FX settlement:

Instant, still distant?

Instant has become a firm fascination and, in some cases, an expectation in the world of payments. Faster payment systems (FPS) are now a common feature across many countries, making domestic payment rails more efficient. Many consider linking domestic instant payment solutions the key to improving cross-border payments, at least in the retail sector. But the answer is not so simple for the wholesale market. This paper explores the potential opportunities instant payments bring to the cross-border payment sphere, acknowledging that instant is not yet feasible on a large scale due to the unique nature of the foreign exchange (FX) market, nor is there a strong market desire for instant FX settlement.

Fast and furious, the growth of instant payment systems

A ‘need for speed’ has recently become a driver – or at least a key factor – for market participants selecting a payment mechanism. Those offering ‘instant settlement’ are becoming more desirable.[1]

Instant settlement solutions involve the transfer of funds in real-time or near real-time[2] on a 24/7 basis.[3] Though real-time payment capabilities and systems have been around for some time,[4] the gradual digitization of economies and improvements in computer technology over recent decades has led consumers to expect their financial interactions to keep pace.[5] Around 70 jurisdictions already have FPS in place offering real-time payment solutions[6], often praised for their speed, convenience and cost savings for end users.[7]

FPS implementations have significantly increased over the past decade, and it is expected that the overall number of FPS worldwide will continue to rise as the global real-time payment market grows at a compound annual growth rate of 35.5% from 2023 to 2030.[8]

> “... the gradual digitization of economies and improvements in computer technology over recent decades has led consumers to expect their financial interactions to keep pace.”

1 See Real-Time Payments in a Digital World: What Lies Ahead: finextra.com
2 Whilst FPS provide customers with the functionality to send and receive payments, the underlying settlement model does not always settle in real-time. Several FPS, such as UK Faster Payments Service, are settled through deferred net settlement, which involves multiple settlement cycles and the settling of payments in batches on a multilateral net basis, which provides liquidity saving benefits.
3 See CPMI (2016) Fast payments – Enhancing the speed and availability of retail payments.
4 See Future of Fast Payments_Final.pdf: worldbank.org
5 See WEF Shaping_the_Future_of_Cross-Border_Fast_Payment_Systems_2023.pdf: weforum.org
6 See Linking fast payment systems across borders: considerations for governance and oversight: bis.org
7 See IMF (Jan 2024), Digital Money, Cross-Border Payments, International Reserves, and the Global Financial Safety Net—Preliminary Considerations.
8 See World Bank Group, (Oct 2023) ‘The Future of Fast Payments’ (Future of Fast Payments_Final.pdf): worldbank.org

