CAA LIFE COMMITTEE

CARIBBEAN ACTUARIAL ASSOCIATION

PRELIMINARY EXPOSURE DRAFT

Proposed Guideline

Caribbean Actuarial Association

Guideline 1.0: Selection of the Discount Rate Curve – Country Study

A Preliminary Exposure Draft of the Committee on Actuarial Standards of the CAA

Issued: 15 June 2017
Comments Due: 15 December 2017

This Exposure Draft of proposed Guideline
is issued by CAA Life Committee for comment.
Written comments should be addressed to:

hojohn@flowja.com and mtammarks@morneaushepell.com
by 15 December 2017

Comments

Table of Contents

1. INTRODUCTION 2

2. OBJECTIVES 3

3. METHODOLOGY 4

APPENDIX A: INSTRUCTIONS FOR CONDUCTING THE STUDY 5

Appendix B: Reporting Results 8

Comments

1. Introduction

During 2014, the CAA Life Committee gathered information on fixed income instruments in select Caribbean countries from CAA members working in insurance companies in those countries. This information was used to test the proposed methodology set out in the paper *'Technical specifications assessing the development of the Zero rate curve for Caribbean jurisdictions'* ("*the Technical Paper*"), which was issued for comment by the CAA Life Committee in 2013.

A summary of the information collected and results of the tests performed by the Committee was presented at the 2014 annual CAA conference.

The next step in the process is to provide all members of the CAA with the draft Guideline and a modeling tool, to do their own internal testing of the methodology and provide feedback to the CAA Life Committee. This exercise was recently completed by two volunteer countries, Bahamas and Jamaica.

Comments

2. Objectives

The objectives of this exercise are as follows:

1. To provide users of the Guideline with the opportunity to test the methodology put forward in the Guideline.

2. To determine whether the appropriate data and information are available to implement the methodology.

3. To determine whether there may be any practical challenges with implementing the methodology.

4. To provide feedback to the CAA Life Committee regarding challenges and improvements surrounding the proposed methodology.

5. To estimate yield curves for all major currencies utilized in the Caribbean as at December 31st 2015 and December 31st 2016 using the proposed methodology.

Comments

3. Methodology

The method is that proposed in the paper *'Technical specifications assessing the development of the Zero rate curve for Caribbean jurisdictions'*. The proposed modeling tool is one created by the *European Insurance and Occupational Pensions Authority* (formerly *Committee of European Insurance and Occupational Pensions Supervisors*), which takes into account the following main inputs:

1. Data on fixed income securities
2. The Ultimate Forward Rate (UFR)
3. Number of years until the ultimate forward rate is reached
4. Alpha – the speed of convergence to the UFR

The model then returns the spot rates, forward rates and adjusted spot rates with both linear and Smith-Wilson interpolation and extrapolation methods.

Further instructions are given in the following Appendices. A report entitled '*CAA Discount Rate Study_Bahamas_v2*' is also attached and included as a sample response.

Appendix A: Instructions for Conducting the Study

Comments

1. Collect the following data on Government fixed income securities issued in calendar years 2015 and 2016.
    a. Country of Issue
    b. Date of Issue
    c. Currency
    d. Issuer
    e. Maturity Date
    f. Tenor (Years)
    g. Coupon Rate
    h. Yield

    Note that the modelling tool uses only the Maturity Date and the Coupon Rate for issues in a particular issue year. The following sources can be used in addition to information available on the Central Bank of the country's website, depending on the country of the study:

    http://www.ecseonline.com/ Easter Caribbean

    http://www.bse.com.bb/ Barbados

    http://www.jamstockex.com/ Jamaica

    http://www.stockex.co.tt/index.php Trinidad and Tobago

Comments

For further details regarding lack of available data, see Appendix D of the Technical Paper.

2. Determine the long term average Ultimate Forward Rate (UFR) for each country/currency. For the purpose of this assessment, the UFR is defined as the sum of:
    a. The expected future short-term interest rate for each jurisdiction using historic 15 year moving average of the short-term real rate. If such data is not available, annualized rates of nominal short-term securities such as T-bills can be used after adjusting the rates downwards for an inflationary component; and
    b. The target inflation rate for each currency stated by the region's home Central Bank. This is not to be confused with the country's actual inflation incurred during the time period.
    c. See Section 5.16 of the *Technical Paper*

3. Determine the longest reliable horizon (in years) until the UFR is attained for each currency. This is the point at which market data is ignored and extrapolation commences. Sections 5.8 and 5.9 of the *Technical Paper* set out the considerations for

determining this parameter. For the purpose of this study, 10 years is to be used.

Comments

4. Determine the parameter '*alpha' the speed of convergence:*
    a. Section 5.16.3 of the Technical Paper sets out the method of determination of *alpha*
        i. *In order to have a harmonized approach over all the major currencies we will for all currencies use the same alpha. For the purpose of the assessment, the alpha parameter is calibrated so that the extrapolated part of the forward curve converges to within 3 bps of the UFR within 10 years from the LLP (last liquid point).*
        ii. *If this alpha is not appropriate for the currency it is applied to, we will increase it iteratively, until it is deemed – based on given criteria – to be appropriate. More work needs to be done here to develop objective criteria for setting the alpha.*

5. You can choose to use the excel tool provided or build your own internal tool.

Comments

Appendix B: Reporting Results

1. Results should be presented both in tabular and graphical form using the Smith-Wilson Method for years ending December 31, 2015 and 2016.
2. Disclose the sources of all data used in the exercise.
3. Indicate the value of the following parameters used and how determined:
    a. Alpha
    b. Ultimate Forward Rate
4. If assumptions or parameters used in this exercise vary from those recommended, provide an explanation for the deviation and the values of the parameters used.