GSI No. 31

Guernsey Financial
Services Commission

THE INSURANCE BUSINESS (SOLVENCY) RULES 2015

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Part 1 – Introduction

1. The Guernsey Financial Services Commission (the "Commission"), in exercise of the powers conferred upon it by Section 38A of the Insurance Business (Bailiwick of Guernsey) Law, 2002, as amended and of all other powers it enables, hereby makes the following rules:–

Citation

2. These rules may be cited as the Insurance Business (Solvency) Rules, 2015.

Commencement

3. They shall come into force on 1 May 2015, subject to any provisions for transitional relief which may be agreed by the Commission .

Status

4. They shall have the status of rules of the Commission under the provisions of section 38A of the Insurance Business (Bailiwick of Guernsey) Law, 2002 (the "Law"), as amended.

5. Section 30 of the Law requires a licensed insurer to at all times maintain capital resources in accordance with the provisions of these Rules.

Insurer Categorisation

6. For the purposes of these Rules each insurance licensee will fall under one of the following categories:

(a) Category 1 - Commercial Life Insurers - a long-term insurer with any element of unrelated party business;

(b) Category 2 - Commercial Life Reinsurers - a long-term reinsurer with any element of unrelated party business;

(c) Category 3 - Commercial General Insurers - a general insurer with an element of unrelated party business;

(d) Category 4 - Commercial General Reinsurers - a general reinsurer providing reinsurance to a commercial insurer, whether or not part of the same group, and with no direct business;

(e) Category 5 - Captive (Re)insurers - a life or general insurance or reinsurance entity created and owned, directly or indirectly, by one or more industrial, commercial or financial entities or associations, the purpose of which is to provide insurance or

reinsurance cover for risks (other than commercial insurance risks) of the entity or entities to which it belongs, or for entities connected to those entities; and

(f) Category 6 - Special Purpose Entities - entities that the Commission agrees in writing may fall into this category. This is primarily intended for insurer's whose underwriting and counterparty credit risk are effectively eliminated - examples of these would include transformer cells, fully collateralised catastrophe cells, ILS cells and fully funded entities.

In the case of a Protected Cell Company ("PCC"), each cell and the core should be allocated to one of the above categories.

7. In the event an insurer does not fit any of the precise definitions above, the insurer should contact the Commission to agree the appropriate category to be used. The Commission will deal with such requests on a case by case basis, with a key determinant being the consideration of risk to unrelated parties.

Part 2 – Capital Adequacy

2.1 General Rules

8. A licensed insurer must at all times hold regulatory capital resources (as defined in paragraph 23) greater than or equal to its Minimum Capital Requirement ("MCR").

9. A licensed insurer must at all times hold regulatory capital resources (as defined in paragraph 22) greater than or equal to its Prescribed Capital Requirement ("PCR").

10. It is a requirement of section 32 of the Law that a licensed insurer which is a company shall maintain a paid up share capital of not less than the Capital Floor or an equivalent sum in any currency acceptable to the Commission.

11. It is a requirement of section 32 of the Law that a licensed insurer which is a company shall maintain minimum shareholders' funds of at least 75% of the Capital Floor or an equivalent sum in any currency acceptable to the Commission.

12. The Capital Floor of a licensed insurer, pursuant to paragraph is -

    i. £100,000 for a licensed insurer carrying on general business;
    ii. £250,000 for a licensed insurer carrying on long term business;
    iii. £250,000 for a licensed insurer carrying on both long term business and general business; or
    iv. an amount specified in writing by the Commission.

13. For Protected Cell Companies ("PCCs") the Capital Floor only applies to the overall PCC. There is no Capital Floor for each cell or the core.

14. The MCR of a licensed insurer must be no less than the Capital Floor.

15. The Commission may at any time by notice in writing served on a licensed insurer, a class of licensed insurers or licensed insurers generally, modify the requirements to be used for computations of solvency; and in modifying the said requirements, the Commission may consider -

    i. the nature and classes of business involved,
    ii. the spread of risk and the historic and industry based claims data,
    iii. the size, complexity of business and business risks of the licensed insurer, and
    iv. any other information which is available to the Commission and which it considers relevant.

16. A licensed insurer must calculate its PCR and report the results of that calculation to the Commission at least once a year. A regulatory capital resources calculation should be submitted as part of a licensed insurer's annual return and be calculated and reported, where

the Guernsey standard formula is used (as described in Part 4), using the standard format determined by the Commission and published on its website.

17. A licensed insurer must monitor the amount of its regulatory capital resources and its MCR on an ongoing basis.

18. If the licensed insurer's risk profile deviates significantly from the risk profile detailed in its last reported PCR, the licensed insurer must recalculate its PCR without delay and report it to the Commission.

19. A licensed insurer must recalculate the PCR if requested by the Commission.

2.2 Regulatory Capital Resources

20. The regulatory capital resources must be determined as set out in sections 21 to 34. Alternative definitions which may be specified by other regulatory regimes are not permitted.

21. There are two distinct definitions of the regulatory capital resources of a licensed insurer which are required to meet the PCR and the MCR respectively.

22. The regulatory capital resources to meet the PCR are equal to -

    (a) the difference between assets and liabilities on the basis of their determination in accordance with Recognised Accounting Standards; plus

    (b) the value of any basis adjustment; less

    (c) the value of any regulatory adjustment determined by the Commission.

23. The regulatory capital resources to meet the MCR are equal to -

    (a) the regulatory capital resources to meet the PCR; less

    (b) the sum of -

        (i) the value of type 2 letters of credit;

        (ii) the value of issued but uncalled capital; and

        (iii) the value of any other off-balance sheet assets; plus

    (c) the value of any regulatory adjustment determined by the Commission.

Regulatory Capital Resources of a PCC

24. The total regulatory capital resources of a PCC is the sum of notional regulatory capital resources of each cell and the core, pursuant to paragraphs 29 and 34.

25. For a cell the notional regulatory capital resources to meet the notional PCR must be calculated in accordance with paragraph 22 as if it were a stand-alone insurer, subject to a maximum of the PCR for that cell (i.e., excess cell capital is not available to meet the total PCR of the PCC), except where permitted under paragraph 29.

26. For a cell, where the notional regulatory capital resources to meet the notional PCR are less than the notional PCR and the cell has recourse to the capital of the core, pursuant to paragraph 28, core capital may be notionally allocated to the cell.

27. For the core the notional regulatory capital resources to meet the notional PCR must be calculated in accordance with paragraph 22 as if it were a stand-alone insurer, less the total of any capital notionally allocated to the cells.

28. The total core capital notionally allocated to all cells must not exceed the core's own regulatory capital resources (before any reallocation) over that required to meet its own notional PCR.

29. Where the total PCR for the PCC is equal to the total MCR for the PCC, which is itself bound by the Capital Floor, for the purpose of these Rules, the total regulatory capital resources for the PCC may include any core or cell capital, subject to a maximum of the total PCR for the PCC.

30. For a cell the notional regulatory capital resources to meet the notional MCR must be calculated in accordance with paragraph 23 as if it were a stand-alone insurer, subject to a maximum of the MCR for that cell (i.e. excess cell capital is not available to meet the total MCR of the PCC) except where permitted under paragraph 34.

31. For a cell, where the notional regulatory capital resources to meet the notional MCR are less than the notional MCR and the cell has recourse to the capital of the core, pursuant to paragraph 33, core capital may be notionally allocated to the cell.

32. For the core the notional regulatory capital resources to meet the notional MCR must be calculated in accordance with paragraph 23 as if it were a stand-alone insurer, less the total of any capital notionally allocated to the cells.

33. The total core capital notionally allocated to all cells must not exceed the core's own regulatory capital resources (before any reallocation) over that required to meet its own notional MCR.

34. Where the total MCR for the PCC is bound by the Capital Floor, for the purpose of these Rules, the total regulatory capital resources for the PCC include any core or cell capital, subject to a maximum of the total MCR for the PCC.

Part 3 – MCR

35. The MCR must be determined as set out in paragraphs 37 to 46

36. The MCR is intended to be the capital required to ensure that the licensed insurer should be able to meet its obligations over the next 12 months with an 85% probability.

3.1 General insurers and reinsurers

37. The MCR of a licensed insurer carrying on general business is an amount of not less than the higher of -

(a) 12% of that licensed insurer's gross written premiums during the previous financial year, net of –

(i) the amount of any premium taxes, rebates, refunds, and commissions accrued by the licensed insurer, and

(ii) subject to paragraph 38, the gross amount of any reinsurance premiums (after deduction of any rebates or commissions receivable by the licensed insurer) ceded by the licensed insurer in respect of general business during that preceding financial year;

(b) 12% of the value of claims reserves and premium reserves, net of reinsurance and amounts reserved to maximum; and

(c) the Capital Floor.

38. For the purposes of paragraph 37(a) any funds received for the assumption, by a licensed insurer, of insurance obligations under a novation, portfolio transfer or other scheme or arrangement shall be included in the gross written premium income computation unless the novation, transfer or other scheme or arrangement is supported by an actuarial opinion acceptable to the Commission; and in the event that the funds received in respect of the assumption of insurance obligations were not determined on an arms-length basis, the amount to be included in the gross written premium income computation shall be the market value for such an assumption determined on a basis acceptable to the Commission.

39. Reinsurance ceded by a licensed insurer to an associated party shall not be taken into account for the purposes of the MCR calculation unless -

(a) the associated party is a licensed insurer and meets the solvency requirements as defined in these Rules, or

(b) the Commission, in any particular case, consents in writing to its being so taken into account.

3.2 Life Business

40. The MCR of a licensed insurer writing life business is the higher of-

(a) 2.5% of total reserves, net of reinsurance; and

(b) the Capital Floor.

41. Where a licensed insurer has entered into contracts providing for the payment of linked benefits in accordance with section 42(2) of the Law, the value of the total reserves referred to in paragraph 40 should be reduced by the value of the linked liabilities.

42. Reinsurance ceded by a licensed insurer to an associated party shall not be taken into account for the purposes of the MCR calculation unless -

(a) the associated party is a licensed insurer and meets the solvency requirements as defined in these Rules, or

(b) the Commission, in any particular case, consents in writing to its being so taken into account.

3.3 Composite insurers and reinsurers

43. The appropriate method of calculation of the MCR for a composite licensed insurer carrying on both general business and long term business shall be agreed with the Commission on a case by case basis.

3.4 MCR for a PCC

44. The MCR of a PCC is the sum of the notional MCR of each cell and of the core, subject to a minimum of the capital floor determined in accordance with paragraph 12.

45. The notional MCR of each cell and of the core of a PCC must be calculated in accordance with paragraphs 35 to 43 as if the cell or core was a stand-alone licensed insurer. For the purpose of clarity, the capital floor for each cell or the core is nil.

3.5 Category 6 Insurer MCR

46. The MCR shall not apply to a Category 6 insurer, provided that the entity continues to qualify for inclusion in this category on an ongoing basis.

