

# Foreign Exchange

Algorithmic Trading Global: **UBS TWAP**



UBS Electronic Trading

Technology with a **human edge.**

# Algorithm:

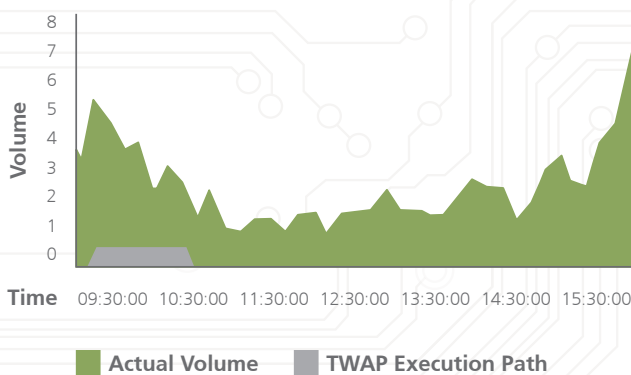
## UBS Time-Weighted Average Price (UBS TWAP)

**UBS TWAP is a time based order that attempts to trade at an even pace over the time you specify. You may consider this strategy suitable if you do not want changes in market volume to impact your execution schedule.**

TWAP taps in to our internal liquidity sources, including:

- UBS Price Improvement Network (PIN-FX)<sup>1</sup> is our matching engine where your Spot FX orders may match other client and UBS<sup>2</sup> orders at prices the same or better than the UBS Price<sup>3</sup>,
- UBS eFX is our electronic FX streaming price. Price formation and hedging are driven by quantitative models managing risk for a large<sup>4</sup> volume of diverse client flow.
- UBS Voice is our voice FX streaming price. Pricing can vary from eFX pricing because our voice desk manages a separate risk book.

**UBS TWAP attempts to trade at an even pace over a specified period**



Source: UBS December 2014. For illustrative purposes only.

TWAP uses proprietary logic to attempt to reduce the number of times TWAP must cross the spread in order to maintain its execution schedule. By using a variety of parameters, such as liquidity, volatility and order size, the algorithm can make trading decisions.

There are times when this logic becomes noticeable when trading TWAP. For example, it is not always necessary to immediately trade when UBS receives a TWAP order. It may be more advantageous to join the bid or offer, and then wait to be hit or lifted rather than immediately pay the spread. Equally, if it sees a narrow spread or unusually large bid/offer, it may cross the spread to get ahead of schedule.

### Parameters

- Start/Expiry Time
- Limit Price
- Max Spread
- Trigger Price
- Liquidity Pool

### Start/Expiry Time

Select a Start Time and an Expiry Time for your TWAP order. Note that minimum duration is one minute.

### Limit Price

Set a Limit Price to ensure that child orders will remain within the bounds you specify for the parent TWAP order. Note that if the bid/ask moves out of limit, once it returns, the algorithm is designed to work to “catch up” the needed volume. However, if the price moves back out of limit, the algorithm may not be able to complete your order by the expiry time.

<sup>1</sup>Note that PIN-FX is a new order book with low activity and in most cases your order will be routed to execute against UBS eFX or Voice prices where the cost of your execution is included in the UBS Price. 0.4% of executions resulting from orders handled by our smart order router occurred in PIN-FX, 3 Months data as of Jan 22, 2015.

<sup>2</sup>Orders in PIN-FX may include manually entered hedging orders from UBS FX Traders.

<sup>3</sup>The UBS Price or Spread is a client specific price formed by the UBS eFX or Voice Desk. We do not provide all clients with the same spreads or liquidity. A client's price may factor in brokerage, risk, sales coverage and other client services.

<sup>4</sup>#1 Electronic Trading Market Share, Source: Greenwich 2014 FX Survey.

<sup>5</sup>The algorithm typically compares the current UBS Spread to the average UBS Spread for the same 30 min window of the previous 20 days; however the algorithm reserves the right to review and alter these time periods in order to optimize performance.

### Max Spread

Add a Max Spread in pips to instruct the algorithm to protect your order during unexpected economic events. Setting this parameter typically prevents your TWAP order from executing when the visible UBS market spread exceeds your specified Max Spread.

### Trigger Price

Set a Trigger Price for your TWAP order to instruct the algorithm to remain inactive until the Mid of the UBS Price goes through your specified level during UBS market hours.

### Liquidity Pool

De-select UBS Voice Desk Liquidity if you do not wish your TWAP order to execute on prices from the UBS voice desk. Note that parent orders are not visible to voice desk traders, even if you select Voice Desk Liquidity.

### Currencies Supported:

- AUD, CAD, CHF, EUR, GBP, JPY, NZD, USD
- DKK, NOK, SEK
- CNH, CZK, HKD, HUF, ILS, MXN, PLN, RON, SGD, THB, TRY, ZAR

### Contact:

Talk to your UBS FX representative or contact us for more information.

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