



STATUTORY INSTRUMENTS

**S.I. No. 611 of 2007**

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ASSET COVERED SECURITIES ACT 2001 (SECTION 91(1))  
(SENSITIVITY TO INTEREST RATE CHANGES — PUBLIC CREDIT)  
(AMENDMENT) REGULATIONS 2007

**(Prn. A7/1672)**

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ASSET COVERED SECURITIES ACT 2001 (SECTION 91(1))  
(SENSITIVITY TO INTEREST RATE CHANGES — PUBLIC CREDIT)  
(AMENDMENT) REGULATIONS 2007

In exercise of the powers conferred on the Authority by section 91(1) of the Asset Covered Securities Act 2001 (No. 47 of 2001) (the “Act”), the Irish Financial Services Regulatory Authority, in performance of the functions of the Authority in accordance with section 33C(1)(a) of the Central Bank Act 1942 (No. 22 of 1942), hereby makes the following regulations:

1. These regulations may be cited as the Asset Covered Securities Act 2001 (Section 91(1)) (Sensitivity to Interest Rate Changes — Public Credit) (Amendment) Regulations 2007.

2. The Schedule to the Asset Covered Securities Act, 2001 (Section 91(1)) (Sensitivity to Interest Rate Changes) Regulation, 2002 (S.I. No. 386 of 2002) is repealed and substituted by the Schedule to these regulations.

Signed for and on behalf of

THE IRISH FINANCIAL SERVICES REGULATORY AUTHORITY

31 August 2007

Mr. PATRICK NEARY

Chief Executive  
Irish Financial Services Regulatory Authority

*Notice of the making of this Statutory Instrument was published in  
“Iris Oifigiúil” of 7th September, 2007.*

## SCHEDULE

## FORMULAE IN RESPECT OF SECTION 91(1)

(SENSITIVITY TO INTEREST RATE CHANGES — PUBLIC CREDIT)  
REGULATION

This schedule sets out the formulae to be used by designated public credit institutions in measuring sensitivity to interest rate changes.

In this schedule, unless the context otherwise requires, “relevant exposure” means a public credit asset, hedge contract, public credit covered security issued, substitution asset, pool hedge collateral or any other asset or position held that is sensitive to interest rate changes.

## 1. Calculation of net present values

## 1.1 Interest rate instruments, relevant exposures or asset covered securities issued

The net present value of a relevant exposure shall be calculated as the sum of the present values of each cashflow payable on the relevant exposure in each time period. In the case of instruments which have a floating rate of interest, the net present value of a relevant exposure shall be calculated as the discounted value of the principal or notional principal outstanding from the next payment date. For both fixed and floating rates the calculation of net present value shall be as follows:

$$NPV = \sum_{t=1}^T \frac{CF_t}{(1 + s_t + z)^t}$$

where

$$CF_t = \text{Interest}_t + \text{Capital}_t$$

$s_t$  is the zero coupon interest rate, derived from the appropriate swap curve, at valuation, to time  $t$

$z$  is a static spread over the zero coupon interest rate, derived from the appropriate swap curve, that lets the net present value of the relevant exposure be equal to its price.

## 1.2 Total net present value of all relevant exposures

The total net present value of all relevant exposures shall be calculated as the sum of the net present values of the relevant exposures.

## 2. Measurement of sensitivity to interest rate changes

Designated public credit institutions shall use the following methodology in measuring their sensitivity to changes in interest rates.

## 2.1 Upward parallel shift in the yield curve

For a one hundred basis points upward shift in the yield curve, the resultant net present value of a relevant exposure shall be calculated as follows:

$$\left( \text{NPV}_{\text{UP}}^{\text{SHIFT}} \right)_p = \sum_{i=1}^k \left( \text{NPV}_{\text{UP},i}^{\text{SHIFT}} \right)$$

where, for a relevant exposure, i:

$$\text{NPV}_{\text{UP},i}^{\text{SHIFT}} = \sum_{t=1}^T \frac{CF_{i,t}}{(1 + y_{\text{SU},t})}$$

$$y_{\text{SU},t} = (s_t + z) + (0.01);$$

$s_t$  = zero coupon interest rate, derived from the appropriate swap curve, at valuation to time t;

$z$  is a static spread over the zero coupon interest rate, derived from the appropriate swap curve, that lets the net present value of the relevant exposure be equal to its price.

## 2.2 Downward parallel shift in the yield curve

For a one hundred basis points downward shift in the yield curve, the resultant net present value of relevant exposures shall be calculated as follows:

$$\left( \text{NPV}_{\text{DOWN}}^{\text{SHIFT}} \right)_p = \sum_{i=1}^k \left( \text{NPV}_{\text{DOWN},i}^{\text{SHIFT}} \right)$$

where, for an individual relevant exposure, i:

$$\text{NPV}_{\text{DOWN},i}^{\text{SHIFT}} = \sum_{t=1}^T \frac{CF_{i,t}}{(1 + y_{\text{SD},t})}$$

$$y_{\text{SD},t} = (s_t + z) - (0.01)$$

$s_t$  = zero coupon interest rate, derived from the appropriate swap curve, at valuation, to time t,

- z is a static spread over the zero coupon interest rate, derived from the appropriate swap curve, that lets the net present value of the relevant exposure be equal to its price.

