

Package ‘fBonds’

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Title Bonds and Interest Rate Models

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Depends R (>= 2.4.0), timeDate, timeSeries, fBasics

Suggests RUnit

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Description Environment for teaching ``Financial Engineering and Computational Finance''

Note Several parts are still preliminary and may be changed in the future. this typically includes function and argument names, as well as defaults for arguments and return values.

LazyData yes

License GPL (>= 2)

URL <http://www.rmetrics.org>

NeedsCompilation no

Repository CRAN

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TermStructure *Term Structure Modelling*

Description

A collection and description of functions for term structure modelling.

The functions are:

| | |
|--------------|--|
| NelsonSiegel | Nelson-Siegel Term Structure, |
| Svensson | Nelson-Siegel-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 `nllminb`.

References

McCulloch J. H. (1990); *US Term Structure Data: 1946-87*, Handbook of Monetary Economics, Friedman B.M. and Hahn F.H. (eds.), Elsevier Science.

McCulloch J. H. and Kwon, H.C. (1993); *US Term Structure Data: 1947-1991*, Working Paper No. 93-6, Department of Economics, Ohio State University.

Zivot E., Wang J.; *Modeling Financial Time Series with S-Plus*.

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,  
  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)
```

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*Topic **datasets**

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