MultiOp Code Reference

A multi-pair, multi-indicator, grid capable, backtestable dashboard EA
for MetaTrader 4 and 5

Updated May 4, 2017
Version 0.1

by Marco Z
https://github.com/marcolovescode

Table of Contents

Signals and Retracements

There are two signals tracked: the filter signal, and the master signal.

Filter vs. Master Signal

A filter signal is issued by a subfilter upon `OnCalculate()`. It is checked for stability via `DataHistory.getSignalDuration()`. A Buy, Sell, or Close (both directions) signal is issued, or a Hold signal if appropriate.

A master signal is issued for the symbol pair, and it is a composite of all filter signals. Depending on each subfilter's mode, a Long or Short signal is issued only when all filter signals agree, or a Hold signal otherwise. It is issued immediately and is not checked for stability.

Note about exit signals

Exit signals internally are **opposite of the intended exit direction**:

- Exit SignalLong means that Long is safe, close Short
- Exit SignalShort means that Short is safe, close Long

When viewing an equivalent entry and exit filter, the fired signals will be the same across Entry and Exit internally.

Watch out for this oppositeness in code. When matching an entry signal to exit signal, sometimes you may need to reference the exit signal's opposite (`getOppositeSignal()`)

- To see if an entry SignalShort was preceded by an exit of short trades: `entry.type (SignalShort) == exit.getOppositeType (result SignalShort)`

The dashboard has a switch to display the internal exit signal, or display the effective exit direction.

Call Path

Lorem ipsum

- MainMan.doCycle()
- DataMan.retrieveDataFromFilters()
    - FilterMan.calculateAllFilters() -> Filter.calculateSubfilterByIndex
        - DataHistory.addData
            - DataHistory.addSubSignalUnit
        - DataMan.symbol.updateSymbolSignal() – Set pending type and force for symbol signal
    - Data.addSymbolSignalUnit

Test Procedure

Procedure

1. Does a new signal open positions?

2. Does retrace not open additional positions?
3. Does retrace open IF an exit signal of the same type (internal opposite) was fired, and entry signal retraces?
4. Does retrace open IF there are no trades (i.e., an SLTP was triggered)
5. If SignalRetraceOpen enabled, does signal open after the elapsed time?

Case 1 and 2, and 5 (Stoch entry zone = 22, exit zone = 20)

- Signal short 1 – AUDUSD 2017.03.20 02:07:59
    - Case 5 - Several shorts inbetween – AUDUSD 2017.03.20 03:14:49
        - NOTE: 3400 SECS from last short signal 2017.03.20 02:17, short of one hour
- Signal long 1 – AUDUSD 2017.03.20 10:45:14
    - Several longs inbetween
- Signal short 2 – AUDUSD 2027.03.20 12:33:59

Case 3 – Change entry zone to 30, exit zone to 20

Stop levels and offsets

offsetStopLoss/unoffsetStopLoss family expects and outputs a **negative stop level offset in price units** from oppositePrice.

This means, for moving stops, the offset relative to oppositePrice must be figured before offsetting.

Proposed stop level must be **normalized and post-adjusted** (after offsetStopLoss and before unoffsetStopLoss) before checking for stop level progression.

Moving stop family checks for stop level progression, but does not check for when the proposed stop level is equal to current stop level. onModify has its own check for this to prevent ERR_INVALID_STOP

Test procedure

- SL/TPInitialEnable works properly.

- Moving stops all work properly: trailing, breakeven, jumping (Stoch entry zone = 22, exit zone = 20)

    - Short: AUDUSD 2017.03.20 16:00

    - Long: AUDUSD 2017.03.21 19:33

    - Separately

    - Stacked

    - Before/after break even

- SL/TPMinimumAdd

    - SGDJPY on ForexTime – 80 point minimum

    - Offsets work properly with and without moving stops

- SL/TPBelowMinimumAction: drop, set equal, do not set
    - Works properly with and without moving stops

Grid

Lorem ipsum

Test procedure

Duplicate grid direction where gridSetShort is clear and gridSetLong is filled. SignalShort is issued and hedge is enabled. Grid in both directions is set, even though gridSetLong is filled

(Stoch entry zone = 22, exit zone = 20)

- AUDUSD 2017.03.22 12:15:32

Baskets

Lorem ipsum

Test procedure

Enable hedged dual grid, test master separately, symbol separately, then the two together. Test Trailing/Breakeven/Jumping.

- AUDUSD 2017.03.21 00:30
    - Trailing stop: 12 pips
    - Breakeven: 1 pips/7 pips
    - Jumping stop: 10 pips
    - Initial stop: 10 pips
    - Initial TP: 10 pips