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May 2020

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FX·Markets

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Lukas Becker

A gradual return from shorts to suits

I don't know who used the analogy first, but in recent years it has become almost unavoidable in markets retooling projects: at some point, someone will compare it to the task of changing a passenger plane's engines in mid-flight.

The analogy should be adapted for the job of moving the $6.6 trillion-a-day foreign exchange business to widespread home-working. It's more like transferring each of the passengers from the in-flight jet to their own single-seater planes – while still allowing them to pass the time of day.

Whichever analogy you prefer, the market handled the unprecedented move with some poise. The bigger question now is how to get all of the passengers back on the jet – and, in some cases, whether that's necessary.

Back in March, when the switch was in progress, physical equipment such as computer screens had to be sourced and shipped quickly, while desk staples – dealer boards and turrets – turned virtual. Data feeds were set up to maintain the flow of information, and trading platforms were able to digest a big increase in volume. Internal communication has turned out to be the bigger challenge, but the market has found ways to stay connected. Market-colour conversations between traders or salespeople that were normally shouted over a bank of desks are now held over video calls or put into chat rooms. Birthdays and shout outs for outstanding work are regularly recognised over video.

It's not just a way to keep people engaged, it's also to head off feelings of disconnection, remoteness and loneliness that can develop in situations like this, particularly if someone is living alone in an apartment in a major city.

As lockdown measures start to gradually ease, market-makers are starting to work out where to go next. Dealer sources say the handful of staff in the office today are being ferried to and fro in taxis to avoid public transport, and have food provided so they don't have to go outside. That doesn't work at scale, of course.

One senior FX executive talks of getting 30% of staff back into the office initially, moving up to half within the next six to nine months, while maintaining social distancing requirements – so, leaving a good proportion of staff at home for the foreseeable future.

It's widely acknowledged that management mistrust of home-working has largely been put to rest. But while market participants say they're enjoying setting their alarms a little later, avoiding the commute, and having space to think, many are still looking forward to getting back into the office, where they feel they're most productive.

Others point out that the office is the best learning environment for junior sales and trading staff.

But of course, many roles don't need to go back. The head of one FX market infrastructure company says he's wondering whether the firm still needs expensive central London office space when its programmers can all work perfectly well and happily at home.

It's a major plus that the world's biggest market can function in suits from the office or in shorts from home – it's been a source of resilience during this crisis, and it offers benefits that extend far beyond the pandemic. FX

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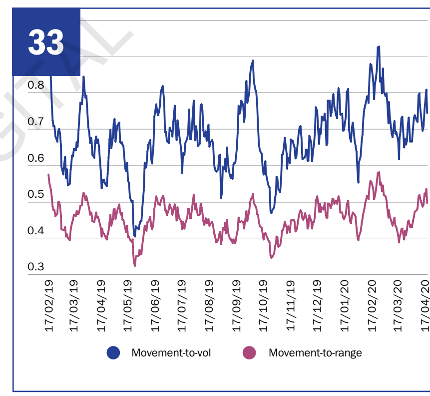
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Vol boosts rules-based trading services

More users – and more platforms – turn to auto-RFQs for smaller tickets. By *Luke Clancy*

AS VOLATILITY RETURNED TO FOREIGN exchange markets over the past six weeks, buy-side traders have been leaning more heavily on automated assistants – services that allow users to obtain quotes and execute trades without human involvement.

It's a temporary surge in demand that platforms see as part of a wider trend – and competition is heating up. Established services are adding bells and whistles, new platforms are rolling out their own services, and all are trying to fend off similar offers from standalone execution management systems (EMSs).

"This is going to keep increasing year on year," says Jill Sigelbaum, head of FXall. "Everyone wants to get rid of the noise and execute small orders automatically, so they can focus on moving their large orders."

Around 200 of the platform's customers auto-execute some of their request-for-quote (RFQ) trading, she says. As FX vol spiked in March, there was a surge in users asking to be set up on the service, says Sigelbaum.

At 360T, automated execution made up a larger share of trading in March, even as volumes hit a record high, says the platform's chief growth officer, Simon Jones.

Bloomberg is also looking to join the party: "For fixed income, we went live in 2019 due to greater demand from the buy-side client base and because it was already happening on some other venues," says Ravi Sawhney, head of automation and analytics. "We're working to release Rules Builder technology to the market in the first half of this year."

'Nuisance' trades

Broadly, these services all aim to do the same thing: allow users to specify parameters within which trades can be executed automatically. Common parameters include the size of trade, the currency pair, dealer names, and some kind of price threshold – potentially expressed as a spread to mid.

At FX Connect, the system is typically applied to smaller trades in the most liquid currencies, says Beverley Doherty, global head of the platform. Users see it as a way to limit the time and effort associated with these trades, so they can focus on larger orders.

Automated assistants are becoming more popular

360T's in-house EMS is also commonly used to automate smaller trades, so firms can send RFQs to a defined group of providers, check the prices that come back are in line with a benchmark, then execute and allocate the trade back to the user.

"All of that process requires zero human intervention," says Jones.

Generally, this means auto-execution services account for a relatively small slice of a platform's volumes by notional size, but a much larger proportion by number of tickets. The specifics vary, though, and each provider claims its own special features. Among these is a growing focus on helping users select the best way to trade, or the best dealers to trade with.

> "Everyone wants to get rid of the noise and execute small orders automatically, so they can focus on moving their large orders"
> Jill Sigelbaum, FXall

CME-owned EBS may be best known as a central limit order book, but it also has an institutional platform with around a dozen large buy-side customers. The service allows RFQs to be automated, alongside a range of other options. Jeff Ward, global head of EBS, says the platform can "predict the best combination of liquidity providers and the optimal way to execute for a particular set of trades".

Believing it a recipe for success, CME has allocated the platform an investment budget to scale out the business.

FXall is also adding to its service. A new tool can slice larger orders into smaller pieces – giving users a wider range of execution choices, including automation. The venue is also expanding the range of parameters users can set, and plans to expand on its pre-trade analytics, so the automation service has its own guide to which dealers are offering the best prices and liquidity for a given trade.

Bloomberg is also planning to offer vetting capabilities when its FX service launches, leaning on work it has already done for other asset classes. "As we build out new functionality in fixed income or equities we can ask ourselves, would this make sense in FX? For example, we are looking to leverage technology we have developed for dealer selection, which enables clients to overlay streaming liquidity and historical performance over a period of time to determine who to put in competition on an RFQ," says Sawhney.

Multiple choice

Before they even get to the intricacies of each service, FX market participants first have a bewildering array of FX platforms from which to choose. Standalone EMSs cite this as an argument in their favour – why use the auto-trading feature at a single platform, when you can automatically tap the liquidity on offer at multiple platforms instead?

Medan Gabbay, chief revenue officer at multi-asset order and EMS vendor Quod Financial, believes FX venue buy-side automation generally is "rudimentary in form and entirely unmatched to the capabilities of typical sell-side technology".

"Using venue-based automation immediately limits your ability to interact with a fragmented market trading across multiple pools," he says. "This leaves the user vulnerable to sudden market moves, flash crashes and gaming by more advanced participants." FX

Read the full story: ***fx-markets.com/7527441***

Ion’s wrists slapped over Broadway deal

Competition watchdog extends initial investigation after Ion failed to comply with call for info. By *Luke Clancy*

TRADING SYSTEMS GIANT ION GROUP HAS received a telling-off from the UK’s competition watchdog as part of an ongoing probe into the firm’s acquisition of rival vendor Broadway Technology.

On April 23, the Competition and Markets Authority said Ion had failed to comply with a notice calling for “information and documents” to be provided by midnight the previous day. The time available for the CMA’s initial probe – originally set to conclude on June 17 – will be extended as a result.

The slap on the wrists appears to bear out the words of one industry source, who has already given evidence in the probe.

“I can confirm the CMA is investigating the merger seriously,” says the source.

The Ion-Broadway deal sparked industry concern when it was announced in February – market participants argued it would leave banks with limited viable alternatives in fixed income technology – but few expected competition authorities to intervene.

Arguably, it would have been a surprise if no probe had been launched. When the CMA approved Ion’s 2018 purchase of equity trading technology firm Fidessa, its final judgement contrasted the fragmented equities landscape with Ion’s dominance elsewhere. In fixed income, Ion had “only one close competitor (with a much smaller share of supply), Broadway Technology”, it stated.

The current probe started with the publication of an enforcement order on April 2, telling Ion and Broadway to freeze integration work, while the regulator decided whether an in-depth investigation would be required. By June 17, the regulator will have to announce whether or not that deeper investigation is warranted, potentially putting the deal on hold for a further six months.

An Ion spokesperson declined to comment. Two sources close to the firm claim the April 23 notice from the CMA was issued because a questionnaire had not been completed on time – it was later submitted in full – and not because Ion was withholding information.

A source at the CMA said the watchdog was “at the early stages of our investigation and unable to comment on its substance at this stage”.

Ion’s London headquarters

Expanding in FX

Both Ion and Broadway provide connections to scores of trading venues. On top of this must-have connectivity service, the firms provide a range of other software – from user interfaces to pricing and risk management.

Ion’s strategy has been to gobble up a variety of broad and narrow trading tech rivals, ruffling the feathers of banks and other financial companies. As it has grown, it has become an ever-larger part of bank front-office tech spending, resulting in more frequent run-ins with customers that are under intense pressure to cut costs. A group of European banks last year teamed up to explore the viability of a consortium-built rival to Ion.

> “On the FX side, Ion is looking to create a similar monopoly to the one it has in fixed income”
>
> A source on the leadership team at a systems vendor

In fixed income, Ion already has a dominant position in commodities and rates – the head of sales at one trading tech vendor estimates it has an 80% share of the sell-side market for fixed income trading technology.

Broadway would give it a bigger slice of foreign exchange trading, for a price tag that has been estimated at around $600 million.

“On the FX side, Ion is looking to create a similar monopoly to the one it has in fixed income,” says a source on the leadership team at one systems vendor.

The head of front office IT at a European bank says: “On the FX side, Ion is currently not a credible player for tier 1 banks. Their functionality is far behind Broadway [in terms of] pricing models, auto hedging and order management.”

The merger would mean Ion getting its hands on Barracuda, an FX order management system (OMS) bought by Broadway in April 2019. Following that purchase, Broadway said it counted half of the top 50 global banks among its client base.

A former head of e-FX at a tier 1 bank says of Barracuda: “They built the best OMS on the Street. It’s a pretty slick build.”

As part of its expansion in FX, Ion also bought MarketFactory in November 2019 as a complement to its existing connectivity components.

FX options

Like equities, the market for FX trading technology remains fragmented, meaning competition and choice concerns are more limited than in other parts of fixed income.

The bank head of front-office IT says there are “many, many options on the FX side. We recently did a request-for-proposal where we compared around 10 credible e-FX offerings”. Both he and the vendor source point particularly to multi-asset execution services platform smartTrade as a credible threat to Ion’s dominance, particularly in FX.

A former Ion employee, and now a manager at a third alternative vendor, says: “I’m not too worried about Ion from an FX perspective taking that controlling stake in Broadway, because I still think Broadway and Barracuda are fairly small in the grand scheme of things. If they were to buy someone like smartTrade, then I’d be more concerned about it.” FX

Read the full story: ***fx-markets.com/7532761***

Delay to IM calculation window leaves some exasperated

"Hasty" decision by global rule-makers frustrates firms that had already started initial margin prep. *Rebekah Tunstead* reports

THE DECISION TO DELAY THE THRESHOLD calculation period for the fifth phase of the non-cleared margin rules has left some firms frustrated that preparatory work may need to be redone and others warning of operational overload next year.

The shift accompanies a delay of phases five and six of initial margin rules, which will sweep hundreds of buy-side firms into scope.

"From the dealer's point of view, we're well into negotiations with phase five firms, and I think that both the dealers and the firms that we've been speaking to effectively want to go ahead and finish up that work," says a derivatives trading head at a large US dealer.

Foreign exchange derivatives users are expected to make up a large proportion of firms in phases five and six. Physically settled FX forwards and swaps, non-deliverable forwards and FX options positions will be counted towards the notional thresholds that determine whether entities have to collect and post margin. However if a firm is brought into scope, only NDFs and options positions will need to covered by initial margin.

The delay was announced by the Basel Committee on Banking Supervision and the International Organization of Securities Commissions on April 3 in response to operational disruptions caused by the coronavirus pandemic. If adopted into local regulation, the new timetable would see firms with more than €50 billion in average aggregate notional amount (AANA) of over-the-counter derivatives being subject to phase five requirements in September 2021, and those with AANA between €50 billion and €8 billion subject to phase six in September 2022.

The original BCBS-Iosco announcement suggested the AANA calculation period for phase five firms would remain between March and May of this year even with the compliance timetable pushed forward. However, BCBS and Iosco were alerted within hours of the release to what sources described as "an error" in the announcement, and the document was immediately changed to state that the AANA calculation would also be deferred for a year along with the deadline.

BCBS did not respond to a request for comment. Iosco declined to comment.

Neil Murphy, TriOptima

"I think [BCBS-Iosco] made the decision rather quickly and probably didn't think about the full impact of moving the calculation. I would prefer them to move it back"

Derivatives trading head at a large US dealer

The deferral of the calculation window means firms cannot confirm whether they will be caught in one of the final two phases of the rules until after the end of next May, ahead of the September 1, 2021 start-date for phase five. Some fear this may not leave them with enough time to prepare, while others are concerned that a scramble to finalise contracts with counterparties could create a logistical bottleneck.

"I think you lose the efficiencies and the relief that the regulators were trying to provide if you move that calculation," says the derivatives trading head at the US dealer.

Neil Murphy, business manager at TriOptima, a post-trade service provider, says that prior to the one-year deferral there was already concern in the market about running the AANA calculation in the same year as the deadline, given the large number of buy-side firms facing initial margin requirements for the first time. One estimate in March was that more than 3,500 counterparty relationships would be dragged into phase five of the rules.

According to Chetan Joshi, chief operating officer of consultancy Margin Reform, a typical non-cleared margin regulation project can take between 12 to 18 months to complete in full. That means firms should be running the AANA calculation this year anyway to give themselves the maximum time to prepare.

"Starting your regulatory project during or at the end of the AANA calculation period is not advisable as there is no practical way you can get compliant that quickly. You need to be performing the AANA calculation at least one year in advance to give you time to work out if you are in scope, look at immediate remediation options if your AANA is near the threshold, and prepare for the bare minimum," he says.

On the other hand, portfolios could change significantly in a one-year period, says Liam Huxley, chief executive of margin analytics firm Cassini Systems, especially given recent volatility. This means delaying the calculation period might be a good idea. It may also give firms that are hovering at the foot of the phase five threshold more time to reduce their derivatives notional and force themselves into phase six.

"It would not have been sensible to keep people bound by this year's AANA numbers for a regulation that's going to apply in a year and a half, especially those firms who are more on the cusp [between phases five and six] and may be able to rebalance the portfolio to drop into phase six before next March."

Smaller firms may welcome the opportunity to move into phase six as they would benefit from any further relaxation of the initial margin requirements between next September and the final implementation date a year beyond.

But most firms are resigned to the likelihood of being caught in phase five, delay or no delay.

"I don't think there's a sense of phase five firms thinking that extending that calculation is not going to force them to be phase five," says the derivatives trading head at the US dealer.

Dom Falco, head of collateral segregation product at BNY Mellon, says the custodian bank would "rather just continue as if there were no change" to the AANA calculation period.

"The majority of our clients have indicated that they're going to move at pretty much the same pace as prior to the postponement while some are slowing down, and a few of them are still trying to assess the situation," he says.

Falco adds that several clients who anticipate dropping down into phase six have decided to pause preparations.

BNY Mellon recently hired two employees to bolster onboarding and the initial margin account set-up processes, with more expected to be hired in the autumn, says Falco.

"We're not going to see a big swell of documentation coming in during May through July as originally anticipated. We expect the documentation curve will be flatter and come in over a longer period of time," he adds.

Local law

National regulators must now decide whether and when to translate the BCBS-Iosco delay of initial margin rules into local law.

