Probability Analytics and Transactions Costs in the Era of Event Risk

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Investment advice is neither given nor intended

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Pre-Brexit Vote: USD per GBP
Expected Probability Distribution
Brexit: Price and Volume (CME) of British Pound on 24 June 2016
E-mini S&P500, Night of US Election (Nov 8-9)

- CME Group Record Daily Volume
- CME Group Record Overnight Daily Volume
Current S&P500® Expected Return: Implied Volatility vs Enhanced Risk Analysis

Normal Distribution based on Options Implied Volatility

Enhanced Assymetrical Distribution based on Market Dynamics

Source: CME Group Data Science Team.
December E-Mini S&P 500 Futures (ESZ6)
Nov 8, 2016 9PM-Midnight CT
Cost to Trade 100 Lots

Cost To Trade (Ticks)

Upper Quartile
Median
Lower Quartile
December E-Mini S&P 500 Futures (ESZ6)
Nov 9, 2016 9AM-Noon CT
Cost to Trade 100 Lots

Cost To Trade (Ticks)

09:00 09:30 10:00 10:30 11:00 11:30 12:00

Upper Quartile

Aggressing Buyer
Aggressing Seller
December E-Mini S&P 500 Futures (ESZ6)
Nov 9, 2016 9AM-Noon CT
Cost to Trade 100 Lots

Cost to Trade (Ticks)

Upper Quartile
Median
Lower Quartile

09:00 09:30 10:00 10:30 11:00 11:30 12:00
E-mini S&P Futures December Expiry (ESZ6) - November 9, 2016 ETH
Cost to Trade 100 Lots

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US Elections: 9 November 2016 Session
E-Mini S&P500® Nearby Futures

Minute by Minute View of Liquidity

Source: CME Group, Intelligence & Analytics, Data Science

Ticks Required to Fully Execute 100 Lot Trade

Aggressing Buyer in Red

Aggressing Seller in Green
US Elections: 9 November 2016 Session
E-Mini S&P500® Nearby Futures

Minute by Minute View of Liquidity

Buying is more expensive

Selling is more expensive

Source: CME Group, Intelligence & Analytics, Data Science
Euro FX Futures June Expiry (6EM7) - April 24, 2017 ETH

Cost to Trade 100 Lots

- Aggressing Buyer
- Aggressing Seller

Upper Quartile
Median
Lower Quartile

Chicago Time [April 23-24, 2017]
Euro FX Futures June Expiry (6EM7) - April 24, 2017 RTH
Cost to Trade 100 Lots

Cost to Trade (Ticks)

Apr/24 8AM  Apr/24 10AM  Apr/24 12PM  Apr/24 2PM

Chicago Time [April 24, 2017]
Ticks Required to Fully Execute 100 Lot Trade

Minute by Minute View of Liquidity

Source: CME Group, Intelligence & Analytics, Data Science
Buying is more expensive

Selling is more expensive

Minute by Minute View of Liquidity

Source: CME Group, Intelligence & Analytics, Data Science
British Pound Futures June Expiry (6BM7) - June 9, 2017 ETH
Cost to Trade 100 Lots

- Aggressing Buyer
- Aggressing Seller

- Upper Quartile
- Median
- Lower Quartile

Chicago Time [June 8-9, 2017]
British Pound Futures June Expiry (6BM7) - June 9, 2017 RTH
Cost to Trade 100 Lots

- Aggressing Buyer
- Aggressing Seller

Cost to Trade (Ticks)

Upper Quartile
Median
Lower Quartile

Chicago Time [June 9, 2017]
UK Elections: 9 June 2017 Session
British Pound Nearby Futures

Ticks Required to Fully Execute 100 Lot Trade
Minute by Minute View of Liquidity

Source: CME Group, Intelligence & Analytics, Data Science

Aggressing Seller in Green
Aggressing Buyer in Red
UK Elections: 9 June 2017 Session
British Pound Nearby Futures

Minute by Minute View of Liquidity

Source: CME Group, Intelligence & Analytics, Data Science

Buying is more expensive
Selling is more expensive

Asia/Europe
US Hours

Buy minus Sell Spread of Ticks Required to Fully Execute 100 Lot Trade

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Thank you.