



## **Prudential Standard GPS 116**

### **Capital Adequacy: Concentration Risk Capital Charge**

#### **Objective and key requirements of this Prudential Standard**

This Prudential Standard sets out the calculation of the Concentration Risk Capital Charge under the Prescribed Method of calculating the Minimum Capital Requirement applicable to a general insurer. There are specific requirements for this calculation for lenders mortgage insurers.

The Concentration Risk Capital Charge is the component of the Minimum Capital Risk that takes into account the highest aggregation of risks of an insurer. It is calculated as the addition of the insurer's Maximum Event Retention after taking into account acceptable reinsurance arrangements less the cost of one reinstatement of those reinsurance arrangements. This Prudential Standard sets out issues that affect an insurer's Maximum Event Retention that must be taken into account in the calculation of the Maximum Event Retention and therefore the Concentration Risk Capital Charge.

This Prudential Standard forms part of a comprehensive set of prudential standards that deal with the measurement of a general insurer's capital adequacy.

## Authority

1. This Prudential Standard is made under section 32 of the *Insurance Act 1973* (**the Act**).

## Application

2. This Prudential Standard applies to **insurers** authorised under the Act<sup>1</sup>
3. Subject to any specific transition rules, this Prudential Standard applies to insurers from 1 July 2008 (**effective date**).
4. As a consequence of the key role played by capital in the financial health of an insurer, every insurer must maintain sufficient capital to enable its insurance obligations to be met under a wide range of circumstances. This required level of capital for regulatory purposes is referred to as the Minimum Capital Requirement (**MCR**).

## Interpretation

5. Unless otherwise defined in this Prudential Standard, expressions in bold are defined in *Prudential Standard GPS 001 Definitions*.

## Concentration Risk Capital Charge

6. This Prudential Standard sets out the calculation of the Concentration Risk Capital Charge for an insurer using the Prescribed Method to determine its MCR. Specifically, it sets out the issues that an insurer must consider in setting its Maximum Event Retention (**MER**). The Concentration Risk Capital Charge is set equal to an insurer's MER plus the cost of one reinstatement of the catastrophe reinsurance cover in cases where the reinstatement reinsurance cover has not been pre-paid by the insurer. It is the responsibility of the insurer's Board and senior management to ensure that the MER is set at a level which is consistent with the insurer's risk profile and its reinsurance program.

## Definitions

7. The MER is the largest loss to which an insurer will be exposed (taking into account the probability of that loss) due to a concentration of risk exposures, after netting out any potential **reinsurance assets**<sup>2</sup>.

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<sup>1</sup> Refer to sections 32 and 35 of the Act.

<sup>2</sup> For the purposes of this paragraph, 'potential reinsurance assets' include reinsurance assets receivable from the Commonwealth Government in respect of:

- (a) a high cost claim indemnity as defined under the *Medical Indemnity Act 2002* (**Medical Indemnity Act**); and
- (b) amounts payable under the High Cost Claims Protocol as defined under the Medical Indemnity Act.

8. **Probable Maximum Loss (PML)** is the largest gross loss to which an insurer will be exposed (within the realms of possibility) due to a concentration of risk exposures, without any allowance for potential reinsurance assets.
9. **Return period** is the expected average period within which a particular catastrophic event will re-occur. For the purposes of this Prudential Standard, insurers will be required to assume a return period of 1 in 250 years, or greater.

### **Background**

10. An insurer is exposed to the possibility of very large losses arising from their portfolios as a result of various natural catastrophes or other accumulation of large losses, e.g. earthquakes, fires, storms, etc. Such events may occur only rarely and yet their financial impact on an insurer can be very significant, possibly resulting in the failure of an insurer.
11. In practice, an insurer uses the concept of MER to estimate its exposure to catastrophic events. The use of MER allows the insurer to:
  - (a) calculate the level of reinsurance cover which the insurer requires;
  - (b) apportion reinsurance costs fairly among different segments of business; and
  - (c) control exposures to geographical zones or business types, where the risks of catastrophic loss are higher than acceptable, having regard to the insurer's risk profile and risk appetite.

