondents' comments about proposals. Building on these overarching principles and the responses received, the FSC intends to commence development on detailed proposals, including factors and methodology for determining capital requirements.

The Commission welcomes comments on this introductory paper from the sector such that informed decisions can be taken.

### **How to submit comments**

The Commission invites you to submit your views and comments on the guideline no later than **Wednesday, July 6, 2016**. These comments should be submitted to the Commission with the subject **"FSC Risk Based Capital for Insurance Companies – Introductory Paper"**:

- Via email to **info@fsc.gov.bb**; and copied to **insurance@fsc.gov.bb** or
- Via fax to **421-2146**; or
- In writing addressed to:

**ATTN: Manager, Insurance Department  
The Financial Services Commission  
Suites 301 & 302 Building 4,  
Harbour Industrial Park,  
Bridgetown, Barbados. BB11142**

## **Background**

The context in which the proposed RBC regime will be developed is the passage of time since the challenges faced stemming from the default of an domestic insurance entity. That situation serves as an always constant reminder of the continual need to maintain appropriate levels of financial sector regulation. The intention of implementing any RBC regime is also to lift the industry up to international standards and in particular the International Association of Insurance Supervisors (IAIS) Insurance Core Principles (ICPs) as it relates to regulatory capital allocation.

The FSC and the Barbadian financial system was last evaluated under the IAIS ICPs in 2013 when the results of the IMF led 2013 Financial Sector Assessment Programme (FSAP) report was released. This report suggested some ways to improve the insurance sector's regulation towards fully meeting IAIS Core Principle 17. One recommendation in that report was that the FSC needed to accelerate the implementation of risk-based capital adequacy requirements covering all insurers and insurance groups and promote Enterprise Risk Management (ERM) frameworks.

Such an improvement to current capital requirements would be intended to more adequately capture relevant risks (such as, credit, market, and underwriting risks). By implementing such a regime risk management requirements could be made more comprehensive and proportionate to the risks that Barbadian insurers face, such as, group and catastrophic risks.

With the aforementioned as a basis, the current FSC legislation requires a flat capital assessment irrespective of institutional risk exposure. The current capital requirement is \$3,000,000 paid up capital for life and non-life insurance companies and \$5,000,000 for a composite company. However, in order to be a strong and prudent regulator and to better regulate the sector and financial system the risks need to better match the capital allocation. The capital allocation should also be dynamic and responsive to a changing environment and conditions. For a successful Risk Based Supervisory system, several improvements in capital requirements should be adhered to, to move to a more dynamic RBC methodology.

The intended RBC standard should also be appropriate and in line with the core insurance principles of the IAIS which constitutes current international best practice. This will allow the capital requirements of an insurance company to be based on the risk inherent in their specific operations such that companies with larger risk exposures hold more capital relative to those exposures when compared to companies with small risk exposures. In addition, companies that implement appropriate risk management practices to mitigate risk will see their regulatory capital requirements reduced to match the risk exposure thereby rewarding good risk management.

It is also expected that a more stringent capitalization requirement will be developed, thereby ensuring that only companies that are adequately capitalized and solvent relative to the size and complexity of their portfolio continue operations or enter the market.

It must be stressed that the move towards developing an RBC framework does not necessarily imply a need to increase or decrease capital for individual insurers. The framework seeks to be consistent with

international practice and make capital requirements more sensitive to the level of risk that individual insurers and insurance groups are bearing.

The expected overall results of having the RBC standard is to enhance the supervisory system to include a more pro-active approach to risk-based supervision, improved corporate governance, and greater disclosure and information sharing with the public and other sectors of the financial system.

Benefits to both the regulator and individual insurer from an enhanced capital standard include: the ability to recognize problems sooner, which gives more scope to mitigate and actually improve financial stability. It should also result in increased transparency, raising and harmonizing insurance industry standards not only domestically but also with other jurisdictions that adopt IAIS standards.

RBC standards help to provide insurers and regulators some added confidence that the insurance company has the financial means to meet all of its clients' needs even in the event of significant loss. As a result of these types of requirements, the insurer can offer more competitive coverage for property and casualty insurance. RBC standards help to shore up the financial risk, reduce costs, and improve customer confidence benefiting multiple stakeholders involved in the insurance industry.

