

**NON-BANK FINANCIAL
INSTITUTIONS REGULATORY
AUTHORITY
(NBFIRA)**

INSURANCE PRUDENTIAL RULES
In terms of Section 50 of the NBFIRA Act

IPR1L

Prescribed Valuation Method
Long Term Insurance Liabilities

Effective March 1, 2012

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1. Introduction

1.1. Insurance Prudential Rules

1. NBFIRA's Insurance Prudential Rules (IPRs) set out the prudential requirements for regulated insurers operating in Botswana.
2. This note sets out in draft form material that may form the basis of IPR1L.

1.2. Valuation of Long Term Insurance Liabilities

3. Long term Insurance liabilities should be valued in accordance with the requirements set out in IPR 1L. The approach is to use best-estimate valuation assumptions, adjusted by compulsory margins and possibly also by discretionary margins. It aims to ensure that the long term insurer should have sufficient assets to meet all its future liabilities in respect of its existing in-force business if actual experience deviates from the valuation assumptions.

1.3. Valuation of Assets

4. Valuation of assets is set out in detail in IPR2L. In principle, assets must be valued at fair value, except where IPR2L indicates otherwise, and the main exception to the use of fair value is in respect of the valuation of group undertakings.

2. Definitions

5. For these purposes, unless the context indicates otherwise:
6. “Act” means the Insurance Industry Act, Cap 46:01 and a word or expression to which a meaning has been given in the Act, has that meaning;
7. “best-estimate assumption” means an assumption that:
 - a. Is realistic;
 - b. Depends on the nature of the business concerned;
 - c. Is guided by immediate past experience, as modified by any knowledge or expectation of the future;
8. “PCT” means the prescribed capital target as set out in Insurance Prudential Rule IPR3L.
9. “bonus stabilisation reserve”, in relation to a category of participating policies, is a reliable estimate of the accumulated differences at the valuation date between the surplus attributable to policyholders and the value of bonuses already declared; the value of bonuses must be calculated on the valuation basis as described in these requirements and needs to allow appropriately for bonuses that have not already been declared;
10. “capital requirement”, in relation to a non-bank financial institution, means the capital or solvency margin, as the case may be, required for that institution by the regulatory authority concerned;
11. "compulsory margins" mean the margins that must be added, in terms of Section 5 of this Rule;
12. "discretionary margins" mean the margins that may be added, in terms of Section 6 of this Rule;
13. “embedded investment derivative” means an investment derivative embedded within a life insurance policy;
14. "GAAP" means the Framework of Generally Accepted Accounting Practice;
15. "fair value” means the fair value of an asset determined by reference to the Statements of Generally Accepted Accounting Practice;
16. “IFRS” means International Financial Reporting Standards;
17. “IPR” means an Insurance Prudential Rule issued by the NBFIRA
18. "materiality guidelines" refer to acceptable margins of error and approximate valuation methods, and not to the effect of different valuation assumptions;
19. “minimum investment maturity guarantee” means the minimum contractual amount that is guaranteed on maturity for policies with an investment component. This minimum amount is paid on maturity irrespective of the actual underlying investment performance.
20. “non-bank financial institution" means a non-bank financial institution as defined in the Non-Bank Financial Institutions Regulatory Authority Act, CAP 46:08;
21. “policy” means a long term policy;

22. "policy accumulation fund" means policy accumulation fund as defined in the Insurance Industry Act;
23. "unbundled policy" means a policy designed with separate risk and investment components

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3. Prescribed Valuation Method

24. The value of the assets, liabilities and capital adequacy requirement of insurers must be calculated according to the Insurance Prudential Requirements, as set out in the Insurance Industry Act. This method is referred to as the Prescribed Valuation Method (“PVM”).
25. It requires, among other things, that the insurer brings into account:
 - a. Premiums to be received in the future;
 - b. Assumptions regarding future investment returns, bonus declarations, expenses, mortality experience, morbidity experience, lapses, surrenders, and other relevant factors, which assumptions:
 - i. Must be best-estimate assumptions;
 - ii. Must take into account the reasonable expectations of policyholders;
 - iii. Must be modified by compulsory margins;
 - iv. May be modified further by discretionary margins;
 - c. A minimum level of financial resilience through compulsory margins to best estimate assumptions. Additional resilience and prudent release of profits is achieved by the inclusion of additional discretionary margins.
26. Except if these Requirements specifically direct otherwise:
 - a. Profit must be recognised over the lifetime of policies, to avoid losses in the future as a result of the premature recognition of profit;
 - b. Assets must be valued in accordance with accounting guidelines in force in Botswana to produce annual published financial statements (GAAP or whatever is applicable at the date); and
 - c. The liabilities of an insurer, other than its contingent liabilities under long term policies, must be determined in accordance with the same accounting guidelines.
27. Where the insurer applies materiality guidelines in the valuation of its assets or liabilities, they may not be less conservative than the materiality guidelines applied by its external auditors.

