transforming global foreign exchange markets

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FX SETTLEMENT RISK:

Building industry consensus to address the problem

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INTRODUCTION
Summer 2024

Welcome to our FX settlement risk supplement. Over the following pages we will explore some of the key risk factors impacting FX settlement with an emphasis on identifying issues and exploring best practice.

FX settlement exposure is an important consideration not just in FX but across the global financial system. The 2022 BIS triennial survey found that almost one-third of deliverable FX turnover ($2.2 trillion) was subject to settlement risk, up from $1.9 trillion in 2019.

CLS, as the leading market infrastructure mitigating FX settlement risk through the provision of PvP settlement, has conducted an analysis of its settlement member data to shed some light on the matter. The analysis found that around 90% of the settlement risk exposure associated with their FX trades in the 18 CLS-eligible currencies was successfully mitigated via CLSSettlement with full PvP.

As a result, it is widely accepted that the increase in settlement risk is due to an increase in currencies ineligible for payment versus payment settlement, such as heavily traded emerging market currencies, as a share of overall FX turnover. According to the BIS 2022 Triennial Survey, the growth in turnover of emerging market currencies has increased from USD0.2 trillion in 2010 (ca. 5.5% of trades) to USD0.7 trillion (ca. 8.5% of trades) in 2022.

The BIS also acknowledged that although existing netting and payment-versus-payment or PvP mechanisms help to mitigate settlement risk, they do not fully eliminate it - because existing PvP arrangements are at times unavailable or unsuitable for some trades. The rationale for increasing PvP arrangements is one of the key topics we will focus on in this supplement.

The BIS Markets Committee has referred to the importance of strengthening FX settlement data integrity and consistency and promoting market-based solutions to mitigate risk. Technology will obviously play a vital role in this process and that is another topic we explore in detail.

A note on the Single Supervisory Mechanism published by the ECB last year stated that FX settlement frameworks need enhancement and specifically referred to incomplete reporting and fragmented information systems that do not facilitate capturing of full FX settlement exposure.

The significance of the work being done by the Global Foreign Exchange Committee (GFXC) is referenced in our market perspectives article alongside the specific challenges posed by the move to T+1 securities settlement in the US.

In a submission into the review of the FX Global Code published earlier this year, the BIS Markets Committee recommended that the GFXC should continue its work on reducing FX settlement risk and described the 2021 amendments to the code that emphasised the use of PvP settlement mechanisms where possible and discouraging 'strategic fails' as a useful first step.

CLS has done – and will continue to do – valuable work in this area. Demand for CLSSettlement has risen steadily in the past few years and over the last 12 months in particular there has been increased engagement from third parties including banks, funds, non-bank financials and corporates.

Given that adding new currencies to CLSSettlement is a complex process, CLS is currently focusing on the development of its CLSNet platform, a standardised, automated bilateral payment netting calculation service across 120 currencies. This service facilitates the reduction of payment obligations exposed to settlement risk while improving operational and liquidity efficiencies, particularly for emerging market currencies not eligible for CLSSettlement (for example, trade instructions including CNH represented approximately 40% of the total notional value of net calculations in CLSNet during the second half of 2023).

It is important to recognise the significance of initiatives such as the G20 cross border roadmap and the strengthening of the settlement risk principles of the FX Global Code in building on industry momentum to further mitigate settlement risk.

We hope you find the content of this supplement stimulating and as always welcome your feedback.

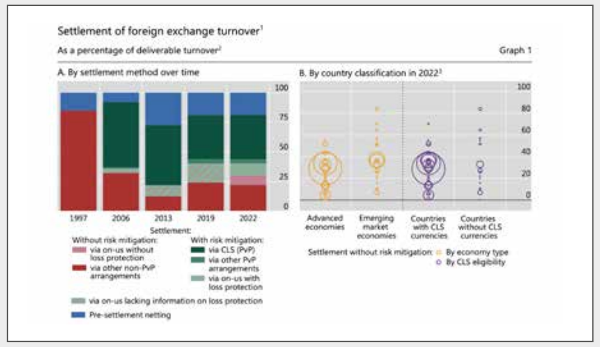
2022 BIS Triennial Survey confirms FX settlement exposure remains high and is increasing

Market participants have two main options for mitigating FX settlement risk. First, they can bilaterally offset their payment obligations to reduce the amounts that need to be settled (ie "pre-settlement netting"). Second, they can settle any remaining turnover via payment-versus-payment (PvP) arrangements or via the same clearer, termed "on-us".

Pre-settlement netting reduced settlement risk in almost a fifth of deliverable turnover in 2022, unchanged from 2019 (Graph 1.A, blue bars). As turnover has grown, this amounts to pre-settlement netting of $1.3 trillion per day (Table 1), up from an estimated $1.1 trillion in 2019. The increase can be attributed to wider availability of automated netting services, driven also by market pressure to reduce funding costs.

In the remaining turnover to be settled, much settlement risk remains despite the broader adoption of PvP arrangements since 1997. In April 2022, $3.5 trillion of deliverable turnover was settled with risk mitigation (Table 1 and Graph 1.A, green bars). Of this, $2.5 trillion was settled via CLS. Nearly $1 trillion was settled either via other PvP arrangements or via the same clearer or on-us with loss protection. The remaining $2.2 trillion was settled via on-us without loss protection or via other non-PvP arrangements and is therefore subject to risk.

Sources: CPSS (2008); Kos and Levich (2016); BIS Triennial Central Bank Survey; authors' calculations



1. Graph 1.A: Adjusted for local but not cross-border inter-dealer double-counting, ie "net-gross" basis; daily averages in April; on-us settlement is where both legs of a trade are settled across the books of a single institution; respondents in 2013 and 2019 did not report whether on-us settlement was with or without loss protection.
1. Graph 1.B: Adjusted for local but not cross-border inter-dealer double-counting, ie "netgross"; daily averages in April; a few countries reported greater settled turnover than deliverable turnover in which case we use settled turnover as the denominator.
2. Turnover settled with multiple payments between counterparties (eg spot trades, outright forwards, FX swaps and currency swaps).
3 Each circle represents a country, and circle area is proportional to the deliverable turnover reported by that country.

Settlement of foreign exchange (FX) turnover in April 2022[1]

In billions of US dollars — Table 1

	All counterparties		Reporting Dealers		Other financial institutions		Non-financial customers	
Deliverable turnover[2]	6,988	100%	3,248	100%	3,348	100%	392	100%
Pre-settlement netting[3]	1,337	19%	591	18%	665	20%	82	21%
Turnover settled	5,651	81%	2,658	82%	2,683	80%	310	79%
with risk mitigation	3,495	50%	1,783	55%	1,563	47%	149	38%
via CLS (PvP)	2,518	36%	1,333	41%	1,125	34%	59	15%
via other PvP arrangements	257	4%	101	3%	127	4%	30	8%
via on-us with loss protection	720	10%	349	11%	310	9%	60	15%
without risk mitigation	2,155	31%	875	27%	1,120	33%	161	41%
via on-us without loss protection	550	8%	259	8%	231	7%	60	15%
via other non-PvP arrangements	1,606	23%	616	19%	889	27%	101	26%

Source: BIS Triennial Central Bank Survey; authors' calculations

1. Table 1: Adjusted for local and cross-border inter-dealer double-counting, ie "net-net" basis; daily averages in April; settled turnover may include trades that were executed before April but settled in April.
2. Turnover settled with multiple payments between counterparties (eg spot trades, outright forwards, FX swaps and currency swaps).
3 Pre-settlement netting is calculated as the difference between deliverable turnover and turnover settled.

