Software «Monetary Information Online» (MIO)

by

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and
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- The software is written in Matlab code (in principle, C-code).
- It comprises 64 Matlab scripts and 12 scripts written in a data-base language (“EASY”).
- The software runs automatically twice a day, once in the morning, once in the afternoon.
- All the pictures shown below appear in the intranet of the Swiss National Bank. For each picture, there is a corresponding Excel file comprising the data of a picture’s variables.
- The following is a diary of a typical screen output including the pictures in the JPG format. (Pictures are generated in 4 different formats.)

Paper to be presented at *Quantitative Methods in Finance*, Sydney, *Reserve Bank of Australia*, Sydney, and *Bank of Thailand*, Bangkok, December 2007.

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1 Backup from network to computer

The data needed for various calculations are generated by a data base software called “EASY”. The data are stored on the network by EASY, from where Matlab copies them onto a particular personal computer which does the following calculations.

2 The zero rates of the Swiss Confederation bonds

```
Program TermStructure_C_N
=========================

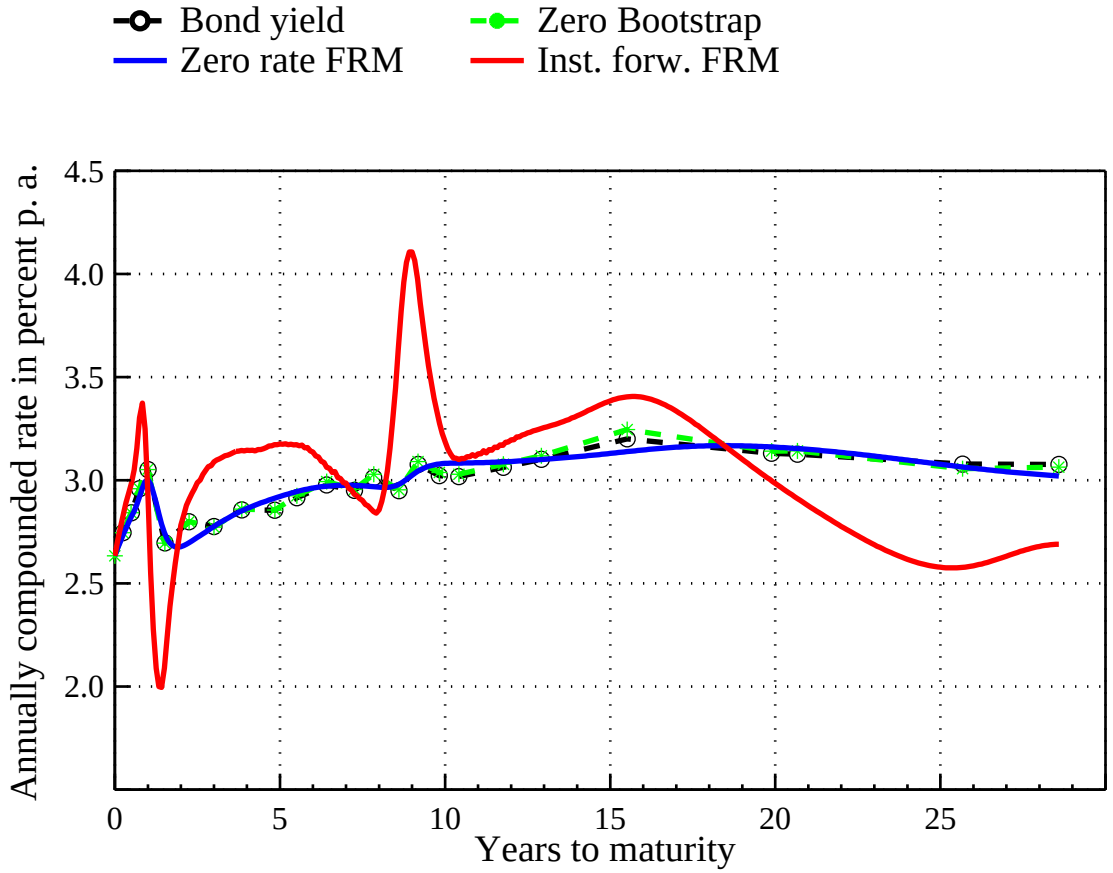

Safety factor =  1.00

f-COUNT   FUNCTION       MAX{g}          STEP  Procedures
    1  7.73787e-05  1.96122e-05             1
    2  0.000135027  1.64405e-09             1   Hessian modified
    3   7.6525e-05  3.70334e-10             1   Hessian modified
    6  7.59944e-05  3.36562e-10          0.25   Hessian modified
    7  7.68658e-05  2.67348e-10             1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     2
     4
     6
    11
    13
    15
    25
    27
    29
    38
    40
    41
    42

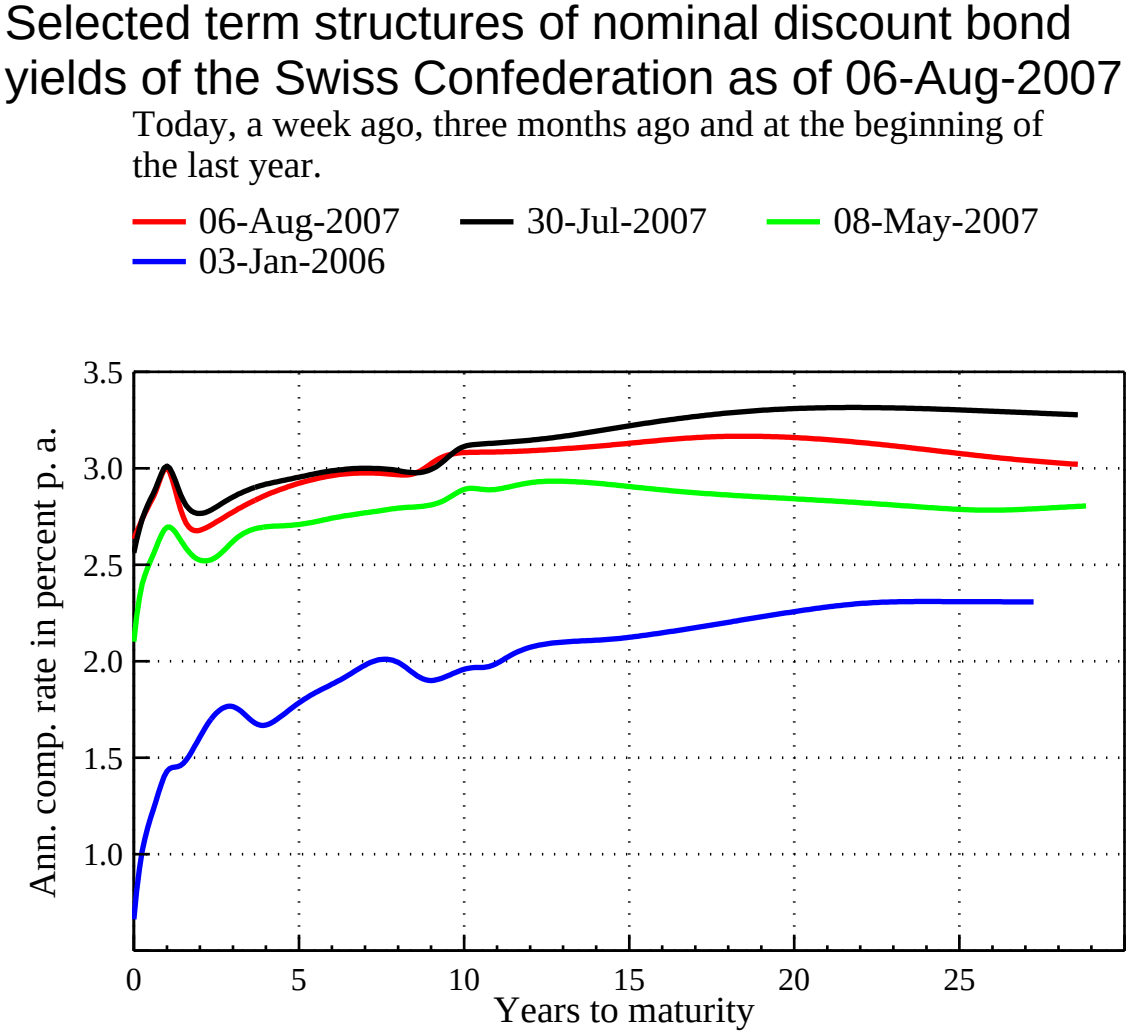
Terminated succesfully
```

The term structure of nominal discount bond yields of the Swiss Confederation on 06-Aug-2007

FRM stands for forward-rate method.




```
Program NomTermStr_2D_N
=======================
```




```
Program ConfZeroYields_N.m
==========================

Eidg_6_8_2007_30J_r.dat
CHART 1
```

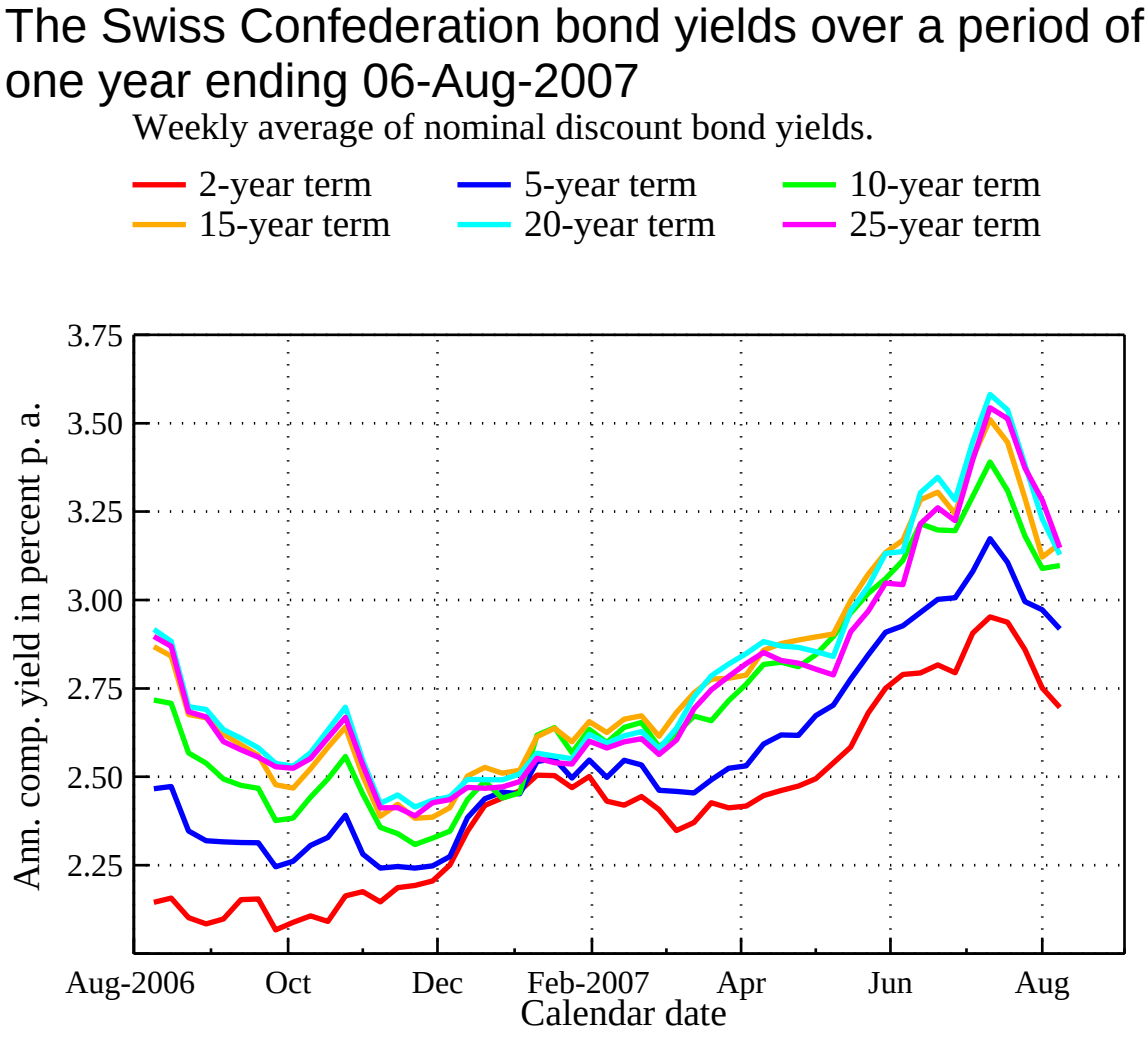
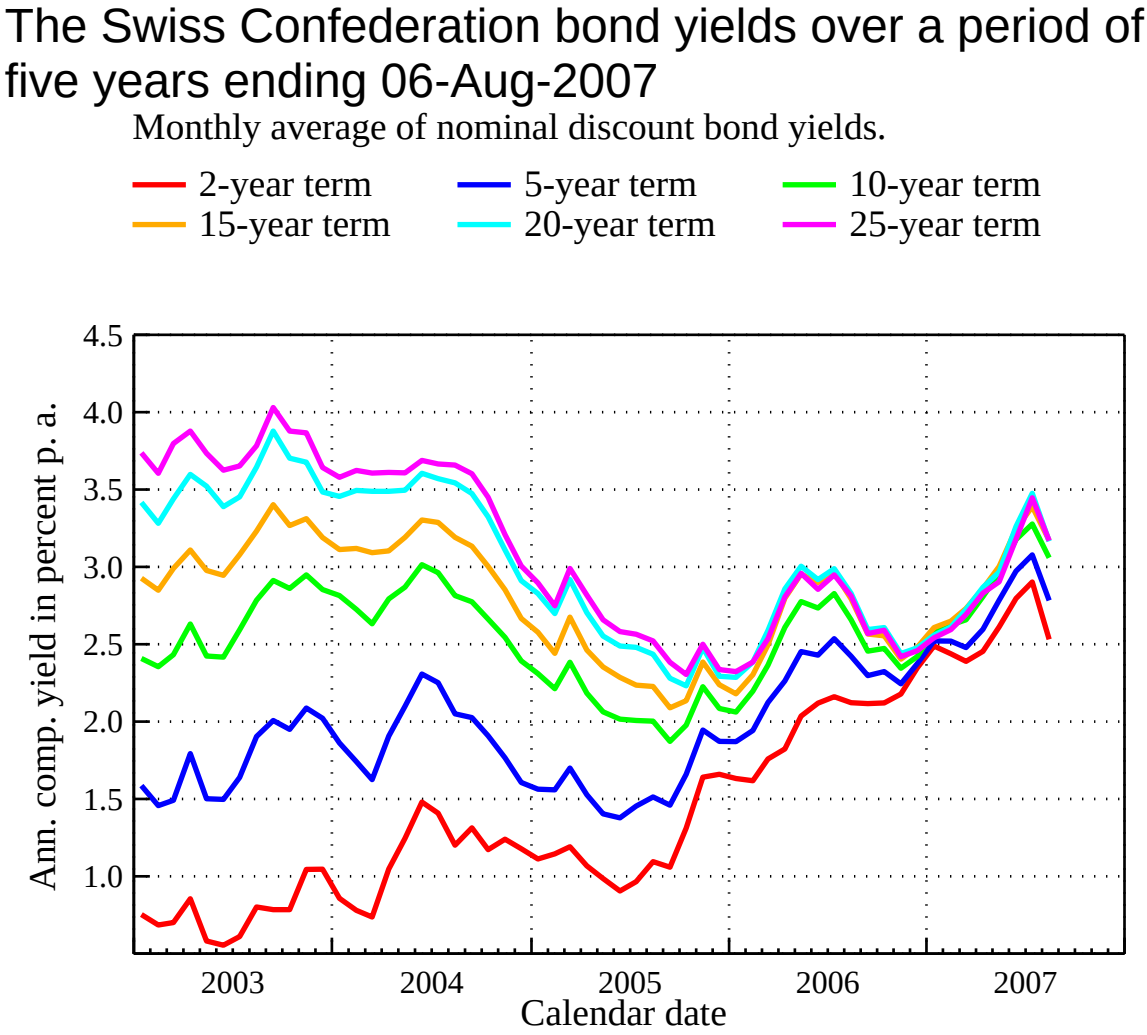

The Swiss Confederation bond yields over a period of one year ending 06-Aug-2007
Weekly average of nominal discount bond yields.
2-year term
5-year term
10-year term
15-year term
20-year term
25-year term
Ann. comp. yield in percent p. a.
3.75
3.50
3.25
3.00
2.75
2.50
2.25
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

CHART 2



3 The zero rates of the Swiss-franc Libor

Also used to calculate the end-of-year effect due to window dressing of the banks.

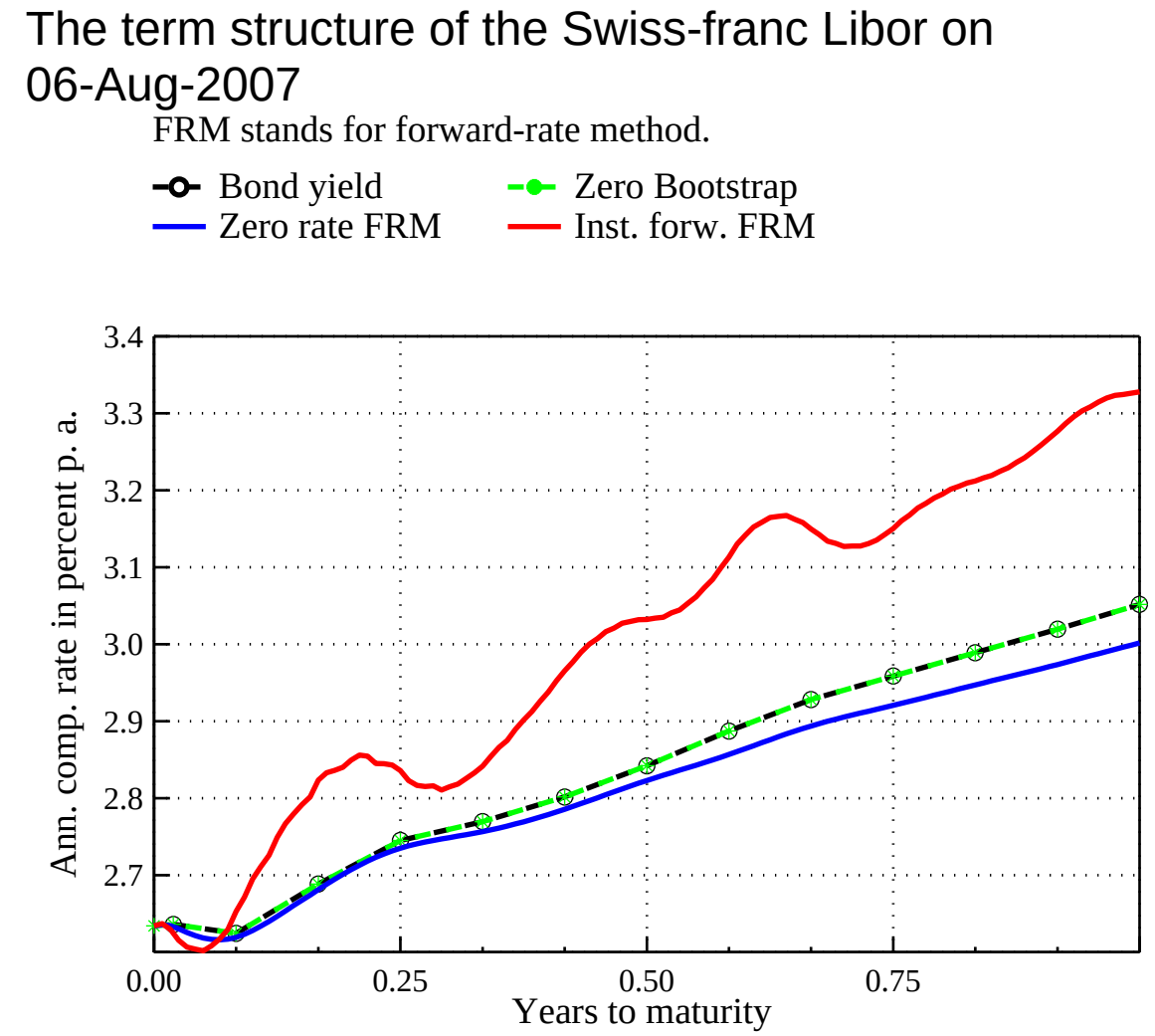
```
Program TermStructure_C_N
=========================


Safety factor =  1.00

f-COUNT    FUNCTION       MAX{g}          STEP  Procedures
    1   9.9406e-07  4.99372e-06             1
    2  3.09383e-06   1.3138e-13             1   Hessian modified
    3  9.62748e-07  1.45977e-14             1   Hessian modified
    4  1.44696e-06  1.45977e-14             1   Hessian modified
    5  9.85143e-07  1.46374e-14             1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     4
     7
     9
```

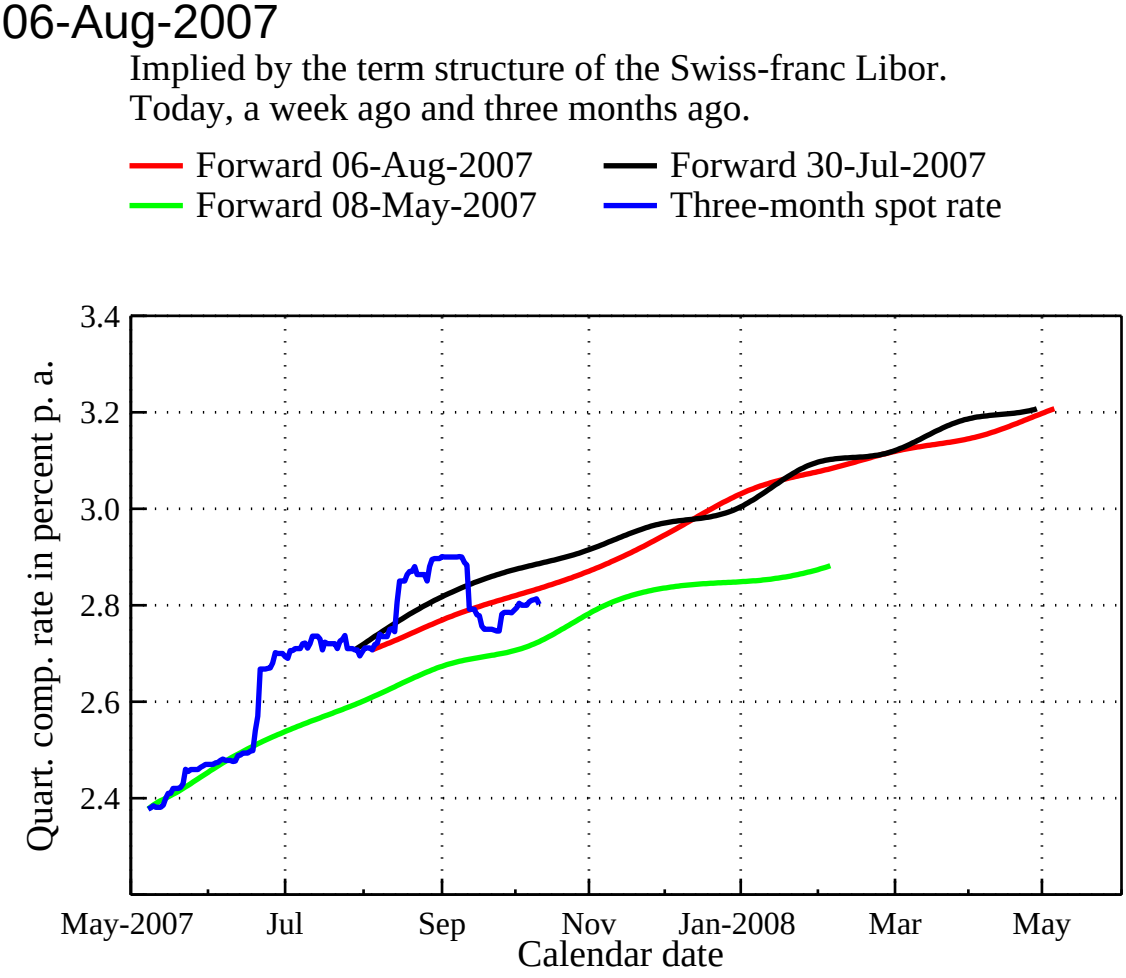
```
    11
    13
    15
    16
    18
    19
    21
    23
    25

Terminated succesfully
```



4 The forward rates implied by the Swiss-franc Libor

```
Program Forw3MLibor
===================
```

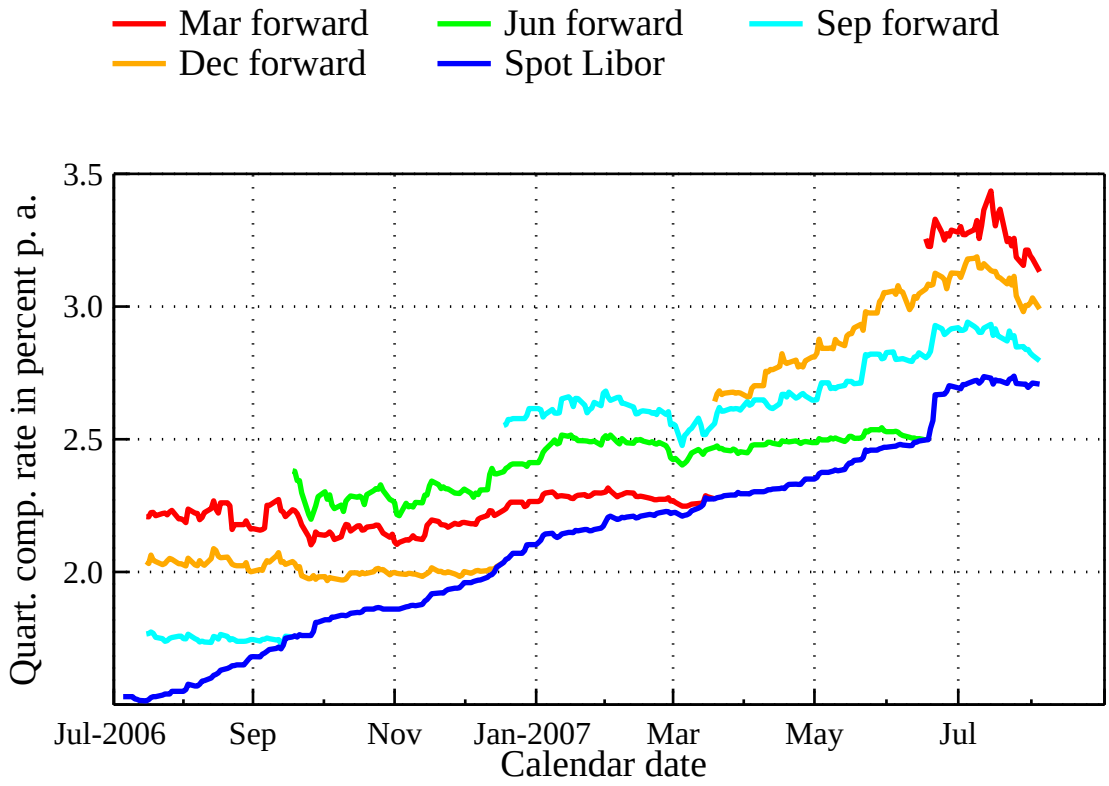



```
ForwRateTermStr_N.m
===================

Eidg_6_8_2007_1J_Forw.txt
CHART: NO MESSAGE
```

The forwards written on the three-month Libor denominated in Swiss franc over a period of one year ending 06-Aug-2007

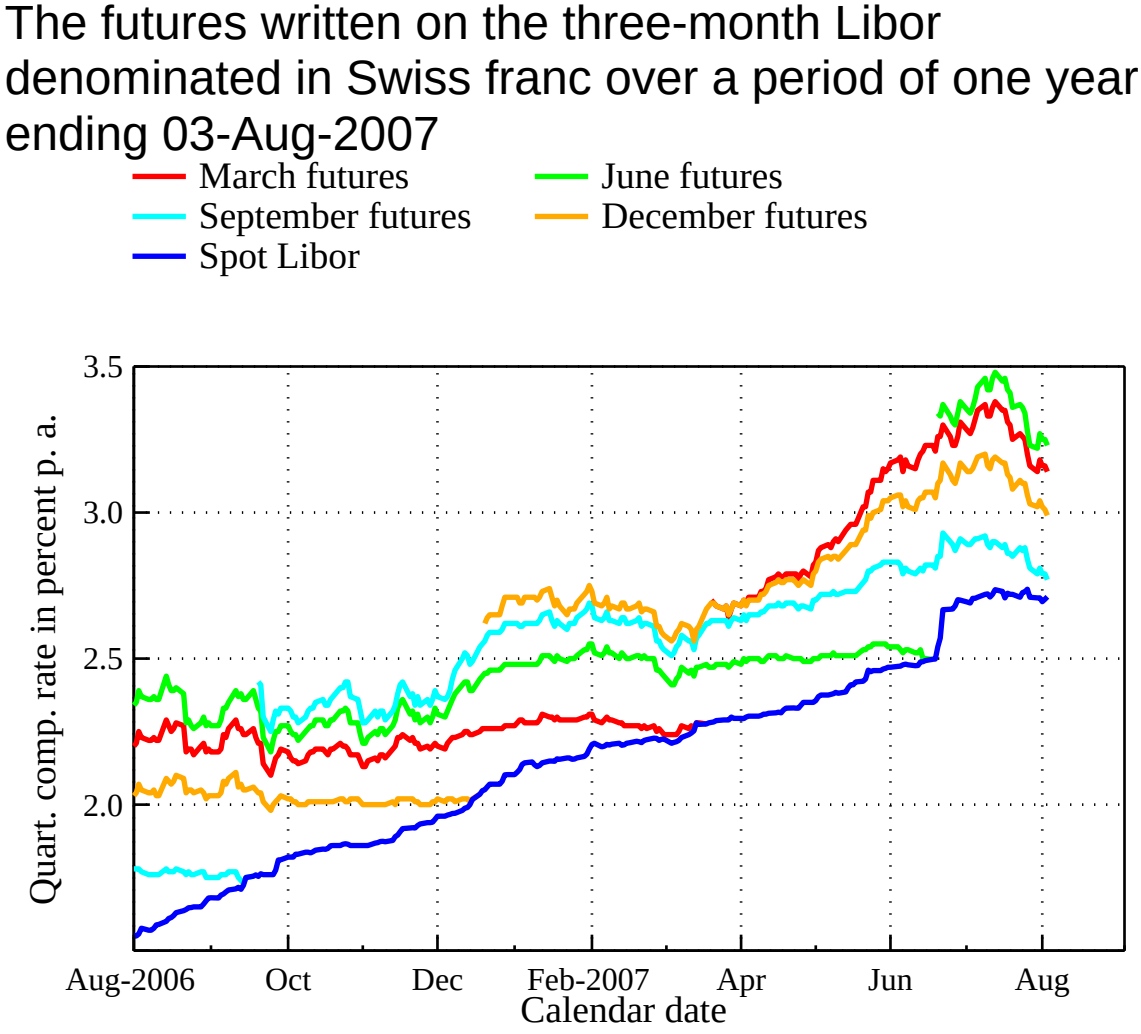
The forward rates are obtained from the term structure of the Swiss franc Libor.



5 The futures rates

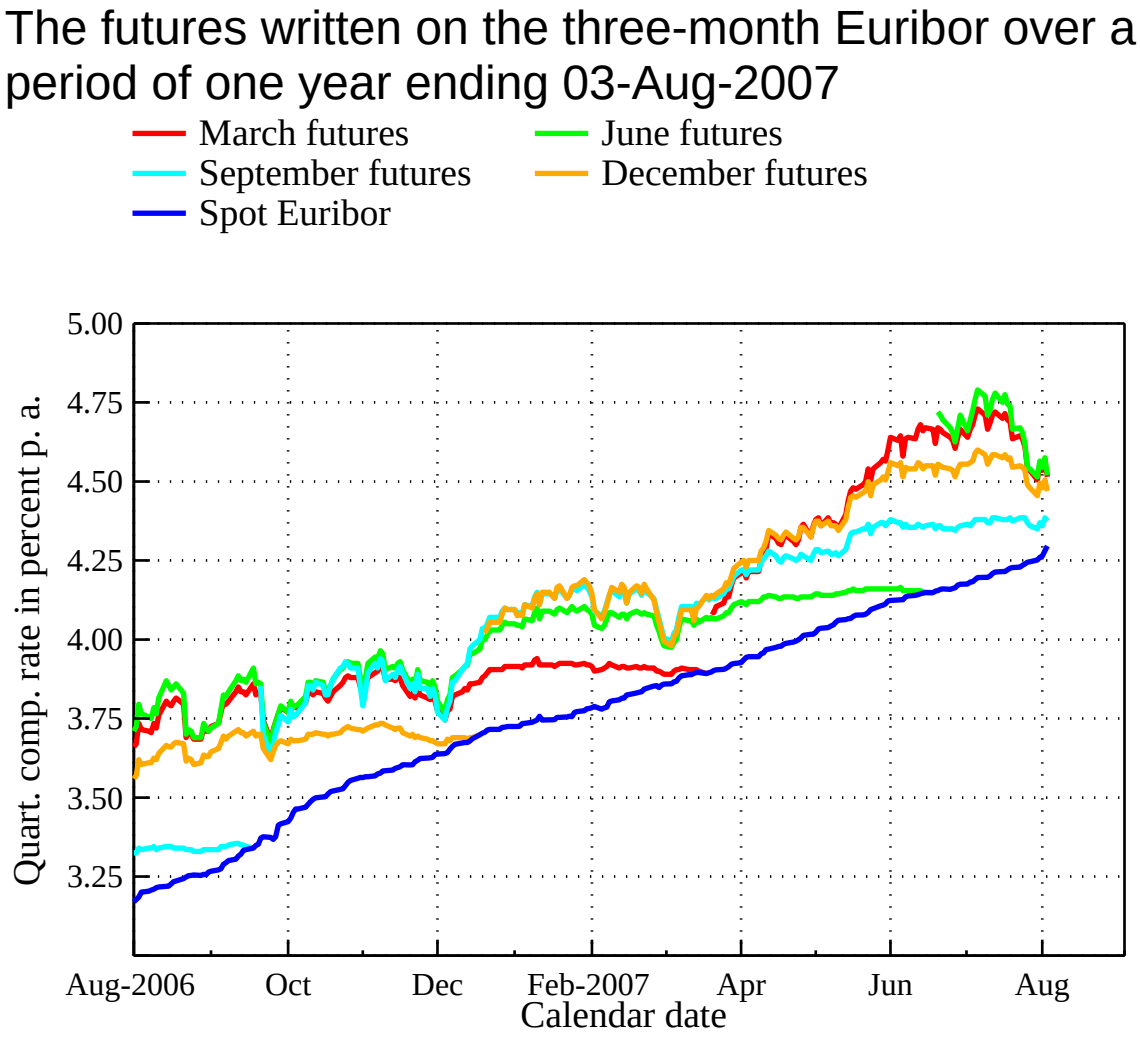
```
FutTermStr_N.m
==================

Currency: CHF
Chart: No messages
```



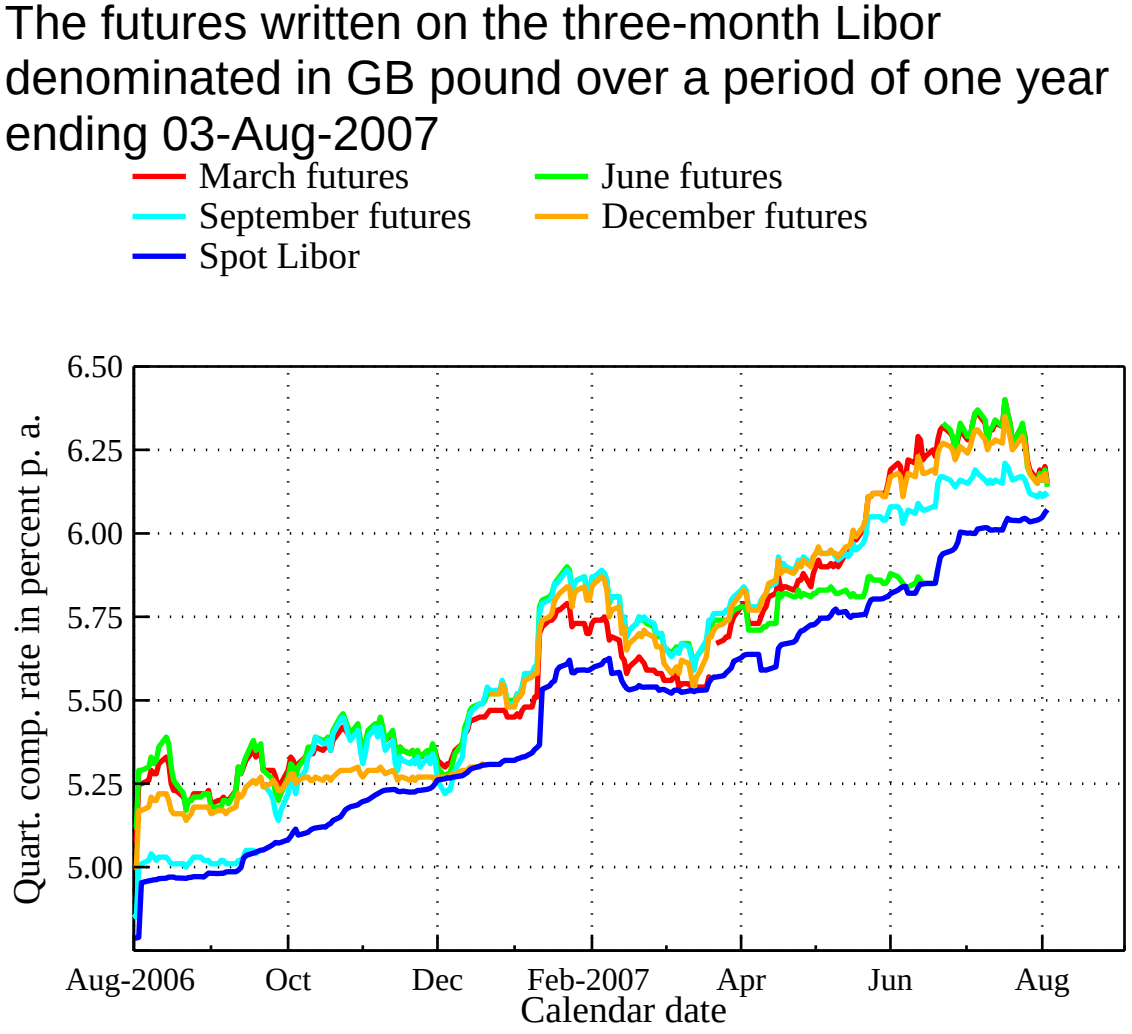

```
FutTermStr_N.m
==================

Currency: EUR
Chart: No messages
```



