Transparent and Capital Efficient Hedging Using Listed FX Derivatives

Get connected to daily market performance at cmegroup.com/dailyfx or subscribe to all our product news at cmegroup.com/subscribe. Join the conversation at linkedin.com/company/foreign-exchange.
**Need to Know: The CME FX Franchise**

**Trading Volume, Open Interest (OI) & Participants**

- **Q2 ADV FX Futures & Options**: 1.04 M contracts (up 17.7% YoY)
- **Q2 Average OI for FX futures and options**: 2.58 M contracts (up 8.03% vs 2017)
- **Large Open Interest Holders in FX Futures**: Totalling 1,177, up 15.2% YTD

**H1 2018 ADV in Notional**: $111 B

**EM Listed FX Futures, YTD 2018**

- **Emerging Market FX**: 40%
- **USD/CNH**: 428%
- **INR/USD**: 171%
- **BRL/USD**: 59%
- **MXN/USD**: 40%
- **RUB/USD**: 25%

**TRADE**

- **$111B Each day**
- **54 FUTURES Monthly and Quarterly**
- **24 OPTIONS Wednesday and Friday**
- **1 FX LINK OTC FX & FX Futures, Linked**
- **150+ Countries connecting**

**CLEAR**

- **11 NDFs**
- **26 CSFs**
- **7 CSOs**

**REPORT**

A choice of trade reporting solutions and STP for certainty and compliance

**EFFICIENTLY**

- Increased capital efficiencies
- Reduced execution costs
- Enhanced trading opportunities
- Committed to simplifying how you do business
Need to Know: Key Commodity Contracts

WTI 6.4% MTD

Brent 41% MTD

Gold 14.4% YTD

Copper 29.2% YTD

Efficiencies: Margin Savings for Hedging FX & Commodity Exposure

<table>
<thead>
<tr>
<th></th>
<th>AUD</th>
<th>BRL</th>
<th>CAD</th>
<th>CLP</th>
<th>CNH</th>
<th>EUR</th>
<th>HUF</th>
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<th>NOK</th>
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<tbody>
<tr>
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<td>KRW</td>
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<td>MXN</td>
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<table>
<thead>
<tr>
<th>Brent Crude Oil</th>
<th>WTI Crude Oil</th>
<th>Gold</th>
<th>Copper</th>
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<tbody>
<tr>
<td>BRL</td>
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Need to Know: Focus on FX

CME Group is the world’s largest regulated FX marketplace, averaging $111B a day in H1 2018. We offer 55 futures and 24 options across developed and emerging currency pairs, providing you with the most liquid and capital efficient FX futures and options in the market. CME’s suite of Emerging Market currencies includes: MXN, BRL, CLP, CNH, KRW, INR, RUB and ZAR – these contracts allow you to manage your currency exposure around the world. In addition, considerable margin offsets are available against developed currency exposures as well as other asset classes traded at CME Group.

Benefits of trading emerging market futures

Transparency and Best Execution
CME is the largest regulated FX marketplace offering transparent, firm no ‘last look’ execution with all participants treated the same. Pricing is not skewed by counterparty, credit status or trading style. As a result, trading on CME’s all-all venue helps participants access broad liquidity pools and meet best execution requirements.

Emerging Market Liquidity
CME offers central limit order book pricing across the following EM pairs: INR, CNH, MXN, BRL, RUB, CLP, KRW, ZAR. This means we are the only global venue across listed and OTC markets with the ability to execute these pairs on screen. CME markets have a diverse liquidity pool across client segments with a range of execution methods to optimise efficiencies.

Margin Efficient Trading
Facing a central counterparty via futures offers considerable margin benefits versus facing several bilateral counterparties. These benefits come from substantial netting opportunities obtained by facing a central counterparty as well as the lower 1-day margin period of risk on futures. Additional margin offsets are available both within FX products and against other CME Group asset classes – the ability to obtain efficiencies increases given the breadth of CME’s FX offering and our global reach.

Capital Efficient Trading
Trading riskier assets and netting the resultant exposures against a central counterparty offer substantial capital savings. Additionally, these netting benefits are further supplemented by lower risk weighted asset multipliers (2% for CCP versus upwards of 20% OTC) and lower leverage ratio weightings as a result of facing a CCP.

Market Access
CME all-all markets provide a simple access model through our FCM network with subsequent pricing credit agnostic. This obviates the difficulties in negotiating and obtaining bilateral or FX Prime Brokerage relationships which may be harder to obtain for some participants looking to trade Emerging Market FX.