Concerns remain in relation to the management of FX settlement even after implementation of action plans

ECB Banking Supervisors have stressed that FX settlement activities and correspondent banking are essential components of the global payment system and that awareness of FX settlement has increased across the board. However they have flagged concerns that remain:

Identified concerns

1. **FX settlement frameworks need enhancement.** Imprecise **definition** and **calculation** of **duration. Approximation methods widely used without evidences of such method not causing underestimation of the risk** (also under stressed conditions).
2. **Lack of prudent limits for FX settlement exposures** (high levels to facilitate trading). Creditworthiness of counterparty not always properly reflected in limit setting. Limits set as guidelines instead of binding.
3. **Inadequate management of failed trades and limit setting.** Issues persist on escalation of failed trades.
4. **Incomplete FX Settlement reporting** which shows a non-comprehensive view of the risk
5. **Insufficient incentive system**
6. **Limited involvement of the Board of Directors**
7. **Information systems are fragmented and do not allow for capturing full FX settlement exposure.**

Identified good practices

- Calculation of the duration according to the standard definition by BCBS, or usage of reasonable approximation methods with evidences of no underestimation.
- Binding and prudent limits set to counterparties, considering its creditworthiness. Measurement of exposure to counterparty closely monitored and updated. Limits are influenced by eventual delays in settlement and depend on the rating of the counterparty, size and duration of the trade.
- Management of failed trades by ensuring a failed trade represents continued exposure for the full principal value of the trade to the counterparty. Proper identification and escalation of failed trades. Report of failed trades escalation of incidents included in the Group Policy.
- Reporting covering exposure at Group level with breakdown by type of settlement and top counterparties by ratings and sectors. Information on number of fails and status is included.
- Incentives i) penalties and financial costs resulting from settlement incidents are incorporated into the costs charged to the Business area, thereby affecting the profitability and ii) the remuneration of front office personnel is adjusted to take into consideration the existence of failed trades.
- The board is directly informed (and not only risk committees) on a yearly basis or at least in case of serious incidents or if the materiality of the risk increases.
- Institutions are prepared for crisis or stressed conditions (clear procedures, alternative settlement options, etc).

Source: European Banking Supervision

Determining the scale of the FX settlement risk problem and taking steps to address it

By Paul Golden

The FX industry continues to work hard to find ways of not just mitigating settlement risk, but improving access to market data to improve understanding of the scale of the issue.

Paul Golden

In recent years, policymakers and regulators have renewed their focus on FX settlement risk.

At a meeting in December 2023, the Global Foreign Exchange Committee (GFXC) discussed the importance of maintaining a continued focus on topics such as FX settlement risk mitigation and enhancements to data transparency in FX transactions.

The committee noted that a number of local foreign exchange committees will this year begin to collect standardized FX settlement data as part of their semi-annual FX volume surveys, which will enable more frequent assessment of FX settlement risk.

The main growth in FX has been in the dealer to client segment over the last 10 years as well as emerging market and developing economies and much of this flow settles outside of existing PvP services.

Current PvP solutions mitigate risk for dealer-to-dealer flow, mostly involving banks participating in CLS, as well as buy-side flow through CLS's settlement members that provide CLSSettlement to their customers (CLS third-party participants).

Basu Choudhury, head of partnerships and alliances at OSTTRA is confident that the issue of FX settlement risk has not been underestimated. But he also acknowledges that regulatory authorities and central banks have been reluctant to talk publicly about the impact of FX settlement risk for fear that negative commentary could lead to market uncertainty.

Valuable solutions

Unless there is a solution in place that helps firms mitigate this risk, any noise from central banks on this issue could lead to instability. In this context, the FX industry has an opportunity to pursue solutions that address risks but also provide value.

"Where regulations have been introduced in other asset classes, the proposals have been problematic for firms to implement and adopt," says Choudhury. "With FX the industry has the opportunity to self-regulate and control the outcomes. But there is a limited timeline and should the industry not act, regulatory authorities may be forced to step in and mandate the way forward."

According to Choudhury, the question of what steps banks could take to more fully address and manage FX

settlement risk should be framed in the context of the need for automation in the post-trade process.

"There are numerous levels of 'linkages' within each stage," he adds. "The challenge is that at the back end, for settlement the account could have thousands of daily payments so how do you associate or link this payment with a set of netted obligations or specific cash flow?"

Most firms only have the ability to link and automate the full stack where they manage the entire ecosystem for a client, normally if they are acting as a fund administrator or custodian. Even in this scenario it is likely that they will rely on a separate (correspondent) bank for settlement as they will not have direct access to central bank account and RTGS systems.

Understanding the degree of settlement risk

In collaboration with its members, CLS has analysed a subset of member banks' trades to determine how they were settled to provide an indication of the market's management of settlement risk and the range of mechanisms used to settle FX flows.

The findings showed that around 90% of the settlement risk exposure

Lisa Danino-Lewis

associated with their FX trades in the 18 CLS-eligible currencies was successfully mitigated via CLSSettlement with full PvP.

"Addressing settlement risk beyond CLS-eligible currencies may require an alternative solution," explains Lisa Danino-Lewis, Chief Growth Officer, CLS. "Given its systemic importance, adding new currencies to CLSSettlement is an extended effort that is subject to several factors. For example, ongoing and crucial legal, risk and liquidity standards must be met in the jurisdiction of onboarding."

Danino-Lewis explains that due to these limitations on access to CLSSettlement, CLS is focusing on growing CLSNet, its automated bilateral payment netting calculation service. The service automates the netting process via a standardized centralized platform, delivering greater operational efficiency and increased risk mitigation for currencies currently unable to settle in CLSSettlement.

She notes, "CLSNet is directly accessible to most market participants, including funds, corporates and non-bank financial institutions, making its benefits widely available to the FX industry. It has also experienced record growth in the last 12 months, underscoring the industry's support for the service."

Faster settlement

In February the SEC adopted amendments to shorten the standard settlement cycle for most broker-dealer transactions from the second business day after the trade date (T+2) to the first business day (T+1). The new regime came into effect on May 28th.

The Global Financial Markets Association (GFMA) notes that while T+1 is not a direct issue for FX, knock-on challenges occur because of the need to execute the securities

Basu Choudhury

transaction followed by the related FX transaction with compressed remediation time available.

