OFHEO

Title: Risk Based Capital
Capturing and Utilizing Interest Rates Files

Approved By: <u>Armando Falcon, Jr.</u>   **Date: <u>10/23/2002</u>**

I.   Purpose:

This guideline sets forth the process used by OFHEO to obtain the interest rate information required to run the Risk-Based Capital stress test for capital classification and other purposes. Historical interest rates are used in the risk-based capital stress test to calculate cash flows and simulate the performance of mortgages and other financial instruments, and to calculate the risk-based capital requirement. OFHEO also provides the data to the Enterprises for them to replicate results. The values for indexes found in Table 3-18--Interest Rate and Index Inputs of the risk-based capital regulation must be updated each quarter.

II.   Scope:

The policy sets forth, in part, the process used to determine quarterly risk-based capital classifications.

The OFHEO Director may amend this guideline at his discretion.

III.   Authority And References:

12 U.S.C. 4611
12 CFR Part 1750
Appendix A, section 3.1.3 and section 3.3.

IV.   Effective Date:

This process is effective immediately upon approval by the Director.

V.   Policy:

In order to conduct the Risk-Based Capital Stress Test for quarterly capital classification purposes, rates shall be obtained on the first business day of the second month after the end of the quarter for which the RBC Stress Test is being conducted. The timing of the creation of this file does not impair the ability of the Enterprises to compile RBC Report data.

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In order to conduct the Risk-Based Capital Stress Test at any other time, rates can be extracted at any time after quarter end (such as the sixth business day). However, if rates are obtained before the first business day of the second month after quarter end, adjustments must be made to compensate for data lags for individual series. For instance, if downloading on the sixth business day, it is generally not possible to calculate the average FHLB 11th District Cost of Funds for the month prior to the beginning of the Stress Test because this particular series is usually published with a lag of at least one month. If, due to a data lag for any interest rate series, insufficient data are available to compute the monthly average for the month immediately preceding the start of the Stress Test, utilize the monthly average for the most recently available month.

1) Download Data

To construct the interest rate indexes, obtain the interest rate data from the sources listed in Table 3-18 for two full years prior to the start of the Stress Test, with the exception of the ten-year CMT and the 30-year CMT. For the ten-year CMT, data should be obtained for three full years prior to the start of the Stress Test. Special instructions found below pertain to specific swap indexes and the 30-year CMT because its publication was discontinued in February of 2002.

OFHEO obtains historical interest rate data from the Bloomberg Professional Service via a Bloomberg terminal and the Federal Reserve H.15 Release for the Constant Maturity Treasury (CMT) yields. The Bloomberg Professional Service database product is an alternative source to the same information as the H.15 Release; the appropriate Bloomberg "Tickers" for the CMT yield series are given in the table below:

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CMT Index	Bloomberg Ticker
3 Month CMT	H15T3M Index
6 Month CMT	H15T6M Index
1 Year CMT	H15T1Y Index
2 Year CMT	H15T2Y Index
3 Year CMT	H15T3Y Index
5 Year CMT	H15T5Y Index
10 Year CMT	H15T10Y Index
20 Year CMT	H15T20Y Index
Long-Term Average CMT	H15TLTAV Index
30 Year CMT	H15T30Y Index

Additionally, the Bloomberg Professional Service database "tickers" for several Federal Agency Cost of Funds indexes have changed since the publication of the Risk-Based Capital Rule in the Federal Register (12 CFR Part 1750) on September 13, 2001. The affected indexes and the current tickers are provided below:

Federal Agency Cost of Funds (COF) Index	Bloomberg Ticker
2-Year Federal Agency COF	C0842Y Index
3-Year Federal Agency COF	C0843Y Index
5-Year Federal Agency COF	C0845Y Index
10-Year Federal Agency COF	C08410Y Index
30-Year Federal Agency COF	C08430Y Index

2) Download Swap Indexes

Obtain swap rates for two full years prior to the start of the Stress Test in order to calculate cash flows for specific instruments. The Bloomberg Professional Service database "tickers" for these swap indexes are found in the table below. These rates are calculated in the stress test in the same way as other non-Treasury rates, based on the same maturity CMT.

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Swap Index	Bloomberg Ticker
2-Year U.S. Dollar Swap Rates	USSWAP2 Index
3-Year U.S. Dollar Swap Rates	USSWAP3 Index
5-Year U.S. Dollar Swap Rates	USSWAP5 Index
10-Year U.S. Dollar Swap Rates	USSWAP10 Index
30-Year U.S. Dollar Swap Rates	USSWAP30 Index

3) Calculate Rates

Prior to inclusion of interest rates in calculations, convert all interest rates from percent basis to decimal basis.