### **Issues affecting the level of MER**

12. In determining the level of MER for a given portfolio, the insurer must consider:
  - (a) the classes of business in which the insurer is engaged;
  - (b) the types of catastrophic risk which need to be addressed;
  - (c) the level of capital available to the insurer;
  - (d) the geographical zones in which the insurer transacts business;
  - (e) the effects of combined risks, e.g. where an insurer provides coverage for both workers' compensation business and building insurance in the same geographical area;
  - (f) how the geographical zones will be grouped for calculation purposes; and
  - (g) the insurer's overall risk appetite and desired probability of ruin.
13. An insurer must at a minimum adopt an MER which relates to an accumulation of exposures to a single event. However, APRA may require an insurer with a

complex portfolio of insurance risks to estimate its MER using a whole of portfolio approach.<sup>3</sup>

14. When calculating the MER, an insurer must have regard to the documentation of reinsurance contracts it has in place. To determine the extent to which potential reinsurance assets expected from reinsurance contracts may be used to offset the PML calculated, refer to paragraph 34 of *Prudential Standard GPS 110 Capital Adequacy (GPS 110)*.

### Specialist insurers

15. Specialist insurers, such as providers of medical indemnity, may not be exposed to large losses from natural catastrophes. They may, however, still be exposed to large losses arising from groups of claims resulting from a common dependent source. For example, a medical insurer may face a large number of claims arising from a class action related to a faulty medical procedure.

### Determining the level of the MER

16. The insurer must base the calculation of its MER on:
  - (a) the relevant area of concentration (e.g. geographic region);
  - (b) which peril produces the greatest MER;
  - (c) the return period of the relevant catastrophe and the sensitivity of the MER to changes in the return period;
  - (d) results produced by modelling the insurer's own past experience; and
  - (e) any external, commercially available data and modelling facilities, bearing in mind the appropriateness of these data to the insurer's portfolio of risks.
17. An insurer must calculate its MER in a manner consistent with the processes for setting, monitoring and altering the MER specified in the insurer's Reinsurance Management Strategy (**REMS**), as required under *Prudential Standard GPS 230 Reinsurance Management*.
18. It is common practice for an insurer to use computer-based modelling techniques, developed either in-house or by external providers, to estimate likely losses under different catastrophe scenarios. If an insurer uses such a model, the model must be conceptually sound and capable of consistently producing realistic calculations of the MER. APRA will expect the insurer to be able to demonstrate an understanding of the model used in estimating the MER. This understanding will include:
  - (a) the type of data and assumptions used in the model;

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<sup>3</sup> Exercising the power under paragraph 32 of GPS 110.

- (b) the methodology used to incorporate the data and assumptions into the model; and
  - (c) the sensitivity of the resulting MER figure to changes in the model's assumptions.
19. An insurer must be able to demonstrate that they have thoroughly researched the model and tested at least several different scenarios of return period for each type of catastrophic event that may affect their portfolio of risks. Similarly, an insurer must calculate its MER using data that is consistent, accurate and complete. Where an insurer lacks access to the relevant data, it must be able to explain the rationale for, and details of, any estimates of data that it uses. This would include analysis of the sensitivity of the results to changes in the estimates and assumptions.
  20. In setting an appropriate level of MER, the Board must consider the insurer's claims history, capital availability and reinsurance arrangements.
  21. A lenders mortgage insurer must determine its MER by reference to Attachment A.

**Reporting**

22. An insurer must consult with APRA regarding the adequacy and appropriateness of the methodology for setting its MER. Where APRA is not satisfied with the methodologies or the assumptions used, it may allow or require the insurer to make adjustments to the calculation of its MER.
23. An insurer must inform APRA of any changes to its MER arising as a result of changes in its REMS, risk profile, classes of business underwritten or reinsurance program.

**Determinations made under previous GPS 110**

24. An approval, determination, direction or requirement made by APRA under a provision specified in Column 1 of the following table that is in operation immediately prior to the commencement of this Prudential Standard is taken, on and from the effective date, to have been made under the provision of this Prudential Standard specified in the same row of Column 2 of the table.

