CME FX: Presentation for the ECB Foreign Exchange Contact Group

March 2024

Role and Value of Primary Venues

- Centralised and efficient price discovery; firm (no last look) and all to all marketplaces
- Reference prices for the fragmented FX spot market
- Core components of benchmark / fixing rate calculations as well as Options contract obligations
- Centralised liquidity in times of market volatility and dislocation (Brexit, Covid, Ukraine)
- Effective mechanisms for currency market operations by central banks and a centralised point for regulatory oversight

"primary venues remain an integral part of the FX Market where the prices published and critically printed, that are of greater importance than their share of volume" **

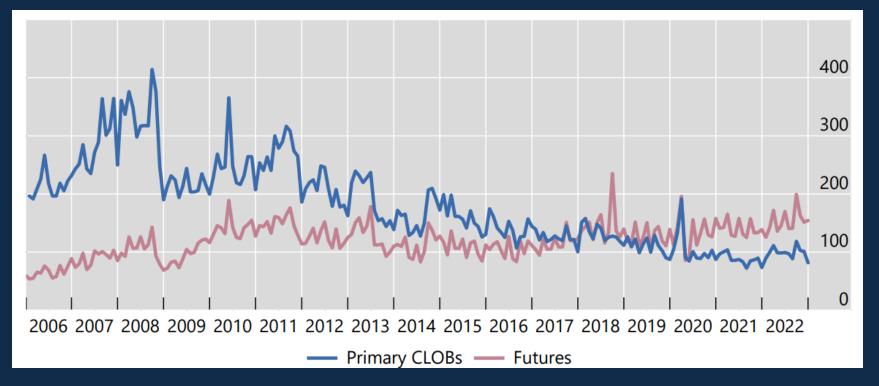
Catalysts for change:

Internalisation: "The share of internalisation in major currency pairs is now estimated to have grown to 80% or more for the largest dealers"*

Use of Dark Pools and secondary venues with last look: "The desire of market participants to manage the information revelation process in the market has likely been one of the factors driving the recent increase in the number of trading venues and available execution protocols."*



Volumes: Primary CLOBs and FX Futures

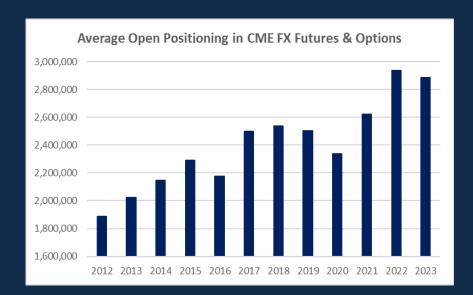


Source: BIS paper from April 2023: https://www.bis.org/publ/work1094.pdf



FX Futures Volumes and Adoption

"Some LPs increasingly look to exchange-traded currency futures for reference prices and for hedging their spot activity...a growing number of market participants of all types now seems to consider currency futures traded on the Chicago Mercantile Exchange (CME) as at least a close cousin of the primary CLOBs" *



| Total CME FX Futures ADV (2023) | \$78.7 bn | |
|-----------------------------------|-----------|--|
| Euro | \$32.3 bn | |
| Japanese Yen | \$15.8 bn | |
| British Pound | \$8.3 bn | |
| Australian Dollar | \$6.9 bn | |
| Canadian Dollar | \$6.3 bn | |
| Swiss Franc | \$3.2 bn | |
| New Zealand Dollar | \$2 bn | |
| Mexican Peso | \$1.9 bn | |
| EUR/GBP | \$491 m | |
| EUR/JPY | \$370 m | |
| Brazilian Real | \$301 m | |
| Offshore Chinese Renminbi \$185 m | | |



Potential Catalysts for FX Futures

Transparency

Liquidity

Cost

- Regulated marketplace
- Firm pricing with no last-look
- Ease of allocations and operational processing
- All positions and settlements netted against CME
- All notional exempt from annual AANA calculation

- All-to-all anonymous trading, with LP counterparty risk removed
- Diverse ecosystem of participants
- Choice of trading styles (electronic and bilateral)
- Credit & CSA agnostic pricing
- No need for ISDAs or bilateral lines

