

## **SOLVENCY REGULATION**

### **IN CANADA**

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#### **BIOGRAPHY:**

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**ABSTRACT:**

A recent feature of the Canadian insurance environment is increasing government reliance on private sector actuarial reporting to assist in the regulation of insurance companies. One new requirement is a report by an Appointed Actuary on the company's expected future financial position. Standards of Practice for the application of Dynamic Solvency Testing (DST) to life insurance companies have already been developed to meet the new requirement.

*This paper presents some background and an overview of current requirements, the response of the life industry to the changing regulatory climate, and the progress made to date by the property casualty sub-committee in responding to this new challenge.*

## BACKGROUND

### Jurisdiction

Canadian insurance companies may be registered either with a provincial government or with the federal government. Companies must also be licensed in each province in which they conduct business. The provinces have exclusive power to regulate rates, insurance contracts and claim settlements. Insurers must satisfy the solvency requirements of their jurisdiction of incorporation and each province in which they are licensed. However, as the federal Office of the Superintendent of Financial Institutions (OSFI) is not involved in rate and contract regulation, the provinces (with occasional exceptions especially Quebec) have chosen to let OSFI take a leading role in the regulation of solvency. Relevant federal legislation includes an act establishing the powers of OSFI, the Canadian and British Insurance Companies Act, the Foreign Insurance Companies Act and an act which essentially defines actuaries as Fellows of the Canadian Institute of Actuaries. The Canadian and British Insurance Companies Act and the Foreign Insurance Companies Act have similar provisions, as do provincial acts respecting insurance. Federal - provincial co-ordination is enhanced by the use of uniform annual statements.

### Traditional Regulatory Techniques

Federal solvency regulation in Canada has been based on three complementary pillars. The first is the minimum asset test enshrined in Section 171 (formerly Section 103) of the Canadian and British Insurance Companies Act. The test basically compares surplus, determined on a liquidity basis, to a margin which is the greater of:

- (i) 15% of outstanding claim reserves
- (ii) 15% of gross written premium (with a credit for reinsurance of up to 50%)
- (iii) 22% of gross incurred claims (with a similar credit of up to 50%).

A fuller explanation of the test is given in Appendix I. In addition to the statutory solvency test, Section 178 of the act limits the dividend to 75% of the average of the last three years "profits". The superintendent also has adequate powers to enforce and monitor

these tests, beginning with the ability to request monthly reporting if there is a potential for problems to emerge.

Provincial regulations may differ from the Federal, with Quebec as the prime example. Quebec solvency regulations are outlined in Appendix II. It is intended that the tests ensure that there is adequate capital to cover the costs of liquidation, should that be required. However, the supervisory authorities prefer to avoid such drastic action by monitoring certain ratios for early warning of potential problems. The ratio tests used as indicators of solvency or profitability problems by the province of Quebec are described in Appendix III. The tests include many well known ratios, such as premium to surplus ratios. Although the ratio tests used by other Canadian jurisdictions may vary from the Quebec tests, the intent is the same; namely to assist the regulator in focusing resources on potential problem companies.

Of course, these tests, even when combined with the minimum solvency provisions, are not enough to adequately monitor solvency. Accordingly, each supervisor conducts audits (or examinations) of registered insurers. OSFI has a well staffed examination department and is required by statute to conduct examinations at least once every three years. Insurers highlighted by problems in the above tests are examined more frequently.

In addition to financial examinations, Quebec is conducting actuarial examinations at least once every three years of every insurer incorporated in the province. It is possible that in the near future this kind of examination may be extended to all companies licensed in Quebec. During an examination, the insurance company's guidelines (Underwriting and Claim Settlements) are reviewed and analyzed and the loss and loss adjustments reserve, policy liabilities and deferred policy acquisition costs are evaluated for adequacy. Working papers are reviewed to ensure that the actuarial exhibits of the annual statement are correctly completed.

### Liquidations In Canada

Prior to 1981 there had only been two small failures of property casualty companies in Canada, one of which was wound down without loss to policyholders. Since 1980 there have been failures associated with each bottom of the underwriting cycle. In 1981/82 two companies with a combined market share of 0.5% failed. In 1985/86 another four companies, with market share of 1.4% failed. A further two companies, with a market share of 0.3%, failed in the latest 1989/1990 trough.

The shock of the first set of failures prompted a re-examination of solvency issues by regulatory authorities and was accelerated by the second set of failures in 1985/1986. The most visible regulatory initiatives were changes in the Canadian and British Insurance Companies Act in three key areas. First, the Surplus Test provisions were strengthened by providing for minimums based on written premiums and incurred claims as well as the existing margins on reserves. Second, regulations were issued to address the excessive use of reinsurance as well as the use of unregistered reinsurance. Third, actuarial certification of the adequacy of outstanding claims and unearned premium provisions is required for all companies' 1992 annual statements.