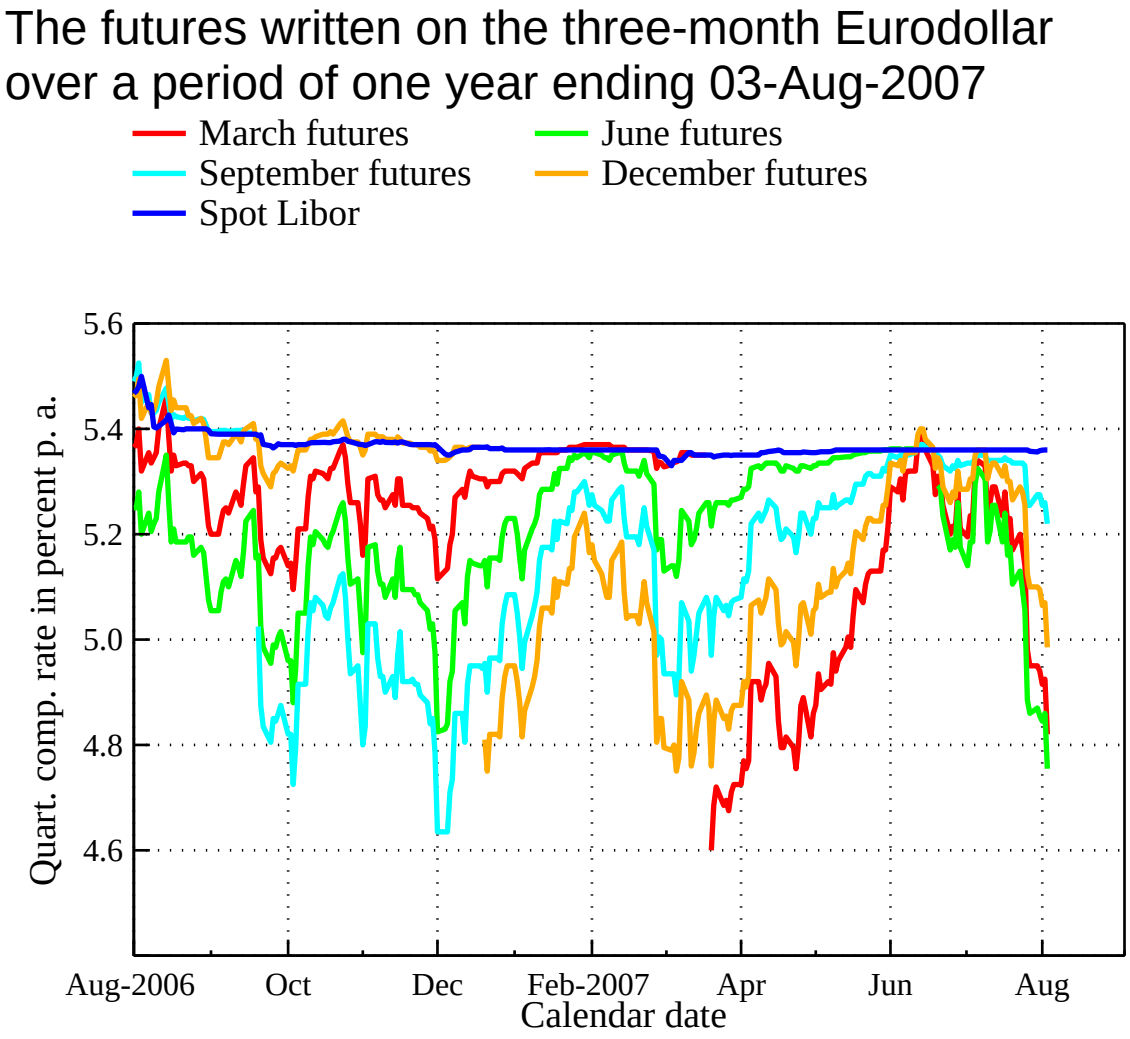

```
FutTermStr_N.m
==================

Currency: GBP
Chart: No messages
```




```
FutTermStr_N.m
==================

Currency: USD
Chart: No messages
```

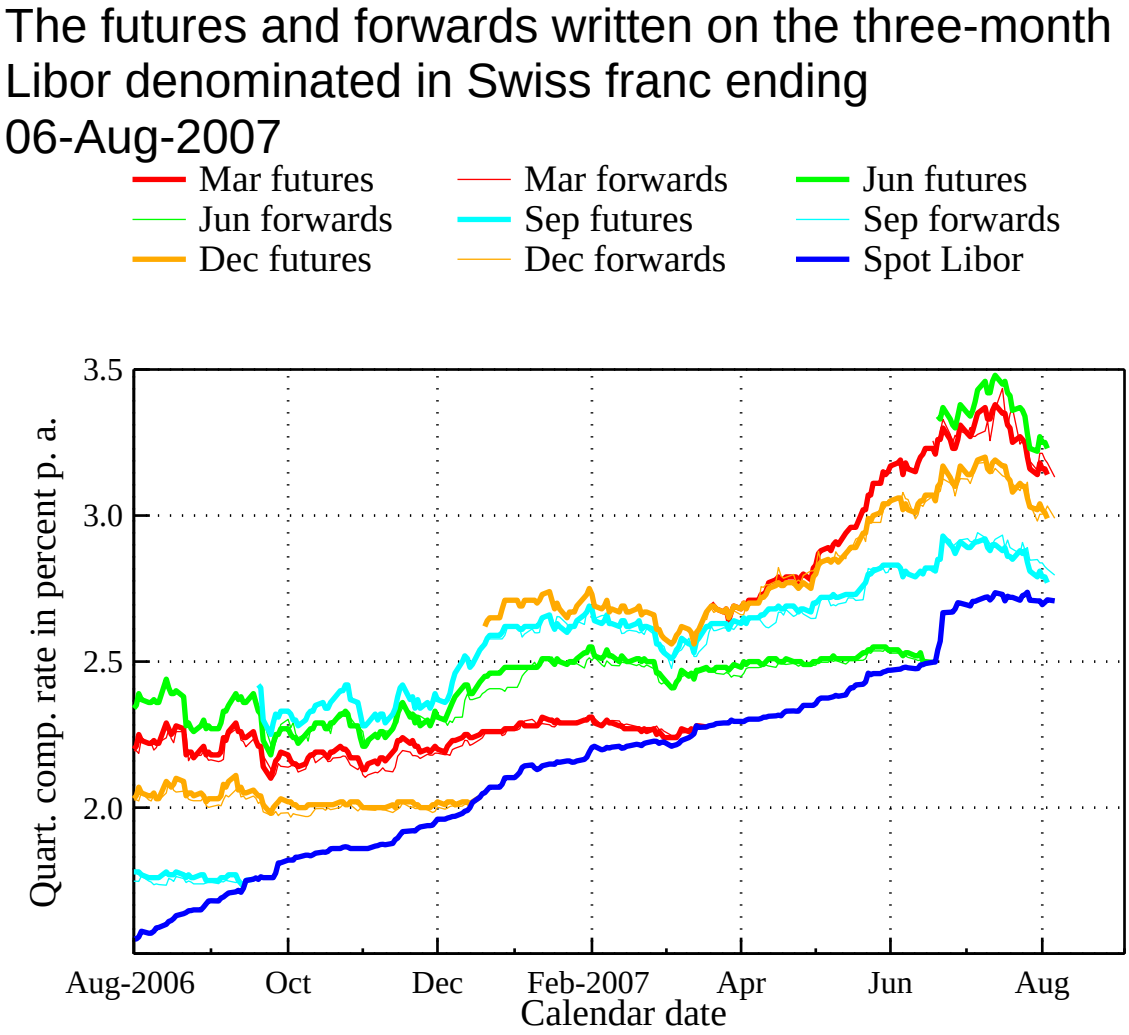


6 Futures rates and forward rates

The forward rates should be slightly smaller than the futures rates.

```
FutForwTermStr_N.m
==================

Currency: CHF
Chart: No messages
```



7 Classes of corporate bonds

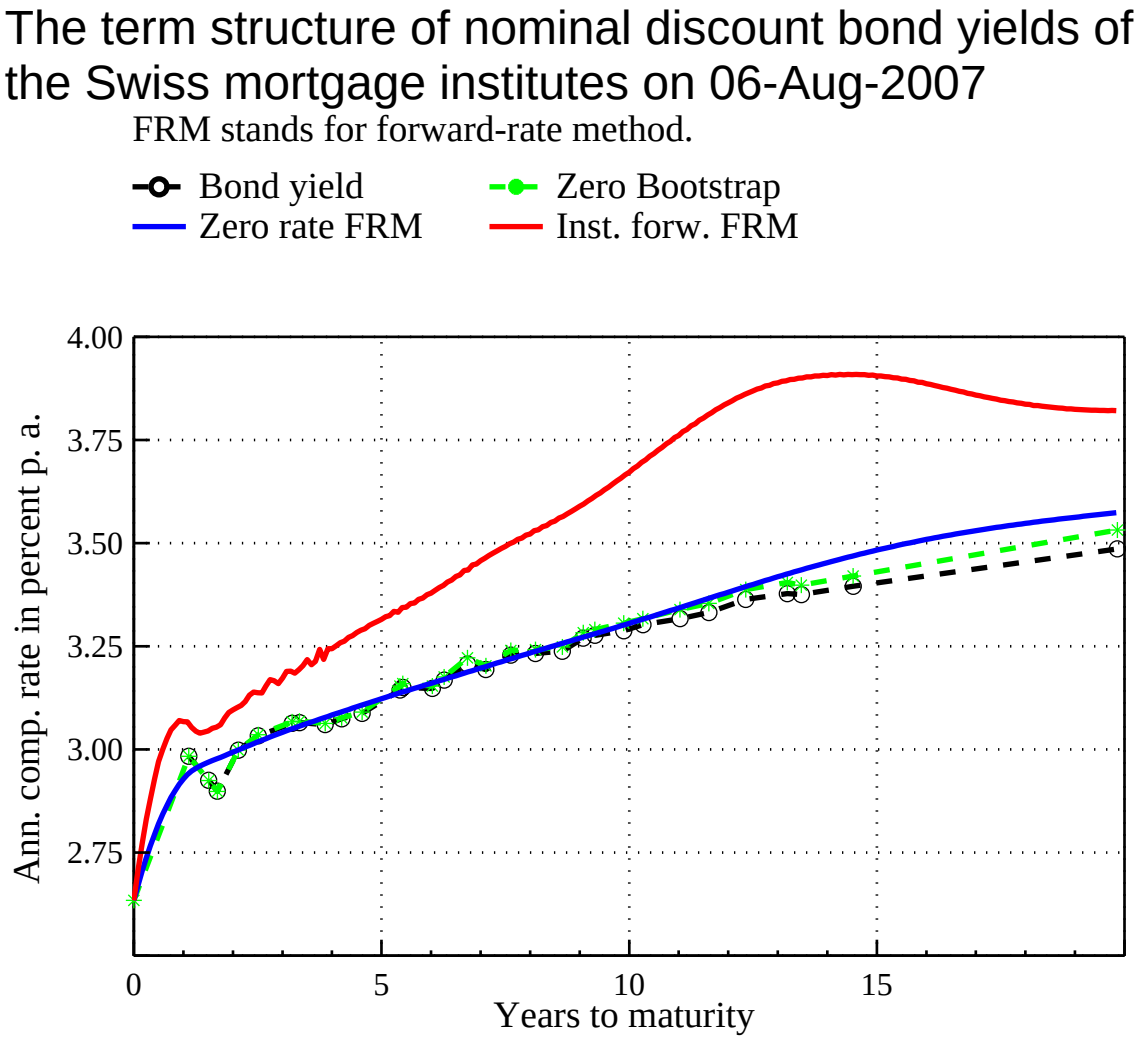
7.1 Zero rates of mortgage institues

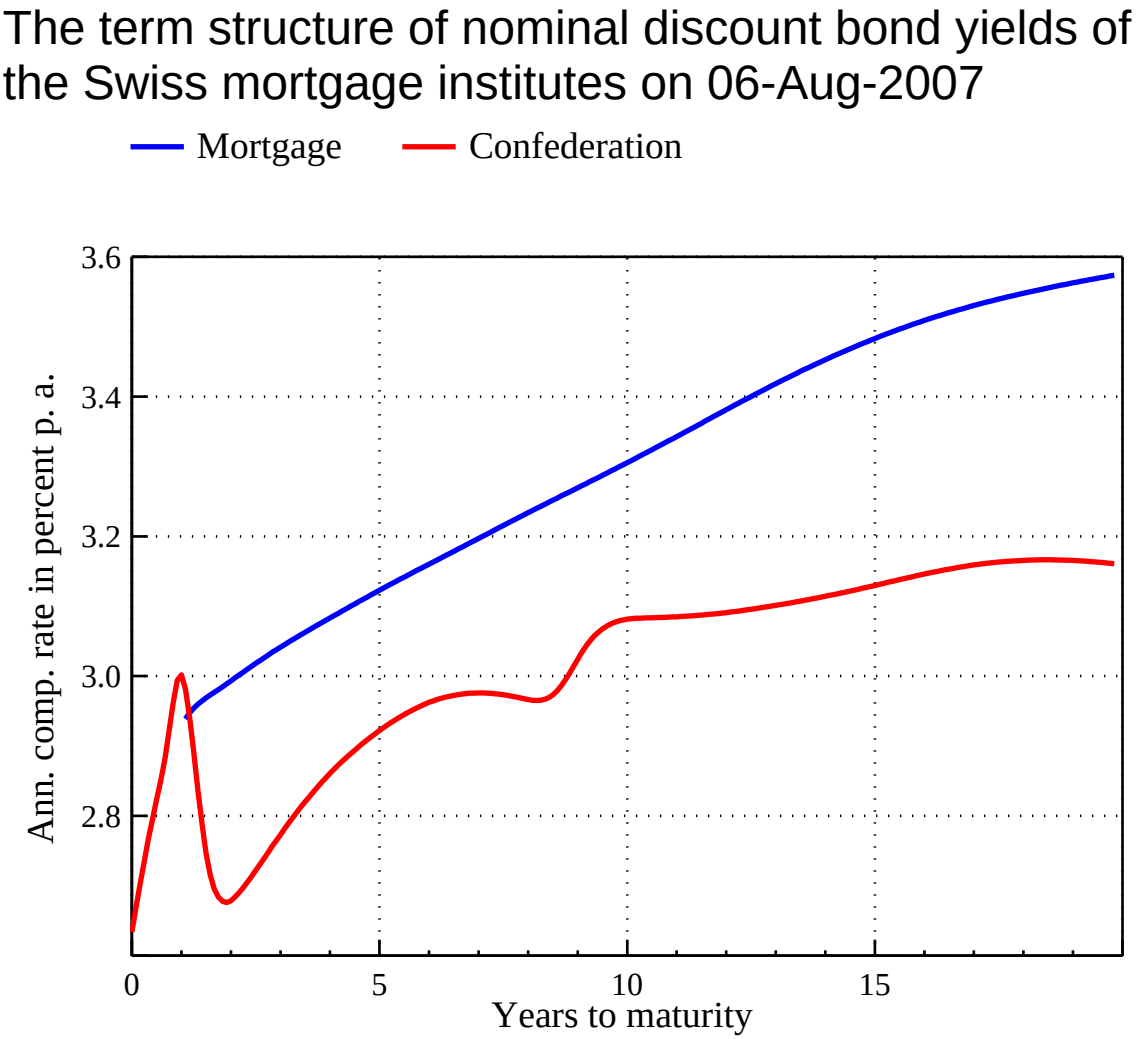
```
Program TermStrCorporate_N: CHP_
============================


Debtor = CHP_1st class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  2.62506e-06  3.37947e-06             1
     2  2.97227e-06  8.18417e-11             1
Optimization Converged Successfully
Active Constraints:
      1
      6
     33
```

```
Terminated succesfully
```





7.2 Zero rates of industy

```
Program TermStrCorporate_N: CHI_
=========================

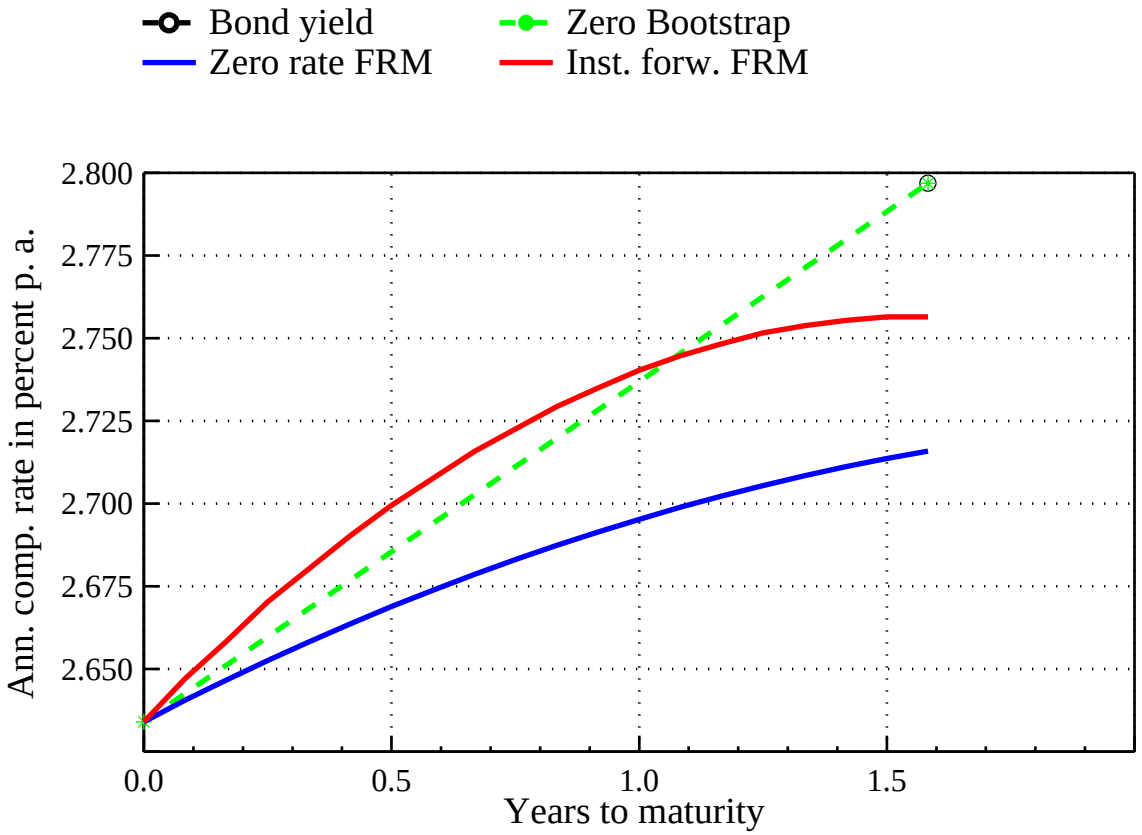

Debtor = CHI_1st class
Safety =  1.00

f-COUNT    FUNCTION       MAX{g}          STEP  Procedures
    1  1.00523e-07  6.08577e-06             1
    2  1.00721e-07  4.00319e-13             1
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```

The term structure of nominal first class discount bond yields of the Swiss industry on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.



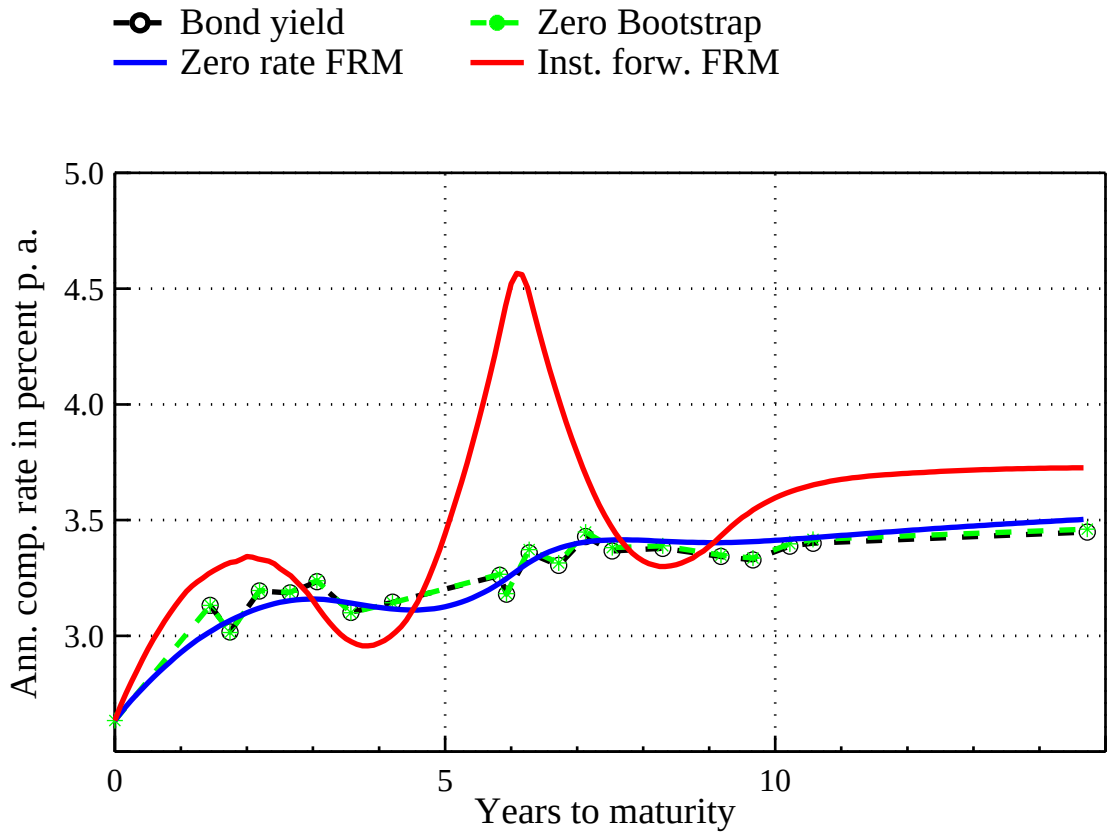

```
Debtor = CHI_2nd class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  2.31739e-05  3.24735e-05             1
     2  2.63147e-05  1.19221e-09             1   Hessian modified
     3  2.31675e-05  1.26241e-10             1   Hessian modified
     6  2.30095e-05  1.64016e-10          0.25   Hessian modified
     8   2.2987e-05   1.6295e-10           0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     5
    10
    28
    32
    34

Terminated succesfully
```

The term structure of nominal second class discount bond yields of the Swiss industry on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.



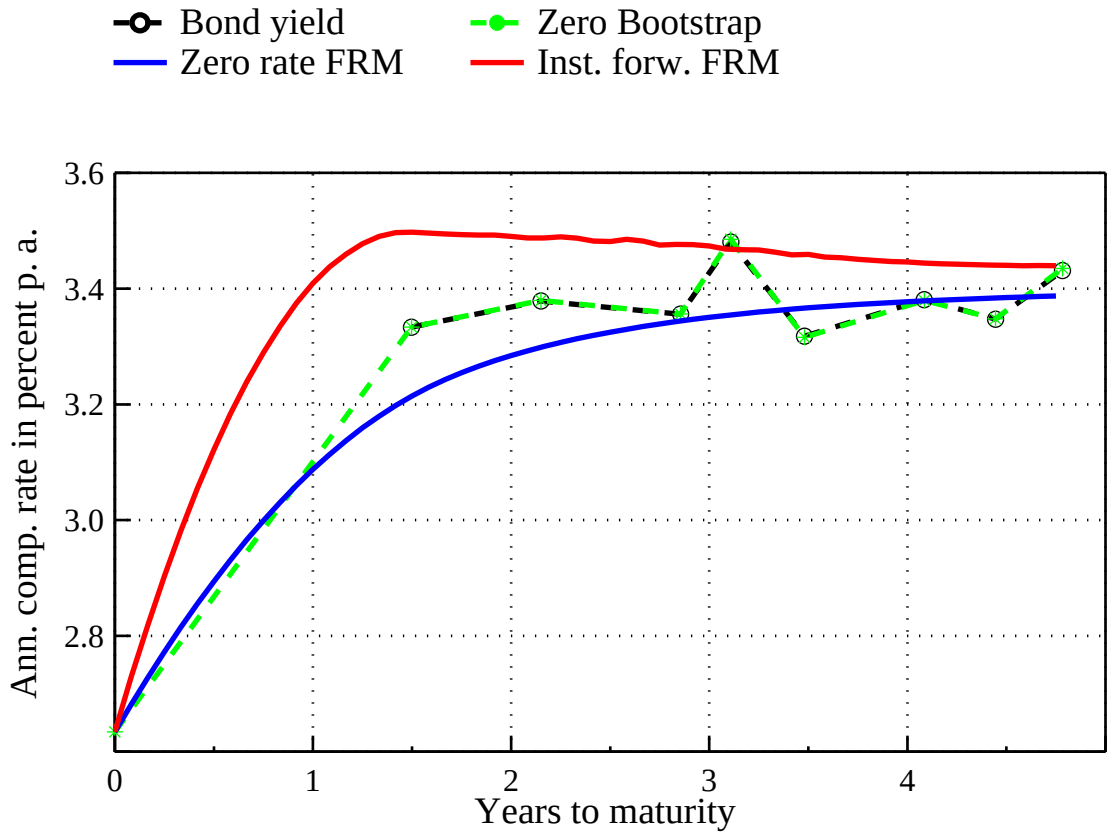

```
Debtor = CHI_3rd class
Safety =  1.00

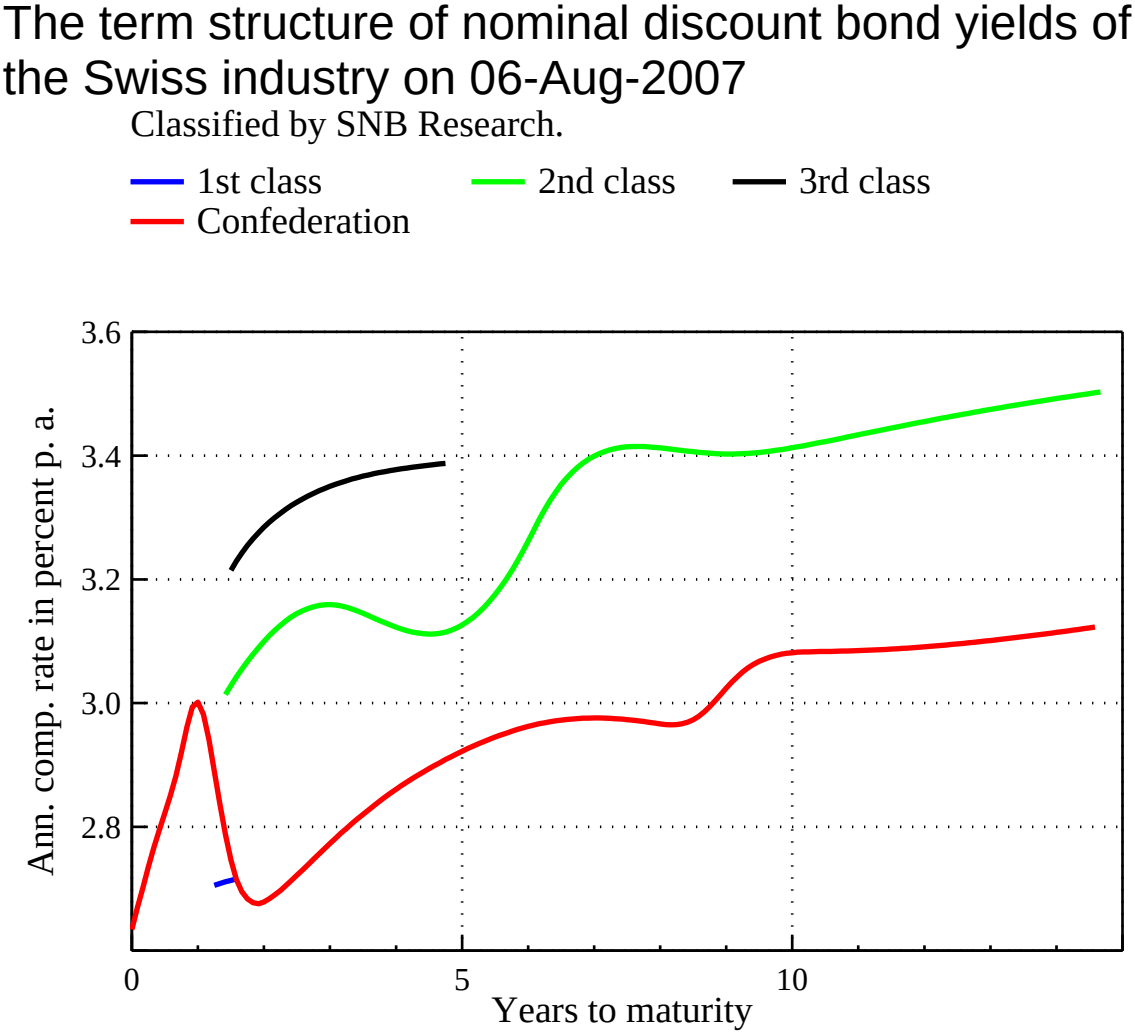
f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  5.38705e-06  5.86303e-06             1
     2  6.85971e-06  9.97619e-13             1   Hessian modified
     3  5.40204e-06  1.33699e-13             1   Hessian modified
     6  5.33931e-06  1.89432e-13          0.25   Hessian modified
     8  5.33161e-06  1.89432e-13           0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
    15

Terminated succesfully
```

The term structure of nominal third class discount bond yields of the Swiss industry on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.





7.3 Zero rates of banks

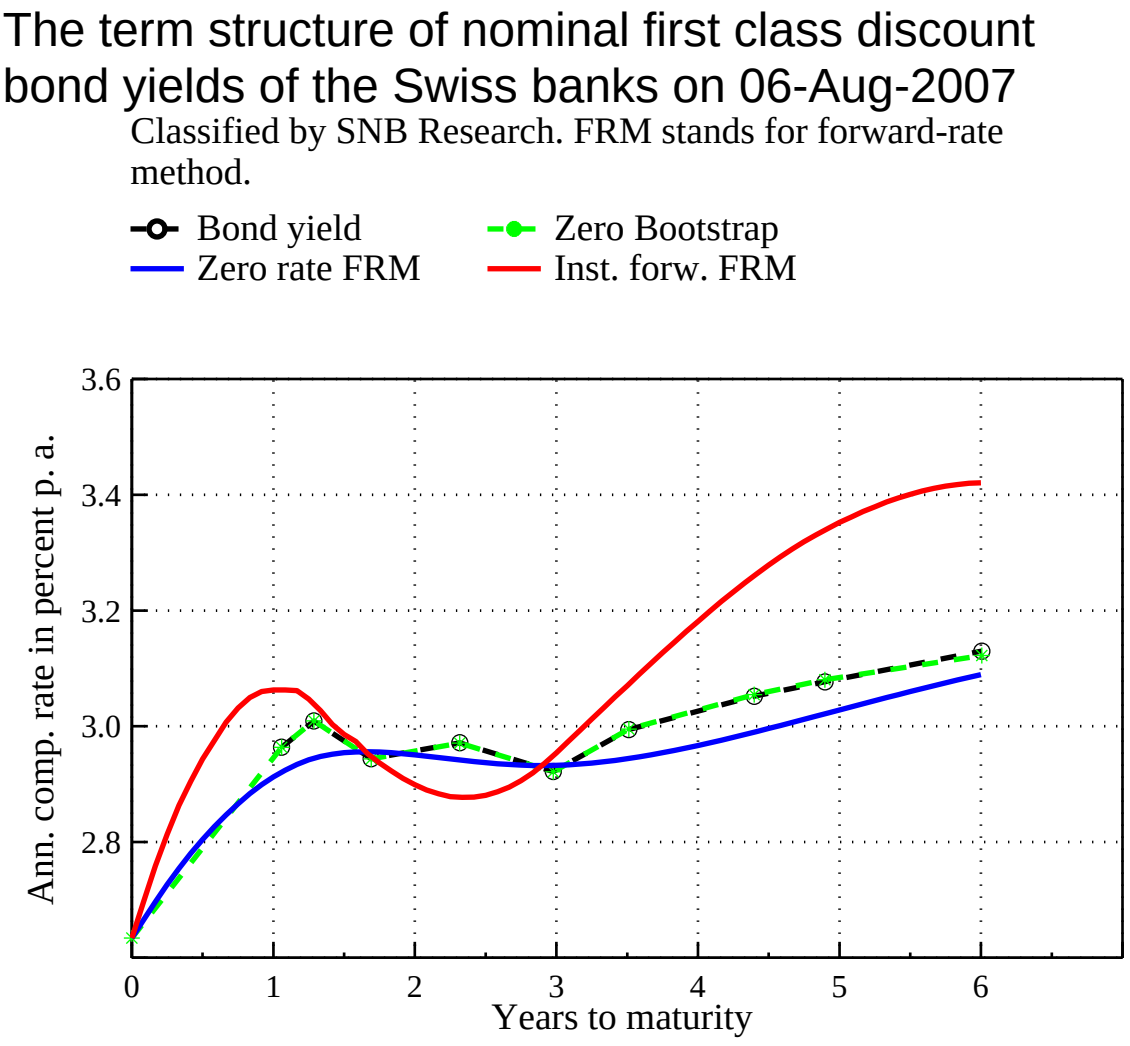
```
Program TermStrCorporate_N: CHB_
=============================


Debtor = CHB_1st class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  3.62975e-05     0.0682076             1
     2  0.000215728   2.34063e-05             1   Hessian modified
     3  4.16444e-05   9.25534e-10             1   Hessian modified
     6  1.30994e-05   2.39995e-08          0.25
     8  1.02311e-05   4.55688e-08           0.5   Hessian modified
     9  1.30236e-05   6.33213e-09             1   Hessian modified
    11  6.52124e-06   1.47673e-08           0.5   Hessian modified
    13  5.10141e-06    1.5636e-08           0.5   Hessian modified
    14  7.67705e-06   8.90557e-10             1   Hessian modified
    15  5.53409e-06   1.54647e-09             1   Hessian modified
    17  4.46622e-06   1.25782e-09           0.5   Hessian modified
    19  3.60116e-06   1.93326e-09           0.5   Hessian modified
```

```
    21   3.26137e-06   1.49009e-09          0.5   Hessian modified
    23   3.12436e-06    7.4973e-10          0.5   Hessian modified
    24   3.27101e-06   6.25387e-10            1   Hessian modified
    25   3.15776e-06   1.00852e-10            1   Hessian modified
    27   3.02572e-06   2.81248e-10          0.5   Hessian modified
    29   2.95972e-06   1.70688e-10          0.5   Hessian modified
    31   2.92699e-06   2.28559e-10          0.5   Hessian modified
    33    2.9079e-06   2.32555e-10          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     2
     8
    14

Terminated succesfully
```




```
Debtor = CHB_2nd class
Safety =  1.00

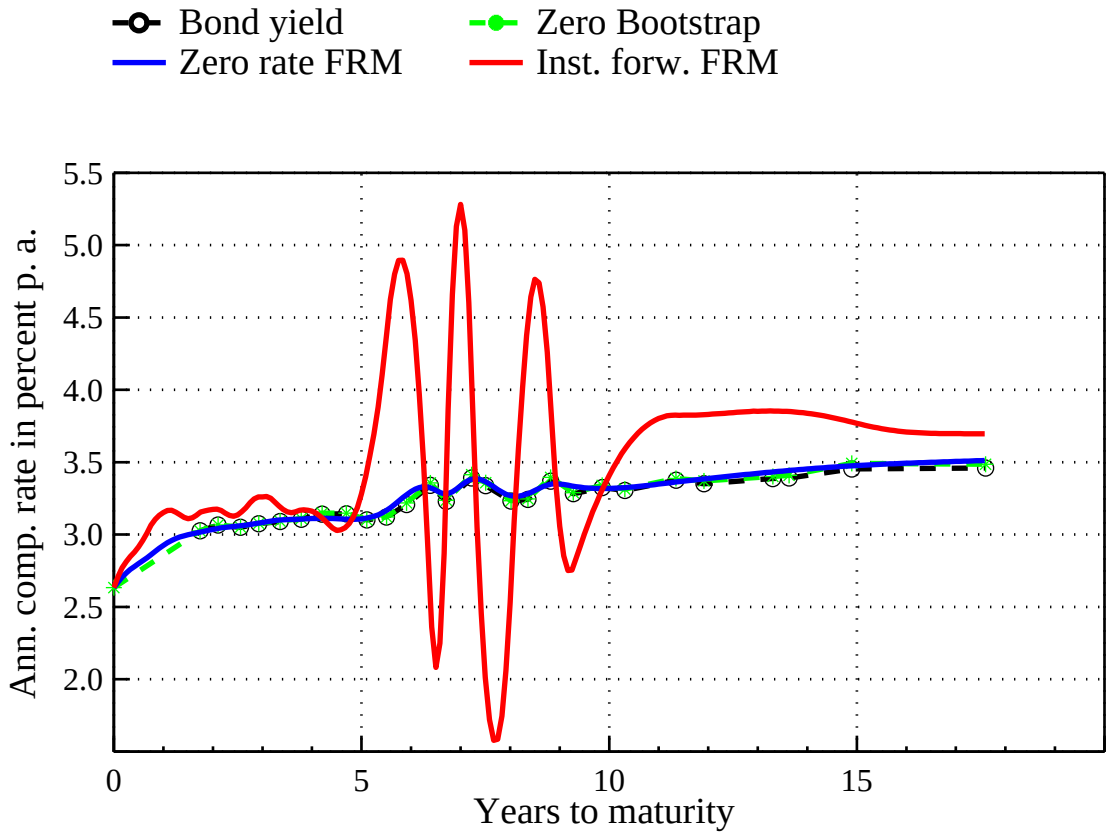
f-COUNT    FUNCTION       MAX{g}         STEP  Procedures
     1  4.09401e-05      1.47532            1
     2   0.00174341     0.012018            1
     3   0.00145749   1.4787e-06            1
     5   0.00114087  1.88719e-06          0.5
```

```
     6    0.0014375   1.2732e-06            1
     7   0.00134521  1.17844e-06            1
     8   0.00194406  8.38814e-07            1
     9   0.00148444  1.50299e-06            1
    10   0.00299081  1.43493e-06            1
    11   0.00155853  1.50467e-06            1
    13   0.00143184  1.15325e-06          0.5
    14   0.00149296   5.2277e-07            1
    16  0.000997622  3.64358e-07          0.5
    18  0.000907084  3.74494e-07          0.5
    19   0.00106092   1.7624e-07            1
    20  0.000968847  1.75168e-07            1
    22  0.000849213  1.01931e-07          0.5
    24  0.000794083  8.15243e-08          0.5
    25  0.000883786  6.49529e-08            1   Hessian modified
    26  0.000801046  3.21923e-08            1   Hessian modified
    28  0.000789585  3.71676e-08          0.5   Hessian modified
    29  0.000805066  1.84274e-08            1   Hessian modified
    31  0.000768058  1.19388e-08          0.5   Hessian modified
    33  0.000762053  1.39021e-08          0.5   Hessian modified
    35  0.000755667   9.8706e-09          0.5   Hessian modified
    37  0.000753182  7.73001e-09          0.5   Hessian modified
    38  0.000757341  4.73797e-09            1   Hessian modified
    39  0.000753648  2.36569e-09            1   Hessian modified
    41  0.000752845  2.54345e-09          0.5   Hessian modified
    42  0.000753794   2.5316e-09            1   Hessian modified
    43  0.000753584  2.43985e-09            1   Hessian modified
    44  0.000755411  1.63752e-09            1   Hessian modified
    45  0.000754351  2.07912e-09            1   Hessian modified
    47  0.000752439  1.68845e-09          0.5   Hessian modified
    49  0.000751537  1.93345e-09          0.5   Hessian modified
    51  0.000751233  1.54733e-09          0.5   Hessian modified
    52  0.000751707   1.2904e-09            1   Hessian modified
    53   0.00075129  8.83626e-10            1   Hessian modified
    55  0.000751098  6.88882e-10          0.5   Hessian modified
    57  0.000750957   4.8265e-10          0.5   Hessian modified
    59  0.000750887  6.08139e-10          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     8
    12
    14
    18
    20
    22
    26
    30
    37
    40
    43
    44
    46

Terminated succesfully
```

The term structure of nominal second class discount bond yields of the Swiss banks on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.




