

# Algorithmica Research AB

## **FX instruments in Database Tool**

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# 1. Introduction

This document describes the setup of FX Spot, FX Swaps and FX Forwards. To minimize duplication of information and minimize the possibility of inconsistent configuration, most of the settings are contained in the instrument classes. There should be one class for each currency pair, one spot instrument, and as many forward and swap instruments as there are distinct maturities.

## 2. FX Instrument class

All FX instruments for a given currency pair should inherit from the same class. This class should have the same name as the FX Spot instrument.

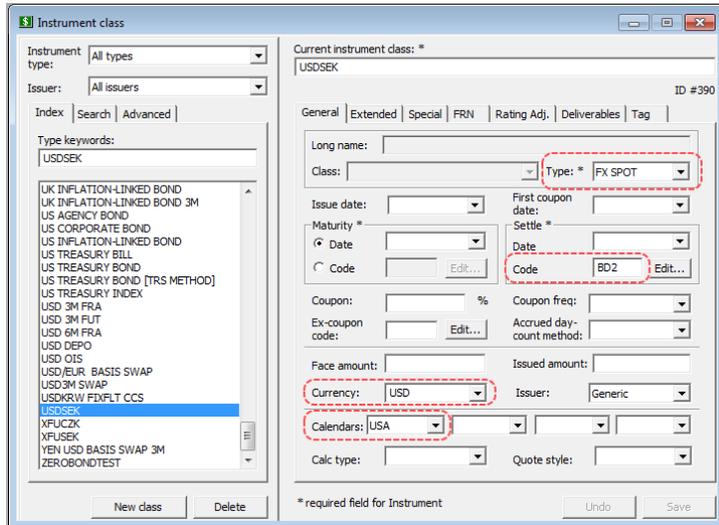


Figure 1. FX Spot class settings [General]

The Type must be set to FX Spot.

The settlement code must be set. Note that the settlement code defines the spot days for the currency. For most currencies it is BD2 (=2 business days but for some it is BD1 (1 day). The compounded code "BD0;BD2" means that the codes "BD0" and "BD2" are applied in sequence meaning that in the case the trade date is a non-business day the first move is to the next business day.

The Currency must be set to the base currency.

At least one Calendar must be set. This is the base currency calendar.

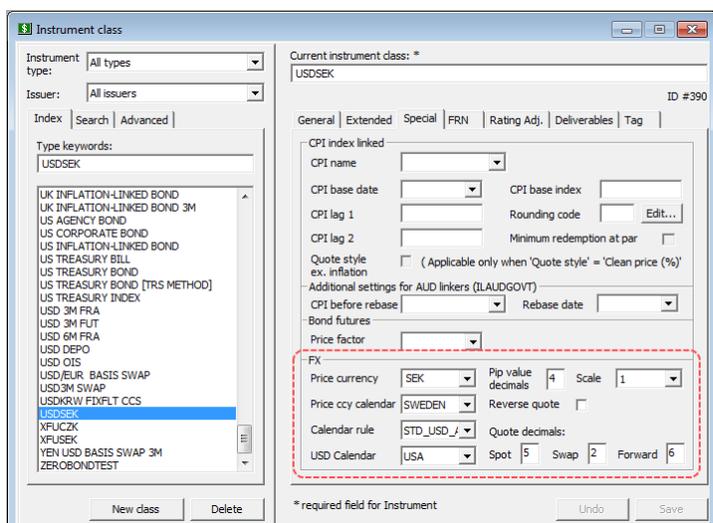


Figure 2. FX Spot class special settings [Special]

The price currency and price currency calendar must be set.

The allowed calendar rules are STD, STD\_NY\_ADJ and SPEC\_LATIN. For STD\_NY\_ADJ and SPEC\_LATIN, the field USD Calendar is required.

calendar rule	description
STD	The settlement date as well as any interim dates cannot be a holiday in either of the currency pairs.
STD_NY_ADJ	The settlement date cannot be on a USD holiday. For currency pairs with T+2 settlement, the interim date can be a USD holiday as long as it is not a holiday in any non-USD currencies in the currency pair.
SPEC_LATIN	For 'special' Latin American currencies such as MXN, ARS and CLP, the interim dates cannot be a USD holiday as well as the settlement date itself.