Obtain all interest rate data at a daily frequency, than compute monthly averages of the interest rates from the daily data, (excluding holidays and weekends) with equal weight given to each observation in the monthly average.

4) Special instructions for the 30-year CMT

Because the publication of the 30-year CMT ceased on February 15, 2002, the Risk-Based Capital Stress Test uses daily estimates of the 30-year CMT for the period following February 15, 2002. The estimates are constructed in a manner consistent with a procedure devised by the United States Department of the Treasury. The estimates should be computed as follows:

1. Obtain the Department of the Treasury's "Long-Term Average Rate" for each day after February 15, 2002 up until the end of the month prior to the first month of the Stress Test. For example, for the Stress Test pertaining to the second quarter of 2002, daily values of the "Long-Term Average Rate" should be obtained from February 19, 2002 to June 28, 2002.

2. Obtain daily "linear extrapolation factors" from the Department of the Treasury at the website address http://www.ustreas.gov/offices/domestic-finance/debt-

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management/interest-rate/ltcompositeindex.html for the same time period over which the "Long-Term Average Rate" was extracted.

3. Compute the daily 30-year CMT estimates by summing together the Long-Term Average Rate and the linear extrapolation factor for each day. Calculate the monthly averages of the daily rates as described above. As a result, the monthly average for February 2002 will reflect actual 30-year CMT rates as well as 30-year CMT rate estimates.

5) Format Rates

Once monthly averages of the daily rates are computed, format according to the following data dictionary for use in the risk-based capital software. All interest rates are rounded to six (6) decimal places at the end of the process by rounding the sixth digit to the right of the decimal up one number if the seventh digit to the right of the decimal is five or greater. Otherwise, do not round up.

Field Name	Field Description	Column Name	Allowable Values	Format	Length
Year	The four-digit year indicating when the interest rates were in effect.	year	Any valid number.	Number	4
Index	The name of the rate index.	idx_cde	FF1W - 1 week Federal Funds FF6M – 6 week Federal Funds FFOV – Overnight Federal Funds MCON – Conventional Mortgage Rate COF11 – FHLB 11 District Cost of Funds FA001 – 1 Month Federal Agency Cost of Funds FA003 – 3 Month Federal Agency Cost of Funds FA006 – 6 Month Federal Agency Cost of Funds FA012 – 12 Month Federal Agency Cost of Funds FA024 – 24 Month Federal Agency Cost of Funds FA036 – 36 Month Federal Agency Cost of Funds FA060 – 60 Month Federal Agency Cost of Funds FA120 – 120 Month Federal Agency Cost of Funds FA360 – 360 Month Federal Agency Cost of Funds LB001- 1 Month LIBOR	Char	5

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			LB003- 3 Month LIBOR LB006- 6 Month LIBOR LB012- 12 Month LIBOR M15FR- 15 Year Fixed Mortgage Rate PRIME – Prime Rate TR001- 1 Month Treasury Bill TR003- 3 Month CMT TR006- 6 Month CMT TR012- 12 Month CMT TR024- 24 Month CMT TR036- 36 Month CMT TR060- 60 Month CMT TR120- 120 Month CMT TR240- 240 Month CMT TR360- 360 Month CMT SW024 - 2-Year U.S. Dollar Swap Rate SW036- 3-Year U.S. Dollar Swap Rate SW060- 5-Year U.S. Dollar Swap Rate SW120- 10-Year U.S. Dollar Swap Rate SW360- 30-Year U.S. Dollar Swap Rate		
Month	The numeric month indicating when the rate was in effect.	month	1,2,3,4,5,6,7,8,9,10,11, and 12	Number	2
Rate	The rate that is in effect for the month and year.	rate	Any valid number > 0. Must be in decimal format (5.57% is 0.0557).	Decimal	9.6
Report Date	The date for which the data are reported.	rpt-dte	YYYY0331 YYYY0630 YYYY0930 YYYY1231	Date/time	

VI.   Definitions:

Long-Term Average Rate – Interest rate series identified by the Federal Reserve's H.15 report with the series name, "Treasury Long-Term Average (25 years and above)". Within the Bloomberg Professional Service database, this series can be found using the label or "ticker" H15TLTAV.

VII.   Responsibilities:

Office of Risk Analysis and Model Development (ORAMD) – downloads the historical interest rate data quarterly from Bloomberg; calculates rates; updates tickers and reviews data as needed; sends data in spreadsheet file to OIT.

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Office of Information Technology (OIT) – loads historical data into database in model-ready format; sends copy of file to the Enterprises for replication testing purposes.

VIII. Types of Records Created:

❑ Quarterly interest rate files.