```
Debtor = CHB_3rd class
Safety =  1.00

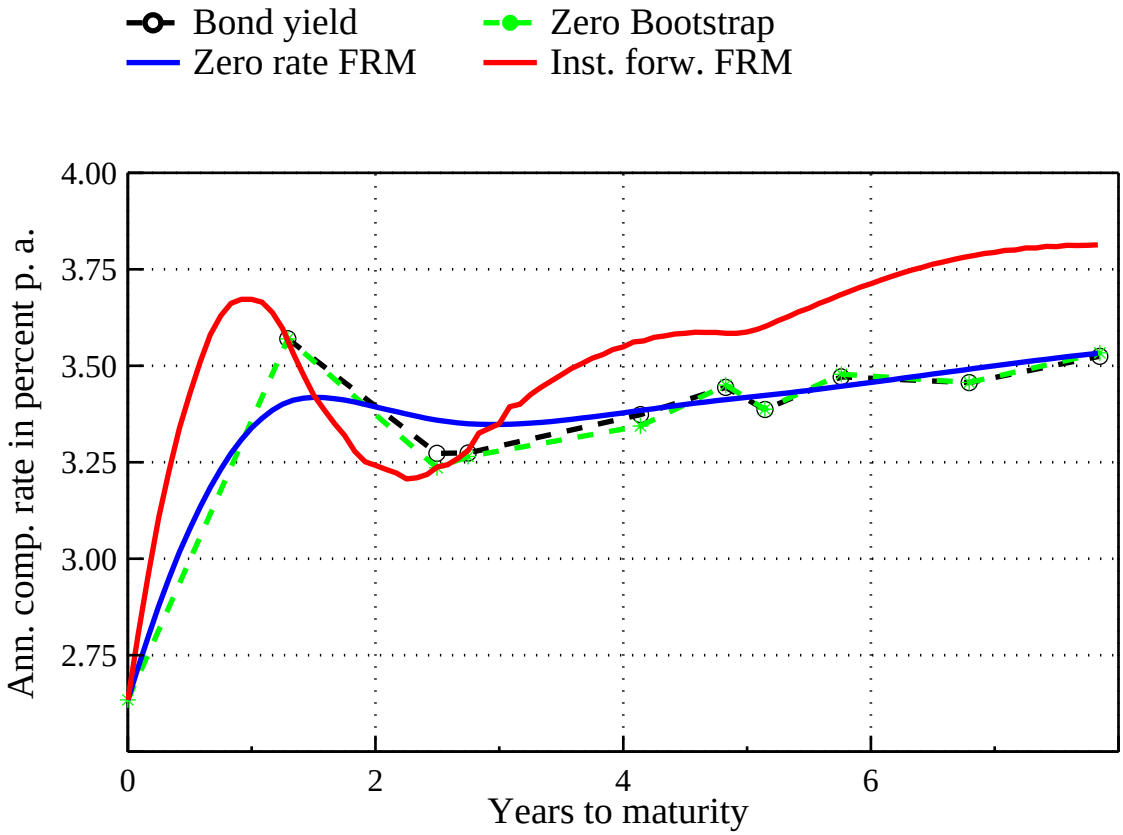
f-COUNT    FUNCTION        MAX{g}          STEP   Procedures
     1   3.95968e-05        1.5483             1
     2   0.000314131     0.0120508             1   Hessian modified
     3   0.000105094   7.41736e-07             1   Hessian modified
     4   0.000467176   4.25007e-07             1
     5    0.00011924   1.40122e-07             1
     8   4.14914e-05    1.4658e-07          0.25
    10   3.22541e-05   1.29253e-07           0.5   Hessian modified
    11   4.33295e-05   4.81526e-09             1   Hessian modified
    12   4.33205e-05   3.95447e-08             1   Hessian modified
    13   6.28516e-05   1.16515e-08             1   Hessian modified
    14   5.39342e-05   4.20428e-08             1   Hessian modified
    15   8.95123e-05   1.55814e-08             1   Hessian modified
    16   6.53657e-05    4.0622e-08             1   Hessian modified
    18   3.73041e-05   2.75911e-08           0.5   Hessian modified
    19   7.39622e-05   2.17556e-08             1   Hessian modified
    20   4.41237e-05   1.84318e-08             1   Hessian modified
    22   3.15109e-05   1.97628e-08           0.5   Hessian modified
    24   2.11449e-05   1.62203e-08           0.5   Hessian modified
    25   3.91701e-05   1.04701e-08             1   Hessian modified
    26   2.38024e-05   5.89415e-09             1   Hessian modified
```

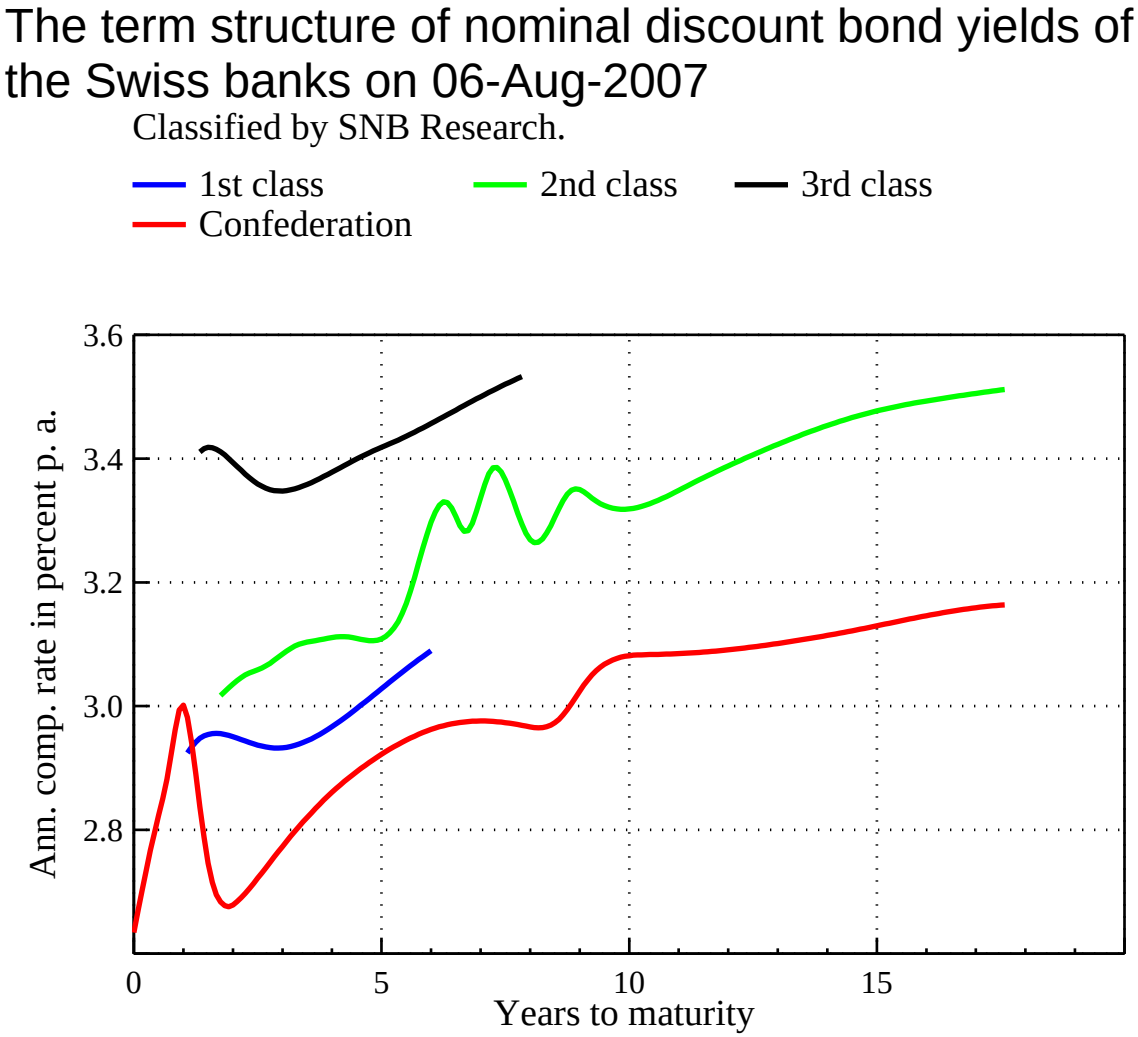
```
   28  2.14204e-05  4.91034e-09          0.5   Hessian modified
   29  2.45751e-05  2.73491e-09            1   Hessian modified
   30  2.45705e-05  1.50511e-09            1   Hessian modified
   32  1.82206e-05  1.77491e-09          0.5   Hessian modified
   34  1.61274e-05  1.42772e-09          0.5   Hessian modified
   36  1.52625e-05  1.22909e-09          0.5   Hessian modified
   37  1.64044e-05  5.79266e-10            1   Hessian modified
   38   1.5595e-05  3.61616e-10            1   Hessian modified
   40  1.49373e-05  4.31253e-10          0.5   Hessian modified
   42  1.45611e-05  3.28973e-10          0.5   Hessian modified
   43  1.52061e-05  8.39396e-11            1   Hessian modified
   44  1.46691e-05   1.1084e-10            1   Hessian modified
   46  1.45484e-05  8.92472e-11          0.5   Hessian modified
   47  1.46537e-05  6.16797e-11            1   Hessian modified
   48  1.46802e-05  5.45304e-11            1   Hessian modified
   50  1.44267e-05   9.6498e-11          0.5   Hessian modified
   51  1.48401e-05  3.18209e-11            1   Hessian modified
   52  1.44833e-05  1.02661e-10            1   Hessian modified
   54  1.44352e-05  1.44672e-10          0.5   Hessian modified
   55  1.45083e-05  8.20979e-11            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     5
    12
    15

Terminated succesfully
```

The term structure of nominal third class discount bond yields of the Swiss banks on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.





7.4 Zero rates of cantons (states)

```
Program TermStrCorporate_N: CHK_
============================


Debtor = CHK_1st class
Safety =  1.00

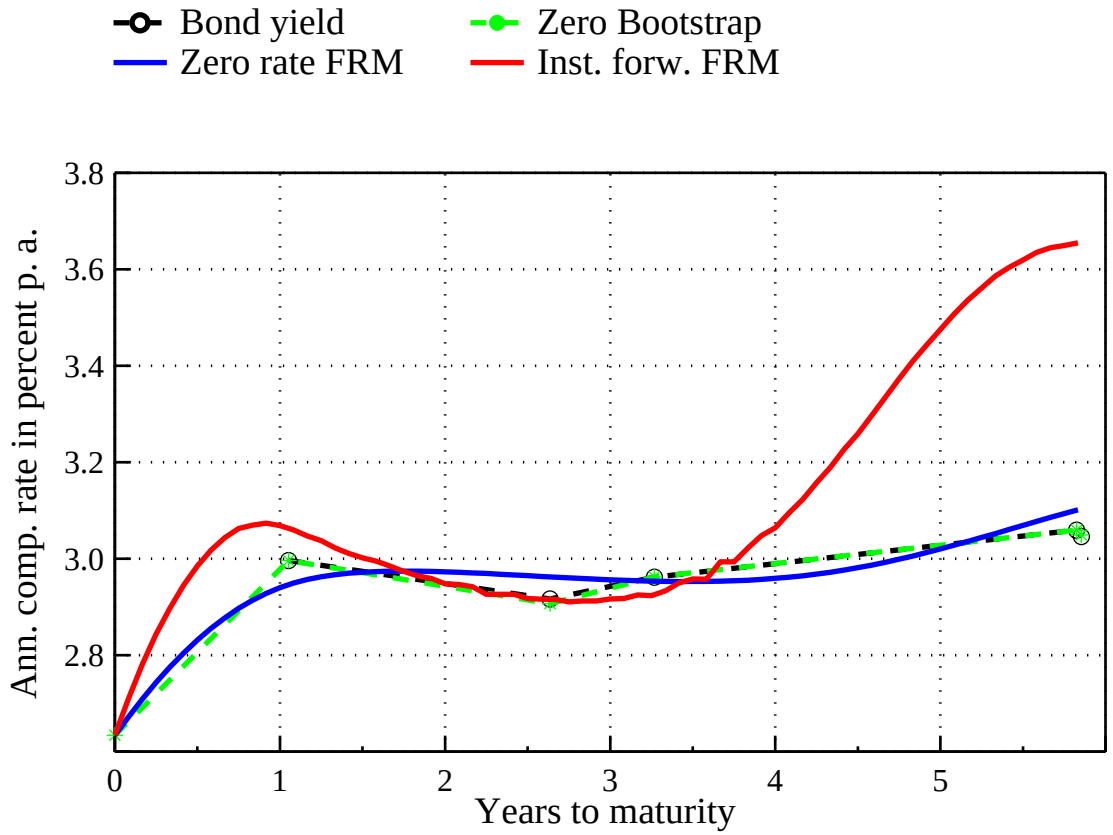
f-COUNT    FUNCTION       MAX{g}          STEP  Procedures
     1   0.00013908     0.202182             1
     2  0.000406627  2.66813e-05             1
     3  0.000121459   2.6642e-08             1   Hessian modified
     4  0.000681462  2.26676e-08             1
     5  0.000112012  8.17922e-09             1
     6   0.00101161   -0.0193237             1
     7  9.99371e-05    -0.006238             1
    10  3.99464e-05  -0.00467849          0.25
    12  3.43566e-05  -0.00233922           0.5   Hessian modified
    13  3.31611e-05   2.9663e-08             1   Hessian modified
    14  4.24022e-05  4.89471e-10             1   Hessian modified
    15  3.33225e-05  1.53967e-10             1   Hessian modified
```

```
   17  2.25151e-05  2.81349e-10          0.5   Hessian modified
   18  3.39277e-05  1.58808e-12            1   Hessian modified
   19  2.33988e-05  1.44093e-10            1   Hessian modified
   20  4.91062e-05   3.4918e-11            1   Hessian modified
   21   2.3263e-05  1.51749e-10            1   Hessian modified
   22  8.60715e-05  1.20488e-10            1   Hessian modified
   23  2.20895e-05  1.53872e-10            1   Hessian modified
   25  2.80854e-05  1.31161e-10          0.5   Hessian modified
   26  2.05723e-05  2.58822e-11            1   Hessian modified
   28  1.38345e-05  4.52119e-11          0.5   Hessian modified
   29  2.11788e-05   1.3446e-12            1   Hessian modified
   30  1.50901e-05   4.0721e-11            1   Hessian modified
   31  3.17822e-05  5.60045e-13            1   Hessian modified
   32  1.53796e-05  3.24832e-11            1   Hessian modified
   33  5.48675e-05  4.51833e-13            1   Hessian modified
   34  1.49057e-05  2.77353e-11            1   Hessian modified
   35   9.4153e-05  3.25018e-14            1   Hessian modified
   36  1.40051e-05  6.93115e-12            1   Hessian modified
   38  2.41503e-05  5.30794e-12          0.5   Hessian modified
   39  1.27774e-05  6.22776e-12            1   Hessian modified
   40  4.83428e-05  3.22482e-12            1   Hessian modified
   41  1.23018e-05  9.56887e-12            1   Hessian modified
   42  8.45453e-05  2.48933e-13            1   Hessian modified
   43  1.15851e-05   1.8992e-12            1   Hessian modified
   44  0.000113172  1.89779e-14            1   Hessian modified
   45   1.0615e-05  5.44703e-15            1   Hessian modified
   48  5.66654e-06  3.25018e-14         0.25   Hessian modified
   49  9.08322e-06  1.89779e-14            1   Hessian modified
   50  5.34872e-06  1.13666e-13            1   Hessian modified
   51   8.0396e-06  5.44703e-15            1   Hessian modified
   52  5.59219e-06  2.21878e-13            1   Hessian modified
   53  1.38807e-05  5.44703e-15            1   Hessian modified
   54  4.90692e-06  2.21878e-13            1   Hessian modified
   57  4.56434e-06  3.16566e-13         0.25   Hessian modified
   58  4.44568e-06  4.60257e-14            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```

The term structure of nominal first class discount bond yields of the Swiss cantons on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.

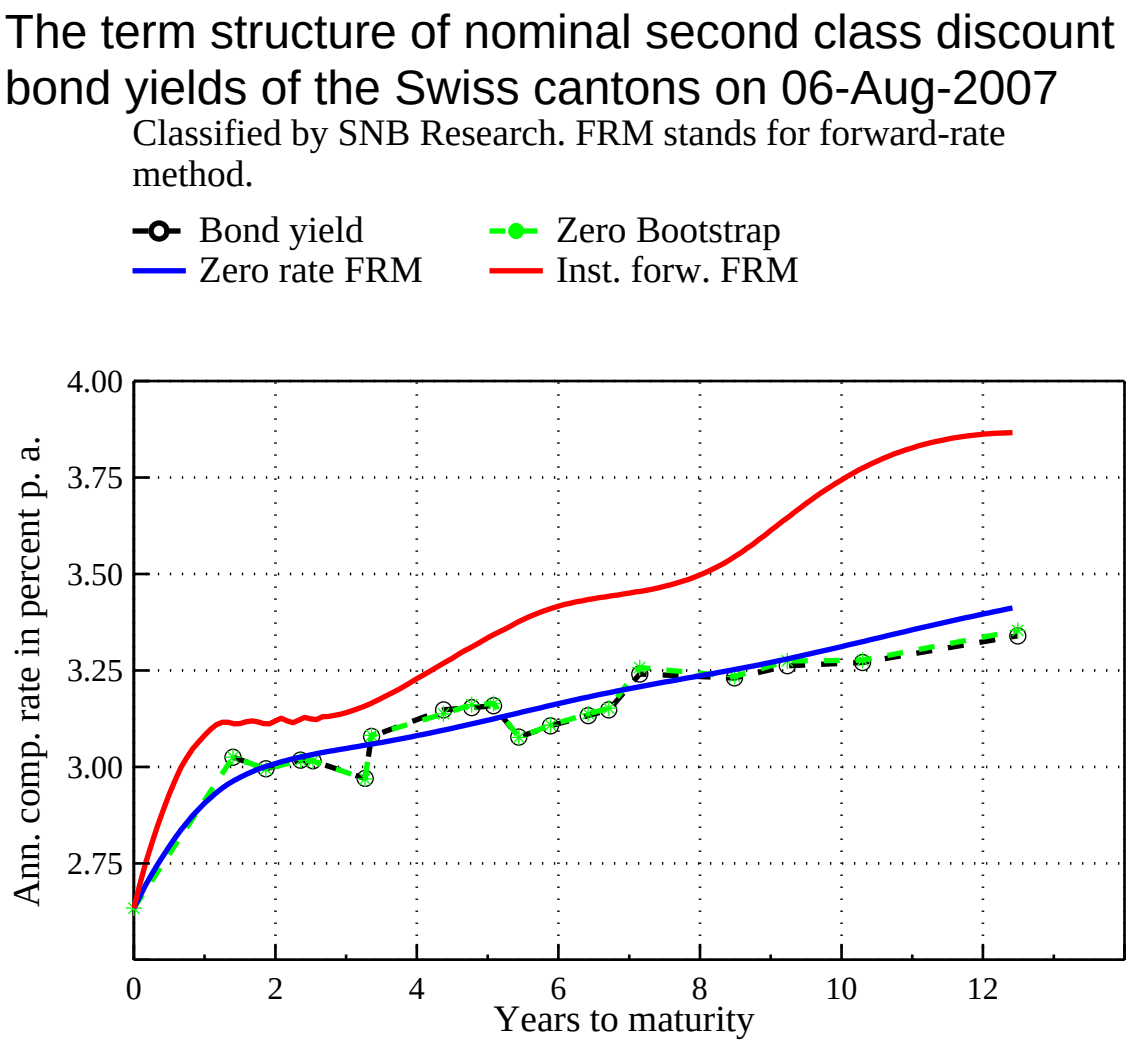



```
Debtor = CHK_2nd class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  3.98245e-05      0.396753             1
     2  0.000234947  0.000847149             1   Hessian modified
     3  6.37997e-05  1.22606e-07             1   Hessian modified
     5  5.86378e-05  5.67417e-07           0.5
     6  7.12371e-05  3.22411e-08             1   Hessian modified
     7   8.6074e-05 -1.42776e-07             1   Hessian modified
     9    3.294e-05 -1.34178e-07           0.5   Hessian modified
    11  1.91113e-05 -0.000781359           0.5   Hessian modified
    13  1.16025e-05 -0.000735951           0.5   Hessian modified
    15  6.67642e-06  -0.00129795           0.5   Hessian modified
    17   4.9881e-06  -0.00155333           0.5   Hessian modified
    19  4.07708e-06 -0.000921141           0.5   Hessian modified
    21  3.46278e-06 -0.000460568           0.5   Hessian modified
    23  3.22095e-06 -0.000230281           0.5   Hessian modified
    25   3.0641e-06 -0.000115139           0.5   Hessian modified
    27  2.93335e-06  -5.7568e-05           0.5   Hessian modified
    29  2.82883e-06 -2.87812e-05           0.5   Hessian modified
    31  2.74302e-06 -1.43869e-05           0.5   Hessian modified
    32  2.71275e-06  2.57376e-08             1   Hessian modified
    33  2.66133e-06  2.46957e-08             1   Hessian modified
```

```
   34  2.80993e-06  2.13344e-09            1   Hessian modified
   35  2.69281e-06  1.91733e-09            1   Hessian modified
   36  3.07028e-06  7.75055e-10            1   Hessian modified
   37  2.72947e-06  3.02764e-09            1   Hessian modified
   38  3.67592e-06  1.19208e-09            1   Hessian modified
   39  2.73904e-06  9.39289e-10            1   Hessian modified
   41  2.76202e-06  7.52912e-10          0.5   Hessian modified
   42  2.72439e-06  3.04716e-10            1   Hessian modified
   44  2.51209e-06  3.06154e-10          0.5   Hessian modified
   45  2.78771e-06   1.8398e-10            1   Hessian modified
   46  2.53056e-06  1.16501e-10            1   Hessian modified
   48  2.50713e-06   9.3874e-11          0.5   Hessian modified
   50  2.42527e-06  1.14192e-10          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
    14
    23
    28

Terminated succesfully
```



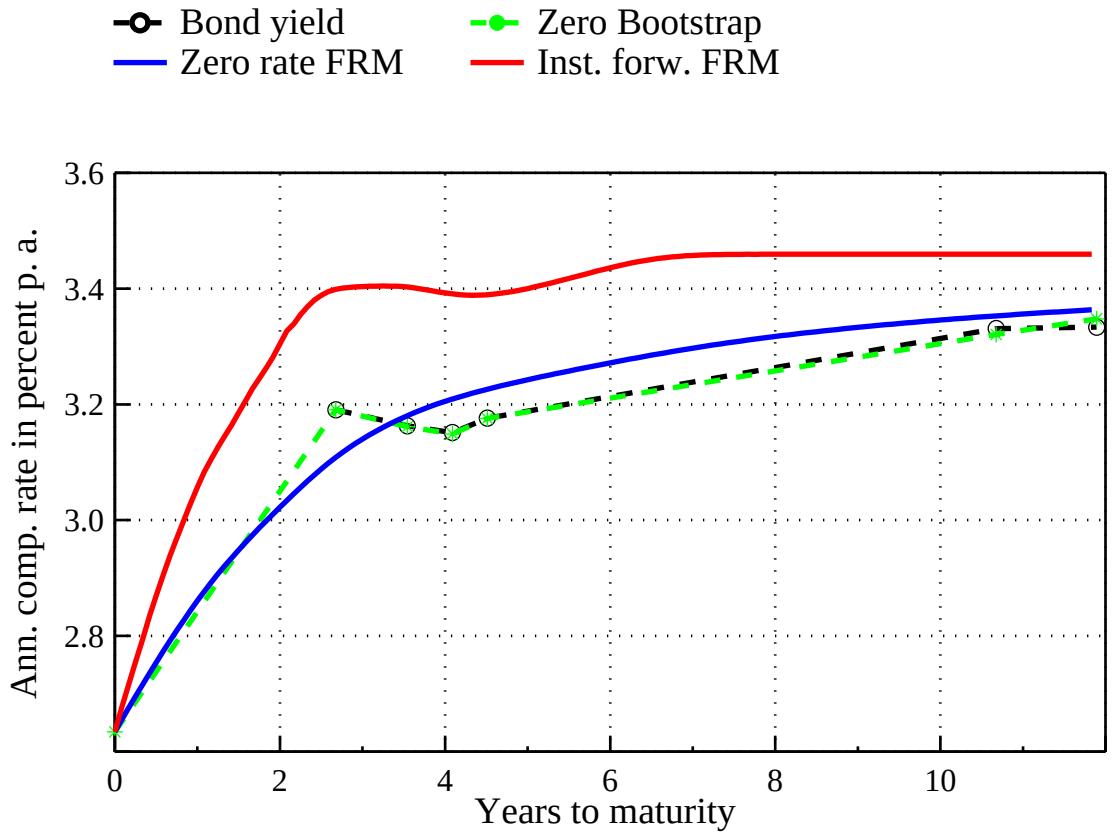

```
Debtor = CHK_3rd class
Safety =  1.00
```

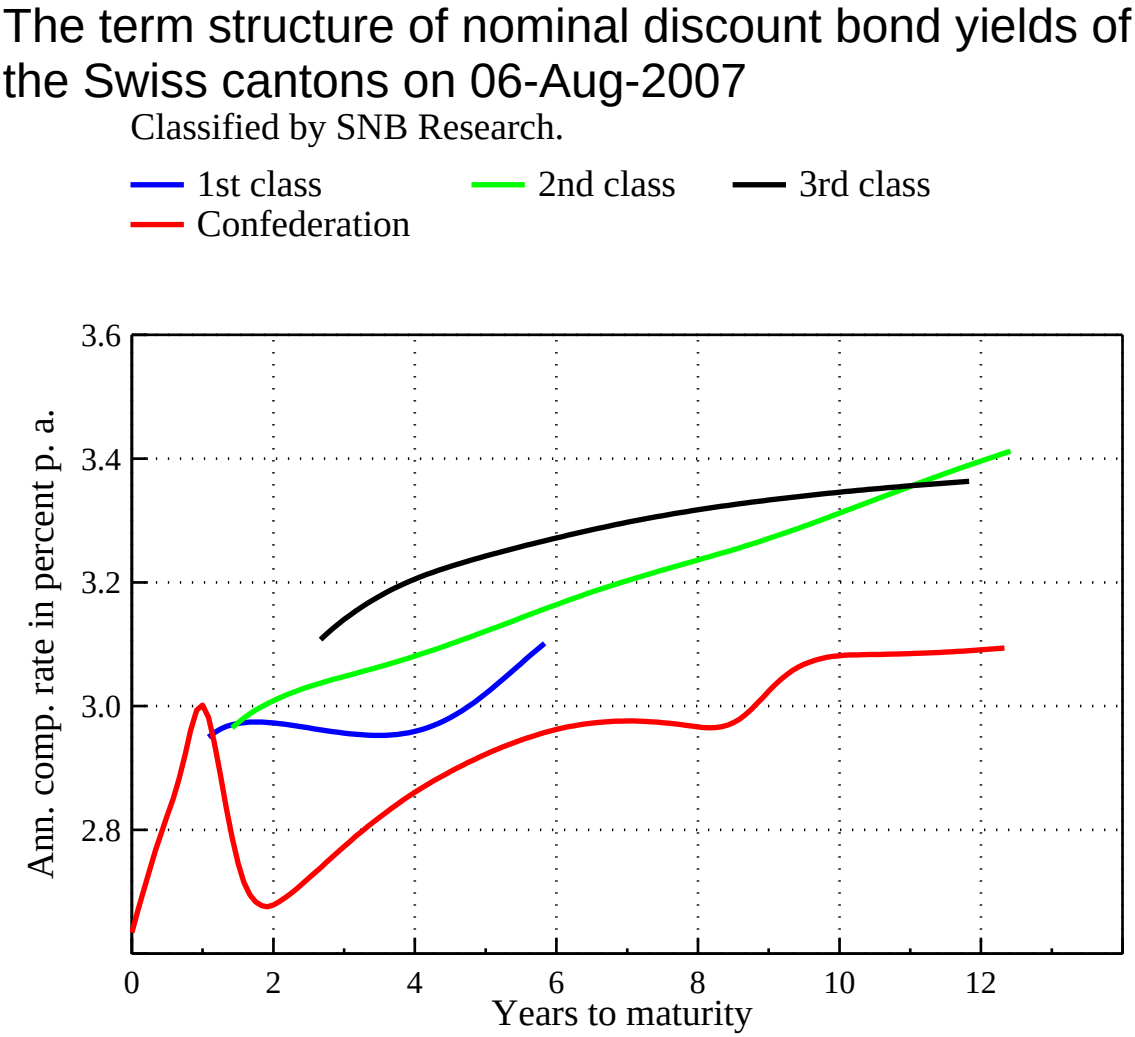
```
f-COUNT   FUNCTION       MAX{g}          STEP  Procedures
    1  4.40775e-05     0.399245             1
    2  0.000250432   0.00080096             1   Hessian modified
    3  5.77073e-05   9.0975e-09             1   Hessian modified
    6  1.79791e-05  2.53729e-08          0.25
    7  6.19875e-05  2.41902e-09             1   Hessian modified
    8  1.91241e-05  -0.00442873             1   Hessian modified
   11  8.33939e-06  -0.00332157          0.25   Hessian modified
   13  6.69971e-06  -0.00166082           0.5   Hessian modified
   15  4.90046e-06 -0.000830421           0.5   Hessian modified
   17  4.34778e-06 -0.000415219           0.5   Hessian modified
   19  3.94436e-06 -0.000207616           0.5   Hessian modified
   21  3.62384e-06 -0.000103815           0.5   Hessian modified
   23  3.41526e-06 -0.000410438           0.5   Hessian modified
   24  3.39464e-06 -4.52776e-08             1   Hessian modified
   25  3.01799e-06 -6.37517e-08             1   Hessian modified
   27  2.71121e-06 -0.000767308           0.5   Hessian modified
   29  2.53215e-06 -0.000744086           0.5   Hessian modified
   31  2.38445e-06 -0.000372057           0.5   Hessian modified
   33  2.30124e-06 -0.000186046           0.5   Hessian modified
   35  2.25004e-06 -9.30329e-05           0.5   Hessian modified
   37  2.20132e-06 -4.65246e-05           0.5   Hessian modified
   39  2.15919e-06 -2.32722e-05           0.5   Hessian modified
   41  2.12792e-06 -2.93597e-05           0.5   Hessian modified
   43  2.10051e-06 -1.46742e-05           0.5   Hessian modified
   45  2.07787e-06 -7.33242e-06           0.5   Hessian modified
   47  2.06381e-06 -3.66395e-06           0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
    10

Terminated succesfully
```

The term structure of nominal third class discount bond yields of the Swiss cantons on 06-Aug-2007

Classified by SNB Research. FRM stands for forward-rate method.





7.5 Zero rates of foreign debtors “AAA”

```
Program TermStrCorporate_N: CH3A_
==========================


Debtor = CH3A_1st class
Safety =  1.00

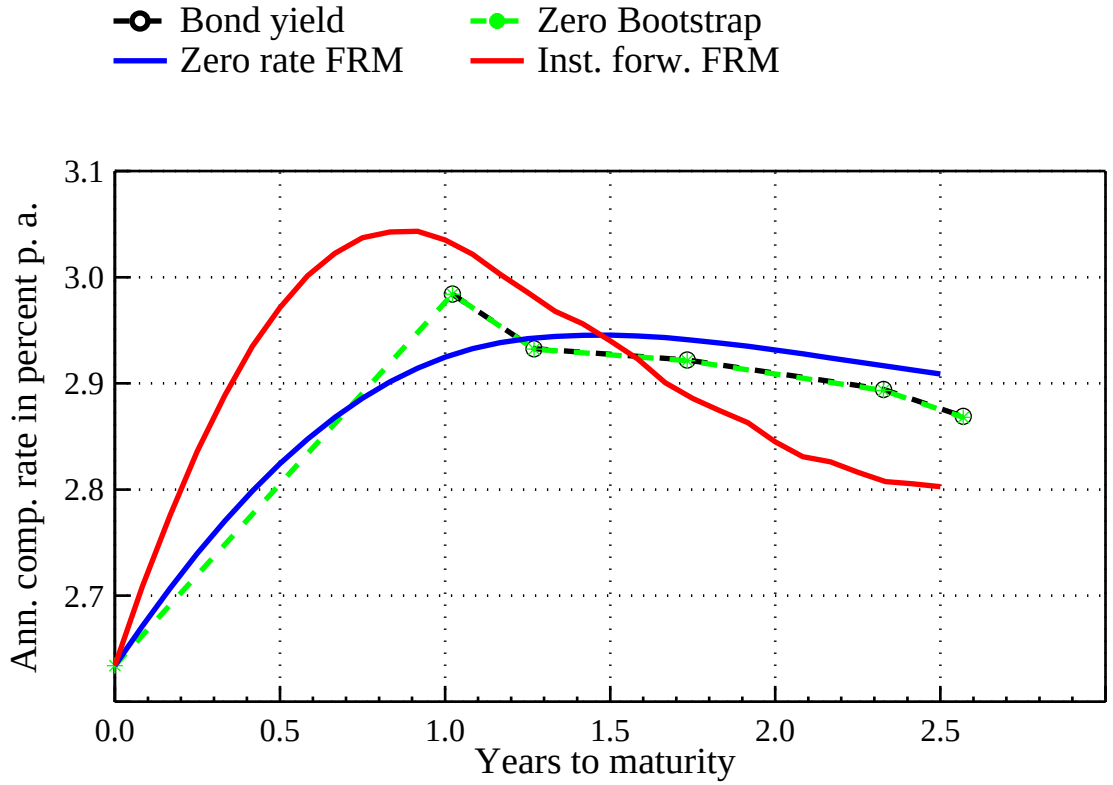
f-COUNT    FUNCTION       MAX{g}          STEP  Procedures
     1  4.85434e-05     0.221159             1
     2  0.000211053    0.00025001            1   Hessian modified
     3  5.29782e-05    2.5895e-08            1   Hessian modified
     6  1.85759e-05   2.93182e-08         0.25
     8  1.45108e-05   4.34328e-08          0.5   Hessian modified
    10   8.7523e-06   3.42842e-08          0.5   Hessian modified
    12  6.49624e-06   3.29471e-08          0.5   Hessian modified
    14  5.22552e-06    2.5035e-08          0.5   Hessian modified
    16  4.04263e-06   1.97666e-08          0.5   Hessian modified
    18  3.45869e-06   -0.00114236          0.5   Hessian modified
    20   3.1726e-06   -0.00285959          0.5   Hessian modified
    22  2.97875e-06   -0.00142978          0.5   Hessian modified
```

```
   24   2.84883e-06   -0.00071489          0.5   Hessian modified
   26   2.75968e-06  -0.000357444          0.5   Hessian modified
   27   2.74719e-06   6.49753e-10            1   Hessian modified
   28   2.64519e-06   1.21347e-13            1   Hessian modified
   30   2.53508e-06   1.21347e-13          0.5   Hessian modified
   31   2.67675e-06   8.20871e-15            1   Hessian modified
   32   2.51889e-06   3.64986e-14            1   Hessian modified
   33   2.85953e-06  -5.93275e-15            1   Hessian modified
   34    2.4994e-06   2.23502e-14            1   Hessian modified
   35   3.17944e-06   8.20871e-15            1   Hessian modified
   36   2.48168e-06   8.20871e-15            1   Hessian modified
   37   3.51878e-06   8.20871e-15            1   Hessian modified
   38   2.48002e-06  -5.93275e-15            1   Hessian modified
   41   2.39251e-06  -5.93275e-15         0.25   Hessian modified
   43    2.3797e-06  -5.93275e-15          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```

The term structure of nominal first class discount bond yields of the foreign AAA-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.



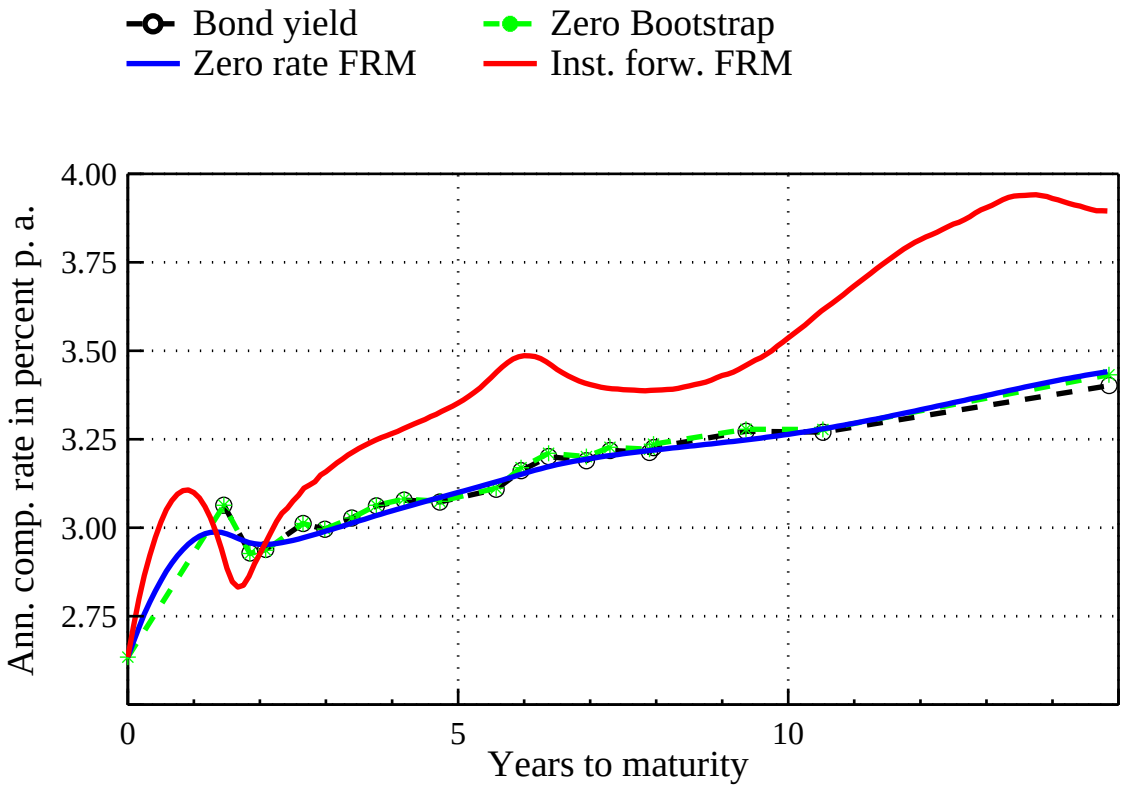

```
Debtor = CH3A_2nd class
Safety =  1.00
```

```
f-COUNT   FUNCTION       MAX{g}         STEP  Procedures
    1   0.00046474     0.384853            1
    2  0.000455776  0.000757509            1
    3  0.000384153   1.6609e-06            1
    5  0.000172356 -0.000158051          0.5
    7  0.000113351  -0.00542811          0.5
    9  7.01578e-05  -0.00271409          0.5   Hessian modified
   11  4.72299e-05  -0.00135706          0.5   Hessian modified
   13  3.76038e-05  -0.00067853          0.5   Hessian modified
   15  3.00551e-05 -0.000339266          0.5   Hessian modified
   17  2.56781e-05 -0.000169633          0.5   Hessian modified
   19  2.30262e-05 -8.48167e-05          0.5   Hessian modified
   20  2.27583e-05   8.8051e-08            1   Hessian modified
   21  2.17318e-05  2.06962e-08            1   Hessian modified
   22  2.33496e-05   1.0541e-08            1   Hessian modified
   23  2.20995e-05  1.20303e-08            1   Hessian modified
   25  1.60045e-05  1.46878e-08          0.5   Hessian modified
   27  1.37042e-05  1.90536e-08          0.5   Hessian modified
   29    1.219e-05  1.48496e-08          0.5   Hessian modified
   31  1.10663e-05  1.15842e-08          0.5   Hessian modified
   33  1.01392e-05  1.04348e-08          0.5   Hessian modified
   34  1.00515e-05  3.45354e-08            1   Hessian modified
   35  8.50256e-06  3.74927e-08            1   Hessian modified
   37  7.21284e-06  1.97478e-08          0.5   Hessian modified
   39  6.53854e-06  9.90616e-09          0.5   Hessian modified
   40  7.05389e-06  8.45367e-09            1   Hessian modified
   41  6.51886e-06  1.22323e-09            1   Hessian modified
   43  5.98019e-06   7.3991e-10          0.5   Hessian modified
   44  6.55476e-06    4.493e-10            1   Hessian modified
   45  6.08728e-06  5.43654e-10            1   Hessian modified
   47  5.72593e-06  4.08242e-10          0.5   Hessian modified
   48  6.15541e-06  3.56567e-10            1   Hessian modified
   49  5.81978e-06  1.45612e-10            1   Hessian modified
   51  5.54932e-06  2.35816e-10          0.5   Hessian modified
   53  5.39274e-06  1.27793e-10          0.5   Hessian modified
   55   5.3171e-06  1.02204e-10          0.5   Hessian modified
   57  5.28423e-06  6.87751e-11          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     4
     7
    12
    21
    29

Terminated succesfully
```

The term structure of nominal second class discount bond yields of the foreign AAA-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.




