

SF2975: Calibration of the Hull-White model Guide to the Quantlab workspace

This document is intended to assist you with the Quantlab workspace used in the assignment, providing short descriptions of the different parameters and data fields. Figure 1 shows a screen shot of the workspace as it looks when you open it the for the first time.

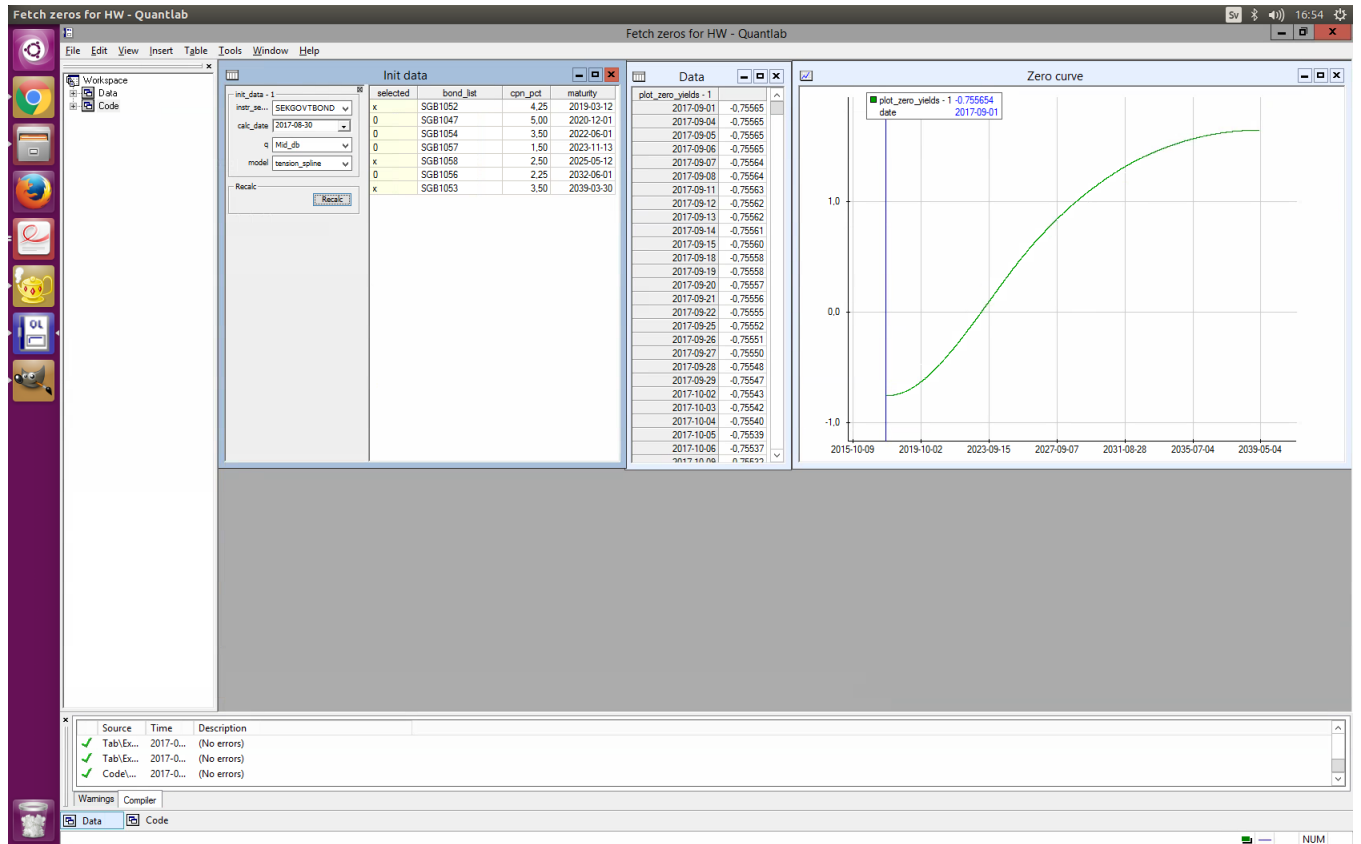


Figure 1: The workspace.

All your actions will be performed in the “Init data” window, shown in Figure 2. In the drop down table `instr_select` you pick the instrument to use for the construction the zero-rate curve (default: Swedish government bonds). In `calc_date` you choose the current date. The tab `q` determines which quotes that are used (use the default: `Mid_db`). Finally, in `model` you pick an interpolation method. You can find some documentation on the methods in the *Quantlab Function browser* (Alt+1, then search for example “linear” or “max_smooth”). The table lists the names, coupons and maturity dates of available instruments

in the selected class. By setting the values in the column `selected` to 0 (x) the instrument will be excluded (included) in the construction of the zero-rate curve. In Figure 2 three bonds are selected; SGB1052, SGB1058 and SGB1053.

The screenshot shows a window titled "Init data" with a table of bond data and control fields on the left. The table has four columns: "selected", "bond_list", "cpn_pct", and "maturity". The "selected" column contains values 'x' or '0', indicating which bonds are included or excluded. The "bond_list" column contains bond identifiers like SGB1052, SGB1047, SGB1054, SGB1057, SGB1058, SGB1056, and SGB1053. The "cpn_pct" column shows coupon rates, and the "maturity" column shows maturity dates.

selected	bond_list	cpn_pct	maturity
x	SGB1052	4,25	2019-03-12
0	SGB1047	5,00	2020-12-01
0	SGB1054	3,50	2022-06-01
0	SGB1057	1,50	2023-11-13
x	SGB1058	2,50	2025-05-12
0	SGB1056	2,25	2032-06-01
x	SGB1053	3,50	2039-03-30

Control fields on the left include: "instr_se..." set to "SEKGOVTBOND", "calc_date" set to "2017-08-30", "q" set to "Mid_db", and "model" set to "tension_spline". A "Recalc" button is also visible.

Figure 2: A zoom on the “Init data” window.

The zero-rate curve is plotted in the window “Zero curve” and in “Data” the daily rates are tabulated. You can export the data by either right-clicking on the curve or by copying the table.