T+1 FX settlement is challenging for a number of reasons. Many regulatory and operational considerations govern the FX settlement process, much of which comes down to the brokers and banks involved.

Taking positive actions on imperfect data could lead to an increase in error rates and therefore the costs of doing business observes Gerard Walsh, global head of client solutions, banking and markets at Northern Trust.

Risk mitigation

Walsh says the industry will need to stay on its toes to mitigate such risks and ensure steps have been taken to minimise negative consequences for investors from inefficient processing.

"We have seen increased interest in solutions that deliver the trade, matching, clearing and settlement process as well as trade-related FX in a single coherent lifecycle," says Walsh. "We believe this trend will continue for as long as the settlement mismatch between the US and other major markets persists – in other words, for some years to come.

Executing the FX trade in a comprehensive trade lifecycle as close as possible to the time the underlying assets are traded can be achieved through an automated, tailored and programmatic FX funding mechanism that is linked as close to the underlying transaction as possible, along with flexibility in execution timing and access to global liquidity.

However, many firms do not have the operational processes to speed up workflows to ensure settlement takes place in this new shortened time frame. Some have looked for operational simplicity and had their custodians do more management of FX exposures, but this is likely to lead to an increase in transaction costs.

"I suspect some will have gone the other way and want to outsource these operational processes to specialist FX managers who can reduce transaction costs and manage settlements," says Nathan Vurgest, director, head of trading at Record Financial Group, who refers to increased demand for STP operational services.

"The value-add is in a manager who can accurately review trade requirements and act in the short time frame needed at minimum cost of execution," he adds.

Limited impact

At the beginning of April, CLS announced that it would not

Nathan Vurgest

make any operational changes to CLSSettlement ahead of T+1 implementation in the US in May 2024.

This decision was based on a member survey, asset manager outreach, as well as analysis of CLS transaction data to assess how the move to T+1 could affect asset managers and funds.

"Asset manager outreach combined with CLS's analysis of its transaction data indicated that a value equivalent to 0.4% to 0.5% of CLSSettlement average daily value could be impacted by the move to T+1 in US Securities, "observes CLS chief growth officer, Lisa Danino-Lewis. "More than 50% of asset manager respondents said the majority of their risk could still be mitigated through CLS even without any changes to custodian cut-offs or deadlines, while 35% have not yet decided how to respond to the impact of T+1."

"Following the T+1 implementation, there has been no reduction in CLSSettlement's average daily value (ADV). In fact, we have seen an increase in CLSSettlement ADV from USD6.6 trillion in 2023 to USD7 trillion (year-to-date). We will continue to monitor and analyse our transaction data and will provide updates as appropriate." said Danino-Lewis. She added that "In the meantime, prioritizing execution and operational efficiency across the asset manager and fund community remains paramount, which is where solutions such as CLSNet can offer valuable support. We are also working closely with our settlement members, asset managers and the wider ecosystem to proactively explore possible solutions to address any challenges that may arise."

Alternative approaches

Choudhury agrees that the move to T+1 're-bilateralises' FX settlement with managers that choose to miss or end up missing the CLS deadline

Gerard Walsh

having to settle bilaterally. However, he notes that firms are exploring other ways of addressing the issue.

Where possible firms may trade synthetic securities, which would allow them to benefit from price moves but not need to physically settle the securities - removing the need to trade and manage FX.

"Where a fund cannot trade synthetic securities, one option is to outsource FX execution and settlement to the custodian who manages their USD DvP," observes Choudhury. "Both models have pros and cons but they do allow firms to avoid the potential for settlement failures in both their FX and securities activities. In the long term other countries will adopt T+1 models and the industry will require more flexible PvP models."

As for what can be done to encourage wider industry engagement around the challenge of FX settlement risk, Choudhury refers to existing engagement by both banks (industry working groups) and buy-side customers.

"We have seen a real appetite for our bilateral PvP service," he adds. "We are in the process of growing the ecosystem and see this as a complementary ecosystem to CLS as the coverage is focused on the flow (either participant, duration or currency) that may not be efficient or practical within a multilateral PvP model."

COMMENTARY & PERSPECTIVES

OSTTRA:
Helping to solve the post-trade challenges of the global financial markets.

OSTTRA plays a critical role in supporting global financial markets, connecting thousands of counterparties on its multi-asset networks that underpin the post trade lifecycle from trade capture, through portfolio optimisation, to clearing and settlement. We asked Basu Choudhury, Head of Partnerships and Strategic Initiatives at the firm, to tell us more about the services it offers, including a new FX payment-versus- payment (PvP) solution which is aimed at mitigating settlement risk for FX transactions that are not settled on CLS.


Basu Choudhury

Basu, OSTTRA brings together four businesses that have been at the heart of post trade evolution and innovation for more than 25 years: Please can you give us a little background on who they are.

OSTTRA was formed in 2021, bringing together CME Group's optimisation businesses –Traiana, TriOptima, and Reset – and IHS Markit's MarkitServ. The aim was to create a leading provider of post-trade solutions for the global OTC and exchange-traded derivative markets across interest rate, FX, equity, credit and commodity asset classes.

How does OSTTRA strengthen post-trade infrastructures and ecosystems and what range of FX solutions does it provide?

OSTTRA is central to helping financial institutions solve some of their core business challenges by connecting thousands of counterparties worldwide. We process millions of trades every day by connecting to all primary and secondary liquidity pools (ECNs, eFX, IDB, Voice). Firms leverage our ecosystem to process notice of executions, match, confirm and allocate FX trades to give all parties T+0 certainty on trade economics. Additionally, we provide services critical to optimisation and reconciliation of FX portfolios, through compression, rebalancing, basis risk mitigation, margin and portfolio services. We now enable firms to mitigate their bilateral FX settlement risk through our PvP settlement orchestration service.

What types of clients are looking to OSTTRA to help them manage the post-trade challenges of the highly diverse and fragmented FX market?

OSTTRA links over 2000 participants to the ecosystem of FX venues (ECN, eFX, SEF, MFT, voice) to provide end to end workflows for the world's top 50 executing banks, all of the largest prime brokers, FCMs and their thousands of hedge fund and investment management clients.

Earlier this year OSTTRA launched an FX PvP settlement orchestration service designed to mitigate bilateral settlement risk between participants. What was the motivation for doing that?

For OSTTRA, there were two key motivations. The service will provide our customers with efficient ways to mitigate, manage, monitor and control the approximately $2.2T FX deliverable activity that today settles without any risk controls.

Additionally, the construct of Distributed data, shared workflow and peer-to-peer interactions orchestrated by a trusted administrator aligns with our long-term vision of the future digital ecosystem of post-trade wholesale financial markets.

Please tell us about the focus of this new PvP service and the key benefits it will deliver.

The focus on day one is to onboard large FX dealer banks onto the network. We anticipate that the service will provide benefits for flows that cannot today be managed through PvP models.

This would include offshore emerging markets currencies along with short-dated transactions on G10 currencies, or currencies where firms have liquidity challenges.