Another initiative was the creation of the Property and Casualty Insurance Compensation Corporation (PACIC). This corporation functions like the guarantee funds in many U.S. states. Membership in this national organization is mandatory for all insurers operating in participating jurisdictions. PACIC co-operates with the liquidators of insurance companies, usually a regulatory authority, to ensure that all covered claims between \$500 and \$200,000 are paid. Certain lines of business (for example, marine) are not covered. Expenses and claims are covered by member companies on a post-assessment basis and by recoveries from the failed insurer.

## BILL C-28

On June 19, 1991 Bill C-28 was introduced in parliament. The purpose of this act is to reform the current law on insurance companies and fraternal benefit societies. At the time of writing, the bill has been passed by parliament, and should be proclaimed by the time this article is published. Regulations that will detail the specifics of implementation are expected to be broadly effective for the 1992 year-end.

This bill introduces the concept of the "Appointed Actuary", who has reporting duties beyond the traditional reserve certification duties. Three such reporting duties are present in the bill:

1. The actuary must report on the value of actuarial and other policy liabilities of the company at the end of the financial year according to generally accepted actuarial practice.
2. The actuary should report on the financial condition of the company, including the expected future financial condition of the company.
3. The actuary should report on any matters that have come to the actuary's attention, that, in the actuary's opinion, have material adverse effect on the financial position of the company and require rectification.

The first report is essentially the same report that is currently done in Canada at year end. This report is a valuation of the claims and policy liabilities as stated in the statutory annual statement. This report is to be presented at the annual shareholders' meeting.

The second report is the one of importance within the context of solvency. It is essentially broken down into two sections. The actuary must first comment, on a yearly basis and in accordance with generally accepted actuarial principles, on the financial condition of the company. This is broader than the straight valuation of policy and claims liabilities as it encompasses other items in the balance sheet. The second part of this report consists

of a comment on the expected future financial condition of the company. This second part is not mandatory, but may be required for a given company by the regulator. This second part is at the heart of the need to explore and develop recommendations on how to assess the solvency of an insurance company.

The third report clearly indicates the need for the actuary to be involved more closely in the day to day operations of the company. The actuary has a duty to report to the Chief Financial Officer or the Chief Executive Officer any matter that may have a material adverse effect on the company, and has a duty to inform the Board of the company when such report is made to management. Finally, the actuary will have to report such findings to the superintendent if, in the opinion of the actuary, the management of the company is not taking action to remedy the matter that has an adverse effect.

#### *Solvency and Solvency Testing - Life Companies*

Most of the work done to date on solvency in Canada relates to life insurance companies, to the extent that the CIA has developed Standards of Practice for Dynamic Solvency Testing for life insurance companies, which come into effect January 1, 1992. This work has been prompted primarily by a move to GAAP reporting for life companies, not by Bill C-28. However, the "Appointed Actuary" provisions of Bill C-28 will also apply to non-life companies, probably in regulations which will recognize the differences in the economics and the preparation of the reporting actuaries.

The committee responsible for the creation of the recommendations of the CIA on solvency for life companies explored a variety of stochastic/statistical models to describe the behaviour of a typical life insurance company through time. After a considerable amount of effort, it concluded that no theoretical model is adequate in theory or practice to reflect the variety of products and conditions under which these products are sold.

Consequently, the committee devised the new approach called Dynamic Solvency Testing (DST). This approach takes the form of scenario testing.

To apply DST, the actuary creates a deterministic model of the insurance company. The actuary uses his or her experience and knowledge of the company to design a model that reasonably reflects key variables for the company, without becoming needlessly complicated. Key variables were isolated for the materiality of their impact on the solvency of life insurance companies given changes through time. These key variables are:

1. mortality rates;
2. morbidity rates;
3. withdrawal rates;
4. interest rate;
5. new sales level;
6. combined worsening of mortality and morbidity;
7. default rate; and
8. expense rate.

The effect of changing each variable can be tested. For example, what would happen to the solvency margin of the company over the next five years if the mortality rate increased by 3% of the base rate for each and every year in that five year projection? A mapping of the results of all scenarios produces a range of likely surplus positions over the next five years. If, in all but unusual circumstances the company remains solvent, the actuary can be reasonably confident that the solvency of the company is not in jeopardy in the short term. The list above is not exhaustive, it is the responsibility of the actuary to consider all relevant factors.

