

Presentation to the Trends in FX Market Structure and Liquidity



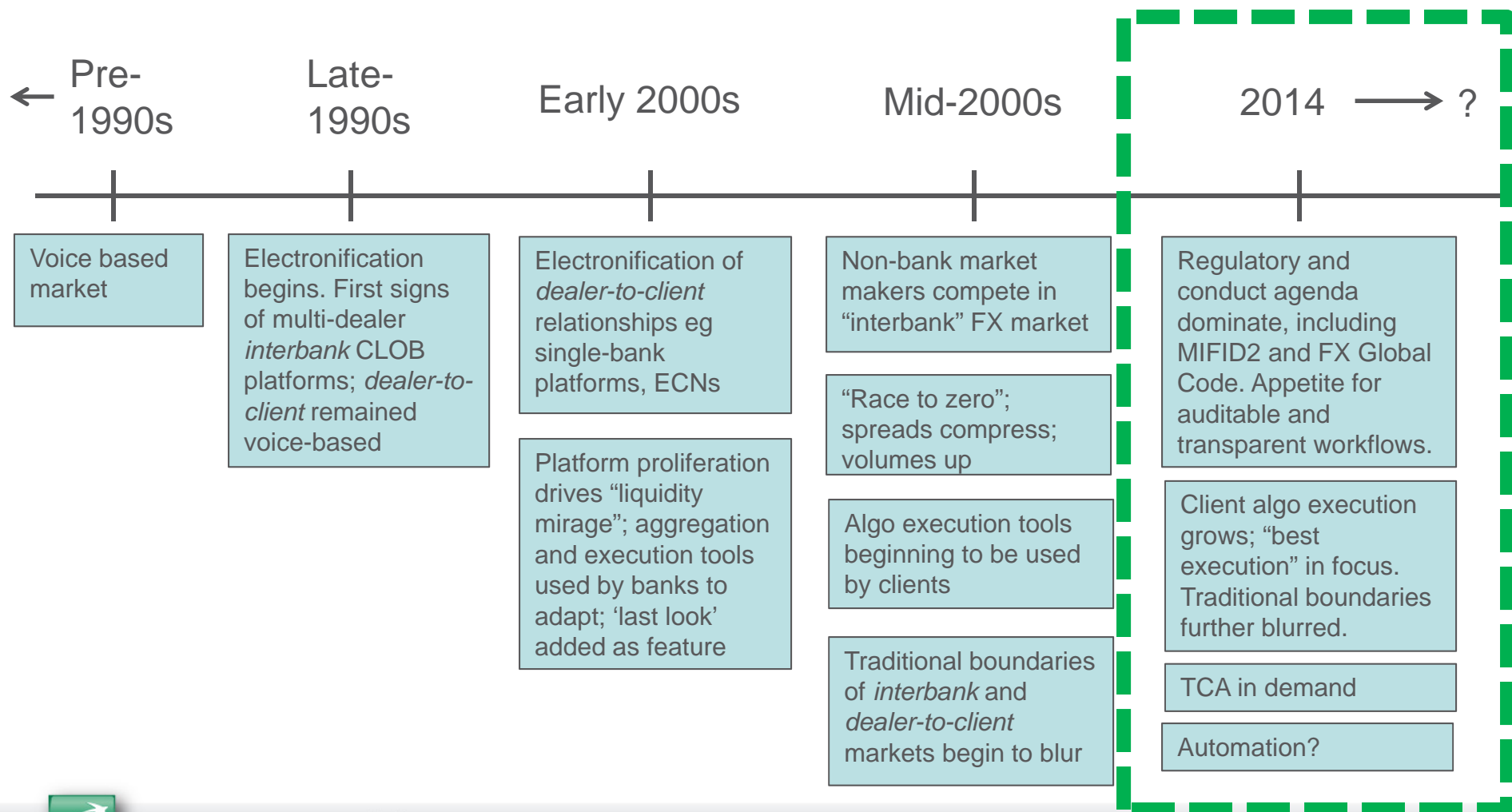
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THE EVOLUTION OF FX SPOT MARKET STRUCTURE - AT A GLANCE