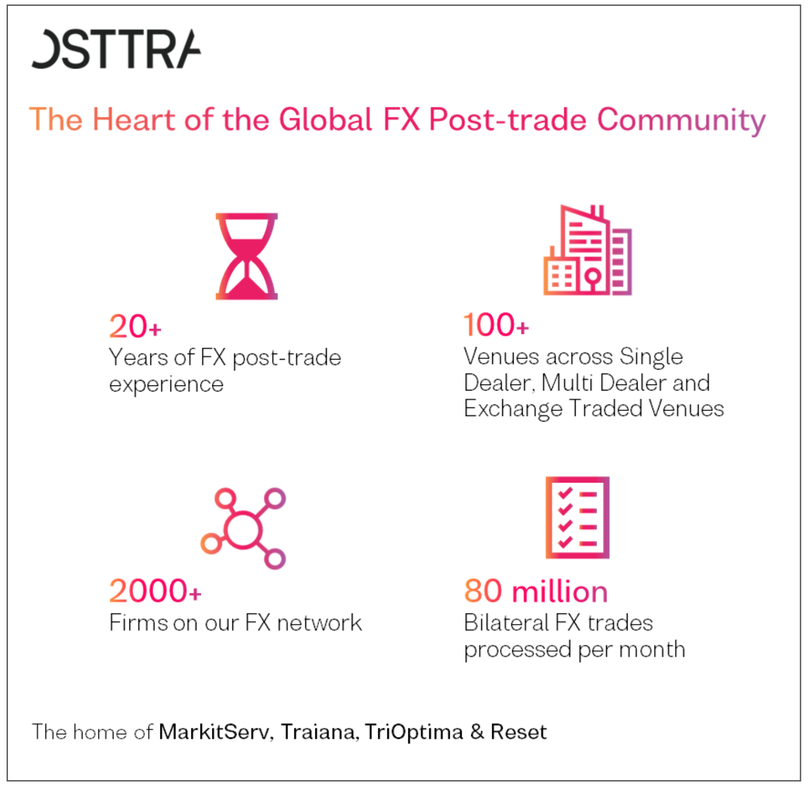
Once this network of firms and flows has been established, we will look to expand with PB/fund admin/ custodian workflows and their associated hedge fund or investment manager customers. In doing so, firms will be able to address the large settlement and liquidity risks that exist today for D2C flows.

How will the service be delivered?

The service will be hosted, managed and operated by OSTTRA, and powered by Baton Systems' CoreFX technology. Clients will participate in the ecosystem through our cloud-based SaaS offering, while OSTTRA's rulebook and contractual framework will provide firms with the legal certainty and the necessary operational and technical support to facilitate their efficient participation.

How important is this launch in the evolution of your own FX network and in what ways could it mark a significant milestone in increasing market wide access to PvP, helping to address FX settlement risk concerns?

The launch will enable all participants to benefit from end-to-end automation and full visibility



OSTTRA by the numbers
OSTTRA builds and manages the post-trade workflows that financial institutions across the Capital Markets rely on to process and reconcile their trades, manage exceptions and enable timely settlement for all OTC and exchange-traded derivative markets.

of their FX transactions and settlements. We will achieve this by linking point of execution into T+0 post-trade matching and allocations, which allows for a single source of truth. The associated daily lifecycle processing, including pre-settlement matching, netting, payment shaping, settled-to-market (STM), and final PvP settlement can all be linked efficiently back to the original execution and optimisation activity.

What plans do you have for developing the new PvP service still further?

Our initial focus is to enable FX settlement risk mitigation services and grow the ecosystem to encompass D2C end-to-end flows. Over time, the intention is to extend the service, initially to provide balance sheet relief (continuous compression, STM model) and then to create enhanced liquidity optimisation solutions (data driven ML / AI) and provide cross asset efficiencies (netting / STM) while expanding the ecosystem to bridge with new digital end points (Wallets, Synthetic CBDC, Custodian chains or digital ecosystems).

How much scope is there for achieving even greater post-trade efficiencies across OTC asset classes and what opportunities will this present for OSTTRA to play a central role in delivering them?

The PvP service is the first enabler of achieving both the cross-asset settlement netting and balance sheet-efficient STM construct, where trapped collateral can be effectively linked and released, contingent on settlement (PvP, IRD resets, Equity Swap, Dividends, Bond Coupons etc.). While some may view this as the holy grail, with OSTTRA's existing OTC networks, optimisation capabilities and pedigree in operating robust, safe, and secure ecosystems, we see this as an achievable end state for the wholesale financial markets.

What can be done to increase the appeal and adoption of Payment Versus Payment (PvP) settlement mechanisms?

By Vivek Shankar


Vivek Shankar

FX market participants have always prioritised reducing settlement risk and over the years, payment-versus-payment, or PvP, has emerged as one of the best ways of reducing it. Despite generally positive sentiment toward PvP, the proportion of PvP-settled trades has decreased.

Marc Bayle de Jessé, CEO at CLS notes this trend and says that rising EM currency trading is pushing the percentage of PvP settled trades down. "Despite the continued growth in CLSSettlement values, there has been an increase in the turnover of non-PvP settled trades, driven primarily by the increase in trading volumes of emerging market currencies, many of which are not CLS-eligible ," he says.

Meanwhile Basu Choudhury, Head of Partnerships and Alliances at OSTTRA, points to another reason. "Over the last 10 years, non-bank participation in FX markets has increased greatly in absolute terms," he says. "Much of this flow does not settle in CLS due to limited access for these participants."

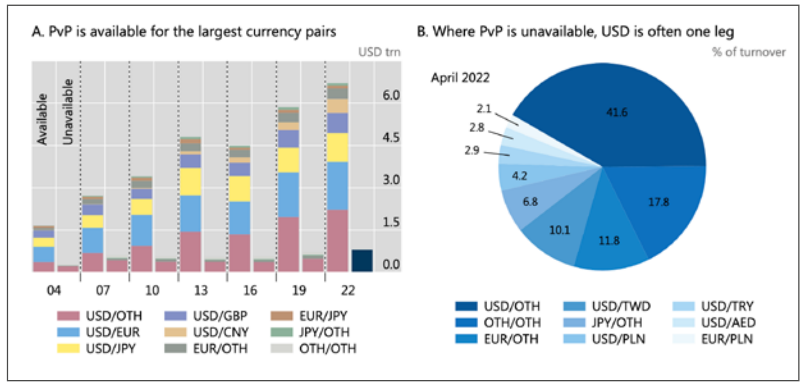
What other issues exist, preventing the adoption of PvP in FX? And how are solution providers evolving to address them? Let's dive in.

Barriers to PvP adoption

Rising EM currency flows have long been an issue for PvP adoption. Currently, CLS settles 18 of the largest currencies and these represent 80% of FX trade volumes. The remaining 20% is from where challenges emerge.