- Ability to trade directly with chosen liquidity providers
- Active and passive trading supported
- Potential capital savings and balance sheet efficiencies GSIB and SA-CCR
- Initial Margin efficiencies especially compared with ISDA SIMM

Look Forward / Near Term Developments

1. Continued investment to the primary market

- Quarter pips for AUD/USD and EUR/USD
- Faster market data
- Enhanced order types
- Calculation and publication of a "true mid" rate

2. FX Spot+

- CME FX Spot+ will enable OTC spot FX market participants to interact with CME FX futures liquidity through an all-to-all, transparent central limit order book while giving FX futures users broader access to OTC liquidity
- This unique liquidity connection will be made possible by implied matching through CME FX Link, a liquid, tradeable spread between OTC spot FX and CME FX futures

3. Further Liquidity Provider Automation

 25 liquidity providers supporting OTC style trading (Blocks & EFRPs) of CME FX Futures & Options – clear investment from many of these firms to further automate and enhance their client offerings and interaction with FX futures

Discussion Topics

- 1. Is the role of primary venues more important than ever given the increasing fragmentation of the global FX market?
- With the FX futures central limit order book playing an increasingly prominent role in FX price discovery, will it in the future help inform market highs/lows and/or dispute resolution?
- 3. Will products that connect the Spot FX market to cleared FX futures drive greater participation in futures markets?
- 4. What further developments are needed to further bridge the OTC market with cleared FX futures? (more expiry dates / more automated, low touch trading platforms etc)

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Eurex FX

Foreign Exchange Contact Group

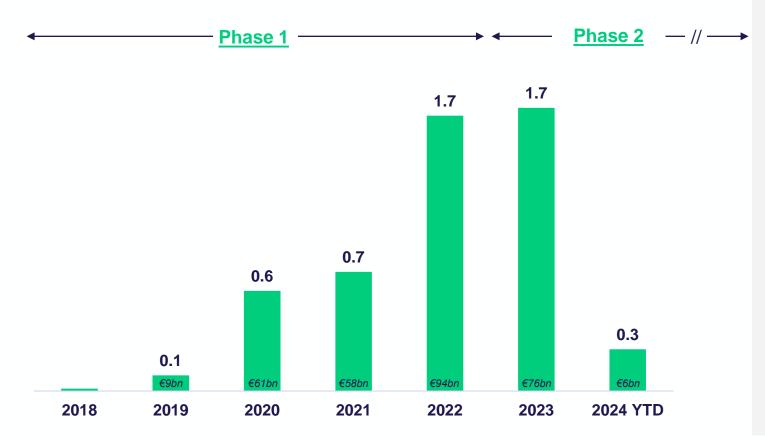
19 March 2024



Eurex FX volume growth as a result of existing and new users of FX futures demanding cleared FX solutions

Eurex FX Volumes 2018 - 2024 YTD

Per annum, in million contracts (bold) and notional (italic), all ccy pairs, data as of 05 March 2024



Phase 1 (2018 - 2022)

- Eurex & 360T build cleared FX liquidity hub in Europe
- Initial value proposition: attractive pricing, broader collateral universe, European focus
- Volume growth through existing FX futures users as pilot clients & first movers

Phase 2 (since 2023)

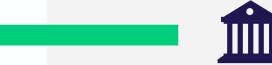
- Regulatory tailwinds: SA-CCR and UMR
 Phase 6 > FX futures to mitigate reg. cost
- Substantial demand from OTC FX buy- and sell-side participants for cleared solutions
- 11 banks onboarded in 15 months (total: 22)
- Emergence of hybrid trading models
- All major dealers to offer low touch execution services for FX futures
- OTC FX platforms (e.g. 360T) integrating & innovating FX futures trading

FX market participants are discovering FX futures address current regulatory changes in OTC FX markets

FX market participants are relying on FX futures instruments to address heightened regulatory requirements.