THE FX MARKET IS IN A STATE OF TRANSITION

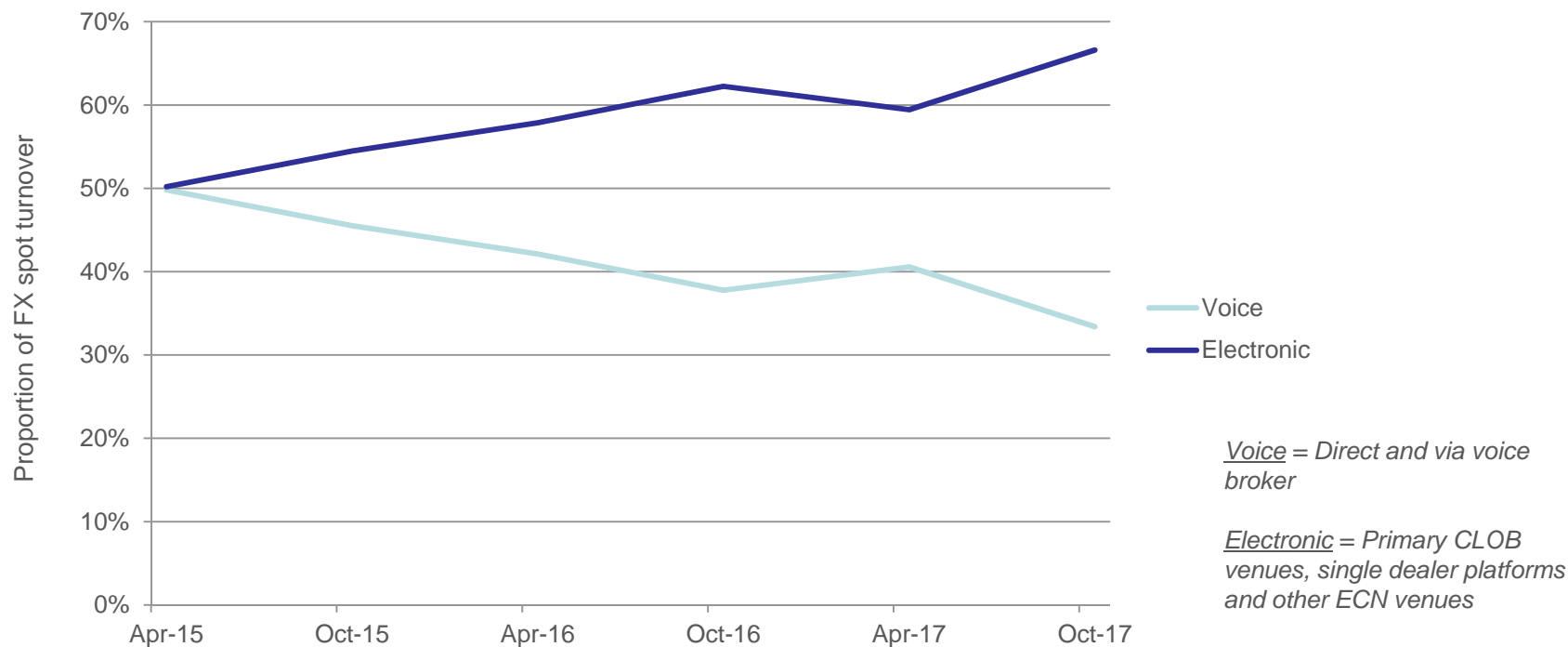
- MIFID II has increased the focus on “**best execution**” and **transparency** in FX markets;
- **The FX Global Code** has set the “industry standard” for good practice and is driving increasing levels of disclosure across the industry
- There is a trend towards **auditable and measurable automated FX workflows**
- Participants increasingly want robust, comprehensive **TCA** metrics, including from third-party providers
- Increasing numbers of buy side participants are **willing to hold market risk**, for example through algorithmic execution
- Some participants want their **flow segregated** from traditional market making activities through algo desks

What does this mean for the microstructure of the FX market?



