Total balance sheet approach
A Trinidad & Tobago Case Study

December 4th 2008
David Congram
Agenda

- Background
- Working Group
- Framework
- Valuation Methodology
- Capital Methodology
- Conclusions
Objectives

- Achievement of developed-country status by the year 2020 as the principal developmental goal of the country.

- Development of a stable and well-regulated financial services sector that can respond adequately to changes in the international environment.
Key implications for the Insurance Sector:

- Revise the insurance legislation and regulations in conjunction with the industry in line with the Core Insurance Principles of the International Association of Insurance Supervisors.

- Work together to develop appropriate financial reporting standards for use until such time as the International Financial Reporting Standards for insurance entities become available.
T&T Current Environment

- Different Regulatory Valuation Reporting Methods
- All companies reporting under IFRS.
- Application of IFRS 4 for insurance calls for continuing the existing company accounting policy.
- A common International Insurance accounting approach will not be implemented until Phase II. Likely not until 2013.
- A liability adequacy test is only required if company’s existing accounting policy does not meet certain criteria
## Current valuation methods

<table>
<thead>
<tr>
<th>Valn Method</th>
<th>No of Co’s using</th>
<th>Valn Method</th>
<th>% Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Premium</td>
<td>6</td>
<td>CRVM</td>
<td>2.2</td>
</tr>
<tr>
<td>CRVM (US Method)</td>
<td>1</td>
<td>Zillmer</td>
<td>18.6</td>
</tr>
<tr>
<td>Gross Premium Method</td>
<td>4</td>
<td>FPT</td>
<td>0.9</td>
</tr>
<tr>
<td>Fund Value</td>
<td>4</td>
<td>NLP</td>
<td>1.8</td>
</tr>
<tr>
<td>PV of Annuities</td>
<td>2</td>
<td>Fund Balance</td>
<td>9.0</td>
</tr>
<tr>
<td>CALM / PPM</td>
<td>4</td>
<td>PPM</td>
<td>55.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CALM</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Primary Attributes of International IFRS

- Insurance to be subject to the same general principles as other financial services firms
- Principles-based approach with additional guidance
- Consistency of treatment between insurance, investment management and banking products
- Proposal outlined in Phase II
  - Single measurement model for Life and non-life
  - Prospective valuation – Present Value of all future cash flows
  - Paradigm of Current exit value - transfer value
  - De-linking asset and liability measurement
Working Group

2005

- Work began on the new Insurance Act and Capital Adequacy approach
- Need identified for a consistent valuation method for liabilities

2008

- May 16, 2008 Central Bank hosted initial meeting with
  - Caribbean Actuarial Association
  - Association of Trinidad and Tobago Insurance Companies
  - Institute of Chartered Accountants

  to consider how to approach a consistent valuation method
A single method for Capital Adequacy framework.

Known by the Insurance Industry in Trinidad.

In use by some companies either as valuation method or for IFRS adequacy testing.

Software is easily accessible.

External experience to support such an approach is in greater supply.

It will need to be fitted within the current legislative structure.
Capital & Liability Framework

<table>
<thead>
<tr>
<th>Total Assets Available</th>
<th>Liabilities and Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min Req Capital</td>
</tr>
<tr>
<td></td>
<td>Risk Margin</td>
</tr>
<tr>
<td></td>
<td>Best Estimate</td>
</tr>
<tr>
<td></td>
<td>Insurance Obligations</td>
</tr>
</tbody>
</table>

Assets Required for Total Balance Sheet

Target Required Capital

Available Capital

Solvency Buffer

Liabilities
Capital & Liability Framework

Total Assets Available

Liabilities and Capital

Min Req Capital

Risk Margin

Best Estimate Insurance Obligations

Solvency Buffer

Target Required Capital

Available Capital

Liabilities

Assets Required for Total Balance Sheet

Assets Required for Liabilities
Valuation Methodology

- Local – Proposed by T&T Chapter
- Regional – Adopt Canadian - Jamaican approach
- International – Adapt IFRS Liability Adequacy Test
## Comparison of approaches

<table>
<thead>
<tr>
<th></th>
<th>Local</th>
<th>Regional</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projection of future cash flows</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Requires best estimates</td>
<td>Current experience</td>
<td>Current experience</td>
<td>Current experience</td>
</tr>
<tr>
<td>Margins</td>
<td>Explicit compulsory and discretionary</td>
<td>Explicit PFAD’s</td>
<td>Explicit market value margins</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>Consistent with market yields on fixed rate securities</td>
<td>Consistent with yields on supporting asset portfolio</td>
<td>Risk free yield curve</td>
</tr>
<tr>
<td>Participating business</td>
<td>Includes shareholder transfers and stabilization reserve</td>
<td>Policyholder expectations</td>
<td>Contingent obligations</td>
</tr>
</tbody>
</table>
## Assessment against objectives