Buy-Side

Challenges of uncleared FX

- Growing funding cost impact of uncleared margin rules (UMR)
- SA-CCR threatens pricing for buyside through increasing capital cost

Goals

Mitigate UMR and SA-CCR impact

FX Futures

Benefits

- Easily accessible via existing infrastructure for equity & fixed income futures
- Centrally cleared for greatest counterparty risk protection and capital efficiencies
- Multilateral netting reduces risk exposure and optimizes portfolios under UMR
- Possibility to maintain bilateral FX relationships (blocks & EFPs)

FX Dealers

Challenges of uncleared FX

SA-CCR may increase capital cost for directional and uncollateralized **FX** portfolios

Goals

- Mitigate SA-CCR impact
- Offer UMR efficient solution to clients

Connecting liquidity pools and avoiding market impact through off-book FX futures trading models

| | | Execution | Liquidity | Market Impact (in comparison to OTC FX) |
|----------------------------------|--------------------------------------|--|---|--|
| On-exchange (on-screen) | Central Limit Orderbook (CLOB) | Market / limit order in the exchange orderbook | Liquidity might be sourced in OTC FX or FX futures markets | Slippage may be greater than in OTC markets in case of exceptionally large orders |
| Off-exchange (bilateral trading) | Block Trades | Bilateral RFQ with selected panel of FX dealers | Liquidity commonly sourced in OTC FX markets | Minimal market impact / slippage for clients as price is pre-agreed before execution |
| | Exchange-for- physicals (EFPs) | Simultaneous transaction of an OTC FX and an FX futures instrument | Enables hybrid trading models connecting OTC FX and listed FX liquidity pools | Execution can take place in regular OTC FX markets |

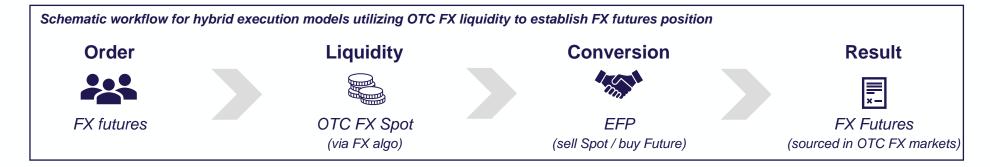
Focus on off-book FX futures

- Off-exchange FX futures increasingly used by OTC FX participants on buy- and sell-side
- Clients and banks maintain their FX relationships while optimizing portfolios under UMR and SA-CCR
- Liquidity sourced directly from OTC FX dealers and/or OTC FX markets

Emergence of hybrid trading models and hybrid FX platforms to connect OTC and listed FX markets



- Emergence of hybrid execution workflows for FX futures to connect OTC FX and listed FX liquidity pools
- Most FX dealers now offering / launching low touch execution services for FX futures (e.g. EFP workflows)
- Increasing number of tier 2 and regional banks working on similar services as well



Hybrid FX Platforms

- FX platforms integrating FX futures to enable side-by-side trading of OTC and listed FX instruments
- Example 360T:
 - RFQ based trading for block trades & RFQs between dealers and buy-side

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- Integration into OMS enables OTC style execution
- Further developments: API integration, calendar rolls, assignments, etc.

Launch of flexible futures might enable more market participants to access FX futures

Alpha generating strategies

FX futures are highly standardized instruments which are predominantly **used for FX hedge activity or alpha generating strategies**. Future market innovations may include flexible expiries to provide users greater choice and enabling more users to access FX futures products.

- Outlook: Flexible futures
- Potential introduction of:
 - Additional expiries (e.g. daily/weekly/monthly expiries)
 - Flexible expiries (incl. broken dates)

- Greater coverage of OTC FX market and related trading strategies
- Trading with/for exchange of principal
- Full OTC clearing capabilities for FX forwards and FX swaps via FX futures

Questions for discussion

- **Future proof:** We expect the majority of FX execution business to remain fully OTC, whereby cleared post-execution service will become more relevant. Do you agree with this statement and which participants / client types will benefit from cleared FX futures the most?
- **Flex futures:** Will flexible expiration dates for FX futures help to address current challenges in OTC FX markets?
- Automation: FX platforms like 360T are driving the automation of bilateral FX futures trading.
 What is needed to help OTC FX users to access FX futures?