ELECTRONIFICATION AND THE TREND TOWARDS AUTOMATION

UK OTC FX Spot turnover by execution method



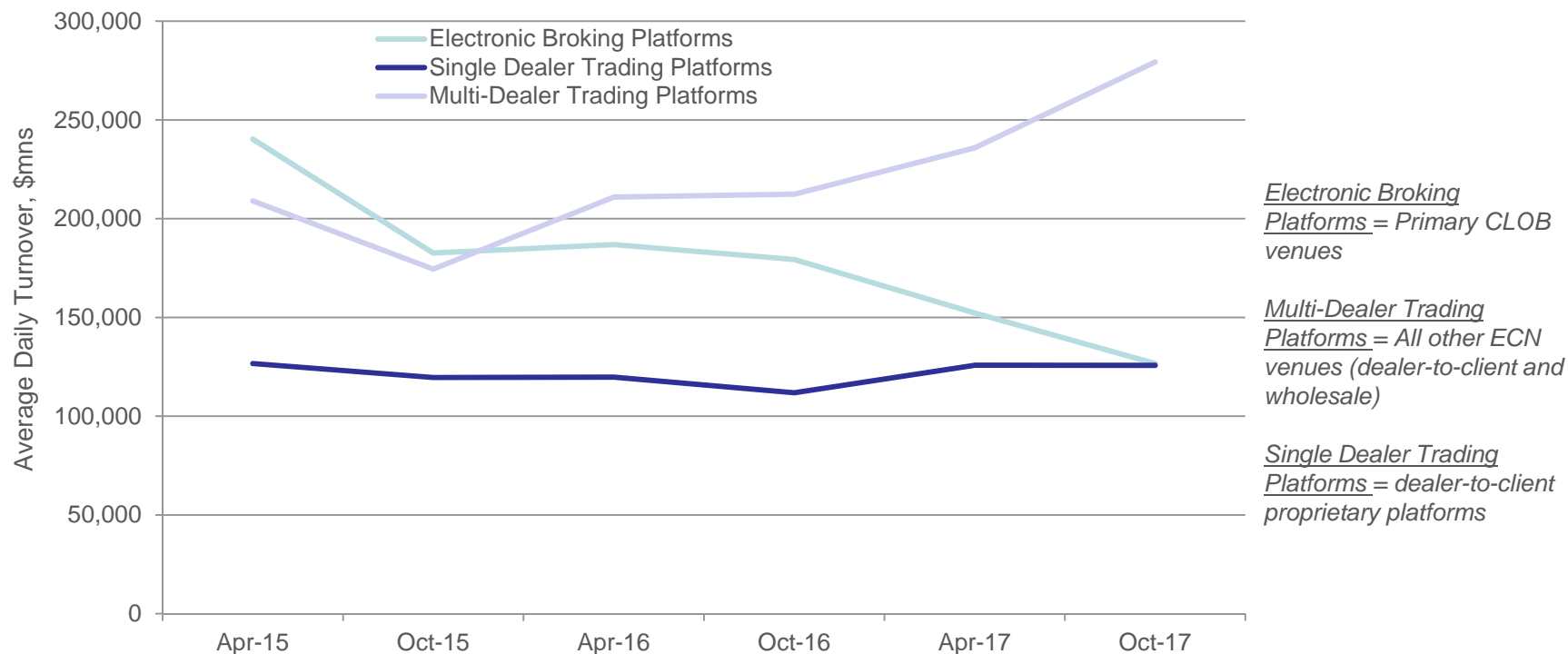
Source: FXJSC 6-monthly FX turnover survey

- Over recent years there has been a tectonic shift in the trend towards electronic execution



ELECTRONIFICATION AND THE TREND TOWARDS AUTOMATION

UK OTC FX Spot turnover by electronic execution type



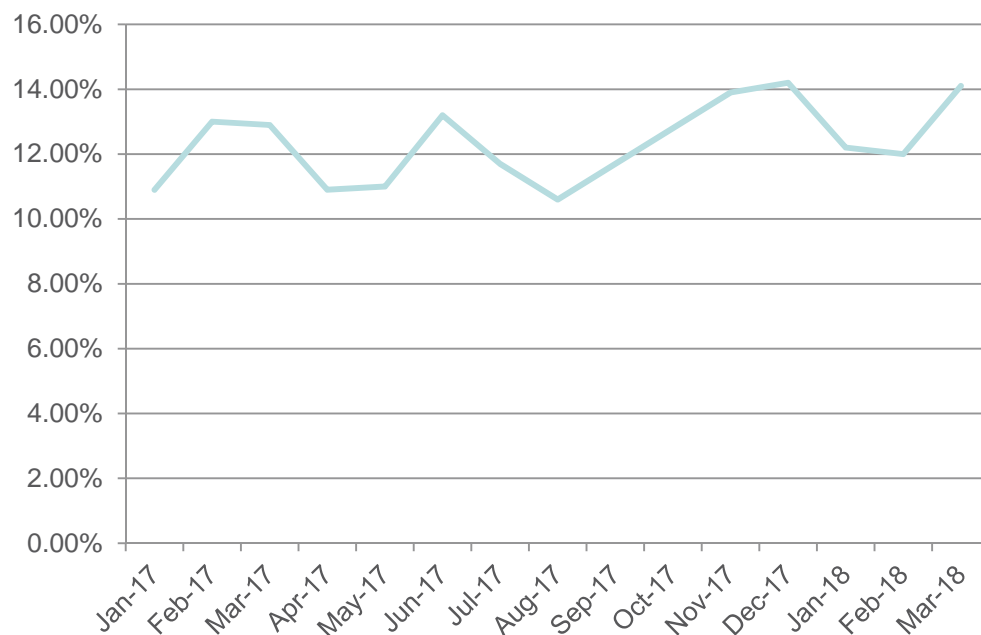
Source: FXJSC 6-monthly FX turnover survey

- Strong growth amongst “secondary” ECNs
- Trend suggests that the electronic FX market is becoming more fragmented