## 2.3 Changes in the slope of the yield curve

### 2.3.1 General approach

The procedure for the calculation of the net present value of relevant exposures resulting from a one hundred basis points twist in the yield curve shall be as follows:

- for all revaluation points along the yield curve up to and including 3 months (i.e. the ‘short end’), increase (decrease) the yield curve values by 100 basis points;
- for all revaluation points along the yield curve greater than or equal to 10 years (i.e. the ‘long end’), decrease (increase) the yield curve values by 100 basis points; and
- in the interval from 3 months to 10 years, make proportional changes to the yield curve in accordance with the number of revaluation points in the interval.

This new yield curve shall then be applied to all relevant exposures. The formulae for the calculation of the net present value of all relevant exposures resulting from a one hundred basis points twist in the yield curve are set out in paragraphs 2.3.2 and 2.3.3.

### 2.3.2 Downward change in the slope of the yield curve

For a twist in the yield curve, up one hundred basis points in the short term and down one hundred basis points in the long term, with proportional changes in the interval, the resultant net present value of relevant exposures shall be calculated as follows:

$$\left( NPV_{\text{TWIST DOWN}} \right)_p = \sum_{i=1}^k \left( NPV_{\text{TWIST DOWN}i} \right)$$

where, for an individual relevant exposure, i:

$$NPV_{\text{TWIST DOWN},i} = \sum_{t=1}^T \frac{CF_{i,t}}{(1 + y_{TD,t})^t};$$

$$y_{TD,t} = (s_t + z) + (0.01) - (0.02) \cdot \left( \frac{\alpha - 1}{\beta - 1} \right);$$

$$\alpha, \beta \geq 1, \quad \alpha, \beta \in \mathbb{N};$$

$\alpha = 1$  for  $t \leq 3$  months;

$\alpha = \beta$  for  $t \geq 10$  years;

for  $3 \text{ months} \leq t \leq 10 \text{ years}$ , assign ascending values of  $\alpha$  to each revaluation point along the curve greater than 3 months and less than 10 years, beginning with  $\alpha = 1$  for  $t = 3$  months;

$\beta$  is the final revaluation point along the curve required in the interval ( $3 \text{ months} \leq t \leq 10 \text{ years}$ );

$z$  is a static spread over the zero coupon interest rate, derived from the appropriate swap curve, that lets the net present value of the relevant exposure be equal to its price.

### 2.3.3 Upward change in the slope of the yield curve

For a twist in the yield curve, down one hundred basis points in the short term and up one hundred basis points in the long term, with proportional changes in the interval, the resultant net present value of relevant exposures shall be calculated as follows:

$$\left( NPV_{UP}^{TWIST} \right)_P = \sum_{i=1}^k \left( NPV_{UP,i}^{TWIST} \right)$$

where, for an individual relevant exposure,  $i$ :

$$NPV_{UP,i}^{TWIST} = \sum_{t=1}^T \frac{CF_{i,t}}{(1 + y_{TU,t})^t};$$

$$y_{TU,t} = (s_t + z) - 0.01 + (0.02) \cdot \left( \frac{\alpha - 1}{\beta - 1} \right)$$

$$\alpha, \beta \geq 1, \quad \alpha, \beta \in \mathbb{N};$$

$\alpha = 1$  for  $t \leq 3$  months;

$\alpha = \beta$  for  $t \geq 10$  years;

for 3 months  $\leq t \leq 10$  years, assign ascending values of  $\beta$  to each revaluation point along the curve greater than 3 months and less than 10 years, beginning with  $\beta = 1$  for  $t = 3$  months;

$\beta$  is the final revaluation point along the curve required in the interval (3 months  $\leq t \leq 10$  years);

$z$  is a static spread over the zero coupon interest rate, derived from the appropriate swap curve, that lets the net present value of the relevant exposure be equal to its price.

#### 2.4 Sensitivity to changes in interest rates

Sensitivity to changes in interest rates shall be measured as the difference between:

- actual net present value and the resultant net present value from a one hundred basis point upward shift in the yield curve;
- actual net present value and the resultant net present value from a one hundred basis point downward shift in the yield curve;
- actual net present value and the resultant net present value from a twist in the yield curve of plus one hundred basis points in the short term and minus one hundred basis points in the long term, with proportional changes in the interval; and
- actual net present value and the resultant net present value from a twist in the yield curve of minus one hundred basis points in the short term and plus one hundred basis points in the long term, with proportional changes in the interval.

#### 3. Reference interest-rate curve

The appropriate interest rate swap curve for each currency shall be used as the reference curve for valuing all relevant exposures.

EXPLANATORY NOTE

*(This note is not part of the Instrument and does not purport to be a legal interpretation.)*

These regulations substitute the Schedule in the Asset Covered Securities Act, 2001 (Section 91(1)) (Sensitivity to Interest Rate Changes) Regulation, 2003 (S.I. No. 386 of 2002) with the Schedule in these regulations.

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