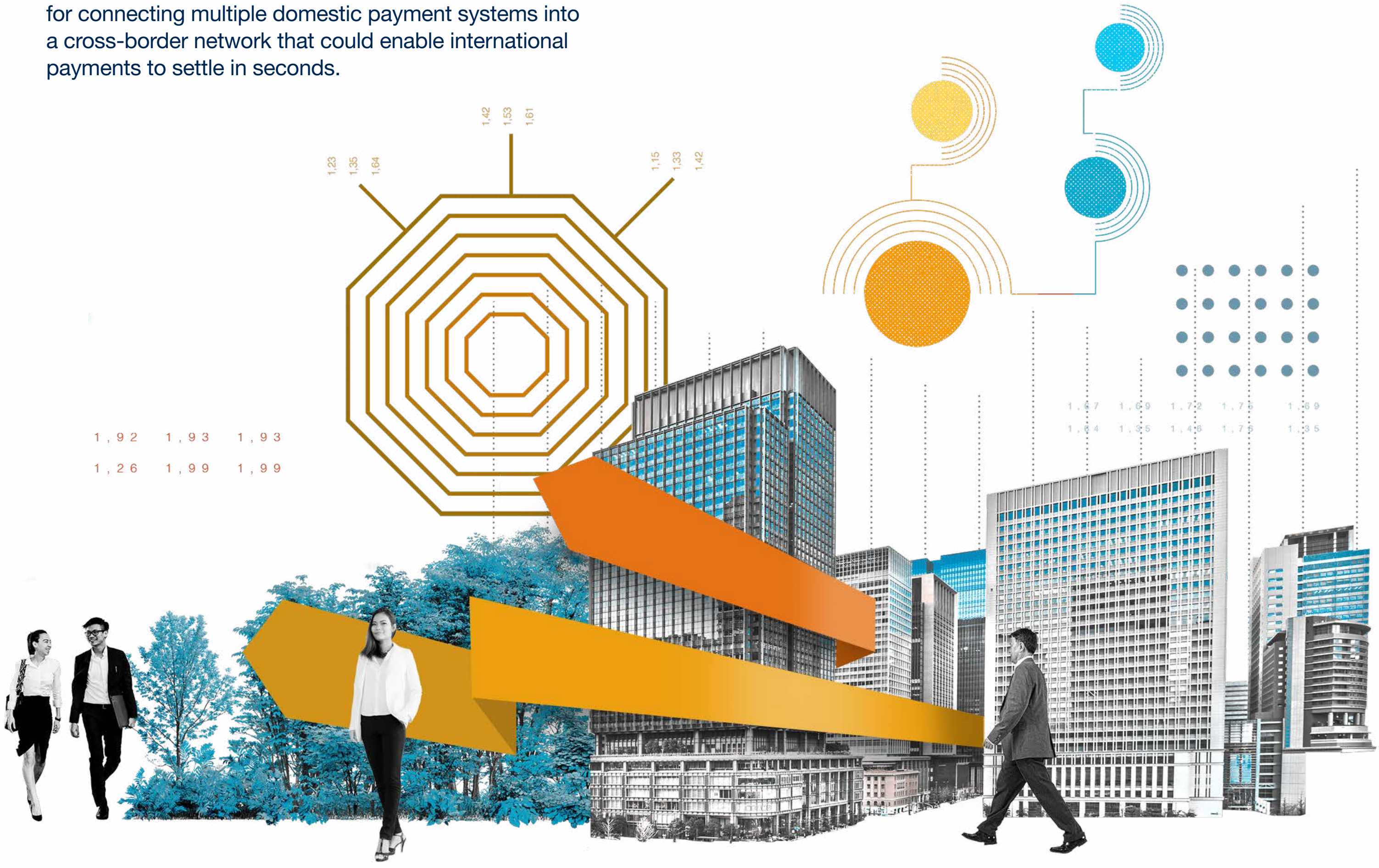
Cross-border payments, innovative initiatives

There is a common view that the various domestic FPS can be interlinked to extend the benefits of digitization to cross-border payments. The Committee on Payments and Market Infrastructure (CPMI) reported in October 2023 that interlinking arrangements amongst FPS are one of the most promising solutions for enhancing cross-border payments, offering the prospect of significantly faster, cheaper and more accessible and transparent payments.[9] To date there are only a few live linkages in place among 23% of the jurisdictions that have FPS.[10] Enabling interoperability between these systems is complex, and it brings not only technical challenges but important legal, regulatory, and political considerations. Today, 92% of FPS are built on new infrastructures, and 87% use ISO 20022 messaging standards – both important strides toward global interoperability.[11]

Recent developments to extend linkages between existing FPS include collaborative efforts in Southeast Asia[12] such as Project Nexus, coordinated by the Bank for International Settlements Innovation Hub (BISIH) Singapore Centre.[13] The participants of this project successfully built a model for connecting multiple domestic payment systems into a cross-border network that could enable international payments to settle in seconds.

Other innovative initiatives around the globe are striving to reduce the time to process cross-border payments, with the goal of achieving the 'instant settlement' luxury of their domestic counterparts. This can be said of the global efforts around central bank digital currencies (CBDCs),[14] both in the retail and wholesale space. Since the term CBDC was first coined back in 2017 amidst the distributed ledger technology (DLT) hype boom, the pendulum of global attention has swung between retail and wholesale projects. Most of these projects share a common goal: 'instant settlement' of CBDCs on a 24/7 basis.[15]

Instant settlement might be the obvious choice for an individual, business or bank sending money to a counterpart in another country in the retail context. However, wholesale use cases like FX raise other issues that require measured evaluation. Instant settlement is not as desirable or feasible in the FX market due to its unique setup and the logic behind it.[16]



9 See CPMI, Oct 2023, Interim report to the G20 Linking fast payment systems across borders: considerations for governance and oversight: bis.org
10 See Data | Fast Payment System: worldbank.org. Within this analysis it should be noted that a number of countries are classified because 'null' as their FPSs were cross-border in nature from the outset.
11 Ibid.
12 See WEF Shaping_the_Future_of_Cross-Border_Fast_Payment_Systems_2023.pdf: weforum.org
13 See Nexus: enabling instant cross-border payments: bis.org
14 In 2022, nine out of ten central banks were engaged in a CBDC project in some form. See Kosse, A., Mattei, I. (2023). Making headway – results of the 2022 BIS survey on central bank digital currencies and crypto; BIS paper No 136.
15 See cls_opinion_piece_cbdc_the_fx_game_changer_mar2024.pdf: cls-group.com
16 Global efforts to shorten settlement times in securities markets – in particular the upcoming move to T+1, which will inevitably impact the FX market – has recently focused attention on this debate.