```
Debtor = CH3A_3rd class
Safety =  1.00

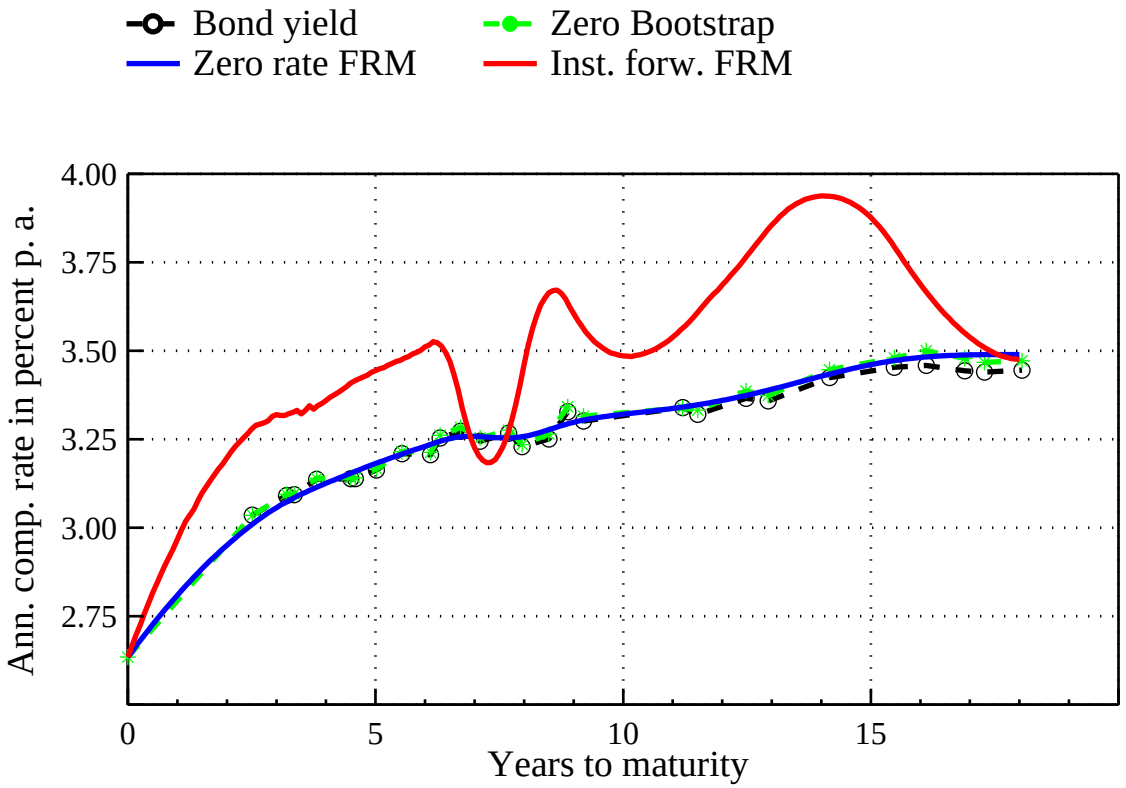
f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1   0.000173767       2.36392             1
     2   0.000321442     0.0224858             1   Hessian modified
     3   0.000157625  2.60077e-07              1   Hessian modified
     5   0.000103833  4.60886e-07            0.5
     7   6.31291e-05  3.41406e-07            0.5   Hessian modified
     8   0.000119709  1.68906e-07              1   Hessian modified
     9   6.86654e-05  1.09612e-07              1   Hessian modified
    11   5.03566e-05  8.34411e-08            0.5   Hessian modified
    13   3.21757e-05  3.95728e-08            0.5   Hessian modified
    15   2.42208e-05  7.27589e-08            0.5   Hessian modified
    17   2.06614e-05  5.90033e-08            0.5   Hessian modified
    19   1.76759e-05  5.54056e-08            0.5   Hessian modified
    21   1.53273e-05  6.74865e-08            0.5   Hessian modified
    23   1.39506e-05  9.24547e-08            0.5   Hessian modified
    24   1.26687e-05   3.2984e-07              1   Hessian modified
    26   1.06561e-05  3.04424e-07            0.5   Hessian modified
    28   9.51164e-06  2.49437e-07            0.5   Hessian modified
    29   1.06578e-05  1.38474e-07              1   Hessian modified
    30   9.24288e-06   1.2646e-08              1   Hessian modified
    31   1.24577e-05  1.09343e-08              1   Hessian modified
```

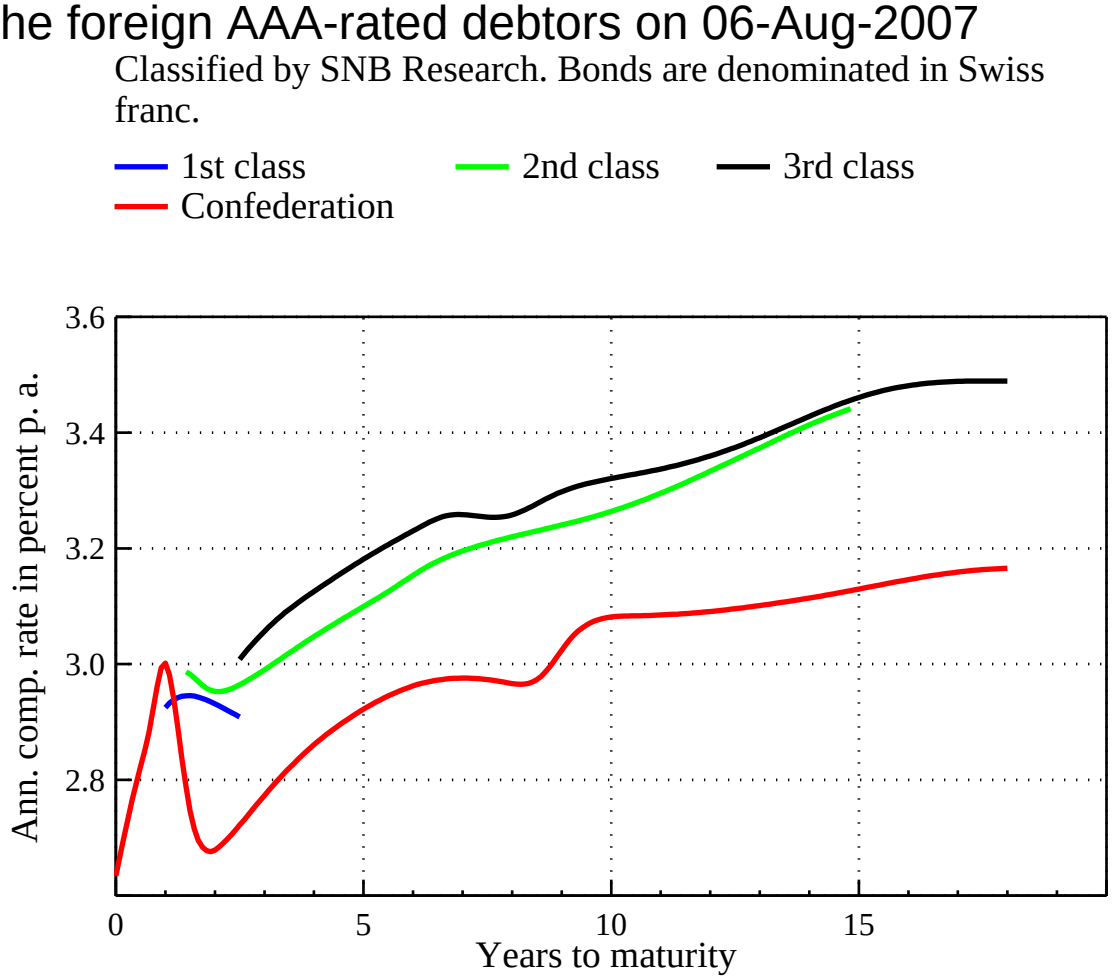
```
   32  9.21102e-06  1.74658e-08            1   Hessian modified
   34  8.72553e-06  4.08391e-08          0.5   Hessian modified
   35  9.20656e-06  2.36579e-08            1   Hessian modified
   36  9.05416e-06  1.07139e-08            1   Hessian modified
   37  1.01315e-05  7.90235e-09            1   Hessian modified
   38  9.61896e-06  2.24316e-08            1   Hessian modified
   39  1.23035e-05  2.22377e-08            1   Hessian modified
   40   1.0218e-05  6.97957e-09            1   Hessian modified
   42  8.46486e-06  4.13546e-09          0.5   Hessian modified
   44  7.37999e-06  4.90065e-09          0.5   Hessian modified
   46  6.90972e-06  1.06021e-08          0.5   Hessian modified
   48  6.74028e-06  8.22499e-09          0.5   Hessian modified
   49  6.87516e-06  6.70557e-09            1   Hessian modified
   50  6.78873e-06  3.77105e-09            1   Hessian modified
   52  6.54702e-06  2.93284e-09          0.5   Hessian modified
   54  6.44967e-06  4.33907e-09          0.5   Hessian modified
   56   6.3821e-06  5.68328e-09          0.5   Hessian modified
   58  6.32244e-06  8.26911e-09          0.5   Hessian modified
   60  6.26573e-06   1.4176e-08          0.5   Hessian modified
   61  6.20405e-06  9.45451e-08            1   Hessian modified
   62  6.12546e-06  2.92002e-07            1   Hessian modified
   63  6.19315e-06  2.06139e-07            1   Hessian modified
   64  6.12973e-06  4.68857e-09            1   Hessian modified
   66  5.95478e-06  7.60907e-09          0.5   Hessian modified
   68  5.89356e-06  6.39453e-09          0.5   Hessian modified
   70  5.85446e-06  1.01082e-08          0.5   Hessian modified
   71  5.90071e-06  9.44038e-09            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     2
    11
    16
    23
    36
    41
    46
    54

Terminated succesfully
```

The term structure of nominal third class discount bond yields of the foreign AAA-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.





7.6 Zero rates of foreign debtors “AA”

```
Program TermStrCorporate_N: CH2A_
==========================


Debtor = CH2A_1st class
Safety =  1.00

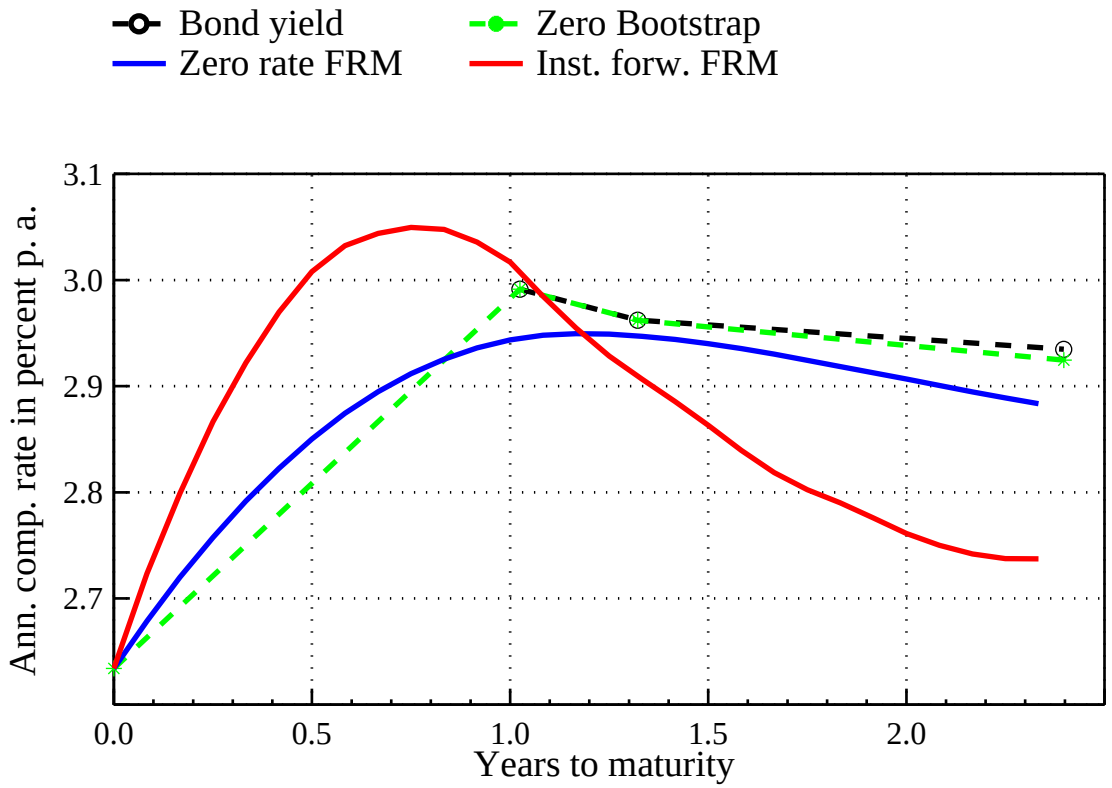
f-COUNT    FUNCTION       MAX{g}          STEP  Procedures
     1  5.93309e-05     0.163367             1
     2  0.000225199  0.000133709             1   Hessian modified
     3  5.68087e-05  6.20632e-09             1   Hessian modified
     6  2.46134e-05  1.21388e-08          0.25
     8  1.94118e-05  1.89281e-08           0.5   Hessian modified
    10  1.27774e-05  2.38806e-08           0.5   Hessian modified
    11  2.07839e-05  -0.00121835             1   Hessian modified
    12  1.29546e-05  4.25203e-07             1   Hessian modified
    13  3.18087e-05  1.24628e-09             1   Hessian modified
    14  1.42461e-05  7.85345e-12             1   Hessian modified
    16   1.2107e-05  4.04747e-11           0.5   Hessian modified
    17  1.37678e-05  2.66481e-13             1   Hessian modified
```

```
   19  6.87597e-06  7.40953e-12          0.5   Hessian modified
   21  5.78685e-06  7.57095e-12          0.5   Hessian modified
   22  7.39315e-06  1.10051e-12            1   Hessian modified
   23  6.82961e-06  3.40081e-12            1   Hessian modified
   24  9.00404e-06  1.34264e-12            1   Hessian modified
   25  8.34546e-06  2.56678e-12            1   Hessian modified
   26  1.19428e-05  4.41355e-13            1   Hessian modified
   27  1.02779e-05  2.45916e-12            1   Hessian modified
   28  1.80873e-05  5.12437e-14            1   Hessian modified
   29  1.18007e-05  3.37391e-12            1   Hessian modified
   30  3.20153e-05  9.16003e-14            1   Hessian modified
   31  1.27305e-05  4.04651e-12            1   Hessian modified
   32   5.7396e-05  3.77962e-14            1   Hessian modified
   33  1.21146e-05  2.86273e-12            1   Hessian modified
   34  0.000101567  3.06831e-13            1   Hessian modified
   35  1.10944e-05  7.81458e-14            1   Hessian modified
   36  0.000127236 -2.56045e-15            1   Hessian modified
   37  9.50274e-06  1.45411e-13            1   Hessian modified
   39  1.57236e-05  1.45411e-13          0.5   Hessian modified
   40  3.88979e-06  1.08871e-14            1   Hessian modified
   42  3.33653e-06  2.43416e-14          0.5   Hessian modified
   43  3.09165e-06  3.77962e-14            1   Hessian modified
   44  3.06705e-06  2.43416e-14            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```

The term structure of nominal first class discount bond yields of the foreign AA-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.

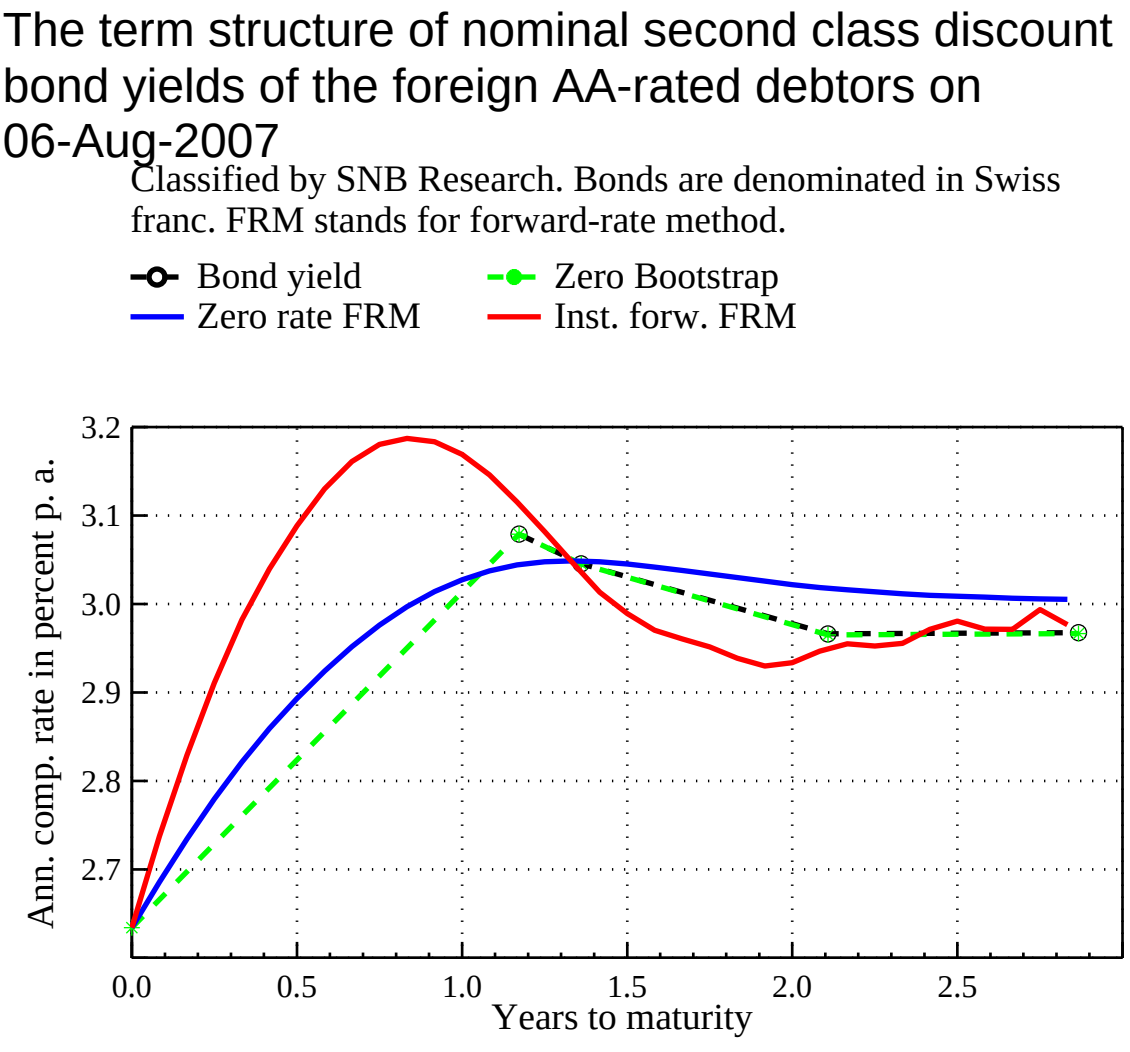



```
Debtor = CH2A_2nd class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
     1  4.70348e-05     0.0279315             1
     2  0.000213052 -4.03008e-06             1   Hessian modified
     3  4.58633e-05 -7.16538e-09             1   Hessian modified
     6  1.87958e-05  -0.00470103          0.25
     8  1.51445e-05   -0.0156944           0.5   Hessian modified
    10   1.0233e-05   -0.0262272           0.5   Hessian modified
    12  8.29109e-06    -0.013725           0.5   Hessian modified
    14   7.0522e-06  -0.00686223           0.5   Hessian modified
    16  6.21248e-06  -0.00343106           0.5   Hessian modified
    18  5.70217e-06  -0.00171551           0.5   Hessian modified
    20  5.38374e-06 -0.000857753           0.5   Hessian modified
    21  5.32906e-06  3.97859e-09             1   Hessian modified
    22  5.00658e-06  8.48819e-10             1   Hessian modified
    23  5.57587e-06  7.79317e-11             1   Hessian modified
    24  5.07758e-06  8.67214e-10             1   Hessian modified
    25  6.48402e-06  6.36785e-10             1   Hessian modified
    26  5.16308e-06  4.01173e-10             1   Hessian modified
    28  5.01435e-06  4.22441e-10           0.5   Hessian modified
    29  5.12314e-06  6.57373e-11             1   Hessian modified
    31  4.65202e-06   1.1934e-10           0.5   Hessian modified
```

```
    32   5.23223e-06   1.35776e-11            1   Hessian modified
    33   4.72982e-06   6.74008e-11            1   Hessian modified
    34    5.9232e-06   2.91678e-11            1   Hessian modified
    35   4.74877e-06   7.22538e-11            1   Hessian modified
    36   7.28432e-06   6.28639e-11            1   Hessian modified
    37   4.72799e-06   6.07193e-11            1   Hessian modified
    38   8.64238e-06   5.05183e-11            1   Hessian modified
    39   4.68793e-06   4.38918e-11            1   Hessian modified
    40   9.05069e-06   2.63219e-11            1   Hessian modified
    41   4.65091e-06   1.57223e-11            1   Hessian modified
    42   9.12805e-06   9.21951e-12            1   Hessian modified
    43   4.59456e-06   5.06764e-12            1   Hessian modified
    45   5.00494e-06   4.44898e-12          0.5   Hessian modified
    46   4.55209e-06     8.403e-15            1   Hessian modified
    49   4.41505e-06   3.65846e-13         0.25   Hessian modified
    50   4.50356e-06   3.38354e-13            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     7

Terminated succesfully
```




```
Debtor = CH2A_3rd class
```

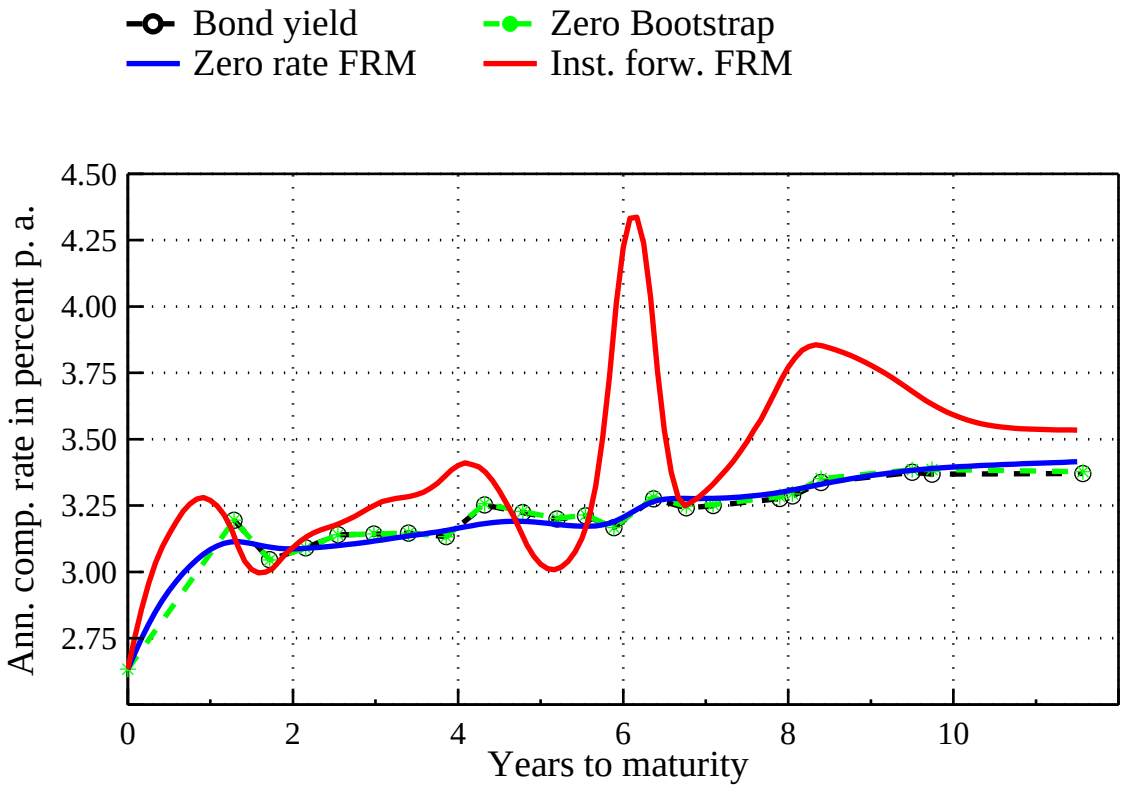
```
Safety =  1.00

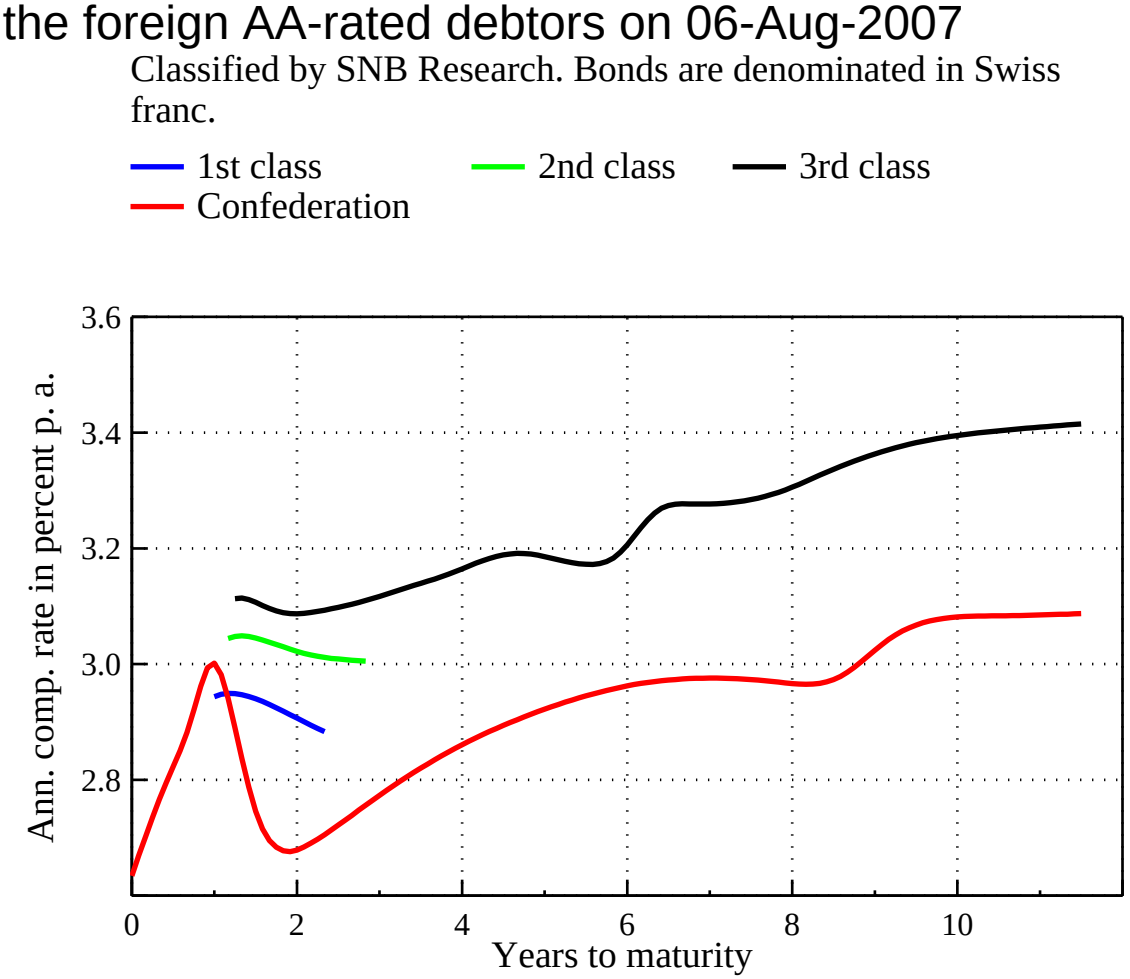
f-COUNT   FUNCTION       MAX{g}         STEP  Procedures
    1  6.32649e-05     0.910147            1
    2  0.000473811   0.00211496            1
    3  0.000241895  3.93682e-07            1
    5  0.000197329  3.45321e-07          0.5
    7  0.000112722  2.45509e-07          0.5   Hessian modified
    9  8.46142e-05  2.17342e-07          0.5   Hessian modified
   10  0.000132917  1.66695e-07            1   Hessian modified
   11  8.57295e-05  1.45449e-07            1   Hessian modified
   12  0.000218836  8.55084e-08            1   Hessian modified
   13  8.44452e-05  6.98695e-08            1   Hessian modified
   15  8.98351e-05  3.84621e-08          0.5   Hessian modified
   16  8.49994e-05  9.53409e-09            1   Hessian modified
   18   6.5406e-05  1.05839e-08          0.5   Hessian modified
   20  5.96592e-05  6.84065e-09          0.5   Hessian modified
   22  5.60664e-05  4.73108e-09          0.5   Hessian modified
   24  5.48232e-05  3.20017e-09          0.5   Hessian modified
   26  5.40822e-05  2.58991e-09          0.5   Hessian modified
   28  5.37162e-05  1.94742e-09          0.5   Hessian modified
   29  5.42986e-05  1.68311e-09            1   Hessian modified
   30  5.37214e-05  8.95057e-10            1   Hessian modified
   32  5.36331e-05  5.76852e-10          0.5   Hessian modified
   34  5.34455e-05  5.48933e-10          0.5   Hessian modified
   36  5.33746e-05  8.74561e-10          0.5   Hessian modified
   38  5.33425e-05  7.61427e-10          0.5   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     9
    11
    13
    18
    19
    23
    28
    33
    35
    37
    42

Terminated succesfully
```

The term structure of nominal third class discount bond yields of the foreign AA-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.





7.7 Zero rates of foreign debtors “A”

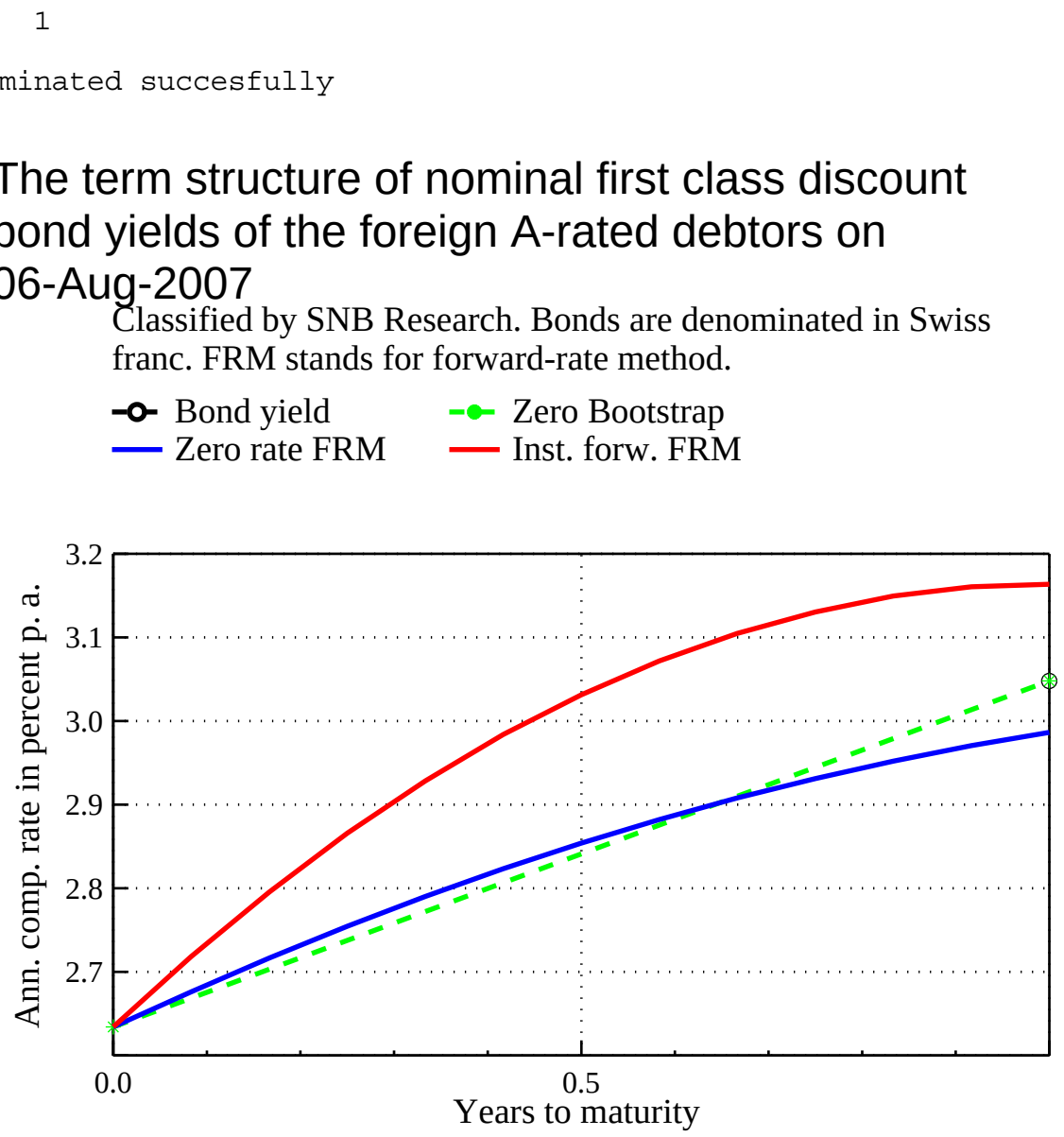
```
Program TermStrCorporate_N: CH1A_
==========================


Debtor = CH1A_1st class
Safety =  1.00

f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
    1   3.62525e-05    -0.0536777             1
    4   1.55637e-05    -0.0492481          0.25   Hessian modified
    6   1.11275e-05    -0.0347239           0.5   Hessian modified
    8   7.91047e-06    -0.0329623           0.5   Hessian modified
   10   6.21329e-06    -0.0393159           0.5   Hessian modified
   12   5.42193e-06    -0.0479723           0.5   Hessian modified
   14   4.90156e-06    -0.0554856           0.5   Hessian modified
   16   4.50884e-06    -0.0560145           0.5   Hessian modified
   18    4.1607e-06    -0.0458842           0.5   Hessian modified
   19    3.9472e-06    -0.0125108             1   Hessian modified
   20   3.45041e-06   7.82261e-07             1   Hessian modified
   21   4.28591e-06    1.8853e-14             1   Hessian modified
```

```
   22  3.10074e-06 -9.40914e-15            1   Hessian modified
   23  3.00277e-06  4.72539e-15            1   Hessian modified
   24  2.94383e-06  4.72539e-15            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```

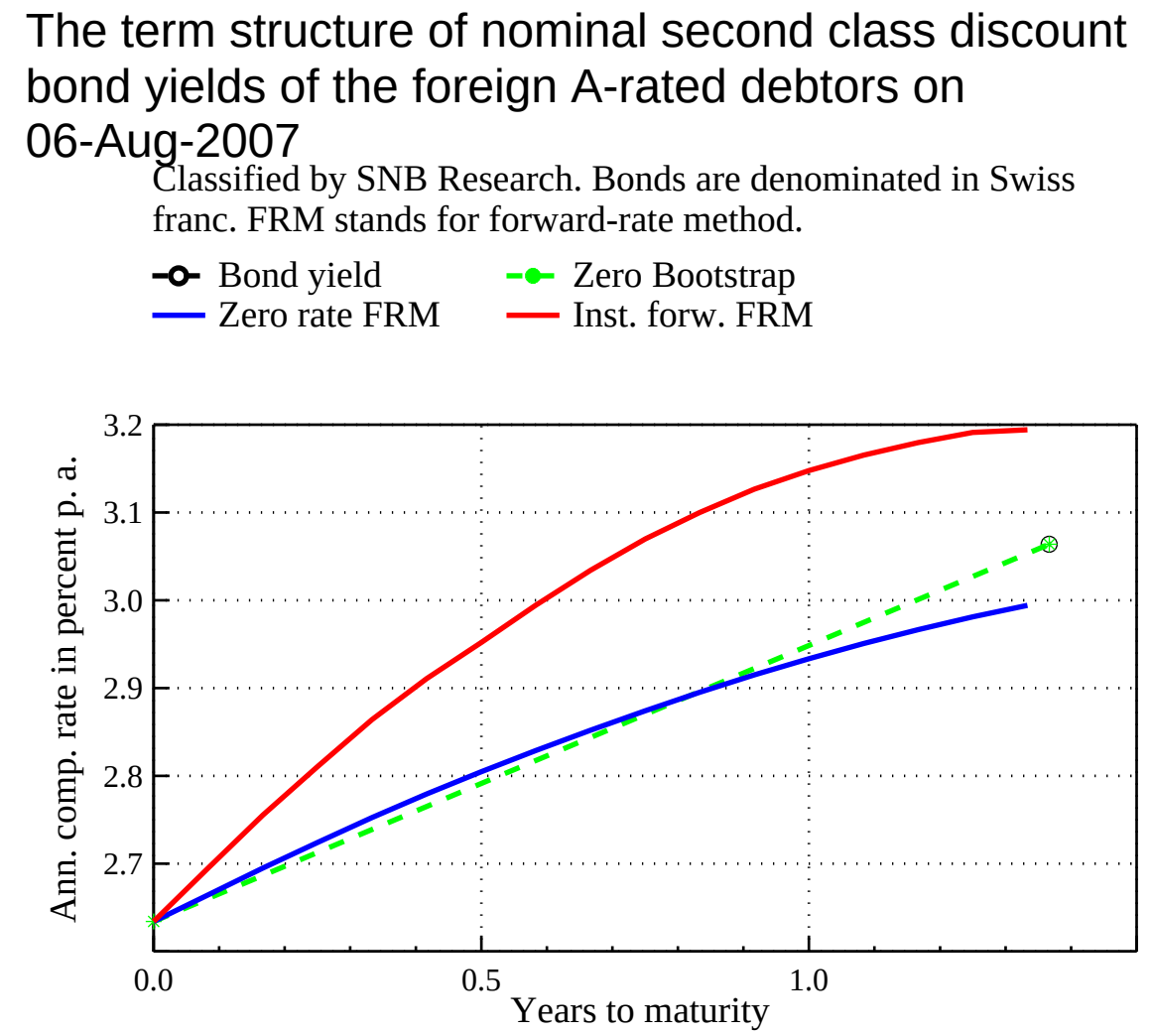



```
Debtor = CH1A_2nd class
Safety =  1.00

f-COUNT    FUNCTION       MAX{g}         STEP  Procedures
    1   3.9655e-05     0.327414            1
    2  0.000251348  0.000535792            1   Hessian modified
    3  5.89412e-05  2.54566e-09            1   Hessian modified
    6  1.73516e-05    1.175e-08         0.25
    8  1.29844e-05  1.34185e-08          0.5   Hessian modified
   10   7.0202e-06  1.24074e-08          0.5   Hessian modified
   11  1.67939e-05  -0.00313049            1   Hessian modified
   12  7.99428e-06 -0.000567542            1   Hessian modified
   14  7.05171e-06 -0.000283771          0.5   Hessian modified
   16  4.33017e-06 -0.000141885          0.5   Hessian modified
   18  3.48372e-06 -7.09425e-05          0.5   Hessian modified
```

```
   20  3.09298e-06 -3.54709e-05          0.5   Hessian modified
   22  2.78596e-06  -1.7735e-05          0.5   Hessian modified
   24  2.63805e-06 -8.86725e-06          0.5   Hessian modified
   26  2.55892e-06 -4.43354e-06          0.5   Hessian modified
   28  2.48642e-06  -2.2167e-06          0.5   Hessian modified
   29   2.4694e-06  1.04254e-09            1   Hessian modified
   30  2.34622e-06  4.29499e-10            1   Hessian modified
   31  2.31789e-06  2.50413e-10            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1