ELECTRONIFICATION AND THE TREND TOWARDS AUTOMATION

Algorithmic order volume as a proportion of electronic FX spot volume



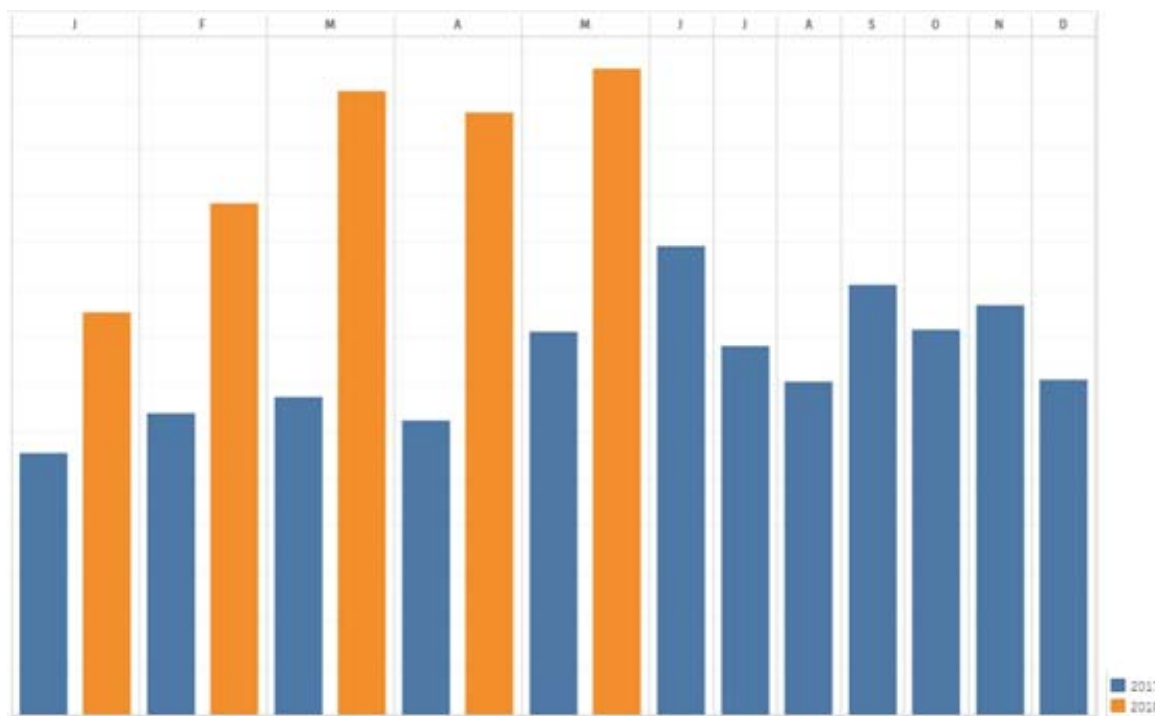
Source: Expand Research. Data is based on a subset of the largest algo dealers in the market.

- Data supports anecdotal evidence that clients are increasingly automating their FX spot execution through the use of algorithms
- As a proportion of overall e-volumes, execution algo volumes remain relatively low
- Feedback suggests flow automation is top of the buy side agenda for 2018



ELECTRONIFICATION AND THE TREND TOWARDS AUTOMATION

BNP algorithmic order volumes, 2017 vs 2018



Source: BNP Paribas calculations

- Over the past few months, we've seen marked growth in the algorithmic trading space



THE EVOLUTION OF TRANSACTION COST ANALYSIS

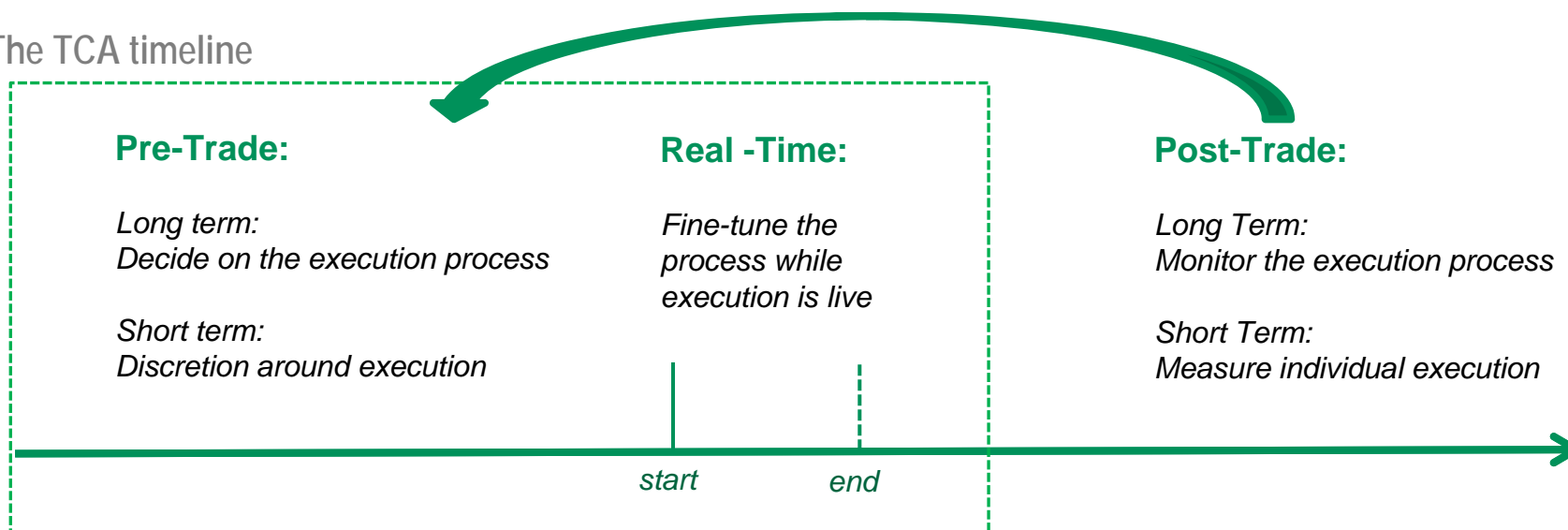
- With the demand for auditable, transparent and automated execution solutions growing, and MIFID2 [indirectly] sharpening the focus on “best execution” in FX, we’re seeing the **demand for TCA proliferate** and become ever-more sophisticated
- Estimates suggest around 60%+ of buy side firms are now using TCA (vs 80% in equities and 30% in Fixed Income)
- Post-trade TCA has evolved and end-users are **using different, complementary analyses**:
 - Broker-provided: *provides execution and trading analysis leveraging the large amounts of data embedded in electronic market making and algorithmic execution*
 - Internal interpretations: *quantitative analysis that provides internal control and detailed analysis of calculations and conclusions*
 - Third-party TCA providers: *provide an independent assessment to help demonstrate “best execution”*