On April 9, the Commodity Futures Trading Commission published in the Federal Register its final rule on implementing the split between phases five and six of initial margin requirements, as recommended by the twin standard-setters in July last year. The rule is due to come into effect on May 11.

> **"Starting your regulatory project during or at the end of the AANA calculation period is not advisable as there is no practical way you can get compliant that quickly"**
> Chetan Joshi, Margin Reform

It is understood that if the CFTC decides to defer implementation of phases five and six, as BCBS and Iosco have recommended, then it will need to issue a separate rulemaking. This also applies to the AANA calculation period.

For now, though, the CFTC rule states that phase five firms will be required to calculate AANA between March and May of this year.

Traditionally, US firms have calculated AANA between June and August the year before the go-live date. This could mean that if the one-year deferral is implemented some US firms might face repeating the calculation several times: last year, this year and next year. Phase six firms may also have to run the same calculation again in 2022.

The dealer says there is still time for the BCBS and Iosco to move the AANA calculation back to its original timeframe of March to May this year

"I think they made the decision rather quickly with everything happening and probably didn't think about the full impact of moving the calculation," he says.

"I would prefer them to move it back." FX

FURTHER READING

- **Industry calls for suspension of IM compliance dates *risk.net/7513521***
- **US firms must rerun non-cleared margin test in March *risk.net/7266551***

Is there a dollar funding squeeze in China?

China could benefit from joining the Fed's dollar swaps network, but political obstacles bar the way. By *Alice Shen*

Political sensitivities mean a dollar swap line between the US Federal Reserve and the PBoC is unlikely

CHINESE BANKS EXPERIENCED A MINOR US dollar shortage as companies and banks worldwide scrambled to hoard the greenback due to growing fears over the coronavirus. The rush into the dollar pushed the exchange rate higher, worsening the squeeze.

All the same, funding costs via China's dollar money market have stayed calm for the past few weeks, while the premium to swap Chinese yuan for US dollars has risen less than that of other currencies, such as the euro and yen. So how much is China at risk?

Dollar money markets and forex swaps are the two major ways in which Chinese banks and companies obtain US dollar liquidity.

There are signs of dollar stress, as there are firms bidding for spot USD/CNY and counterparties offering to buy and sell USD/CNY FX swaps. However, this could also be attributed to quarter-end tighter liquidity, says Stephen Chiu, Asia FX and rates strategist at Bloomberg Intelligence.

"[It is] not really a squeeze, but there is surging demand for dollars for sure," says Chiu. "Implied dollar cost was just under 1.5% using three-month FX swaps, still way cheaper than getting straight cash from the money market. Liquidity is especially tight near quarter-end, too."

These trading positions don't just offer US dollar liquidity, but are also a positive carry if the status quo holds, says Chiu.

Dollar stress reprise?

One of the reasons China's dollar funding stress was less severe than other markets is that it remains a relatively "closed" economy. Meanwhile, the People's Bank of China itself has ample dollar reserves and US Treasury bond holdings, making it capable of handling a dollar squeeze if there is one.

"The fact that the PBoC did not lend its dollar reserve directly to banks suggests the stress was not too damaging," says a head of foreign exchange with a foreign bank in China. "But the premium to swap dollar for renminbi did widen since March 9."

The premium to swap Chinese yuan for six-month dollars peaked at -102 basis points on March 23, double the level seen on calmer days. In contrast, the premium to swap yen for three-month dollars widened to -139bp on March 19, while the usual levels are around -10.

Since March 9, the dollar has been appreciating sharply against almost every other currency, while money market funding rates soared and stock prices plunged. To alleviate stress, the Federal Reserve on March 15 revised the terms of its global crisis-era swap lines with major central banks: the Bank of Canada, Bank of England, Bank of Japan, the European Central Bank and Switzerland.

> **"Implied dollar cost was just under 1.5% using three-month FX swaps, still way cheaper than getting straight cash from the money market. Liquidity is especially tight near quarter-end, too"**
>
> Stephen Chiu, Bloomberg Intelligence

On March 19, swap lines were extended to more countries, including central banks in Australia, Brazil, Denmark, Mexico, New Zealand, Norway, Singapore, South Korea and and Sweden.

'Huge political problem'

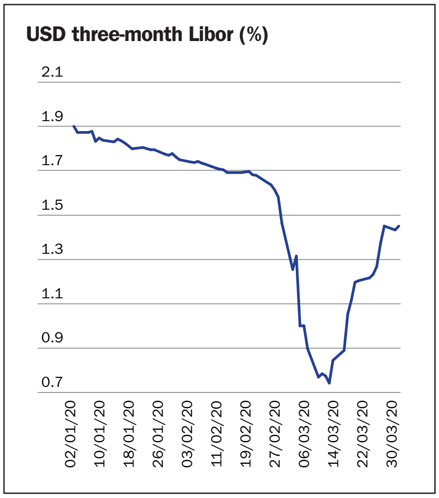
However, the prospect of a Fed-PBoC swap line remains distant, given continued US-China tensions, analysts say.

"The way to get dollars to a Chinese company is a swap line or through a repo facility at the Fed. But the problem is always political," says Pierre Ortlieb, economist at think-tank the Official Monetary and Financial Institutions Forum.

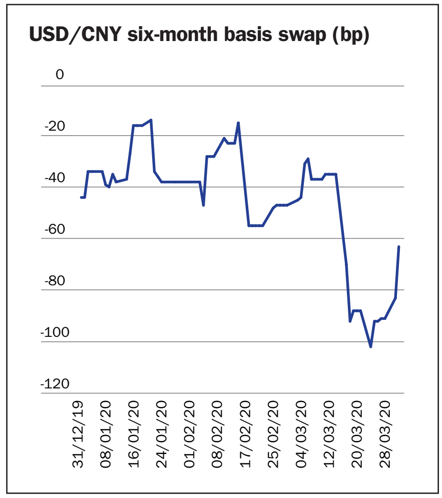
The best timing for the Fed to establish a swap line with the Chinese central bank is when it extended the facilities to more central banks of emerging and Asian economies on March 19. "If they were to establish one right now, they would probably shut it in the summer and not reopen it," says Ortlieb. "Having a standing swap line with the PBoC would be a huge political problem, while having one for like two months during the worst of a global crisis is probably fine."

Chiu notes that the US-China political relationship is more sensitive, which makes a dollar swap line unlikely.

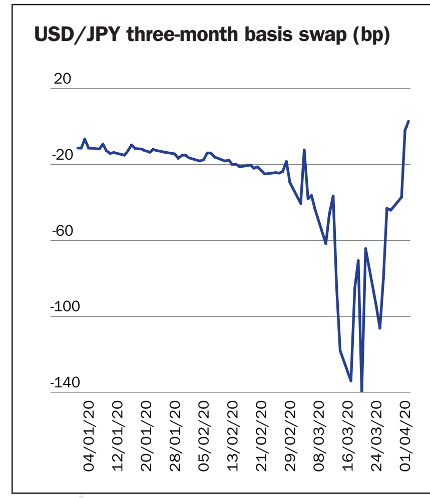
"President Trump still blames China for the coronavirus and there are a lot of things going on behind the scenes," says Chiu.



USD three-month Libor (%)



USD/CNY six-month basis swap (bp)



USD/JPY three-month basis swap (bp)

Source: Bloomberg

"Even though it looks obvious that China could just reach out for the swap line. But first they don't want to, and second they don't have to."

While the swap lines appear to have reduced the more severe dollar stresses, Chinese firms and banks' dollar debt remains a concern.

A potential source for Chinese firms to get dollar funding is from Japanese firms, Ortlieb says. "Since around 2015, Japanese banks have been a big player in the offshore dollar FX swap market, lending out dollars to various other people."

China's State Administration of Foreign Exchange is widely thought to have been swapping dollars for yen. Economist Brad Setser says the rise of China's Japanese government bond holdings are evidence for this.

That funding line might get crowded. "Unless you have direct access to the Fed or the foreign central bank, I think it's kind of hard to get dollars because why would you get rid of dollars right now," Ortlieb adds.

While China has the largest stock of dollar debt, dollar-denominated debt as a share of GDP is much lower than that of some South-east Asian countries such as Indonesia and Malaysia, according to a research paper by Natixis. When taking into account the depth of the market – measured by percentage shares of average daily turnover in forex – the most exposed to the dollar credit crunch are Australia, Malaysia and Indonesia, says Trinh Nguyen, economist at Natixis.

Setser argued that an alternative to a Fed-PBoC swap line is a repo facility for the PBoC at the Fed.

China has $3 trillion in reserves, including around $1.2 trillion of US Treasuries. China's foreign currency reserves substantially exceed China's foreign currency debts.

But neither China nor the US would prefer the selling of US Treasury portfolios in exchange for dollars now, as the Fed wants US rates to be low, Setser said in a blogpost for the Council on Foreign Relations, a New York-based think-tank.

"So China in aggregate has enough liquid dollar assets to meet the demands for payment on the foreign currency debt of its banks and firms if it wanted to – at least in normal times," Setser said.

"As a result, it might be in everyone's interest if the Fed let countries with lots of reserves – typically held as Treasury and agency securities – borrow dollar cash against those securities," Setser said. "Central banks could get their own repo facility at the Fed."

Meanwhile, if there are any political concerns about providing China with a swap, lending against Treasuries is an easy alternative, Setser said.

"Worse comes to worst, the US ends up buying back some of its own debt."

Bigger picture

Chinese banks and companies are charged higher prices when it comes to dollar funding, one aspect that makes the rise of dollar funding costs less steep in China – they already pay higher premiums.

In money markets, the US dollar borrowing cost for Chinese banks and firms is around 100 basis points higher than their peers – such as US, European, or Japanese banks, says a trader at a Swiss bank in Hong Kong. It is referred as "the China premium".

The premium has driven Chinese banks and firms to the FX swaps market when the option is available. Meanwhile, it is also encouraging the PBoC to push RMB internationalisation, which aims to increase the use of Chinese yuan in global trade and settlement.

As China and other countries seek to reduce their dependence on the greenback, the PBoC has been regularly issuing central bank bills in offshore hubs such as Hong Kong. The central bank bills could help improve the offshore yuan yield curve, which would help support the market for yuan-denominated credit securities.

On March 26, the PBoC issued 10 billion yuan of six-month central bank bills in Hong Kong, which was oversubscribed by around three times. "The central bank bills are welcomed by investors and will push RMB internationalisation further," the PBoC said.

The PBoC and forex regulator adjusted Chinese firms' macro-prudential assessments to help them obtain credit from offshore markets on March 27. The adjustment means domestic firms can borrow as much as 250% of their risk-weighted assets, up from 200%.

China's total foreign debt-to-GDP ratio stood at 14% at the end of 2019, while the short-term foreign debt-to-foreign reserve ratio was 39%, both lower than the levels recommended by the IMF, the PBoC said.

With some vulnerabilities remaining, any renewed dollar funding stress could push yuan internationalisation further. But there is still a long way to go. FX

Applying Mifid to spot FX 'could backfire'

EC would need to make "very compelling case" to draw spot market into wider regime, says Ferber.
By *Rebekah Tunstead*

Capturing spot FX within Mifid II could subject the asset class to many more rules and requirements

AS THE EUROPEAN COMMISSION WEIGHS UP an Australian-styled approach to regulating currency trading, one member of the European Parliament is warning against heavy handed oversight.

Spot FX markets are global in nature, and Markus Ferber – the rapporteur tasked with negotiating Mifid II – says that if the European Union imposes overly restrictive rules it could result in trading moving away from the bloc.

"If the commission is really doing something which hurts these markets, [that activity] will leave the European Union," he says.

Last year the European Securities and Markets Authority set out a consultation on the inclusion of rules for spot FX trading within the European Market Abuse Regulation.

As Mar takes its regulatory scope from the financial instruments definitions in Mifid II, it could result in both regimes having to be updated to include spot FX.

The European Commission revisited the possibility of regulating spot FX in February with a consultation review of Mifid II and its accompanying regulation.

Then in March, the European Commission told FX Markets it was studying the Australian regulatory regime of currency trading, which encompasses spot.

More rules

Introducing spot FX into Mifid II could open up the asset class to the same rules and requirements as the equities and fixed income markets, covering trade reporting, best execution and electronic execution requirements, for example. Trading platforms may have to register as multilateral trading facilities.

In its consultation, Esma noted the spot FX markets "might need to develop features required by Mifid II to trading venues and market participants regarding systems and controls, transparency, conduct requirements, and reporting obligations".

The reasons for the increased interest by supervisors in the regulation of spot FX are unclear, says Ferber.

"I have not yet seen any major problems in spot FX markets. I was surprised to even have read it in the consultation paper," he says.

In recent years, judges and markets watchdogs around the world have concluded that small groups of bank traders rigged the spot FX market against their clients, resulting in criminal convictions and around $12 billion of regulatory penalties. The industry has responded by drawing up a voluntary code of conduct, which some market participants and regulators believe does not go far enough.

> **"If the commission is really doing something which hurts these markets, [that activity] will leave the European Union"**
>
> Markus Ferber, rapporteur tasked with negotiating Mifid II

Ferber suggests a simpler solution, rather than adding spot FX to the scope of Mifid II and subjecting it to the wider requirements set out in the regime.

"If there really is a problem, a dedicated chapter for spot FX contracts in the Market Abuse Regulation could achieve the same objective without creating any collateral damage," he says.

"If the commission can come up with compelling evidence that there's an issue with market integrity for spot FX contracts, we will have a look into this. But I hope that the commission is able to make a very compelling case in this regard."

In Australia, any company or individual engaged in financial services business is required to have a licence that shows the entity has the ability to adhere to financial services laws including on market misconduct.

Similarly, those who operate markets for spot FX are required to have a market licence.

Ferber says a European equivalent to Australia's licencing regime "goes beyond" the remit to seek a low-impact solution to any issues within the spot FX market. FX

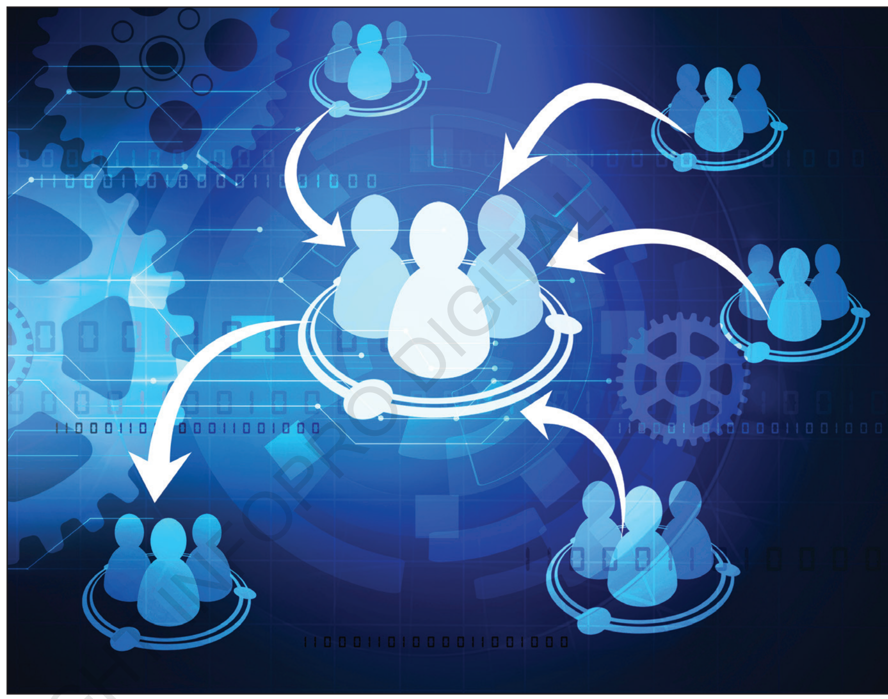
See this issue's cover story on page 18.

FURTHER READING

- **Spot FX could be dragged into Mifid II** *fx-markets.com/7503081*
- **Six big FX market-makers call for end to last look** *fx-markets.com/4405026*

Buy side eyes outsourced trading amid Covid disruption

Pressure on trading continuity drives in-house desks to look outwards. By *Ben St Clair*



SEESAWING MARKETS ARE FORCING MANY buy-siders to reassess how they operate, as coronavirus upends the norms of trading. But for one segment of the industry, the disruption may bring an opportunity: outsourced trading firms.