Bayle de Jessé explains that bringing a currency into CLSSettlement is a complex effort subject to several factors, given CLS's systemic importance. "For example, it requires support from the relevant central bank and crucial legal, risk and liquidity standards must be met in the jurisdiction of onboarding. Local authorities also set the agenda and timing for the onboarding of their currency."

"For that reason, we are now focusing on growing and enhancing CLSNet, our automated bilateral payment netting calculation service. The service helps mitigate risk for emerging market currency trades by supporting market participants in significantly netting down their overall positions, leading to a reduction in the payment obligations exposed to settlement



Sources: CPMI (2022); BIS Triennial Central Bank Survey; authors' calculations.

Availability of PvP settlement for foreign exchange currency pairs [1,2]

[1]Adjusted for local and cross-border inter-dealer double-counting, ie "net-net" basis; daily averages in April. [2] A PvP arrangement is available if a currency pair can be settled by either the B3 Foreign Exchange Clearinghouse (B3) in Brazil, the Clearing Corporation of India Limited's Forex Settlement (CCIL), the Clearing House Automated Transfer System (CHATS) in Hong Kong or CLS.

risk while improving operational and liquidity efficiencies."
He added that recent growth statistics illustrate the scale of the industry's support for CLSNet. The average daily netted value[1] of net calculations in CLSNet consistently exceeded USD120 billion over the last 12 months.
Most recently, on 20 June 2024 CLS witnessed a record daily notional of USD593 billion netted in the service.

Kate Weston, VP, Head of Execution, Portfolio Optimisation at Capitolis, says that institutions can leverage a settlement optimization service in such situations where PvP is not available. "This method optimises currency exposure by moving positions across participating banks and optimising each pair simultaneously," she says.

"In addition, the service enables financial institutions to reduce gross notional and line items to simplify their books, so they can more easily handle a sudden currency shock or crisis." Weston likens it to purchasing a home insurance policy before something adverse occurs.

"A settlement optimization service looks to reduce exposure ahead of time, providing a unique and vital service by addressing potential settlement risks before they escalate," she says. "This creates an added layer of protection for the global banking system."

Choudhury notes that the multilateral service model itself has a few limitations, making it less than ideal for a section of market participants. "Someone, either the service provider or settlement agent, must mitigate against the risk that one or two parties could fail to pay in their obligations," he says. "This normally involves liquidity backstops and settlement limits and tools to remove exposures."

He notes that the CLS model also presents a few challenges in terms of cash reserves and central bank access. "The model works for a bank-to-bank flow," he says, "but where you have an investment manager with a thousand funds, you can't get away from settling with every single one. The cash needed to service all of that now increases exponentially, making it impractical."

Jarrad Hubble, CEO of RTGS. global believes two barriers prevent wider adoption. "There are two main barriers for using an existing settlement arrangement: omission of the currency from that service, or the fact that at least one of the sides to the settlement is not using it," he says.

He explains that these barriers are why RTGS.global believes a new fit-for-purpose common platform is essential. "[An ideal new platform] creates a foundational regulatory framework, designed with accessibility and the potential for a truly global reach in mind, is underpinned by an agile technical infrastructure that leverages the latest standards, payments, message standards, application programming interface (API) and technological advancements, and is overlaid with a comprehensive notification and workflow where finality of settlement is achieved within its rulebook," he says. In this picture, settlement will be instant, transparent, predictable and executed with certainty of outcome.

"The availability of such a platform across multiple jurisdictions will allow for previously unavailable levels of interoperability whereby currencies can be freely exchanged with peace of mind that local host bank funds are segregated and held at the relevant central banks," Hubble says. "This will result in the opening up of previously underserved currency corridors — as recently demonstrated with the successful transaction we facilitated with Credo, Humo, Arvand, Alif and Anorbank."

Choudhury says that the industry needs alternative PvP models, like the OSTTRA bilateral PvP initiative that's underway right now, to offer flexibility and open it to a wider range of market participants. "You want flexibility in terms of settlement times, whether you're based out of Singapore or Latin America," he


Marc Bayle de Jessé

says. "You also want currency pair settlement flexibility." When asked to explain more about the latter, Choudhury outlines an example. "You and I could have a Euro-Dollar settlement, but maybe we don't want to settle that Euro-Dollar," he explains. "Maybe we want to roll it to the next day or we want to participate in a multi-party liquidity optimization service."

These kinds of overlays and flexibility are critical to minimising the settlement risk that lies outside of CLS Choudhury feels. Is there anything additional the private sector can do to facilitate increased PvP adoption?

Choudhury says that while industry participants can play a role, new models are the only answer given that the current model is at capacity. "Until we evolve [existing] infrastructure to something new, you're not going to get to that [ideal] end state," he says.


Basu Choudhury

1 Netted value refers to bilateral net payment amounts calculated by CLSNet.

Kate Weston

What service providers can do

Currently, institutions can access two types of settlement optimisation services for currencies outside the CLS umbrella, Weston says. These are Bilateral Day of Settlement Netting and Multilateral Future Settlement Optimisation.

"A bilateral mechanism allows for the offsetting of payment obligations between a pair of participants across multiple currencies the day the trades are due for settlement," Weston explains. "The benefit of this service is operational risk reduction and operational efficiency."

Multilateral Future Settlement Optimization is facilitated as a run with multiple participants looking to optimise for future settlement. "This mechanism moves positions across network participants," Weston says. "The benefit of this service is future risk reduction while also allowing participants to reduce gross notional and line items to simplify books."

Jarrad Hubble

Market participants can currently access different PvP solutions, all of them based on different models. For instance, some rely on central bank accounts while others work with commercial bank accounts, etc. No matter the model, what market participants want can be boiled down to a few factors.

A good PvP solution must be flexible, transparent, and quick to orchestrate. These factors will help participants use and plan future use of their assets. Choudhury notes that liquidity management and flexibility around settlement times are critical.

"Liquidity optimization tools, similar to compression or rebalancing mechanisms, will be crucial for the growth of and adoption of any broad-based PvP ecosystem," he says. However, he notes that service providers cannot stop at merely mitigating settlement risk. "Most firms are now grappling with balance sheet constraints due to the introduction of SA-CCR," he explains. "Any service that can provide further lifecycle benefits for the FX inventory will provide greater benefits for the end customers (IMs, HF, Corporates) and banks."

Bayle de Jessé agrees and says that PvP settlement must deliver additional efficiency benefits if it is to be adopted more widely in the market. "CLSSettlement is a great example of this as before settlement, it calculates the net funding required of each settlement member on a multilateral netted basis," he says. "Each settlement member only transfers the net amount of its combined payment obligations in each currency, while still settling the gross value of its instructions."

As a result, the cash required to settle trades in a given day shrinks considerably. "This makes over 96% of cash flow available for other business operations like trading, sales, and business growth," he says.

In addition, CLS offers a liquidity management tool to its settlement members – in/out swaps, which, when combined with multilateral netting, results in an average funding requirement of less than 1% of the total value of all trades for participating settlement members.