<b>Column 1: Provision of Prudential Standard GPS 110 Capital Adequacy made on 25 September 2006</b>	<b>Column 2: Provision of this Prudential Standard</b>
Attachment E, paragraph 18: allow or require adjustments to calculation of an insurer's MER	Paragraph 22
Attachment F, paragraph 21: determine a formula for calculating PML in relation	Attachment A, Paragraph 21

<b>Column 1: Provision of <i>Prudential Standard GPS 110 Capital Adequacy</i> made on 25 September 2006</b>	<b>Column 2: Provision of this Prudential Standard</b>
to certain exposures.	
Attachment F, paragraph 22: approve methodology for downward adjustment of an LMI's PML.	Attachment A, Paragraph 22
Attachment F, paragraph 26: direct classification of loan as non-standard loan.	Attachment A, Paragraph 26
Attachment F, paragraph 28: direct reclassification of loan as commercial loan.	Attachment A, Paragraph 28
Attachment F, paragraph 29: direct LMI to assume sum insured, LVR or age of loan.	Attachment A, Paragraph 29
Attachment F, paragraph 36: approve methodology for calculation of available insurance.	Attachment A, Paragraph 36

## Attachment A

### MER for Lenders Mortgage Insurers

1. This Attachment applies to a Lenders Mortgage Insurer (**LMI**), meaning an insurer that has written or reinsured, or proposes to write or reinsure, policies of lenders mortgage insurance. For these purposes, **lenders mortgage insurance** has its ordinary commercial meaning and includes insurance under a policy which protects a lender from losses in the event of borrower default on a loan secured by mortgage over residential or other property. This Attachment outlines the methodology for the calculation of the MER, and the applicable Concentration Risk Capital Charge, for an LMI that uses the Prescribed Method to determine its MCR. Consistent with GPS 110 and this Prudential Standard, the Concentration Risk Capital Charge is set equal to an LMI's MER, plus the cost of one reinstatement of the catastrophe reinsurance cover in cases where the reinstatement reinsurance cover has not been pre-paid by the insurer.
2. An LMI must also meet the requirements in the main body of this Prudential Standard. In the event of any inconsistency between this Attachment and the main body of this Prudential Standard, the requirements in the latter take precedence in relation to an LMI.

### Definitions

3. The MER is the largest loss to which an insurer will be exposed (taking into account the probability of that loss) due to a concentration of policies, after netting out any potential reinsurance assets.
4. **PML** is the largest loss to which an insurer will be exposed (within the realms of possibility) due to a concentration of policies, without any allowance for potential reinsurance assets. For the purpose of this Attachment, the PML is assumed to arise from a catastrophic event that is expected to re-occur, on average, once in every 250 years.
5. **Loans**, as referred to in this Attachment, are loans secured by an insured mortgage over residential or other property.
6. **Sum insured** is the original exposure amount for an LMI as stated in the mortgage insurance policy. Further information on sum insured is provided in paragraph 29 of this Attachment.
7. **Loan-to-Valuation Ratio (LVR)** is the ratio of the amount of the loan to the value of the secured residential property, as at the date of origination of the loan. Where the mortgage insurance premium is capitalised in the loan amount, the LVR must be calculated including the premium; that is, the loan amount must be increased by the amount of the capitalised premium. The inclusion of a **First Home Owners Grant (FHOG)** in the deposit for a mortgaged property will not otherwise increase the LVR of a loan. Further information on LVR is provided in paragraph 29 of this Attachment.

8. **Age** is the length of time from the date of origination of the loan to the date of calculation. Further information on age is provided in paragraph 29 of this Attachment.
9. **Loan type** refers to whether the loan is a standard, non-standard or commercial loan. Further information on loan types is provided in paragraphs 23 to 28 of this Attachment.
10. **Coverage type** refers to whether the insurance provided is for 100 per cent of the loan amount, or less than 100 per cent of the loan amount (**top cover**), or is coverage in respect of a pool of loans (**pool mortgage insurance**).
11. **Premiums Liabilities**, as referred to in this Attachment, relate to future claim payments arising from future events insured under existing policies, gross of expected reinsurance recoveries and valued at a 75 per cent level of sufficiency.
12. **Outstanding Claims Provision (OCP)**, as referred to in this Attachment, relates to all claims incurred prior to the calculation date, whether or not they have been reported to the insurer, gross of **reinsurance recoverables** and valued at a 75 per cent level of sufficiency.