Many are reporting interest in their services from asset managers struggling to cope with higher-than-usual trading volumes and volatility, or looking for back-up options. Dislocated markets are also pushing portfolio managers to explore unfamiliar asset classes in a bid to improve performance, and outsourcing is an outlet for those who lack the necessary expertise and relationships.

"This pandemic has definitely increased the enquiries," says Jeff LeVeen, head of outsourced trading at US firm Jones Trading.

Greg Sutton, chief operating officer at outsourced trading firm Meraki Global Advisors, says the company has had "a lot of initial conversations" since the onset of the pandemic.

Outsourced trading firms, which take on some or all of a buy-sider's order execution, have picked up business in recent years as asset managers look to reduce costs of hiring traders, transacting in various time zones and maintaining necessary technology. The virus may be turbo-charging that trend.

FX Markets spoke to six outsourced trading firms that say they have seen increased interest from prospective clients during the current pandemic.

Business continuity is a motif in conversations with prospective clients, outsourced traders say. The crisis has forced companies to focus on maintaining key business functions in disaster scenarios where their traders are unable to work from the office or, if they are ill, unable to work at all.

In recent weeks, asset management firms have had to reduce the number of traders working in the office, sending a large share of them to work from home or from external disaster recovery sites.

"I think the Covid crisis has in a short time greatly increased awareness of workforce vulnerability and is forcing all of us to consider solutions for the next interruption," says Chris Hurley, director of institutional sales at Capital Institutional Services (Capis), which provides outsourced trading.

> **"The Covid crisis has in a short time greatly increased awareness of workforce vulnerability"**
> Chris Hurley, Capis

Outsourced firms are not necessarily better equipped to handle trading during a pandemic – their traders, too, are likely to be split between their own homes, the office and auxiliary sites. But the firms are positioning themselves as a back-up plan for asset managers looking to ensure they can continue trading in a crisis.

Some outsourced trading firms are also looking to make a virtue of their location in out-of-the-way or unfashionable areas. Meraki is based in Park City, Utah, while the headquarters of Capis are in Dallas, Texas. The two companies claim an advantage in having a base outside of the main financial centres of New York, Chicago or London during the coronavirus pandemic, which has seen infection rates spike in densely populated cities.

Gary Paulin, global head of integrated trading solutions in Northern Trust's institutional brokerage business, which offers outsourced trading, says the September 11 terrorist attacks prompted many large US banks to build disaster recovery sites away from the city, in New Jersey and elsewhere. He says pandemics are the next big crisis that will "inform how all of our asset management clients need to think about disaster planning going forward".

Roller-coaster ride

Hand in hand with the displacement of staff is a spike in volatility not seen for a decade, with various measures surging in the second half of March (figure 1). The Vix index, which gauges equity volatility on the S&P 500, rose 500% from levels at the start of the year. Similar spikes were visible in Treasury market volatility, with one measure up roughly four times from its January level, and in oil markets where volatility jumped over six times higher than levels from January.

The flux has sparked a flurry of trading as firms rush to enter or exit positions, lay off risk, or adjust strategies. Some asset managers may be unable to handle this increase in trade volumes internally. At one of the larger outsourced trading firms, Tourmaline Partners, European business head Andrew Walton says the firm has seen a growth in trade flows from clients, notably a heightened demand from managers that "want to work with us in a supplemental capacity", referring to clients that outsource a portion of their trading to Tourmaline.

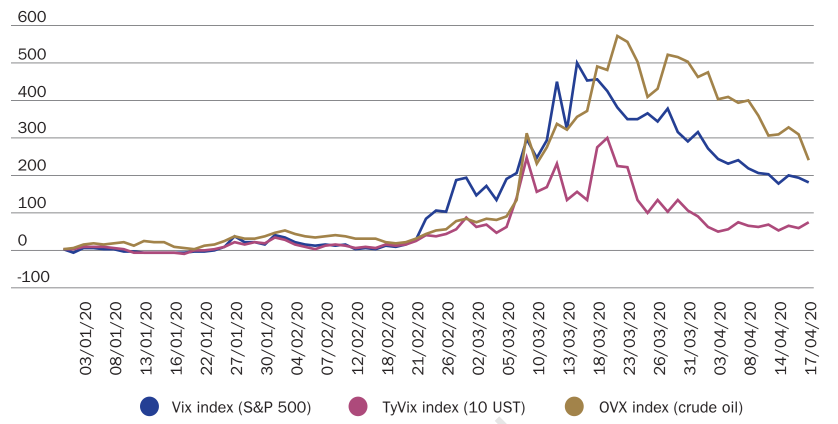
Outsourced desks may have a wider range of trading platform and interpersonal connections than managers who typically focus on one or two asset classes. With volatility in March spreading across markets, Meraki's Sutton says clients used the firm to trade products with which they're less familiar.

"You might have an equity-focused fund that now wants to get involved in debt – or they see some opportunity in commodity markets or rates – and maybe their traders don't have access or expertise in those markets," he says.

As ever, cost is a key part of the equation. Running a remote trading facility is an expensive business, especially if firms want to maintain "like-for-like capabilities" in terms of technology, such as multiple computer screens per trader, and connectivity, says Paulin at Northern Trust.

For firms wrestling with the operational disruption of the pandemic, it may be cheaper to hive off part, or all, of their trading. Outsourcing firms tend to work under a plug-and-play model, which means clients bear no fixed cost. A permanent back-up site, on the other hand, represents a permanent expense.

1. Market volatility indexes



Source: Bloomberg

Cost pressure may be especially acute if falling markets cause assets under management to drop, along with associated management fees, says Hurley at Capis, adding: "We are already starting to see it." Much of the sector is in the grip of a cost-cutting drive in part due to the shift to passive fund management with its paper-thin margins.

> **"You might have an equity-focused fund that now wants to get involved in debt – or they see some opportunity in commodity markets or rates – and maybe their traders don't have access or expertise in those markets"**
> Greg Sutton, Meraki Global Advisors

However, not all outsourced traders are willing to be used as a buy-side disaster recovery option. Northern Trust, for one, is wary of such an arrangement.

"If we're already dealing with outsized volumes and volatility and then someone rings up and says, 'you need to be my disaster recovery site today', it would introduce too much uncertainty for us," says Paulin.

Asset managers, too, may be resistant to outsourcing. Some worry about losing control and sacrificing existing relationships with dealers. Others see their trading operations as too complicated to pass off to an external firm.

Outsourced traders counter that they can give managers' orders more clout since the outsourcing firm faces dealers as a larger trading entity and can more easily maintain and leverage relationships with brokers across the globe. The result could mean better fund performance.

They also trumpet the convenience of the service. New clients can be set up more quickly than hiring extra traders, says Daniel Shepherd, chief executive at BTON Financial, where onboarding can take two weeks. Depending on a client's size and requirements, some say they could be trading on a new client's behalf within days.

With the Covid pandemic reinforcing the need for business continuity planning, how managers respond could become a key part of future risk management assessments.

"That's going to be a due diligence question now: what did you do and how are you prepared for the next issue that comes up?" says Sutton. FX

FURTHER READING

- **Outsourcers eye bigger role in funds' fixed income trading *risk.net/6688306***
- **Some quants fear more deleveraging to come *risk.net/7530456***

Market turmoil causes traders to pull back to vanilla strategies

Emerging markets spreads tighten but liquidity remains patchy.
By *Alessandro Aimone*

There was a stampede for the safety of the dollar in March

TRADING EMERGING MARKETS CURRENCIES has fallen out of favour since the outbreak of Covid-19, with runaway volatility and blow-outs in spreads for many currency pairs damping volumes in spot and forwards.

Although spreads are tracing back from their March highs, there are still reasons for caution, traders say.

"I don't feel like we have necessarily hit the bottom because fundamentals now are shrouded with uncertainty. We're probably going to see the impact of what's going on in three months or so, and that means some negativity may still need to be priced in," says Charlotte Hampshire-Waugh, head of trading and FX payments at INTL FCStone, a US broker.

Clients looking to trade emerging markets currencies should keep it simple, says Ashok Das, head of local Asia markets and solutions at Deutsche Bank, and focus on their basic needs for investment and hedging activities. The key is using pockets of liquidity when they become available in onshore or offshore markets, he says.

Investors should also look closely at the FX component of trades. When buying bonds, for example, real money investors need to use spot or non-deliverable forward (NDF) markets to "close the risk exposure", Das says.

Traders are also looking at strategies to arbitrage the recovery from Covid across emerging markets. As some countries discuss whether to start relaxing lockdown measures, and others enter the second phase of the outbreak, the focus could shift on trading one emerging markets currency against another based on each country's actions.

"While there's no strong argument that one country's FX should do significantly better or worse than others, if you have seen a bigger action in one place then maybe that's just ahead of the curve, and one can trade relative value on the way back versus the other one that hasn't moved so much," says Stephen Jefferies, head of Emea currencies and emerging markets trading at JP Morgan.

> **"I don't feel like we have necessarily hit the bottom because fundamentals now are shrouded with uncertainty"**
> Charlotte Hampshire-Waugh, INTL FCStone

But even this strategy might be hard to execute. According to Hampshire-Waugh: "There is no magic wand to put it on in one single trade. Every single country is on a different level. It is anybody's guess when markets normalise."

Spread far and wide

With coronavirus-driven volatility hitting highs in developed market pairs in March, bid/offer spreads on emerging market currencies widened by more than 1,000% in some pairs.

In spot markets, the spread on USD/MXN for example jumped from 0.02 basis points on February 26 to 0.3bp two days later, a 1,400% increase according to Bloomberg data. Similarly, the bid/offer differential rose by over 700% in both USD/ZAR and USD/TRY, between the end of February and mid-March (figure 1).

In USD/MYR, the spread widened from 0.002bp for most of February to a peak of 0.014bp on March 30 – an increase of 600%. USD/BRL saw its spread jump from 0.001bp on March 16 to 0.006bp four days later, a 400% increase.

Wider spreads were also seen in FX options, with one month at-the-money USD/MXN for example rising from 0.6 vol points on February 25 to 5.9 on March 17. In USD/MYR, the spread rose from 4 points before the virus outbreak to 8.8 on March 12. In USD/TRY, it doubled to 4 points by mid-March (figure 2).

Spreads have all since narrowed, but most remain wider than normal. By the last week of April, the bid/offer spread for spot USD/

MXN was down to 0.06bp, which was still three times higher than February.

"Things are better now compared to March – that was a bit surreal," says Stephen Chiu, an analyst at Bloomberg Intelligence. "Trading has normalised and at least you get both sides these days. In March, it was like everyone was just saying 'I want dollars'."

Some trades are still hard to execute, however. The head of emerging markets FX trading at one large dealer says they have seen less volume and volatility, which means it's harder for investors to find the opposite side if they want to get out of a trade that isn't working.

"There are still a lot of gapping moves and there's nothing there to protect you. It's probably a more difficult market now because the direction is less clear, and it's hard to hedge even though bid/offer spreads are coming tighter," the head says.

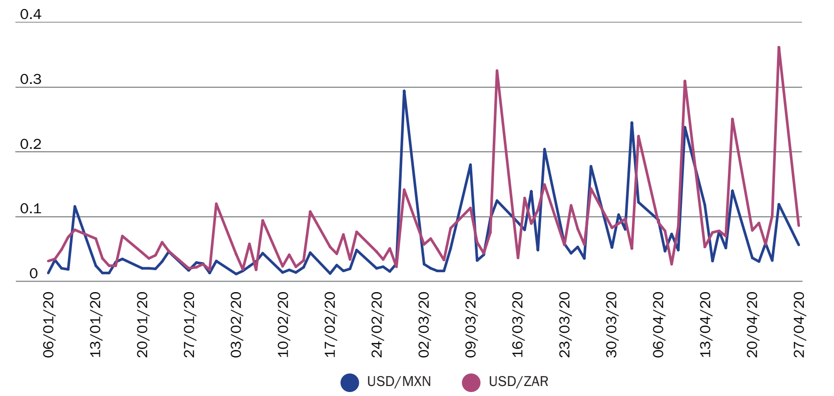
The drop in volume is also seen in emerging markets NDFs, with lower levels of trading in many pairs since the quarter-end.

Market participants have also been spooked by market dislocations caused by sudden closures of exchanges and reduced market hours in some countries.

"Take the case of the Philippines, where holidays were declared without notice in mid-March and risks for every single corporate and institution came into question," says Deutsche Bank's Das.

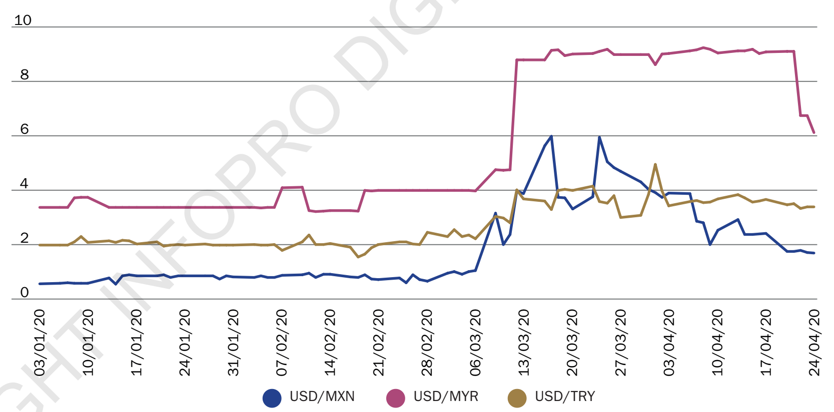
"How would clients square any risk on this day then? It is a very tricky position to be in because there is no underlying price."

1. Bid/offer spot spreads (bp)



Source: Bloomberg

2. One-month at-the-money options spreads



Source: Bloomberg

Anatomy of a crisis

At least initially, the spread of Covid-19 seemed to be contained to one Chinese province. This led emerging markets investors to continue to enter traditional positive carry trades, where money is borrowed in a low-yielding currency and then invested into a high-yielding one, with the objective of capturing the interest rate differential between the two.

Typical strategies included buying FX forwards, shorting FX volatility or owning bonds denominated in emerging market currencies, says Anant Swarup, global head of FX and emerging markets flow products at Nomura.

"That was the position that the market was in, when we went into these events. It was not until the US equity market started seeing significant stress, that this percolated across into all emerging markets currencies," Swarup says.

At that point, getting out of the market, and quickly, became key.

"We first approached the crisis by reducing our higher beta currencies, such as the Mexican peso, the Brazilian real, the South African rand and the Turkish lira," says Andreas König, head of global FX at Amundi.

"When the virus broke out across Asia we underweighted local currencies such as the Korean won, the Chinese renminbi, the Malaysian ringgit, the Thai baht and the Taiwanese dollar and bought safe haven currencies like the Japanese yen," he adds.

When markets tumbled at the end of February and early March, investors rushed to exit their positions and unwind their carry trades in response to widening spreads. As a result, FX volumes skyrocketed.

"March was a very high volume month for FX businesses," says Nomura's Swarup. "I would say that the volumes for us were three to four times higher than what we usually see in these products. This was a function of a lot of rebalancing of portfolios which had to be done in an unexpected way." FX

Additional reporting by Natasha Rega-Jones and Chris Davis

FURTHER READING

- **FX vol revived by Covid-19 – but for how long?** ***fx-markets.com/7513731***
- **FX options, NDFs trading slows as Covid fears ease** ***fx-markets.com/7533941***
- **Philippines traders shrug off mid-month jitters from Covid shutdown** ***fx-markets.com/7519646***

Banks trade first onshore renminbi/US dollar cross-currency swap versus SOFR

Risk-free rate sets new milestone with Crédit Agricole and Bank of China's $10m trade.
By *Chris Davis*

CRÉDIT AGRICOLE AND BANK OF CHINA HAVE transacted the first onshore Chinese renminbi versus US dollar cross-currency swap using the secured overnight financing rate (SOFR), breaking new ground in the acceptance of alternative reference rates in Asia.