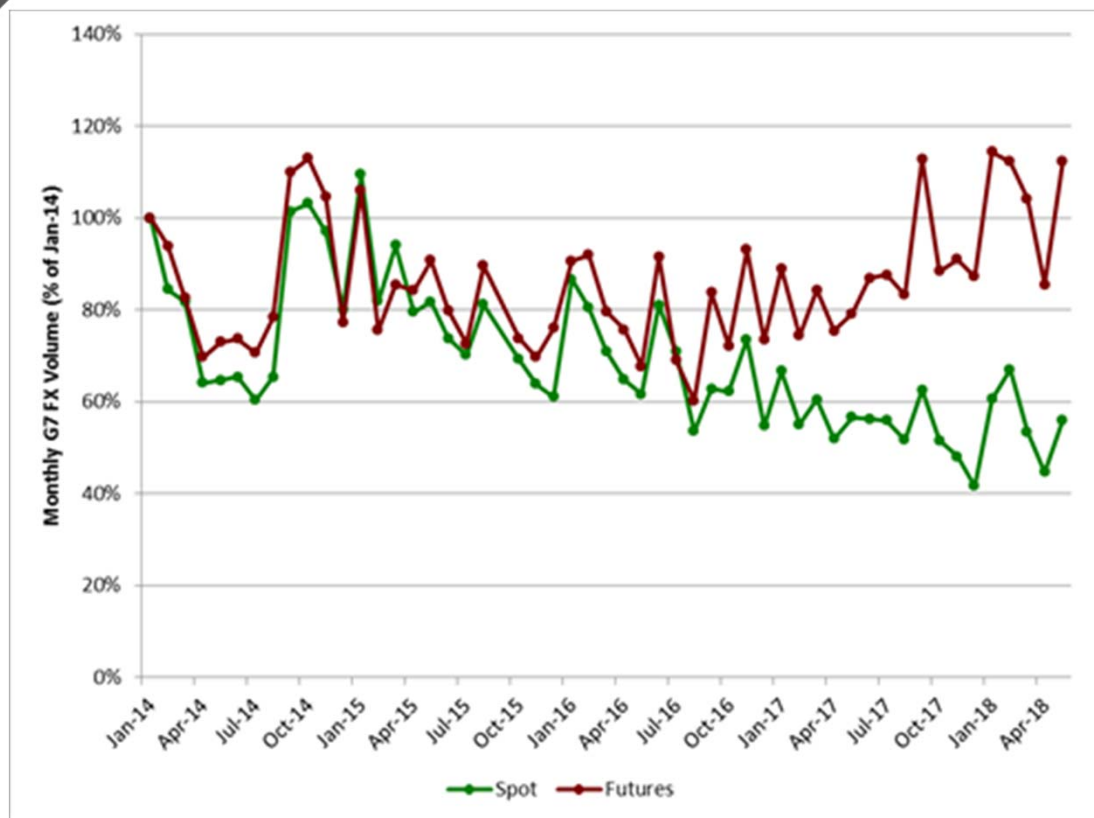
THE EVOLUTION OF TRANSACTION COST ANALYSIS

- And the **timeline for TCA analysis is broadening**
 - Pre-trade: *Estimate market impact and slippage before the trade*
 - Real-time: *Receive performance updates, and estimate future performance of a live trade*
- However, **challenges with market data** remain: 85%+ of FX spot volume is still largely invisible to most participants