Appendix

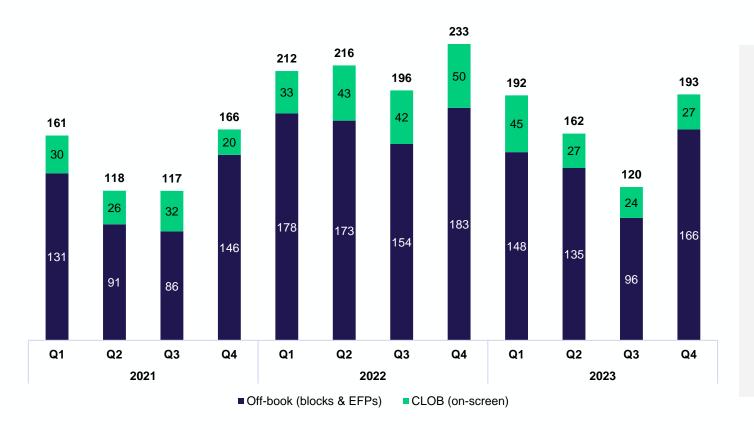


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Trading participants prefer executing FX futures outside the orderbook on Eurex on a bilateral basis via blocks & EFPs

Eurex FX Volumes by trade type: CLOB vs. Off-book

Per quarter, in thousand contracts, regular FX futures only, excl. USD/KRW KRX partnership product



Eurex FX market participants appreciate bilateral trading models

- Regular Eurex FX futures (ex USD/KRW) volumes driven by bilateral trading (block trade & EFPs) outside the CLOB
- Approx. 80% traded between banks and clients directly
- Eurex on track to enable flexible expirations for bilateral trading models in 2024
- All major dealers to offer bilateral execution services for FX futures





David Leigh

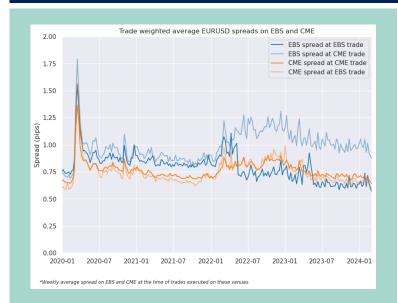
Observations on Primary Venue Developments

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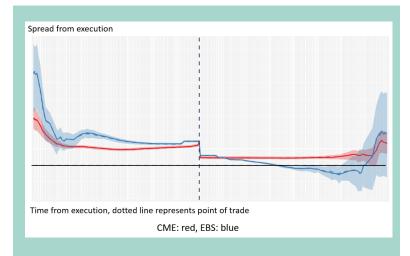
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Microstructure Observations EBS vs CME

From a microstructure perspective, shifting volumes from primary OTC venue to CME is consistent with an increase in market efficiency. Similar dynamics are observed with regards to the volume shift to other OTC venues



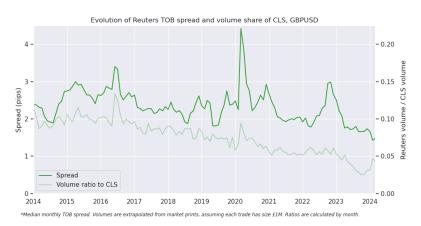
Post infrastructure migration, trades are selectively occurring at the more attractive price across the two venues



Market Impact Analysis shows the relative performance of passive liquidity provision across the two venues. Provision of passive liquidity to CME appears a more attractive proposition for the market as a whole even at tighter spreads.

No observable impact on price discovery thus far...





- Bid-Ask Spreads on primary venues have remained largely unaffected as market share has dropped.
- In contrast, end client spreads have reduced in recent years suggesting that efficiency savings are being passed on to end users.
- Similar dynamics appear to be at play in other electronically traded products.

Beyond Liquidity

EU Equity Trading Lit

07.21.2023

Volumes at Record Lows

Clobbered: how 'toxic' flows reshaped US Treasury trading

Volumes have dropped by more than a third at BrokerTec. The reasons are complex, the outlook uncertain