#### *Solvency and Solvency Testing - P & C Companies*

In response to Bill C-28, the CIA Solvency Committee established a sub-committee in 1991 to work on recommendations for solvency in regards to P&C companies. The sub-committee is working to develop an approach that draws on the experience and recommendations developed for life companies. The sub-committee also intends to draw

on the extensive literature, mostly European, dealing with solvency of P&C companies.

To date, the sub-committee has isolated variables that are pertinent to the future solvency of P&C companies, and matched them against specific balance sheet and income statement items. The variables are:

1. reinsurance programme;
2. investments;
3. capital structure;
4. default rate on reinsurance ceded;
5. expense levels and volume and mix of business;
6. rate adequacy;
7. claim frequency and severity;
8. inflation;
9. interest rate(s); and
10. legislative changes.

The above list is not exhaustive, and represents in broad form the main elements that are being considered at this time. The first six have a higher regulatory profile at current time. The first two are perhaps of greatest concern because of their impact on many annual statement items, and in particular on the solvency test described in the appendices to this paper.

The sub-committee's resulting recommendations, which may still be several years from completion, should recognize the unique aspects of P&C companies, while maintaining sufficient parallels to the Standards for life companies.

In the review of literature to-date, the sub-committee has found the work begun by the Solvency Working Party of the Institute of Actuaries' General Insurance Study Group, and continued by Daykin and Hey, to be particularly useful. It is interesting to note that the initial British work parallels Canadian efforts to date. It began with a review of the major

uncertainties facing P&C companies, and was continued with the development of a model.

The model, which can be run in a stochastic or non-stochastic mode, has evolved from a pure run-off model, to one which incorporates new business assumptions, and finally to its current state which includes the interaction between company and market. The Canadian P&C sub-committee is currently considering following a similar path.

Extensive work will be required to adapt the model to Canadian circumstances. Key areas may be Canadian accounting standards, the Canadian economy and the investment sub-model, the Canadian insurance market interactions and an explicit reinsurance module. Another major decision will be the time frame contemplated. Although DST for life companies uses a five year time horizon, an initial agreement between the CIA and the property casualty industry contemplates only a one year "forecast" for P&C companies. The sub-committee hopes that, by drawing on the existing Canadian and European work, it will be able to complete its work on a Canadian P&C model expeditiously. An appropriate model will enable the sub-committee to analyze the potential impact of the variables identified above. This analysis will in turn lead to practical recommendations and guidelines to assist practising actuaries in fulfilling their new statutory responsibilities.

These guidelines will eventually become standards of the CIA and will be enforced through the CIA's discipline process. Individual reports will also be actively reviewed by the regulators, who will in turn work with the CIA to ensure that their concerns are being met.

**APPENDIX I - FEDERAL MINIMUM ASSET TEST**  
**(SECTION 171)**

*Assets Available for Test Purposes*

Balance sheets assets, which are basically stated on a book value GAAP basis, are only available for test purposes after the following adjustments;

- (i) Invested Assets are marked up or down to market value.
- (ii) Certain assets are Non-Admitted. For the 1990 test, non-admitted assets included premiums more than 60 days past due, automobiles, furniture and equipment and deferred income tax debits.
- (iii) No credit can be taken for Deferred Policy Acquisition Expenses.

*Liabilities for Test Purposes*

The principal adjustment to balance sheet liabilities is the exclusion of any reserve credits for unregistered reinsurance.

*Reinsurance Ratio*

This ratio, which is used to generate a credit in two of the minimum margin tests, is the ratio of reinsurance claim recoveries incurred to gross claims incurred in the preceding 12 months. The ratio used is the lesser of the actual ratio and 50%.

Margin required for test purposes

The margin is the greater of:

- (i) 15% of outstanding claims (incl. adj. expenses)  
plus 15% of unearned premiums (reduced if the greater of expected and actual loss ratio is less than 95%, by line.)  
plus 15% of reserves for unregistered reinsurance recoverable (except to the extent covered by amounts due or security held).
- (ii) 15% of gross written premiums (GWP) plus the lesser of \$500,000 and 5% of GWP, less the gross margin times the reinsurance ratio.
- (iii) 22% of average gross incurred losses over last 3 years plus the lesser of \$500,000 and 7% of the average gross losses, less the gross margin times the reinsurance ratio.

For accident and sickness policies, the margin is only based on a calculation similar to (i) above.

For more details, please obtain a copy of Section 171 of the federal insurance act and a copy of a Canadian Annual Statement blank.

In some circles, a company is only considered rock solid if tested assets exceed the sum of tested liabilities and the required margin by more than 25%.

## APPENDIX II - QUEBEC MINIMUM EXCESS OF ASSETS OVER LIABILITIES

According to section 275 of the Quebec Act respecting insurance, every insurer shall maintain assets that exceed its liabilities in accordance with the valuation standards established by regulation.