The $10 million, one-year swap, struck on April 21, sees Bank of China receive compounded SOFR on the floating USD leg and pay a fixed rate of 0.48% on the CNY leg.

The trade was confirmed on the China Foreign Exchange Trade System platform.

Lilian Darbon, head of Asia trading at Crédit Agricole Corporate and Investment Bank in Hong Kong, says there is growing interest among Chinese banks in using SOFR as a benchmark for US dollar borrowing, which means more SOFR swaps with onshore Chinese counterparties are likely to follow this year.

"In China, the regulator is very keen on seeing the development of the SOFR market, so we believe it will become popular to use as a reference rate in the coming months," says Darbon.

The trade is the latest milestone in the uptake of SOFR by Chinese banks. In September 2019, the Hong Kong subsidiary of Bank of China completed a US dollar trade finance loan for a corporate client and issued two-month dollar-denominated commercial paper, both of which were linked to SOFR. Two months later, the bank sold $350 million in three-year floating rate notes linked to the new benchmark.

The transaction is the first cross-currency swap between USD and CNY to reference SOFR. In late December last year, Westpac and Citi entered into the first SOFR-linked cross-currency swap involving an Asia-Pacific currency, the Australian dollar.

As has been the case for the other recently traded SOFR cross-currency swaps, Crédit Agricole and Bank of China had to use Libor as a base to price the USD leg of the swap.

SOFR liquidity is expected to improve when it is used for calculating price alignment interest this year

> **"In China, the regulator is very keen on seeing the development of the SOFR market"**
> Lilian Darbon, Crédit Agricole Corporate and Investment Bank

The implied fixed swap rate for USD/CNY was 0.95% versus USD Libor, from which they subtracted the basis between that benchmark and SOFR – 47 basis points – arriving at the rate of 0.48% for the fixed CNY leg.

Liquidity lacking in Asia hours

Darbon says the reason for using the Libor-SOFR basis market is the lack of liquidity in the SOFR swap market at longer tenors, something that is a particular issue during Asia hours.

"Of course you have to use an existing market to quote your first new RFR swap. But in the future, we hope this new market will be quoted with more liquidity and that the risk-free curve will appear. The reality of this market is that it is not very liquid outside of New York trading hours," he says.

Libor rates across five currencies, including the US dollar, could cease publication after 2021 once banks are no longer compelled to participate in the rate-setting panel. In the US dollar market, SOFR has been selected as the alternative risk-free rate that will replace the Libor benchmark.

Though Darbon concedes the Covid-19 pandemic has disrupted benchmark transition projects, he expects SOFR liquidity to improve after clearing houses start using the rate for calculating price alignment interest and the present value of future swap cash flows later this year. Use of SOFR will then continue to accelerate up to the end-of-2021 deadline.

"This is going to be the first of a series [of onshore SOFR swaps]," he says. "I cannot deny it has been a bit slow in terms of how SOFR is traded – including in the US – but clearly it will accelerate because that is what the regulator is wishing to see." FX

FURTHER READING

- **First Ibor versus SOFR cross-currency swap trades *risk.net/7275071***
- **LCH plans October 2020 SOFR discounting switch *risk.net/6868566***

NDF access could help tame rupee volatility

Lifting of restrictions stopping Indian banks trading rupee NDFs allows RBI to intervene offshore.
By *Chris Davis and Alice Shen*

THE DECISION BY INDIA'S BANKING watchdog to allow domestic banks to trade rupee non-deliverable forwards will help curb volatility in the currency, observers say. Rupee volatility has been especially pronounced during the coronavirus-fuelled rout in financial markets.

The Indian rupee NDF market is also likely to become more liquid and prices should begin to converge with onshore forwards as Indian banks start trading offshore, they add.

"Liquidity will improve in the offshore markets," says Tushar Awasthi, an analyst at Nomura in Mumbai. "Also, the spread between onshore rupee forwards and NDFs will come down substantially."

From June 1, Indian banks will be permitted to trade rupee NDFs via special banking units set up in international financial services centres, the Reserve Bank of India announced in March. The Gujarat International Finance Tec-City is India's only IFSC, but the country plans to create more of these trading zones. Banks can also trade NDFs through their branches in India and foreign branches.

The RBI has long been keen to curb wild swings in the currency, which it blames on international banks trading NDFs in offshore exchanges. The spread between one-month

1. One-month INR NDF-INR onshore spread (bp)

Source: Bloomberg

Rupee volatility spiked amid Covid-19 volatility

onshore rupee forwards and offshore NDFs blew out to 109 basis points on March 26, as mounting panic over the effects of coronavirus rocked markets.

The spread averaged 58bp in March, and 51bp in April. By comparison, the spread was 3bp on average in February, and 0.5bp in January (see figure 1).

Stephen Chiu, an analyst at Bloomberg Intelligence in Hong Kong, expects the spread to tighten once the rule change comes into effect. Rupee NDFs tend to price weaker than onshore forwards because foreign investors are usually more pessimistic about the currency, he explains.

"Offshore [traders] always try to sell rupee," Chiu says.

Allowing Indian banks to trade offshore NDFs is one of several recent measures from the RBI intended to reduce rupee volatility. In October last year the central bank announced it would allow onshore trading of Indian rupee listed derivatives settled in US dollars in the Gujarat IFSC, in a bid to bring more trading onshore and lessen the offshore market's influence on price discovery.

The RBI is not the only emerging market central bank to introduce measures to limit the impact of NDFs on the volatility of local currencies. In recent years, Malaysia banned domestic licensed banks from trading ringgit NDF while Indonesia introduced an onshore version of rupiah NDFs.

Bloomberg's Chiu says that allowing Indian banks to trade NDFs gives the RBI means to intervene in the offshore market. This can be done by making Indian banks buy rupees in exchange for dollars when volatility spikes.

"It is pretty much the same as onshore intervention, but done instead through the NDF market," he says. "Before they couldn't do that because Indian banks can't access NDFs, but now they can."

Bank of America India's country treasurer Jayesh Mehta agrees, adding that the development should also boost liquidity offshore.

"The move that allows Indian banks to trade rupee NDF – whether through their offshore branches in London or New York or IFSC banking units – will improve liquidity of the market," he says.

Half the time

The ability to access NDFs, which trade around the clock five days a week in offshore centres, could be beneficial to Indian banks if the current restrictions on trading hours in India continue. The central bank cut trading hours for bonds and foreign exchange products to four hours per day at the beginning of April as part of its response to the coronavirus pandemic and related market disruption.

On April 30, the RBI indicated the reduced hours would continue until further notice. The RBI said the reduction in trading hours was necessary because of lower liquidity caused by the lockdown, which in turn was "increasing the volatility of financial prices".

It is unclear whether the RBI will choose to extend the reduced trading hours if the government decides to lengthen the duration of the lockdown. Dealers say that having a four-hour window in which to trade compared to the usual eight hours has proved difficult and means, ultimately, fewer trades can be executed domestically.

Bloomberg's Chiu says the reduced trading hours have been challenging for domestic banks. "It has fairly closed the domestic trading market right now," he says. FX

Read the full story: ***fx-markets.com/7534821***

Spot FX shies away from regulatory yoke

As Europe weighs Aussie-style rules for spot trading, some see benefits – but many fear the burden. By *Rebekah Tunstead*

Illustration: Getty/FX Markets montage

The $2 trillion-a-day foreign exchange spot market underpins a huge array of basic economic activity, from going on holiday, to cross-border trade and investment. This vast market has also given rise to more than $10 billion in fines for banks that had rigged it against their customers – and it has largely escaped direct oversight.

In Europe, that may be about to change. Regulators in the European Union are now weighing whether to bring spot FX into the scope of Mifid II, the bloc's far-reaching markets and transparency regime.

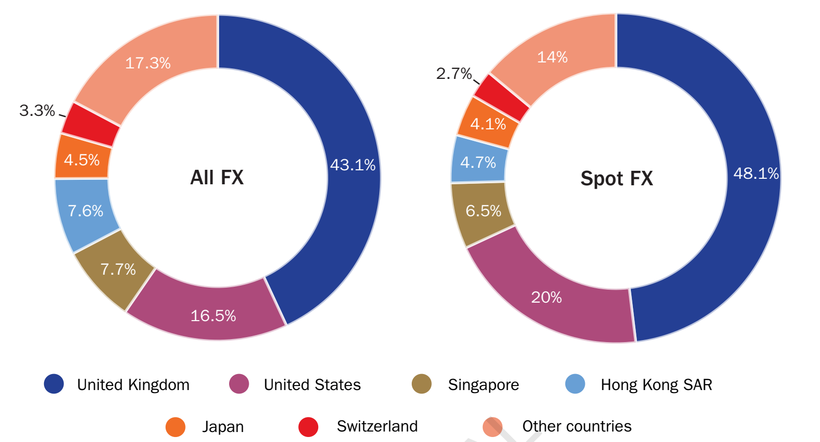
"I think spot FX is the one market regulators haven't got sight over," says a regulatory specialist at a trade processing platform. Extending rules that exist for other asset classes could be seen as a "natural next step", he argues.

Adding spot FX into Mifid II could open up the asset class to the same rules that currently apply in equities and fixed income, including trade reporting and best execution requirements. Meanwhile, the 70-odd trading platforms and aggregators that currently operate unregulated in the spot FX market may have to register as multilateral trading facilities, with all the regulatory trimmings that brings.

Need to know

- The European Commission is studying an Australian-type model for regulating spot FX markets.
- Though not presently under European regulation, the idea of supervising spot has been raised in recent EU consultations on Mifid II and the Market Abuse Regulation.
- Unsurprisingly, the industry is largely opposed to the idea. Concerns stem from the potential cost of compliance and the work involved in updating internal systems.
- It's not all bad, though. Broker association Evia says regulation could produce a level playing field for trading venues – and other observers claim the workload is being exaggerated.
- Opponents of regulation argue the FX Global Code removes the need for a clampdown, but sceptics note the code remains voluntary.

FX volumes by country



Source: BIS 2019 Triennial Survey

Many in the industry had hoped – and are still hoping – to avoid that outcome. One of their principal defences is the FX Global Code, developed in conjunction with regulators following the market's rigging scandals and published in its initial form in 2017. It now has more than 1,000 signatories, but it remains voluntary, raising concerns over levels of adherence.

Some see a clear direction of travel.

"[Spot FX] was initially considered to be part of Mifid II, but then prior to implementation it was taken out. So, when you take the set of global principles of good practice we have in the FX code of conduct on the one hand, adding on the other hand the central clearing of currently bilaterally executed business, then one could imagine that a regulation like Mifid could also become applicable for FX spot at one stage," says Christoph Hock, head of multi-asset trading at Union Investment.

Industry opponents argue having a global FX code alongside regulation would be confusing. In the UK, supervisors can enforce the code indirectly via rules on accountability – the Senior Managers and Certification Regime – negating the need for stand-alone regulation, some argue.

Other critics warn regulation would be economically damaging: if the EU moves on its own to regulate the market, trading will simply move out of the region and its local market participants face being cut off from global liquidity pools. In addition, complying with the various transparency and record-keeping requirements in Mifid II is not cheap, say dealers. In a business already struggling to stay profitable, some dealers might decide to avoid trading with EU clients.

> *"You're going to have conflict because it's the governing bodies who created the [global FX] code versus the regulator who is going to enforce regulation"*
>
> Head of market structure at a European bank

Politics makes the issue more complex. The UK is negotiating a trade deal with the EU as it prepares to leave the single market at the end of 2020. That will leave the world's biggest FX trading centre – London – just outside the EU's perimeter, and there are suggestions that European

1,000 signatories

Although the FX Global Code has amassed more than 1,000 signatories since its launch, concerns remain over adherence as it is voluntary.

regulators want to be able to monitor FX trading, post-Brexit.

But not everyone in the industry is against tighter regulation. The European Venues and Intermediaries Association (Evia), which represents interdealer brokers that operate regulated platforms in other asset classes, says that while it doesn't agree spot should be in Mifid II, including it in the market abuse regime could level the playing field between its members and the unregulated venues that have sprung up in recent years.

Domino effect

Today, spot FX is not defined as a financial instrument by Mifid II, and therefore falls outside the regime's scope. Recent consultations by European regulators have questioned the status quo.

In October last year, the European Securities and Markets Authority canvassed the industry for comments on the potential introduction of spot FX into the Market Abuse Regulation, which tackles insider trading, market manipulation and other illegal practices. The consultation is part of an obligatory review of Mar by the European Commission.

Mar sets its scope by referring to the financial instruments definitions in Mifid II. So, one way of applying Mar to spot FX

Guy Debelle, GFXC and Reserve Bank of Australia

would be to add spot FX to that list.

The topic arose again in February when the Commission published a consultation on Mifid II and its accompanying regulation Mifir. The document asked stakeholders if the regulatory provisions were "adequately calibrated to prevent misbehaviours in the area of spot foreign exchange transactions".

The Commission said it had heard concerns from stakeholders and competent authorities regarding a "regulatory gap".

Regulators went beyond these kind of questions in March when the Commission told *FX Markets* it was looking at whether an Australian-style approach could be a model for the regulation of spot FX in Europe. Australian market participants need a licence to trade FX, granted by the regulator (see box: *The Australian way*).

It's unclear what a licence regime would look like in the EU, and whether this would still require spot FX to be brought within the perimeter of Mifid II.

But the idea of bringing spot FX into Mar and Mifid II has already triggered a flood of protest and criticism. One of the most popular arguments is that the industry already has a set of standards in the form of the FX Global Code, which was created to guide the market after the rigging scandals of recent years.

The code was published in 2017 by the Global Foreign Exchange Committee, an industry body of regulators and practitioners, and is due for a mandatory three-year review this year. The industry argues any concerns over behaviour in spot markets could be addressed as part of the review.

However, Guy Debelle, chair of the GFXC and deputy governor of the Reserve Bank of Australia, says the review has had to move at a slower pace due to the disruption caused by Covid-19.

Another issue is that the code is voluntary. The UK's Financial Conduct Authority

The Australian way

In Australia, spot FX is defined as a financial product. Those who advise, deal or make a market in spot FX in Australia are required to hold a licence. Firms that carry out FX services must have an Australian Financial Services Licence, while exchanges and platforms must have an Australian Market Licence.

"Once an AFSL is granted, the licensee must comply with ongoing obligations, such as to do all things necessary to provide the financial services covered by their licence efficiently, honestly and fairly, have adequate financial resources, and to comply with the financial services laws which include laws prohibiting market misconduct," says Steven Rice, special counsel at law firm Herbert Smith Freehills.

As part of ongoing compliance, firms must conduct regulatory reporting. Spot FX firms fall under a number of reporting requirements, including breach reporting and, in the case of forwards and options, derivatives trade reporting, says Paul Derham, partner at law firm Holley Nethercote.

Spot FX is classed as a financial instrument in Australia and is subject to a licensing regime

The Australian Securities and Investments Commission announced on March 30 it would be receiving breach reports through its online regulatory portal, doing away with older methods of logging reports.

Foreign financial service providers were previously able to take advantage of certain exemptions to the rules if their home jurisdiction was approved as sufficiently equivalent.

However, following recent reforms, all overseas firms operating in Australia – even those from regulatory equivalent jurisdictions – are required to hold a foreign AFSL. These licences allow the holders to be exempt from some provisions outlined in chapter seven of the Corporations Act 2001.

Firms that relied on the previous exemptions may still be able to benefit from a transitional period under the sufficient equivalence relief until March 31, 2022.

has stressed that although it recognises the code, it won't directly supervise or sanction companies against the standards set out in the code. London is the main hub of FX trading, with a 43% share of all FX activity by volume, according to latest data from the Bank for International Settlements.

In its response to the Mar review, Evia said it considered the limited reach of the code and of the UK financial regime "to be insufficient in respect of the size and nature of the spot FX markets".

The group also noted that platforms "would find it more difficult to monitor and police a principles-defined code of conduct than we would for a legal statute and concomitant national rules".

Speaking in March, Debelle said it was not inconsistent for the code and regulation to co-exist, and that compliance with the code could be enhanced if it was "backed up" by national regulators.