Trends and traditions, the modern FX market

The FX market – though part of the broader cross-border payments sphere – operates differently. The FX spot market has been operating on a T+2 settlement cycle[17] since the 1980s. T+2 developed at a time when technology was less advanced, the market lacked centralized infrastructure and manual processes dominated. However, today T+2 is still the *de facto* standard.[18] Why hasn't the digitization that transformed front office processes similarly streamlined FX settlement time windows? There are three main reasons.

First, instant settlement in the FX market today is possible, and in fact already exists.[19] Unlike the securities market, which has been operating under rules specifying T+2 (which will soon shorten to T+1 in some jurisdictions), the FX market follows T+2 by convention. For a limited set of FX trades, instant settlement is the optimal choice, and the technology exists to support it.[20]

Second, the varied reasons to exchange currency help explain why the same-day (T+0) market values remain relatively low. Counterparties trade FX for a variety of carefully calculated reasons that do not require instant or near-instant settlement, including to fund international trade or hedge risk.[21] Beyond the adjustments necessary to accommodate the securities market move to T+1,[22] it is not yet apparent that a shift to instant settlement would make sense for the FX market in the foreseeable future, nor is there strong demand to do so. The same observation was made in a recent report from the Global Foreign Exchange Division (part of the Global Financial Markets Association).[23]

The third, and perhaps most pertinent reason from CLS's perspective, relates to mitigating FX settlement risk. Subject to further analysis, settling trades instantly may impact processes in a way that prevents usage of payment-versus-payment (PvP) solutions. Moreover, instant settlement would vastly increase liquidity requirements, as it would eliminate the time window for netting payments to reduce the amount of funding required for settlement.

Only one atom of atomic settlement

The increasing fascination with instant settlement in the payments landscape often equates 'instant' with 'atomic' settlement, but instant is only one aspect of it. Previous papers considered atomic settlement in the FX market and CLS's role in facilitating atomic settlement, whereby one leg of a transaction settles if and only if the other leg settles.[24] CLS operates a PvP multicurrency settlement system that mitigates FX settlement risk by synchronizing the settlement of payment instructions for the two currency legs of an FX trade with finality and irrevocability. CLS's PvP system ensures that a party's payment instruction in one currency is not settled unless the corresponding payment instruction in the counter currency is also settled. Before settling more FX trades 'instantly', traders should consider whether and how such instant settlement mitigates settlement risk.[25]

17 The settlement cycle should not be confused with actual settlement, which only happens at the end of the cycle. In a T+2 settlement cycle, the currency trade is agreed on day T and then matched and queued two days later, when settlement occurs.

18 See Not just a pipe dream: Achieving same day settlement in FX – E-Forex News.

19 CLS supports same-day settlement through CLSNet, which is a standardized, automated bilateral payment netting calculation service to support FX trades not settling in CLSSettlement. Participants can submit FX instructions to CLSNet for spot, tom/next day, forwards, non-deliverable forwards (NDFs), swaps and same-day trades for over 120 currencies.

20 A recent survey conducted with several CLS settlement member banks found that 8.4% of their overall trade flow was same-day.

21 Traders are also constrained by their own operational capabilities and capacity as well as any requirements from nostro agents upon whom they may rely.

22 One of the ripple effects of the move to T+1 is its impact on the FX market. As 20% of US securities and 16% of US equities are held in foreign portfolios (Department of US Treasury, "Foreign Portfolio Holding of US Securities", 30 June 2022), the US T+1 rule will impact many cross-border transactions because the FX component of the transaction must be settled prior to the T+1 settlement of the security.

