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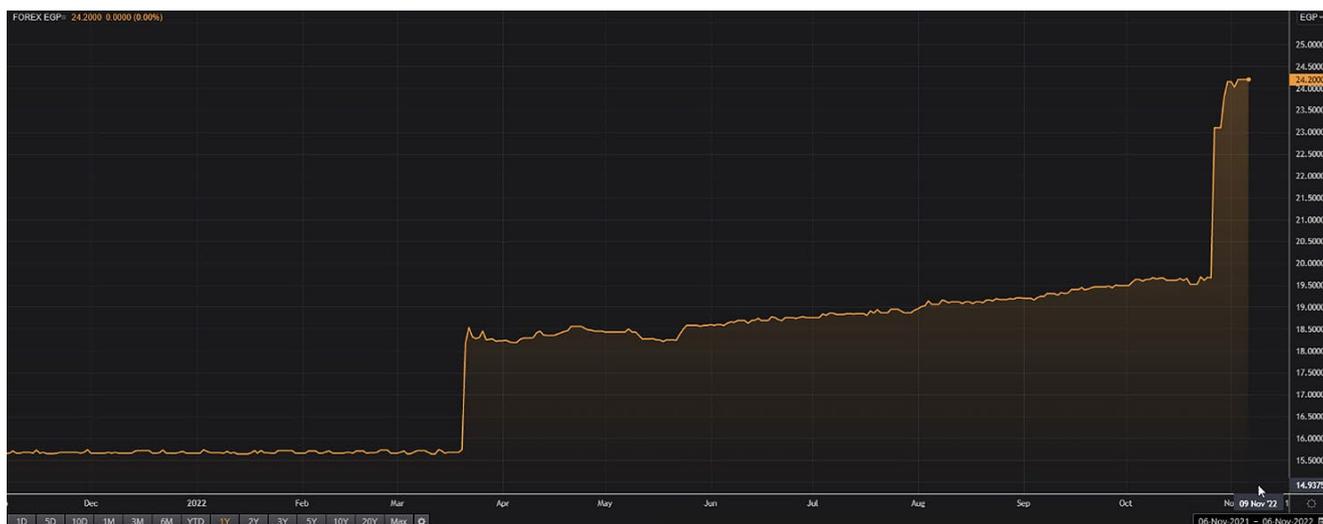
Fusion Kondor Treasury

FX options

Challenges and solutions in the context of a highly volatile market (Egypt)

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Compelling events

- After two years of a global pandemic, which saw shortages of commodities, high inflation, recession, 2022 ended on a high-note for the financial markets

- Global Trade and FX markets were heavily impacted, with an all-time low for certain currency pairs (e.g., EUR/USD)

- Alongside many other countries, Egypt was also hit by inflation, shortages, higher interest rates, which resulted in a strong devaluation of EGP and growing difficulties for banks and corporations to secure funding and liquidity

- IMF, Central Bank of Egypt and the Egyptian government reached **an agreement for a loan to the value of $3 billion with exchange rate flexibility**

- The Egyptian financial market's flexibility is best reflected in the introduction of USD/EGP derivatives in the FX market

It became crucial for banks to take a closer look at using different financial instruments in hedging activities as well as tapping into extra growth avenues with products and services for their clients.

Fusion Kondor (Treasury) **capabilities**

With the new policies yet to be officially applied by the Central Bank, one can assume that Egyptian banks with a consistent FX exposure/activity will likely be looking to put in place tools and processes to manage **USD/EGP (and possibly EUR/USD) European and American vanilla trading options,** as first steps into enabling more hedging and growth flexibility.

This would usually trigger stringent requirements to such options capturing, pricing and their end-to-end in a treasury front-to-back solution such as Fusion Kondor Treasury.

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In terms of the product capabilities, Fusion Kondor is fully capable to support FX options instruments from a front-to-back to risk management perspective. The main offerings of the platform, which should support Egyptian banks in adopting new instruments are as follows:

Instrument valuation capability

Implied volatility

- The main attribute used in the options valuations is volatility, which is implied by the price of liquid contracts: **ATM options, butterfly and risk reversal contracts**

- Fusion Kondor Treasury allows these contracts and their automated real-time sources to be setup

Platform contracts definitions

Contracts quotations

Tenor	Butterfly 0.250	Reversal_Call_Put 0.250
O/N	v 0.125	v 0.400
1 Week	v 0.175	v 0.525
1 Month	v 0.175	v 0.625
2 Months	v 0.225	v 0.663
3 Months	v 0.275	v 0.675
6 Months	v 0.350	v 0.675
9 Months	v 0.400	v 0.650
1 Year	v 0.425	v 0.675
2 Years	v 0.425	v 0.450
3 Years	v 0.437	v 0.325
5 Years	v 0.425	v 0.150