The TCA timeline



FX LIQUIDITY: TRENDS IN G7 PLATFORM VOLUMES

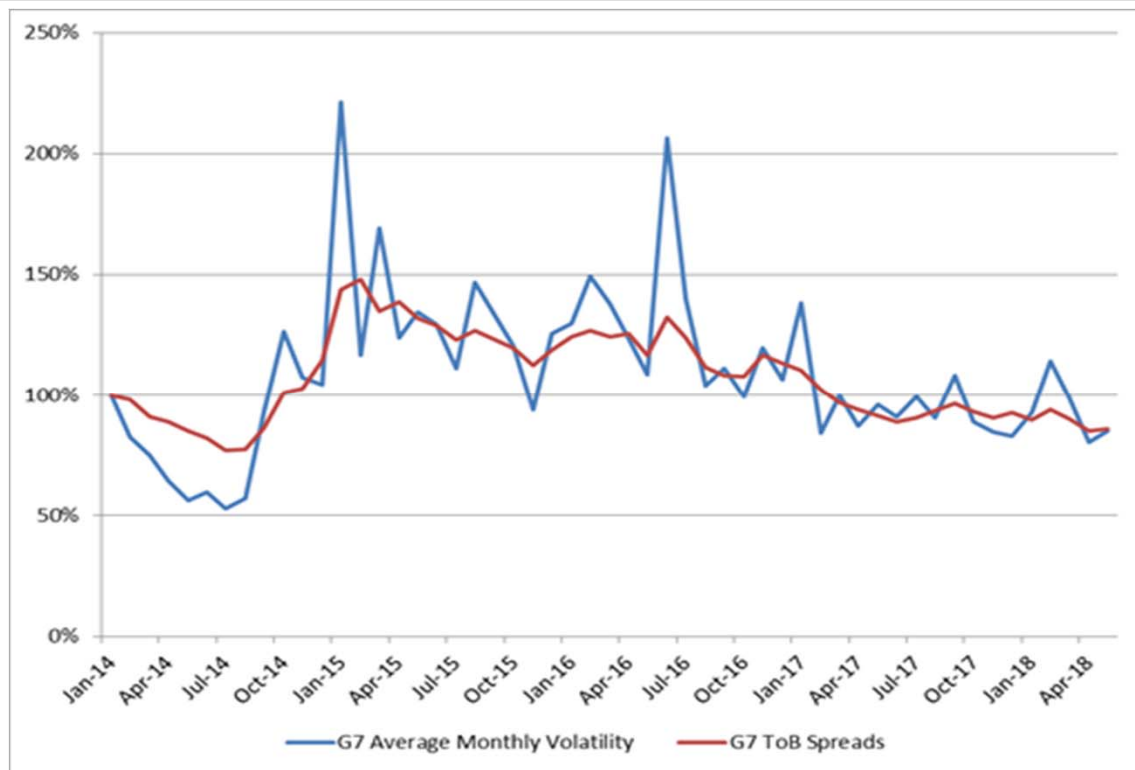


Source: Reuters, EBS, Hotspot, Currenex, ParFX, LMAX, CME, BNP Paribas calculations

- Up until early 2017, we observed fairly consistent trends in volumes transacted on major OTC venues vs futures markets
- Since early 2017, there has been a dislocation between the two
- Potentially consistent with further diversification in FX wholesale market trading volume towards regulated exchanges, adding to broader market fragmentation