## **Background**

13. Although an LMI may not be exposed to the possibility of large losses due to natural perils, such as those faced by most other general insurers, it will be exposed to large losses resulting from a severe economic or property downturn.
14. Most natural peril catastrophes are localised and occur at a particular point in time. In contrast, an economic or property downturn can be a prolonged, nationwide event, which may have an impact over several years. APRA considers that a three-year downturn is appropriate for determining the MER of an LMI.

## **MER model for LMIs**

15. The MER model for LMIs assumes a three-year economic or property downturn. The modelled losses must be allocated in the proportion of 25 per cent to year one, 50 per cent to year two and 25 per cent to year three, of the downturn. These losses are in addition to future claim payments provisioned for as Premiums Liabilities.
16. An LMI's MER is calculated by:
  - (a) working out the PML (which will comprise the total of all the amounts worked out by applying paragraphs 17 to 22 of this Attachment);
  - (b) deducting the amount of allowable reinsurance, worked out in accordance with paragraphs 30 to 37 of this Attachment, from the PML; and
  - (c) adding an allowance of five per cent of the PML for claims handling expenses.

17. Where an LMI has written one or more policies covering standard or non-standard loans (other than by way of a policy of pool mortgage insurance, or by way of a policy of top cover), its PML will include an amount calculated by:
  - (a) multiplying the sum insured under each such policy by the appropriate Probability of Default (**PD**), Loss-Given-Default (**LGD**) and seasoning factors set out in the Table at Attachment B; and then
  - (b) adding together the amounts calculated for each policy under paragraph 17(a) of this Attachment to produce a total.
  
18. Where an LMI has written one or more policies of top cover in respect of standard or non-standard loans, its PML will include an amount calculated by:
  - (a) multiplying the sum insured under each such policy by:
    - (i) the appropriate PD factor set out in the table at Attachment B;
    - (ii) the appropriate LGD factor set out in the table at Attachment B, adjusted to reflect the proportion of insurance in place by dividing the LGD percentage by the percentage of top cover (refer to Example below), up to a maximum of 100 per cent; and
    - (iii) the appropriate seasoning factor set out in the table at Attachment B; and then
  - (b) adding together the amounts calculated for each policy under paragraph 18(a) of this Attachment to produce a total.

*Example:* 30 per cent top cover for a loan with an LVR of 65 per cent is subject to an LGD of 67 per cent (which is equal to 20 per cent divided by 30 per cent).

19. Where an LMI has written one or more policies of pool mortgage insurance covering standard or non-standard loans, its PML will include an amount calculated by:
  - (a) multiplying the total sum insured under each such policy by the appropriate PD, LGD and seasoning factors (as set out in the table at Attachment B); and then
  - (b) adding together the amounts calculated for each policy under paragraph 19(a) of this Attachment to produce a total.

For the purposes of paragraph 19(a) of this Attachment, the PD and seasoning factors are the factors set out in the table at Attachment B that correspond to the weighted-average LVR and weighted-average age of the pool, and the LGD is 100 per cent.

20. Where an LMI has written one or more policies covering commercial loans, its PML will include an amount calculated by:

- (a) multiplying the sum insured under each such policy by a factor of eight per cent (irrespective of the LVR and age of the loan); and then
  - (b) adding together the amounts calculated for each policy under paragraph 20(a) of this Attachment to produce a total.
21. Where a policy has characteristics of more than one coverage type, or the insured loan or loans have characteristics of more than one loan type, then the relevant exposure must be recognised in the category which produces the highest PML for that exposure. If paragraphs 17, 18, 19 or 20 of this Attachment do not readily apply to the policy or the loan type, APRA may determine, by instrument in writing, a formula for the calculation of the PML in relation to that exposure (being a formula that is appropriate to the policy or loan type and is broadly consistent with the prudential approach taken in this Attachment).
22. In calculating the PML in accordance with paragraphs 17 to 21 of this Attachment, the LMI MER model assumes a constant sum insured over the three-year scenario. This recognises that, although the sum insured may decrease as a result of the expiration of existing policies, this may be offset by the LMI writing new business over the three-year scenario. However, for an LMI no longer writing new business (i.e. in run-off), the sum insured is expected to decrease over the three-year scenario. Accordingly, it may be appropriate for an LMI in run-off to adjust its PML downwards in years two and three of the scenario for the purpose of calculating its MER. The methodology for adjusting an LMI's PML must be approved, by APRA, by an instrument in writing.