Implied volatility surface

Tenor	Maturity	Bid	Ask	Delta 0.2500	Delta 0.7500
O/N	08/11/2022	v 4.000 %	v 5.900 %	v 32.50	v -7.50
3 Days	10/11/2022	5.042 %	6.542 %	36.25	-7.92
1 Week	14/11/2022	v 7.125 %	v 7.825 %	v 43.75	v -8.75
1 Month	07/12/2022	v 7.400 %	v 7.600 %	v 48.75	v -13.75
2 Months	05/01/2023	v 7.425 %	v 7.675 %	v 55.63	v -10.63
3 Months	07/02/2023	v 7.950 %	v 8.200 %	v 61.25	v -6.25
6 Months	05/05/2023	v 7.625 %	v 7.825 %	v 68.75	v 1.25
9 Months	07/08/2023	v 7.528 %	v 7.727 %	v 72.50	v 7.50
1 Year	07/11/2023	v 7.500 %	v 7.700 %	v 76.25	v 8.75
2 Years	07/11/2024	v 7.725 %	v 7.975 %	v 65.00	v 20.00
2Y 3M	06/02/2025	7.776 %	8.051 %	63.74	21.86
2Y 6M	07/05/2025	7.825 %	8.126 %	62.49	23.70
2Y 9M	07/08/2025	7.877 %	8.202 %	61.21	25.59
3 Years	06/11/2025	v 7.927 %	v 8.278 %	v 59.95	v 27.45
3Y 3M	05/02/2026	7.946 %	8.309 %	58.71	28.39
3Y 6M	07/05/2026	7.965 %	8.340 %	57.47	29.33
3Y 9M	06/08/2026	7.984 %	8.372 %	56.22	30.28
4 Years	05/11/2026	8.002 %	8.403 %	54.98	31.22

In the case of USD/EGP, the RICS (usable records to download market data in treasury platforms) that can be used for the contract in volatility surface contracts are:

- EGPRR10=FN, EGPBF10=FN for 10Δ Risk reversal and butterfly

- EGPRR25=FN, EGPBF25=FN for 25Δ Risk reversal and butterfly

- EGPVOLO=for ATM volatilities

More details about how delta adjustment is computed from risk reversal contracts and butterfly can be found in the analytics module of the Fusion Kondor official documentation and FX derivatives enhancements document. Please reach out to your local Finastra or Luxoft representative for more details or contact us at **financialservices@luxoft.com**.

Current volatility

In the case of unavailability or illiquidity of those contracts, the likely solution would be to use actual current and historical volatility. Those will simply be the observation of the USD/EGP price deviation around its average over a given period, for instance this can be for a 30- or 90-day period. Below, we can see what the volatility smile would look like based on this methodology as of October 31, 2022:

On October 31, 2022 USD/EGP ~24 following deal closure with IMF

The only thing left to do is to import that smile into Kondor to start using it for pricing and risk analysis. This will result in a volatility curve where the same volatility would be used whether the option is ATM out of, or in the money. This process can be automated to be run daily, if needed.

# Instrument capability

Greeks and valuation reporting

Due to the differences in the exercise methodology, observations, and defining the payoff, models used for computing volatility and prices for vanilla options will not give accurate realistic figures when applied to more complex products. It is therefore recommended to use different models for volatility and pricing, which are fully supported by the platform — SABR or LSV (local stochastic model) — and are adapted to compute the implied volatility, price and Greeks of more complex options (e.g., Barrier, digital, Asia, lookback, etc.). Those models can be seen as improvements of the standard Black Scholes model with calibration of their parameters with traded instruments.

Furthermore, pricing/valuation and Greeks (options sensitivities) can be viewed and monitored in different standard system dashboards: FX options pricer, deal analysis window, realtime position report, P/L report.

Post-trade processing

In line with the full capabilities of the system across asset classes, Fusion Kondor fully supports the post-trade processing aspect of the FXO trading/hedging.

This refers to all of the standard processes and events related to the back office, but this time around, they're translated for FXO instruments:
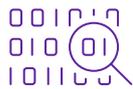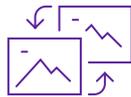
Validation workflows

Confirmations management

On and off balance sheet accounting for cash and revaluation

Processing of market events

Messaging/SWIFT

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Delivery scope and timeline

In light of the above market movements and the overall out-of-the-box support for FX options in Fusion Kondor, the authors recommendation is to consider adopting an instrument for USD/EGP hedging and trading activities, as it is the main pair impacted **by the new policies**, with other pairs being considered based on requirements.

An example project scope and delivery timeline to achieve a fast time-to-market can follow the subsequent steps:

Project delivery scope:

FO

- **Static and market data setup**
  - Definition and realtime setup of market contracts (e.g., Butterfly, Risk Reversal, ATM)
  - Configuration and validation of volatility curves with either the actual observed volatility, implied volatility or both

- **Testing and validation of FX options contracts**
  - Validation of price and Greeks for European and American vanilla options
  - Validation of events (exercise/liquidation) and impact on trading positions

MO

- **Adjustments of current configurations**
  - Credit/Settlement limits setup
  - RisKatcher, market risk processes

BO

- **Standard back office configurations**
  - Validations, payment and netting
  - Standard mail configuration — MT305, MT202 & MT210 + 1 PDF
  - Accounting covering the deal events of FX options (e.g., Contingent, MTM, Settlements)

Indicative implementation timelines

Luxoft has experience executing projects related to implementation, upgrade, and customization of Finastra products for more than 5 years covering all product lines within Treasury, Trading and Risk Management areas. Our 50+ consultants serve customers in different regions and we maintain strong knowledge base and know-how's on Finastra products implementation. By leveraging on these accelerators and experience, we are able to achieve aggressive delivery timelines with high quality outcomes. The tentative phased timelines for FX options turnkey implementation are given below:

Project Phase/Time	Month 2				Month 2			
	w1	w2	w3	w4	w5	w6	w7	w8
Requirements phase								
Build phase								
Test phase								
Go-live								