Liquidity benefits:

Do (not) settle for less

For decades, the mitigation of settlement risk in the FX market has been high on the agenda of both public policy makers and the industry. With the advent of the CLS settlement service in September 2002, an effective mechanism for FX settlement risk mitigation quickly became the *de facto* market standard.[1] But CLS offers much more than risk mitigation – it provides an efficient flow of liquidity and delivers significant operational benefits.

[1] See Shaping FX series, whitepapers 01 and 02; cls-group.com/insights/shaping-fx-ecosystem

The trade-off between risk reduction and liquidity efficiency in payments

Interbank payment systems are the backbone of the financial sector. In most of today's systems, payments are transferred from sender to receiver on a transaction-by-transaction basis,[2] which is considered the most effective way to mitigate settlement risk. By construction, sufficient liquidity needs to be available in these real-time gross settlement (RTGS) systems.[3] In a nutshell, liquidity greases the wheels of payment processing engines.

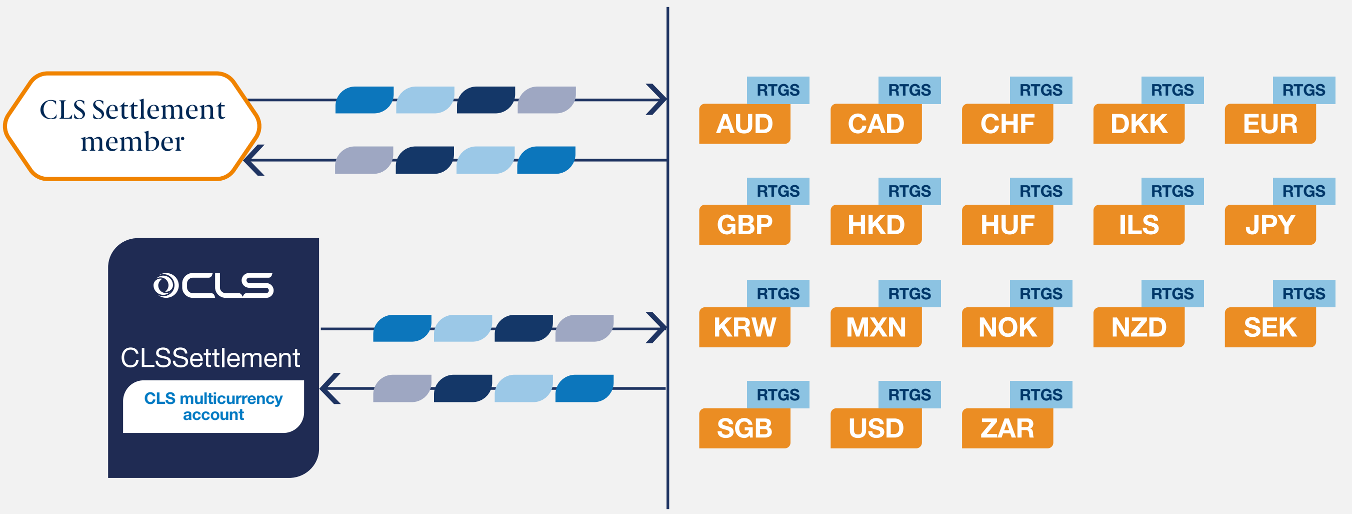
Liquidity in payment systems is provided through available funds or intraday credit lines.[4] If liquidity is not available and credit lines cannot be used, market participants must borrow from central banks or other banks via the money market. If liquidity is sitting idle on payment system accounts, it cannot earn interest elsewhere and thus incurs an opportunity cost, the size of which depends on the applicable interest rate. Therefore, payment systems often provide sophisticated liquidity-saving mechanisms to their users.[5]

As an interbank settlement system, CLSSettlement is no exception to this trade-off between risk reduction and liquidity efficiency. CLS was established by the private sector in response to a public sector call to address FX settlement risk on a global scale. Settlement risk could materialize if payment instructions for the two currency legs of an FX trade are not settled at the same time, which can result in one party to the FX trade paying in one currency but not getting paid in the counter currency.

