Cleared OTC Foreign Exchange Forward

July 2016

Margin Model

Current OTC FX Margin Model

Margin Model Goals	
Scalable to other currency pairs	✓
Satisfy coverage requirements*	✓
Quickly reacts to changes in FX rate and volatility regimes	✓
Stable during periods of low and moderate volatility	✓
Ease of implementation	✓
Transparency for market participants	✓

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* The model provides 99% 5-day MPOR coverage

Current OTC FX Margin Model

Risk Framework

Filtered Historical VaR Risk Framework

Filtered Historical VaR risk framework:

- Is a refinement and an extension to historical simulation risk framework;
- Enriches the traditional non-parametric historical simulation with parametric time series models;
- Normalizes historic scenarios from different market regimes to be relevant to the current market environment.

Model details:

- The current OTC FX Margin Model incorporates historical scenarios for FX forward curves and discounting curves with a lookback of 5 years;
- Historical returns are derived using 5-day log returns for FX forward and discount curves;
- Historical returns are scaled using an appropriate forecast of short term volatility. Exponentially Weighted Moving Average (EWMA) model is used to determine both the realized volatility and a forecast of volatility over the close-out horizon. Furthermore, the forecast EWMA volatilities are floored to ensure that margins are sufficient in low volatility environment;
- Once the P/L distribution is determined based on the above scenarios, margin is calculated using Value at Risk risk measure (VaR) with 99.7% confidence level.

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