FX LIQUIDITY: TRENDS IN G7 PLATFORM SPREADS

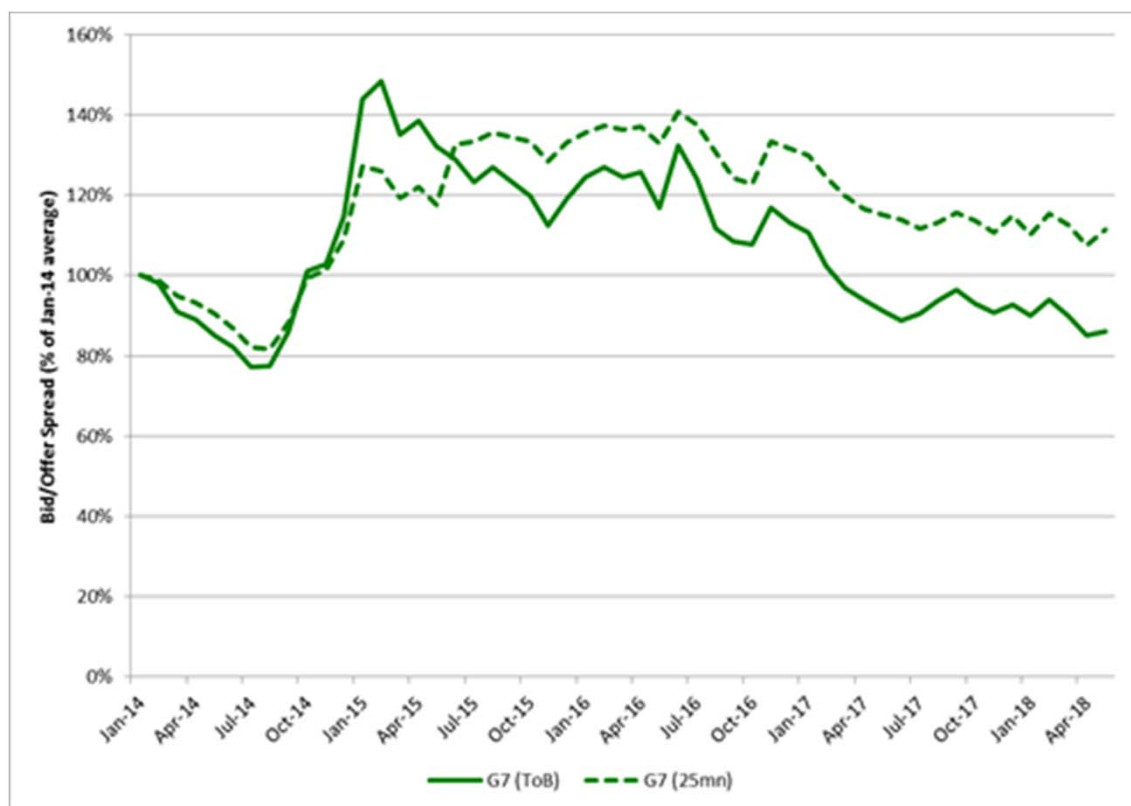


Source: Reuters, EBS, BNP Paribas calculations

- The widening of spreads triggered by the SNB event in 2015 has now largely unwound
- The relationship between volatility and spreads has remained reasonably constant



FX LIQUIDITY: TRENDS IN G7 PLATFORM SPREADS

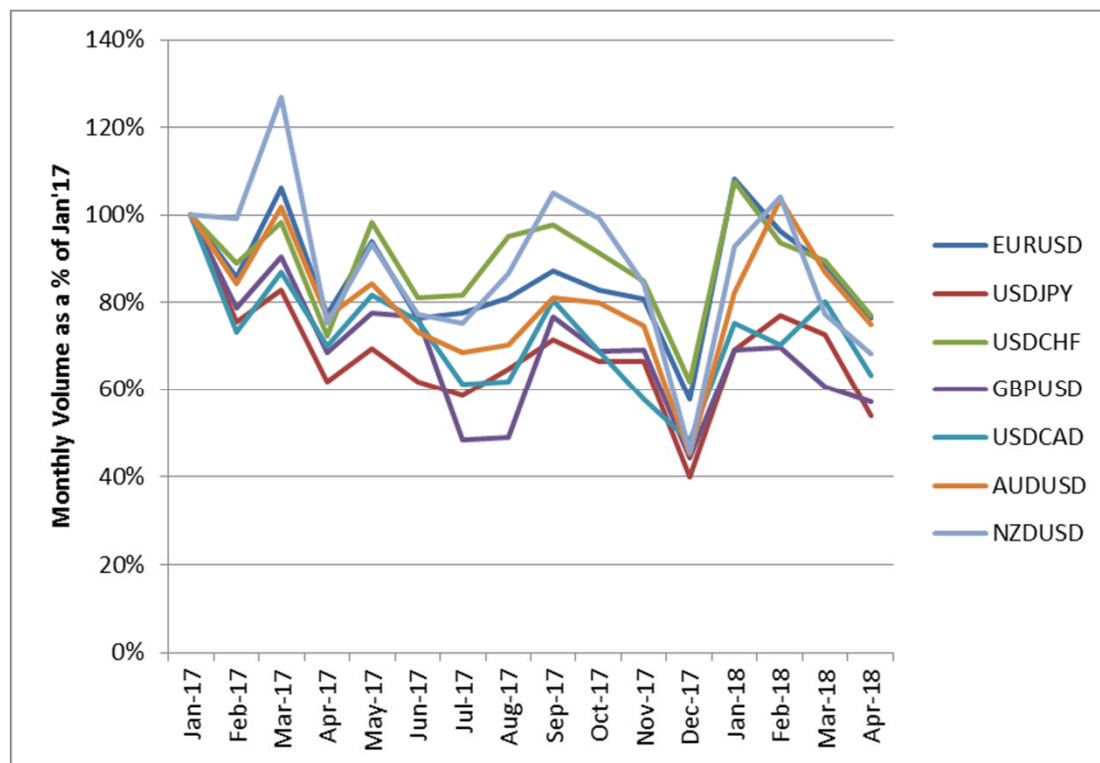


Source: Reuters, EBS, BNP Paribas calculations

- Interestingly, the spread for 25mn has tightened by approximately 17% from its wides, while the inner bid/offer (top of book) has tightened by more than 42% since the peaks
- Potentially consistent with growing algorithmic trading
- May also be influenced by PTF activity on major venues who typically trade at TOB