23 At this time it is not clear if there is a market desire, or ability to move at scale, in a networked manner to T+0 and a world of instant settlement. See GFXD, July 2023, mag-accelerated-fx-settlement-final-july-2023.pdf: gfma.org

24 Atomic settlement also involves a cross-ledger dimension as well as other attributes such as simultaneity. For further explanation of what constitutes atomic settlement, see cls_shaping-fx_opinion-piece_-01_counting_down_to_zero.pdf: cls-group.com

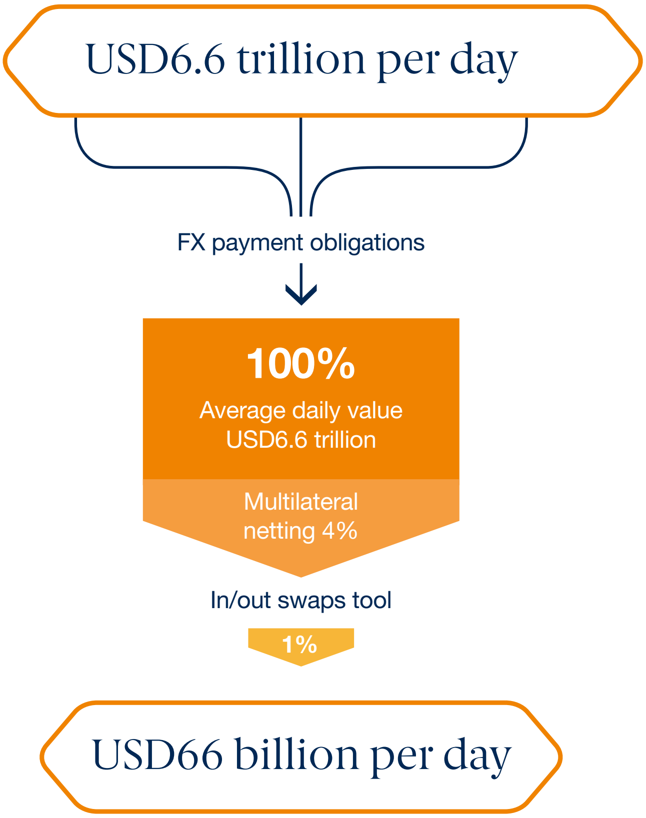
25 See Linking fast payment systems across borders: considerations for governance and oversight: bis.org

Loss of liquidity savings

A key benefit of CLS's settlement service is the enormous liquidity savings for clients. Whereas settlement occurs on a gross basis, the corresponding funding process takes place on a net basis, delivering huge liquidity efficiencies. Funding requirements for each CLSSettlement member are based on a multilateral net calculation of the expected positions in each CLS-eligible currency. This multilateral netting results in liquidity savings of approximately 96%. Pay-in obligations can be further reduced using an optional in/out swap tool.[26] As a result, CLS settlement members fund only around 1%[27] of the total value of their payment instructions on a typical day (figure 1). This tremendous reduction in overall funding requirements makes considerable liquidity available to the FX market and beyond.

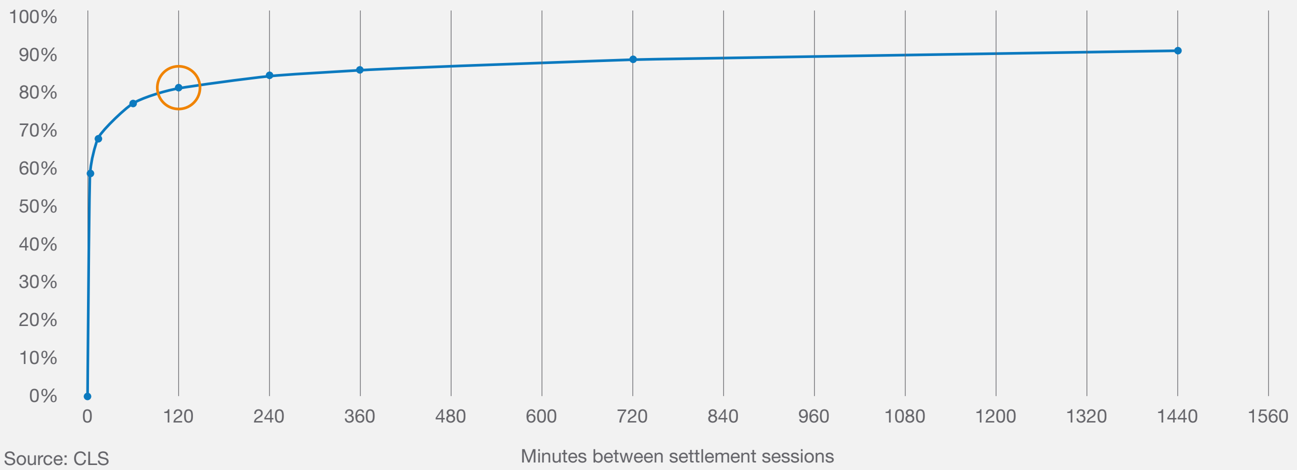
If the trades netted and settled through CLSSettlement were instead settled instantly, all netting benefits would be lost, effectively leading to a hundred-fold increase in liquidity requirements for most of the world's largest banks. This trade-off between instant settlement and higher liquidity requirements should be examined cautiously.[28] Shortening the current CLSSettlement cycle[29] from five hours to two hours would reduce netting efficiency to 80%, and it would quickly drop to 0% if the settlement shrunk further (figure 2).[30] Essentially, a move to T+0 would diminish the netting benefit provided by CLS and would leave the market grappling to find large pools of liquidity. Also, from an operational perspective, a move to T+0 settlement would require an overhaul of back-office processes as well as an adjustment in central banks' real-time gross settlement (RTGS) systems' operating hours.[31]