Operational Infrastructure
CME FX futures, accessed through the FCM model, provide an operational and regulatory wrapper to manage trading and operational needs. This negates the need for multiple documentation requirements, connectivity points and operational processes.

Global Reach
CME offers 23 hours a day trading across 55 FX futures and 24 Listed FX options allowing our global client base access to both our developed and emerging liquidity on one venue.
We're working to deliver creative solutions to your most important challenges...

...so you can access the capital and margin efficiencies of our centrally-cleared and transparent market.

That’s why:

We’ve expanded our margin offsets offering
With margin offsets now available across a range of commodity contracts, from 20-40%, across the most frequently traded commodity currencies.

We’ve expanded our FX futures offering
With monthly expiries on six pairs, all with implied liquidity, and now with CME FX Link which connects the OTC FX market with FX futures electronically, for the first time.

We’ve expanded our listed FX options offering
With Wednesday Weeklies, Volatility-Quoted Options (VQO) and Triangulation, we are now the only centralised all-all electronic FX options marketplace in the world.

We’ve expanded our OTC FX clearing offering
Clear NDFs, G10 NDFs (Cash-settled forwards) and new FX options. All under one Guarantee Fund.

Get to know our EM franchise at cmegroup.com/emfx

Follow the performance of all our FX products by subscribing to The FX Report – for all the news, views and stats happening in our marketplace.

Monthly, Quarterly, in print and online. Direct to your mailbox.

cmegroup.com/fxtrending
Risk Managed, Where it is Originated

Traditionally, FX and commodity price risks have been managed independently within many organisations. There are several reasons for this segregation, perhaps the most important of which is the fact that responsibility for commodity risk management is often located in a different part of the organisation from FX risk management.

However, a direct relationship between FX exposure and commodity price exposure occurs when a commodity price is determined in a currency other than the functional currency of the organisation (clearly, as many commodities are priced in USD, this is a common issue for non-USD functional organisations). In this situation, the commodity price clearly drives the currency exposure, and the size of the notional FX exposure rises and falls as a direct result of commodity price fluctuations. Therefore, in more sophisticated organisations, there is a growing acknowledgement that FX risk arising from commodities should be managed at the point and source of such risk being generated.

While commodity traders actively manage their commodity price exposures in the futures market, the resulting FX risk has been traditionally hedged via over the counter (“OTC”) instruments such as FX forwards. However, recent developments in our Listed FX derivatives market now makes it attractive to hedge such FX exposures using Futures.

This is done by seamlessly replicating OTC FX positions using Listed Derivatives at CME Group, directly or via FX Link.

## FX Link is the first-ever electronically-traded spread connecting OTC FX Spot with CME FX Futures.

This seamless connection between the two markets is a significant feature which allows participants to benefit from using standardised FX futures for hedging FX exposure while at the same time providing the flexibility to take delivery of cashflows to a bespoke date. Therefore, participants can trade and risk manage as they have always done in the OTC market, whilst accessing the capital efficiencies of FX futures.

FX Link is currently available on six currency pairs:
EUR/USD, GBP/USD, AUD/USD, JPY/USD, CAD/USD & MXN/USD

For more information, including more case studies, please visit cmegroup.com/fxlink
Case Study: 1

Hedging Commodity-Related FX Risk: Mexican Oil Exporter Hedging Oil Price Risk with WTI Futures

Assume a Mexican Oil exporter has hedged their oil price risk in USD for spot price delivery for 15MM USD worth of crude in April 2019 using (CLJ19) WTI futures on NYMEX. If the trader believes that the USD would depreciate versus the Mexican peso in the interim period, he would consider hedging the FX risk on the expected USD receivable amount by selling USD and buying MXN peso to the forward date of the exposure. To initiate a transaction based on this market view, the trader would sell in the OTC FX market, 15MM USD and buy MXN for value March 20 (which corresponds to the last trading day for CLJ19).

Alternatively, the trader could replicate this trade by buying 566 CME MXN/USD futures contracts with a Mar 2019 expiry date (having settlement date of March 20th, 2019); the number of contracts is derived from the notional size of the FX risk amount divided by the notional size of the MXN/USD futures contract.

As the trader only wishes to hedge the FX risk, without necessarily taking delivery of the cashflows on expiry, they would terminate the respective hedges just prior to expiry. To do this in the OTC market, the trader would unwind the hedge via an offsetting FX trade to the same date as that of the original hedge. In the case of the FX futures trade, the trader would sell the 566 Mar-2019 MXN/USD contracts.

In making this trade, the trader also benefits from a 30% offset between MXN/USD Futures and WTI Futures.