Part 4 – PCR

48. The PCR of an insurer equals -

(a) an amount determined either -

(i) by applying the 'Guernsey standard formula'; or

(ii) by applying a 'recognised standard formula'; or

(iii) by using an internal model developed by the company to reflect the circumstances of its business; or

(iv) by using a partial internal model which is a combination of the approaches specified in (i) and (iii) or (ii) and (iii) above; plus

(b) any regulatory adjustment specified in writing by the Commission.

49. The PCR is the capital required to ensure that the licensed insurer should be able to meet its obligations over the next 12 months with a probability as defined by the confidence levels specified in subparagraphs (a) to (e).

(a) Category 1 - Commercial Life Insurers- the PCR is determined at a 99.5% confidence level.

(b) Category 2 - Commercial Life Reinsurers - the PCR is determined at a 97.5% confidence level.

(c) Category 3 - For Commercial General Insurers - the PCR is determined at a 99.5% confidence level.[1]

(d) Category 4 - Commercial General Reinsurers - the PCR is determined at a 97.5% confidence level.

(e) Category 5 - Captive (Re)insurers - the PCR is determined at a 90% confidence level.

[1] Where a Category 3 insurer writes all of its business into a single foreign jurisdiction then the insurer may seek the Commission's permission to calibrate the Guernsey standard model with reference to the relevant, applicable confidence level applied in the regulatory capital framework of the foreign jurisdiction in question, where this can be clearly determined. In considering such a request the Commission will take into account the overall level of protection available to policyholders under such an arrangement.

Regardless of the method used, a licensed insurer's PCR cannot be less than its MCR.

50. The PCR determined applying the Guernsey standard formula is to be calculated in accordance with -

(a) Section A in respect of a general business, and

(b) Section B in respect of life business.

51. A licensed insurer may use a recognised standard formula applied in full to calculate its PCR in place of the Guernsey standard formula without the prior written approval of the Commission. A list of recognised standard formula is provided at Schedule 4. If the recognised standard formula is not applied in full, then it will be deemed a partial internal model.

52. A licensed insurer may use a standard formula of a country not on the list of recognised standard formulas as if it were a recognised standard formula subject to the prior written approval of the Commission. In obtaining approval, the Commission must be satisfied that the standard formula provides a similar level of policyholder and beneficiary protection for capital adequacy purposes as provided by the Commission's standard formula relevant to that insurer.

PCR for a PCC

53. The PCR of a PCC is the sum of the notional PCR of each cell and of the core, subject to a minimum of the MCR for the PCC.

54. The notional PCR of each cell and of the core of a PCC must be calculated in accordance with paragraphs 48 to 52 as if the cell or core was a stand-alone licensed insurer.

Composite Insurers

55. The appropriate method of calculation of the PCR for a composite licensed insurer carrying on both general business and long term business shall be agreed with the Commission on a case by case basis.

Category 6 Insurer PCR

56. The PCR shall not apply to a Category 6 insurer, provided that the entity continues to qualify for inclusion in this category on an ongoing basis.

Section A - General Business - PCR standard formula

57. The PCR for general business determined using the standard formula is equal to -

(a) the capital requirement for market risk; plus

(b) the capital requirement for counterparty default risk; plus

(c) the capital requirement for premium risk; plus

(d) the capital requirement for reserve risk; less

(e) a diversification adjustment as determined in accordance with Schedule 9; plus

(f) any regulatory adjustment specified in writing by the Commission.

58. For each risk and risk component the resulting capital requirement must not be negative.

Market Risk Capital

59. The capital requirement in respect of market risk is equal to -

(a) the capital requirement for interest rate risk; plus

(b) the capital requirement for spread risk; plus

(c) the capital requirement for currency risk; plus

(d) the capital requirement for other market risks; less

(e) a diversification adjustment as determined in accordance with Schedule 9.

Interest Rate Risk Capital

60. The capital requirement for interest rate risk is the sum of the absolute value of interest sensitive assets less liabilities in each duration band multiplied by the Interest Rate Risk Capital Factor applicable to that duration band as determined in accordance with Schedule 8.

Spread Risk Capital

61. The capital requirement for spread risk is the sum of the absolute value of spread sensitive assets less liabilities in each duration band multiplied by the Spread Risk Capital Factor applicable to that spread duration band as determined in accordance with Schedule 8.

Currency Risk Capital

62. The capital requirement for currency risk is the sum of the absolute value of assets less liabilities denominated in currencies other than the reporting currency of the licensed insurer, multiplied by the Currency Risk Capital Factor as determined in accordance with Schedule 8.

Other Market Risk Capital

63. The capital requirement for other market risks is the sum of the capital required in respect of -

(a) equity risk, which is the sum of the exposure of each equity type multiplied by the Equity Risk Capital Factor applicable to that equity type as determined in accordance with Schedule 8.

(b) property risk, which is the sum of the total exposure to real estate multiplied by the Property Risk Capital Factor as determined in accordance with Schedule 8.

(c) derivative risk, which is the exposure to derivatives multiplied by the Derivative Risk Capital Factor as determined in accordance with Schedule 8.

(d) other investments subject to market risk but not elsewhere classified, which is equal to the value of other investment exposures multiplied by the Other Investments Capital Factor as determined in accordance with Schedule 8.

Counterparty Default Risk Capital

64. The capital requirement for counterparty default risk is equal to -

(a) the capital requirement for receivable default risk; plus

(b) the capital requirement for other default risk.

Receivable Default Risk Capital

65. The capital required for receivable default risk must be determined for each receivable type and in each of the days overdue bands as the gross exposure, less any amounts offset in case of default, multiplied by the applicable Receivable Capital Factor as determined in accordance with Schedule 8.

Other Default Risk Capital

66. The capital requirement for other default risk must be determined for each counterparty and each exposure type as the value of the gross exposure, less any amount offset in case of default, multiplied by (1 – Recovery Rate) and the Other Default Risk Capital Factor. The Recovery Rate and the Other Default Risk Capital Factors are as determined in accordance with Schedule 8.

Offset In the Case of Default

67. For the purpose of determining the exposure to each counterparty, the gross exposures may be reduced by liabilities towards the same counterparty and by collateral posted against the same counterparty, to the extent that they could be offset or recovered in the event of default. Liabilities to one counterparty cannot be used to reduce the net residual exposure to another counterparty unless they are to a counterparty which belongs to the same group. A written legal right of set-off must be in place.

Premium Risk Capital

68. The capital requirement for premium risk is equal to -

(a) the sum of premium risk capital requirement for each line of business; less

(b) a diversification adjustment as determined in accordance with Schedule 9.

Premium Risk Capital per Line of Business

69. The premium risk capital for a line of business is equal to the lower of -

(a) the gross premiums expected to be written on business commencing during the following 12 months, net of commission and ceded written premium, multiplied by the Premium Risk Capital Factor; and

(b) the expected risk gap on business commencing during the following 12 months; where the risk gap is determined as -

(i) the maximum net aggregate exposure; less

(ii) the net written premium determined in accordance with subparagraph (a).

The Premium Risk Capital Factors are as determined in accordance with Schedule 8.

Lines of Business

70. For the purpose of determining the premium risk capital the lines of business are defined in Schedule 2.

Reserve Risk Capital

71. The capital requirement for reserve risk is equal to -

(a) the sum of reserve risk capital for each line of business; less

(b) a diversification adjustment as determined in accordance with Schedule 9.

Reserve Risk Capital

72. The capital requirement for reserve risk must be determined for each line of business as -

(a) the gross claim reserves plus the gross premium reserves, net of amounts recoverable from reinsurance contracts and any 'reserved to maximum' amount, multiplied by the Reserve Risk Capital Factor; less

(b) an 'almost reserved to maximum' amount.

The Reserve Risk Capital Factors are as determined in accordance with Schedule 8. The lines of business are defined in Schedule 2.

Reserved to Maximum Amount

73. For those lines of business reserved up to the maximum future amount payable under the policy terms for that line of business there can be no further adverse deterioration in those reserves and so no capital requirement. The Reserve to Maximum Amount is the maximum future amount payable.

Almost Reserved to Maximum Amount

74. For those lines of business that are almost reserved up to the maximum future amount payable under the policy terms for that line of business, there can only be limited further adverse deterioration in those reserves. The Almost Reserved to Maximum Amount is equal to -

(a) the reserve risk capital determined in accordance with paragraph 71(a); less

(b) the maximum future amount payable under the policy terms less the sum of the gross claim reserves plus the gross premium reserves, net of amounts recoverable from reinsurance contracts.

Section B - Life Business – Standard Formula

75. The PCR for life business determined using the Guernsey standard formula is equal to -

(a) the capital requirement for market risk; plus

(b) the capital requirement for counterparty default risk; plus

(c) the capital requirement for underwriting risk; less

(e) a diversification adjustment as determined in accordance with the Schedule 11; plus

(f) any regulatory adjustment specified in writing by the Commission.

76. The capital requirement for each risk and each risk component is determined as:

(a) the unstressed value of the assets less the unstressed value of the liabilities; less

(b) the stressed value of the assets less the stressed value of the

liabilities

subject to a minimum of zero.

77. When determining the capital requirement for each risk, the licensed insurer may make allowances for management actions that it would reasonably expect to take in response to the risk being considered, subject to the management actions being determined:

(a) in an objective and consistent manner;

(b) they are realistic and consistent with the licensed insurer's current business plan;

(c) they reflect any legal, regulatory or contractual requirements; and

(d) where there is business with a profits participation clause, they consider policyholder's reasonable expectations.

78. Licensed insurers may simplify the stresses set out in paragraphs 79 to 94 to the extent that it is proportionate to the nature, scale and complexity of the risk being considered.

Market Risk Capital

79. The capital requirement for market risk is equal to:

(a) the capital requirement for real interest rate risk; plus

(b) the capital requirement for inflation rate risk; plus

(c) the capital requirement for spread risk; plus

(d) the capital requirement for currency risk; plus

(e) the capital requirement for equity risk; plus

(f) the capital requirement for property risk; less

(g) a diversification adjustment as determined in accordance with Schedule 11.

General Conditions

80. The market stresses are applied either directly to asset values or by way of changes to economic variables that in turn affect the value of both assets and liabilities. Some assets and liabilities may be impacted by more than one of the six stress tests and will need to be considered in each relevant stress test.

81. For the purposes of paragraph 79, no risk capital component may be negative. Consequently, if there is no fall in capital resources due to the application of the stresses, the risk capital component is assumed to be zero.

Real Interest Rate Risk Capital

82. Real interest rate risk exists for assets and liabilities whose values are sensitive to changes in real interest rates. Real interest rates are the part of the nominal interest rate after allowing for expected inflation and so assets and liabilities whose values are dependent on nominal rates are also sensitive and must be included under this stress.

83. The capital requirement for real interest rate risk is the higher of the capital requirements determined by applying the following two stresses -

(a) an instantaneous increase in nominal interest rates at each maturity; and

(b) an instantaneous decrease in nominal interest rates at each maturity.