But there are worries a twin approach would leave firms uncertain over which document to comply with.

"You're going to have conflict because it's the governing bodies who created the code, but the regulator who is going to enforce regulation. And if they are not 100% aligned, it's going to be difficult for market participants to choose which one they should adopt," says the head of market structure at a European bank.

Infrastructure

If spot FX became a regulated financial instrument under Mar and Mifid II, market participants warn of the financial burden, technology development, and complexity that would accompany such a change.

Bid/offer spreads for spot FX trading leave little room for extra costs. John Estrada, global co-head of spot FX at Credit Suisse, estimates the industry-wide cost of complying with Mifid II in 2018 was £2 billion–£3 billion, with annual running costs of not much less than £1 billion per year.

An Australian-type approach could be considerably cheaper for participants. But if all jurisdictions adopted a licencing regime, the resulting costs might force banks to choose which countries they wanted to be active in, Estrada says.

Some warn that over-regulation of the FX spot market in Europe could see participants move elsewhere

"It would probably create a two-tier market where banks would have to be involved with some key countries like the US or UK," he says.

Vikas Srivastava, chief revenue officer at cloud-based e-trading platform, Integral, says that for trading platforms that already operate multilateral trading facilities or swap execution facilities in other asset classes, updating their infrastructure to include spot FX should be relatively straightforward. Evia in its Mar response also noted that broker platforms already apply the same level of market monitoring, storing and reporting of transactions in spot FX as they are required by regulation to apply to asset classes already in scope of Mifid II.

> *"It would probably create a two-tier market where banks would have to be involved with some key countries like the US or UK"* John Estrada, Credit Suisse

Problems may arise, however, for liquidity providers that deal exclusively with spot FX.

Some warn that any perceived over-regulation of the FX spot market by the EC could see participants move elsewhere. "They might have to build their own infrastructure completely from scratch, whereas for buy-side and sell-side firms involved across asset classes it would just be one additional asset class to be added," says Union Investment's Hock.

Regulatory reporting can also be costly, with the infrastructure, people and processes that are required to implement it. The head of product management at one Mifid data reporting repository says the increase in workload could affect liquidity in the market.

"It'll just be a high-volume increase for us and for the firms that trade it in order to get the mechanisms in place to get us those transaction reports on time," the head says.

Given the low latency and high frequency nature of spot FX, the European bank's head of market structure says opening up the market to regulations and monitoring activities could overwhelm regulators' databases, which weren't designed for that type of volume.

Christoph Hock of Union Investment downplays this concern, saying the systems used by regulators should be able to handle the increase.

A sudden hike in Mifid II-related costs might prompt firms to avoid trading in jurisdictions where these rules apply, insiders warn. Alex McDonald, chief executive of Evia, says the global nature of the spot FX industry means regulatory co-ordination is needed – particularly with the US, given many trades are denominated and settled in US dollars. These trades could theoretically be rerouted to the US to avoid the EU's requirements.

The association believes that while Mar should apply to all FX instruments, some should be carved out of the Mifid II framework altogether, like spot FX. Some products should also be regulated instead as payments or securities financing transactions – for example, FX forwards up to 12 months.

Similarly, when speaking to *FX Markets* in April, German MEP and the rapporteur for Mifid II, Markus Ferber, said regulators should keep the impact of any change to a minimum. He argued an Australian-style regime would go beyond that remit.

"If there really is a problem, a dedicated chapter for spot FX contracts in the Market Abuse Regulation could achieve the same objective without creating any collateral damage," he said.

Ferber shared fears that over-regulation would push spot trading elsewhere, and warned the Commission that it would need a compelling reason to change the status quo.

Politics and data

Greater transparency may be a contributing factor for financial authorities to pursue regulation of the market. The head of product management at the data repository says the move is part of a wider push by regulators to move trading activity on to regulated venues in an attempt to have greater insight into the market.

"It's only once [regulators] have the data, they can start having a look and try to understand the dynamics of the market and how the business activity happened from what venues, in which areas, through which processes," he says.

"What the market would not like to see is spot FX brought under an investment-type regulatory framework, because you never know where that's going to end up"
David Clark, Evia

The global head of market structure at the European bank suggests there might be a political element at play, considering London's central role in spot FX markets in Europe and the closing of the Brexit transition period in December.

"I don't think the goal is to move the trading activity out of the UK to mainland Europe, like we may see in other asset classes, but it was more as a starting point to be able to measure the activity and to say, how much is done in Europe? That fragment is very hard for EU regulators to know because most of the activity is done in London."

Consultations of spot FX regulation are ongoing, and it is understood that if any changes are made by European legislators to Mifid II or Mar they would come into force after the Brexit transition period. Market participants warn this could result in a divide between spot FX markets in mainland Europe and London.

The head of product management at the data repository points to the breakdown in diplomatic relations between Switzerland and the European Union in June last year which saw the EU unwilling to extend stock market equivalence to Switzerland, which then retaliated by banning trading of Swiss equities on exchanges in the EU.

"[EU regulators] could say, 'We don't like the supervisory regimes globally, you can only trade FX spot in Europe', which for a 24-hour global market would probably be more impactful than the impact on Swiss equity trading," he says.

But with Covid-19 still causing significant disruption in Europe it's unclear when regulators will have an opportunity to revisit this topic.

The head of market structure at the European bank says the EC has bigger issues to deal with at the moment than regulation of spot FX.

Others suggest the potential disruption created by including spot FX in Mifid II will deter regulators from taking that path.

If European legislators do move ahead with the idea, Evia's Clark says the choice between aping the Australian regime and introducing spot FX into Mifid II will be an easy one.

"The market will probably shrug its shoulders and say, 'Okay, we'll go for the licence to deal'," says Clark.

"What the market would not like to see is spot FX brought under an investment-type regulatory framework, because you never know where that's going to end up." FX

FURTHER READING

- **BIS calls for wider adoption of FX Global Code** *fx-markets.com/4729251*
- **Expanding European market abuse regime to FX spot considered problematic** *fx-markets.com/4512546*
- **Spot FX could be dragged into Mifid II** *fx-markets.com/7503081*
- **Trading venues decry disruptors as MTF battle heats up** *risk.net/7338271*

Investors trade the drama out of the crisis

How LGIM, Axa IM, Manulife and other buy-siders tackled the toughest markets since 2008.
By *Ben St Clair*

Necessity is the mother of invention, says the old adage. And in recent months, asset managers and investors have been forced to reinvent their environment as well as their trading practices. In addition to the market fallout from coronavirus, their traders have faced a new and unexpected challenge: how to continue transacting away from their desks and – significantly – away from other traders.

Buy-side trading desks, which typically thrive on having traders share information and collaborate in close proximity, have been forced to change trading strategies and think differently about finding counterparties willing to trade at acceptable levels. In navigating some of the most volatile and illiquid markets since the financial crisis, sometimes the biggest challenge was simply to get a trade completed.

For this article, more than a dozen traders, market participants and industry experts spoke about how the buy side adapted to the "new normal" in currency, bond and equity markets.

"The circumstances will stick around in memory for a while, I think. Probably comparable to what the market saw after the 2008 financial crisis," says Joost de Bakker, a trader at Netherlands and UK investment manager Cardano. "After a long period, we could return to the normal liquidity circumstances we were used to, but I think it will definitely take a [long] time."

Equity traders, for example, began buying and selling in smaller blocks of stock and using execution algorithms to take advantage of trading opportunities quickly.

In over-the-counter markets, such as rates and credit, some buy-side firms put fewer dealers in competition when asking for quotes and looked instead to their peers through alternative trading protocols.

Market participants agree that a smooth transition was contingent on constant communication with clients and portfolio managers to find the best product and trading strategy. Leaning on relationships with sell-side counterparties was also key.

Testing the bounds

Amidst the upheaval, the role of buy-side traders was cast into the spotlight. These traders serve within their firms in execution and advisory roles. Their skills are put to mandatory use in Europe, where regulators have made achieving best execution through trading an obligation, compelling managers to take into account various execution factors such as price, timing and size.

The regulation accepts that trading conditions and particular investment products will dictate the ideal method for trading and, in some cases, that ideal can depend on the specific needs of portfolio managers and those making the investment decisions. This is where the advisory function of a trader's role comes into play, providing market colour to help managers understand liquidity conditions so that they can most effectively express investment views.

Ed Wicks, head of trading at Legal & General Investment Management, says these conversations were especially important in the less liquid fixed income and rates markets in March, where they worked "even more closely with portfolio managers". Getting orders as quickly as possible to extend the potential window for execution made a difference, he says.

One way to gauge best execution is to compare a firm's traded levels with a market mid-price, available on screens for some OTC products and for listed instruments. In March, deciphering this mid-price became increasingly challenging in some less liquid instruments. And waiting to trade at cost levels available mere months beforehand could have meant not being able to trade at all, says Michel Lansink, head of trading at Cardano.

"Part of adapting to these changing markets is also accepting higher transaction costs. If we were to stick to whatever we were used to, then we'd probably end up trading nothing," he says.

Conversations with clients and portfolio managers became key. "If a PM is trying to express a view in an OTC bilateral instrument, we might say you can achieve the same in this listed or cleared instrument. That advisory aspect of the job increases in those markets in times like this," says Wicks.

> *"After a long period, we could return to the normal liquidity circumstances we were used to, but I think it will definitely take a [long] time"* Joost de Bakker, Cardano

In some situations, Axa Investment Managers turned to trading the underlying asset instead of its options, or index futures instead of the swaps alternatives, according to Daniel Leon, global head of trading, security financing and derivatives at the firm.

"We went into the biggest pool of liquidity and, as expected, the simplest products had the better liquidity," he says.

Need to know

- The pandemic has introduced fresh challenges to trading desks across the board, as market volatility and costs of trading surged.
- But buy-side traders say they have adapted relatively seamlessly to working remotely – with some notable changes to the way markets have functioned.
- Multiple issues forced traders to think differently about best execution and how they sourced liquidity.
- Traders say success has hinged on constant communication with portfolio managers and clients.
- Trading practice has evolved to put fewer dealers in competition for RFQs in OTC markets and a reliance on pre-trade analytics to find the best liquidity pool.
- Equity and FX traders have leaned on execution algos, and equities traded in smaller blocks throughout the day.

Portfolio managers and clients understood the need to make quick decisions and adapted their processes to be more reactive, says Leon. "When prices can change by more than 10, 20 basis points in one move, you need to be able to react very quickly."

For example, the desks needed to be ready to take advantage of trading opportunities as they arose, says Vincenzo Barbagallo, head of trading at Generali Insurance Asset Management.

"It is crucial for us to understand whether our clients are flexible in terms of pricing and/or timing. That makes the difference, if you also consider that the ability to source liquidity in the market was very poor," says Barbagallo.

Others echo this sentiment, highlighting the importance of knowing how "desperate" a manager is to complete a trade and how much they're prepared to pay.

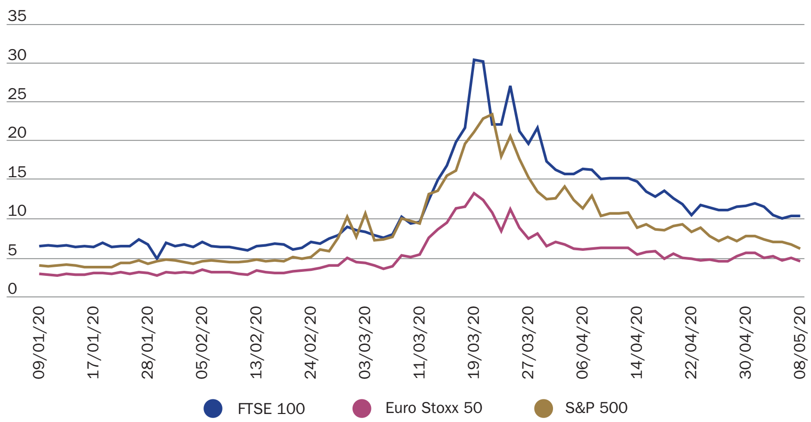
"There's always a price at which you can trade. You'd rather have those conversations than trade significantly away from a portfolio manager's expectation," says David Scilly, head of fixed income and currency dealing at First State Investments.

Still, conditions may have meant that transaction costs were too high to trade at certain points. Cardano's de Bakker says the firm refrained from trading at times, notably in less liquid products such as interest rate swaptions.

OTC: other trading constraints?

The fact that market conditions changed some of their execution decisions and traders were not "hunting around for an extra basis point" does not make it more challenging to demonstrate best execution, says Jan Mark van Mill, head of treasury and trading at Netherlands-based APG Asset Management. Since "best execution is the whole process around executing a trade", decisions must weigh a variety of aspects, including price, speed and operational risk.

1. Median stock bid-ask spread (bp)



Source: Goldman Sachs Investment Research

In OTC markets, for example, normal market conditions would see a buy-side desk ask a handful of banks for quotes on rates or credit derivatives products. But in March, some firms found that it was better to put fewer dealers in competition – or go directly to just one. Doing so successfully relied on pre-trade liquidity analytics and understanding which counterparty was available to trade which products.

"We're not going to be going to as many counterparties in this market. Absolutely, we would be trading in a non-comp fashion. We would be calibrating the sizes that we're requesting," says Wicks.

The buy side can view axes – or indications of a counterparty's willingness to buy or sell certain products – on various platforms. Axes provide opportunities to trade with natural counterparties – those already looking to buy or sell.

In bond markets, this can mean a dealer already holds the bonds an investor wants. Instead of having to buy the credit themselves before delivering it to an investor – incurring transaction costs and possibly charging the investor more – the dealer can deliver the bonds directly, possibly at a better price.

"You need to know who is axed to trade, who's providing liquidity and which tool is more liquid," says Leon.

He says Axa has been making use of dealer axes for years, which it has electronically fed into its internal systems. Being able to pinpoint trade opportunities was key to its ability to trade in March's volatile markets, he notes.

Adding to the complexity was the fragmented and concentrated nature of liquidity in interest rate products, says de Bakker at Cardano. "You really need to know which dealer can source liquidity and then work with that dealer in order to get the specific trade and size done. It requires a different execution style."

De Bakker says one way they got a sense of dealer liquidity was to speak with the bank sales traders. If they said there was poor liquidity in the market, chances are they were having trouble transacting and other dealers may be a better bet for that particular product.

"There was a very big difference across banks in terms of what they could offer. Some of them were completely out of business and others were the perfect partners to trade," says Cardano's Lansink.

The process accentuated the buy side's reliance on dealer balance sheets to trade in certain asset classes and products, especially in markets without two-way flow. Some buy-side traders say banks' increasingly

WFH?

Even if the raucous trading floors of the Liar's Poker generation have long been replaced by the quieter buzz of computers, today's buy- and sell-side trading desks depend on close communication – and traders working in the same room.

Now, the coronavirus pandemic has forced firms to move some traders home and others to auxiliary sites. The few left in the office are appropriately distanced.

Firms say the transition to working remotely was fairly seamless

While some firms have had a taste of what it's like for traders to work away from the office during the recent protest disruptions in Hong Kong, the global nature of the current crisis, combined with the surge in market volatility, offered a crash course in remote working. But buy-side firms say the transition has been relatively seamless.

"I've been at the firm five years, and I've never authorised anyone to trade from home on a regular basis. This is quite a new – quite a big step – for us to take and it's actually gone quite well," says Legal & General Investment Management's Ed Wicks. The company sent 36-inch monitors to its London traders' homes for them to connect to company-issued laptops.

Others observed similarly smooth transitions. Netherlands-based APG Asset Management started to transition to mobile working at the end of February, ensuring traders had screens, keyboards and key office equipment at home to simulate the office dealing room. Now three quarters of traders are working from home, while the others are socially distancing in the office. Treasury and trading head Jan Mark van Mill says traders have adapted well.

Still, normal process remains disrupted and video calls and instant messaging conversations can only offer some consolation.

"We have the internal policy of executing transactions with two traders in order to reduce operational risk. We needed to be inventive in order to get that arranged, so it's definitely a lot more interaction via phone, chat, and screen sharing now. We needed to definitely take some time to get fully used to that," says Cardano's Joost de Bakker.

