

SF2701: Homework 2

Guide to the Quantlab workspace

This document is intended to assist you with the Quantlab workspace used in the assignment on forward rates, 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. All your actions will be

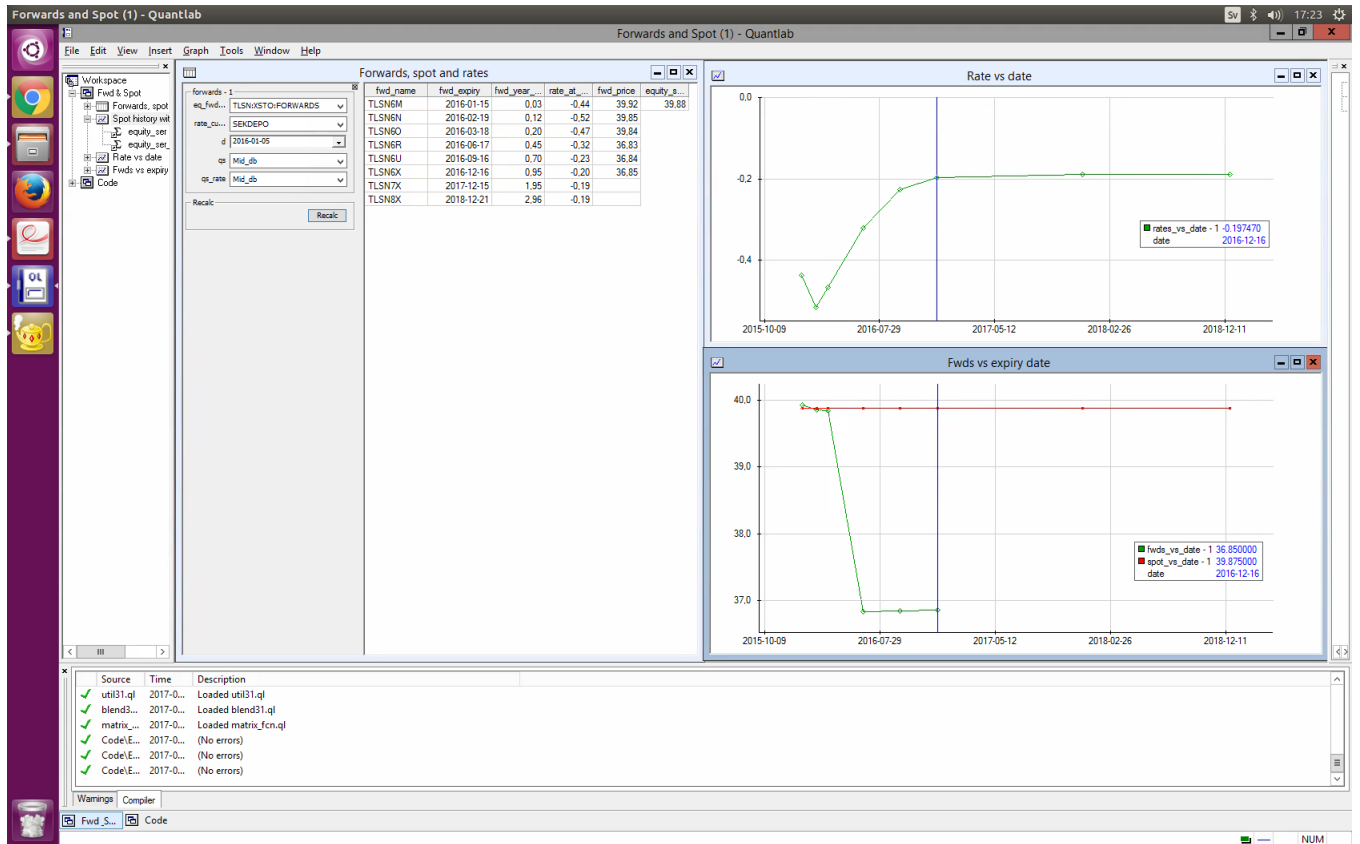


Figure 1: The workspace.

performed in the “Forwards, spot and rates” window, shown in Figure 2. The selection in `eq_fwd_curve` determines, by underlying, which forward contracts that will be used. For example, the default option `TLN:XSTO:FORWARDS` selects forward contracts on the underlying stock Telia Sonera. In `rate_curve` the interest rate curve is selected (use the default: `SEKDEPO`). In the tab `d`, the date corresponding to $t = 0$ is selected. The tabs `qs` and `qs_rate` determine which price quotes that are used (use the default: `Mid_db`). After making your selection, clicking “Recalc” will update the table and the graphs. In the window

“Forwards, spot and rates”, you will find a table containing all the data needed to complete this exercise. In each row, you will find the price, `fwd_price`, and time to maturity in years, `fwd_year_mat`, for the forward `fwd_name` with expiry date `fwd_expiry`. In the column `rate_at_expiry` the interest rates at expiry are given. The last column, `equity_spot`, lists the spot price of the underlying stock. Note that all or parts of the column `fwd_price` might be empty if forward contract is not traded on the market. In the window “Fwds vs expiry date” the selected forward contracts and the spot price are plotted. In the window “Rate vs date” the selected interest rates are plotted. Note that in this lab, interest data is only available at the dates tabled in “Forward, spot and rates”. For intermediate dates, a linear approximation is used to generate the plotted interest rate curve.

The screenshot shows a software window titled "Forwards, spot and rates". On the left, there are several dropdown menus for configuration: "eq_fwd..." is set to "TLSN:XSSTO:FORWARDS", "rate_cu..." is "SEKDEPO", "d" is "2016-01-05", "qs" is "Mid_db", and "qs_rate" is "Mid_db". Below these is a "Recalc" button. The main area of the window contains a table with the following data:

| fwd_name | fwd_expiry | fwd_year_... | rate_at_... | fwd_price | equity_s... |
|----------|------------|--------------|-------------|-----------|-------------|
| TLSN6M | 2016-01-15 | 0,03 | -0,44 | 39,92 | 39,88 |
| TLSN6N | 2016-02-19 | 0,12 | -0,52 | 39,85 | |
| TLSN6O | 2016-03-18 | 0,20 | -0,47 | 39,84 | |
| TLSN6R | 2016-06-17 | 0,45 | -0,32 | 36,83 | |
| TLSN6U | 2016-09-16 | 0,70 | -0,23 | 36,84 | |
| TLSN6X | 2016-12-16 | 0,95 | -0,20 | 36,85 | |
| TLSN7X | 2017-12-15 | 1,95 | -0,19 | | |
| TLSN8X | 2018-12-21 | 2,96 | -0,19 | | |

Figure 2: A zoomed view on the “Forwards, spot and rates” window. Note that some price-boxes are empty since there are no listed prices for these contracts.