Figure 1: **CLS liquidity savings**



Source: CLS

Figure 2: **Initial pay-in schedule (IPIS) netting efficiency**



Source: CLS

This is a hypothetical extreme scenario for illustrative purposes. In reality the volume moving to the same-day market should be much smaller, but this issue requires further analysis.

26 An in/out swap is a swap transaction. The first leg of the swap settles inside CLSSettlement (the "in" leg), and the second leg settles outside CLSSettlement (the "out" leg). The effect of the swap is to reduce the net short position in one currency for each counterparty (with a corresponding reduction in its respective net long position in another currency), and thereby reduce the funding CLSSettlement requires from each participant in the counterparty. While the "in" leg minimizes funding requirements within CLSSettlement, the "out" leg must be settled outside CLSSettlement and thereby introduces settlement risk back into the market.

27 The funding percentage may be higher at quarter end and when markets are volatile.

28 See World Economic Forum "Modernizing Financial Markets with Wholesale Central Bank Digital Currency (wCBDC)" Insight Report April 2024.

29 CLS operates 24 hours a day, 5.5 days a week. Settlement takes place over a two-hour period (07:00 to 09:00 CET). CLS settles each payment instruction by making the appropriate debit and credit across the accounts of the relevant CLS settlement members on CLS's books. Funding occurs over a five-hour window (07:00 to 12:00 CET) in which the 18 RTGS systems of the CLS-eligible currencies have various overlapping processing hours.

30 The analysis shown in Figure 2 applies only to spot trades in CLSSettlement, and shows how netting efficiency tails off at 90%, not reaching the 96% that CLS settlement members enjoy today.

31 Both impacts warrant further analysis.

What does the future look like?

The drive to instant settlement will not subside, and may in fact accelerate. However, it is not clear if it will be widely adopted in the FX market. The inherent trade-off between ever-faster settlement and higher liquidity makes instant settlement less suited to the FX market, which may explain the lack of drive to achieve it.

If the market were to move further toward instant settlement, multiple short settlement cycles that still provide the benefits of netting[32] may be more suitable. In principle, an 80% netting efficiency may still be achieved with a two-hour settlement window, as discussed above.

The debate around sacrificing multilateral netting benefits to shorten settlement cycles recently gained traction in the securities market amidst the global shift towards T+1. While instant settlement prevents multilateral netting, settlement windows as short as ten minutes in the securities world can nevertheless achieve 90% of netting benefits.[33]

Any decision to move to a shorter settlement window – like 'T+ 2 hours', 'T+ 10 mins' or instant settlement – necessitates careful consideration and detailed analysis of the potential technical and operational upheaval. For the FX market, it is not yet clear how instant settlement could be implemented on a large scale, and we do not expect widespread adoption in the near to medium term.

32 See Swift "Connecting Digital islands: Swift CBDC sandbox project – Phase 2" as an example of recent experimentation with multiple settlement cycles: Swift.com

33 See McLaughlin, Dennis, The Trade-off Between Shorter Settlement Times and Multilateral Netting Benefits in Deferred Net Settlement (December 4, 2023); Journal of Financial Market Infrastructures, Vol. 11, No. 1, 2023.

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