High and dry

Even as some markets saw record volumes, traders complained of poor liquidity conditions – or the ability to trade in the desired product, size and perceived-as-fair price point.

Bank of America Securities' liquidity risk indicator, which measures funding stress in the global financial system by looking at spread-based relationships in rates, credit and currencies, shows markets experienced the highest levels of stress since the financial crisis. May levels remained elevated.

Bid-offer spreads are another way to gauge volatility and the cost of trading. According to various measures, investors in March faced some of the highest spreads in years (see figure 2).

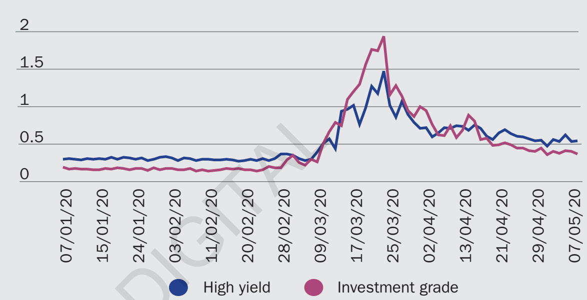
At their peak, spreads for US high-grade credit were 12 times wider during the volatility than their daily January average and exceeded those of riskier high-yield bonds, MarketAxess data shows. At the end of April, investment-grade spreads remained more than twice as high as their January average. Spreads on high-yield bonds were roughly one and a half times higher than their January average.

Equity trading experienced similarly high transaction costs. The median bid-ask spread for stocks comprising the S&P 500 jumped from an average of just over 4 basis points in January to roughly 23bp at their peak on March 23, according to daily figures from Goldman Sachs Investment Research. The median spreads on stocks in European indexes show similar jumps.

One reason for high spreads may be the inability to trade in large sizes, says Ben Springett, head of electronic and program trading at Jefferies.

"The cost of trading is still double what it was in January – even though market volumes have returned and spreads have come down and intraday volatility has come down – because we haven't seen the display size yet come back up to anywhere like what it was in January or February," he said in early April.

2. MarketAxess bid/ask indexes ($)



Source: MarketAxess

more cautious stance only added to the trading challenges.

Without a natural interest from dealers or competitive pricing, the desk had to decide, consistent with its client's needs, whether to postpone execution or trade away from expected prices, says Generali's Barbagallo.

Algo my way

Markets that have long been electronic, like cash equities and spot foreign exchange, offered low-touch opportunities in March.

Wicks says at LGIM, the team adjusted some of the algorithms' settings, such as timing and price limits, but the firm did not stop using equity algorithms to execute in March.

"I'm not sure how effective more of a high-touch channel would be in equities. We actually had a very positive experience with our algorithms in March," he says.

On the sell side, Jefferies was especially busy on its algorithmic desk with clients looking for the speed that algorithms offer, says Ben Springett, head of electronic and program trading at the firm.

The buy side also relied on execution algorithms to trade in FX markets, to the pleasant surprise of some traders.

"Traditionally, algos have always been linked to silent and predictable markets. But they've actually become smarter and grown into a suitable partner in these choppy markets as well. They're not the exclusive domain of quiet markets anymore," says Cardano's Lansink.

Jason Fromer, head of US FICC trading at Manulife Investment Management, shares a similar view: "With the fractured nature of liquidity, we have found that algo trading has been a great way to execute trades without market impact. We have increased our algo volume dramatically," he says.

As equity volatility rose (see figure 1), some trading behaviour did change, though. Equity trading in Europe at the market close, usually the most concentrated point of liquidity during the day, saw its share of daily volume decline in March. Between March 9 and March 16, 13.2% of daily European equity volumes traded at the close, down from January's daily average of 18.8%, according to data from Jefferies. The proportion of European trading at the close rose in subsequent weeks.

Similar scenes were evident for US traders. "We've taken extra measures to advise clients on execution strategy with the abnormal widening of spreads, particularly on the market open and close, that are a result of the increased volatility," says Matt Krebs, director of outsourced trading at Dallas-based Capital Institutional Services.

Trading throughout the day gave desks more time to complete trades and find pockets of liquidity, instead of risking that an order goes unfilled at the closing auction. Still, stocks available to trade were often only accessible in smaller blocks than traders are used to.

Jeff LeVeen, head of outsourced trading at Jones Trading, says the "increased volatility definitely led to smaller order sizes given the lack of conviction". He called it the "the biggest adjustment" for traders to make in March.

In Europe, Jefferies data shows that the average displayed trade sizes for two weekly periods in mid-to-late March were roughly a third of what they were at the start of the year: $62,000 down from a $171,000 average in January. FX

FURTHER READING

- **In choppy forex markets, algos buck expectations** ***fx-markets.com/7510491***
- **Electronic bond trading stalled in volatile markets** ***risk.net/7536811***
- **Buy side eyes outsourced trading amid Covid disruption** ***fx-markets.com/7532291***

Inside March madness with Citi's Tuchman

Trading rooms went virtual, central banks stepped up – but some platforms flopped.
By *Lukas Becker*

The coronavirus has upended life all over our planet – in foreign exchange trading, as elsewhere. Banks have become Amazon-style distributors of computer hardware; usually crowdedtrading floors lie deserted; home-working salespeople and traders are juggling the 4pm currency fix and the 4:05pm grocery delivery.

It hasn't been straightforward for anyone, but when you employ around 1,000 front-office staff across more than 70 countries – as is the case for Citi – it becomes a huge logistical challenge.

"We delivered hundreds of work-from-home set-ups to our FX staff all over the world. It seems easy, we work with computers all the time, but we didn't just pluck them from the dealing room and hand them to people – it required an incredible amount of coordination to source and deliver two or three screens, communication tools and other computer equipment for people," says Itay Tuchman, global head of FX at Citi.

"We delivered hundreds of work-from-home set-ups to our FX staff all over the world"
Itay Tuchman, Citi

After watching lockdowns spread across Asia, at least the bank was prepared. Like many of its peers, Citi first split staff between its main dealing rooms and disaster recovery sites, and then spread the dealing room staff across multiple floors to ensure social distancing.

The spreading pandemic soon forced everyone to go further. Anticipating the need for mass home-working, as in Hong Kong, Citi started ordering the necessary hardware and – by mid-March – the bank was sending home the bulk of its FX staff globally. Most are still there. As of a few weeks ago, 68% of Asia staff were working at home, along with 84% of the business in Europe, the Middle East and Africa, 97% in Latin America and 98% in North America.

It was not a straightforward transition. A trader can't do the job using a single laptop or iPad – or can't do it properly, at least – and Tuchman believes the Street-wide switch from office to home was one of the main reasons liquidity was disrupted in March.

"I would get messages from traders saying liquidity was really poor, that it seemed like a lot of banks were struggling with their work-from-home set-up," he says.

"Clients were also establishing these processes at different times over the past couple of months, so it took a while for the market to return to what I would call a highly functional state."

Tuchman claims a smoother transition to home-working was one of Citi's advantages in the first quarter, when the bank posted a 37% year-on-year rise in fixed income revenues, with a particular nod given to the currencies business.

On the surface, all is well then; but behind the scenes, there have been unique challenges. Traders are used to being able to chat with colleagues at neighbouring desks about market conditions, but working

Pips and points

98%: Percentage of Citi's front-office FX staff in the Americas working from home.
37%: Citi's year-on-year rise in fixed income revenues in Q1.
1000+: Number of front-office staff in the FX business at Citi.
50+: Number of FX platform vendors the bank was connected to at one point.

from home obviously makes that tricky. To recreate the buzz, Citi has been using what it calls 'virtual dealing rooms' – essentially an always-on video call – to keep teams connected and talking throughout the day.

"We noticed right away that we would need that adaptation. And so we started to experiment with those kinds of things to make up for it," says Tuchman.

Other challenges arise from the sometimes-awkward collision of office and family life. Staff are no longer coming into the office at 7am and leaving at 6pm without disruption – they might need to take an hour in the morning to set their kids up with online schooling, or to collect a grocery delivery.

Tackling those aspects of home working requires coordination. For instance, a salesperson might need a colleague to cover from 8:30am to 9:30am while getting their kids set up for the day. Citi tried to tackle this collectively.

"I don't think any of us have thought 'your family is your problem'. It's quite the opposite: your family and making it work is our problem," says Tuchman.

Perhaps the old African proverb can be adapted: it takes a Citi to raise a child.

Communication now takes up the largest part of Tuchman's day, whether that's calling clients and staff, setting up team chats or dropping into other people's team chats. He has also been organising blogs, podcasts, roundtables, virtual roundtables and daily thought leadership calls for clients – content the bank would normally have saved for a face-to-face conference or seminar, but has now begun breaking up and blasting out virtually.

One direction

The more traditional aspect of the crisis, of course, was a period of extended volatility. Tuchman says the business initially focused on de-risking its existing books to ensure it had the capacity to quote two-way prices as the stress continued.

In the days and weeks that followed, differences between dealers quickly became apparent, he claims. Put simply, Tuchman argues some dealers 'internalise' their risk – holding it with the aim of finding an offset within their own franchise, and minimising

Citi sent most of its foreign exchange staff home in mid-March as the Covid-19 pandemic spread

market impact as a result. Others are so-called 'externalisers'.

"There were times we saw – in major currencies – visible external liquidity that was 80-90% less than January's average. At a time like that, you need to be able to rely on a bank that can provide you with its own principal liquidity," he says.

Clients' execution strategies through March varied. Wider bid/offer spreads tempted some to opt for passive algorithmic execution, in which orders sit on central limit order books until they are lifted by other market participants – the client captures the spread rather than paying it, but has to endure minutes or hours of price risk. Others wanted the comfort of executing in one shot, at a price agreed over the phone.

But orders in March were more directional than usual – with many market participants looking to sell a range of currencies against the US dollar – which reduced the amount of offsetting flow. Citi's hedging needs increased as a result.

"When I look at our internalisation statistics electronically, sure – we did more external hedging during March than we would have in pre-crisis environments. But our internalisation rates were still very high. So that dip was not what I would call game changing, we still internalised a huge percentage of our flows," he says.

In the options business, Citi initially saw clients looking to take off exposure, particularly those that had been selling options in the extended low-volatility regime that

> **"I cannot give enough credit to the Fed and other major central banks around the world for how quickly they acted"**
> Itay Tuchman, Citi

While spreads widened and volumes increased significantly, dealers weren't able to sit back and let the revenue roll in, says Tuchman. Internalisation of flows is a key strategic plank for many large FX dealers, allowing the liquidity provider to minimise its hedging needs – and costs – by matching off client orders. In theory, a dealer with lower hedging costs is able to offer tighter spreads.

preceded the crisis. Since then, hedgers have re-emerged as a significant source of demand.

"We're starting to see a lot of investors who had not thought about hedging using FX options now buying them for tail protection. It's a return of that kind of activity after a number of years where folks just didn't even pay very, very low levels of premium for options for asset protection, given the low-vol environment," says Tuchman.

While some corporates took off hedges with positive mark-to-market values to generate some cashflow, most are still in the "digestion" phase, he says, and are thinking about their business and capital mix.

Tuchman believes the Covid-19 episode will accelerate some macro trends, in particular the pace of deglobalisation seen in recent years. Citi is expecting to see more companies move in this direction – possibly choosing to do more manufacturing closer to home, for example.

"A US corporate that decides to move something from country A back to the United States will have a fairly material set of FX transactions to do," he says.

Swaps stress

After running Citi's FX swap business during the 2008 financial crisis, Tuchman takes a keen interest in the product, which was spiralling towards a crisis of its own in March.

As spreads on FX swaps widened and liquidity evaporated, Tuchman says he feared a funding feedback loop could develop in the way it did 12 years ago.

> **"We can't have this beta-version thinking that sometimes dominates Silicon Valley – just get something out there and then fix it later"**
> Itay Tuchman, Citi

Index-tracking asset managers rely on FX swaps to avoid tracking errors arising from currency movements in bond and other portfolios, tweaking the positions and rolling them over each month to coincide with index updates. In March, investors started fretting about their ability to roll those FX swap hedges, making them less willing to hold the underlying foreign currency assets.

As the 2008 crisis unfolded, Tuchman says dealers had to educate central banks about the critical role played by the FX swap market in an environment where other funding markets, such as commercial paper, were completely shuttered.

Since then, he says central bankers have a keener appreciation of the swap market's

The March meltdown has provided an opportunity to assess the performance of trading platforms

workings, including the concentration risks associated with month-end flows. This allowed officials to engage quickly as the crisis took hold, says Tuchman. One fruit of that was the US Federal Reserve's dollar swap line with central banks, which is credited with stabilising funding markets in March.

"I cannot give enough credit to the Fed and other major central banks around the world for how quickly they acted to make sure – as far as possible – that the feedback loop of a funding crisis was not added to the list of enormous humanitarian and economic challenges facing the world in the months and years ahead," he says.

The bank worked closely with clients on when and how to roll their hedges, the general advice being to avoid the last day of the month as much as possible. While the problems in the FX swap market in March stemmed dramatic changes in asset valuations, going forward Tuchman says clients may start thinking more carefully about how they manage their rolls, and there may be more interest in more flexible roll timings.

The bad kind of recycling

One silver lining of the March meltdown is that dealers now have a rich set of data on the performance of various trading platforms during a period of intense stress. This will give banks more ammunition in their ongoing scrap with platforms over fragmentation and fees.

Citi has been public about its attempts to benchmark the 50-odd FX trading and aggregation platforms it is currently connected to, with a view to ditching those that do not meet its expectations on liquidity, transparency, stability and value for money. The bank is currently crunching the numbers, and Tuchman expects to see clear differences in performance.

"It will come out that some of these platforms will have performed brilliantly and done a great service for clients, and some will have been seen to have very poor liquidity, poor service or issues with stability or latency," he says.

He insists the bank is not trying to shut off client choice, or limit competition. "But if the sixtieth or seventieth vendor is just recycling very poor liquidity that's already been recycled a few times, what value is it really creating?"

Clients have been keen to see the results, he says. Some have also been asking for Citi's views when deciding whether to move their liquidity from one vendor to another.

Where clients are using a platform that Citi plans to cut, Tuchman says the bank has explained its reasoning, often arguing that the client isn't getting the best of the bank's liquidity through that venue. Clients then ask for Citi's advice on which platforms to use.

Vendors that make the cut will not necessarily be the most-established players – Tuchman says there is plenty of room for new or disruptive entrants. "I would not interpret this as 'new members need not apply'. We want innovation, but it has to be good," he says.

There is a caveat, though: "It can't be built on a threadbare infrastructure. We can't have this beta-version thinking that sometimes dominates Silicon Valley – just get something out there and then fix it later – for such an important part of the financial markets ecosystem." FX

FURTHER READING

- **For FX dealers, virus brings volumes** *fx-markets.com/7501486*
- **Coronavirus jolts FX options market** *fx-markets.com/7507751*

Andreas König's crisis playbook meets Covid-19

Trading from home may be odd, but Amundi's FX head was ready for other stresses, writes *Alessandro Aimone*

For traders and investors, financial stress has a soundtrack: tense phone calls, blaring squawk-boxes, shouted requests for information, and the running background chatter of broadcast journalists.

So, as financial markets buckled in March under the pressure of the spreading coronavirus, the thing that was most new to Andreas König was the silence.

"The process of producing a trade idea, putting the order in and executing it has not changed at all, but the communication has, necessarily," he says. "I've been trading all my career in large trading rooms and all of a sudden I sit here, on my own. There is no noise, except from the screen, and there are no colleagues telling me what's going on in the equity market or in the bond market."

It forced König – the head of global foreign exchange at Amundi Asset Management – to adapt: "I went from a passive way of information coming to me, to me having to be more active. It's a bit of a learning process. At the beginning I thought, "whoa, this is very different". But after some time everybody adjusts," he says.

König had to do less adjusting than some. Traders and fund managers who joined the industry in the past decade have seen the occasional wild day, such as the historic leap in the Swiss franc in January 2015, but the general trend has been of progressively lower volatility. König's 26-year career has taken him from the currency options desk at Commerzbank to Europe's largest asset manager, and from the Asian financial crisis to the subprime meltdown and its aftermath in 2007 and 2008 – so he knows what currency markets can do when provoked.