The increases and decreases to be applied at each maturity are as determined in accordance with Schedule 10. These changes are defined in terms of a change in the nominal interest rate, but the resulting stress must be applied to both the real interest rates and nominal interest rates as appropriate.

Inflation Rate Risk Capital

84. Inflation rate risk exists for assets and liabilities whose values are sensitive to changes in inflation rates. To avoid double counting, the stress described in paragraph 85 should only be applied to those assets and liabilities included in the real interest rate risk calculation and not those which are included in the equity, property or other market risk calculations.

85. The capital requirement for inflation rate risk is determined by applying the stresses as determined in accordance with Schedule 10 and should be applied to both real interest rates and nominal interest rates.

Spread Risk Capital

86. Spread rate risk exists for assets and liabilities whose values are sensitive to changes in credit spreads, which measures the extent of financial default risk. Bonds issued by or explicitly backed by:

(a) Governments; or

(b) supranational organisations listed in Schedule 7

are excluded from this stress.

87. The capital requirement for spread risk exposures must be determined for each asset type by applying a credit spread stress (dependent on credit rating) to the current yield, and then multiplying the reduced value of the asset by (1 – Default Factor). The credit spread stresses and Default Factors are determined in accordance with Schedule 10.

88. For the purpose of applying this stress to the liabilities, the stressed value of the assets determined in accordance with paragraph 87 should be used to derive a revised discount rate.

Currency Risk Capital

89. Currency risk exists for assets and liabilities whose values are sensitive to changes in exchange rates compared to the reporting currency of the licensed insurer.

90. The capital requirement for currency risk is determined as the higher of the capital requirements determined by applying the following two stresses-

(a) an instantaneous increase in exchange rates compared to the reporting currency, and

(b) an instantaneous decrease in exchange rates compared to the reporting currency.

The stresses to be applied are as determined in accordance with Schedule 10.

Equity Risk Capital

91. Equity risk exists for assets and liabilities whose values are sensitive to changes in equity prices. It also applies to other financial assets which are not covered under any of the other market risks.

92. The capital requirement for equity risk is determined by applying the stresses as determined in accordance with Schedule 10.

Property Risk Capital

93. Property risk exists for assets and liabilities whose values are sensitive to changes in real estate prices.

94. The capital requirement for property risk is determined by applying the stresses as determined in accordance with Schedule 10.

Counterparty Default Risk Capital

95. The capital requirement for counterparty default risk is equal to -

(a) the capital requirement for receivables; plus

(b) the capital requirement for other default risk exposures.

Receivable Default Risk Capital

96. Receivable default risk exists where there is exposure to default of amounts receivable.

97. The capital requirement for receivable default risk must be determined for each receivable type and in each of the days overdue bands as the gross exposure, less any of amounts offset in case of default, multiplied by the Receivable Capital Factor as determined in accordance with Schedule 10.

Other Default Risk Capital

98. Other default risk exists where there is exposure to default of counterparties.

99. The capital requirement for other default risk exposures must be determined for each counterparty and each exposure type as the value of the gross exposure, less any amount offset in case of default, multiplied by (1 – Recovery Rate) and the Other Default Risk Capital Factor. The Recovery Rate and Other Default Risk Capital Factors are as determined in accordance with Schedule 10.

Offset In the Case of Default

100. For the purpose of determining the exposure to each counterparty, the gross exposures may be reduced by liabilities towards the same counterparty and by collateral posted against the same counterparty, to the extent that they could be offset or recovered in the event of default.

Underwriting Risk Capital

101. The capital requirement for underwriting risk is equal to -

(a) the capital requirement for mortality risk; plus

(b) the capital requirement for longevity risk; plus

(c) the capital requirement for disability/morbidity risk; plus

(d) the capital requirement for lapse risk; plus

(e) the capital requirement for expense risk; plus

(f) the capital requirement for catastrophe risk; less

(g) a diversification adjustment as determined in accordance with Schedule 11.

Mortality Risk Capital

102. Mortality risk exists for liabilities which are sensitive to increases in mortality rates which leads to an increase in liabilities.

103. The capital requirement for mortality risk is determined by applying the instantaneous stresses as determined in accordance with Schedule 10.

Longevity Risk Capital

104. Longevity risk exists for liabilities which are sensitive to decrease in mortality rates which leads to an increase in liabilities.

105. The capital requirement for longevity risk is determined by applying the instantaneous stresses as determined in accordance with Schedule 10.

Disability/Morbidity Risk Capital

106. Disability/Morbidity risk exists for liabilities which are sensitive to increases in disability/morbidity rates.

107. The capital requirement for disability/morbidity risk is determined by applying the instantaneous stresses as determined in accordance with Schedule 10.

Lapse Risk Capital

108. Lapse risk exists for liabilities which are sensitive to changes in policyholder options. This includes full or partial termination, full or partial surrender, any decrease, restriction or suspension of cover, to the extent that they are legal or contractual policyholder rights. Lapse risk also exists for liabilities where there is a risk of a one-off mass lapse event.

109. The capital requirement for lapse risk is determined as the higher of the capital requirements determined by applying the following three stresses-

(a) an instantaneous permanent increase in lapse rates, for policies where exercising the option would lead to an increase in liabilities, and

(b) an instantaneous permanent decrease in lapse rates, for policies where exercising the option would lead to a decrease in liabilities, and

(c) a one-off mass lapse event which leads to an increase in liabilities.

The stresses to be applied are as determined in accordance with Schedule 10.

Expense Risk Capital

110. Expense risk exists for liabilities which are sensitive to increases in expense cost associated with the servicing the policies.

111. The capital requirement for expense risk is determined by applying the instantaneous stresses as determined in accordance with Schedule 10.

Catastrophe Stress

112. Catastrophe risk exists for liabilities which are sensitive to extreme or irregular events that are not captured by the other underwriting risks.

113. The capital requirement for catastrophe risk is equal to -

(a) the capital requirement for life pandemic risk; for policies where increasing mortality rates leads to an increase in liabilities, plus

(b) the capital requirement for disability/morbidity pandemic risk; for policies where increasing disability/morbidity rates leads to an increase in liabilities, plus

(c) the capital requirement for mass accident risk; for policies where the mass event leads to an increase in liabilities less

(d) a diversification adjustment as determined in accordance with Schedule 11.

114. The capital requirement for each catastrophe risk is determined by applying the instantaneous stresses as determined in accordance with Schedule 10.

Part 5 - Internal Model

Introduction

115. An insurer may use a partial or full internal model to calculate its PCR subject to the prior written approval of the Commission.

116. An insurer may use a partial model for the calculation of -

(a) one or more risk components of the standard formula;

(b) one or more risk components of a recognised standard formula.

117. A partial model may be applied to the whole business of the insurer or only to one or more major business units.

118. An internal model cannot be used to determine an insurer's MCR or determine its regulatory capital resources.

119. An insurer does not require Commission approval, initial or ongoing, for the use of its internal model in determining its own economic capital needs or management.

120. To obtain prior written approval for the use of an internal model to calculate its PCR, the Commission must be satisfied that the model is well designed, the analysis and assumptions used are sound, and that the results of applying the model are reasonable from a prudential viewpoint. The criteria to obtain and retain Commission approval to use an internal model to determine its PCR comprise criteria relating to model validation and model documentation. These criteria are set out below.

121. This section applies to undertakings determining their PCR using either –

(a) a partial internal model; or

(b) a full internal model.

The Commission uses the term "internal model" to refer to either (a) or (b) above.

122. An internal model is defined as a risk measurement system developed by a licensed insurer to analyse its overall risk position, to quantify risks and to determine the economic capital required to meet those risks. A partial model captures a subset of the risks borne by the licensed insurer using an internally developed measurement system which is used in determining the licensed insurer's economic capital.

123. A licensed insurer is required to have its internal model independently validated against the model validation and model documentation criteria.

A. Model Validation Criteria

124. A licensed insurer is required to validate its internal model by subjecting it to, as a minimum, the following tests –

(a) A statistical quality test;

(b) A calibration test; and

(c) A use test.

125. To obtain Commission approval to use an internal model, the Commission must have sufficient confidence that the results being produced by the model provide adequate and appropriate measures of risk and capital. The statistical quality test and the use test enable the Commission to gain an understanding of how the undertaking has embedded its internal model within its business. The calibration test is used by the Commission to assess the results from the internal model in comparison to the undertaking's PCR as determined using the applicable standard formula and the PCR of other undertaking in the same license category.

Statistical Quality Test

126. A licensed insurer is required to demonstrate that the PCR using the internal model addresses the overall risk position of the licensed insurer subject to the nature, scale and complexity of the licensed insurer and its risk exposures.

127. A licensed insurer is required to demonstrate the theoretical validity of the internal model including –

(a) The suitability of model structure, data (including completeness and accuracy), and estimation within the licensed insurer's business context;

(b) The appropriateness of the internal model basis within the industry context, including methodological benchmarking to alternatives and best practice;

(c) The appropriateness of the parameter estimations. It should be demonstrated that the parameter estimations are appropriate within the market and industry context and parameter uncertainty is addressed to the extent possible; and

(d) The consistency, soundness and justification of the methodologies, distributions, aggregation techniques and dependencies (within and among risk categories) adopted.

128. A licensed insurer is required to demonstrate the analytical validity of the internal model including–

(a) The statistical process for validating that the results of the model are fit for the purpose for which they are used;

(b) The implementation of the model given the theoretical basis, goodness of fit, forecasting capability for out-of sample observations (backtesting), sensitivity to changes in key underlying assumptions and stability of outputs;

(c) The backtesting applied at various levels of the business activity;

(d) The sensitivity analysis undertaken, which should validate the parts of the internal model where expert judgement is used and should examine whether the model output is sensitive to changes in key assumptions;

(e) The convergence of the model to demonstrate that model outputs are statistically significant;

(f) The processes of monitoring the model's performance; and

(g) Where possible, benchmarking the model results and techniques with peers, available literature and research.

129. An internal model may deliver a probability distribution of the required risk capital rather than a "point estimate".

Techniques to Quantify Risk

130. There are several different techniques to quantify risk which could be used by a licensed insurer to construct its internal model. In broad terms, these could range from basic deterministic scenarios to complex stochastic models. Deterministic scenarios would typically involve the use of stress and scenario testing reflecting an event, or a change in conditions, with a set probability to model the effect of certain events (such as a drop in equity prices) on the licensed insurer's capital position, in which the underlying assumptions would be fixed. In contrast, stochastic modelling often involves simulating very large numbers of scenarios in order to reflect the likely distributions of the capital required by, and the different risk exposures of, the licensed insurer.

131. The Commission recognises that there are numerous methodologies which a licensed insurer could use as part of its stress and scenario testing. A licensed insurer should use scenarios which it regards as most appropriate for its business. An undertaking should be able to demonstrate that the chosen methodology is appropriate to capture the relevant risks for its business. This includes testing of the model to require that it can replicate its results on

request by the Commission and that its response to variation in input data is adequate such as that corresponding to changes in base or stress scenarios.