### **Criteria for standard loans, non-standard loans and commercial loans**

23. Loans predominantly secured by residential property are generally classified as standard or non-standard. For the purpose of the LMI MER model, a standard loan must meet the following criteria:
- (a) the LMI or lender has formally verified the borrower's income and employment; and
  - (b) the borrower passes standard credit checks and income requirements as documented in the LMI or lender's underwriting or credit policies and procedures.
24. Loans to borrowers with non-saved deposits (e.g. borrowers with deposits partially generated under the FHOG scheme), are to be classified as standard loans, except where the loans do not otherwise meet the criteria in paragraph 23 of this Attachment.
25. Loans which are predominantly secured by registered mortgage over residential property, but do not meet the criteria set out in paragraph 23 of this Attachment, are to be classified as non-standard loans.

26. APRA may also, by instrument in writing, direct an LMI to classify a loan as a non-standard loan where APRA considers the PD factors for standard loans do not reflect the inherent risk of the loan.
27. All loans which are not predominantly secured by registered mortgage over residential property must be classified as commercial loans.
28. APRA may, by instrument in writing, direct an LMI to reclassify:
  - (a) a particular standard or non-standard loan; or
  - (b) each standard or non-standard loan of a particular kindas a commercial loan. APRA may do this if it is satisfied that the PML that would otherwise apply to the loan would not reflect the inherent risk relating to the loan or related mortgage.

### **Direction relating to sum insured, LVR and age**

29. Despite paragraphs 6, 7 and 8 of this Attachment, APRA may, by instrument in writing, direct an LMI to assume that the sum insured, LVR or age of:
  - (a) a particular standard or non-standard loan; or
  - (b) each standard or non-standard loan of a particular kindis the sum insured, LVR or age specified in APRA's direction, or is the sum insured, LVR or age worked out by applying instructions contained in APRA's direction. APRA may do so if it is satisfied, having regard to the nature of the loan (or kind of loan), that working out the sum insured, LVR or age by applying paragraph 6, 7 or 8 of this Attachment would produce a result that fails to reflect the risks relating to the loan (or kind of loan).<sup>4</sup>

### **Reinsurance**

30. Reinsurance arrangements must be in place for at least a full year in advance, and be fully documented, to be recognised in determining the MER. For example, where an LMI has two and a half years of reinsurance cover remaining, it can only recognise reinsurance in the first two years of the three-year scenario for the purpose of the MER model.
31. APRA recognises that, as Premiums Liabilities are apportioned over the term of the loan, a proportion of an LMI's Premiums Liabilities will be recognised as claim payments in the same period as the modelled downturn. Accordingly, for the purpose of calculating available reinsurance for the MER calculation, an LMI with aggregate excess-of-loss or stop-loss reinsurance may assume an appropriate proportion of Premiums Liabilities as being incurred in addition to its PML (refer to paragraphs 32 to 35 of this Attachment).

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<sup>4</sup> For example, APRA may give such a direction in relation to a reverse mortgage (where the amount outstanding increases over the life of the loan).