"Is it better to be a seasoned trader in these circumstances? I would say yes. When it comes to keeping your portfolio in check and managing risk as a prudent investor, it's helpful to know you can see a 7% move in a single day," he says.

One of those days came on March 18, when the usually sturdy Norwegian krone suffered a 6.7% collapse against the euro – spurred partly by the collapsing oil price, and partly by a demand for US dollars. König remembers it as a canary-in-the-coalmine moment – a day that brought home how significant the pandemic would be.

> **"In an environment where everyone in the market is panicking, I'm not going to ask for exotic or extra complex things"**
> Andreas König, Amundi

"Nobody was really used to these moves anymore, after two or three years with daily moves of 0.3%, maybe reaching 0.5% on a good day," he says.

Unsafe havens

So, how did König's crisis playbook hold up to the pandemic?

When the virus broke out across Asia, he underweighted local currencies such as the Korean won, the Chinese renminbi, the Malaysian ringgit, the Thai baht and the Taiwanese dollar, buying safe haven currencies such as the yen.

Some of those havens would later turn out to be less than safe.

Initially, with the virus largely contained to one Chinese province, many investors appeared to be regarding it as a local problem, says König – something that could be contained and squashed within a matter of weeks. This perception left the market unprepared for what was to come.

"At the beginning, the reaction was relatively normal, sort of textbook. We first went into a classic risk-off environment where so-called safe haven currencies are supported and carry trades are reversed," König says.

Initially, the textbook behaviour held: the yen was popular and the euro strengthened against the US dollar. But when more information became available and figures on the reproduction rate of the virus started to be reported, fear seeped into the market, along with growing uncertainty about the size of the crisis.

It contributed to overwhelming demand for the US dollar, despite the rapid erosion of the currency's interest rate advantage, as the US Federal Reserve slashed interest rates by 150 basis points in two steps on March 3 and 15.

"That was surprising. Due to the reaction of the Fed, the interest rate differential was coming back as they were cutting relatively quickly. The first reaction was, "OK, if the attractiveness for the carry of the US dollar is going away, that should

Pips and points

26: The length in years of Andreas König's markets career. He started out in Frankfurt as an options market-maker, before moving to Munich with Activest Investment, Dublin with Pioneer Investment Management and then – since 2018 – London with Amundi.

€1,527: Assets under management at Amundi as of March 31, in billions.

6.7%: The size of the EUR/NOK move in mid-March that highlighted to König just how big an impact the coronavirus was going to have on currency trading.

1: The number of dedicated currency funds at Amundi, down from two prior to the 2008 crisis.

>€5: In billions, the largest single bond fund at Amundi.

be negative for the dollar". But it wasn't, because the dollar funding needs were so intense," König says.

By constantly reviewing and reducing positions – particularly in less-liquid currencies – König avoided being hit by big daily moves such as the tanking krone.

"In these circumstances you stick to the major currencies and leave the exotic ones to the side, unless you absolutely have to trade them," he says. He concentrated on EUR/USD and USD/JPY and some of the more liquid emerging market pairs.

A similar principle applied to his choice of instrument – spot and forwards, rather than options. "FX forwards are quicker, more flexible and cheaper," König says, whereas in options, "things were less liquid and traders were a bit more careful and it took more time to get a price".

Tales abound of traders who struggled to get their orders executed during March, but König says he always got a price by anticipating difficulty and being flexible.

"I always got a price because I adjusted my requests," he says. "In an environment where everyone in the market is panicking, I'm not going to ask for exotic or extra complex things, because I know it might be impossible to get a price."

He adds that trading Scandinavian currencies was tricky at times because of the speed at which prices were changing. Rather than accepting a bad price, he passed on some of the less attractive ones.

"In these circumstances you stick to the major currencies and leave the exotic ones to the side"
Andreas König, Amundi

Once again, experience turned out to be a valuable resource.

"Before I went into portfolio management I was a market-maker for currency options. I know how difficult it can get in such a situation, so I don't ask for them," König says. "You concentrate on liquid stuff. You just don't trade the smallest currencies in a volatile situation like this."

Fine-tuning with FX

While the opening act of the drama now seems to be over, the future is uncertain – which could be a good thing for FX.

The biggest question for investors is how countries manage their exit from the lockdown, and therefore how quickly different sectors of the economy and different geographies will recover. The rapid arrival of a vaccine would underpin the recovery – a second wave of the virus would torpedo it.

"Nobody really knows what the right answer is," says König. "I don't know any more than others about what will happen to the different countries, but I know this environment could bring back the advantage of FX as an asset class."

In an environment of widespread uncertainty – with no clear long-term bets – investors will be drawn to an asset class that can reliably be traded around the world and round the clock, he predicts.

"You have to think on a day-by-day basis and stay tactical short-term because nobody sees far in advance. That's where FX has an advantage in such an environment," König says. "When volatility went up, all of a sudden the market found out that in some asset classes there is a liquidity issue and a lot of investors had to adjust their positions."

Of course, there is a right way and a wrong way to trade FX. For now, König favours a disciplined, low-risk approach.

"We put on trades that are asymmetric in terms of risk-to-chance. If it works, good; if it doesn't work, there will be a stop-loss," he says.

As markets return to calm, the focus for investors is once again likely to be on those asset classes supported by central banks' actions. Interest rate differentials will likely converge to zero, as most governments and central banks will take similar expansionary approaches to bounce their economies back on track, with equities and bonds benefiting the most. That is likely to hold currency volatility down but, unlike the pre-Covid era, the mission of FX might be a different one.

"We could go into a situation where investors are risk-positive, so they buy attractive bonds or credits, and use the FX market as a flexible way of hedging. In this example, the investors are selling the risk-positive currencies for a hedge in the original portfolio and that gives a completely different reaction function in FX. That's the challenge going forward," König says.

The advantages of FX in this scenario are clear, König believes. "Thanks to the low transaction costs and the liquidity available in the market, FX could be used as a flexible proxy for hedging and become a precious fine-tuning instrument," he argues. FX

FURTHER READING

- **Investors trade the drama out of the crisis** *fx-markets.com/7542886*
- **Who killed FX volatility?** *fx-markets.com/4768416*

FX options, NDFs trading slows as Covid fears ease

Analysis of transaction data shows lower notional volumes and tighter spreads for most currency pairs, writes *Ben St Clair*

Trading volumes in FX derivatives slowed down in April after hitting record highs the previous month, as traders continue to assess the impact of the coronavirus outbreak on the markets and the economy.

Reduced activity in some FX options and non-deliverable forwards (NDFs) pairs comes as the global economic outlook remains uncertain, with some countries looking to ease some of the restrictions put in place to reduce the spread of the virus and others prolonging a full lockdown.

Currency markets have been upended this year, with traders reacting to monetary policy easing from major central banks, interventions to stabilise financial markets, and increases in government spending across the globe.

The rise and fall in weekly trading of vanilla options and NDFs is visible on the Depository Trust & Clearing Corporation's swap data repository. The data includes trades involving US-regulated firms and offers one of the best publicly available insights into FX options trading.

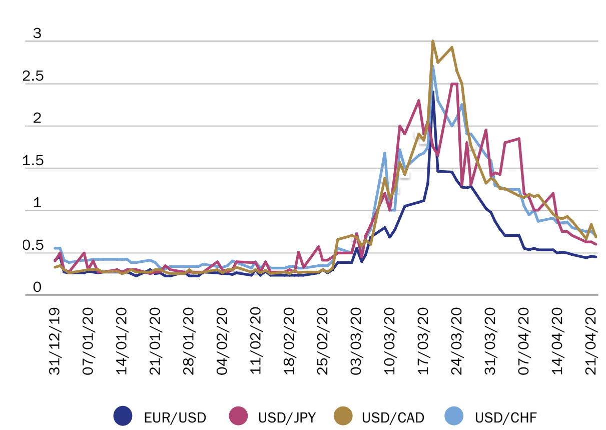
Bid/offer spreads on the way down

The difference between bid and offer prices – a measure of market volatility and the cost of trading – on one-month at-the-money FX options has come down from the highs of March. Still, spreads remain elevated from pre-Covid crisis levels.

Figure 1 shows:

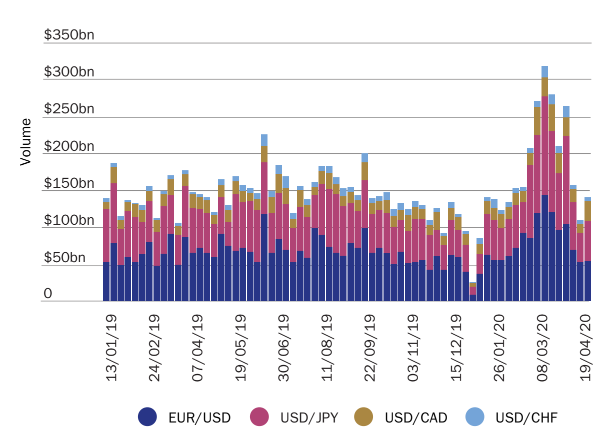
- USD/CAD traders saw bid-offer spreads on one-month options widen to three volatility points on March 19 and rested at 0.7 on April 22, more than double their daily average in January and February.
- One-month EUR/USD option bid-offer spreads have settled below half a volatility point, down from their daily high of 2.4 on March 19.
- After averaging 0.3 volatility points in January and February, daily bid-offer spreads on one-month USD/JPY options peaked at 2.5 on March 23 and 24, before dropping to 0.6 last week.
- Bid/offer spreads on one-month USD/CHF options peaked

1. One-month ATM option bid-offer spread



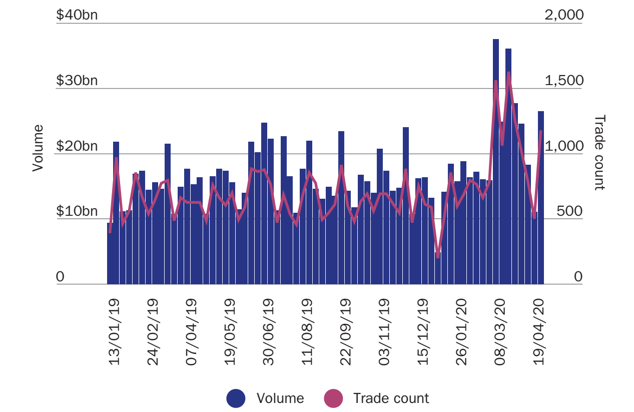
Source: DTCC

2. FX options volume



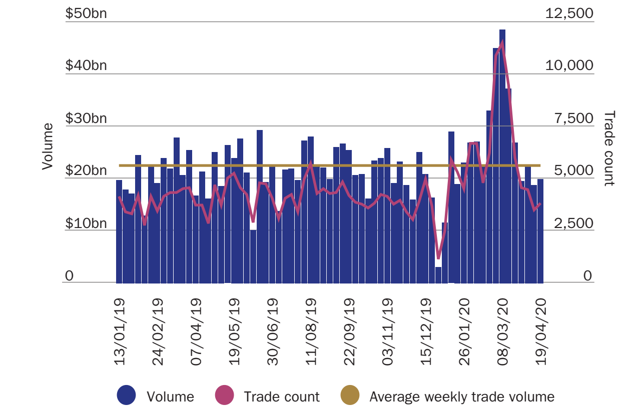
Source: DTCC

3. USD/CAD options



Source: DTCC

4. USD/IDR NDF



Source: DTCC

at 2.3 vol points on March 25, up from an average of 0.4 at the start of the year. The spread was down to 0.8 points as of April 22.

Option volumes contract

Options trading in currency pairs that saw record highs in March was subdued in the weeks following their peaks.

Figure 2 shows:

- The combined notional values of JPY, EUR, CAD and CHF vanilla options against the US dollar reached $318 billion for the week ending March 8.
- On the week ending April 19, the combined notional was down by more than half the peak level, at $140 billion.
- Weekly trading in USD/CHF vanilla options declined 66% from a recent weekly peak of $16 billion.
- Weekly EUR/USD vanilla options volumes rested at $55 billion for the week ending April 19, down from a weekly high of $144 billion in early March.

Vanilla options in USD/CAD bucked the trend, with volumes returning to climb towards the end of April.

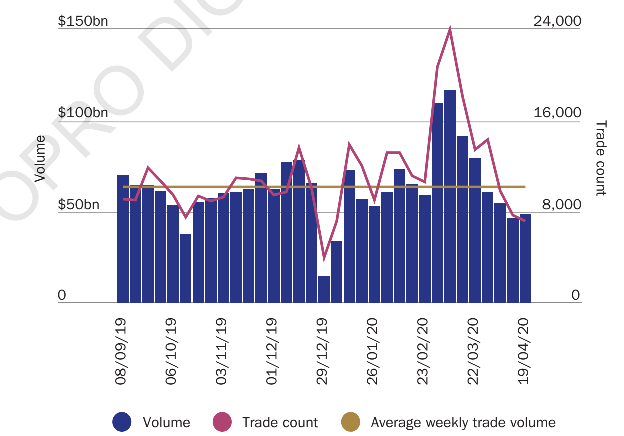
Figure 3 shows:

- The most active week this year in USD/CAD vanilla options trading was the seven days ending March 1, where 1,559 options totalling $38 billion in notional hit the market.
- The five weeks following the peak saw an average of $26 billion in vanilla options notional traded, before falling to $11 billion in notional the week ending April 12 – the lowest weekly total since the week ending December 29, 2019.
- Vanilla options trading spiked the following week with $27 billion over 1,176 trades

NDFs go quiet

Trading in non-deliverable forwards saw increased activity in March amid Covid-induced volatility and the quarter-end bottleneck. Like

5. USD/INR NDF



Source: DTCC

options trades, though, weekly NDF volumes have since subsided in various commonly traded pairs.

Figure 4 shows:

- USD/IDR NDFs saw their most active week since at least early 2019 for the week ending March 8, with $48 billion in notional hitting the market over 11,453 trades.
- In the weeks following the peak, trading has subsided and for the week ending April 19, it reached $20 billion in notional, below the weekly average since January 2019 of $23 billion.

Figure 5 shows:

- Weekly trading volumes in USD/INR NDFs peaked at 23,948 trades, totalling $116 billion in notional for the week ending March 8.
- For the week ending April 19, NDF volumes were down 58% from the peak, at $49 billion.
- Weekly NDF notional volumes averaged $64 billion over the 33-week period analysed. FX

Alexei Jiltsov

Assessing execution quality and slippage in volatile times

Market participants must focus on how their evaluated execution costs vary in different market regimes, writes *Alexei Jiltsov* of Tradefeedr

Every time volatility returns, market participants observe an increase in their variable trading costs, such as slippage and spreads. The difference between the new and the old execution costs is then blamed on the execution agents, who in turn blame the lack of liquidity. The cycle repeats itself.

In many ways, variable execution costs – the ability to transact in size, quickly and with low market impact – and liquidity are related. And unlike investment performance, changes in execution costs are reasonably easy to explain.

A large number of factors can affect liquidity. Assets with similar volatility, for example, can have very different liquidity characteristics. However, changes in liquidity are by and large driven by volatility apart from the case of a complete market breakdown, when the causality is reversed. For our analysis, we only consider the case of a normally functioning market.

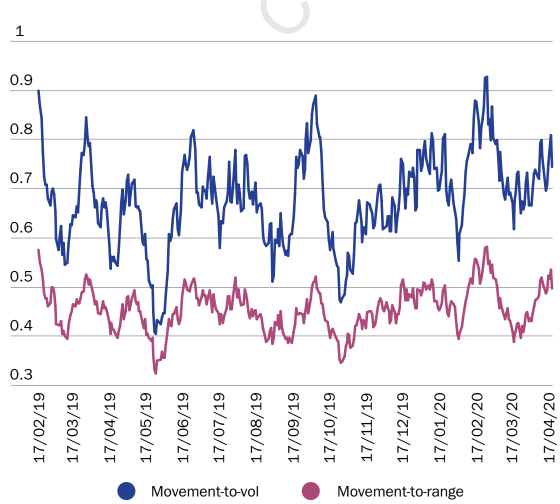
An important question before we delve into the study of execution costs in volatile times is, should we care? One school of thought is that during big selloffs, market moves are so dominant that decisions have to be made quickly and implemented with very little regard for costs.