4. General provisions

4.1. Premiums

28. The premiums that must be valued are those still to be paid under the policy, which the insurer has not yet recognised for accounting purposes, subject to 4.2 below.

4.2. Policy Options

29. Profit may not be recognised in respect of policy options that may be exercised by policyholders. However, losses that are expected in respect of such options must be recognised. The insurer may group its business into broad categories with expected similar option exercise patterns. Only the net loss in a category, if any, has to be recognised.

4.3. Shareholder's Participation

30. Where shareholders may participate in the net investment returns earned on the underlying policy assets the insurer must include in its liabilities a provision for the portion it expects to allocate to shareholders. Where the allocated portion will be available as a buffer in adverse situations, the provision must be the higher of:
- a) the expected allocation to shareholders;
 - b) the increase, in the value of the policy liability concerned, arising from the application of the compulsory margins.
31. The basis of calculation of the provision must be disclosed in the Valuator's report LR3.

4.4. Bonus Stabilisation Reserves

32. The value of the liabilities must be increased by any positive bonus stabilisation reserve. If there is a negative bonus stabilisation reserve, the value of the liabilities may be reduced by, at most, the amount that can reasonably be expected to be recovered by a distribution of lower bonuses during the ensuing three years. This may be done only if the Valuator is satisfied, as far as is reasonably possible in the circumstances, that the bonuses will be reduced to the extent necessary during the ensuing three years, if the fair value of the corresponding assets does not recover more than would be produced by normally assumed future investment returns.

5. Compulsory Margins

33. The following compulsory margins must be added to the best-estimate assumptions, provided that an assumption must be increased, or decreased, depending on which alternative gives rise to an increase in the liability of the category of policies concerned:

	Item	Compulsory margin
1	Charge against investment return	0.25 percentage points per year in the management fee, or in an equivalent asset-based or investment performance-based margin
	Note	For item 1 the compulsory margin is expressed as an addition/subtraction from the best-estimate assumption. If the best-estimate assumption is, say, 10%, and the compulsory margin is 0.25 percentage points, then the assumption including the margin would be 10.25% or 9.75%, as the case may be.
2	Mortality claims	7.5%
3	Morbidity claims	10%
4	Health claims	15%
5	Lapses	25%
6	Disability Income Benefits in payment terminations	10%
7	Surrenders	10%
8	Expenses	10%
9	Expense inflation	10% - of the estimated escalation rate
	Note	For items 2 to 9 the compulsory margins is expressed as a percentage of the best-estimate assumption. If the best-estimate assumption is, say, 5%, and the compulsory margin is, for example, 10%, then the assumption including the margin would be 5,5% or 4,5%, as the case may be.

34. The compulsory margins must be added throughout the lifetime of policies. The exception is for regular renewable policies where the margin should be added for a minimum period of twelve months, or up to the next renewal date, if this period is longer than twelve months. Future management actions may not be assumed to reduce the compulsory margins.
35. If retrospective reserves are calculated and shown in the annual regulatory return, the value of the retrospective reserves should be at least equal to the corresponding prospectively calculated reserves, where the prospectively calculated reserves include allowance for compulsory margins.

6. Discretionary Margins

36. Discretionary margins may be added to the best-estimate assumptions.
37. The Valuator must, in the Valuator's report LTR3:
 - a. Define all explicit and implicit discretionary margins;
 - b. Quantify them where they are explicit;
 - c. Give the reason why they have been added.
38. The deferred tax asset or liability, determined according to the Botswana accounting standards, relating to assets of a policyholder fund and which is recognised in the annual financial statements, must be taken into account in determining the value of the liabilities of the fund.

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7. Policyholder Reasonable Expectations

39. The reasonable expectations of policyholders will depend on the type of policy, the practice of the insurer, the manner in which benefits are quoted and presented to policyholders, and the expectations created by marketing material.
40. The reasonable expectations of policyholders must be taken into account to the extent that, in the opinion of the Valuator, they are likely to influence the decisions of the insurer on bonus declarations.
41. Except in the case of linked policies:
 - a. The future bonus rates assumed for policies must be consistent with the discount rate used in the valuation of the corresponding liabilities, taking into account the reasonable expectations of the policyholders as determined by the Valuator after having considered the issues set out in this paragraph;
 - b. Where the maintaining of the bonus rates last declared is not assumed for all future years, this must be disclosed in the Valuator's report LTR3, with details of the reductions or increases in assumed bonus rates;
 - c. Where applicable, the value of non-vesting bonuses that have accumulated must be included in the valuation – and in addition, depending on the circumstances, future additions to such bonuses may have to be assumed, for example, where the amount of a bonus depends on a scale that is related to the duration the policy has been in force.