He added, "Consider our recent record day. On 20 June, CLS settled a record USD19.1 trillion of FX payment instructions. Rather than funding the gross amount to settle their trades, our clients only need to pay the net amount. On this occasion, that was USD380k for every USD100 million settled or 0.38% of the gross value settled. This is only possible due to the unique size, depth and global nature of the CLS network."

In addition, solving problems at the very beginning is critical. Onboarding is typically a tedious process, given regulatory requirements, and creating as smooth an experience as possible is critical to a service provider's success.

Choudhury says that standardising legal documents is critical to fast onboarding. "Standard workflows for block, allocations, and netting protocols along with API-based integrations linked to standard protocols like ISO20022, Fix, etc will simplify onboarding," he says.

Broader access and T+1's impact

While service provider actions are important, access to PvP arrangements is just as critical. For its part, Bayle de Jessé says CLS supports expanding eligibility to a broader range of market participants, including allowing certain low-risk non-bank participants to directly participate in systemically important FMIs.

"For this to be permitted, changes would need to be made to the Settlement Finality Directive in terms of permitted participants," he says. "However, any such expansion in participant accessibility should be assessed against the trade-off of potential changes to the ecosystem's risk profile."

Wider access to CLSSettlement is already available via CLS settlement member banks that act as third-party service providers. There are more than 35,000 third-party participants including banks, funds, non-bank financial institutions and multinational corporations that access CLSSettlement in this way. In the past five years there has been an increase of 33% in the number of legal entities from around the globe settling through CLSSettlement third-party service providers.

Choudhury feels the point about the risk profile poses the biggest challenge. "With multilateral service, this is difficult as someone, either the operator or the bank intermediaries, must take on the risk that one party does not pay in what they owe," he says.

Choudhury believes that due to the challenge of risk profiles for multi-lateral services, bilateral models are more practical. "However, the uptake will be facilitated by existing service providers such as custodians, fund administrators, and prime brokers," he notes. "In the future, the integration of a blockchain deposit account (BDA) into a PvP ecosystem would allow a client to have direct settlement accounts without utilising the bank intermediaries' balance sheet."

No talk of settlement risk these days is complete without addressing the T+1 elephant in the room. Val Wotton, DTCC Managing Director, General Manager of Institutional Trade Processing, says cross-border trades will become particularly challenging.

"Foreign investors are only able to determine the actual amount of U.S. dollars to be purchased upon confirmation of the trade," he says. "At the same time, the FX challenge also creates settlement risk, as foreign investors selling their local currency may not receive the U.S. dollar equivalent to finalise the transaction on time."

He believes that observing and learning from other markets' move to T+1 is instructive. "When India moved to T+1 in several phases starting in February 2022, industry participants explored solutions to address the shortened processing window and mandatory pre-funding concerns," he says.

"While India did not turn into a mandatory pre-funding market post T+1 implementation, what we learned from India's financial markets is that it is up to foreign investors to work with their intermediaries, including global and local custodians and banks, to agree on the most suitable approach to meet their FX requirements."

Choudhury sees two outcomes. "The non-US IMs could increase their usage of Synthetic Securities and avoid needing any FX trade to fund the US securities," he says. "Alternatively, they will likely be forced to outsource their FX execution to the US custodian who is providing the DvP to meet the compressed funding and settlement timelines."

When asked about its impact on CLSSettlement, Bayle de Jessé said, "Asset manager outreach combined with an analysis of our transaction data indicated that a value equivalent to 0.4% to 0.5% of CLSSettlement ADV could be impacted by the move to T+1 in US Securities."

As a result, at the beginning of April, CLS announced that it would not make any operational changes to CLSSettlement ahead of T+1 implementation in the US in May 2024. This decision was based on the asset manager outreach, the analysis of CLS transaction data and a settlement member survey. Bayle de Jessé concludes, "While we have not made any operational changes to CLSSettlement, we will continue to work with our clients and the broader ecosystem to explore how we can support the market in the longer term, while always prioritising the stability of the FX ecosystem."

Val Wotton

Expanding PvP settlement

In the short term, not many options seem available to expand PvP access. However, Bayle de Jessé notes that partnerships are always critical. "CLS believes that public-private sector partnerships are the optimal model to solve FX industry challenges such as expanding PvP settlement," he says, "as it ensures that the market's needs are truly understood and that initiatives borne out of this collaboration receive sufficient industry investment and support."

Continuing the theme, Choudhury says that OSTTRA has launched a flexible bilateral PvP settlement orchestration recently. "We are in the process of growing the ecosystem of bank participants and we anticipate that custodians/fund admins and their IMs will look to join as this ecosystem expands," he notes.

Thanks to moves like these, the long-term picture for PvP remains optimistic, even if short-term adoption lags expectations.

INDUSTRY VIEWS

Bright ideas, the promise of new technology and prospects for the future

By Vivek Shankar

Payment versus payment (PvP) settlement offers FX market participants plenty of benefits—benefits that every stakeholder recognizes. However, the rising proportion of non-PvP settled trades tells a different story.

"Whilst incumbent PvP arrangements protect a significant proportion of daily FX settlements from settlement risk, it is well-recognised that such arrangements are not available to all segments of the FX market," says Jarrad Hubble, CEO of RTGS.global. "Many emerging markets and developing economy markets, for example, do not have PvP solutions available to them, despite trading in their currencies having increased over the years."

While rising EM currency demand and their presence outside CLSSettlement is a major contributor to this trend, is there a technological reason behind rising settlement risk?

Basu Choudhury, Head of Partnerships and Alliances at OSTTRA, doesn't think so. "The issue here isn't the technology or the way the technology was developed," he says. "When CLSSettlement was designed and developed its focus was to address the large risk in the interbank FX market."

He says that while the multilateral batch model works well to deliver value to these participants, recent growth in non-bank flow is making this model ill-suited.

"The rigidness of the model is not well suited to help mitigate this risk as it implies much larger liquidity backstops and/or greater risk for the settlement agent who is intermediating on behalf of the non-bank client," Choudhury explains.

So what does the future hold for PvP, and what role will technology play in it?

Technology as a solution

Designing a new system to accommodate recent changes in flow is challenging. Market fragmentation caused by new solutions and the unproven resilience of new technologies are just two of the obstacles. Given these challenges, Dirk Bullmann, Managing Director, CEO office at CLS, believes FMIs are best suited to tackle them.

"While we welcome new approaches aimed at reducing settlement risk in the FX market, it is crucial to weigh the benefits of any new solution against the risk of market fragmentation. This fragmentation could potentially reduce market efficiency, re-introduce risks and increase funding costs," explains Bullmann.

"FMIs, as regulated entities bound by strict rules and standards, play a crucial role in safeguarding the financial industry. These standards ensure that the infrastructure supporting global financial markets is resilient, particularly during times of market stress."