Terminated succesfully
```




```
Debtor = CH1A_3rd class
Safety =  1.00

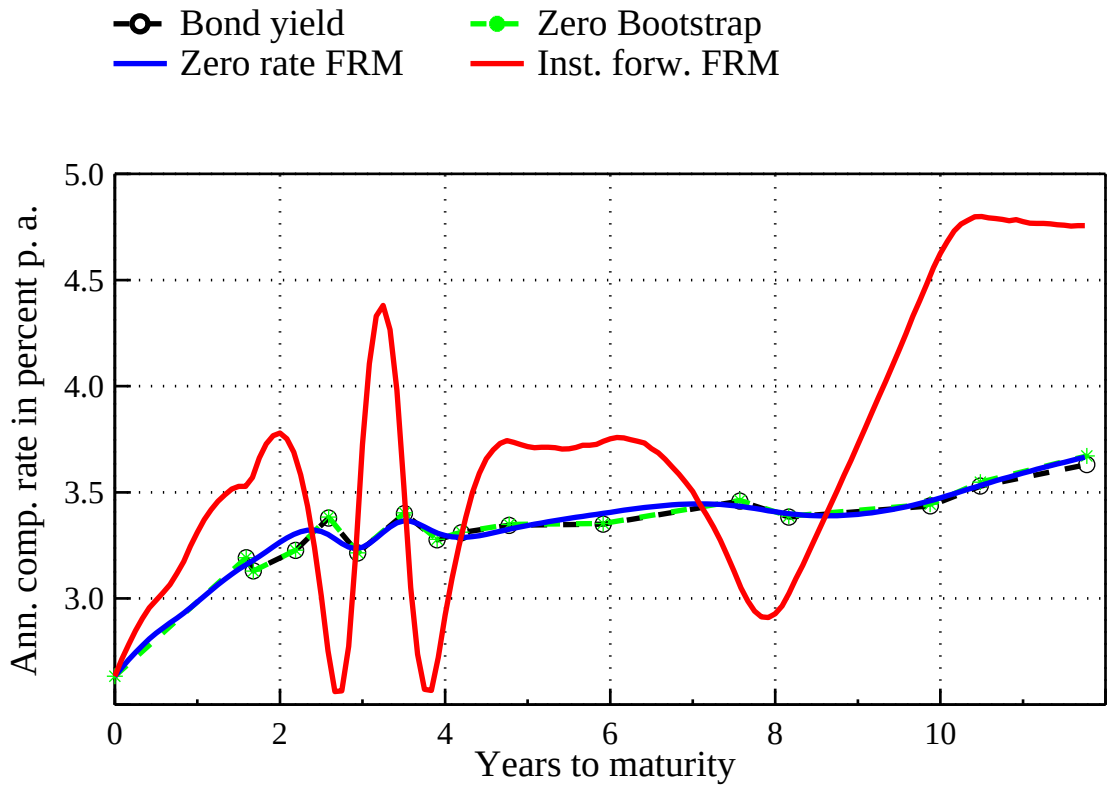
f-COUNT    FUNCTION        MAX{g}          STEP  Procedures
    1    7.622e-05       4.63745             1
    2  0.000677388      0.136177             1
    3  0.000407176  0.000110142              1   Hessian modified
    4  0.000980687  1.26196e-06              1
    5  0.000420828  8.19861e-08              1
    8  0.000271302  8.64376e-08           0.25
```

```
   10  0.000245077  7.00384e-08          0.5   Hessian modified
   12  0.000218059  9.34171e-08          0.5   Hessian modified
   14  0.000209152  1.43266e-07          0.5   Hessian modified
   15   0.00021478  1.43014e-07            1   Hessian modified
   16    0.0002067  5.34226e-08            1   Hessian modified
   18  0.000198798  4.09904e-08          0.5   Hessian modified
   20  0.000193304  3.60222e-08          0.5   Hessian modified
   22   0.00019073  4.66053e-08          0.5   Hessian modified
   24  0.000189543  4.73996e-08          0.5   Hessian modified
   26  0.000188488  4.05692e-08          0.5   Hessian modified
   28  0.000187716  5.00022e-08          0.5   Hessian modified
   30  0.000187086  6.37973e-08          0.5   Hessian modified
   31  0.000186888  1.36071e-07            1   Hessian modified
   32  0.000186688  3.06764e-09            1   Hessian modified
   34  0.000186256  2.45337e-09          0.5   Hessian modified
   35  0.000186585  2.71189e-10            1   Hessian modified
   36  0.000186489  1.25915e-09            1   Hessian modified
   37  0.000186598  1.24048e-09            1   Hessian modified
   38  0.000187016  9.55844e-10            1   Hessian modified
   39  0.000186615  1.88256e-09            1   Hessian modified
   40  0.000187774  1.29108e-09            1   Hessian modified
   41  0.000186702  1.54888e-09            1   Hessian modified
   43  0.000186429  9.08336e-10          0.5   Hessian modified
   44  0.000186744   6.5321e-10            1   Hessian modified
   45  0.000186774  5.48228e-10            1   Hessian modified
   46  0.000187208  5.11335e-10            1   Hessian modified
   47  0.000186856  6.45862e-10            1   Hessian modified
   49  0.000186342  4.98384e-10          0.5   Hessian modified
   51   0.00018607   4.5867e-10          0.5   Hessian modified
   52  0.000186515   4.0084e-10            1   Hessian modified
   53  0.000186072  3.92731e-10            1   Hessian modified
   55  0.000186077  2.89931e-10          0.5   Hessian modified
   56  0.000186035  1.40881e-10            1   Hessian modified
Optimization Converged Successfully
Active Constraints:
     1
     4
     6
     9
    11
    14
    17
    20
    22
    25
    27
    28

Terminated succesfully
```

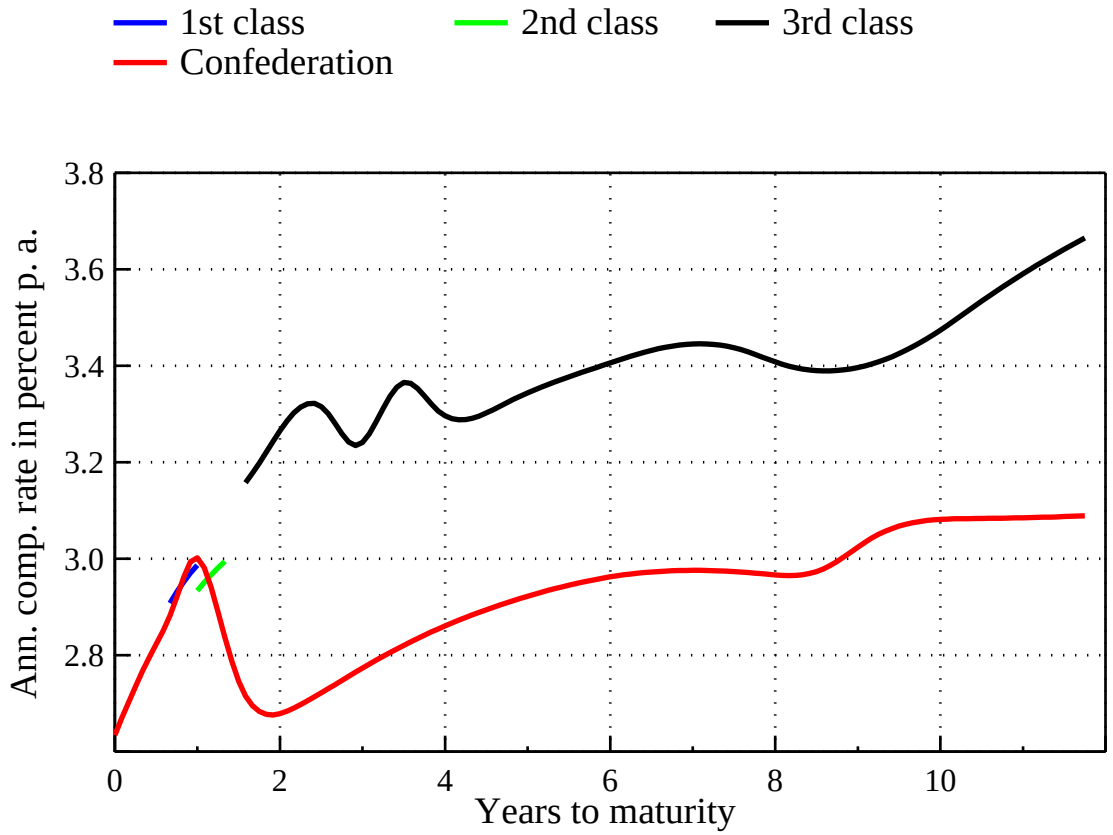
The term structure of nominal third class discount bond yields of the foreign A-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc. FRM stands for forward-rate method.



The term structure of nominal discount bond yields of the foreign A-rated debtors on 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



8 Credit spreads

```
Program CreditRiskPremium_N.m
=============================


06-Aug-2007
Eidg_6_8_2007_30J_r.dat
CHK_6_8_2007_30J_r_1.dat
CHK_6_8_2007_30J_r_2.dat
CHK_6_8_2007_30J_r_3.dat
CHB_6_8_2007_30J_r_1.dat
CHB_6_8_2007_30J_r_2.dat
CHB_6_8_2007_30J_r_3.dat
CHP_6_8_2007_30J_r_1.dat
CHI_6_8_2007_30J_r_1.dat
CHI_6_8_2007_30J_r_2.dat
CHI_6_8_2007_30J_r_3.dat
CH3A_6_8_2007_30J_r_1.dat
CH3A_6_8_2007_30J_r_2.dat
CH3A_6_8_2007_30J_r_3.dat
```

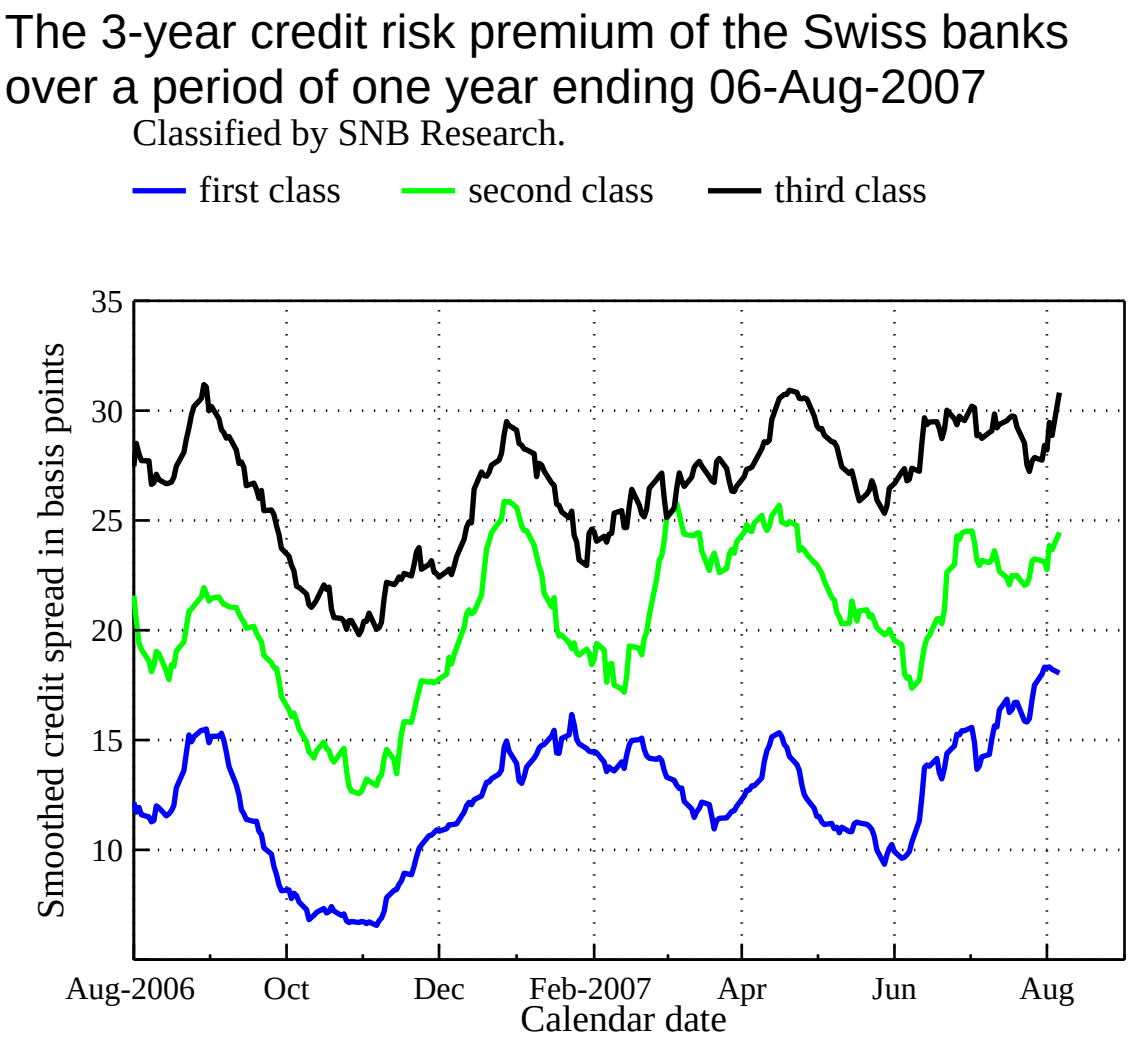
```
CH2A_6_8_2007_30J_r_1.dat
CH2A_6_8_2007_30J_r_2.dat
CH2A_6_8_2007_30J_r_3.dat
CH1A_6_8_2007_30J_r_1.dat
CH1A_6_8_2007_30J_r_2.dat
CH1A_6_8_2007_30J_r_3.dat