FX LIQUIDITY: RECENT TRENDS IN G7 PLATFORM VOLUMES

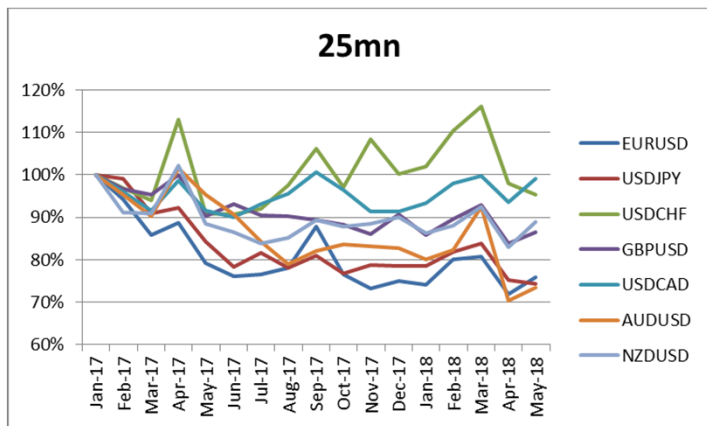
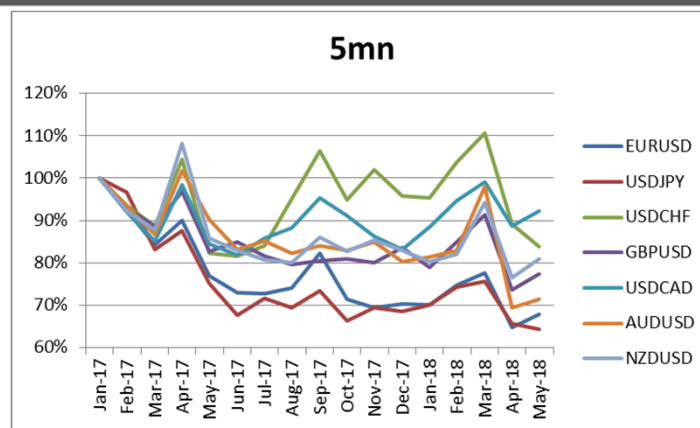
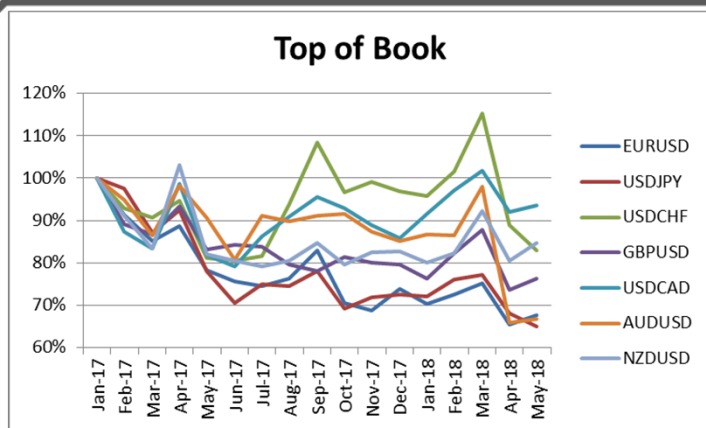


Source: Reuters, EBS, Hotspot, Currenex, Fastmatch, LMAX, ParFX, BNP Paribas calculations

- In general there was the seasonal rise in volumes to start 2018
- But even with this rise, JPY, CAD, and GBP volumes across Q1 2018 were considerably below those in Q1 2017
- Volumes for EUR, CHF, AUD, and NZD during Jan and Feb 2018 were very strong compared to 2017
- Volumes in Mar and Apr 2018 have fallen sharply across all G7 pairs and now trade well below their 2017 levels



FX LIQUIDITY: RECENT TRENDS IN G7 PLATFORM SPREADS



- The spread tightening in early 2017 stabilised by mid-2017 and in most cases remained relatively constant over H2 2017
 - *The main exception being in USDCHF which saw a considerable increase in volatility in H2 2017 which caused spreads to widen alongside*
- Over Q1 and Q2 2018 spreads have been highly correlated to traded volumes (and volatility): there was a notable widening in Jan/Feb as volumes spiked and then a sharp tightening during Mar and Apr as volumes shrunk



SUMMARY

- The FX market is being driven by the regulatory and conduct agenda towards more transparent, auditable workflows
- MIFID2 sharpened the focus on “best execution” in FX, further driving the trend towards sophisticated, thorough TCA
- Combined, this is driving further electronification of the FX market...
- ...and also broadening demand for automated, algorithmic execution solutions, not least as end-users become more comfortable holding market risk
- We are seeing these trends impact market liquidity, as top of book spreads narrow relatively sharply compared to deeper book size



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