During the consultation process towards developing a RBC framework, international standards, capital standards of other jurisdictions with similar regulatory structures, past industry consultations and consultants' reports along with other governmental authorities and advisors are to be reviewed and considered. Notice will be sent to the industry during the second quarter of 2016 on this the release of the FSC Discussion Paper on Risk Based Capital for the Insurance Sector. Comments will be invited for submission during this phase and during the later consultation phase. This is an important part of the process as although we are benchmarking against international standards, the methodology eventually adopted to calculate the required regulatory capital will be reflecting of the characteristics in the Barbados and Caribbean insurance industry.

It is expected that after the consultation period has eventually concluded and the regulatory regime crafted there will be a transition period of a defined period to achieve full industry implementation.

The proposed regulatory framework at this stage is also intended to provide coverage only to domestically licensed life and general insurance companies as well as branch insurance companies operating domestically. Individual international insurance companies licensed in Barbados as an exempt insurance company (EIC) or as a qualified insurance company (QIC) will not be subject to this proposed regulatory framework at this time. Insurance intermediaries are also not intended to be covered directly.

## Overview of the Insurance Sector

The insurance sector is the second largest component of the Barbadian financial system and at December 31, 2015 its assets when compared to national GDP were greater than at \$3 billion or more than one third of GDP. There were 20 insurance companies writing business domestically at the end of 2015: six life insurers and fourteen general insurers. Of these 20 insurers, there were 6 branch insurance companies of foreign parent companies operating in Barbados writing general insurance business and one branch foreign insurer writing life insurance business.

The existing capital adequacy framework for Barbados' insurance industry is essentially rules-based, with capital and solvency requirements stipulated in the legislation and in guidance notes issued by the FSC. Many insurers already have capital and reserves to serve as a buffer while absorbing losses. Claims provisioning in the general insurance sub-sector also appeared to be adequate in 2014.

There is however at present no regulatory capital standard beyond the minimum established by legislation. Insurers are licensed and regulated on a legal entity basis. Capital adequacy is assessed based on whether the value of the assets of an insurer exceeds the value of its liabilities by the required margin of solvency. The FSC continues to specifically monitor the performance, solvency, and capital structure of general insurers as well as work towards establishing industry capital regimes and benchmarks.

In Barbados insurers are classified into the broad categories of life and non-life (general) insurance segments of the market. However, many insurers from either category also engage in both types of insurance and may create subsidiaries or affiliated companies to perform either segment of business. Some life insurers however, also write a significant amount of general insurance business through their life insurance companies despite having general insurance affiliates.

Many insurance companies also operate in Barbados as a branch of a foreign parent company. These insurers however, are not required to hold share capital within their Barbadian subsidiaries. Such firms rely on the strength and financial capital of expatriate parent companies for injections of additional funds as required.

Some insurers prefer to specialize in specific lines of insurance business. Each type of insurance business also has its own inherent risks and preferred performance metrics. The general insurance industry for example may be further classified by type of policy written. These include:

- Liability
- Marine, Aviation and Transport
- Motor Vehicle
- Pecuniary Loss
- Accident and Sickness Insurance
- Bond Investment
- Property
- Other

The life insurance industry also is classified at a more granular level as follow:

- Ordinary life
- Industrial Life & Group Life
- Annuities
- Group Pension
- Other (Creditor Life and Health)
- Group Health and Accident

The specific nuances in both types of insurance – life and general, and within the specific lines of insurance business will be considered when crafting the proposed RBC regime.



## What is Risk Based Capital?

Risk Based Capital (RBC) essentially represents the capital resources required to enable an institution to absorb the risks from unexpected losses and shocks<sup>1</sup>. Different companies face differing risk; therefore different levels of capital are required based on their specific types of risks. RBC is a risk management practice which defines required capital and manages risk by assisting in determining the size capital buffer that an institution should have for the level of risk inherent in its business. These capital requirements are a tool by which regulators help to ensure that financial institutions maintain satisfactory levels of solvency. This is important because it enhances consumer protection and financial stability along with allowing financial institutions to better meet obligations to customers.

