Package ‘fBonds’

November 15, 2017

Title Rmetrics - Pricing and Evaluating Bonds
Date 2017-11-12
Version 3042.78
Author Diethelm Wuertz [aut],
Tobias Setz [cre]
Maintainer Tobias Setz <tobias.setz@live.com>
Description It implements the Nelson-Siegel and the Nelson-Siegel-Svensson
term structures.
Depends R (>= 2.15.1), timeDate, timeSeries, fBasics
Imports graphics, stats
Suggests RUnit
LazyData yes
License GPL (>= 2)

URL http://www.rmetrics.org
NeedsCompilation no
Repository CRAN
Date/Publication 2017-11-15 22:30:09 UTC

R topics documented:

  fBonds-package .................................................. 2
  TermStructure .................................................... 2

Index 5
Description

The Rmetrics “fBonds” package is a collection of functions for pricing and evaluating bonds and to compute term structures.

Details

Package: \tab fBonds\cr
Type: \tab Package\cr
Version: \tab R 3.0.1\cr
Date: \tab 2014\cr
License: \tab GPL Version 2 or later\cr
Copyright: \tab (c) 1999-2014 Rmetrics Association\cr
URL: \tab \url{https://www.rmetrics.org}\cr

1 Introduction

This section provides functions to valuate Bonds and to calculate term structures.

2 Term Structure Calculation

This section provides two functions for term structure modelling based on the Nelson-Siegel, and on the Svensson approach.

\begin{tabular}{ll}
\textit{NelsonSiegel} & models Nelson-Siegel Term Structure \\
\textit{Svensson} & models Nelson-Siegel-Svensson Term Structure \\
\end{tabular}

About Rmetrics

The fBonds Rmetrics package is written for educational support in teaching "Computational Finance and Financial Engineering" and licensed under the GPL.

TermStructure

Description

A collection and description of functions for term structure modelling.

The functions are:
Nelson-Siegel Term Structure,
Svensson Term Structure.

Usage

NelsonSiegel(rate, maturity, doplot = TRUE)
Svensson(rate, maturity, doplot = TRUE)

Arguments

doplot a logical. Should a plot be displayed?
maturity a numeric vector of maturities on an annual scale.
rate a numeric vector of forward rates.

Value

a list object with entries returned from the optimization function nlminb.

References


Examples

Yield = c(0.04984, 0.05283, 0.05549, 0.05777, 0.05961, 0.06102, 0.06216, 0.06314,
0.06403, 0.06488, 0.06568, 0.06644, 0.06717, 0.06786, 0.06852, 0.06913, 0.06969,
0.07020, 0.07134, 0.07205, 0.07339, 0.07500, 0.07710, 0.07860, 0.08011, 0.08114,
0.08194, 0.08274, 0.08355, 0.08434, 0.08512, 0.08588, 0.08662, 0.08731, 0.08794,
0.08851, 0.08900, 0.08939, 0.08967, 0.08980, 0.08976, 0.08954, 0.08910, 0.08843,
0.08748, 0.08626, 0.08474, 0.08291)

Maturity = c(0.083, 0.167, 0.250, 0.333, 0.417, 0.500, 0.583, 0.667,
0.750, 0.833, 0.917, 1.000, 1.083, 1.167, 1.250, 1.333, 1.417, 1.500,
1.750, 2.000, 2.500, 3.000, 4.000, 5.000, 6.000, 7.000, 8.000, 9.000, 10.000,
11.000, 12.000, 13.000, 14.000, 15.000, 16.000, 17.000, 18.000, 19.000, 20.000,
21.000, R1NPPPL
22.000, 23.000, 24.000, 25.000, 26.000, 27.000, 28.000, 29.000)

NelsonSiegel(Yield, Maturity)

par(mfrow = c(2, 2))
Svensson(Yield, Maturity)
Index

*Topic datasets
  TermStructure, 2
*Topic package
  fBonds-package, 2

fBonds (fBonds-package), 2
fBonds-package, 2

NelsonSiegel (TermStructure), 2
Svensson (TermStructure), 2
TermStructure, 2