132. Conducting stress and scenario testing to determine the effect of shocks may be a suitable tool to validate statistical assumptions.

Aggregation of Risks

133. Where an internal model is established to assess risks at a modular level, i.e. on a risk-by-risk basis, in order to conduct an overall risk assessment, an undertaking should aggregate the results for each of these risks both within and across business lines. The determination of overall regulatory capital requirements by the internal model should consider dependencies within, as well as across, risk categories. Where the internal model allows for diversification effects, an undertaking should be able to justify its allowance for diversification effects and demonstrate that it has considered how dependencies may increase under stressed circumstances.

Data

134. The data used for an internal model should be current and sufficiently credible, accurate, complete and appropriate.

135. An undertaking should be able to demonstrate the appropriateness of the underlying data used in the construction of the internal model the aggregation of data, the modelling assumptions and the statistical measures used to construct the internal model.

136. An undertaking should undertake an annual (or more frequent) review of the various items that are being measured (claims, lapses, etc.) updated for the additional data available together with a scrutiny of data from previous periods to determine whether this data continues to be relevant. Older data may no longer be relevant possibly due to changes in risks covered, secular trends or policy conditions and guarantees attaching. Similarly, new data may not be of substantive use when modelling items that require a long-term view of experience (such as testing the predictions of cash flows for catastrophic events).

137. Where a licensed insurer's data lacks full credibility, it may rely on industry or other sufficiently credible data sources to supplement its own data. Where deemed appropriate, the undertaking should adjust the data to allow for differences in features between the data source and the licensed insurer.

138. In assessing suitability of data and of other inputs to the internal model, expert judgment should be applied and supported by proper justification, documentation and validation.

Base Quantitative Methodology

139. The undertaking should be able to demonstrate that the base quantitative methodology used to construct its internal model is sound and sufficiently reliable to support the model's use, both as a strategic and capital management tool, and to calculate the licensed insurer's regulatory capital requirements, if appropriate. The methodology should also be consistent with the methods used to calculate technical provisions.

Completeness

140. The undertaking should be able to demonstrate that the assets and products as represented in the internal model reflect the undertaking's actual assets and products. An undertaking should consider –

(a) an analysis of whether all reasonably foreseeable and relevant material risks have been incorporated, including any financial guarantees and embedded options; and

(b) whether the algorithms used are able to take into account the action of management and the reasonable expectation of policyholders.

Testing

141. Testing should include future projections within the model and to the extent practicable "back-testing".

Calibration Test

142. An undertaking is required to demonstrate that the PCR produced by its internal model is consistent with the Commission's modelling criteria (i.e. risk measure, time horizon or confidence level) underlying the standard formula applicable to the undertaking's license category.

143. An undertaking may use different modelling criteria in its internal model than adopted by the Commission in the standard formula applicable to the undertaking's license category provided that the overall modelling criteria provides policyholders and beneficiaries with a level of protection at least equivalent to that provided by the standard formula.

Use Test

144. An undertaking is required to demonstrate that the internal model (its methodologies and results) is fully integrated within its risk and capital management and system of governance processes and procedures;

145. An undertaking's board and senior management are required to –

(a) have overall control of and responsibility for the construction and use of the internal model for risk management purposes;

(b) have sufficient understanding of the model's construction at appropriate levels within the undertaking's organisational structure; and

(c) have an understanding of the consequences of the internal model's outputs and limitations for risk and capital management decisions.

146. An undertaking is required to have adequate governance and internal controls in place with respect to the internal model.

147. Pursuant to paragraph 142, a licensed insurer should be able to demonstrate –

(a) how the internal model is used for operational management purposes;

(b) how the results are used to influence the risk management strategy and business plan of the licensed insurer;

(c) how senior management are involved in applying the internal model in running the business; and

(d) how the internal model remains useful and is applied consistently over time.

148. An undertaking's board and senior management is not expected to be able to de-construct the internal model in detail. However, the board should be able to demonstrate it has overall oversight of the model's operation on an ongoing basis and the level of understanding necessary to achieve this.

149. Pursuant to paragraph 145, the undertaking's board and senior management should be able to demonstrate an understanding of -

(a) the structure of the internal model and how this fits with their business model and risk-management framework;

(b) the methodology behind the internal model;

(c) the dynamics of the model, or how the different elements fit together;

(d) the limitations of the internal model, including the limitations of statistical assumptions and limitations in business planning assumptions and that these limitations are taken into account in decision-making;

(e) in which areas and on which entity / hierarchy level within the undertaking/group diversification effects arise as well as the dependencies throughout the risk profile; and

(f) the scope and purpose of the internal model and the risks covered by the internal model, as well as those not covered.

150. An undertaking is expected to have a framework for the model's application across business units. This framework should define lines of responsibility for the production and use of information derived from the model. It should also define the purpose and type of management information available from the model, the decisions to be taken using that information, and the responsibilities for taking those decisions.

151. The internal model should be subject to appropriate review and challenge so that it is relevant and reliable when used by the undertaking.

B. Model Documentation Criteria

General Requirements

152. An undertaking is required to document, at a minimum -

(a) the design, construction, modelling criteria and governance of the internal model;

(b) the justification for and details of the underlying methodology, assumptions and quantitative and financial bases;

(c) if applicable, why it has chosen to only use a partial internal model for certain risks or business lines; and

(d) if applicable, the reliance on and appropriateness of the use of external vendors/suppliers.

153. The documentation should be sufficiently detailed to demonstrate compliance with the statistical quality test, calibration test and use test.

154. The documentation of the internal model is to be timely and up to date.

155. The documentation of the internal model should be thorough, sufficiently detailed and sufficiently complete to enable an independent knowledgeable third party to form a sound judgment as to the reliability of the internal model and the compliance with the validation criteria and could understand the reasoning and the underlying design and operational details of the internal model.

Partial Model

156. An undertaking is required to document why it has chosen to only use a partial internal model for certain risks or business lines.

157. The primary concern of the Commission regarding the approval of a partial internal model is "cherry picking" (i.e. undertakings choosing to use its model for regulatory capital purposes only when the model results in a lower capital requirement than the standard

formula). The level of document should be such as to justify the reduced scope of the internal model.

Model Limitations

158. An undertaking is required to document the instances where the model is shown not to perform effectively.

159. The documentation of circumstances under which the undertaking believes that the internal model does not work effectively shall address both design and operational details of the internal model as well as the possible implications due to any lack of compliance with the validation criteria.

160. When assessing and documenting circumstances where the internal model does not work effectively undertakings should take into account at least the following aspects:

(a) Limitations in risk modelling and the cover of risk captured;

(b) The nature, degree and sources of uncertainty surrounding the results of the internal model and sensitivity of key assumptions;

(c) Shortcoming and/or deficiencies in input data;

(d) Any specific features of the internal model or circumstances or limitation that present potential concerns or would significantly increase the uncertainty of the results of the internal model beyond what would reasonably be expected; and

(e) Insufficiencies in IT-systems, governance and related controls surrounding the internal model.

Ongoing Validation and Documentation

Ongoing Validation

161. An undertaking is required to monitor the performance of its internal model and regularly review and validate the ongoing appropriateness of the model's specifications.

162. An undertaking is required to demonstrate that the model remains fit for purpose in changing circumstances against the criteria of the statistical quality test, calibration test and use test.

163. Over time an undertaking 's business may alter considerably, as a result of internal factors or events (such as a change in undertaking strategy) and external factors or events (such as a change in interest rates), so that the internal model may no longer fully capture the risks to which the undertaking is exposed unless adapted. The undertaking is expected to demonstrate that the internal model remains valid for use, both as a strategic decision-

making tool in the context of the undertaking's risk management and as a means of calculating the PCR. The undertaking is expected to demonstrate that the data used in the internal model remains appropriate, complete and accurate for its purpose.

164. An undertaking is required to obtain Commission approval prior to implementing material changes to its internal model. An undertaking does not require prior Commission approval to enact minor changes to its internal model. A 'model change policy' will be agreed between the undertaking and the Commission regarding the degree and timing of changes made to the internal model.

Ongoing Documentation

165. An undertaking is required to document, on an ongoing basis, the planned future development and enhancements of the internal model, including the methodology and timeline for improvements.

166. An undertaking is required to document, on an ongoing basis, any major changes to the internal model.

167. The documentation of major changes to the internal model shall address the implications for both the design and operational details of the internal model and an assessment of continued compliance with the validation criteria after the model change has been implemented. When a major change has had a significant impact on the outcome of the internal model the most recent valuation date shall be calculated with both the revised internal model and the previous version of the internal model and the outcomes of the internal models shall be compared. Any differences between the two due to the model change shall be, if possible, identified, quantified and documented.

Commission Approval

Exemptions

168. An undertaking does not require Commission approval, initial or ongoing, for the use of its internal model in determining its own economic capital needs or capital management.

169. An undertaking determining its PCR using a Recognised Standard Formula in totality is not deemed to be using an internal model and does not require prior Commission approval.

Notification of Intent

170. An undertaking must notify the Commission in writing of its intention to use an internal model to determine the PCR. The undertaking must notify the Commission of, at a minimum –

(a) The scope of the proposed internal model, including which risks, entities, lines of business and/or major business units are covered by the model;

(b) Whether the internal model has been previously approved; and

(c) The name of the actuary that will independently assess the validation and documentation of the internal model.

Formal Application

171. An undertaking must submit an "Internal Model Assessment Report" to obtain Commission approval to use its internal model to determine its PCR unless paragraph 172 applies.

172. An undertaking can submit an "Internal Model Reassessment Report" to obtain Commission approval to use its internal model if either of the following conditions apply –

(a) The internal model has been previously approved by the Commission for use by another licensed insurer; or

(b) The internal model has been previously approved by a supervisor acceptable to the Commission.

173. An undertaking must submit an "Internal Model Change Report" to obtain Commission approval to implement material changes to its previously approved internal model.

174. The reports referred to in paragraphs 171 to 173 must be prepared by the independent actuary approved, in writing, by the Commission.

175. The reports referred to in paragraphs 171 to 173 may consist of one or more component reports, each of which contributes to an aggregate report. To the extent that the independent actuary relies upon a component report, the author of the component report must be approved, in writing, by the Commission.

Application Costs

176. The costs of preparing a report referred to in paragraphs 171 to 173 will be borne entirely by the licensed insurer.

177. The costs, fees and expenses incurred by the Commission in approving the internal model or a change in internal model will be borne entirely by the licensed insurer and will be non-refundable.

Internal Model Assessment Report

178. The purpose of an Internal Model Assessment Report is to document the independent actuary's assessment of the internal model against each validation criterion and each

documentation criterion. The assessment must clearly highlight any critical flaws in the internal model and gaps in model documentation.

Internal Model Reassessment Report

179. The purpose of an Internal Model Reassessment Report is to document the independent actuary's assessment of the internal model, which has previously been approved to be used to determine the regulatory capital requirement of another licensed insurer, against each validation criterion and documentation criterion. The assessment must clearly highlight any critical flaws in the internal model and gaps in model documentation.