The RBC also addresses capital adequacy and solvency of insurers and is intended to consistently address the valuation of the liabilities; the quality of the assets; the matching of these assets and liabilities; capital adequacy requirements and solvency control levels. RBC is also responsive so that if a company takes on additional business and additional risk, the capital requirements respond and if a company reduces its portfolio and reduces its risk exposure the capital requirements also respond to the activity.

Having a RBC regime emphasizes underlying concepts of having a permanent buffer of available capital that is free of encumbrances available whenever needed to meet unforeseen losses. Inherent in RBC regimes are also considerations about the expected size of the capital buffer and factors such as the institution's current position in the business cycle (both the short and long term view); expected and potential stressed conditions; risk appetite; corporate and risk strategy; and liquidity concerns.

Though the list of possible risks that an RBC regime is designed to mitigate is by no means exhaustive the following are some of the usual risks considered for mitigation:

- Asset defaults risk
- Pricing risk
- Asset liability mismatch risk
- Management risk

RBC regimes usually involve a number of components. The first is the measurement of the risk of the insurance undertakings. Hereby, the main risks to which an insurance undertaking is exposed are identified. Secondly, the amount of capital necessary to cover the inherent risks is established. These are the capital requirements. The next step is verifying the amount of capital actually available at the insurer. This is known as the solvency margin which is the calculation of the total capital required by a company to adequately cover its risks. The solvency margin is then compared to the capital available to

---

<sup>1</sup> Risk-based Supervisory Framework prepared for the Caribbean Regional Technical Assistance Center (CARTAC) by Naren Sheth, Regulatory and Supervisory Consultant, NAS Consulting Inc. Toronto Canada. September 2013

the company. The final component then involves regulatory intervention should capital fall below the minimum level.

Capital is usually built upon a tier-based capital framework, typically made up of at least two tiers of capital with various types of capital constituting each respective tier. Examples of types of capital are as follows:

**Tier 1 Capital (*Core Capital*)**

- Shareholders' equity
- Retained earnings
- Qualifying non-cumulative perpetual preferred shares

**Tier 2 Capital (*Supplementary Capital*)**

- Cumulative preference shares
- Sub-ordinated liabilities with a shorter duration

Tier 2 Capital may be less permanent in nature but must still be free of encumbrances. It should also never be allowed to be greater than the amount allocated to Tier 1 Capital.

Besides the different tiers of capital, different capital measures are also required for different types of insurers. Life insurance companies have a need for long-term assets that match long-term, guaranteed life insurance and annuity products. General insurance companies however have different lines of business and face different risks as well as having different types of assets and liability compositions to life insurers. Thus capital standards appropriate for general insurers may not be appropriate for life insurers. The risk profiles, balance sheet characteristics, and business models of life and general insurance companies can be vastly different. If life insurers are required to hold excessive amounts of short-term assets by general insurance-based capital rules, the availability and affordability of financial security products could be affected.

## Types of Risk Based Capital Regimes

Different jurisdictions implement different risk based capital regimes based on their specific legislative systems, levels of financial sector development and the sophistication of financial institutions operating in their economy. However many jurisdiction also adopt regulatory and risk based capital frameworks similar to those developed by other countries.

The main types of risk based capital regimes being considered for review are (1) the Minimum Continuing Capital and Surplus Requirement (MCCSR) and its accompanying Test of Adequacy and Margin Requirements (TAAM) for the life insurance sector; along with the corresponding general insurance equivalents Minimum Capital Test (MCT) and Branch Adequacy of Assets Test (BAAT); (2) the European Solvency I & II Regulatory Regimes; (3) the Minimum Capital Required (MCR) and Prescribed Capital Required (PCR). Other capital regimes such as the Dynamic Capital Adequacy Test (DCAT) will also be discussed but these serve more as supporting and supplementary regimes to the three main RBC frameworks highlighted rather than as stand-alone models.

In the Caribbean, the Jamaican Financial Services Commission (FSCJ) specifies that life insurance companies apply a MCCSR which is used in that jurisdiction to determine minimum capital. General insurance companies however, are subject to a minimum capital test (MCT). The MCCSR and MCT were both frameworks adopted from similar RBC regimes developed by the Canadian regulatory agency OSFI. In Canada the MCCSR and MCT supervisory thresholds were both 150% effective January 1, 2016. The FSC will consider the need for consistency and harmonization of the capital standards when determining the final model for adoption.