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Local</th>
<th>Regional</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>International practice</td>
<td>Two steps</td>
<td>Two steps</td>
<td>Two steps</td>
</tr>
<tr>
<td>Relevant to the market</td>
<td>?</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Regional compatibility</td>
<td>No</td>
<td>Partially</td>
<td>?</td>
</tr>
<tr>
<td>Tech Provisions Adequate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tech Provisions Reliable</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tech Provisions Objective</td>
<td>Judgment</td>
<td>Judgment</td>
<td>Judgment</td>
</tr>
<tr>
<td>Tech Provisions Comparable</td>
<td>Locally</td>
<td>Partially Regionally</td>
<td>Partially Internationally</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>Yes</td>
<td>Yes</td>
<td>Investment and Service contracts</td>
</tr>
<tr>
<td>Fit T&amp;T legal framework</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry acceptance</td>
<td>Maybe</td>
<td>Known</td>
<td>Maybe</td>
</tr>
<tr>
<td>Practical</td>
<td>?</td>
<td>Yes</td>
<td>?</td>
</tr>
</tbody>
</table>
Approach

- No change in the assets an insurer can invest
- The measurement method to be applied to assets - IFRS
- Long Term Business - Caribbean (PPM)
- Short Term Business – Company Basis
  (However we will be collecting Loss reserve data by accident year)
Capital Adequacy Ratio

Capital Available divided by Capital Required

For example, if
- Capital Available = $200 million
- Capital Required = $100 million

Then the Capital Adequacy Ratio is 200%
Tier 1 is the Core Capital and is unrestricted:
- Common shareholders' equity
- Retained earnings and Life surplus

Tier 2 is Supplementary Capital
- Tier 2 capital is constrained by amount of Tier 1 Capital.
- Other types of capital
## Asset Classes and Risk Components

<table>
<thead>
<tr>
<th>Asset</th>
<th>Risk Components</th>
<th>Asset Liability Mismatch</th>
<th>Duration Stress Test</th>
<th>Currency Open Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Income</td>
<td>Default Based on Rating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Income Securities</td>
<td>Investment Volatility Based on nature &amp; if quoted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real Estate</td>
<td>Duration Stress Test Based on degree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receivables &amp; Other Assets</td>
<td>Rating &amp; type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off Balance Sheet</td>
<td>Off Balance Sheet Residual maturity, type, counterparty</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- **Default Based on Rating**
- **Investment Volatility Based on nature & if quoted**
- **Off Balance Sheet Residual maturity, type, counterparty**
- **Concentration Based on degree**
- **Asset Liability Mismatch**
- **Duration Stress Test**
- **Currency Open Positions**
Risks Considered for Life products:

- Mortality assumptions
- Morbidity assumptions
- Lapse rate assumptions
- Interest rate margin pricing assumptions
- Guarantees provided to (off-balance sheet) segregated funds

Risks Considered for Non-Life products:

- Inadequacy in Unearned Premium provisions
- Variation in outstanding claims provisions
- Exposure to catastrophes
Two step process

- Both liabilities and capital requirements
- Where should the risk be addressed?
  - Credit risk or asset default – risk free discount rates
  - Market risk – mis-match liability
  - Concentration risk
  - Diversification
  - Insurance risk
  - Risk margins – explicit to cost of capital
  - Operational risk
- Capital requirements will need to be funded
- Liability strengthening will need to be funded
Impact study

- Test the insurance industry’s capabilities

- To support the development of industry’s risk management

- To assess the magnitude of the new capital requirement and liability changes and compare the resulting amount of retained earnings and surplus with the prior year-end,

- To determine the magnitude of differences in Asset Valuation under QIS I (IFRS) and the original statutory filing.
Initial Conclusions

- We expect to be able to achieve our objective of introducing a Capital adequacy framework by 2009.
- We will need some time for an orderly transition.
- All Industry members will have some experience in applying a prospective valuation method ahead of IFRS for Insurance products.
- This work will contribute to the review of valuation assumptions in preparation for Phase 2 IFRS.
- Will provide insight and preparation for the International Financial Center and anticipated increased competition.
- Professions will have time to prepare.
Opportunity for the Actuarial Profession
Questions?