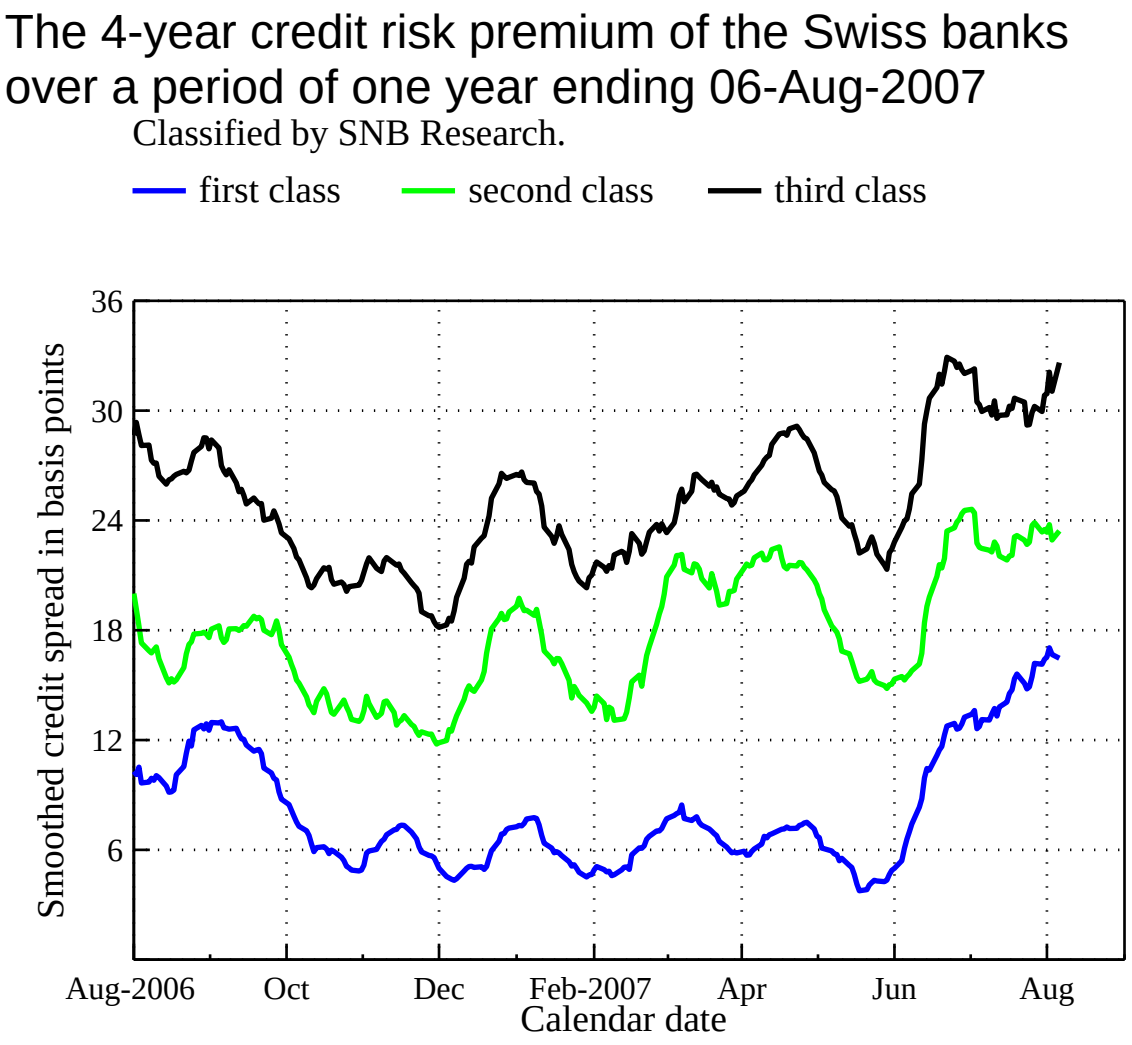
Preparing data for charts
CHART 1:
CHK_3, Term2Mat = 4.00: TOO MANY NaNs
CHK_3, Term2Mat = 5.00: TOO MANY NaNs
CHK_2, Term2Mat = 10.00: TOO MANY NaNs
CHK_3, Term2Mat = 10.00: TOO MANY NaNs
CHB_3, Term2Mat = 10.00: TOO MANY NaNs
CHI_2, Term2Mat = 10.00: TOO MANY NaNs
CHI_3, Term2Mat = 10.00: TOO MANY NaNs
CH3A_1, Term2Mat = 10.00: TOO MANY NaNs
CH2A_1, Term2Mat = 5.00: TOO MANY NaNs
CH2A_1, Term2Mat = 10.00: TOO MANY NaNs
CH1A_1, Term2Mat = 2.00: TOO MANY NaNs
CH1A_1, Term2Mat = 3.00: TOO MANY NaNs
CH1A_1, Term2Mat = 4.00: TOO MANY NaNs
CH1A_1, Term2Mat = 5.00: TOO MANY NaNs
CH1A_2, Term2Mat = 5.00: TOO MANY NaNs
CH1A_1, Term2Mat = 10.00: TOO MANY NaNs
CH1A_2, Term2Mat = 10.00: TOO MANY NaNs
CH1A_3, Term2Mat = 10.00: TOO MANY NaNs
CH1A, Term2Mat = 10.00: XX IS EMPTY
CH1A, Term2Mat = 10.00: YY IS EMPTY
```

8.1 Credit spreads of banks

The 2-year credit risk premium of the Swiss banks over a period of one year ending 06-Aug-2007

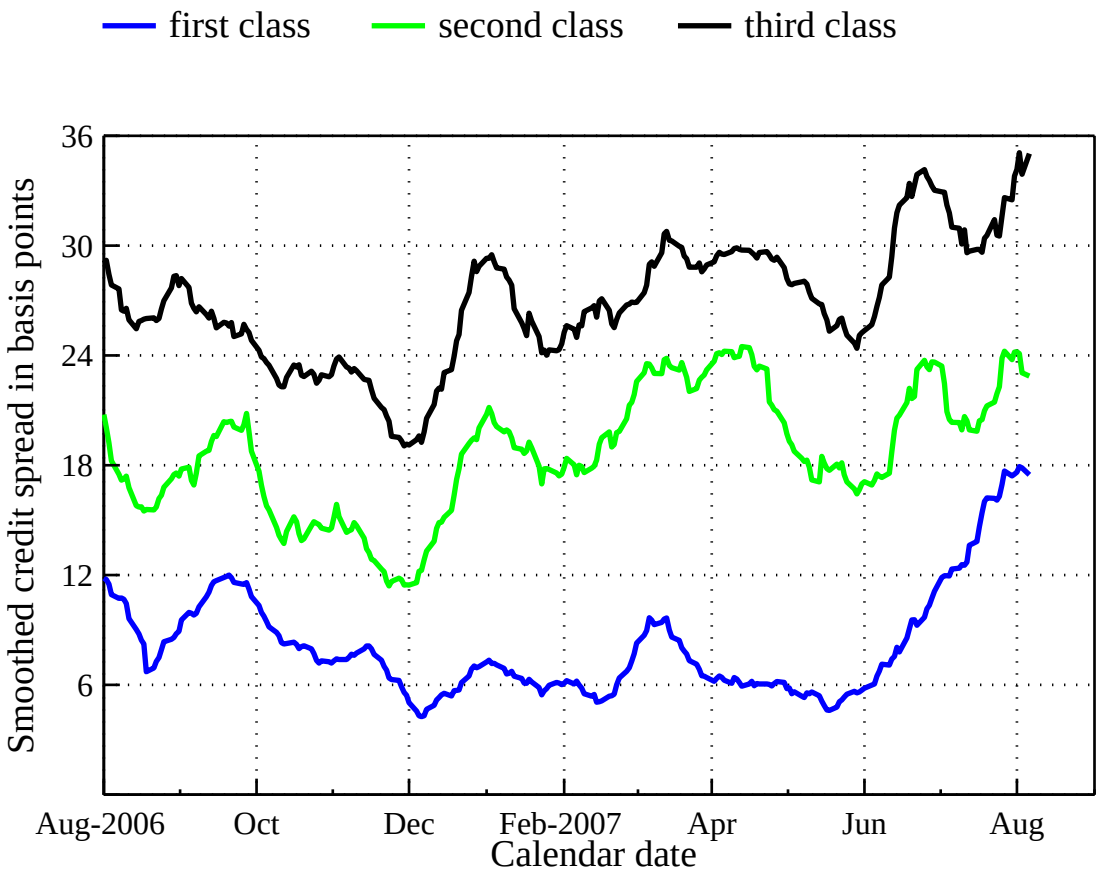
Classified by SNB Research.

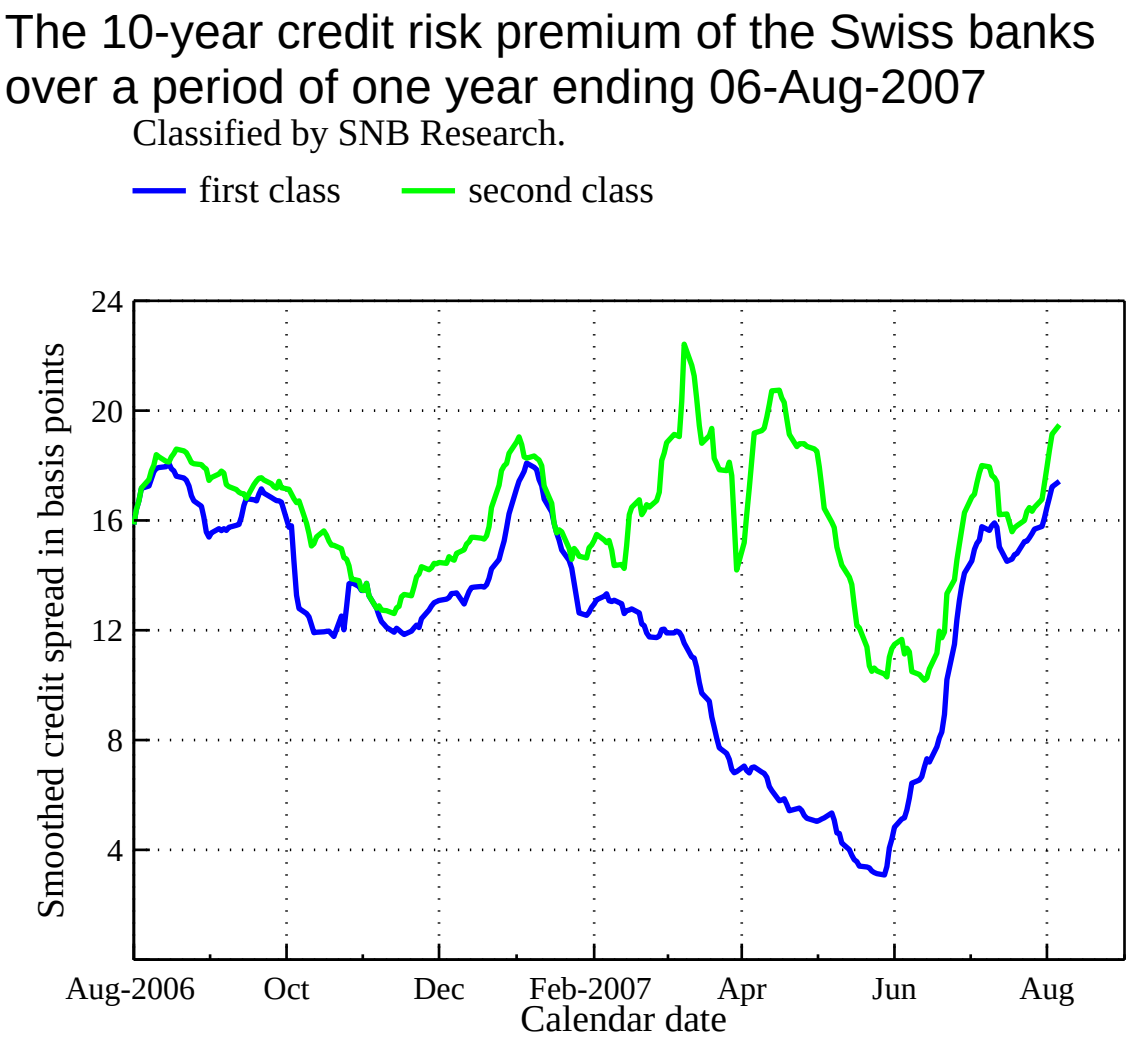

The 3-year credit risk premium of the Swiss banks over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
third class
Smoothed credit spread in basis points
35
30
25
20
15
10
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date


The 4-year credit risk premium of the Swiss banks over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
third class
Smoothed credit spread in basis points
36
30
24
18
12
6
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

The 5-year credit risk premium of the Swiss banks over a period of one year ending 06-Aug-2007

Classified by SNB Research.

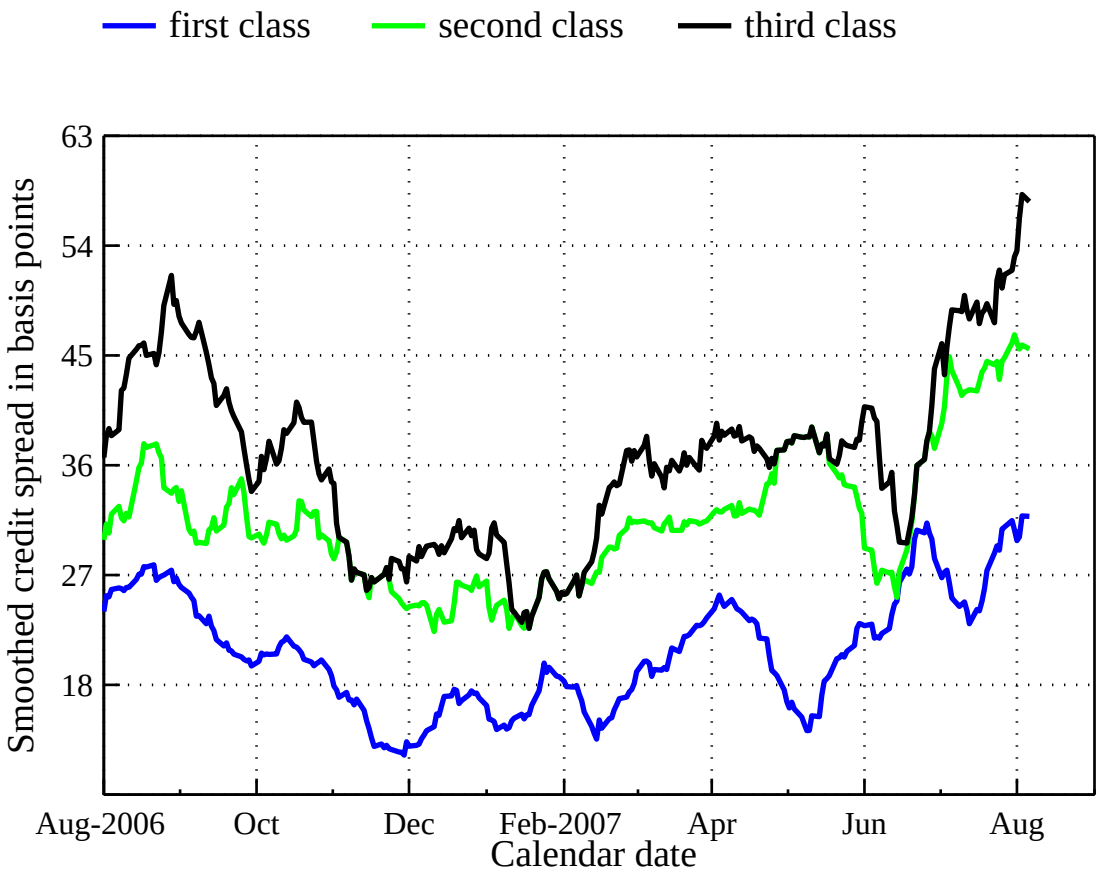




8.2 Credit spreads of industry

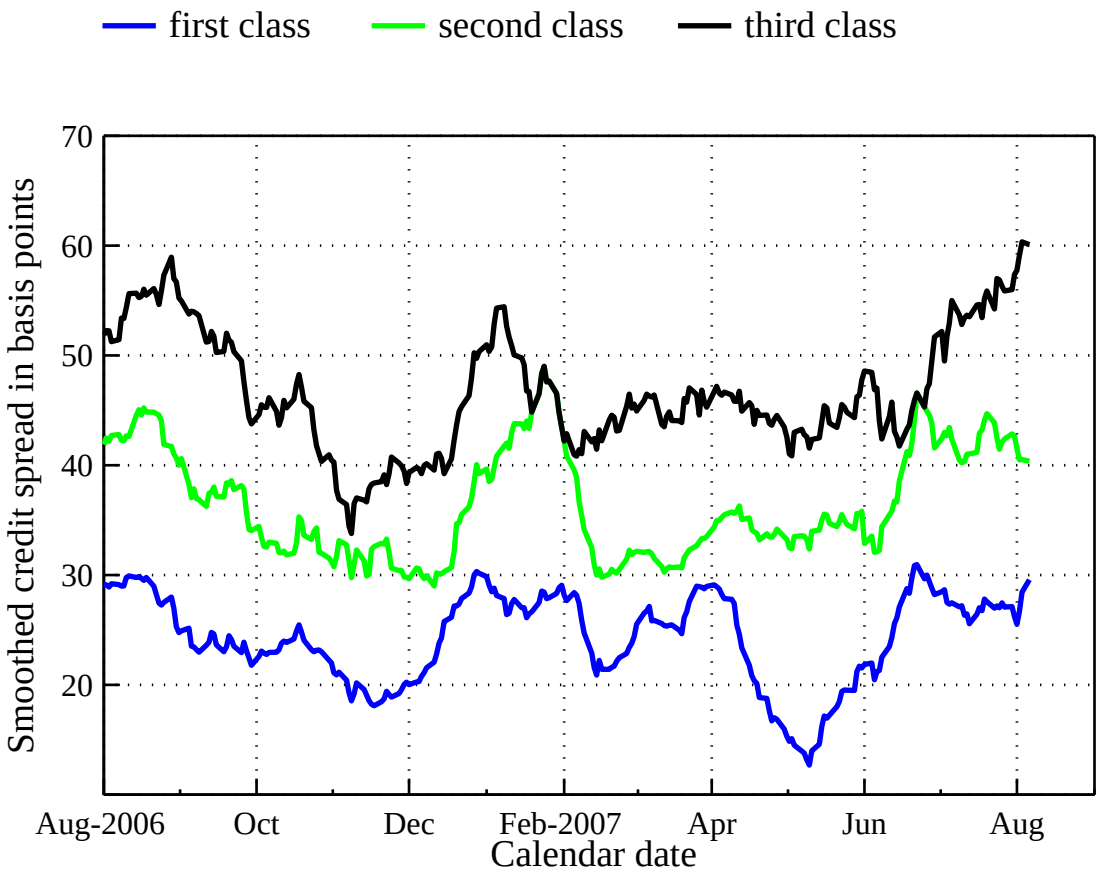
The 2-year credit risk premium of the Swiss industry over a period of one year ending 06-Aug-2007

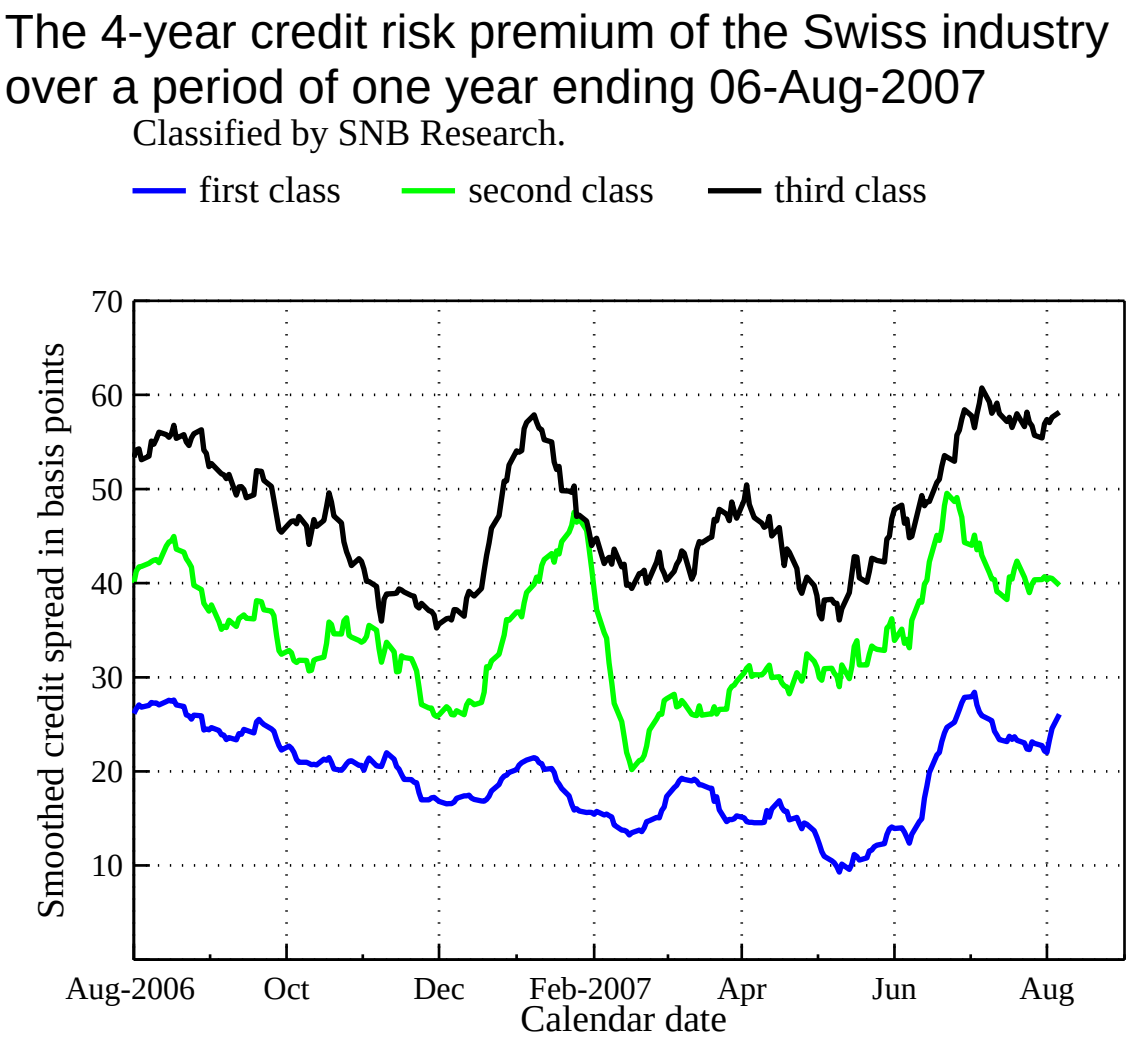
Classified by SNB Research.

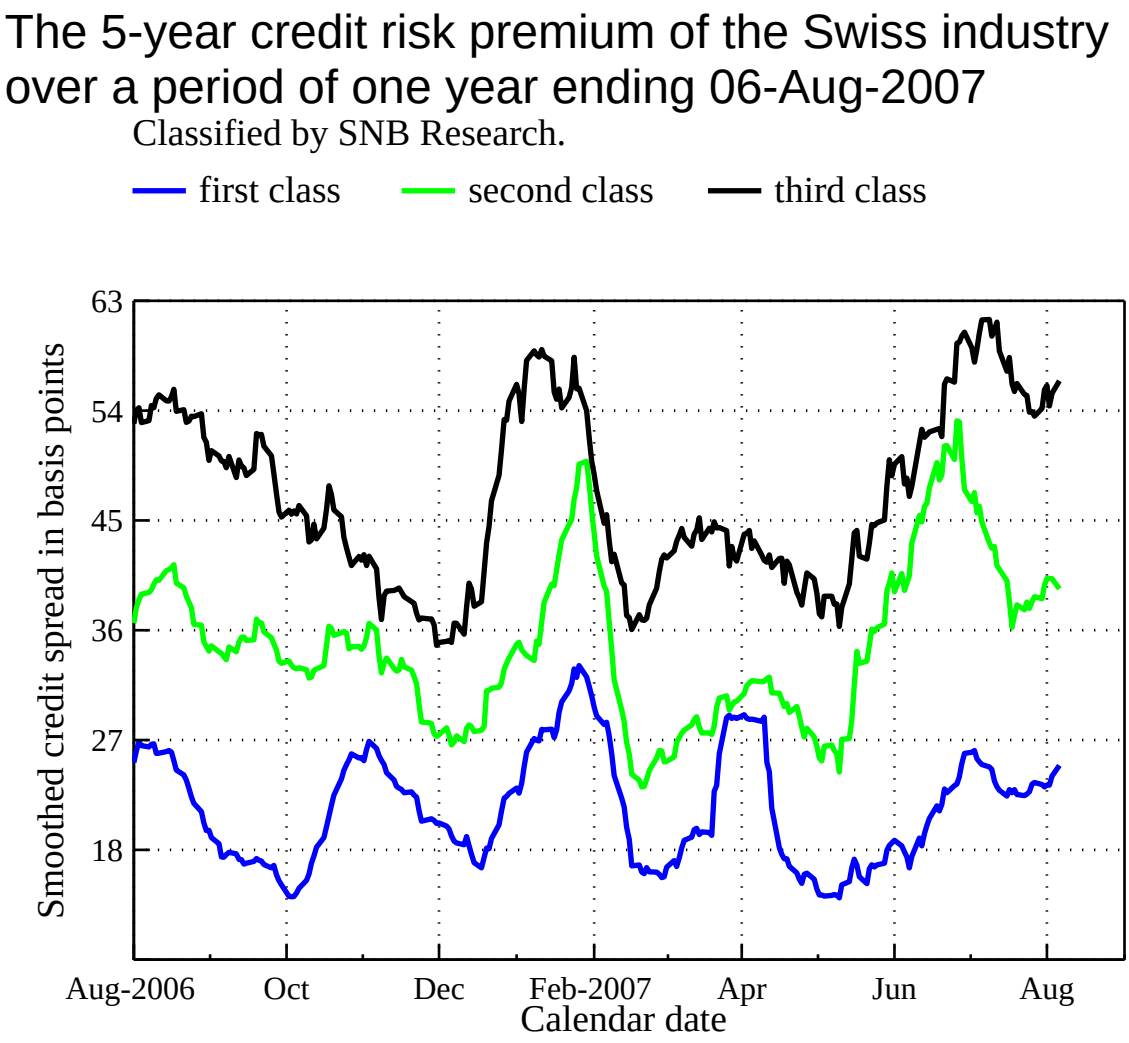


The 3-year credit risk premium of the Swiss industry over a period of one year ending 06-Aug-2007

Classified by SNB Research.

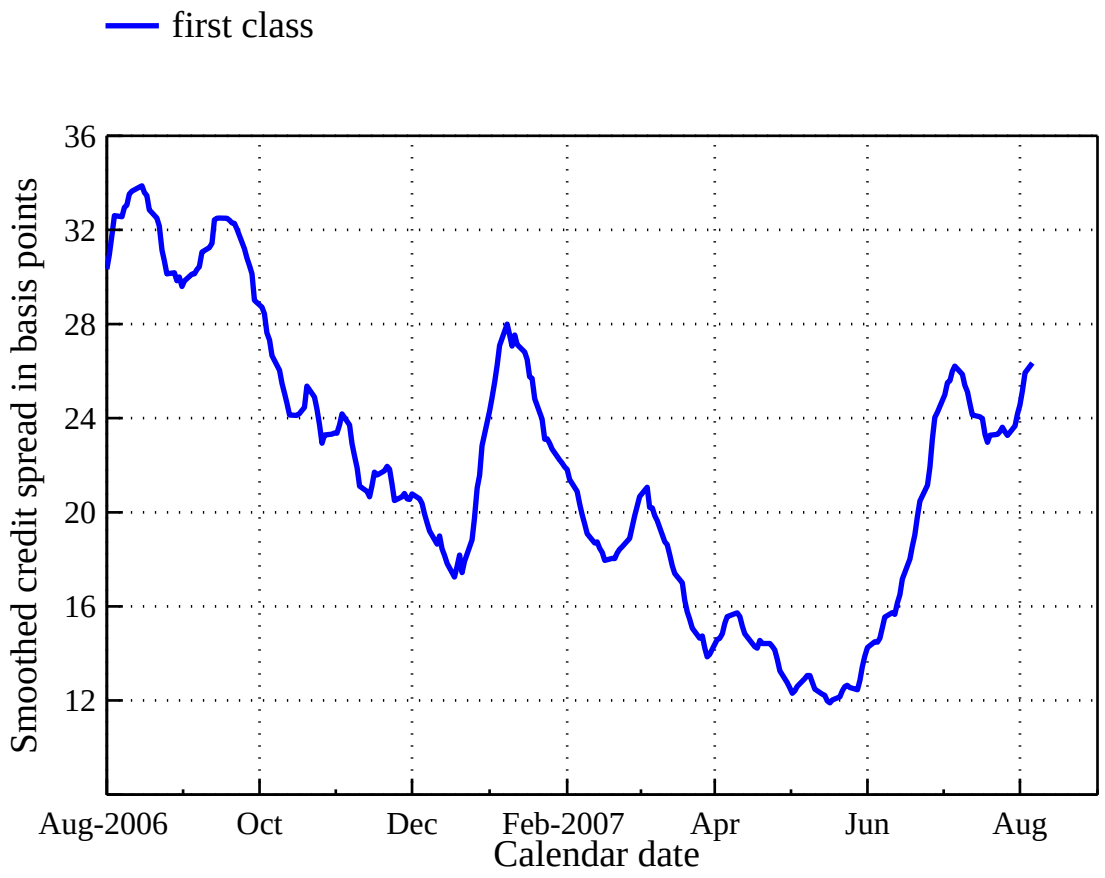



The 4-year credit risk premium of the Swiss industry over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
third class
Smoothed credit spread in basis points
70
60
50
40
30
20
10
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

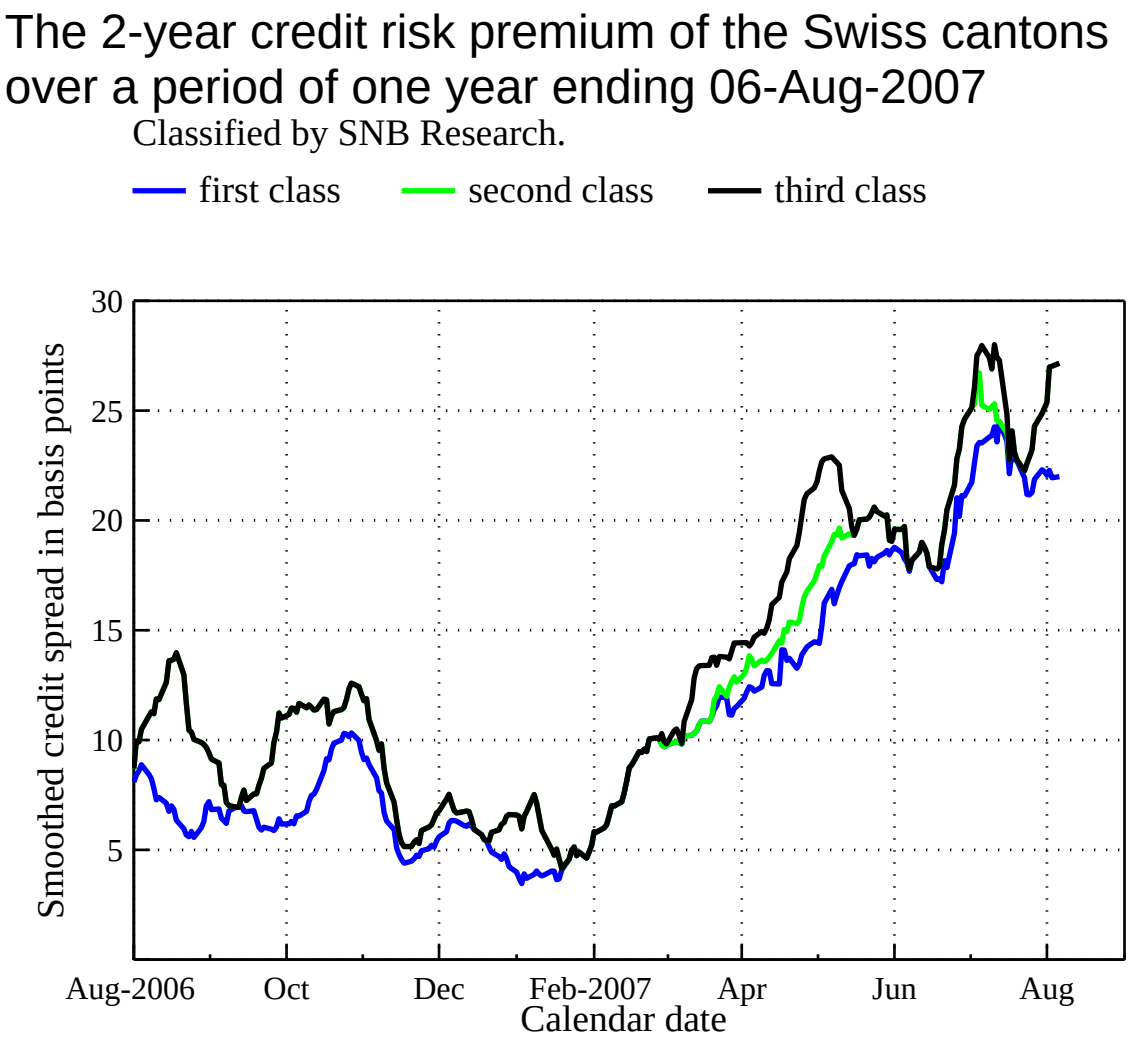

The 5-year credit risk premium of the Swiss industry over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
third class
Smoothed credit spread in basis points
63
54
45
36
27
18
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

The 10-year credit risk premium of the Swiss industry over a period of one year ending 06-Aug-2007

Classified by SNB Research.

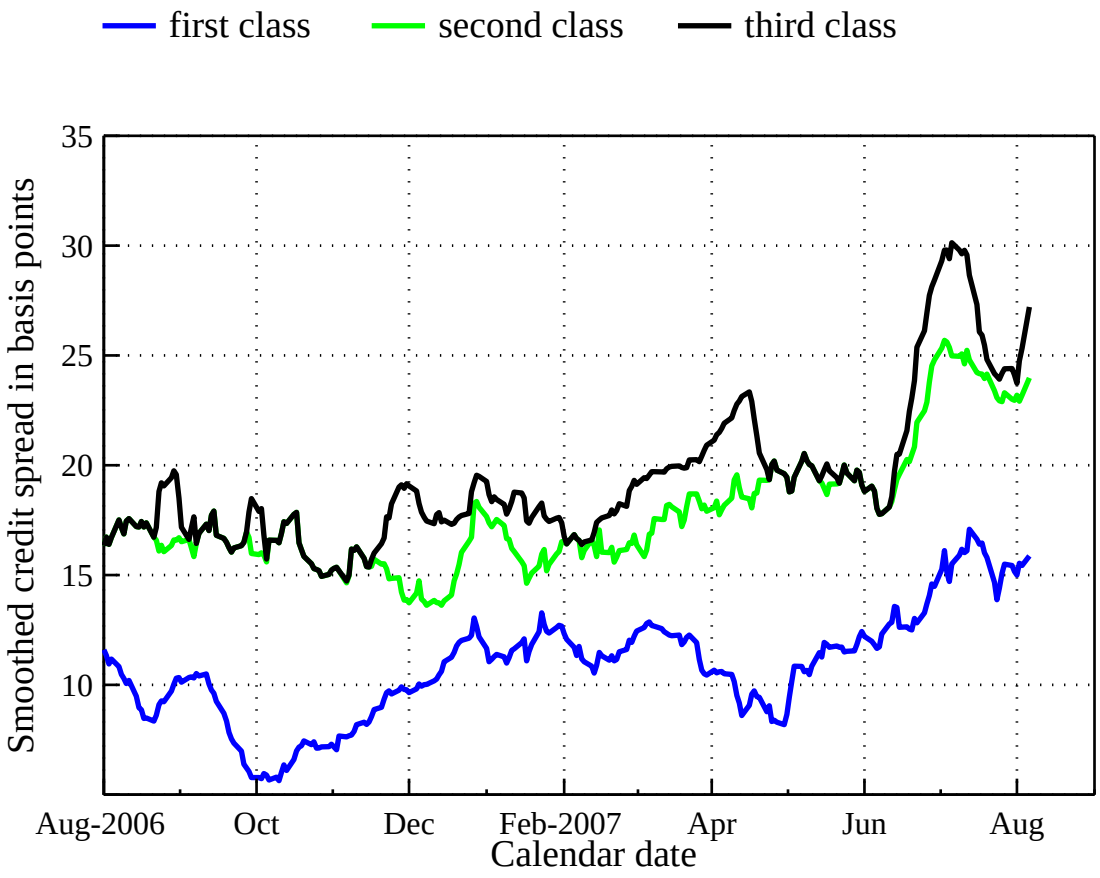


8.3 Credit spreads of Cantons (states)


The 2-year credit risk premium of the Swiss cantons over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
third class
Smoothed credit spread in basis points
30
25
20
15
10
5
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

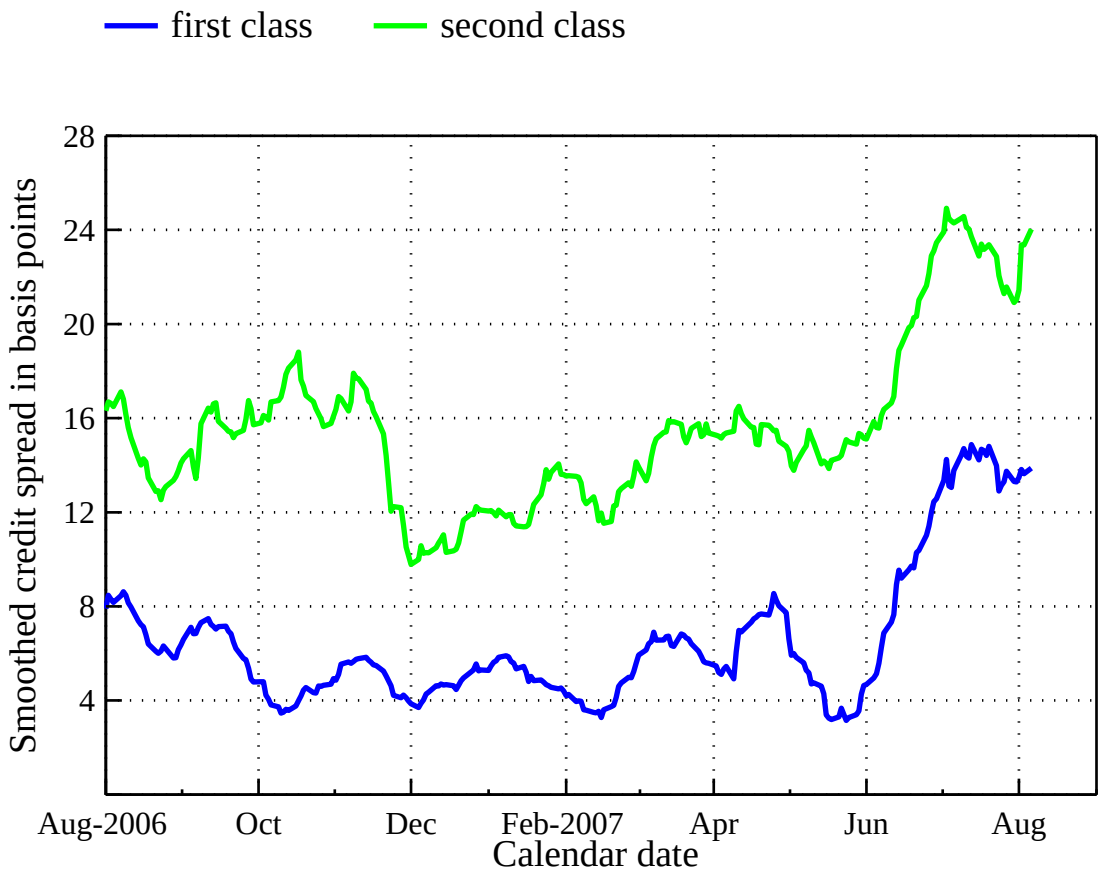
The 3-year credit risk premium of the Swiss cantons over a period of one year ending 06-Aug-2007

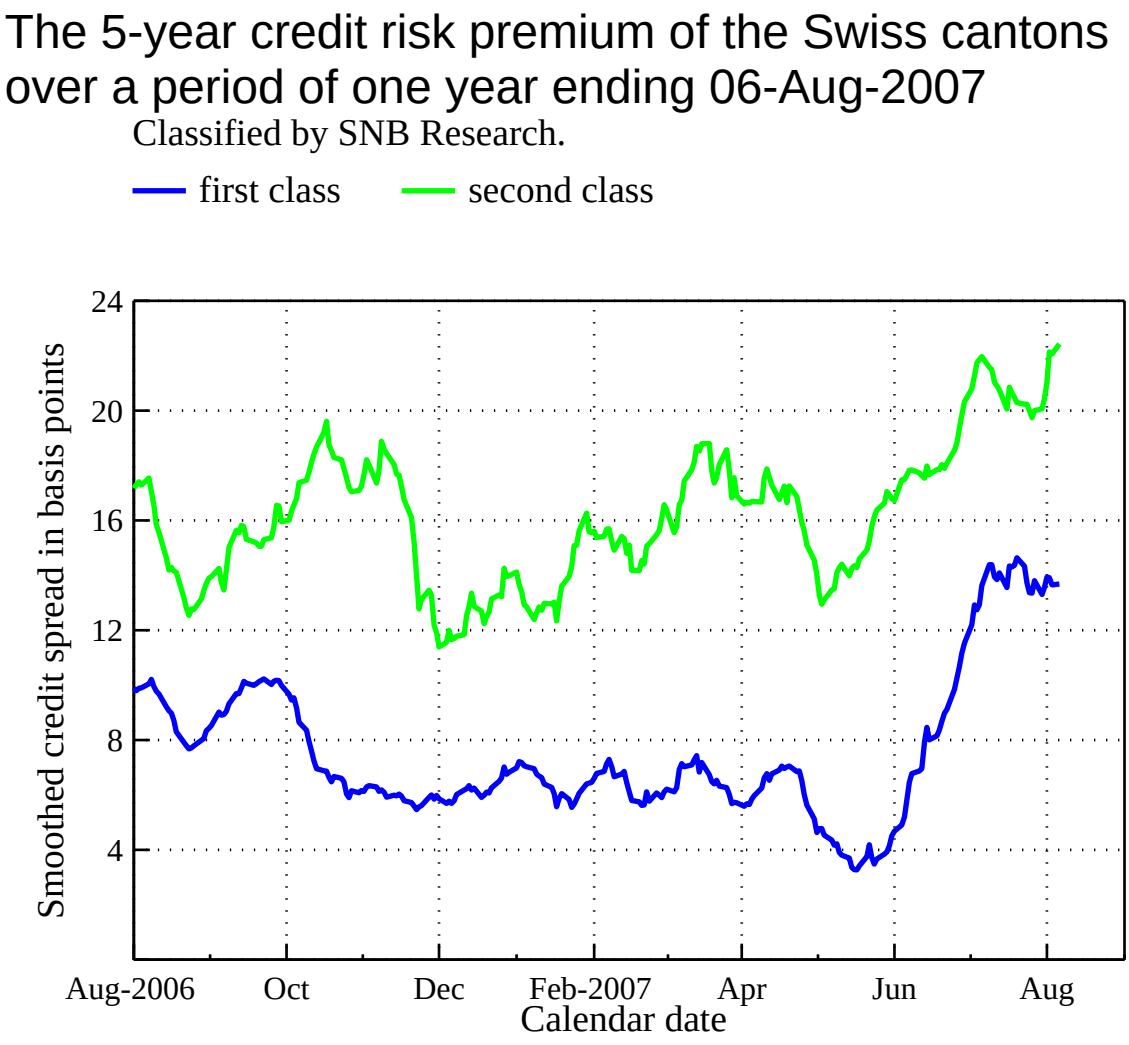
Classified by SNB Research.



The 4-year credit risk premium of the Swiss cantons over a period of one year ending 06-Aug-2007

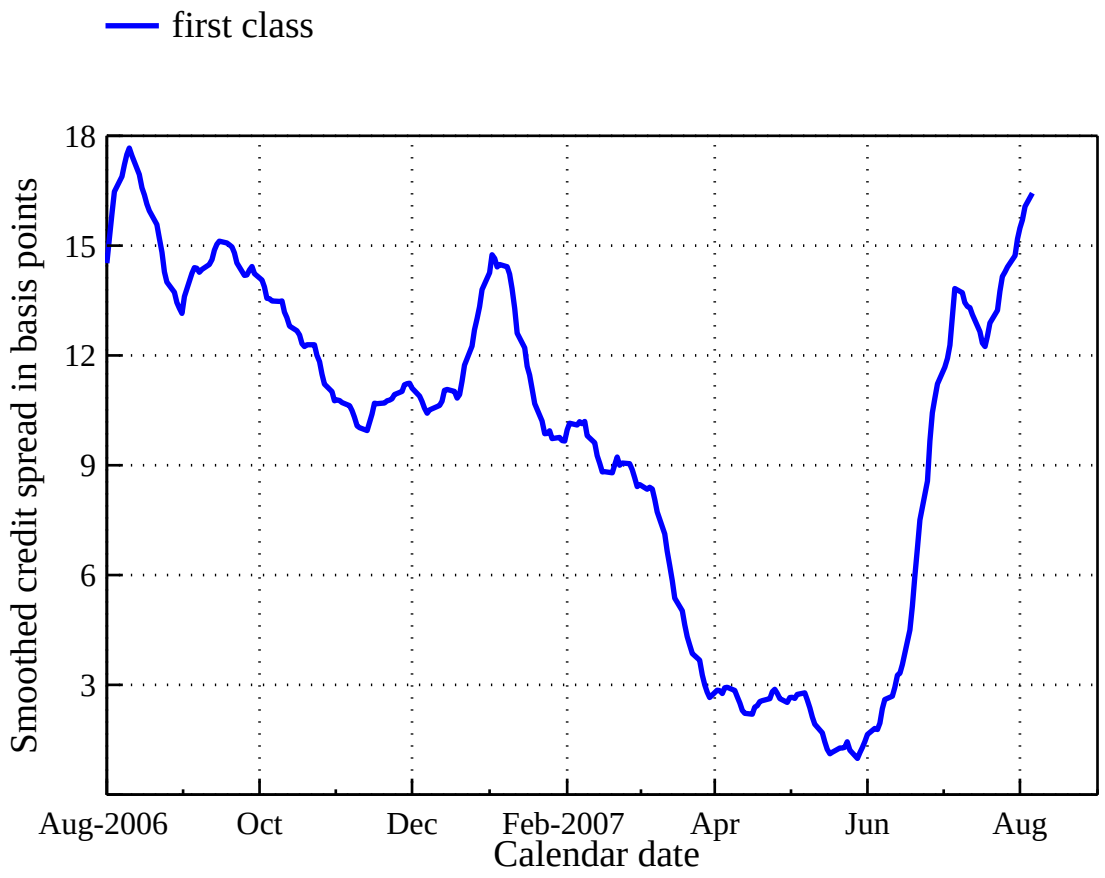
Classified by SNB Research.




The 5-year credit risk premium of the Swiss cantons over a period of one year ending 06-Aug-2007
Classified by SNB Research.
first class
second class
Smoothed credit spread in basis points
24
20
16
12
8
4
Aug-2006
Oct
Dec
Feb-2007
Apr
Jun
Aug
Calendar date

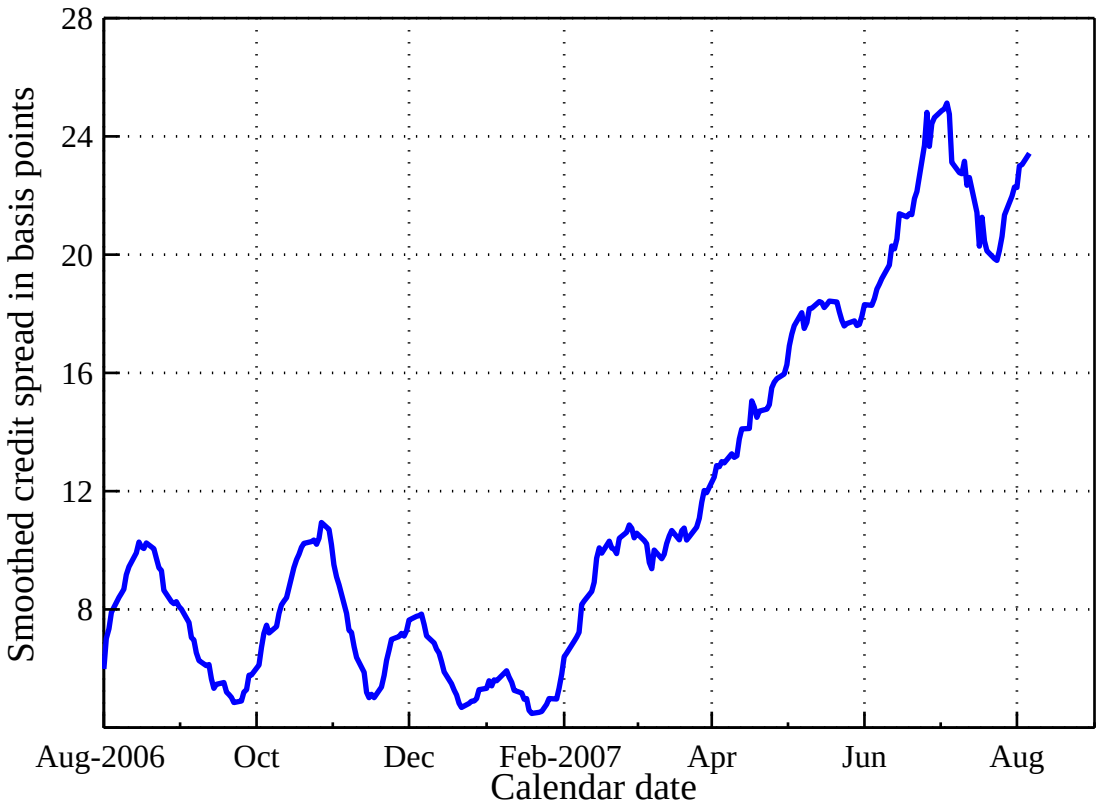
The 10-year credit risk premium of the Swiss cantons over a period of one year ending 06-Aug-2007

Classified by SNB Research.



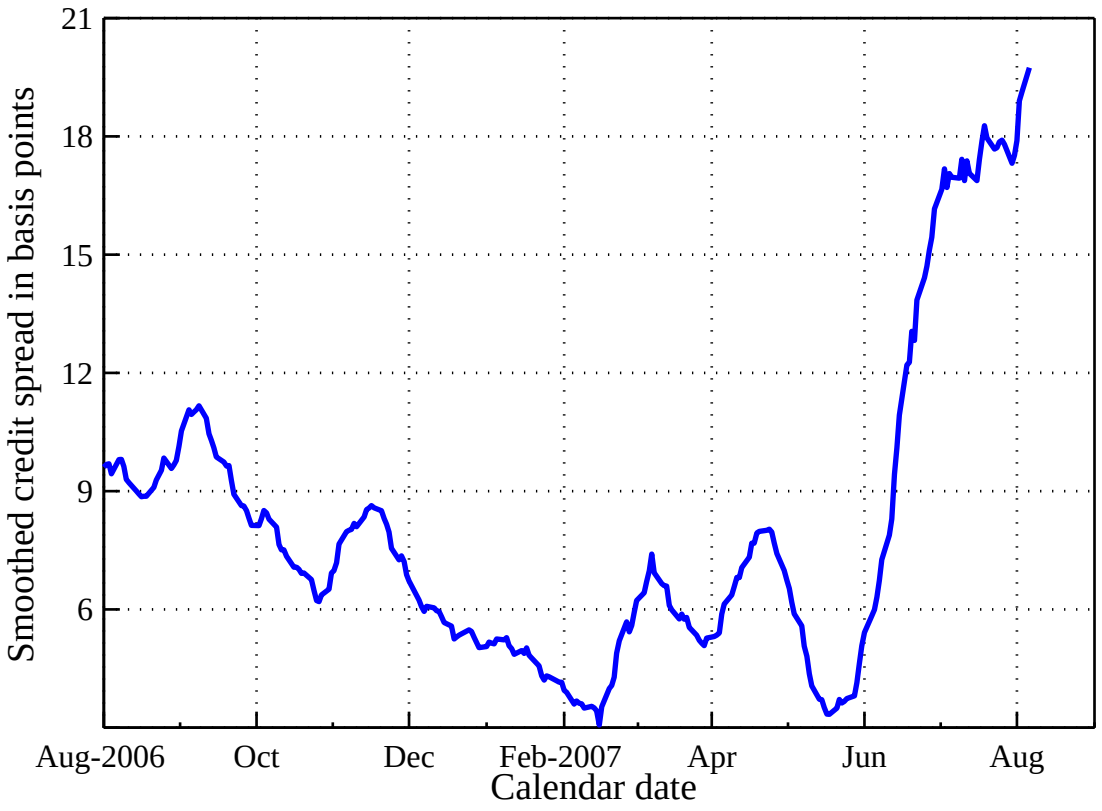
8.4 Credit spreads of mortgage institutes

The 2-year credit risk premium of the Swiss mortgage institutes over a period of one year ending 06-Aug-2007

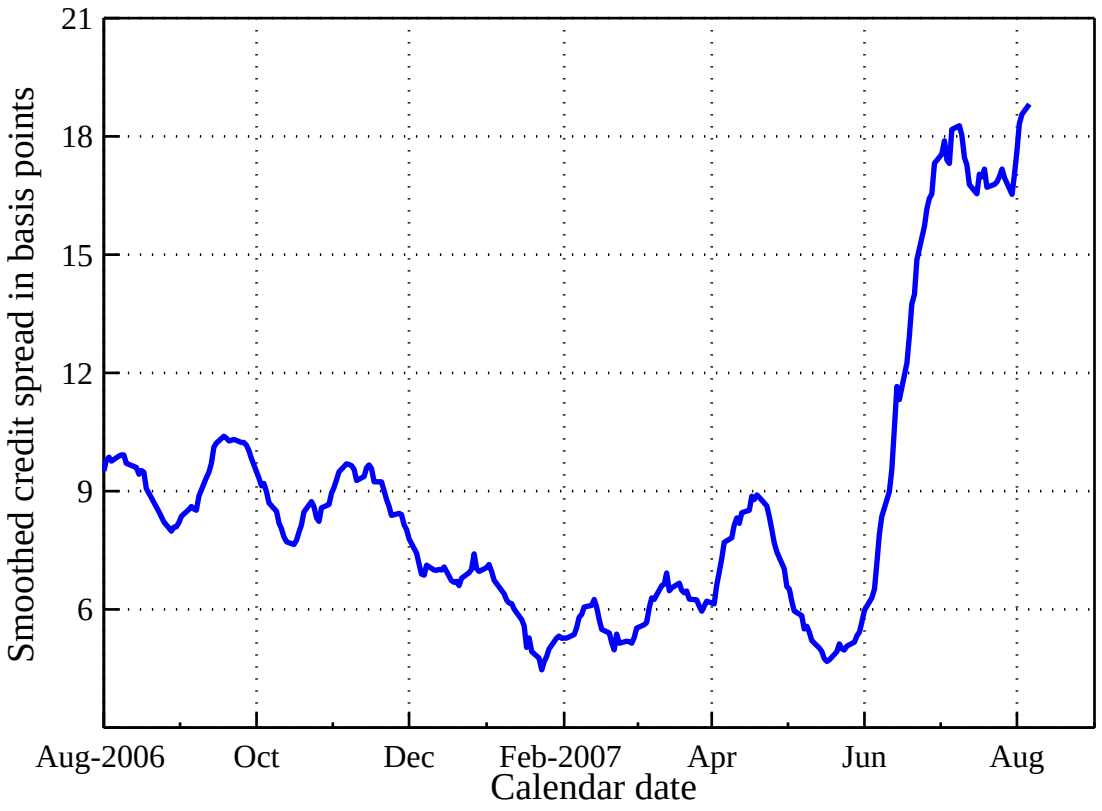


The 3-year credit risk premium of the Swiss mortgage institutes over a period of one year ending 06-Aug-2007

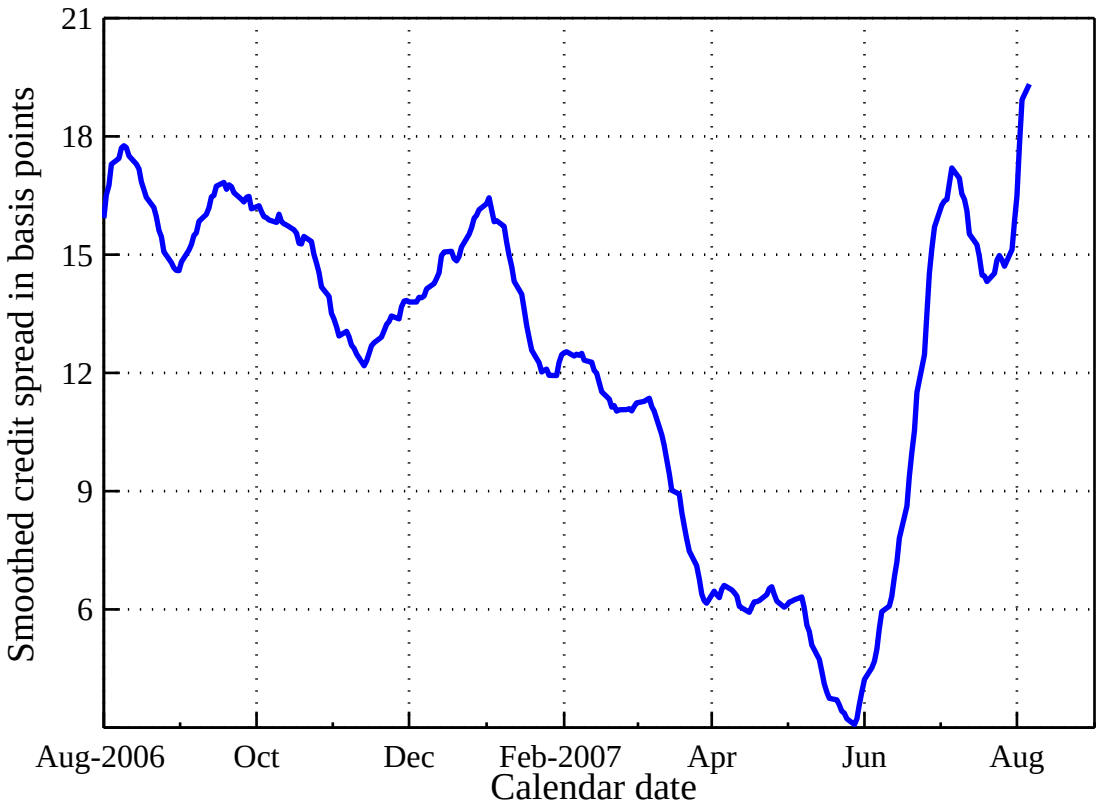
The 4-year credit risk premium of the Swiss mortgage institutes over a period of one year ending 06-Aug-2007



The 5-year credit risk premium of the Swiss mortgage institutes over a period of one year ending 06-Aug-2007



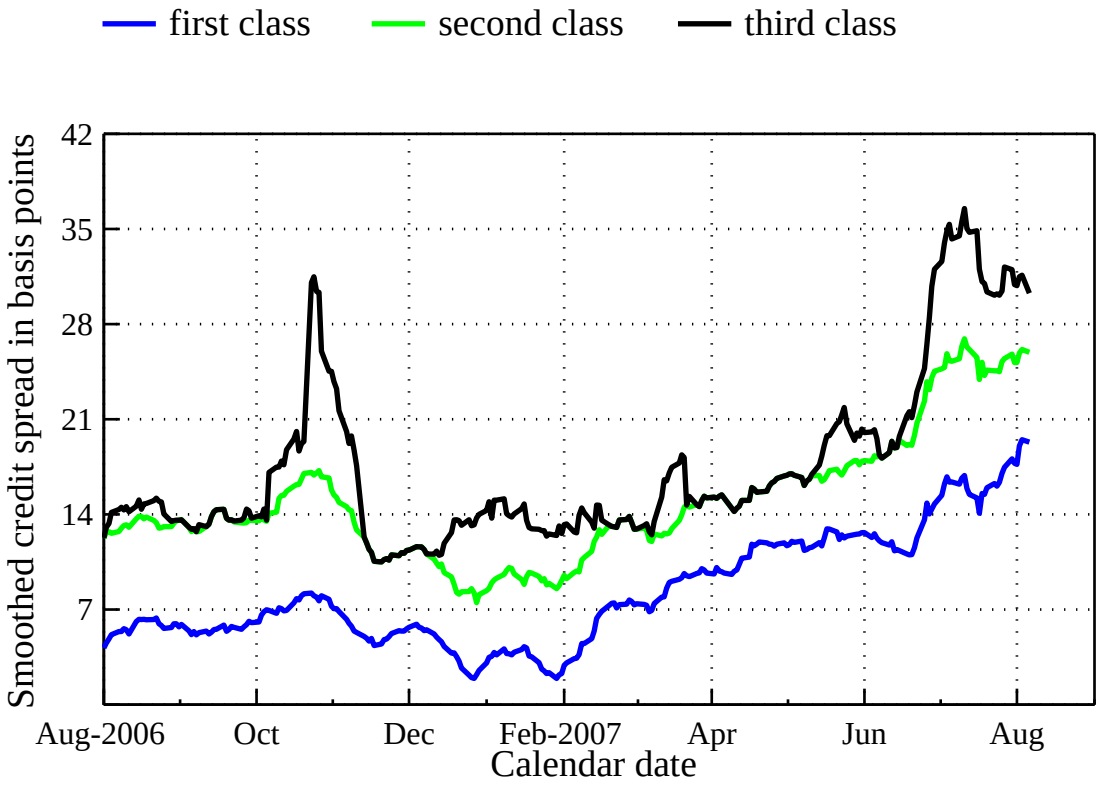
The 10-year credit risk premium of the Swiss mortgage institutes over a period of one year ending 06-Aug-2007



8.5 Credit spreads of foreign debtors “AAA”

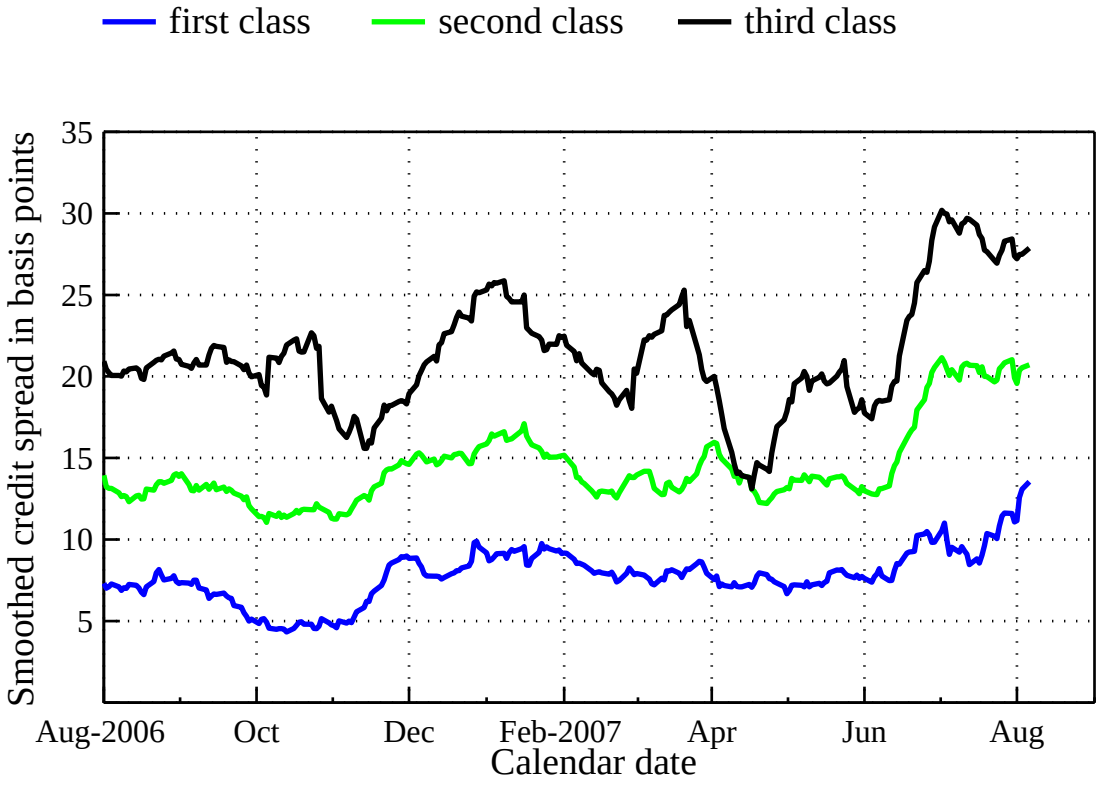