Both the MCCSR and MCT are risk based measures that consider the risks faced by insurance companies based on the lines of business conducted, as well as the types and amounts of assets and liabilities that are held.

The MCT computes the total capital required by a company to adequately cover its risks, and then compares this to the capital actually available to the company.

$$\text{Minimum Capital Test} = \frac{\text{Capital Available}}{\text{Capital Required}}$$

The capital required is calculated as the product of the company's assets and liabilities and their assigned risk weightings. Capital required also incorporates the margins required to offset risks being

covered by the insurance portfolio. Companies with risky assets holdings or volatile lines of business will be required to hold more capital than companies with more conservative business practices.<sup>2</sup>

The Jamaican MCT was first implemented in January 2011, for annual statements ending 2010 December 31 and was intended to align the capital required of each company with its risk management framework.<sup>3</sup> For the first two years that the MCT was implemented in Jamaica, there was the transitional period from the prior regulatory framework – the Minimum Asset Test (MAT) - companies were filing both the MCT and the MAT. This parallel process allowed the regulator there the chance to compare both frameworks. The results for each insurance company were analyzed under both standards allowing the regulator there to decide the minimum MCT standard. These overall results were then discussed at the industry level.<sup>4</sup>

The MCT framework as employed by the Jamaican FSC provides the following caveats regarding capital available:

- There is no split between Tier 1 and Tier 2 capital
- Capital Available to general insurer = Equity less deductions
- Equity e.g. share capital, retained earnings and reserves, capital available of Regulated Financial Institution Subsidiaries
- Non-inclusion of Redeemable Preference shares in Capital Available
- Capital Available of the Branch = Assets in Jamaica minus Liabilities, deferred taxes and deductions

When the MCT was implemented in Jamaica in 2010 there were a number of proposed requirements which included a Minimum Capital Requirement with the following caveats:

- Must be 200% increasing each year for the next 3 years to 250%
- The MCR must always be achieved
- If company believes it will fail the test it must notify the FSCJ immediately and send a plan of action to achieve the additional capital required
- Company must file annually in December<sup>5</sup>

---

<sup>2</sup> Presentation by Angela Beckford, Chief Actuary at the Jamaican Financial Services Commission on Minimum Capital Requirements and the Minimum Capital Test (MCT) for the General Insurance Industry operating in Jamaica

<sup>3</sup>FSC Compass Vol. 1 Issue 3, July – Sep 2010, A publication of the Jamaican Financial Services Commission

<sup>4</sup> West Indies Stockbrokers Limited. June 02, 2010. "Tougher, risk-based standards...general insurers to face changes by year-end". Available online at: <https://wiseequities.com/home/news.php?id=1891>

<sup>5</sup> Presentation by Angela Beckford, Chief Actuary at the Jamaican Financial Services Commission on Minimum Capital Requirements and the Minimum Capital Test (MCT) for the General Insurance Industry operating in Jamaica

The Central Bank of Trinidad and Tobago (CBTT), the insurance sector industry regulator also has a RBC regime known as the Regulatory Capital Requirement Ratio (RCRR) and it along with Jamaica has target ratios of 150%.

For insurance companies registered in Trinidad and Tobago, the Regulatory Capital Requirement Ratio was determined based on the company’s total business and calculated using the formula:

$$\text{Regulatory Capital Requirement Ratio} = \frac{\text{Total Regulatory Capital Available}}{\text{Total Regulatory Capital Required}}$$

Foreign insurance companies with a branch registered to write insurance business in Trinidad and Tobago are required to determine the Regulatory Capital Requirement Ratio on their business in Trinidad and Tobago only.<sup>6</sup>

For the valuation of assets under this regulatory framework an insurance company will be using the International Accounting Standards Board (IASB) International Financial Reporting Standard (IFRS) methodology for its published accounts. Therefore this is the basis to be adopted in determining the value of the assets used in the risk based capital calculations.<sup>7</sup>