180. The Commission anticipates that while the scope of the Internal Model Reassessment Report is identical to that of the Internal Model Assessment Report, the cost of the former may be materially less than that of the latter. The independent actuary may rely upon the previous assessment regarding validation (excluding the use test) and documentation to the extent that –

(a) the risk profile of the licensed insurer is assessed not to materially depart from that underlying the internal model; and

(b) the level of policyholder protection afforded to policyholders and beneficiaries using the internal model is assessed to be equal to or exceeds that required by the applicable standard formula for the licensed insurer.

The independent actuary cannot rely on the previously validated use test.

Internal Model Change Report

181. The purpose of an Internal Model Change Report is to independently assess the changes to the internal model against each validation criterion and documentation criterion. The assessment must clearly highlight any critical flaws in the internal model and gaps in model documentation.

Part 6 – Valuation

Regulatory Balance Sheet

182. For the purpose of preparing the Regulatory Balance Sheet the value of the assets and the value of the liabilities should be determined on the basis of the Recognised Accounting Standards used to prepare the financial statements, adjusted for any basis adjustment. The Recognised Accounting Standards which are for the time being approved by the Commission for insurance purposes are listed in Schedule 1. Basis adjustments are adjustments that should be applied to both on-balance sheet and off-balance sheet assets and liabilities for the purpose of ensuring an economic valuation for regulatory purposes. Where basis adjustments are made, they should be clearly stated in the documentation submitted with the regulatory capital assessment.

Economic valuation

184. An economic valuation is a valuation such that the resulting assessment of the licensed insurer's financial position is not obscured by hidden or inherent conservatism or optimism in the valuation.

Basis Adjustments

185. Licensed insurers must apply the following basis adjustments in determining the regulatory balance sheet –

(a) Off-balance sheet derivative asset and liability exposures, where payments or receipts are contingent on the performance of an underlying asset or liability, are to be brought into account at fair value, estimated according to the framework for measuring fair value set out in the accounting standards adopted for the financial accounts. Such exposures include, but are not limited to, forwards, futures, swaps, caps and options;

(b) All contingent liabilities other than those specified in subparagraph (a), where the licensed insurer is exposed to the risk of having to make payment, are to be brought into account. Contingent liabilities include, but are not limited to, credit substitutes such as guarantees and letters of credit;

(c) Intangible assets are to be reduced to nil value;

(d) Financial liabilities are not to be adjusted in value to take account of the own credit standing of the licensed insurer or any change thereof after initial recognition; and

(e) Any other basis adjustments notified in writing by the Commission.

186. Licensed insurers may apply the following basis adjustments in determining the regulatory balance sheet –

(a) Contingent assets other than those specified in paragraph 185 (a) may be brought into account equal to the nominal value of each exposure. Such assets include, but are not limited to, letters of credit and guarantees;

(b) Commitments received by the licensed insurer which have been issued but are unpaid may be brought into account equal to the nominal value. Such commitments include, but are not limited to, uncalled ordinary share capital and preference shares;

(c) Surplus funds included in technical provisions of licensed insurers writing long term, profit participation ("with-profit") business may be reduced to nil value. Surplus funds are deemed to be accumulated profits which have not been allocated for distribution to policyholders and beneficiaries;

(d) Loans subordinated, in writing, to the prior claims of all policyholders may be reduced to nil value; and

(e) Unearned profit margins included in technical provisions may be reduced to nil value provided that any risk adjustment included in technical provisions is at a level of at least equivalent to that at which the PCR of the licensed insurer has been determined.

Part 7 – Investment

187. A licensed insurer when, investing in assets, is required to consider whether, for the portfolio as a whole -

(a) assets are sufficiently secure. The security of an investment is related to the protection of its value and to the preservation of its economic substance;

(b) payments to policyholders or creditors are able to be made as they fall due (liquidity);

(c) assets are held in the appropriate location for their availability; and

(d) assets are sufficiently diversified subject to the nature, scale and complexity of the business.

188. A licensed insurer is required to invest in a manner that is appropriate to the nature of its liabilities. The licensed insurer should –

(a) consider the extent to which the cash flows from its investments match the liability cash flows in both timing and amount and how this changes in varying conditions;

(b) consider the investment guarantees and embedded options that are contained in its policies;

(c) consider the currency or currencies of its liabilities and the extent to which they are matched by the currencies of the assets;

(d) manage conflicts of interest (e.g. between the licensed insurer's corporate objectives and disclosed insurance policy objectives) to ensure assets are invested appropriately;

(e) for with-profits liabilities, hold an appropriate mix of assets to meet policyholders' reasonable expectations; and

(f) if part of an insurance group, hold investments tailored to the characteristics of its liabilities and its needs and not be subject to undue influence from the wider objectives of the group.

189. A licensed insurer is required to invest only in assets whose risks it can properly assess and manage. The licensed insurer should -

(a) ensure its investments, including those in collective investment funds, are sufficiently transparent and should limit its investments to those where the associated risks of the asset can be properly managed by the licensed insurer;

(b) understand all of the risks involved sufficiently well before any investments are undertaken;

(c) if it is able to look through the structure of the investments to the underlying assets, consider the risk characteristics of the underlying assets and how this affects the risk characteristics of the investments itself. However, where look through is not possible, appropriate techniques should be developed to assess the risks associated with the investment.

190. A licensed insurer must establish an investment policy which -

(i) specifies the nature, role and extent of its investment activities;

(ii) specifies how it complies with paragraphs 187 to 189; and

(ii) establishes explicit risk management procedures with regard to more complex and less transparent classes of asset and investment in markets or instruments that are subject to less governance or regulation.

191. A licensed insurer shall not invest in the following, unless in any particular case the Commission consents in writing to their being regarded as such and on such conditions as it may impose -

(a) derivative contracts, or schemes resulting in an equivalent arrangement, in whatever form they take, other than those defined in paragraph 192; and

(b) any asset under lien securing any derivative contract or other such encumbrance (except to the extent that it is securing an obligation of the licensed insurer under an insurance contract).

192. A licensed insurer may invest in Exchange Traded Derivative Contracts, or schemes resulting in equivalent arrangements, without the prior approval of the Commission if, and only if, they are not leveraged and to the extent that they are in order to -

(i) apply an index tracking strategy to part or all of a portfolio;

(ii) apply capital protected strategies to part or all of a portfolio;

(iii) apply efficient portfolio management techniques to a portfolio; or

(iv) reduce investment risk currently employed on a portfolio.

193. A licensed insurer may invest in forward foreign exchange transactions, conducted with a recognised bank, to the extent that they hedge currency exposures to currencies other than the reporting currency in the statutory accounts.

Part 8 – Risk Management and Own Risk Solvency Assessment

194. A licensed insurer must establish and maintain a risk management framework that is appropriate to the nature, scale and complexity of the business. The risk management framework is the totality of the systems, structures, policies, processes and people that identify, assess, mitigate and monitor all internal and external sources of risk that could have a material impact on the licensed insurer.

195. A licensed insurer's risk management framework must -

(a) provide for the identification and quantification of material risks under a sufficiently wide range of outcomes using techniques which are appropriate to the nature, scale and complexity of the risks it bears;

(b) include a risk management policy;

(c) be supported by accurate documentation;

(c) be responsive to changes in its risk profile; and

(d) incorporate a feedback loop, based on appropriate and good quality information, management processes and objective assessment, which enables it to take the necessary action in a timely manner in response to changes in its risk profile.

196. A licensed insurer is required to establish and maintain a risk tolerance statement. The statement sets out its overall quantitative and qualitative risk tolerance levels and defines its risk tolerance limits taking into account all relevant and material categories of risk and the relationships between them.

197. A licensed insurer's risk management policy must, at a minimum -

(a) describe how all relevant and material categories of risk are managed, both in the licensed insurer's business strategy and its day-to-day operations;

(b) describe the relationship between the licensed insurer's tolerance limits, regulatory capital requirements, economic capital and the processes and methods for monitoring risk;

(c) include explicit policies in relation to –

(i) underwriting risk;

(ii) investment; and

(iii) asset-liability management.

Own Risk Assessment

198. These Rules introduce requirements for a licensed insurer to perform an Own Risk and Solvency Assessment (ORSA) comprising:

(a) the licensed insurer's own assessment and calculation of its solvency requirements (an Own Solvency Capital Assessment or OSCA);

(b) the licensed insurer's assessment of risk management; and

(c) the licensed insurer's assessment of the adequacy of capital resources to meet future capital requirements.

199. Subject to the provisions of paragraph 200, all licensed insurers are required to perform an ORSA.

200. A licensed insurer meeting at least one of the following criteria is not required to perform an ORSA –

(a) A licensed insurer classified as a Category 6 licensee;

(b) A licensed insurer which is dormant with no outstanding insurance liabilities;

(c) A licensed insurer that would otherwise be required to perform an OSCA only (pursuant to the exemption under paragraph 201) and whose board of directors considers the PCR to be sufficient. In such cases, this should be clearly stated either in the documentation submitted with the annual return or in separate correspondence. Any such statement should be accompanied by the supporting rationale for this decision; and

(d) A licensed insurer notified in writing by the Commission.

201. Unless otherwise notified in writing by the Commission, a licensed insurer meeting at least one of the following conditions need not meet the requirements of paragraph 205 and may limit their assessment to an OSCA only -

(a) a Category 1 licensed insurers writing life business with:

(i) annual gross written premium income below £25 million; or

(ii) technical provisions, gross of the amounts recoverable from reinsurance contracts and special purpose vehicles below £250 million;

(b) a Category 2 licensed insurer;

(c) a Category 3 licensed insurer writing solely domestic business with annual gross written premium income below £5 million;

(d) a Category 4 licensed insurer;

(e) a Category 5 licensed insurer; and

(f) a Protected Cell Company.

202. An ORSA must be performed at least once a year. The ORSA need not necessarily be performed at the licensed insurer's financial year-end if the board considers it more appropriate to conduct the assessment at another time of year. A licensed insurer is required to recalculate the ORSA if the risk profile of the licensed insurer deviates significantly from the assumptions underlying the last performed assessment.

203. A licensed insurer is required to include in its ORSA all reasonably foreseeable and relevant material risks including, as a minimum –

(a) underwriting risk;

(b) credit risk;

(c) market risk;

(d) operational risk;

(e) liquidity risk; and

(f) any additional risks arising due to membership of a group.

204. A licensed insurer's ORSA is required to be supported by accurate documentation providing appropriately detailed descriptions and explanations of, as a minimum –

(a) the modeling criteria (e.g. confidence level, risk measure and time horizon);

(b) the risks covered;

(c) the measurement approaches used; and

(d) the key assumptions made.