Our analysis of recent Covid-19-related price action in EUR/USD suggests this is not the case.

Figure 1 shows the pair's signal-to-noise ratio, defined as a measure of direction over one of variability, which dropped during the market sell-off in March.

While the price move in EUR/USD might have been big, it was not the main driver of volatility, even when compared with more quiet times. The noise around the move suggests execution quality remained relevant even during these volatile times.

1. Signal-to-noise ratio



A simple framework for slippage cost estimation

Estimating the potential slippage cost that comes with any trade is paramount. Let's assume we want to execute at a particular point in time, 't', but our order is delayed and gets executed at 't + X milliseconds' instead. The difference between the mid-price at 't' and 't + Xms' is defined as slippage.

The term is used in a broad sense here: it can be the cost of rejection in a 'last look' type execution, or it can be a missed bid/offer price in an aggressive market order against a central limit order book.

Regardless of its origin, it's helpful for market participants to know what the slippage would be in normal circumstances, for example if we execute a trade without any market impact. The following framework offers a way to address this issue.

Figure 2a shows two mid-price curves, one for the actual time and one for the time shifted by Xms. The gap between those two curves is the potential slippage.

In a fast-moving market, the difference between the two price curves widens and the slippage becomes considerable. When the market does not move, there is not potential slippage – theoretically, at least.

Note that we do not specify the trade side (buy or sell) for

All charts: Tradefeedr

the slippage. This approach simply allows us to rank the slippage experience in a zero price-impact theoretical case. In the example above, a trade executed right after 8:01am will have a larger slippage than one executed at 8.02am.

Weighting the slippage by execution time allows market participants to identify specific time periods with either high or low potential slippage and determine its distribution. This is illustrated in figure 2b, where the cut-off line at $50/m represents a typical 'last look' arrangement.

A simple calibration against this distribution would give us the expected frequency of rejects. This is of course optimistic, as it is calculated in the absence of a user's trading flow, which can potentially contribute to the move. However, it is a reasonable starting point when looking at a small size and a random execution pattern.

The derived distribution shown in figure 2b can be thought as a fair slippage for each day. One way to think about this estimate is to do so in a statistical sense. Picture the tossing of a coin; if we get tails 10 times in a row, we should not marvel at the odds but question the coin. The same is true with this base case for slippage or rejection costs.

Now that we have a framework in place, we can track our slippage stats over time and see how they behave in normal and volatile market conditions, for example, January-February versus March-April. The results are shown in figures 3a and 3b.

"The choice of metric determines the expected range. If the rejection frequency is the metric of choice to value a liquidity provider, it is possible it jumped considerably more than the volatility increase"

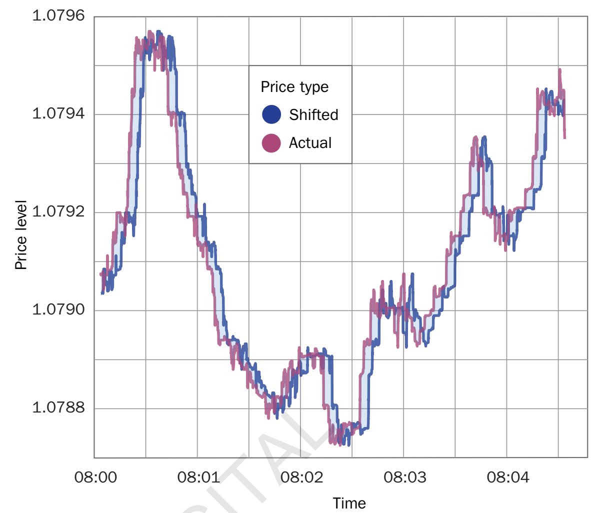
The first aspect that stands out is a sharp increase in realised volatility, which jumped from below 5% to about 20%. Expected slippage and probability of rejections also increased sharply in March. While these moves might not be surprising, it is worth noting their relative magnitude.

The potential slippage and the volatility increase are very similar, ranging between four and five times. This means that if the real slippage increased by less than a factor of 5 during the March sell-off in EUR/USD, we would have obtained a decent result.

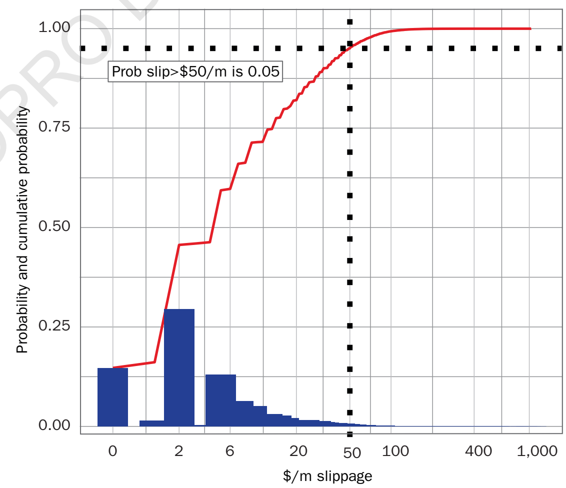
The probability of rejection – calculated here as the probability of a price move of more than $50/m over 250ms latency – rose by a factor of 30, from around 0.2% to 5%. Again, while not surprising, the magnitude of the increase is worth noting, as $50/m in a small time window is a fairly big number and it is designed to protect against exceptional circumstances. In volatile times those exceptional circumstances happen much more frequently.

These examples lead to a straightforward conclusion: the choice of metric determines the expected range. If the rejection frequency is the metric of choice to value a liquidity provider (LP), it is possible it jumped considerably more than the volatility increase. However, this does not necessarily mean an LP did a bad job.

2a. Potential slippage in EUR/USD



2b. Potential slippage distribution (one day)



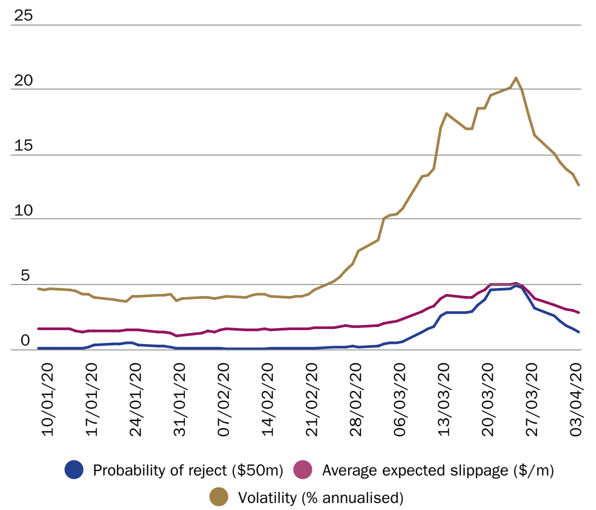
The above framework helps in projecting how execution patterns should adapt with changes in volatility and other market regimes. And because it is based purely on market data, a number of variables of interest can easily be calculated, such as the expected slippage conditional on rejections.

The key assumption is of course that market orders are uniformly distributed across the day. But the same argument can be made for different trading hours within a day. If, for example, execution only happens during London hours, only the price action during those hours should be used to calculate the potential slippage estimation.

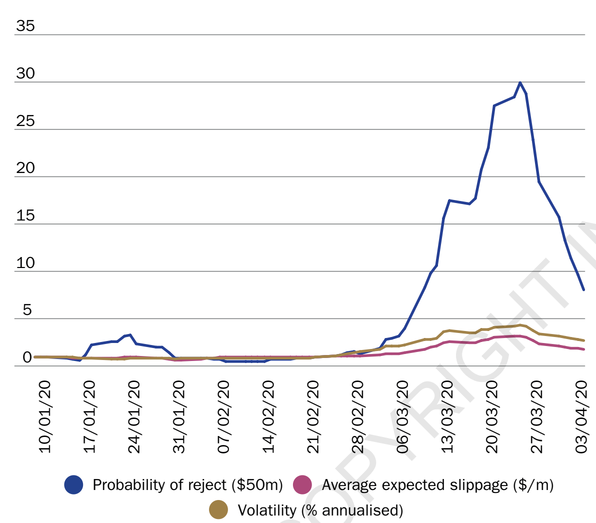
Execution around the 4pm fix

The potential for slippage is higher when markets move in the same direction as the execution. Needless to say, being able to correctly forecast the market direction would be the obvious way to improve execution quality. Analysing market dynamics around important

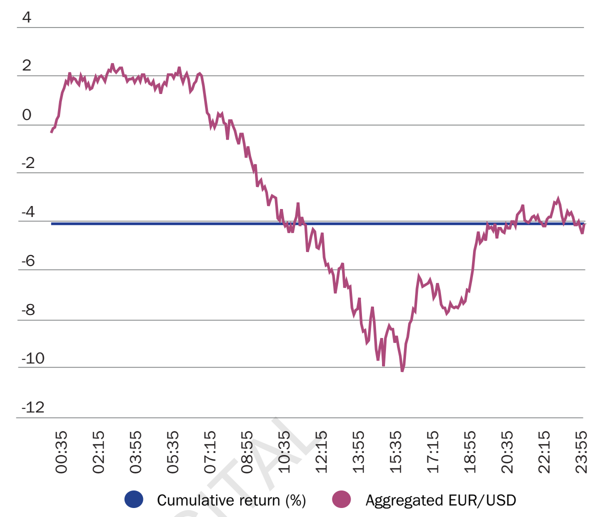
3a. Volatility, expected slippage and probability of reject



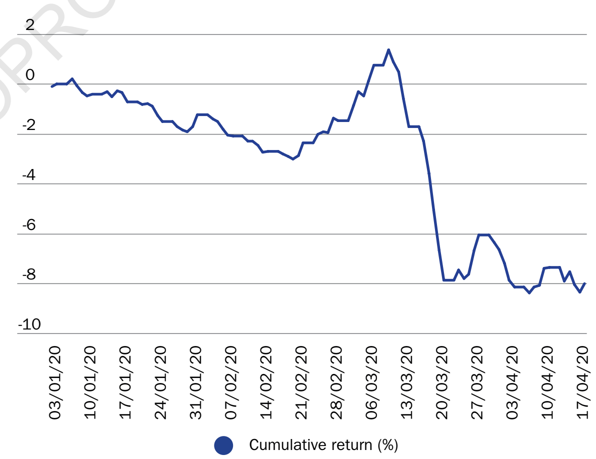
3b. Volatility, expected slippage and probability of reject, normalised



4. Aggregate EUR/USD dynamics YTD



5. Cumulative difference between 8am and 4pm EUR/USD level YTD



events could be an important first step in this direction. As a rule of thumb, the more generic an event is, the better it is for statistical inference. For instance, an analysis of GBP/USD around the Brexit referendum cannot be generalised easily.

The 4pm fix is probably the most generic event we can think of. Figure 4 shows EUR/USD for the first four months of 2020 as if it was one day, with returns in each time bucket summed up across days.

What stands out from the price dynamics is the turning point around the fix. EUR/USD is currently down 4% on the year. However, if we track the intraday move, the pair jumps in Asian trading hours, then it begins to drop when London opens and continues to fall all the way until 4pm, at which point a strong reversal occurs.

The pattern suggests a consistent EUR/USD selling towards the 4pm fix, before a market recovery is staged. If we only take the 60 minutes before the fix, we would be tempted to argue we are in the presence of a 'banging the close' type of execution. However, the longer-term picture suggests a more fundamental reason: EUR/USD is consistently under pressure throughout the entire London session.

As our exercise focuses on volatile versus quiet periods, the next step is to split this intraday pattern per each month analysed, as shown in figure 5.

To simplify things, we only focus on the difference between 8am and 4pm. The March drop clearly stands out, but the downward pattern was already visible back in January and throughout the first half of February.

What does this mean for execution quality? Simply put, if you have been selling EUR/USD in an algorithmic fashion at any point during the March sell-off, your implementation shortfall is less likely to have been good. Moreover, if you were targeting the 4pm fix level around mid-March, you would be around 8% worse off on

6a. Equity/FX correlations in quiet environment

	EUR	JPY	GBP	AUD	NZD	CAD	NOK	SEK	CHF	S&P500	Materials	Energy	Financials	Real Estate
EUR	100	25	52	54	51	46	72	73	73	9	15	12	10	0
JPY	25	100	-3	6	15	-3	9	12	52	-17	-15	-16	-17	5
GBP	52	-3	100	43	39	32	44	44	30	7	10	4	11	0
AUD	54	6	43	100	80	48	62	60	40	18	23	24	19	4
NZD	51	15	39	80	100	42	59	58	46	12	13	18	13	3
CAD	46	-3	32	48	42	100	56	48	31	15	17	22	18	1
NOK	72	9	44	62	59	56	100	78	48	19	23	27	17	4
SEK	73	12	44	60	58	48	78	100	56	15	21	15	16	1
CHF	73	52	30	40	46	31	48	56	100	-3	2	1	-1	1
S&P500	9	-17	7	18	12	15	19	15	-3	100	87	13	94	74
Materials	15	-15	10	23	13	17	23	21	2	87	100	25	84	57
Energy	12	-16	4	24	18	22	27	15	1	13	25	100	12	-24
Financials	10	-17	11	19	13	18	17	16	-1	94	84	12	100	64
Real Estate	0	5	0	4	3	1	4	1	1	74	57	-24	64	100

6b. Equity/FX correlations in volatile environment

	EUR	JPY	GBP	AUD	NZD	CAD	NOK	SEK	CHF	S&P500	Materials	Energy	Financials	Real Estate
EUR	100	82	59	40	50	19	37	79	95	-10	-16	-22	-19	-7
JPY	82	100	48	17	29	8	2	51	86	-49	-51	-57	-56	-41
GBP	59	48	100	85	91	50	62	67	54	22	23	22	20	34
AUD	40	17	85	100	94	55	72	68	31	41	45	48	40	47
NZD	50	29	91	94	100	55	76	71	41	42	44	43	40	49
CAD	19	8	50	55	55	100	50	44	11	22	24	43	27	28
NOK	37	2	62	72	76	50	100	70	20	58	54	54	54	60
SEK	79	51	67	68	71	44	70	100	68	6	2	3	0	10
CHF	95	86	54	31	41	11	20	68	100	-24	-27	-32	-32	-21
S&P500	-10	-49	22	41	42	22	58	6	-24	100	98	87	98	95
Materials	-16	-51	23	45	44	24	54	2	-27	98	100	92	98	94
Energy	-22	-57	22	48	43	43	54	3	-32	87	92	100	92	81
Financials	-19	-56	20	40	40	27	54	0	-32	98	98	92	100	95
Real Estate	-7	-41	34	47	49	28	60	10	-21	95	94	81	95	100

a cumulative basis than someone executing at 8am. This is quite significant.

Equity/FX correlation

We have considered slippage as a function of volatility and directional intraday moves as determinants of execution quality. The first defines whether the visible price can be achieved and what an acceptable difference between visible and executed price is. The second defines market timing in the context of execution.

The third dimension appears when several instruments need to be executed at the same time. As markets are selling off, all assets tend to follow the same direction.

Figure 6a and 6b show how the correlation structures change during normal and volatile time. The stress scenario splits currencies into risky and safe haven patterns. The correlation between the Australian dollar and the New Zealand dollar, and equities increased considerably in a volatile environment. The price action of the Norwegian krone was also undoubtedly linked to equities via the energy channel. The correlation between the yen and equities turned decisively negative, as yen is a classic safe haven currency.

The differences between the two tables are quite pronounced and matter when thinking about execution quality.

FX execution does not happen in isolation. Frequently, several currencies are executed in a context of concurrent equity execution.

> **“Frequently, several currencies are executed in a context of concurrent equity execution. Changing these correlation structures also changes the total risk of the execution”**

Changing these correlation structures also changes the total risk of the execution. This is something the risk budgets of execution desks need to take into account.

Lastly, every market stress brings opportunity. Currencies are known to respond to movements in other asset classes and do this more willingly in times of stress. Some of this predictability can be exploited to optimise execution. FX