Case Study: 2

Hedging FX Exposures to Bespoke Dates with FX Futures: CME FX Link

Assume the same trader was interested in taking delivery of the MXN/USD cashflows, say on March 13th, 2019, they could execute a trade in MXN/USD FX Link spread on March 11th, 2019. Trading this spread would result in the sale of the March 19 FX futures and purchase of MXN versus USD as a spot FX trade value March 13th.
In The News: Greenwich Associates’ Perspective on the Viability of FX Futures

TCA Report On FX Futures

Greenwich Associates has published a paper assessing the value of viability of FX futures as a proxy to the OTC FX market. The report, “A Bright Future for FX Futures” assesses the economic benefits of using FX futures through a quantitative total cost analysis (TCA) model and by analysing the impact of regulatory change to the FX market.

Greenwich interviewed 41 buy-side institutions and nine major FX sell-side institutions to validate inputs to the quantitative TCA.

Excerpt From Report

“In the face of the growth in FX futures trading, Greenwich Associates set out to examine and assess the potential economic benefits of utilizing futures as an alternative to trading in the OTC markets.

To do so, we employed a proprietary quantitative model to analyze the costs associated with trading FX over-the-counter (OTC) against comparable FX futures. The model calculates the cost of opening, maintaining and closing out a position. To validate key inputs into the model and gather feedback on current demand and pricing, we spoke with FX traders on the buy and sell side.

The results show that FX investors can find significant cost savings (upward of 75% in some cases) by trading futures rather than executing a trade in the OTC markets. For those entities subject to Basel III costs, switching to futures from OTC trades could garner even greater savings.

Pure costs savings are not the only reason to consider FX futures. As sell-side dealers become more selective in the clients that they prioritize, some buy-side traders may find liquidity more difficult to access. Others may find that they are getting de-prioritized and receiving fewer services from particular counterparties. As a result, adding the option to trade in a futures environment could help mitigate the effects of shifting sell-side behavior.

Even with these potential cost savings, a switch to futures might not make sense for some FX market participants that trade only infrequently and at relatively small volumes. And for some investors, there may be lingering skepticism about the available liquidity in an exchange-traded environment, even though recent statistics show that average daily volume (ADV) in FX futures equals or exceeds the volume on a major spot exchange.

The results of our analysis prove that even before considering the potentially punitive effects that regulations have on trading costs, trading FX futures can have clear economic benefits. For that reason, we expect FX futures to continue to gain traction as an alternative to OTC trading.

Cost Savings For Executing Futures VS OTC FX – 60 Day Holding Period

<table>
<thead>
<tr>
<th></th>
<th>EUR/USD</th>
<th>EUR/JPY</th>
<th>EUR/CAD</th>
<th>EUR/USD</th>
<th>EUR/JPY</th>
<th>EUR/CAD</th>
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</thead>
<tbody>
<tr>
<td>$1 million</td>
<td>($153)</td>
<td>($168)</td>
<td>($130)</td>
<td>77%</td>
<td>76%</td>
<td>64%</td>
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<tr>
<td>$5 million</td>
<td>($646)</td>
<td>($588)</td>
<td>($255)</td>
<td>52%</td>
<td>52%</td>
<td>24%</td>
</tr>
<tr>
<td>$10 million</td>
<td>($1,120)</td>
<td>($916)</td>
<td>($300)</td>
<td>39%</td>
<td>39%</td>
<td>14%</td>
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</table>

Assumptions:
- Funding rate (all-in rate at which you can obtain funding): 0.3% Holding period: 60
- Futures type: Quarterly
- Exiting position at end of holding period (close out, roll): Roll
Cost Savings For Executing Futures VS OTC FX – 120 Day Holding Period

<table>
<thead>
<tr>
<th></th>
<th>EUR/USD</th>
<th>EUR/JPY</th>
<th>EUR/CAD</th>
<th>EUR/USD</th>
<th>EUR/JPY</th>
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<tr>
<td>$1 million</td>
<td>($143)</td>
<td>($164)</td>
<td>($117)</td>
<td>63%</td>
<td>63%</td>
<td>47%</td>
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<tr>
<td>$5 million</td>
<td>($639)</td>
<td>($607)</td>
<td>($228)</td>
<td>54%</td>
<td>45%</td>
<td>17%</td>
</tr>
<tr>
<td>$10 million</td>
<td>($1,206)</td>
<td>($1,053)</td>
<td>($348)</td>
<td>47%</td>
<td>37%</td>
<td>12%</td>
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</tbody>
</table>

Assumptions:
Funding rate (all-in rate at which you can obtain funding): 0.3% Holding period: 120
Futures type: Quarterly
Exiting position at end of holding period (close out, roll): Roll

The Impact Of Basel III And Other Costs

For those entities subject to Basel III costs, futures can provide significant cost advantages over OTC FX— with futures, all counterparties face a central counterparty clearing house (CCP) directly.