205. As part of its ORSA, a licensed insurer is required to –

(a) identify the relationship between its risk management and the level and quality of financial resources needed and available;

(b) determine the overall financial resources it needs to manage its business given its own risk tolerance and business plans, and to demonstrate that supervisory requirements are met;

(c) base its risk management actions on consideration of its ORSA;

(d) assess the quality and adequacy of its capital resources to meet its future regulatory capital requirements and any additional capital needs; and

(e) analyse its ability to continue in business, and the risk management and financial resources required to do so over its planning horizon, which is expected to exceed one-year.

206. The licensed insurer's continuity analysis referred to in subparagraph 205(e) is required to address a combination of quantitative and qualitative elements in its medium and longer-term business strategy and include projections of its future financial position and analysis of its ability to meet future regulatory capital requirements.

207. Further reference should be made to the Commission's published guidance on the ORSA.

Schedule 1
Recognised Accounting Standards

For the purpose of these Rules, the following accounting standards or practices are approved by the Commission and are referred to as Recognised Accounting Standards:

	Accounting Standard / Practice
1	International Financial Reporting Standards
2	United Kingdom Generally Accepted Accounting Practice*
3	United States Generally Accepted Accounting Practice

* Including where the Commission has permitted a derogation from the additional disclosure requirements under FRS 103.

Schedule 2
General Business Lines of Business

1.1 Motor

1.1.1 Obligations

1. This line of business includes all obligations covering all damage to or loss of land motor vehicles (including railway rolling stock).

2. It also includes obligations which cover liabilities arising out of the use of motor vehicles operating on the land (including carrier's liability).

1.1.2 Guidance: Policies covered

This line of business include private motor comprehensive, private motor non comprehensive, motor cycle, fleets, commercial vehicles (non-fleet) and other motor policies

1.2 General Liability

1.2.1 Obligations

This line of business includes obligations covering all liabilities other than those included in the motor and the marine, aviation and transport lines of business.

1.2.2 Guidance: Policies covered

1. This line of business includes employers' liability, professional indemnity (including directors' and officers' liability and errors and omissions liability), public liability, product liability and mixed commercial package policies.

2. For the avoidance of doubt, a mixed commercial package can be considered contracts of insurance (other than treaty reinsurance contracts) against more than one of:

   (a) loss or damage to property;

   (b) risks to the persons insured incurring liabilities to third parties;

   (c) risks of loss to the persons insured arising from the failure of debtors of theirs to pay their debts when due;

   (d) risks of loss to the persons insured attributable to interruptions of business carried on by them;

   (e) risks of loss to the persons insured attributable to their incurring unforeseen expenses; or

   (f) any other risk of loss to a commercial operation;

   where the risks and losses covered in the contract are rated on a single package basis and no separately identifiable premium is charged or

recorded for internal management purposes for any one group of risks or losses specified in the contract.

1.3 Marine, Aviation and Transport

1.3.1 This line of business includes obligations which cover all damage or loss to river, canal, lake and sea vessels, aircraft (including satellites) and damage to or loss of goods in transit or baggage irrespective of the form of transport.

1.3.2 This line of business also includes all liabilities arising out of use of aircraft, ships, vessels or boats on the sea, lakes, rivers or canals including carrier's liability irrespective of the form of transport.

1.4 Property

1.4.1 Obligations

This line of business includes obligations which cover all damage to or loss of property (other than motor vehicles and marine aviation and transport) due to fire, explosion, natural forces including storm, hail or frost, nuclear energy, land subsidence and any event such as theft.

1.4.2 Guidance: Policies covered

This line of business includes primary (direct) and facultative household and domestic all risks, commercial property (including livestock and crops but excluding energy) and contractors or engineering all risks policies.

1.5 Legal Expenses

This line of business includes obligations which cover legal expenses and cost of litigation.

1.6 Miscellaneous

This line of business includes obligations not elsewhere covered other than those included in the health and health non-proportional lines of business.

1.7 Health

1.7.1 Obligations

Obligations which cover the provision of preventive or curative medical treatment or care including medical treatment or care due to illness, accident, disability and infirmity, or financial compensation for such treatment or care.

1.7.2 Guidance: Policies covered

This line of business includes medical expenses, workers' compensation (but not employer's liability which is covered under the general liability line of business), personal accident, income protection (also known as PHI) and death in service policies.

1.8 Casualty Non-Proportional

This line of business includes non-proportional reinsurance obligations relating to insurance obligations included in the motor and general liability lines of business.

1.9 Marine, Aviation and Transport Non-Proportional

This line of business includes non-proportional reinsurance obligations relating to insurance obligations included in the marine, aviation and transport line of business.

1.10 Property Non-Proportional

This line of business includes non-proportional reinsurance obligations relating to insurance obligations included in the property, legal expenses and miscellaneous lines of business.

1.11 Health Non-Proportional

This line of business includes non-proportional reinsurance obligations relating to insurance obligations included in the health line of business.

Schedule 3
Glossary of Expressions

In this Regulation, unless the context requires otherwise –

"associated party" means-

(a) a holding company, subsidiary or related company of a licensed insurer,

(b) a subsidiary or related company of a holding company of a licensed insurer,

(c) a holding company of a subsidiary of a licensed insurer, or

(d) a company in the case of which a shareholder controller of a licensed insurer, alone or with associates, is entitled to exercise, or control the exercise of, more than 50% of the voting power in general meeting.

"basis adjustment" means the adjustment made to the Recognised Accounting Standards' value of an asset or liability under for the purpose of determining the licensed insurer's regulatory financial statements.

"capital adequacy" means the adequacy of an insurer's capital resources relative to its PCR determined in accordance with Part 4.

"capital floor" means the minimum paid up share capital which must be maintained by a licensed insurer pursuant to section 32 of the Law.

"capital resources" means the difference between assets and liabilities on the basis of their recognition and valuation for capital adequacy purposes.

"**Captive (Re)insurer**" means an insurance or reinsurance entity created and owned, directly or indirectly, by one or more industrial, commercial or financial entities or associations, the purpose of which is to provide insurance or reinsurance cover for risks of the entity or entities to which it belongs, or for entities connected to those entities.

"**Commercial General Insurer**" means a general insurer with any element of unrelated party business.

"**Commercial General Reinsurer**" means a reinsurer providing reinsurance to a commercial insurer, whether or not part of the same group, and with no direct business.

"**Commercial Life Insurer**" means a long-term insurer with any element of unrelated

party business.

"**Commercial Life Reinsurer**" means a long-term reinsurer with any element of unrelated party business.

"**counterparty default risk**" means the possible losses due to unexpected default, or deterioration in the credit standing, of the counterparties and debtors of insurers over the following 12 months.

"**diversification effects**" mean the reduction in the risk exposure of insurance and reinsurance undertakings and groups related to the diversification of their business, resulting from the fact that the adverse outcome from one risk can be offset by a more favourable outcome from another risk, where those risks are not fully correlated.

"**interest rate risk**" means the sensitivity of the values of assets, liabilities and financial instruments to changes in the term structure of interest rates, or in the volatility of interest rates.

"**internal model**" means the model which a licensed insurer uses in place of the Standard Formula to calculate its PCR and for which Commission approval has been granted, which appropriately reflects its risk profile, based on accurate and appropriate data and adequate actuarial and statistical techniques that are commensurate with the nature, scale and complexity of its business.

"**Law**" means the Insurance Business (Bailiwick of Guernsey) Law, 2002

"**market risk**" means the risk to an insurer's financial condition arising from movements in the level or volatility of market prices of assets, liabilities and financial instruments, whether on all investments as a whole (general market risk) or on an individual investment (specific market risk).

"**MCR**" means the Minimum Capital Requirement determined in accordance with Part 3.

"**premium risk**" means the risk that premium provisions, relating to unexpired risks on existing contracts, will be insufficient or need to be increased. It also relates to the risk that net written premiums, relating to policies expected to be written (or renewed) during the forthcoming financial year, will be insufficient to fund the liabilities arising from that business.

"**PCR**" means the Prescribed Capital Requirement determined in accordance with Part 4.

"**Recognised Accounting Standards**" means accounting standards recognised by the

Commission in Schedule 1.

"**Recognised Bank**" means a bank or building society –

(a) with a short-term credit rating of A-1/P-1, or

(b) licensed by the appropriate regulatory authority in Guernsey, the Isle of Man or Jersey.

"**Recognised Territory**" means a territory recognised by the Commission in Schedule 7.

"reserve risk" means the risk that the value of claim settlements will be greater than the value of claim provisions.

"**re-securitised assets**" means a securitised/structured asset where one or more of the underlying assets is itself a securitized/structured asset.

"**securitised/structured asset**" means an asset that is typically a tranche of a pool of assets. Examples include asset backed securities and mortgage backed securities.

"**shareholders' funds**" means the value of the excess of an insurer's assets over its liabilities; and for the purposes of this definition the expression "liabilities" excludes share capital, retained reserves and loans from shareholders where they are subordinated, in writing, to the prior claims of all other creditors.

"**Type 1 letter of credit**" means a letter of credit that is irrevocable, issued to the benefit of the undertaking and provided by a Recognised Bank in a Recognised Territory.

"**Type 2 letter of credit**" means a letter of credit that does not meet the criteria to be classified as a Type 1 letter of credit.

Schedule 4
Recognised Standard Formulae

For the purpose of determining the PCR, the standard formulae in the following countries or territories are for the time being approved by the Commission for use in place of the Guernsey Standard Formula and are referred to as Recognised Standard Formulae: –

	Country / Territory
1	Australia
2	Bermuda
3	Canada
4	the European Union
5	Japan
6	Switzerland

Schedule 5
Acceptable Rating Agencies

For the purpose of these Rules, the following rating agencies are for the time being approved by the Commission and are referred to as Acceptable Rating Agencies:

	Rating Agency
1	A M Best Company
2	Fitch Ratings
3	Moody's Investors Service
4	Standard and Poor's

Schedule 6
Recognised Territory

For the purpose of these Rules, the following territories are recognised by the Commission and are referred to as Recognised Territories:

	Territory
1	any member state of the European Economic Area,
2	any member state of the European Free Trade Area,
3	the Bailiwick of Guernsey, the Isle of Man or the Bailiwick of Jersey, and
4	the following countries or territories -
	(a) Australia
	(b) Canada
	(c) Gibraltar
	(d) Hong Kong
	(e) Japan
	(f) Mexico
	(g) New Zealand
	(h) Singapore
	(i) South Africa
	(j) the United States of America

Schedule 7
Supranational Agencies

For the purpose of these Rules, the following agencies are recognised by the Commission and are referred to as Supranational Agencies:

	Agency
1	African Development Bank
2	Asian Development Bank
3	Caribbean Development Bank
4	Council of Europe
5	Eurofima
6	European Bank for Reconstruction and Development
7	European Investment Bank
8	European Investment Fund
9	Inter-American Development Bank
10	International Bank for Reconstruction and Development (World Bank)
11	International Finance Corporation
12	Islamic Development Bank
13	Nordic Investment Bank

Schedule 8
General Business Risk Capital Factors

1. Market Risk

The market risk capital factors are as follows:

		Capital Factors		
Exposure Type	**Bands**	**Commercial General Insurer**	**Commercial General Reinsurer**	**Captive General (Re)insurer**
Interest Rate Risk	Less than two years	0.3%	0.3%	0.0%
	Two to less than five years	2.6%	1.8%	1.4%
	Five years and above	8.5%	6.0%	4.4%
Spread Risk	Less than two years	1.4%	1.0%	0.6%
	Two to less than five years	4.9%	3.7%	2.4%
	Five years and above	8.7%	6.6%	4.3%
Currency Risk	All	25.0%	18.0%	10.0%
Equity Risk	Listed	39.0%	28.0%	16.0%
	Unlisted	49.0%	35.0%	20.0%
Property Risk	All	25.0%	18.0%	5.0%
Derivatives	All	100.0%	100.0%	100%
Other Investments	All	49.0%	35.0%	20.0%

The modified duration is the change in the value of the assets or liabilities for a 1% change in interest rates (part of which is spread risk). Note that this differs from the basic (or Macaulay) duration which is simply the weighted average time of a series of cash flows.