32. For an LMI with a quota share reinsurance arrangement, the level of Premiums Liabilities will not impact on the amount of available reinsurance for the MER calculation.
33. An LMI with aggregate excess-of-loss or stop-loss reinsurance on a claims year basis<sup>5</sup> may assume claim payments of up to a maximum of 60 per cent of reported Premiums Liabilities as at the MER calculation date, in determining the amount of available reinsurance for determining the MER.<sup>6</sup> A maximum of 15 per cent of Premiums Liabilities may be allocated to year one, 30 per cent to year two and 15 per cent to year three, of the modelled downturn.
34. Consistent with the assumption of a constant sum insured over the three-year scenario (refer to paragraph 22 of this Attachment), an LMI (that is not in run-off) with aggregate excess-of-loss or stop-loss reinsurance on a claims year basis must assume that the attachment points of reinsurance in years two and three of the modelled downturn are the same as the attachment point determined in year one.
35. An LMI with aggregate excess-of-loss or stop-loss reinsurance on an underwriting year basis<sup>7</sup> may:
  - (a) determine PML for individual underwriting years by applying the model separately to the sum insured in each underwriting year or allocating total PML (over the three-year scenario) back to each underwriting year in the same proportion as the sum insured for those years;
  - (b) recognise claims that have already been paid, 90 per cent of OCP and 90 per cent of Premiums Liabilities in calculating the amount of available reinsurance for the MER calculation; and
  - (c) allocate OCP and Premiums Liabilities to each underwriting year in accordance with a methodology outlined in the LMI's REMS (refer to paragraph 39 of this Attachment).
36. An LMI with reinsurance arrangements which are not detailed in paragraphs 32 to 35 of this Attachment must seek APRA's written approval of the methodology proposed for the calculation of available reinsurance.
37. The amount of allowable reinsurance to be deducted from the PML in determining the MER is limited to a maximum of 60 per cent of the PML, irrespective of the amount available under paragraphs 30 to 36 of this Attachment.

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<sup>5</sup> This includes both claims made reinsurance, which relates to all claims made in a particular year on policies written in previous years as well as the current year, and claims incurred reinsurance, which relates to all claims incurred in a particular year.

<sup>6</sup> Technical provisions in excess of a 75 per cent level of sufficiency must not be recognised.

<sup>7</sup> Underwriting year reinsurance relates to claims on all policies written in a particular year, irrespective of when claims are made or incurred.

## **Reinsurance Management Strategy**

38. An LMI must outline in its REMS all assumptions that have been made in the determination of its MER (as might particularly be the case for LMIs in run-off), the methodology used in calculating its allowable reinsurance and how allowable reinsurance is applied to its PML in determining its MER.
39. An LMI with reinsurance on an underwriting year basis must detail in its REMS the reasoning and methodology it has adopted in allocating OCP and Premiums Liabilities to individual underwriting years (refer to paragraph 35 of this Attachment).

## **'Grandfathering' of transition arrangements**

40. Any determination made by APRA in relation to a transition period for an LMI under *Prudential Standard GPS 110 Capital Adequacy* made on 25 September 2006, including any determination continued under paragraph 8 of Attachment H to that Prudential Standard, continues in force until the date of expiry specified by APRA in the determination, or such other date as APRA may specify in writing.<sup>8</sup>

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<sup>8</sup> Not being a date later than 31 December 2008.

**Attachment B****PD, LGD and seasoning factors to be applied in determining the MER of LMIs**

The aggregate PD and LGD factors by LVR, over the three-year scenario, for **standard loans** are:

<b>LVR</b>	<b>PD factor</b>	<b>LGD factor</b>
Greater than 100%	14.0%	40%
95.01 – 100%	8.0%	40%
90.01 – 95%	5.0%	40%
85.01 – 90%	3.2%	30%
80.01 – 85%	1.6%	30%
70.01 – 80%	1.2%	30%
60.01 – 70%	0.8%	20%
Less than 60.01%	0.6%	20%

The aggregate PD and LGD factors by LVR, over the three-year scenario, for **non-standard loans** are:

<b>LVR</b>	<b>PD factor</b>	<b>LGD factor</b>
Greater than 100%	21.0%	40%
95.01 – 100%	12.0%	40%
90.01 – 95%	7.5%	40%
85.01 – 90%	4.8%	30%
80.01 – 85%	2.4%	30%
70.01 – 80%	1.8%	30%
60.01 – 70%	1.2%	20%
Less than 60.01%	0.9%	20%

The seasoning factors by age are:

<b>Age of loan</b>	<b>Seasoning factor</b>
Less than 3 years	100%
3 years to less than 5 years	75%
5 years to less than 10 years	25%
10 years or more	5%