Pip values decimals: The number of decimals in the quote that defines one fx pip. Allowed values are 1-6.

Scale: The number of units in the base currency the quote represents. Allowed values are 1, 100, 1000, 10000.

Reverse quote: Normally unchecked. If checked, the quote received from the ric is inverted i.e. the quote received from the ric have the base and price currencies reversed compared to how they are defined in Database Tool. Note that if this is checked the bid and ask fields of the ric also needs to be reversed, in order for the bid ask quotes to be calculated correctly.

Quote decimals: The number of decimals that defines how many decimals are in the quote. This setting affects rounding (if enabled). There are three separate settings, Spot, Swap and Forward, that affects instruments of those types derived from this class. Allowed values are 1-6, for fx swaps 0-6.

### 3. FX Spot instrument

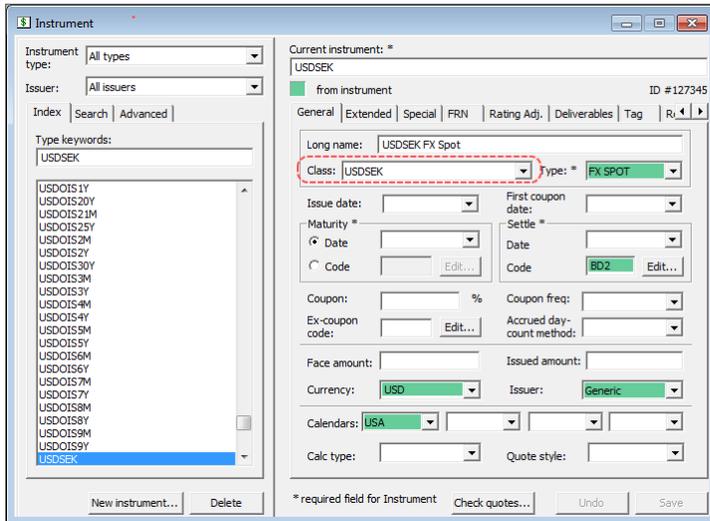


Figure 3. USDSEK settings [General]

The instrument named for the FX spot instrument should be that same as the class name.

Everything else should be inherited from the class.

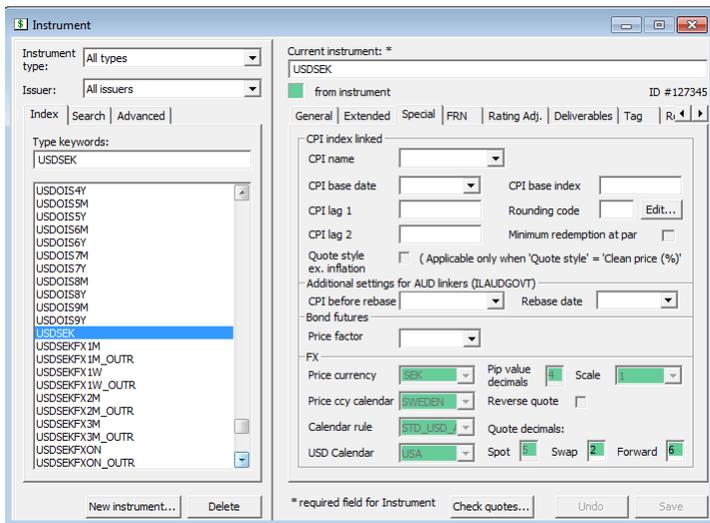


Figure 4. USDSEK special settings [Tag]

All values under FX should be inherited from the class.

## 4. FX Swap instrument

The screenshot shows the 'Instrument' dialog box with the 'General' tab selected. The 'Current instrument' is 'USDSEKFX1M'. The 'Class' is set to 'USDSEK' and the 'Type' is 'FX SWAP'. The 'Maturity Code' is '1M\_MF' and the 'Settle Code' is 'BD2'. The 'Currency' is 'USD' and the 'Issuer' is 'Generic'. The 'Calendar' is 'USA'. The 'Calc type' and 'Quote style' are also visible.

Figure 5. FX Swap instrument settings [General]

The class should be set to the class for this currency pair.