2. Counterparty Default Risk

Receivable Capital Factors

The Receivable Capital Factors for insurers, reinsurers and captives are as follows:

(a) 0% for receivables due 90 days or less; and

(b) 100% for receivables greater than 90 days overdue.

Other Default Risk Capital Factors

The Other Default Risk Capital Factors are as follows:

Credit Rating Band	**Commercial General Insurer**	**Commercial General Reinsurer**	**Captive General (Re)insurer**
AAA	1.3%	1.0%	0.0%
AA	3.0%	2.2%	1.0%
A	6.7%	4.9%	3.0%
BBB	14.7%	10.7%	6.0%
BB	54.4%	39.8%	24.0%
B or Lower	100.0%	73.1%	45.0%

Unrated	100.0%	73.1%	45.0%

Note that the Credit Rating Band relates to the direct counterparty to which there is an exposure. Where an exposure is to a Guernsey licensed bank and that bank is unrated, reference may be made to the credit rating of the parent bank.

Other Default Risk Recovery Rates

The Recovery Rates for insurers, reinsurers and captives are as follows:

(a) 50% for receivables due from reinsurers; and

(b) 0% for other exposure types.

3. Premium Risk

The Premium Risk Capital Factors are as follows -

	Premium Risk Capital Factors		
Line of Business	**Commercial General Insurer**	**Commercial General Reinsurer**	**Captive General (Re)insurer**
Motor	28.6%	20.9%	13.0%
General Liability	41.7%	30.1%	18.3%
Casualty Non-Proportional	52.2%	37.2%	22.3%
Marine, Aviation and Transport	45.2%	32.4%	19.7%

MAT Non-Proportional	52.2%	37.2%	22.3%
Property	22.4%	16.5%	10.4%
Property Non-Proportional	52.2%	37.2%	22.3%
Legal Expenses	19.4%	14.4%	9.1%
Miscellaneous	28.9%	21.1%	13.1%
Health	19.7%	14.6%	9.2%
Health Non-Proportional	52.2%	37.2%	22.3%

4. Reserve Risk

The Reserve Risk Capital Factors are as follows -

	Reserve Risk Capital Factors		
Line of Business	**Commercial General Insurer**	**Commercial General Reinsurer**	**Captive General (Re)insurer**
Motor	25.5%	18.7%	11.7%
General Liability	31.8%	23.2%	14.4%
Casualty Non-Proportional	63.3%	44.5%	26.3%
Marine, Aviation and Transport	31.8%	23.2%	14.4%
MAT Non-Proportional	63.3%	44.5%	26.3%
Property	28.6%	20.9%	13.0%
Property Non-Proportional	63.3%	44.5%	26.3%
Legal Expenses	35.1%	25.5%	15.7%

Miscellaneous	51.6%	36.8%	22.1%
Health	26.5%	19.5%	12.1%
Health Non-Proportional	63.3%	44.5%	26.3%

Schedule 9
General Business Diversification Adjustment

General Formula

The diversification adjustment determined using the Guernsey Standard Formula is calculated as -

$$\text{Diversification Adjustment} = \text{Undiversified capital} - \sqrt{\sum_{x,y} Corr_{x,y} \cdot C_x \cdot C_y}$$

Where:

(a) Undiversified capital is the capital requirement not allowing for diversification and, where relevant, any regulatory adjustment;

(b) $\sum_{x,y}$ is the sum over all combinations of risks;

(c) $Corr_{x,y}$ is the correlation between risks x and y; and

(d) C_x, C_y is the capital requirement for individual risks x and y according to the rows and columns of the correlation matrix $Corr_{x,y}$; and

$Corr_{x,y} = 1$ is equivalent to full correlation and leads to no diversification benefit.

$Corr_{x,y} = 0$ is equivalent to no correlation and leads to full diversification benefit.

Correlation Matrix: PCR

(i) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	Market	Default	Premium	Reserve
Market	1	0.25	0.25	0.25
Default	0.25	1	0.5	0.5

Premium	0.25	0.5	1	0.5
Reserve	0.25	0.5	0.5	1

(ii) For captive (re)insurers, $Corr_{x,y}$ is defined as

Corr	Market	Default	Premium	Reserve
Market	1	0	0	0
Default	0	1	0.25	0.25
Premium	0	0.25	1	0.25
Reserve	0	0.25	0.25	1

(iii)

Correlation Matrix: Market Risk

(i) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	Interest	Spread	Currency	Other
Interest	1	0	0.25	0
Spread	0	1	0.25	0.75
Currency	0.25	0.25	1	0.25
Other Market	0	0.75	0.25	1

(ii) For captive (re)insurers, $Corr_{x,y}$ is defined as:

Corr	Interest	Spread	Currency	Other
Interest	1	0	0	0
Spread	0	1	0	0.5
Currency	0	0	1	0
Other Market	0	0.5	0	1

Correlation Matrix: Counterparty Default Risk

For insurers, reinsurers and captive (re)insurers, $Corr_{x,y}$ is defined as:

Corr	Receivables	Other
Receivables	1	1
Other Exposures	1	1

Correlation Matrix: Reserve Risk

(i) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	General Liability	Legal Expenses	MAT	Motor	Property	Miscellaneous	Casualty NP	MAT NP	Property NP	Health	Health NP
General Liability	1	0.5	0.25	0.5	0.25	0.25	0.25	0.5	0.5	0	0
Legal Expenses	0.5	1	0.5	0.25	0.25	0.25	0.25	0.5	0.5	0	0
MAT	0.25	0.5	1	0.25	0.25	0.25	0.25	0.5	0.25	0	0
Motor	0.5	0.25	0.25	1	0.5	0.25	0.25	0.25	0.5	0	0
Property	0.25	0.25	0.25	0.5	1	0.5	0.25	0.25	0.5	0	0
Miscellaneous	0.25	0.25	0.25	0.25	0.5	1	0.5	0.25	0.5	0	0
Casualty NP	0.25	0.25	0.25	0.25	0.25	0.5	1	0.25	0.25	0	0
MAT NP	0.5	0.5	0.5	0.25	0.25	0.25	0.25	1	0.5	0	0
Property NP	0.5	0.5	0.25	0.5	0.5	0.5	0.25	0.5	1	0	0
Health	0	0	0	0	0	0	0	0	0	1	0
Health NP	0	0	0	0	0	0	0	0	0	0	1

(ii) For captive (re)insurers, $Corr_{x,y}$ is defined as:

Corr	General	Legal	MAT	Motor	Property	Miscella	Casualty	MAT NP	Property	Health	Health
General Liability	1	0.25	0	0.25	0	0	0	0.25	0.25	0	0
Legal Expenses	0.25	1	0.25	0	0	0	0	0.25	0.25	0	0
MAT	0	0.25	1	0	0	0	0	0.25	0	0	0
Motor	0.25	0	0	1	0.25	0	0	0	0.25	0	0
Property	0	0	0	0.25	1	0.25	0	0	0.25	0	0
Miscellaneous	0	0	0	0	0.25	1	0.25	0	0.25	0	0
Casualty NP	0	0	0	0	0	0.25	1	0	0	0	0
MAT NP	0.25	0.25	0.25	0	0	0	0	1	0.25	0	0
Property NP	0.25	0.25	0	0.25	0.25	0.25	0	0.25	1	0	0
Health	0	0	0	0	0	0	0	0	0	1	0.25
Health NP	0	0	0	0	0	0	0	0	0	0.25	1

Correlation Matrix: Premium Risk

For insurers, reinsurers and captive (re)insurers, the correlation matrices for premium risk are the same as for reserve risk.

Schedule 10

Life Business Stresses and Risk Capital Factors

1. Real Interest Rate Stress

The instantaneous stresses that should be applied to the nominal interest rates are as follows:

	Commercial Life Insurer		*Commercial Life Reinsurer*		*Captive Life (Re)insurer*	
Maturity t (years)	**Up stress**	**Down stress**	**Up stress**	**Down stress**	**Up stress**	**Down stress**
0.25	70%	-75%	55%	-68%	36%	-36%
0.5	70%	-75%	55%	-68%	36%	-36%
1	70%	-75%	55%	-68%	36%	-36%
2	70%	-65%	55%	-59%	30%	-38%
3	64%	-56%	49%	-47%	26%	-36%
4	59%	-50%	42%	-41%	22%	-33%
5	55%	-46%	39%	-37%	21%	-31%
6	52%	-42%	37%	-33%	20%	-28%
7	49%	-39%	34%	-30%	19%	-25%
8	47%	-36%	33%	-28%	19%	-23%
9	44%	-33%	31%	-25%	18%	-21%
10	42%	-31%	30%	-23%	17%	-20%
11	39%	-30%	29%	-22%	16%	-20%
12	37%	-29%	28%	-22%	15%	-19%
13	35%	-28%	26%	-22%	15%	-19%
14	34%	-28%	25%	-22%	14%	-19%
15	33%	-27%	24%	-21%	14%	-18%
16	31%	-28%	22%	-23%	13%	-19%
17	30%	-28%	22%	-23%	12%	-19%
18	29%	-28%	21%	-23%	12%	-19%
19	27%	-29%	20%	-24%	11%	-20%
≥20	26%	-29%	19%	-25%	11%	-20%

Example of application for an insurer in the downward scenario at a maturity of 15 years:

$N(15)$ = nominal interest rate at 15 years

$N_S(15)$ = stressed nominal interest rate at 15 years

$R(15)$ = real interest rate at 15 years

$R_S(15)$ = stressed real interest rate at 15 years

When using nominal interest rates:

$$\text{Stress} = N(15) \times -27\%$$

$$N_S(15) = N(15) + N(15) \times -27\%$$

When using real interest rates:

$$\text{Stress} = N(15) \times -27\%$$

$$R_S(15) = R(15) + N(15) \times -27\%$$

2. Inflation Rate Stress

The instantaneous stresses that should be applied to the inflation rates are as follows:

	Inflation
Commercial Life Insurer	*1.00%*
Commercial Life Reinsurer	*0.75%*
Captive Life (Re)insurer	*0.50%*