The 2-year credit risk premium of the foreign AAA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



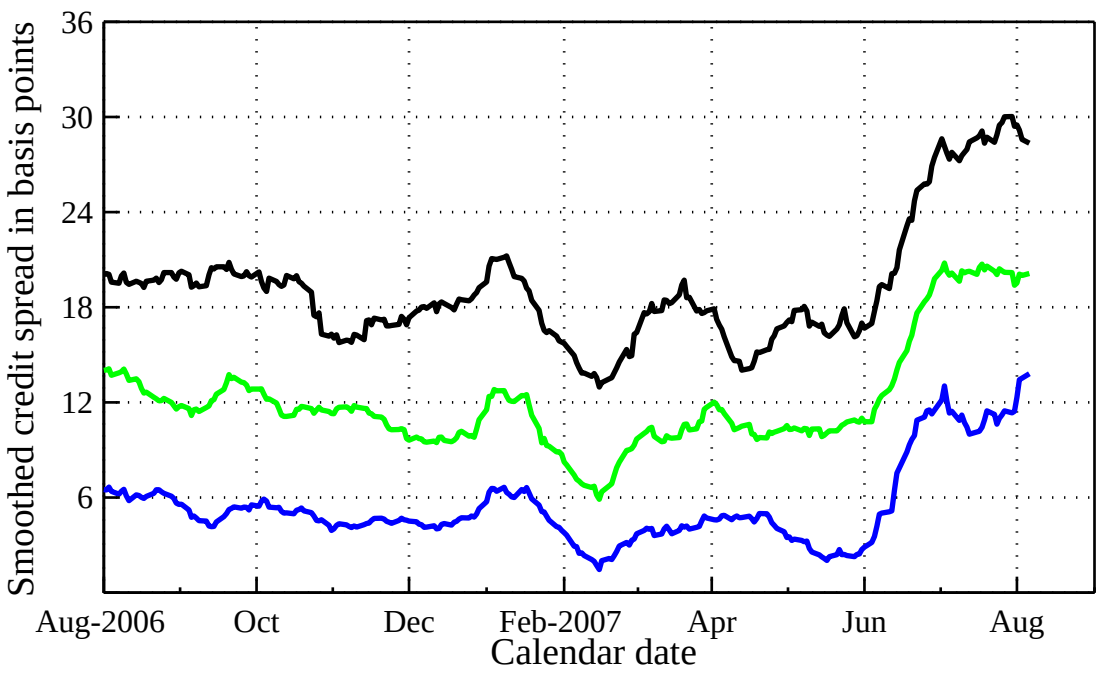
The 3-year credit risk premium of the foreign AAA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



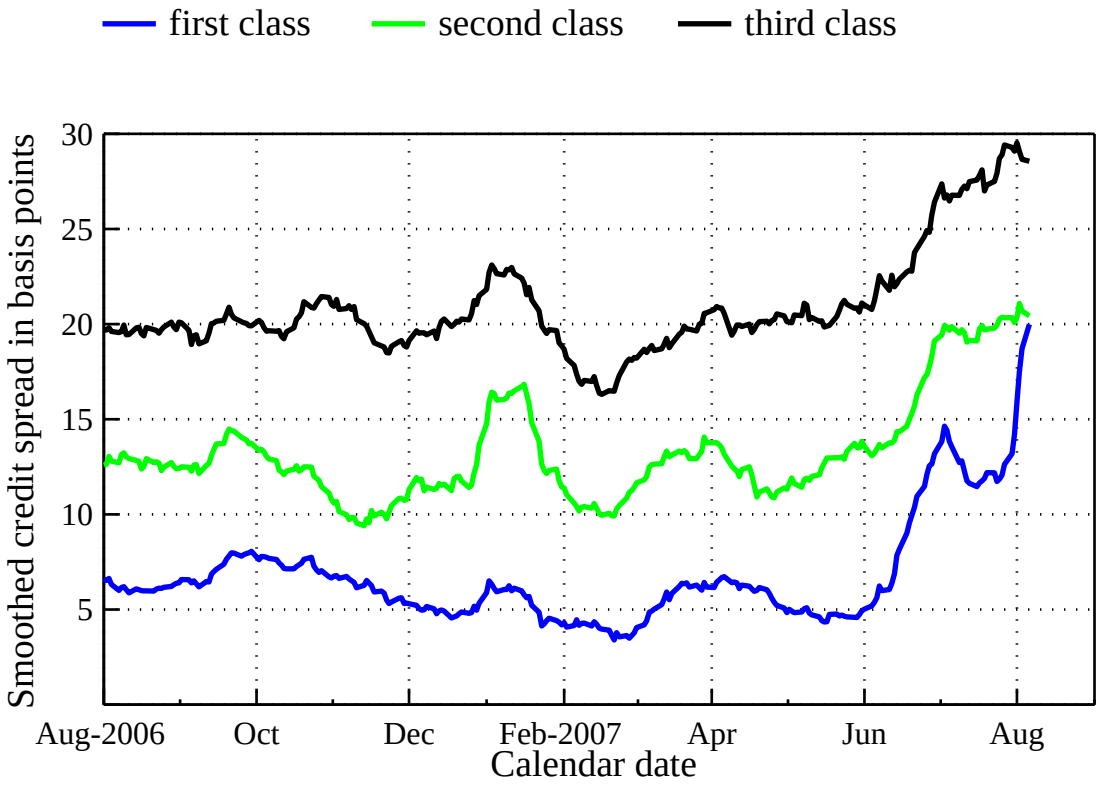
The 4-year credit risk premium of the foreign AAA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



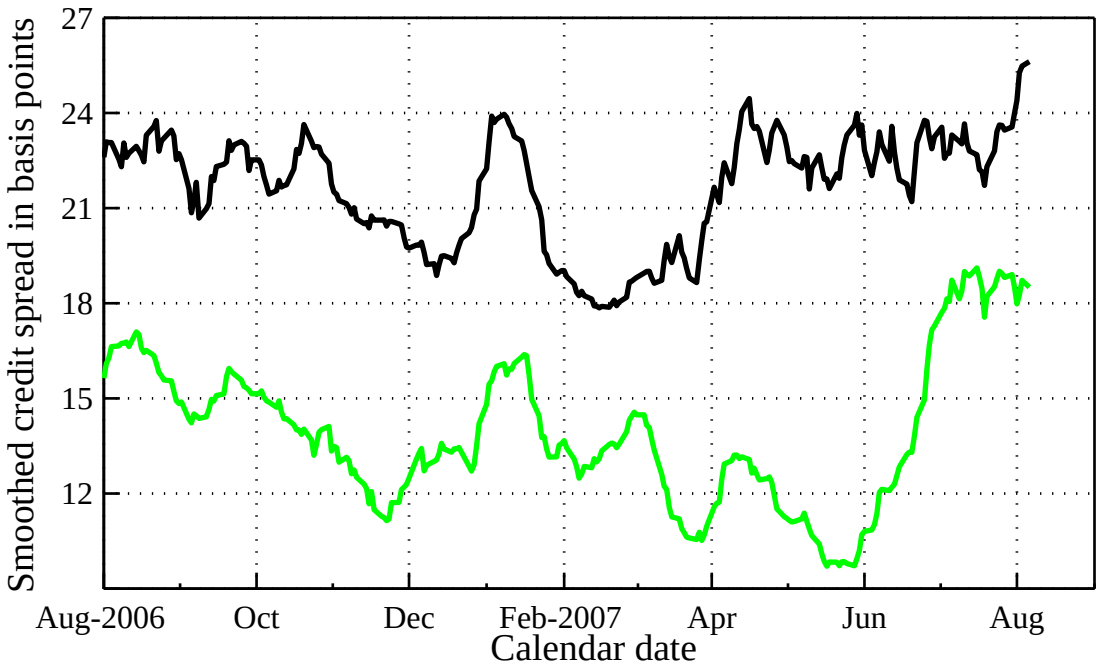
The 5-year credit risk premium of the foreign AAA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



The 10-year credit risk premium of the foreign AAA-rated debtors over a period of one year ending 06-Aug-2007

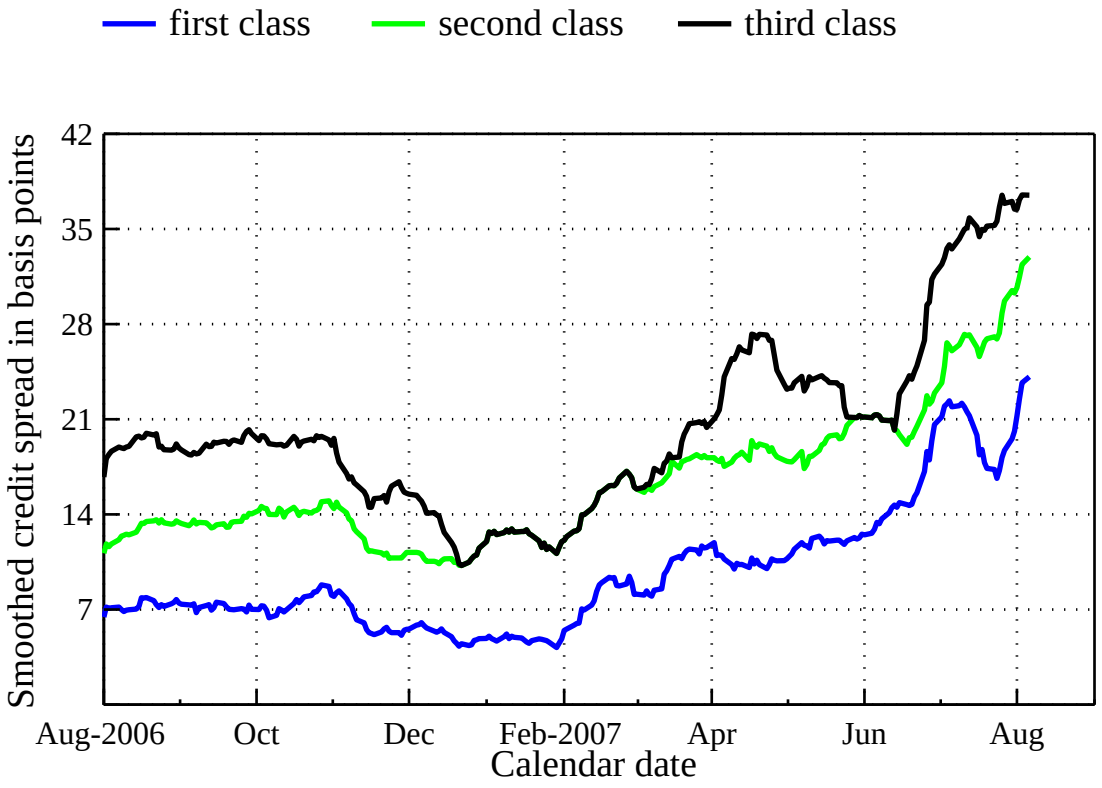
Classified by SNB Research. Bonds are denominated in Swiss franc.



8.6 Credit spreads of foreign debtors “AA”

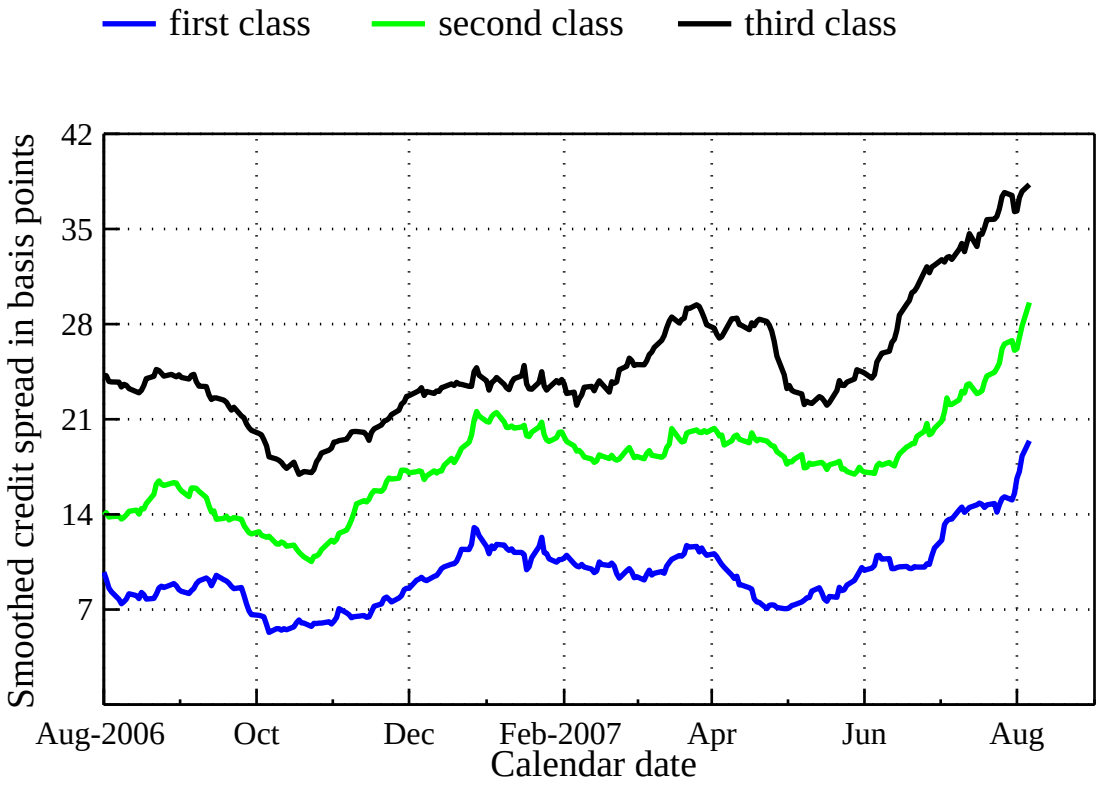
The 2-year credit risk premium of the foreign AA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



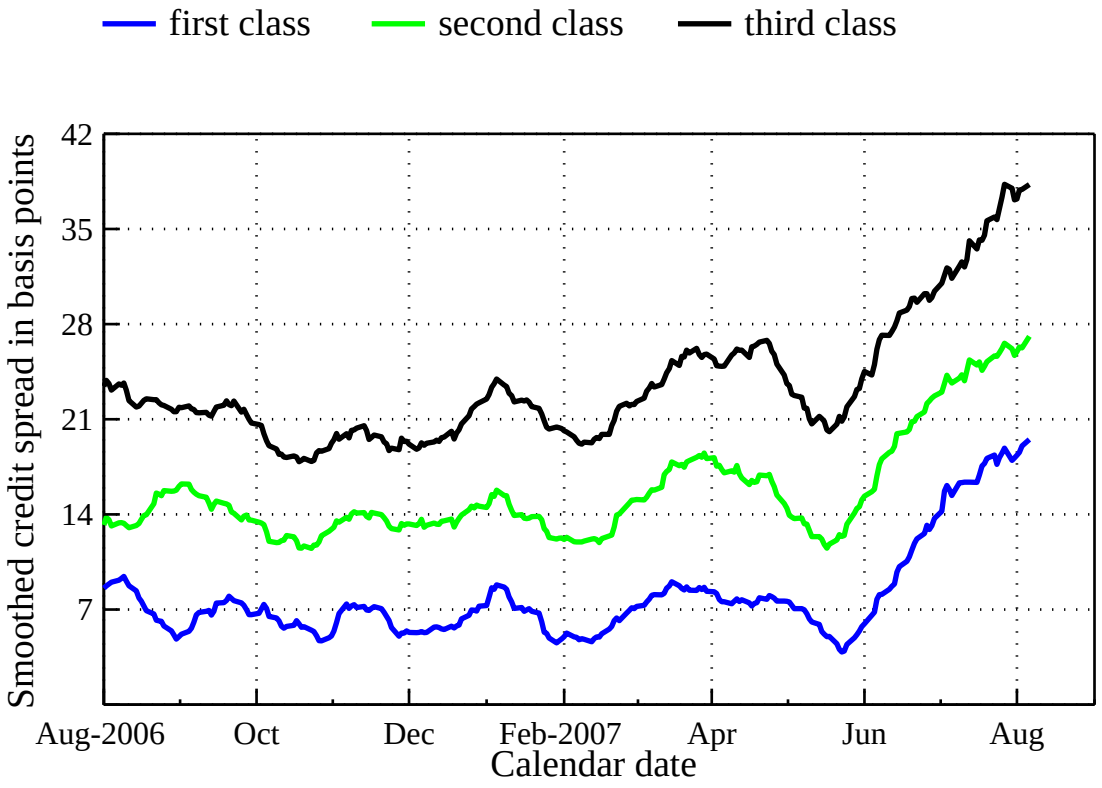
The 3-year credit risk premium of the foreign AA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



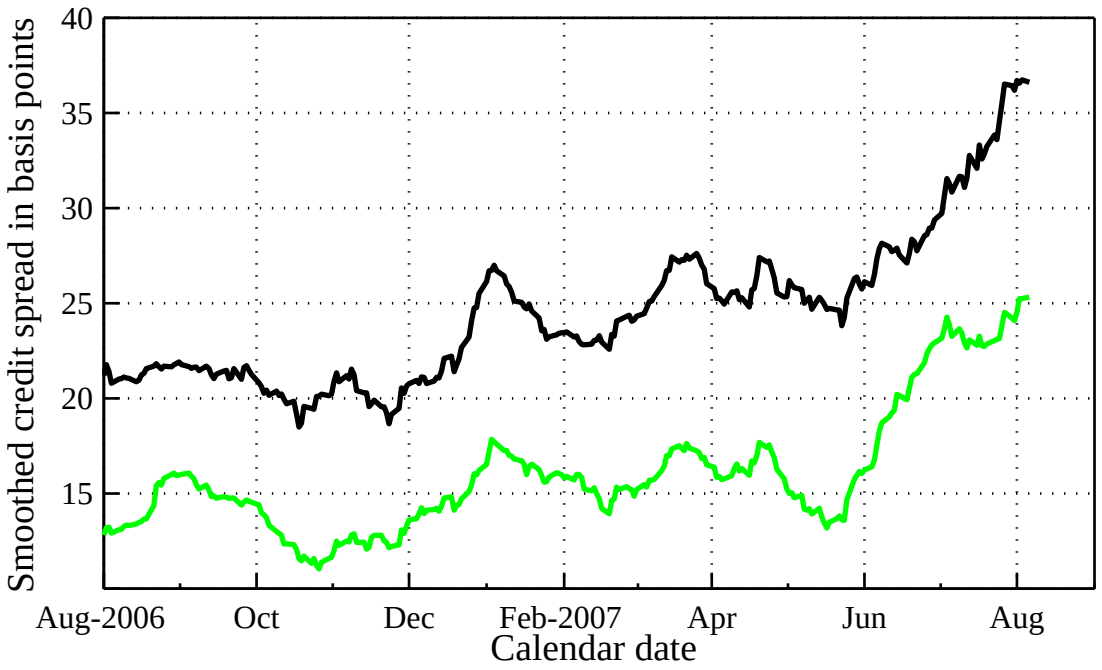
The 4-year credit risk premium of the foreign AA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



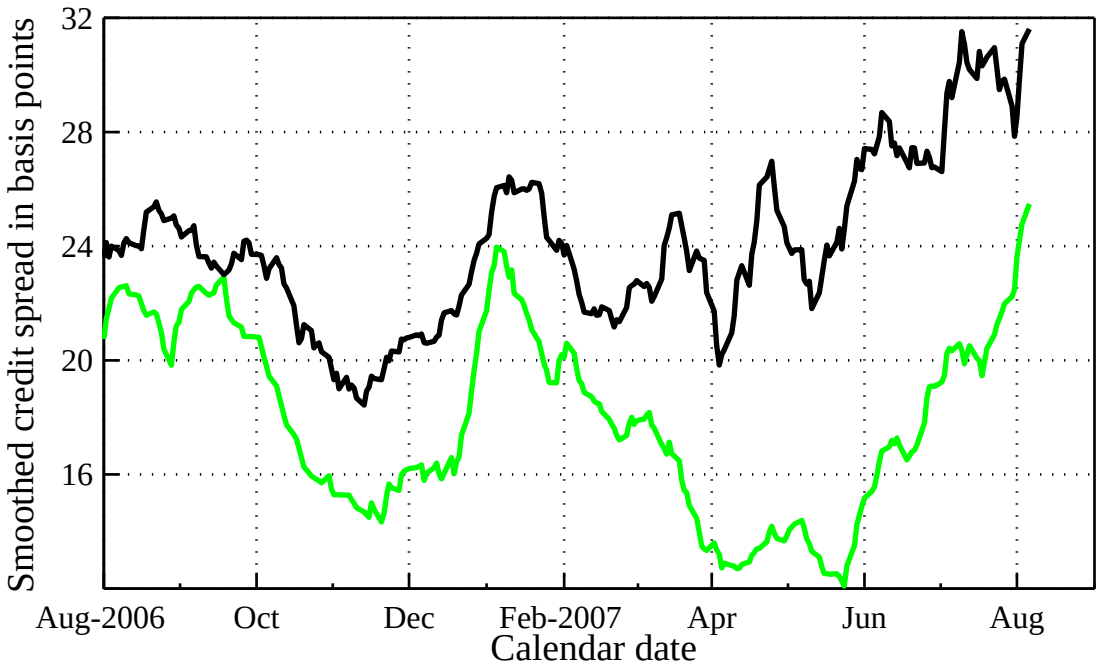
The 5-year credit risk premium of the foreign AA-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



The 10-year credit risk premium of the foreign AA-rated debtors over a period of one year ending 06-Aug-2007

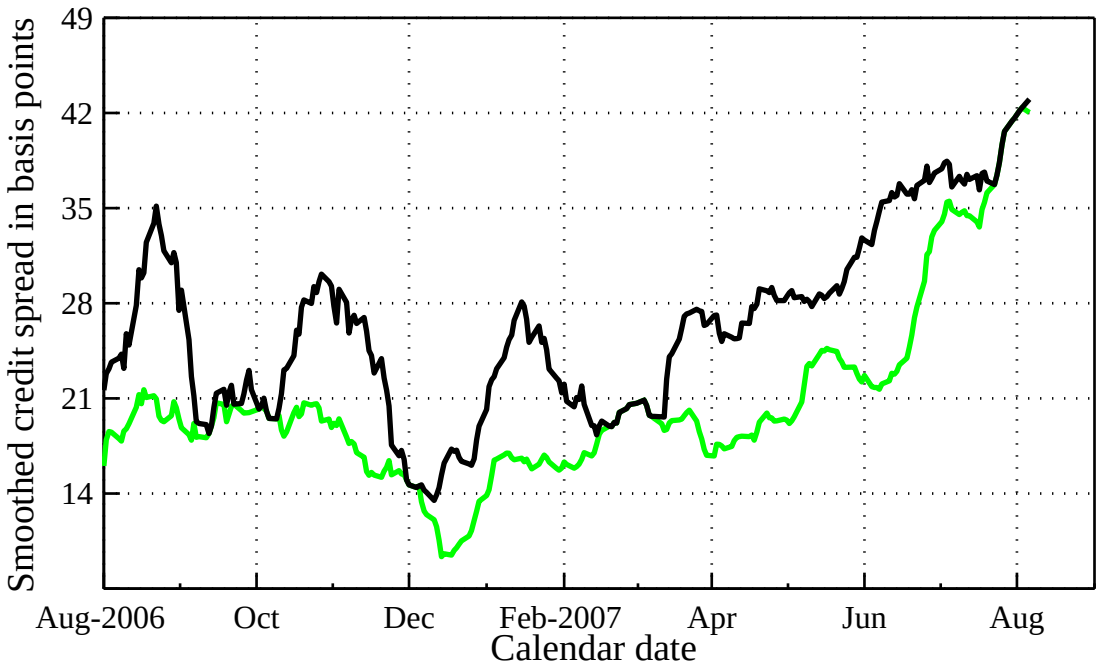
Classified by SNB Research. Bonds are denominated in Swiss franc.



8.7 Credit spreads of foreign debtors “A”

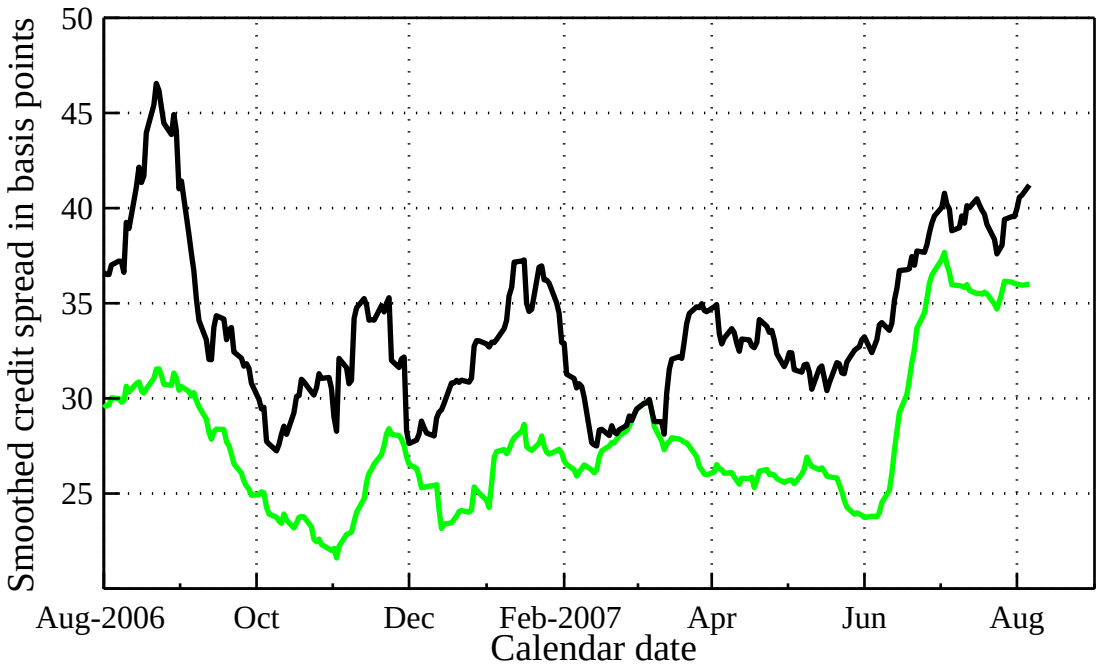
The 2-year credit risk premium of the foreign A-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



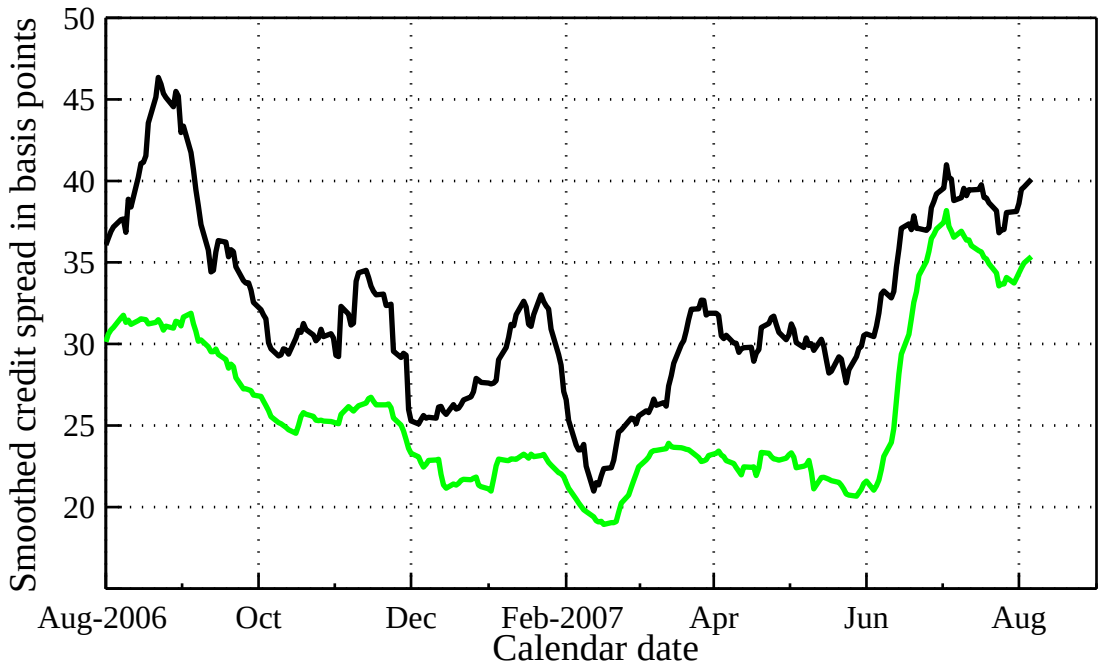
The 3-year credit risk premium of the foreign A-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



The 4-year credit risk premium of the foreign A-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.



The 5-year credit risk premium of the foreign A-rated debtors over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds are denominated in Swiss franc.

— third class

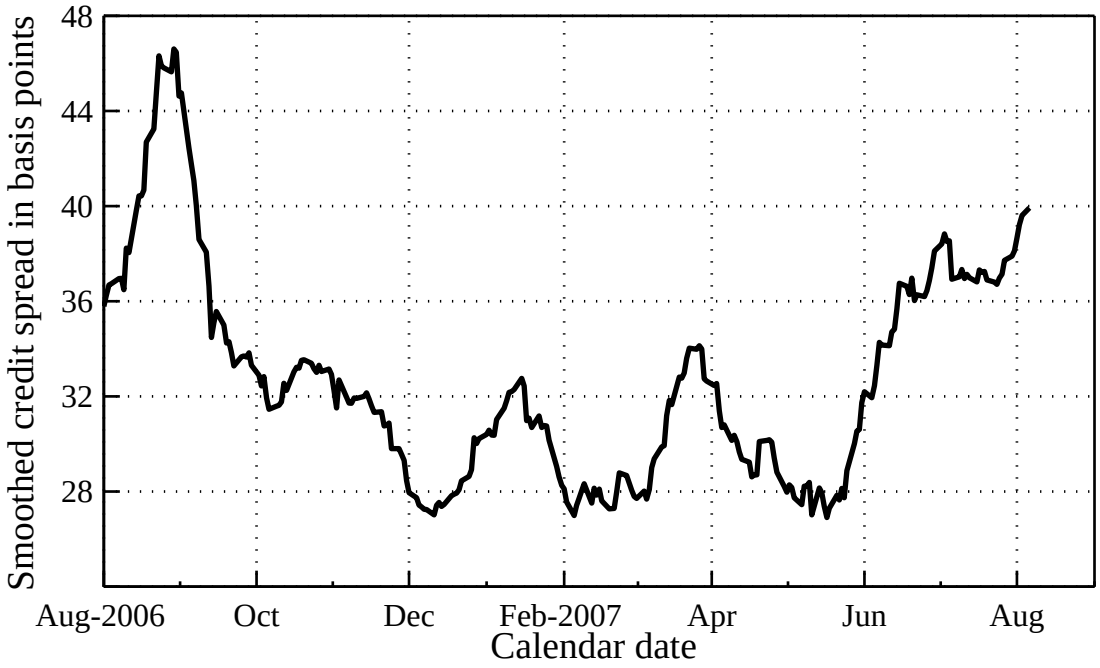



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CHART 2:
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CH1A_1, Term2Mat = 3.00: TOO MANY NaNs
CH1A_1, Term2Mat = 4.00: TOO MANY NaNs
CH2A_1, Term2Mat = 5.00: TOO MANY NaNs
CH1A_1, Term2Mat = 5.00: TOO MANY NaNs
CH3A_1, Term2Mat = 10.00: TOO MANY NaNs
CH2A_1, Term2Mat = 10.00: TOO MANY NaNs
CH1A_1, Term2Mat = 10.00: TOO MANY NaNs
CHP_2, Term2Mat = 2.00: TOO MANY NaNs
CHP_2, Term2Mat = 3.00: TOO MANY NaNs
CHP_2, Term2Mat = 4.00: TOO MANY NaNs
CHP_2, Term2Mat = 5.00: TOO MANY NaNs
CH1A_2, Term2Mat = 5.00: TOO MANY NaNs
CHK_2, Term2Mat = 10.00: TOO MANY NaNs
CHP_2, Term2Mat = 10.00: TOO MANY NaNs
CHI_2, Term2Mat = 10.00: TOO MANY NaNs
CH1A_2, Term2Mat = 10.00: TOO MANY NaNs
CHP_3, Term2Mat = 2.00: TOO MANY NaNs
CHP_3, Term2Mat = 3.00: TOO MANY NaNs
CHK_3, Term2Mat = 4.00: TOO MANY NaNs
CHP_3, Term2Mat = 4.00: TOO MANY NaNs
CHK_3, Term2Mat = 5.00: TOO MANY NaNs
CHP_3, Term2Mat = 5.00: TOO MANY NaNs
```

```
CHK_3, Term2Mat = 10.00: TOO MANY NaNs
CHB_3, Term2Mat = 10.00: TOO MANY NaNs
CHP_3, Term2Mat = 10.00: TOO MANY NaNs
CHI_3, Term2Mat = 10.00: TOO MANY NaNs
CH1A_3, Term2Mat = 10.00: TOO MANY NaNs
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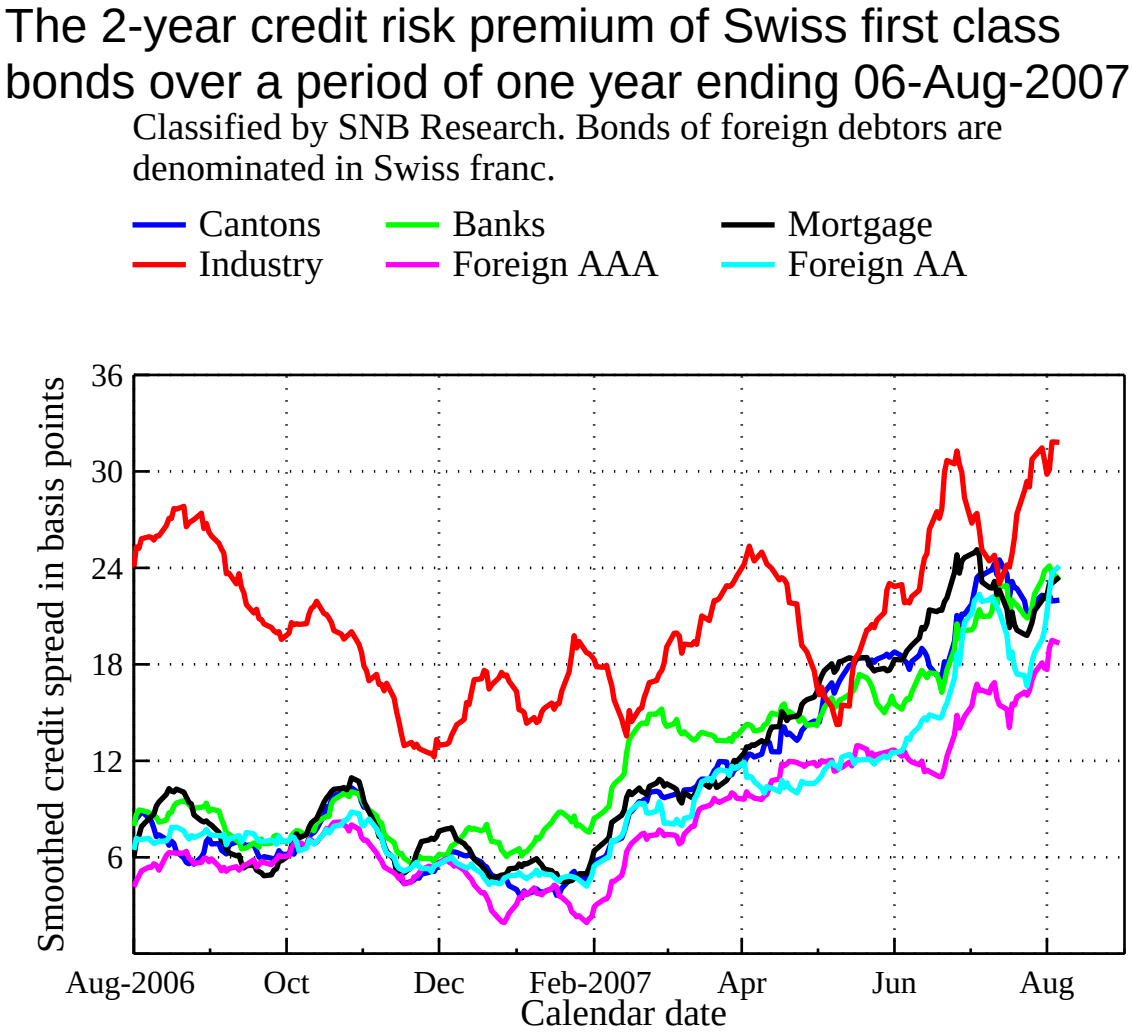
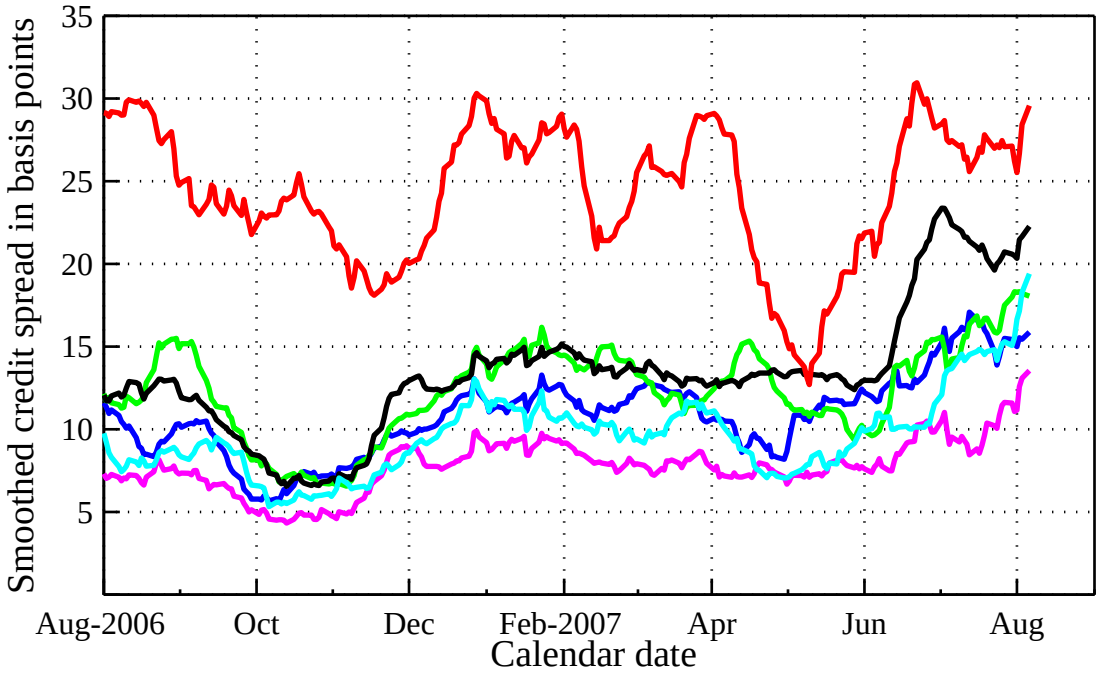
8.8 All first-class bonds



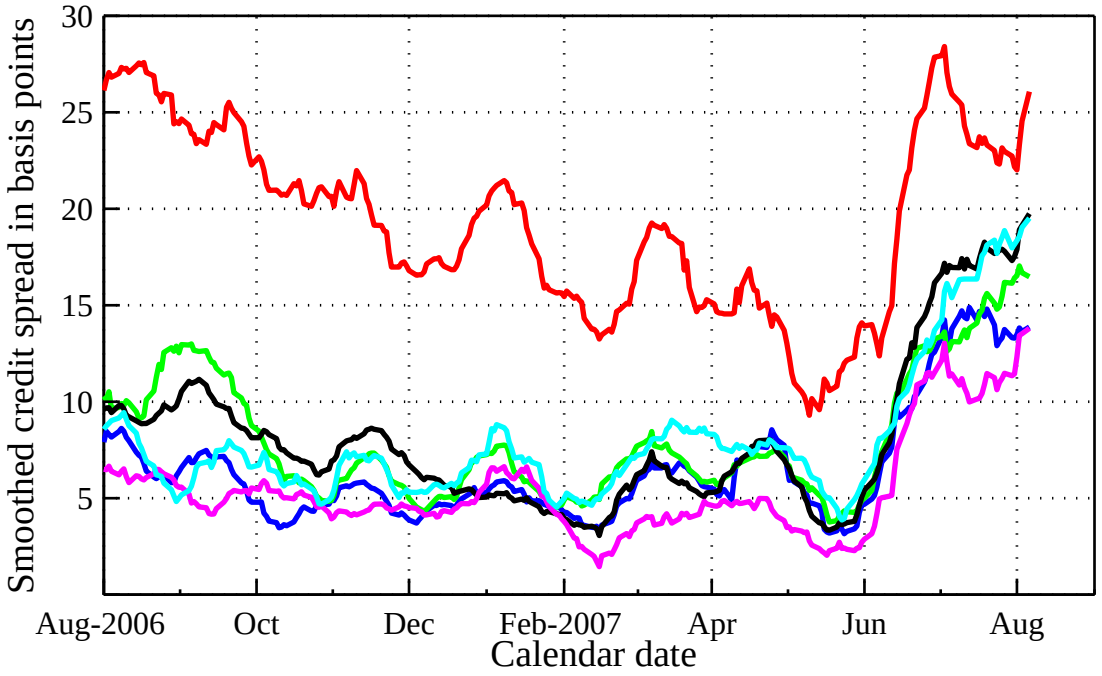
The 3-year credit risk premium of Swiss first class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



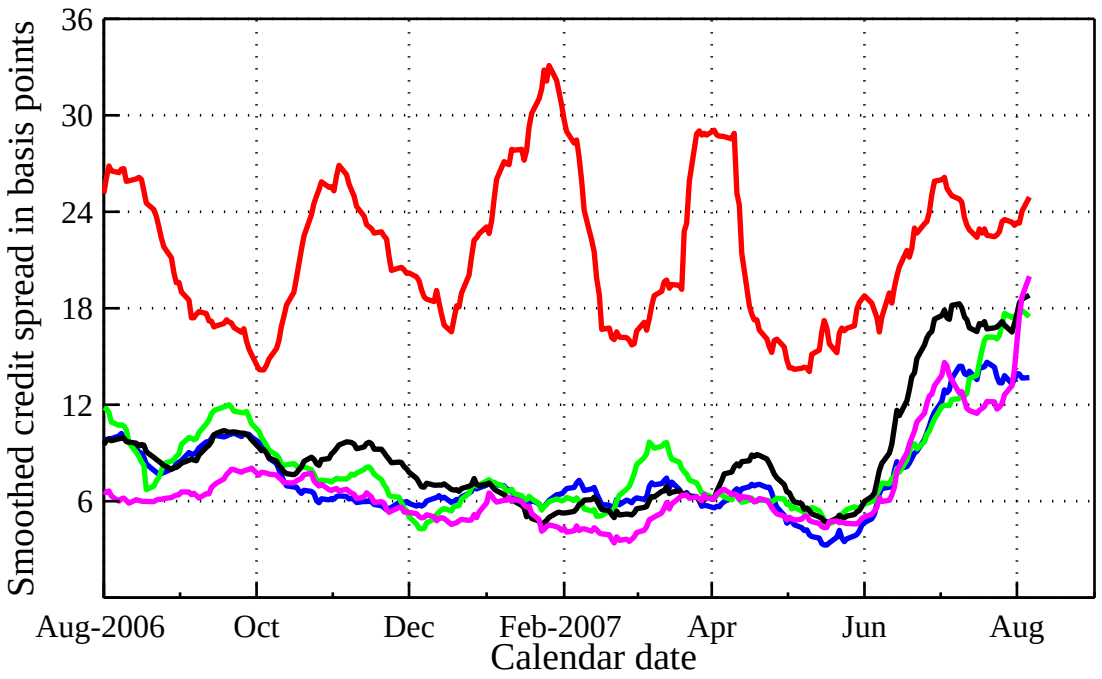
The 4-year credit risk premium of Swiss first class bonds over a period of one year ending 06-Aug-2007

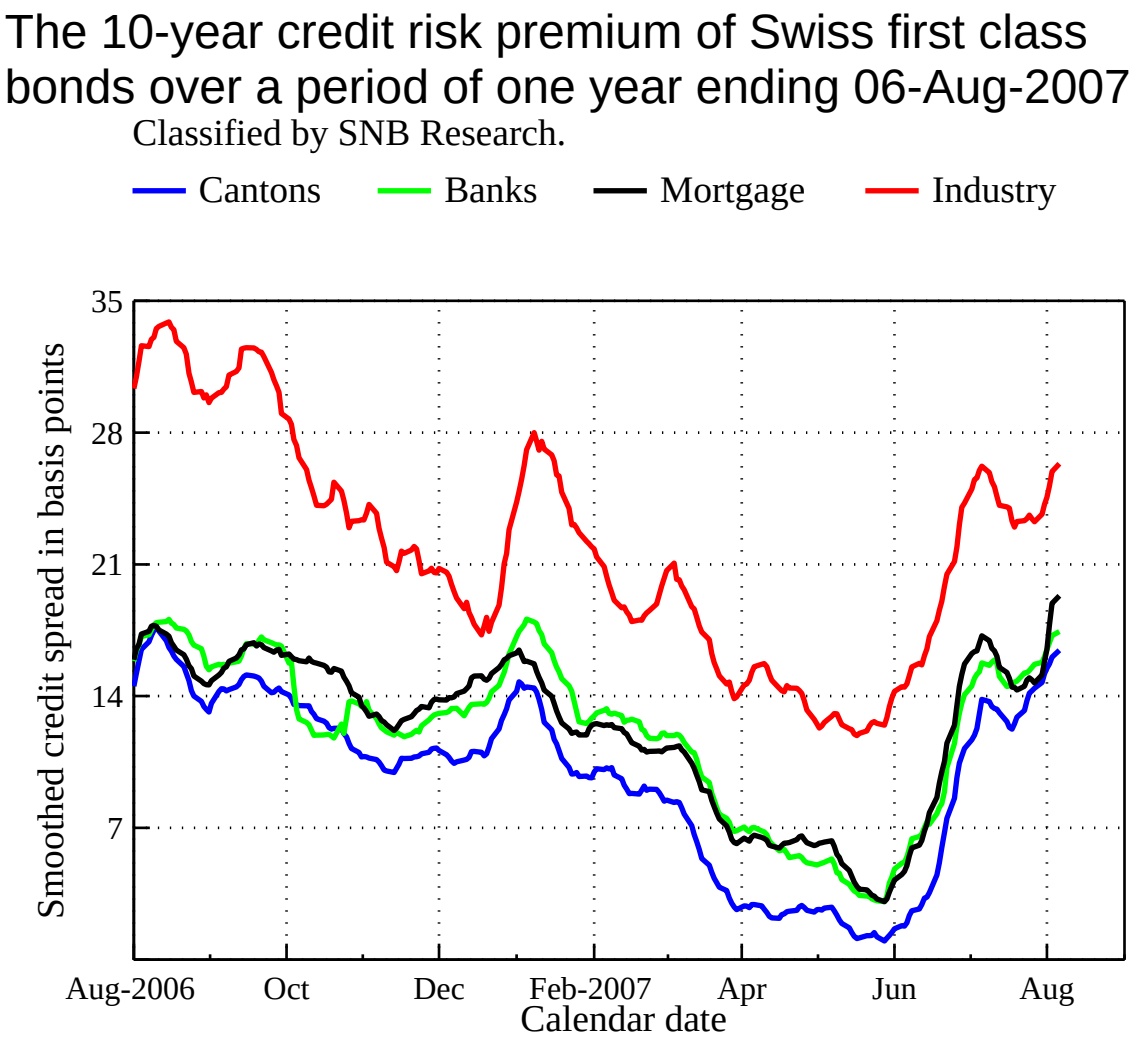
Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



The 5-year credit risk premium of Swiss first class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.

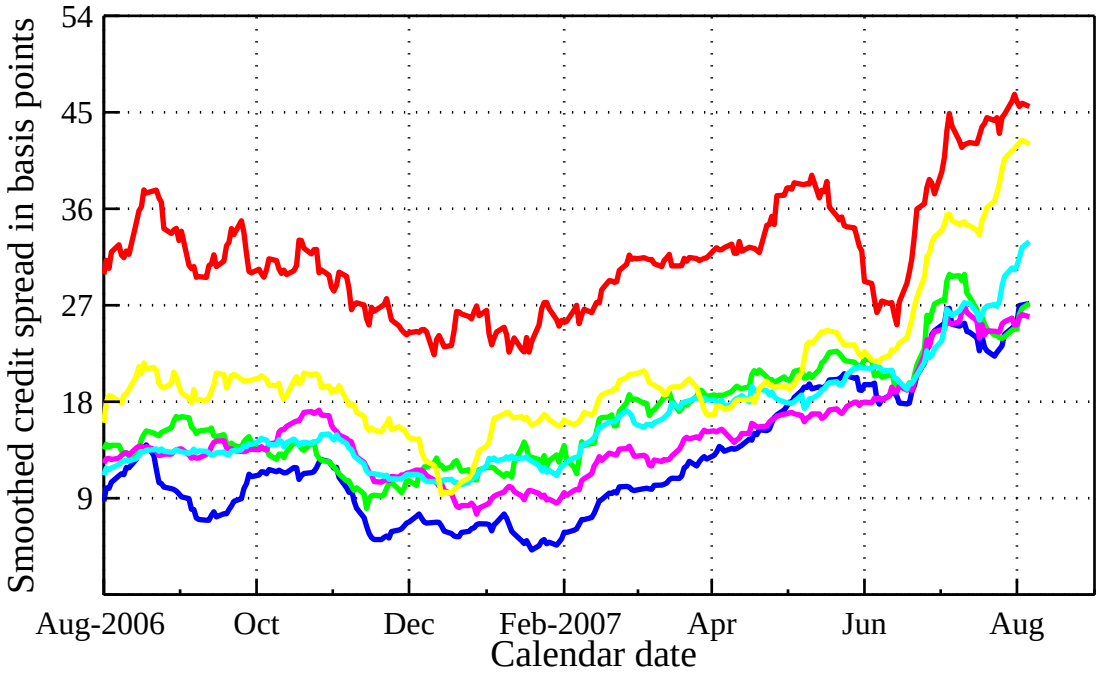




8.9 All second-class bonds

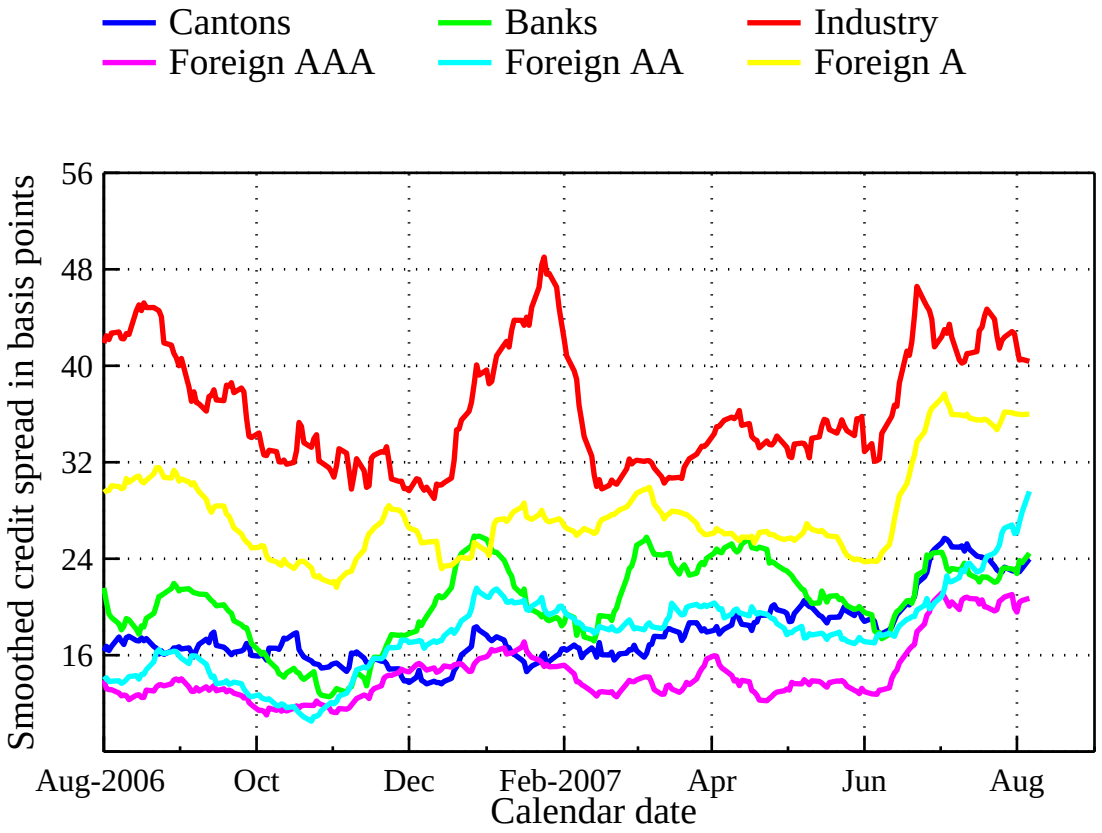
The 2-year credit risk premium of Swiss second class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



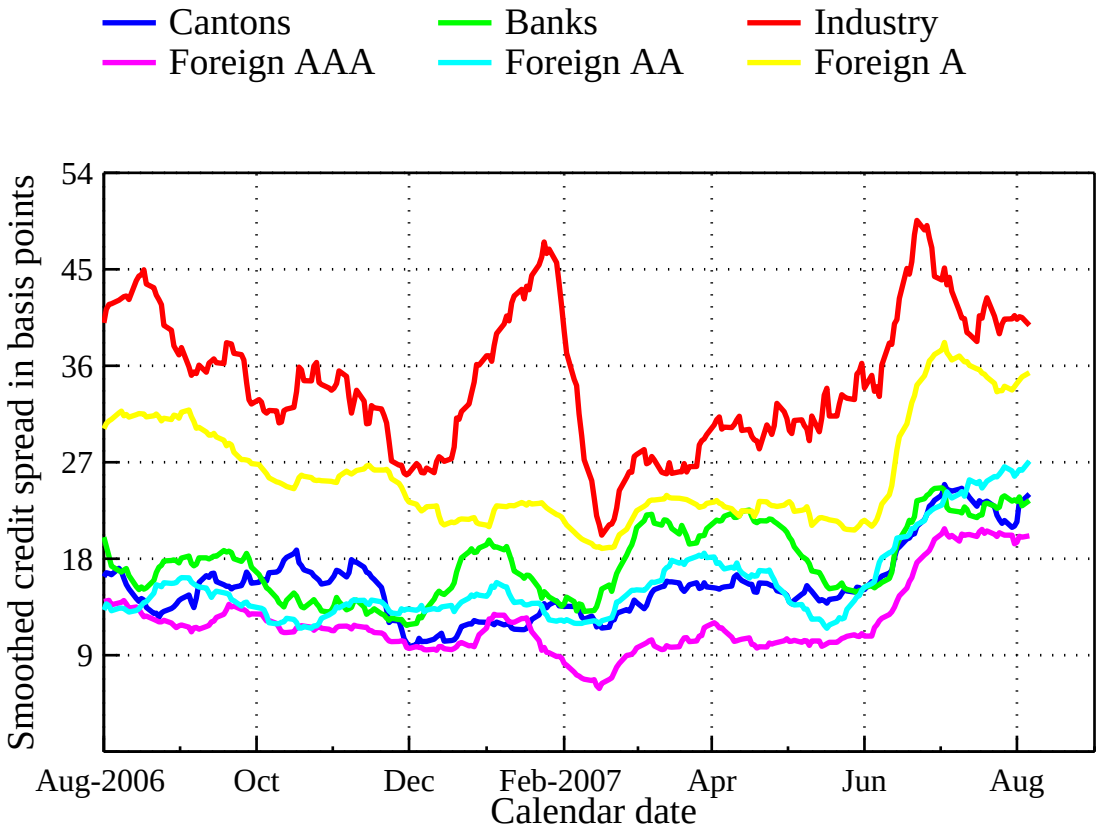
The 3-year credit risk premium of Swiss second class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



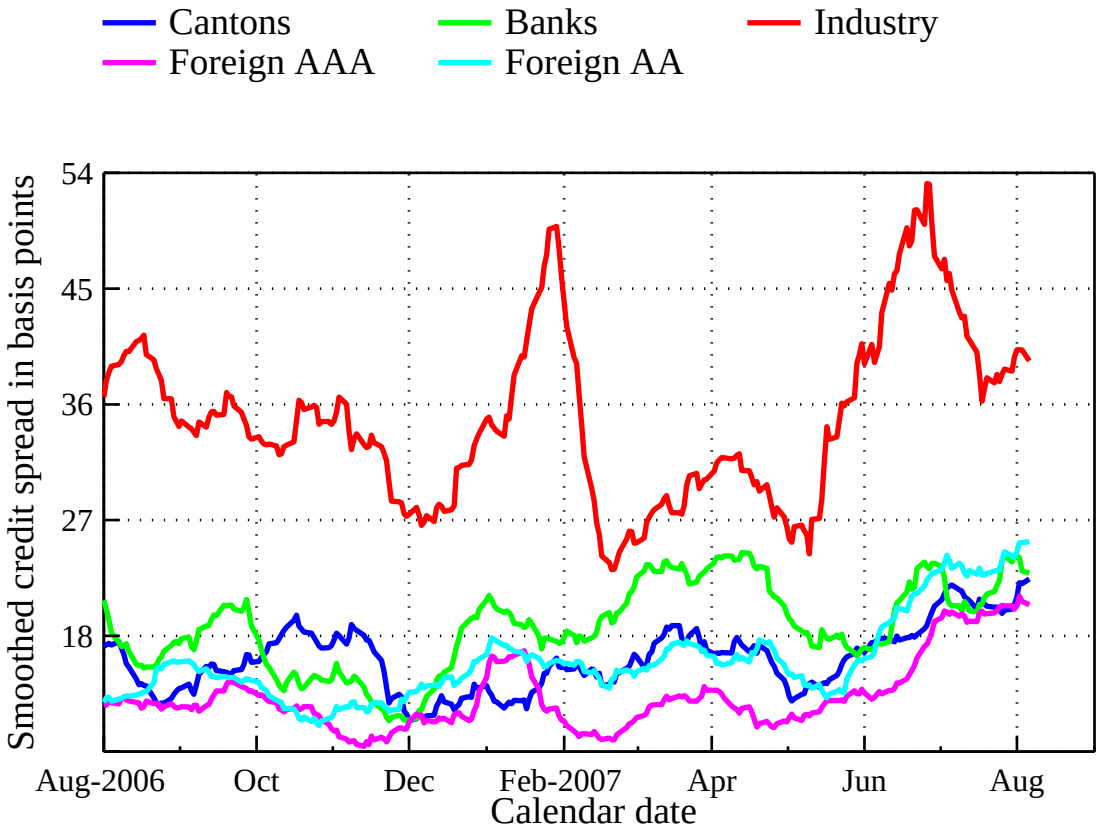
The 4-year credit risk premium of Swiss second class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



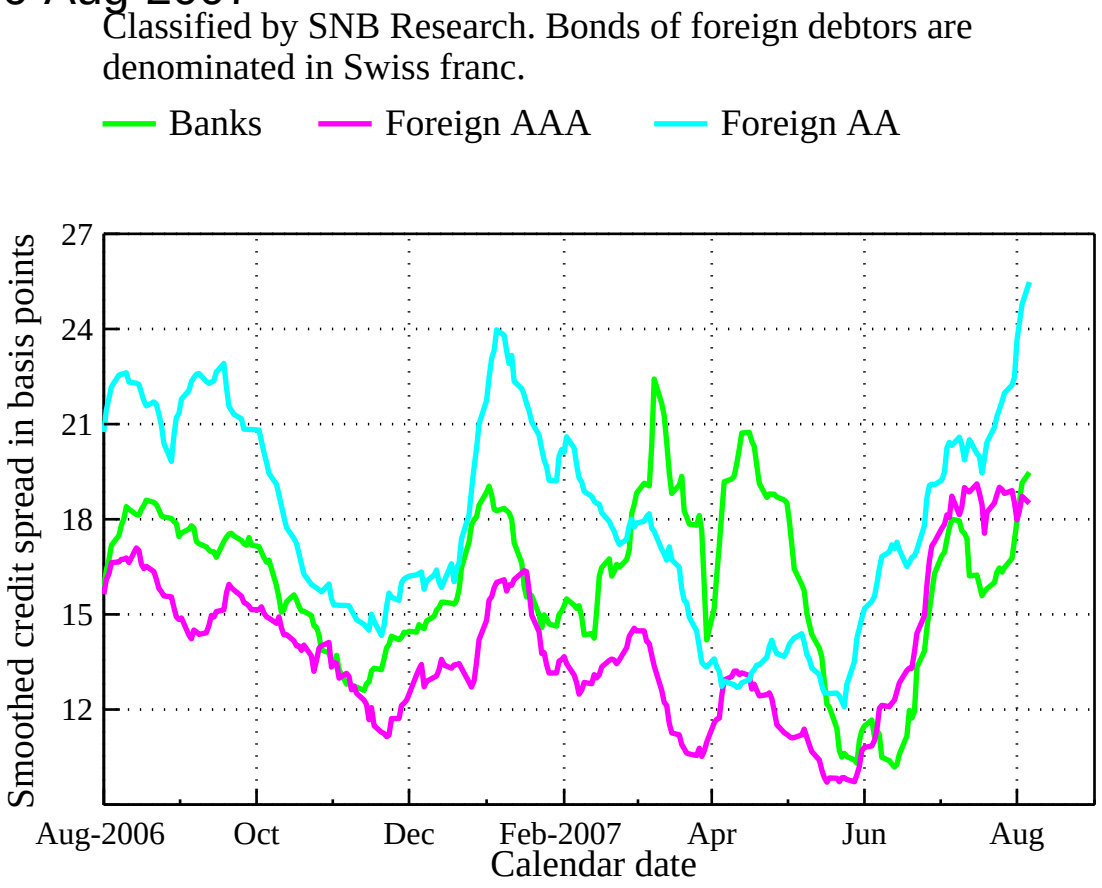
The 5-year credit risk premium of Swiss second class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