In addition, Bullmann highlights that FMIs have best-in-class risk management practices, scalability and regulatory experience - positioning them well to develop new solutions to address evolving market needs. "The effectiveness of the FMI model in mitigating FX settlement risk is evidenced by the increasing PvP settlement values and the growing CLSSettlement community," he says. "Since 2021, CLSSettlement values have increased by 8%, reaching an average daily settled value of USD7 trillion currently".

"New FX settlement solution providers may also seek to enhance efficiency by offering their settlement rails to further mitigate other cross-border payment frictions," Hubble says, "such as slow and expensive movement of funds due to long transaction chains, limited hours of functionality, expensive credit, credit risk, opacity as to the status of a payment, and trapped liquidity, most of which are a direct result of over-reliance on the traditional correspondent bank network."

"The time is right for new initiatives to provide services to an expanded set of markets and industry stakeholders, especially where there are clear opportunities for and from more efficient cross-border payments but a lack of availability of PvP and streamlined global payment mechanisms."

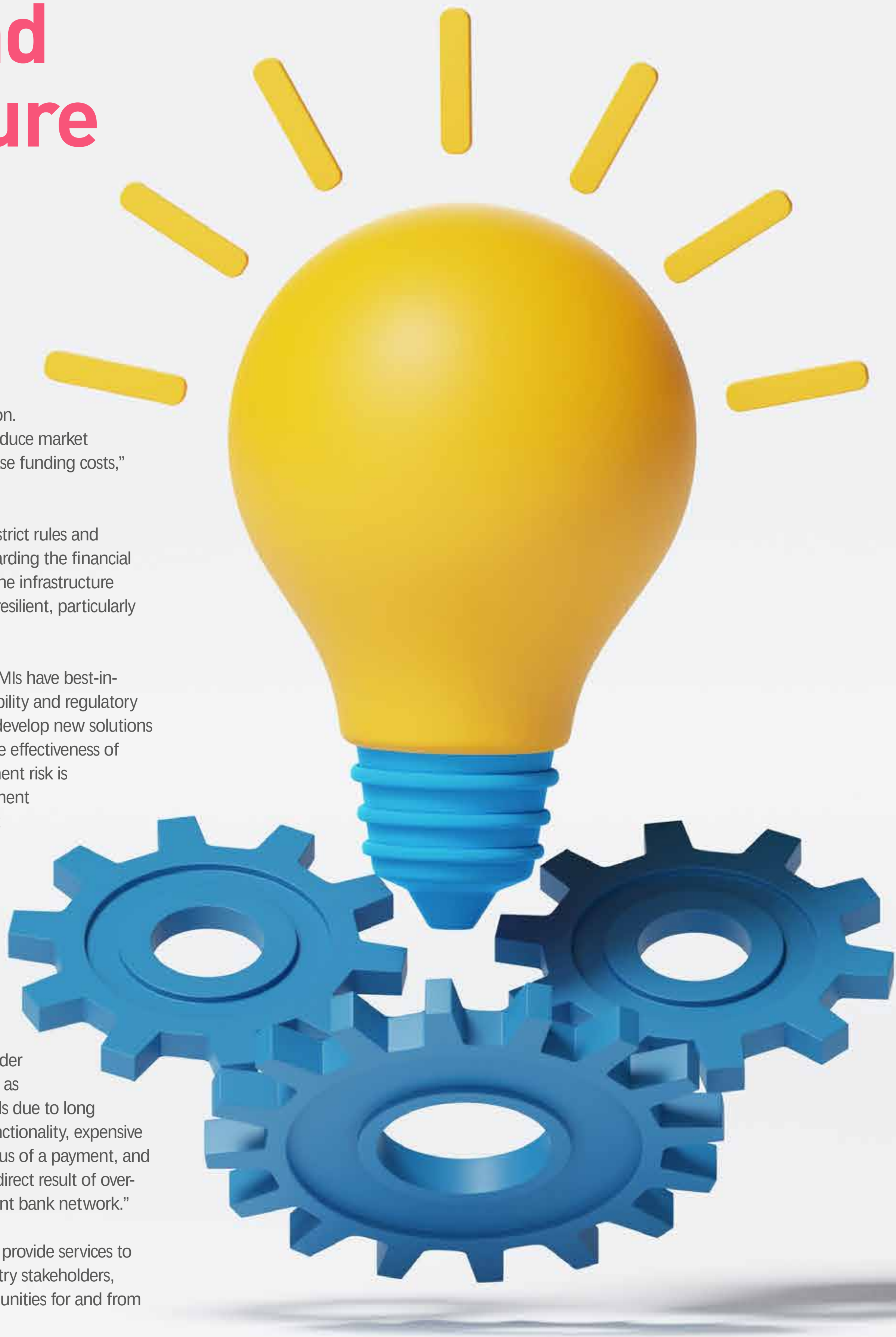


Image by shutterstock

The question of overcoming legacy technology's restrictions always arises when discussing the development of a new solution. The past few years have seen blockchain and DLT systems gain popularity. Can these be a solution for PvP?

Choudhury is quick to point out a nuance in this line of thought. "The key concept is not blockchain, rather it is distributed data, shared workflow and peer-to-peer interactions where a trusted operator (CeFi) provides legal and operational certainty to participants in a closed ecosystem," he says.

He explains that merely creating a so-called golden record of a transaction is not enough. "When you say you have this golden record, what you need to do is give the participant the ability to reconcile in real time with their current books and records," Choudhury says.

In terms of shared workflows, he gives an example of flexible settlement based on flows. "Even though I owe you 100 million, it could be that I get 10 million every hour," Choudhury says. "I want that flexibility to be able to say 'Can we split that 100 million into lots of ten every hour', or 'I have a regular schedule where I know my DVP settles in X time'. Can we have these batch processes or intraday runs where we can settle bilaterally?"

He acknowledges that this system will introduce a new form of commercial bank risk. "Broad adoption in wholesale markets will require either synthetic CBDC or wCBDC to scale," he notes. "RTGS.global and Fnality are attempting to implement this type of model however it needs access to either central bank accounts or direct access to local payments infrastructure (RTGS systems), both of which have high compliance overheads and will take time."

Alex Knight, Head of EMEA at Baton Systems, says DLT in post-trade processing can smooth the T+1 transition. "DLT allows workflows to be automated and collaborative," he says. "These workflows permit event- or time-based processing to happen in a mutually agreed, consistent, and transparent manner."

"One example is the process for PvP settlement, by which exchange of ownership occurs instantaneously and simultaneously, an event that only occurs when both parties have funded the appropriate (and secure) settlement accounts."

He explains that shared data can include not only data around the transaction economics but also data related to the settlement process. "For example, the standing settlement instructions that are to be used for a certain settlement event," he says. "This shared data reduces the need for ongoing reconciliation and reveals mismatches early in the process, meaning that the operations team is

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more ready to handle the settlement process."

wCBDCs are the most promising technology on offer right now, but Choudhury notes that they're still a few years away. "These types of Micro structures evolve over many years with close collaboration between private sector (the operator) and public sector policy makers," he says.