**The Canadian Model (MCCSR, MCT, TAAM & BAAT)  
Minimum Continuing Capital and Surplus Requirements (MCCSR)**

The MCCSR is a capital requirement applied by the Canadian regulator OSFI which is applicable to all domestic and foreign life insurers registered in Canada. The MCCSR uses a risk-based approach, for measuring specific insurer risks and for aggregating the results to calculate the amount of an insurer’s regulatory required capital to support these risks.<sup>8</sup>

The MCCSR as employed by OSFI is primarily composed of two capital ratios which are measured and monitored for regulatory capital. These two ratios are:

<b>Tier 1 Capital Ratio</b>	<b>Total Capital Ratio</b>
-----------------------------	----------------------------

<sup>6</sup> Insurance (Capital Adequacy) Regulations Guidance Document August 2012 – Capital Adequacy for Insurers

<sup>7</sup> Ibid.

<sup>8</sup> Office of the Superintendent of Financial Institutions (OSFI) Minimum Continuing Capital and Surplus Requirements (MCCSR), Issued November 2014

$\text{Tier 1 Capital Ratio} = \frac{\text{Tier 1 Capital}}{\text{Capital Required}}$	$\text{Total Capital Ratio} = \frac{\text{Total Available Capital}}{\text{Capital Required}} = \frac{\text{Tier I} + \text{Tier II}}{\text{Capital Required}}$
---	--

In equation (1) above, Tier 1 Capital is referred to as core capital while Total Available Capital is inclusive of both Tier 1 and Tier II capital. Tier II is supplementary capital and mainly includes cumulative preference shares, sub-ordinated liabilities with a shorter duration.

The two tiered capital structure of the MCCR is similar to the Basel I and Basel II capital definitions within the banking sector and a similar structure obtains with the European life insurance Solvency I and Solvency II capital regimes.

Some regulators also include other early warning tests by which companies are required to raise additional capital after going below specified supervisory target levels.

In the case of Canada, five specific quantifiable risks and risk factors are usually calculated. These are:

1. Risk of asset default
2. Risk arising from mortality/morbidity/lapse assumptions
3. Risk from interest margin pricing
4. Risk due to changes in the interest rate environment
5. Risk due to the embedded guarantees in segregated funds

**Test of Adequacy and Margin Requirements (TAAM)**

Besides the MCCR guidelines being applicable to domestic and foreign life insurance companies, branches of foreign insurers operating in Canada must also maintain and vest assets in Canada in accordance with the Test of Adequacy of Assets and Margin Requirement (TAAM).

Essentially this means that branches of foreign insurance companies in Canada are required to invest a certain amount of the premiums they collect in that jurisdiction in approved securities specifically allocated to meet claims arising from their operations in Canada.

While the MCCR compares the Total Available Capital to the Required Capital (Total Ratio) and compares the adjusted net Tier 1 capital to the Required Capital (Tier 1 Ratio). The TAAM compares the Available Margin to the Required Margin (Total Ratio) and compares the Available Margin excluding Other Admitted Assets to the Required Margin (Core Ratio). The MCCR and TAAM ratios are generally expressed as a percentage of the Required Capital or the Required Margin.<sup>9</sup>

<b>Total Capital Ratio</b>	<b>Core Ratio</b>
----------------------------	-------------------

<sup>9</sup> Office of the Superintendent of Financial Institutions (OSFI) Minimum Continuing Capital and Surplus Requirements (MCCR), Issued November 2014

$\text{Total Ratio} = \frac{\text{Available Margin}}{\text{Required Margin}}$	$\text{Core Ratio} = \frac{\text{Available Margin} - \text{Other Admitted Assets}}{\text{Required Margin}}$
---	---

Under the Canadian framework and with respect to the Total Ratio, if considering only the risks where calculations are specified, a minimum Total Ratio of 100% may be considered acceptable. However, life insurers are exposed to more risks than those for which calculations are specified. Consequently, the minimum Total Ratio for life insurers was set at 120% rather than 100% to cover operational risks that are not explicitly measured, but which form part of the minimum requirement under MCCSR/TAAM. In addition, the Canadian regulator OSFI established a supervisory target Total Ratio of 150% that was intended to cover the risks specified in the MCCSR/TAAM and other risks that were not included in the calculation. Other potential risks included strategic and reputational risk, as well as risks not explicitly addressed by the actuary when determining policy liabilities.<sup>10</sup>

OSFI guidelines established the minimum Tier 1 Ratio at 60%, though each institution was expected to maintain its Tier 1 Ratio at no less than the supervisory target of 105%. This represented 70% of the 150% supervisory target Total Ratio.