Type should be set to FX SWAP.

The maturity code should be set for each specific instrument.

For an O/N FX Swap the settle code = "BD0" and maturity code = "BD1" and for a T/N Swap the settle code = "BD1" and maturity code = "BD1".

The screenshot shows the 'Instrument' dialog box with the 'Special' tab selected. The 'Quote decimals' field is set to 'Swap'. Other fields include 'CPI index linked', 'CPI name', 'CPI base date', 'CPI base index', 'CPI lag 1', 'CPI lag 2', 'Rounding code', 'Minimum redemption at par', 'Quote style', 'Additional settings for AUD linkers (LLAUDGOVT)', 'CPI before rebase', 'Rebase date', 'Bond futures', 'Price factor', 'FX', 'Price currency', 'Pip value decimals', 'Scale', 'Price ccy calendar', 'Reverse quote', 'Calendar rule', 'Quote decimals', 'USD Calendar', 'Spot', and 'Forward'.

Figure 6. FX Swap instrument special settings [Special]

To override quote decimals for this FX Swap instrument, use the Swap field under Quote Decimals.

## 5. FX Forward (outright) instrument

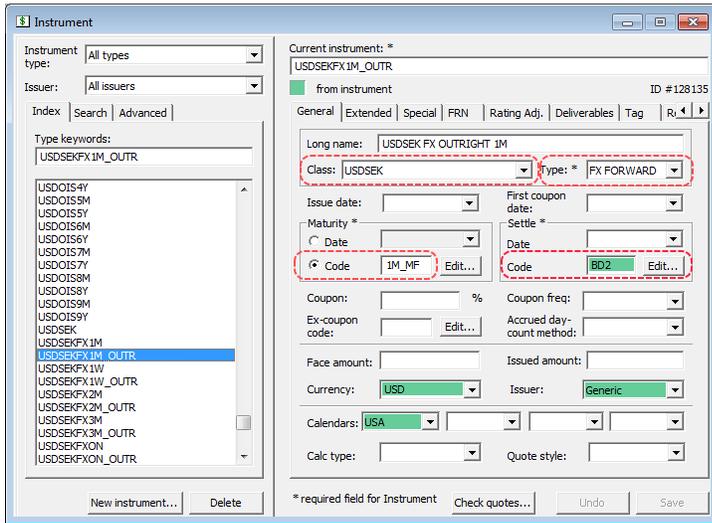


Figure 7. FX Forward instrument settings [General]

The class should be set to the class for this currency pair.

Type should be set to FX FORWARD.

The maturity code should be set for each specific instrument.

For an O/N FX Outright the settle code = "BD0" and maturity code = "BD0" and for a T/N Outright the settle code = "BD0" and maturity code = "BD1". Note that before spot the maturity of the FX outright is the start date of the corresponding FX swap.

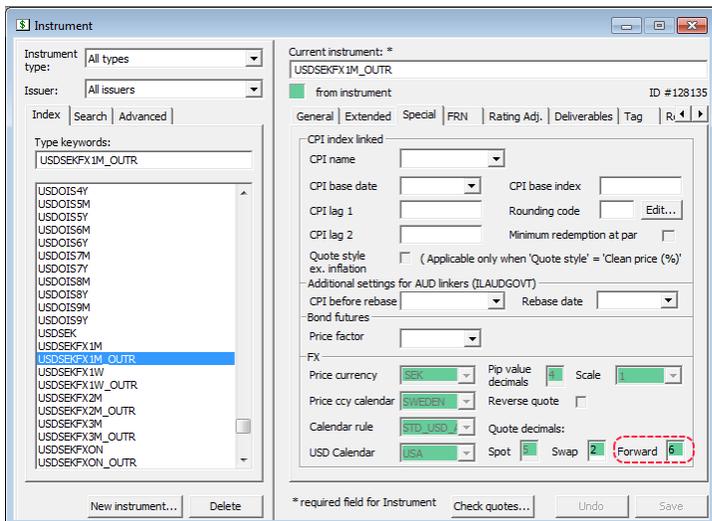


Figure 8. FX Forward instrument special settings [Special]

To override quote decimals for this FX Forward instrument, use the Forward field under Quote Decimals.