He is quick to point out that while wCBDCs are a great starting point, liquidity-efficient settlement solutions need resilient and robust ecosystems where value transfer can be facilitated securely.

Bullmann concurs and adds, "There has been an increased focus on wCBDC, and significant advances have been made in the work around cross-border payments. However, the jury is still out on the role wCBDCs could play in cross-border payments, wholesale PvP settlement and the FX ecosystem generally, and further analysis should consider legal, regulatory, governance, political and other non-technical issues to ensure systemic stability."

Standardisation and reducing stratification

Standardisation is often a great way to improve efficiency in any process and settlement is no different. Frameworks such as ISO20022 messaging can potentially improve efficiency, but they are ineffective without the right processes backing them up. Bullmann underscores the significance of standardization and automation in tackling risk. CLSNet – a standardized and automated bilateral payment netting calculation service - is designed to mitigate operational risk and improve operational and liquidity efficiencies for currencies ineligible for PvP settlement in CLS. The service facilitates the reduction of payment obligations exposed to settlement risk while improving operational and liquidity efficiencies. "We believe that the true benefits of the bilateral netting calculation process can only be realised through a centralized and standardized industry utility model, supported by an underlying rulebook. Crucially, such conditions are essential for generating a network effect that maximises benefits for FX market participants," he says.


Basu Choudhury

Meanwhile Choudhury adds, "Technology on its own does not solve the issue, standard workflows and handshaking will be crucial." He believes that standardisation can make intermarket settlement linkages more efficient.

"Banks typically receive thousands of daily payments into an account for a given client (or multiple end clients when there is an omnibus structure)," he says. "The subsequent allocation of these funds to the end client normally involves reconciliations and links to the obligations that generated the receipt of funds, today many banks will only perform this exercise at EOD."

He believes adopting Swift GPI can simplify this picture and enable banks to track and allocate funds intraday. "However the dependency is with the sender to identify at the point of funding not only who the end beneficiary is but to also indicate what obligation they are fulfilling," he says. "This could be a single FX trade or more likely it is a netted FX obligation."

Hubble notes that despite complexities, the market does not need a "Big Bang" approach. "In collaboration with the banking community and the wider financial ecosystem, a phased and controlled approach is preferred, with a focus on regional growth and/or proving out individual business use cases first," he says.


Jarrad Hubble

Participant stratification is a common theme in financial markets. Sophisticated and well-resourced participants drive requirements and ultimately regulation causing complexity for smaller participants. Will PvP follow a similar route? Is preventing such an outcome for PvP even possible?

Choudhury feels that this phenomenon is how markets naturally evolve. "The FX markets still do not have clearing mandates and will likely never," he says. "In such situations, a trusted FMI plays an important role in ensuring that smaller firms have relevant means to access these services."

However, he says that FMIs must be incentivized, either financially or through regulatory mandates. "At this juncture, the FXGC is seen to be a sufficient lever for PvP," he says.

Standardisation also leads to more interoperability, currently a major challenge in FX. "Many banks hold few direct settlement memberships, and unless they have a global footprint are often only members of their domestic currency settlement system," Hubble says.

"While this approach can work efficiently for transactions within a limited range of currencies, it presents challenges when transacting in any of the world's many other currencies."

"Interoperability serves a critical function in fostering financial inclusion," he continues, "especially in the context of integrating opportunity/developing markets into the worldwide financial ecosystem."

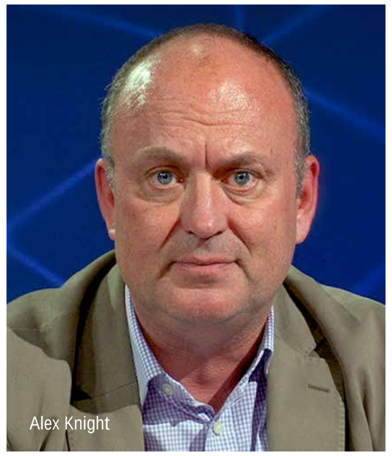
Much depends on the way policy decisions are conducted—whether they are based on the right data. FX has an inherent problem in this regard given the large number of non-bank participants and market fragmentation.

Technological flexibility and turning settlement into a low-touch activity

Transforming settlement from a high to low-touch activity is something market participants wish. However, the path remains long despite advances in technology. "Much of the flow today is low touch and the remaining flow, largely the non-bank and EMDE, is more difficult as their needs and requirements are very diverse," Choudhury says.

He notes that many intermediaries in the ecosystem are investing large sums to address these gaps in the back-end infrastructure. "Does anyone know the full path to a fully automated financial markets ecosystem?," he continues. "No. However, the jigsaw is becoming clearer but will take time to execute the vision."

And what role can technology play in simplifying the picture? "Today's technology allows for the creation of a golden record with distributed data and peer-to-peer interaction with netting, payment shaping, and settlement," Choudhury responds. "Cloud services offer off-the-shelf tools, greater reach, and lower costs as the service provider can host for smaller participants."


Alex Knight

Cybersecurity is a challenge here though, potentially raising barriers to entry for smaller service providers.

Hubble believes increasing technological familiarity is playing a role in driving wider PvP adoption. "With central banks becoming more comfortable with entities storing their liabilities on an external computer system, including in the cloud, this potentially enables a technological and regulatory framework that supports faster, cheaper and more secure exchanges of value across borders," he says.

"This in turn creates the right circumstances and incentives for the development of regional settlement services, supporting regional unification, including of financial markets, and/or extending the currency reach of such regional settlement schemes."

Knight notes that extending buy-side access to PvP is critical. "Quite aside from the concerns about increasing settlement risk," he says, "buy-side participants will find themselves wrestling with a difficult set of challenges; retaining access to (and evidence of) best execution and avoiding performance drag, whilst ensuring operational efficiency and integrity."

"Extending access to PvP settlement is an important lever in ensuring that buy-side participants meet these important objectives," he continues. "It gives them the opportunity to retain control over execution without concerns or limitations caused by settlement risk, whilst confident that the funds will settle in time to meet their underlying securities settlement obligations."


Dirk Bullmann

Ultimately, the combination of technology backed by the right legal and regulatory processes is critical.

Bullmann at CLS concludes, "To ensure the safe and effective implementation of any new PvP solution with systemic risk implications, the relevant legal, regulatory and policy aspects need to be considered alongside the technology delivering the solution".

"Technology is important, however legal and regulatory considerations are paramount to any form of settlement, either PvP or DvP," Choudhury says. "There is however a role for a trusted operator to link into these new forms of settlement."

"A truly global settlement network backed by central bank funds has the power to open up new currency corridors in any developing and opportunity markets—whether that's Central, Middle and Southeast Asia, the Near East, the Caribbean, or the Pacific Island —to the rest of the world," Hubble says. "Starting regionally, we are witnessing a monumental step forward towards universal interoperability between payment systems and other key infrastructures in the financial markets ecosystem."

Ultimately, while PvP's progression remains challenging, technology is enabling greater adoption, with FX stakeholders paving the way for better settlement.

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