Noting that not all of a company's risks can be mitigated through reinsurance, OSFI also expected each institution to maintain Tier 1 Available Capital/Available Margin excluding Other Admitted Assets at or above 25% of the gross MCCSR/TAAM Base Required Capital/Required Margin with the requirement calculated without any reduction for reinsurance ceded.

The requirement to calculate a Tier 1 Ratio gross of reinsurance is waived for companies that cede less than 60% of their business, as measured by both ceded reserves and the ceded MCCSR/TAAM Base Required Capital/Required Margin. Companies are expected to maintain their Total and Tier 1 Ratios at or above the established minimum and supervisory target levels on a continuous basis.<sup>11</sup>

### **Minimum Capital Test (MCT)**

Similar to the MCCSR but applied to the general insurance sector, the MCT is a risk based measure that considers: the risks faced by general insurance companies; the risks on the lines of business it conducts; as well as the types; and amounts of assets and liabilities that it holds.

The MCT computes the total capital required by a company to adequately cover its risks, and then compares this to the capital actually available to the company. The capital required is calculated as the product of the company's assets and liabilities and their assigned risk weightings. Capital required also incorporates the margins required to offset risks being covered by the insurance portfolio. Companies with risky assets holdings or volatile lines of business will be required to hold more capital than companies with more conservative business practices. The MCT is intended to align the capital required

<sup>10</sup> Office of the Superintendent of Financial Institutions (OSFI) Minimum Continuing Capital and Surplus Requirements (MCCSR), Issued November 2014

<sup>11</sup> Ibid.

of each company with its risk management framework. The MCT ratio is computed as the capital available over the minimum capital required.

$$\text{MCT Ratio} = \frac{\text{Capital Available}}{\text{Minimum Capital Required}}$$

*Source: CIA Annual General Meeting: The Next Generation of the Minimum Capital Test - A Canadian Regulatory Capital Framework*

### **Branch Adequacy of Assets Test (BAAT)**

The BAAT is equivalent to the TAAM but applied to branches of foreign general insurance companies. Branches of foreign insurers operating in the host jurisdiction are also expected to maintain and vest assets in the host jurisdiction in accordance with the prescribed stipulations.

The BAAT ratio measures the adequacy of net assets available to meet the margin requirements as determined in accordance with the guideline of the Canadian regulator OSFI. The BAAT ratio is defined as the net assets available divided by the minimum margin required, expressed as a percentage. The formula and determination of the net assets available along with the minimum margin required is described below.<sup>12</sup>

$$\text{BAAT Ratio} = \frac{\text{Net Assets Available}}{\text{Minimum Margin Required}}$$

For BAAT purposes and subject to regulatory adjustments, net assets available are calculated as total vested assets less total net liabilities. Total net liabilities, are equal to total liabilities, net of select stipulated items.<sup>13</sup>

Margin required is calculated with respect to the branch's liabilities, vested assets and other assets available. The BAAT minimum margin required is the sum of select risk margins, less the diversification credit, divided by 1.5.<sup>14</sup>

### **Dynamic Capital Adequacy Test (DCAT)**

The DCAT also known as the Dynamic Solvency Test (DST) is the process whereby the business of the insurer is tested through future cash flow projections under a variety of possible stressed scenarios based on past experience. Essentially the DCAT is a stress test but it involves a risk management

---

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.



component which allows for the testing of possible management strategies for handling adverse and stressed scenarios.

The DCAT is another tool for managing risk and monitoring the adequacy of capital. Rather than intended to supplant other established more static RBC regimes its application is expected to be used in tandem with other regimes.

Unlike the MCCR and MCT which are static and based on historical information the Dynamic Capital Adequacy Test is more forward looking and considers the insurers financial condition rather than just measuring just the financial state or position.