The 10-year credit risk premium of Swiss second class bonds over a period of one year ending 06-Aug-2007

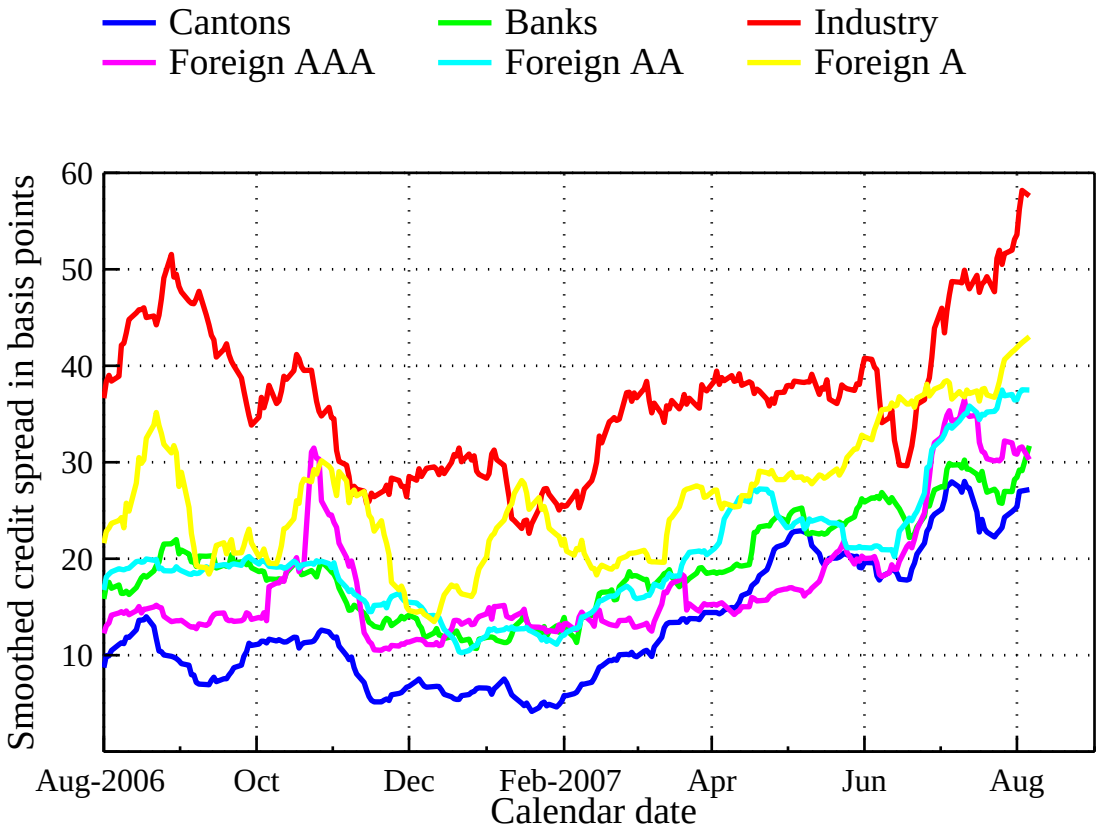
Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



8.10 All third-class bonds

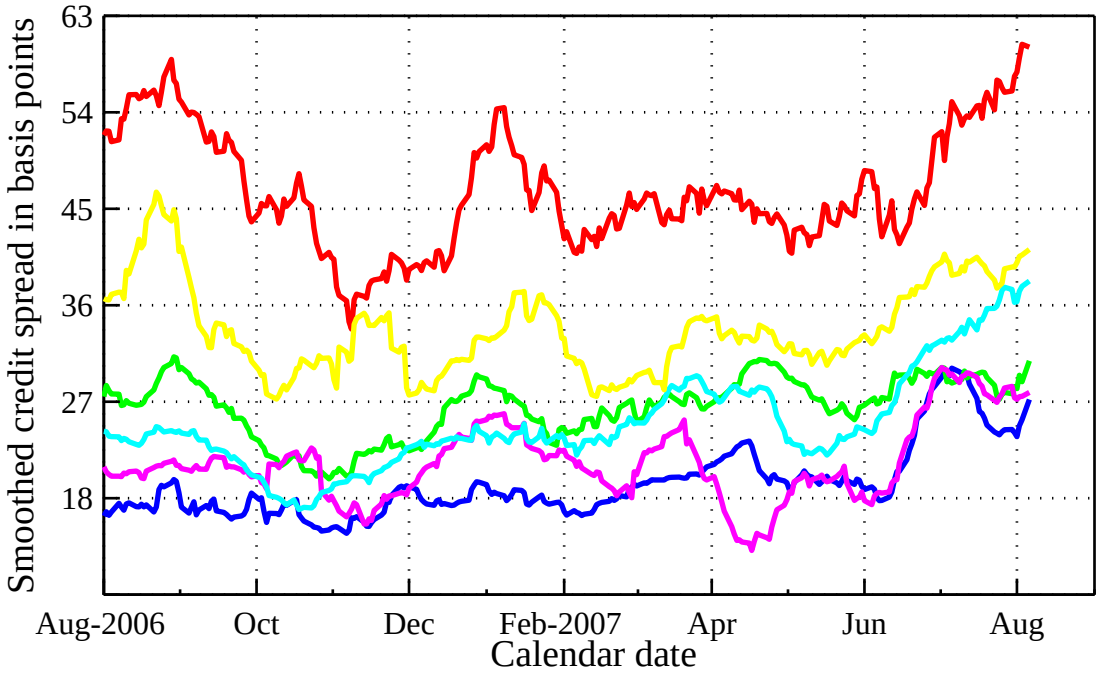
The 2-year credit risk premium of Swiss third class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



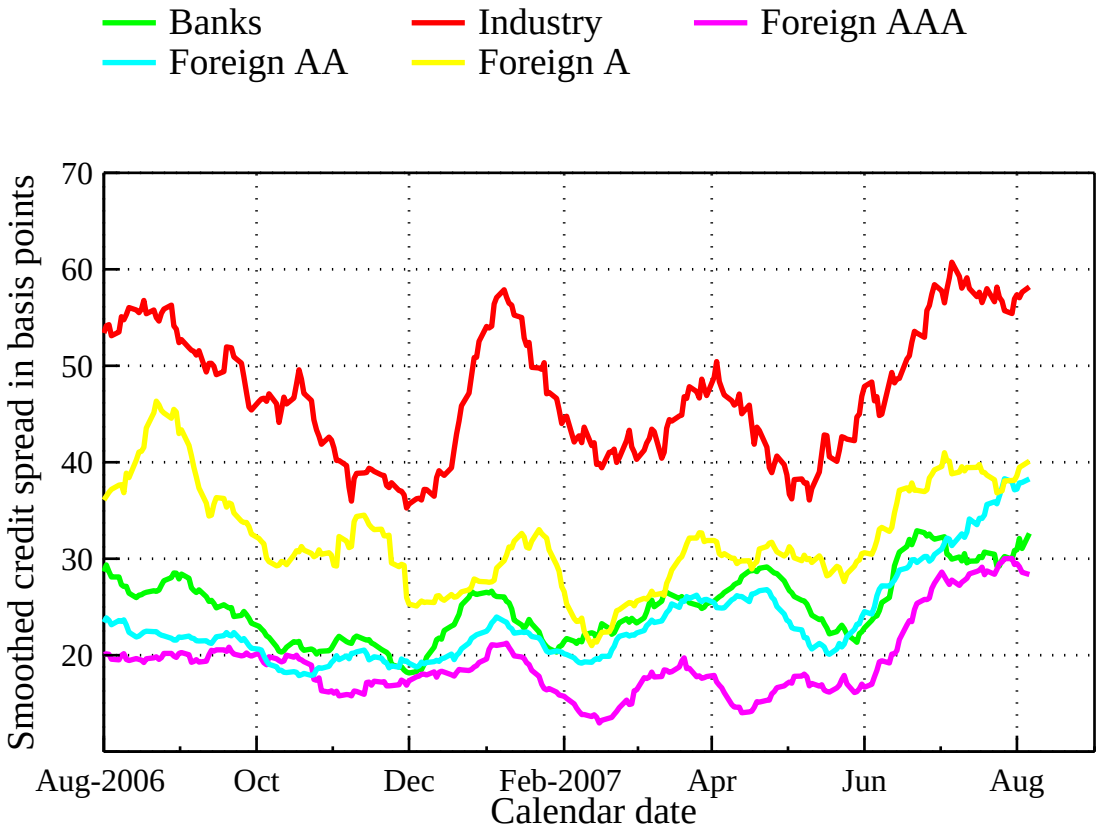
The 3-year credit risk premium of Swiss third class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



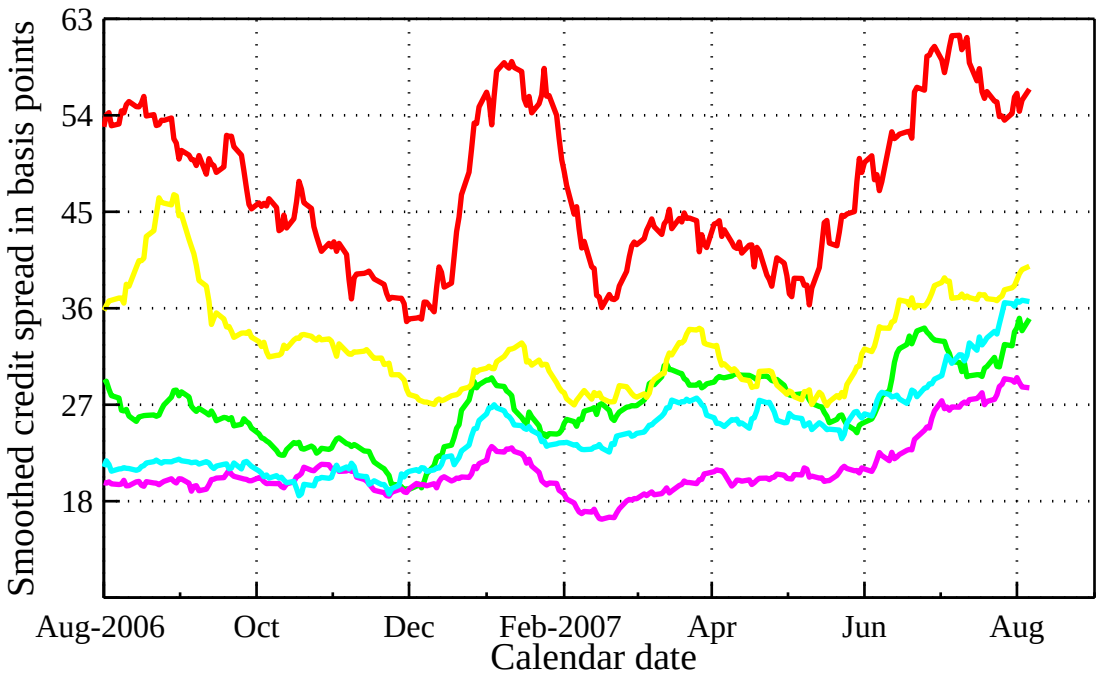
The 4-year credit risk premium of Swiss third class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



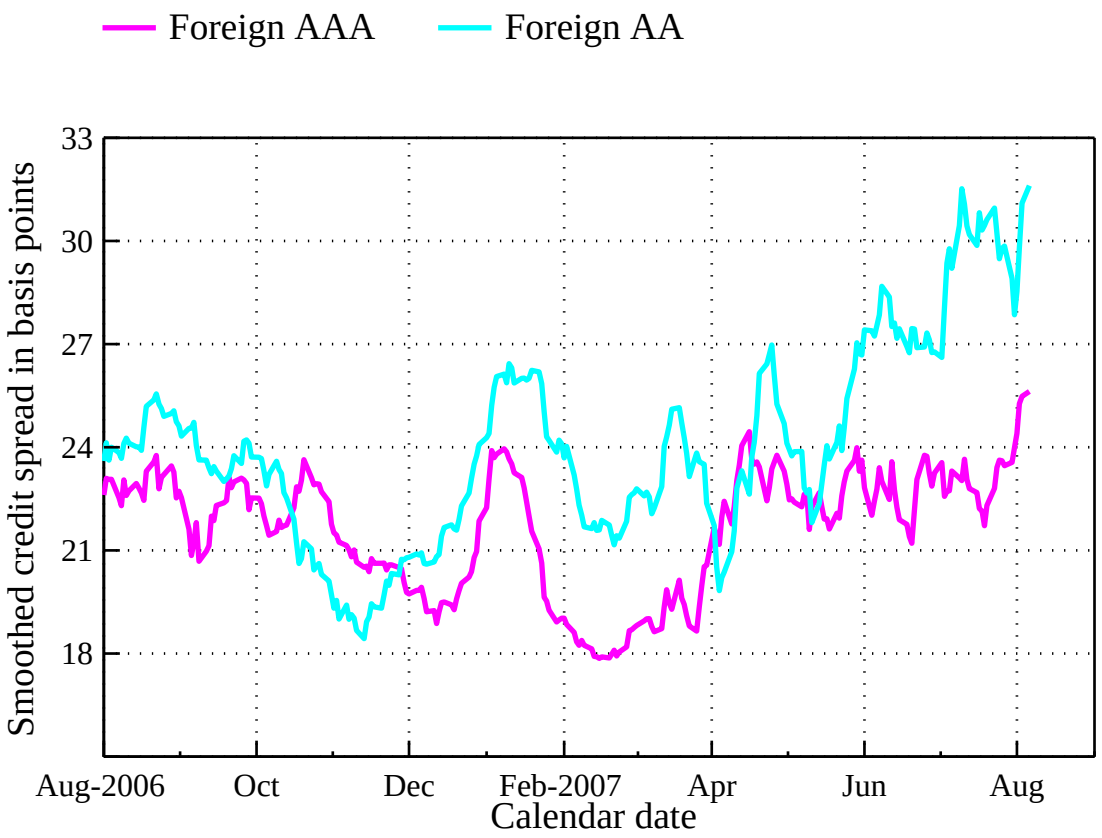
The 5-year credit risk premium of Swiss third class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



The 10-year credit risk premium of Swiss third class bonds over a period of one year ending 06-Aug-2007

Classified by SNB Research. Bonds of foreign debtors are denominated in Swiss franc.



9 The expected three-month interest rate

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06-Aug-2007

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Program RealTermM2_C_N
======================

Sample Size =  208
TolG        =   2.0
OF0         =  -6626.79

f-COUNT    FUNCTION       MAX{g}         STEP  Procedures
   11      -6626.79      3.07863            1   infeasible
   24      -6567.05      2.02078         0.25   infeasible
Number of infeasibles tolerated exhausted
```

```
If TolCount ≤  3: search new start-value file while leaving
tolerance unchanged
If TolCount >  3: increase tolerance while leaving start-value
file unchanged
TolG =   3.0
Time Count =  1, Time to go:    2h,  59m,   0s

Program RealTermM2_C_N
======================

Sample Size =  208
TolG        =   3.0
OF0         =  -6626.79

f-COUNT   FUNCTION       MAX{g}         STEP  Procedures
   11     -6626.79      2.20981            1
   32      -6627.1      2.20665     0.000977
   53      -6627.1      2.20338     0.000977
   69     -6626.72      2.01381       0.0312
   85     -6626.57      1.88153       0.0312
   97      -6622.6      0.26637          0.5
  112     -6622.99     0.233354       0.0625
  125     -6627.42     0.829491         0.25
  136     -6628.58    0.0802182            1
  156     -6628.58    0.0777548      0.00195
  170     -6628.79    0.0713426        0.125
  181     -6628.86 -1.09289e-05            1
  192     -6628.86  5.81341e-06            1   Hessian modified
  203     -6628.86  9.53142e-08            1   Hessian modified
  227     -6628.86  7.34613e-08     0.000122
  242     -6628.86  3.38862e-06       0.0625
  253     -6628.86  4.59888e-08            1   Hessian modified
  264     -6628.86   2.8709e-09            1   Hessian modified
  292     -6628.86  2.87088e-09     7.63e-06   Hessian modified
  315     -6628.86  2.88469e-09     0.000244
  356     -6628.86  2.88469e-09    -9.31e-10   Hessian modified
  377     -6628.79 -8.93385e-05     0.000977   Hessian modified
  402      -6628.8 -7.91503e-05      -6.1e-05   Hessian modified
  427      -6628.8 -7.91479e-05      -6.1e-05   Hessian modified
  451     -6628.81 -7.91382e-05     0.000122   Hessian modified
  475     -6628.81 -8.53455e-05     0.000122
  500     -6628.81 -8.53458e-05      -6.1e-05
  521     -6628.81 -8.51603e-05     0.000977
  532     -6628.81 -8.51691e-05            1   Hessian modified
  551     -6628.81 -8.51692e-05      0.00391
  562     -6628.81 -8.51691e-05            1   Hessian modified
  588     -6628.81 -8.51691e-05     3.05e-05
  592     -6628.81 -8.51691e-05        0.125
Optimization Converged Successfully
 No Active Constraints
Terminated succesfully

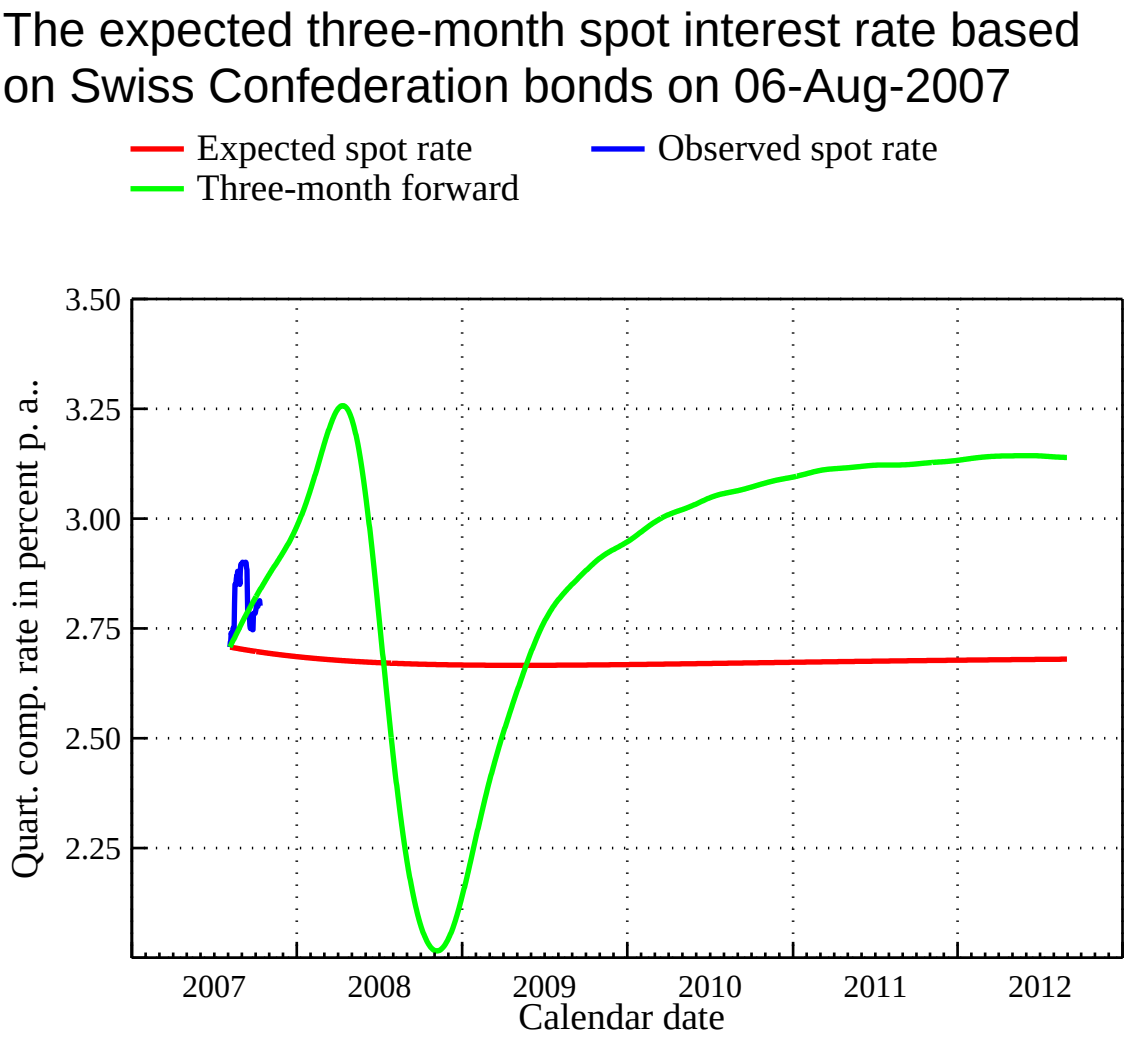
Results of Estimation
*********************

Parameters
         Start     Regression      Estimated
    6.9020e-01     6.9020e-01     7.5337e-01
    5.0000e-04     5.0000e-04     5.0000e-04
```

```
    1.0404e-01    1.0404e-01    1.0373e-01
   -5.0000e-04   -5.0000e-04   -9.7456e-04
    7.3681e-01    7.3681e-01    7.2538e-01
    3.7851e-02    3.7851e-02    3.6655e-02
    4.6981e-01    4.6981e-01    4.7532e-01
    5.7453e-01    5.7453e-01    5.7429e-01
   -9.8000e-01   -9.8000e-01   -9.8000e-01
    9.1046e-02           NaN    9.2519e-02
Objective Function
  Start  Regr.   Final Regr.      Start ML      Final ML
    0.0000e+00    0.0000e+00   -6.6268e+03   -6.6289e+03

Program InflationM2_N
=====================


Program ZinserwartungM2
=======================
```



10 Backup from PC to network

The recent output files generated by Matlab as well as the recent pictures (JPG, EPS, PDF and PICT) are copied by Matlab to various places on the network.

The main Matlab script called «startup_N.m» is shown in the document «startup_N.m.pdf».

THE END