In the OTC market, when calculating both risk-weighted assets (RWA) and total leverage exposure (TLE), the addition of non-netting counterparties can have a major impact, ratcheting up risk and associated capital requirements exponentially. Within futures, this is not a concern, as participants are facing a single counterparty: the CCP. The CCP model allows for maximal compression with a minimal amount of effort. In an OTC environment, having more than one counterparty generally results in some level of capitalization being necessary, even if risk is flat across counterparties. Furthermore, for those entities subject to G-SIB reporting and associated add-on charges, FX futures are not included in the requisite calculations.

For those constrained specifically by RWA calculations, when facing a qualifying CCP, only a 2% risk weight needs to be applied to QCCP exposures, while in OTC, there is a fol or of 20%. Additionally, credit valuation adjustment (CVA) charges do not apply to centrally cleared transactions, allowing participants to reduce their requisite CVA charges by 100% if all FX products were cleared.

The Impact Of Basel III And Other Costs

<table>
<thead>
<tr>
<th>Cost Pressure</th>
<th>Non-Cleared</th>
<th>OTC Cleared/ Futures</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-cleared margin rules</td>
<td>✅</td>
<td>📈</td>
<td>Non-cleared margins are higher than for cleared products/futures due to a) HVAR/SPAN vs. ISDA SIMM b) Lack of central counterparty netting efficiencies</td>
</tr>
<tr>
<td>CVA</td>
<td>✅</td>
<td>📈</td>
<td>Regulations do not require CVA on centrally cleared trades</td>
</tr>
<tr>
<td>Liquidity coverage ratio</td>
<td>✅</td>
<td>📈</td>
<td>CCP netting efficiencies reduces requirements</td>
</tr>
<tr>
<td>Credit lines</td>
<td>✅</td>
<td>📈</td>
<td>Cleaned exposures do not consume bilateral credit lines</td>
</tr>
</tbody>
</table>

Additional uncleared margin rules (UMR) components are still due to come into force in Europe after MiFID II defines deliverable OTC FX derivatives. There is expected to be a requirement to exchange variation margin on all linear deliverable OTC FX products (outside of spot) once MiFID II releases the classification of deliverable OTC FX products in 2018. This VM change will impact all participants that are captured under the uncleared margin rules and will do so once the definitions are released. There will not be a phase-in approach as there has been on the IM component of UMR. This will be the first time some buy-side institutions will have ever exchanged margin on FX.

To read the full TCA report, please visit cmegroup.com/bright-future
Get to know the tools to help you trade

See Who Participates in FX Futures Markets
Analyse information by client segment including dealer, asset manager and leveraged market participant using The Commitment of Traders tool. The tool charts the CFTC’s report on market open interest released each Friday afternoon based on positions held during the prior Tuesday.

Rolling FX Futures with Pace of the Roll Tool
For open interest holders who prefer to carry positions in FX futures over time, the quarterly roll indicates the optimal liquidity period to roll a futures position forward from the expiring front month futures contract to the deferred month futures contract and therefore analyse and set their futures roll strategy. These charts are updated and available on a daily basis during the roll period.

Calculate Your Margins With CME Core
CME CORE is an interactive margin calculator that enables users to calculate and evaluate initial margin requirements for all CME Group products, and execute OTC efficiency analysis through additional analytics.

FX Trading with CME Direct
View or trade CME FX futures with CME Direct, a fast, secure and highly-configurable trading front-end. Benefit from the deep liquidity and transparency of CME Group markets and uncover new trading opportunities.
To trade with CME Direct, you will need a relationship with a clearing FCM so contact your bank if you’d like to get connected.

FX Data to Help You Simulate or Back Test Your Strategies
Our new self-service cloud solution allows you to quickly and more efficiently access CME FX historical data in a more integrated and streamlined process, providing you with the data you need almost instantaneously.

To access the full suite, visit cmegroup.com/fxtools
Go Further

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Neither futures trading nor swaps trading are suitable for all investors, and each involves the risk of loss. Swaps trading should only be undertaken by investors who are Eligible Contract Participants (ECPs) within the meaning of Section 1a(18) of the Commodity Exchange Act. Futures and swaps each are leveraged investments and, because only a percentage of a contract’s value is required to trade, it is possible to lose more than the amount of money deposited for either a futures or swaps position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles and only a portion of those funds should be devoted to any one trade because traders cannot expect to profit on every trade.