8. Allowance for Embedded Investment Derivatives

8.1. General Description

42. This section has been incorporated into the Prudential Rules in order to ensure that the valuator applies his or her mind in calculating adequate reserves for embedded investment derivatives. The principles below are based on The Actuarial Society of South Africa's professional guidance note PGN110.
43. Examples of embedded investment derivatives are as follows:
- a. Minimum investment maturity guarantees
 - b. Guaranteed annuity options and/or minimum increase rate guarantees on variable annuities
 - c. Minimum investment related risk benefits (e.g. on death) or surrender benefits
 - d. Implied investment guarantees related to with-profit business in the form of guaranteed bonuses
44. It should be noted that policyholder liabilities must be calculated using PVM, which is generally based on a real-world approach where a risk premium is taken into account for more risky asset classes. This section therefore does not impose a new reserving requirement, but instead recommends that reserving for embedded investment derivatives is market-consistent. Using a market-consistent approach may result in additional liabilities being held in addition to those calculated using PVM.
45. The PVM is based on deterministic expected investment returns that might not appropriately allow for the volatility of the investment returns underlying embedded investment derivatives. Deterministic methods are not appropriate to quantify the reserves that must be held to fund possible additional liabilities (i.e. shortfall amounts relative to the guarantees) under embedded investment derivatives. In order to quantify the reserves, stochastically simulated future investment returns are needed.
46. A market-consistent stochastic investment return model is required for the purpose of generating future investment returns. These models generate scenarios for future values of economic variables but do so based on assumptions that are derived from actual market prices of tradable assets. Most models will have as inputs a term structure of interest rates and it is recommended that a zero coupon yield curve be used.
47. Best-estimate assumptions (other than the stochastically generated investment returns) should be used in projecting future experience.
48. The additional liabilities at claim date are then discounted at an appropriate discount rate to determine the present value of the reserve required at the valuation date.

8.2. Example: Minimum Investment Maturity Guarantees

49. This section provides an outline for the reserve calculation of **minimum investment maturity guarantees**. A similar methodology should be followed in calculating other embedded investment derivatives.
- a. For each policy with a minimum contractual maturity value, the market value of the underlying assets (i.e. the asset share) as at the valuation date is used as the starting point.

This value is accumulated with future premiums at the stochastically simulated investment returns allowing for charges and taxation to determine the projected maturity value for each policy. The projected maturity values are calculated based on best estimates of all future contingencies (e.g. premium increases), other than decrements and the future investment returns.

- b. For each policy, the projected maturity value is compared to the contractual minimum guaranteed maturity value, where the contractual minimum guaranteed maturity value is also calculated without allowance for decrements. If the projected maturity value exceeds the guaranteed maturity value, a zero shortfall is recorded. If the projected maturity value is less than the minimum guaranteed maturity value, the shortfall should be reserved for.
- c. The shortfall at the maturity date must be discounted to quantify the value of the required reserve at the valuation date. The discount rate should be consistent with the stochastically generated investment return. The discounted shortfall must then be multiplied by the probability of the policy reaching maturity, by taking account of decrements (based on assumptions including compulsory margins). Once all the policies have been projected on a specific series of simulated investment returns, the entire process is repeated for each simulation of future investment returns. **The average discounted shortfall across all simulations is then taken to be the guarantee reserve.**

9. Valuation of Unbundled Policies

50. The liabilities in respect of unbundled policies may not be less than the sum of:
- a. Their underwriting liabilities;
 - b. Their policy accumulation funds, including any bonus stabilisation reserve in respect of those policies.
51. The value of the underwriting liabilities must be determined according to the following formula, and by discounting the experience expected in the future in respect of the items in the formula:

A plus B plus C minus D minus E

where:

A represents mortality and morbidity claims, including compulsory margins and, if any, discretionary margins;

B represents commissions, expenses, and expense inflation, including compulsory margins and, if any, discretionary margins;

C represents the cost of guarantees that have been given under the policy;

D represents the provision in the premium for expenses, guarantees, risk cover and profit; and

E represents the future fees and charges that may be deducted in terms of the policy.

10. Reinsurance

52. For the calculation of the long term insurer's net liabilities the insurer should take into account the impact of any allowable reinsurance contract entered into by the insurer.
53. Allowable reinsurance is defined as reinsurance placed with a reinsurer with a credit rating of BBB or better. Credit ratings may be obtained from any acceptable credit rating agency, but the same credit rating agency must be used to provide ratings for all reinsurers. Where applicable the credit rating must be that applicable to the local office of the reinsurer.
54. In financial or other reinsurance arrangements, where some or all of the risk is transferred back to the insurer, the insurer must hold whatever is the appropriate amount of liabilities in the light of the risk that is effectively retained.

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