The version of the DCAT under consideration was developed by the Canadian Institute of Actuaries (CIA) in the late 1980s and since then it has become a requirement for both life and general insurers in Canada.

The DCAT is more for stress testing scenarios than regular capital and solvency requirements and may be thought of as the insurance equivalent to the Internal Capital Adequacy Assessment Process (ICAAP) that is conducted on deposit taking institutions.

### **The European Model (Solvency I & II)** **Solvency I and Solvency II**

Solvency II is a European Union (EU) piece of insurance legislation aimed at unifying the EU insurance market and enhancing consumer protection. It reflected the contemporary risk management practices occurring over the past few years. By defining required capital and managing risk it was intended to build upon the old Solvency 1 Directive introduced in 1973.

Solvency I rules concentrated mainly on insurance risks, Solvency II took into account investment risks and was intended to enhance consumer protection, increase financial stability and avoid market fragmentation in the EU market.

Initially scheduled for implementation by the end of 2012, then 2014, the date was revised to take effect on January 1st, 2016 with a transitional period for insurers and regulators.

Considered as being similar to the banking regulations of Basel II and intended to harmonize the way firms allocate capital against risk, the Solvency II framework has three main pillars:

- Pillar 1 - consists of the quantitative requirements (for example, the amount of capital an insurer should hold).
- Pillar 2 - sets out requirements for the governance and risk management of insurers, as well as for the effective supervision of insurers.
- Pillar 3 - focuses on disclosure and transparency requirements.

Solvency II is a very holistic supervisory regime. However, for the purposes of the FSC's proposed capital regime, Solvency II Pillar 1 quantitative requirements for RBC will be the main focus for consideration.



## **The IAIS (MCR & PCR)**

The International Association of Insurance Supervisors (IAIS), the global body representing insurance supervisors of more than 200 jurisdictions has the mandate to promote effective and globally consistent supervision of the insurance industry. It has thus issued Insurance Core Principles (ICPs) by which all insurance industry regulators must observe and are obliged to comply with as soon as practicable. These ICPs were issued by the IAIS in October 2011 and revised in 2012. Amongst the areas covered in these ICPs were solvency and capital adequacy.

### **Minimum Capital Required (MCR)**

The Minimum Capital Required (MCR) is derived from the IAIS core principles 17.3 which details the 'structure of regulatory capital requirements – solvency control levels'. The concept establishes regulatory capital levels, triggering different degrees of supervisory intervention the least of which is a level that if a company falls below the insurer may no longer be viable. Should the MCR be employed it is expected that the absolute minimum capital requirements for Life and Non-Life as well as composite insurance companies would be increased.

### **Prescribed Capital Required (PCR)**

Besides the MCR, the IAIS core principle 17.4 also stipulates that insurers should maintain a Prescribed Capital Required (PCR).

When an insurer's capital base is in excess of the MCR but less than the PCR, the insurer would also be required to submit a plan to the regulator on how it would ensure its capital base will increase to the PCR level. In some jurisdictions the PCR is set at 150% of the MCR and an insurer whose capital base is between the PCR and MCR is the subject of remedial measures for the purpose of increasing its capital base to the PCR level. Some of these remedial measures may include for example the prohibition against dividend payments to shareholders.

When an insurer's capital base is less than the MCR, the FSC would be required to take one of two actions including requiring the insurer to increase its capital base to in excess of the MCR level or implement more severe regulatory action.

### **Future Developments**

In recent years, it has been recognized globally that the capital adequacy framework should take into account different risk factors of different insurers, and be conducive to enhancing the corporate governance, enterprise risk management (ERM) and public disclosure practices of insurers.

The world is also moving towards a global, more standardized international capital regime and the IAIS has been looking to establishing a set of capital rules for global insurers. Known as the Insurance Capital Standard (ICS) this regime is likely to build upon the already released IAIS ICPs and it is to jurisdictions advantage to commence the process of observing the existing core principles.

It is thus advantageous to the FSC and Barbados if a RBC regime were implemented as it would smooth the adoption of future international capital standards. It is the intention of the FSC to make a determination on the capital standard for adoption within the next 12 months.