The Government established by regulation a method for determining the minimum excess amount of assets over liabilities that every insurer is required to maintain to continue its operations without restrictions or conditions.

Regulation stipulates that the excess of assets over liabilities must be at least equal to the total of the following:

- (i) 15% of unpaid claims and adjustment expenses (excluding those on accident and sickness policies);
  
- (ii) 15% of unearned premiums excluding those on accident and sickness policies (reduced if the greater of expected and actual loss ratio is less than 95% by line). The expected loss ratio must not be less than the total of 60% of the ratio of the current year and 40% of the ratio of the preceding year. The margin is the amount that the selected loss ratio plus 20% exceeds 100%.

Notwithstanding any regulation made, the Inspector General may give written directives to an insurer to require it to maintain a greater excess amount than the amount

determined according to the method fixed by regulation, taking into account the particular composition of its assets or liabilities.

According to the written directives given by the Inspector General, every insurer shall also maintain an excess of assets over liabilities large enough to finance the following assets or liabilities:

- (i) Accounts receivable due 90 days and over from insurance agents and brokers;
- (ii) Premiums receivable from policyholders and instalment premiums;
- (iii) Automobile, furniture and equipment;
- (iv) Deferred policy acquisition expenses;
- (v) Prepaid expenses;
- (vi) Deferred income tax debits;
- (vii) Required reserve for reinsurance ceded to unregistered insurers.

For more details, please obtain a copy of Section 275 of the Quebec insurance act, its regulation and a copy of page 74 of the Canadian Annual Statement blanks.

## APPENDIX III - CANADIAN RATIO TESTS USED BY THE PROVINCE OF QUEBEC

Note: Certain items may be calculated in the Canadian annual statement on a different basis than the U.S. Commissioners' statement. For an overview of key differences, please see Chapter 16, Canadian Accounting, by John Clark and David Oakden in Strain, R.W., Property-Liability Insurance Accounting.

The following ratios are used by the province of Quebec in its initial diagnosis of the financial soundness of a general insurer. It should be understood that a final judgement is only made after further investigation of the insurer's particular situation. It is also worth noting that other Canadian jurisdictions may use different ratios, or have a different acceptable range for the same ratios.

Broadly speaking, the tests fall into two groups. One group tests solvency, while the other tests profitability.

The ratios used as a guide to solvency follow. In all of the formulas, "Surplus" refers to Capital, Surplus, General and Contingency Reserves.

<u>Formula</u>	<u>Normal Result</u>
1. Surplus + Total Assets	≥23%
2. Surplus + Total Liabilities	≥30%
3. Net Written Premium + Surplus	≤300%

4. Gross Written Premium + Surplus	≤600%
5. Premium Ceded to Non-registered Reinsurers + Net Written Premium + Direct Written Premium	≤100% ≤25%
6. Change in Surplus + Opening Surplus	-10% ≤ R ≤ 50%
7. Liabilities (w/small adjustments) + Invested Assets (w/certain exclusions, particularly real estate that exceeds 5% of Liabilities)	≤ 105%
8. Liabilities (w/small adjustments) + (Invested Assets (excluding real estate) plus Accounts Receivable not overdue 90 days)	≤ 100%
9. Premiums Due + Surplus	≤ 40%
9A. Premiums Due plus amounts due from affiliates + Surplus	≤ 50%
10. Premiums Due (incl. Instalment) + Direct Premiums (Less Commissions)	≤ 20%
11. Surplus/Deficit on claim Reserves + Opening Surplus	≤ 25%
12. Claim Reserves + Surplus	≤250%

The following ratios are used as a guide to the insurer's profitability:

1. Net Written Premiums + Gross Written Premium + Direct Written Premium	≥ 50% ≥ 25%
2. Change in Net Written Premium + Prior Year's Net Written Premium	-33% ≤ R ≤ 33%
3. Change in Gross Written Premium + Prior Year's Gross Written Premium	-25% ≤ R ≤ 25%
4. Operating Ratios to Net Earned Premium	Used to determine source of profitability or losses.

- |  |                                     |
|--|-------------------------------------|
| 5. Investment Income<br>Market<br>+ Average Invested Assets (Less Borrowings)                        | Depends on Investment               |
| 6. Net Income<br>+ Average Surplus   | Greater than Investment<br>Ratio 5. |
| 7. Gross Expense Ratio<br>(General Expenses + Gross Commissions + Taxes)<br>+ Gross Written Premiums | $\leq 33\%$                         |

Source: Letter dated August 19th, 1991 from Jean-Marie Bouchard, Quebec's Inspector General of Financial Institutions, to all insurers licensed in Quebec.

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