FX Derivatives

David Leigh, Global Head of FX Spot and Electronic Trading
Outline

1. Market Overview
2. Recent Evolution in Market Structure
3. Client Activity
4. Liquidity
5. Predictive power of the FX Option market
FX Derivatives – Market Overview

- FX Derivatives make up less than 5% of FX market, a share that has dropped over time.

- Not much more than 5% of this is traded in a way that isn’t ‘voice.’

- Not where we thought we would be – electronification has thus far had a very limited impact on the market as a whole.
FX Derivatives – evolution

... Big efforts placed into electronic price distribution across the market.

- 4 out of every 5 trades DB trades is electronic
- 19 out of every 20 prices DB makes are electronic
- 1 in 3 trades is ‘exotic’

- Unprecedented requests and volume in 2020
- Optimism for ‘Virtuous’ cycle
**FX Derivatives – Client Activity**

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Vanilla</th>
<th>Barrier</th>
<th>MultiFactor</th>
<th>Structured Forward</th>
<th>Vol Product</th>
<th>Yield Enhancement</th>
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<tbody>
<tr>
<td>Corporate</td>
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<tr>
<td>Hedge Fund</td>
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**Example Trade**

- Vanilla
- Knockout Option
- Dual Digital
- Target Profit Forward
- Volatility Swap
- Dual Currency Deposit

**FX Derivatives Product Popularity**

- **Most client segments are active across both vanilla and exotic space**
- **Mix of volatility buying and selling across clients.**
Die Deutsche Bank

Foreign Exchange

FX Derivatives – Liquidity Overview

1. Exotic liquidity is principally determined by vanilla liquidity.
2. For EM currencies, rehedging costs increase exotic spreads. Good vanilla liquidity now doesn’t guarantee it in the future.
3. Potential gap risks in spot will increase parity spreads.
4. All else equal, long dated parity is lower spread than short dated.
5. Most EM currencies have very poor liquidity beyond 2y.

<table>
<thead>
<tr>
<th></th>
<th>Vanilla</th>
<th>Vol Swap</th>
<th>Parity</th>
<th>Long Dates</th>
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<tr>
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<td>Very Good</td>
<td>Very Good</td>
<td>Good</td>
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<tr>
<td>USDJPY</td>
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<td>Very Good</td>
<td>Good</td>
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<tr>
<td>AUDUSD</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>OK</td>
</tr>
<tr>
<td>USDCNH</td>
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<td>OK</td>
<td>OK</td>
<td>Poor</td>
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<tr>
<td>USDBRL</td>
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<td>OK</td>
<td>OK</td>
<td>Very Poor</td>
</tr>
<tr>
<td>USDZAR</td>
<td>OK</td>
<td>Poor</td>
<td>Poor</td>
<td>Very Poor</td>
</tr>
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</table>

Liquidity in Derivative markets is dependent upon both what is available in the underlying markets today and expectations on what will be there in the future.
A common question is the degree to which the option market activity is predictive of future spot market moves.

Our research, using public market transaction data, indicates that there has historically been directional information in the asymmetry of option activity.

Option flow indicators are estimated using data from the Depository Trust and Clearing Corporation (DTCC).

For a given currency pair, it is computed daily as follows:

1. We calculate option deltas for all European options expiring in less than one year, and select options whose (absolute) deltas range between 0.25 and 0.75.
2. We calculate the difference between notional volumes, traded on aggregate over the past 4 weeks, of the calls and puts from Step (1). This smoothed measure controls for noise and gives us the base notional volume imbalance.
3. We standardise the imbalance measure calculated from Step (2) by dividing it by its 1-year historical volatility.