3. Spread Stress and Default Factors

The stresses that should be applied to the current yields and the default factors are as follows:

	Commercial Life Insurer				Commercial Life Reinsurer				Captive Life (Re)insurer			
Credit Rating Band	**Default Factor**	**Bonds Spreads**	**Structured / Securitised Spread**	**Re-securitised Spread**	**Default Factor**	**Bonds Spreads**	**Structured / Securitised Spread**	**Re-securitised Spread**	**Default Factor**	**Bonds Spreads**	**Structured / Securitised Spread**	**Re-securitised Spread**
AAA	0.2%	0.6%	1.0%	1.8%	0.2%	0.5%	0.8%	1.4%	0.1%	0.3%	0.5%	0.9%
AA	0.6%	0.8%	1.4%	2.4%	0.5%	0.6%	1.1%	1.8%	0.3%	0.4%	0.7%	1.2%
A	1.2%	1.2%	2.0%	3.2%	0.9%	0.9%	1.5%	2.4%	0.6%	0.6%	1.0%	1.6%
BBB	3.0%	1.6%	2.5%	4.0%	2.3%	1.2%	1.9%	3.0%	1.5%	0.8%	1.2%	2.0%
BB	6.0%	2.0%	3.0%	5.0%	4.6%	1.5%	2.3%	3.8%	3.0%	1.0%	1.5%	2.5%
B	10.0%	2.5%	3.5%	6.0%	7.6%	1.9%	2.7%	4.6%	5.0%	1.2%	1.7%	3.0%
Less than B, Unrated	16.0%	3.0%	4.5%	7.5%	12.2%	2.3%	3.4%	5.7%	8.0%	1.5%	2.2%	3.7%

4. Currency Stress

The instantaneous stresses that should be applied to the exchange rates compared to the reporting currency are as follows:

	Up Stress	Down Stress
Commercial Life Insurer	25.0%	-25.0%
Commercial Life Reinsurer	18.0%	-18.0%
Captive Life (Re)insurer	10.0%	-10.0%

5. Equity Stress

The stresses that should be applied to equities are a fall in prices as follows:

	Equity			Other investments	
	Quoted	Unquoted	Strategic	Other	Derivatives
Commercial Life Insurer	39.0%	49.0%	22.0%	49.0%	n/a
Commercial Life Reinsurer	28.0%	35.0%	16.0%	35.0%	n/a
Captive Life (Re)insurer	16.0%	20.0%	9.0%	20.0%	n/a

An equity investment is of a strategic nature if the following criteria are met:

(i) The value of the equity investment is likely to be materially less volatile for the following 12 months than the value of other equities over the same period as a result of both the nature of the investment and the influence exercised by the participating undertaking in the related undertaking.
(ii) The nature of the investment is strategic, taking into account all relevant factors, including:
  (a) the existence of a clear decisive strategy to continue holding the participation for long period
  (b) the consistency of the strategy referred to in point (a) with the main policies guiding or limiting the actions of the undertaking
  (c) the participating undertaking's ability to continue holding the participation in the related undertaking
  (d) the existence of a durable link
  (e) where the insurance or reinsurance participating company is part of a group, the consistency of such strategy with the main policies guiding or limiting the actions of the group.

6. Property Stress

The stresses that should be applied to property are a fall in prices as follows:

	Property
Commercial Life Insurer	25.0%
Commercial Life Reinsurer	18.0%
Captive Life (Re)insurer	5.0%

7. Counterparty Default Risk

Receivable Capital Factors

The Receivable Capital Factors for insurers, reinsurers and captives are as follows:

(c) 0% for receivables due 90 days or less; and

(d) 100% for receivables greater than 90 days overdue.

Other Default Risk Capital Factors

The Other Default Risk Capital Factors are as follows:

Credit Rating Band	Commercial Life Insurer	Commercial Life Reinsurer	Captive Life (Re)insurer
AAA	1.3%	1.0%	0.0%
AA	3.0%	2.2%	1.0%
A	6.7%	4.9%	3.0%
BBB	14.7%	10.7%	6.0%
BB	54.4%	39.8%	24.0%
B or Lower	100.0%	73.1%	45.0%
Unrated	100.0%	73.1%	45.0%

Note that the Credit Rating Band relates to the direct counterparty to which there is an exposure. Where an exposure is to a Guernsey licensed bank and that bank is unrated, reference may be made to the credit rating of the parent bank.

Other Default Risk Recovery Rates

The Recovery Rates for insurers, reinsurers and captives are as follows:

(c) 50% for receivables due from reinsurers; and

(d) 0% for other exposure types.

8. Underwriting Stress

The stresses that should be applied for the underwriting risks are as follows:

	Mortality	Longevity	Morbidity/Disability		Lapse			Expenses
			Inception Rates	Recovery Rates	Up Stress	Down Stress	Mass Event	
Commercial Life Insurer	15.0%	20.0%	25.0%	20.0%	50.0%	50.0%	40.0%	10.0%
Commercial Life Reinsurer	11.5%	15.0%	19.0%	15.0%	38.0%	38.0%	30.0%	7.5%
Captive Life (Re)insurer	7.5%	10.0%	12.5%	10.0%	25.0%	25.0%	20.0%	5.0%

For the purpose of the upward lapse stress, the stressed lapse rates should be subject to a maximum of 100%.

For the purpose of the downward lapse stress, the magnitude of the stress should be subject to a maximum of 20%.

Example of application for an insurer:

L = lapse rate

L_S = stressed lapse rate

Increase in lapse rates

$L = 50\%$ $\quad L_S = \min[50\% \times (1 + 50\%), 100\%] = 75\%$

$L = 80\%$ $\quad L_S = \min[80\% \times (1 + 50\%), 100\%] = 100\%$

Decrease in lapse rates

$L = 30\%$ $L_S = 30\% - \min[30\% \times 50\%, 20\%] = 15\%$

$L = 50\%$ $L_S = 50\% - \min[50\% \times 50\%, 20\%] = 30\%$

	Catastrophe Risk						
			Mass Accident				
	Life Pandemic	**Disability/Morbidity Pandemic**	**Accidental deaths**	**Permanent total disabilities**	**Long term disabilities**	**Short term disabilities**	**Medical/Injuries**
	per 1,000 lives	**per 100,000 lives**	**per 100,000 lives**	**per 100,000 lives**	**per 100,000 lives**	**per 100,000 lives**	**per 100,000 lives**
Commercial Life Insurer	1.5	7.5	25	3.75	12.5	33.75	75
Commercial Life Reinsurer	1.14	5.7	19	2.75	9.5	25.75	57
Captive Life (Re)insurer	0.745	3.75	12.5	1.75	6.25	16.75	37.25

Schedule 11
Life Business Diversification Adjustment

General Formula

The diversification adjustment determined using the Guernsey Standard Formula is calculated as -

$$\text{Diversification Adjustment} = \text{Undiversified capital} - \sqrt{\sum_{x,y} Corr_{x,y} \cdot C_x \cdot C_y}$$

Where:

(e) Undiversified capital is the capital requirement not allowing for diversification and, where relevant, any regulatory adjustment;

(f) $\sum_{x,y}$ is the sum over all combinations of risks;

(g) $Corr_{x,y}$ is the correlation between risks x and y; and

(h) C_x, C_y is the capital requirement for individual risks x and y according to the rows and columns of the correlation matrix $Corr_{x,y}$; and

$Corr_{x,y} = 1$ is equivalent to full correlation and leads to no diversification benefit.

$Corr_{x,y} = 0$ is equivalent to no correlation and leads to full diversification benefit.

Correlation Matrix: PCR

(iv) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	Market	Default	Underwriting
Market	1	0.25	0.25
Default	0.25	1	0.25
Underwriting	0.25	0.25	1

(v) For captive (re)insurers, $Corr_{x,y}$ is defined as

Corr	Market	Default	Underwriting
Market	1	0	0
Default	0	1	0
Underwriting	0	0	1

(vi)

Correlation Matrix: Market Risk

(iii) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	Interest	Inflation	Spread	Currency	Equity	Property
Interest	1	0.25	0.25	0.25	0.25	0.25
Inflation	0.25	1	0.25	0.25	0.5	0.5
Spread	0.25	0.25	1	0.25	0.75	0.5
Currency	0.25	0.25	0.25	1	0.25	0.25
Equity	0.25	0.5	0.75	0.25	1	0.75
Property	0.25	0.5	0.5	0.25	0.75	1

(iv) For captive (re)insurers, $Corr_{x,y}$ is defined as:

Corr	Interest	Inflation	Spread	Currency	Equity	Property
Interest	1	0	0	0	0	0
Inflation	0	1	0	0	0.25	0.25
Spread	0	0	1	0	0.5	0.25
Currency	0	0	0	1	0	0
Equity	0	0.25	0.5	0	1	0.5
Property	0	0.25	0.25	0	0.5	1

Correlation Matrix: Counterparty Default Risk

For insurers, reinsurers and captive (re)insurers, $Corr_{x,y}$ is defined as:

Corr	Receivables	Other Exposures
Receivables	1	1
Other Exposures	1	1

Correlation Matrix: Underwriting Risk

(i) For insurers and reinsurers, $Corr_{x,y}$ is defined as:

Corr	Mortality	Longevity	Disability/Morbidity	Lapse	Expense	Catastrophe
Mortality	1	-0.25	0.25	0	0.25	0.25
Longevity	-0.25	1	0	0.25	0.25	0
Disability/Morbidity	0.25	0	1	0	0.5	0.25
Lapse	0	0.25	0	1	0.5	0.25
Expense	0.25	0.25	0.5	0.5	1	0.25
Catastrophe	0.25	0	0.25	0.25	0.25	1

(ii) For captive (re)insurers, $Corr_{x,y}$ is defined as:

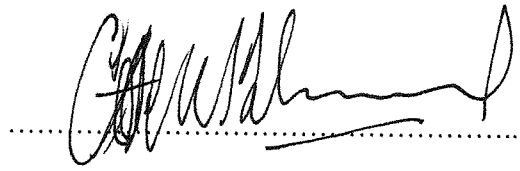
Corr	Mortality	Longevity	Disability/Morbidity	Lapse	Expense	Catastrophe
Mortality	1	-0.5	0	0	0	0
Longevity	-0.5	1	0	0	0	0
Disability/Morbidity	0	0	1	0	0.25	0
Lapse	0	0	0	1	0.25	0
Expense	0	0	0.25	0.25	1	0
Catastrophe	0	0	0	0	0	1

Correlation Matrix: Catastrophe Risk

For insurers, reinsurers and captive (re)insurers, $Corr_{x,y}$ is defined as

Corr	Life pandemic	Disability/Morbidity pandemic	Mass accident
Life pandemic	1	0	0
Disability/Morbidity	0	1	0
Mass accident	0	0	1

Dated this 28th day of April, 2015.



Cees Schrauwers

Chairman of the Guernsey Financial Services Commission

For and on behalf of the Commission