CLS mitigates FX settlement risk by providing a payment-versus-payment (PvP) service, CLSSettlement, in which the payments on both sides of an FX trade are settled simultaneously. It offers a unique arrangement for 18 of the world's most actively traded currencies: by holding accounts with the central bank of each currency, CLS can make and receive payments via the RTGS systems of the respective central banks (Figure 1). Like other interbank payment systems, CLS provides liquidity-saving tools to reduce strains on liquidity. What distinguishes CLS from many other payment systems is the magnitude of liquidity efficiency it provides.

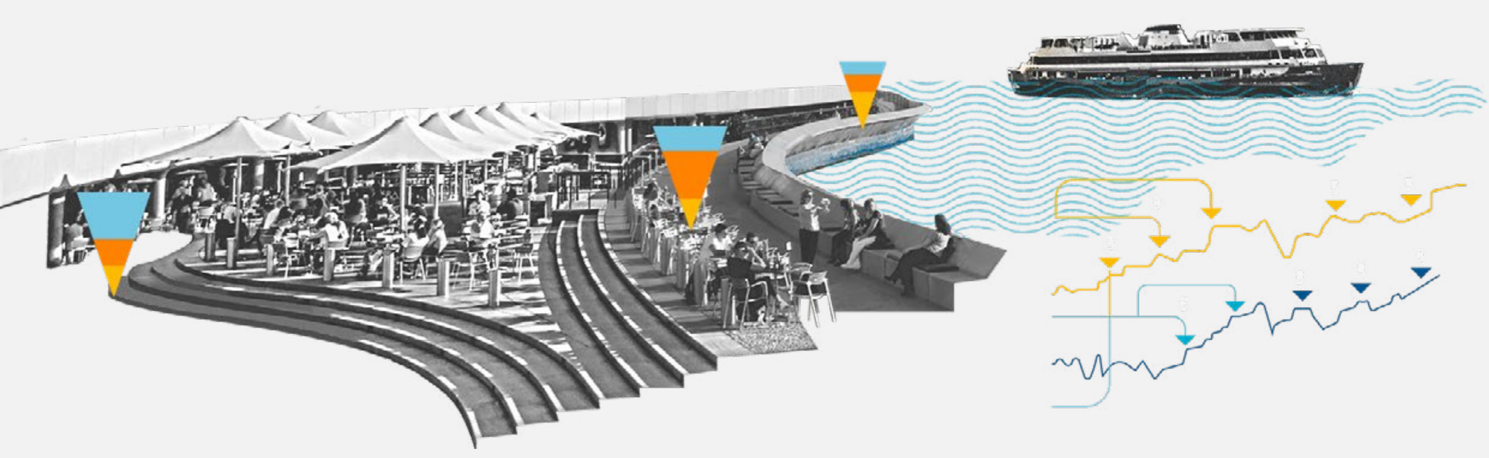
Figure 1: **Payment flows in CLS**

Settlement members incoming payments are made to CLS's account at the respective central bank.



Source: CLS

2 Committee on Payments and Market Infrastructures (CPMI) – A glossary of terms used in payments and settlement systems.
3 Starting in the 1980s, payment systems gradually shifted from net systems (where only the net position deriving from incoming and outgoing payments is transferred) to RTGS systems. Net systems by definition require substantially less liquidity compared to RTGS systems, but they also require deferred settlement, which comes with settlement risk.
4 This may re-introduce credit risk.
5 Liquidity-saving mechanisms may follow different approaches, which often involve off-setting algorithms (i.e., matching payments bilaterally or multilaterally and settling them simultaneously). Payment splitting, limits, queues and liquidity reservation may also be applied.



Delivering significant liquidity efficiencies

CLS's PvP settlement cycle is based on two separate but linked processes (Figure 2):

Settlement

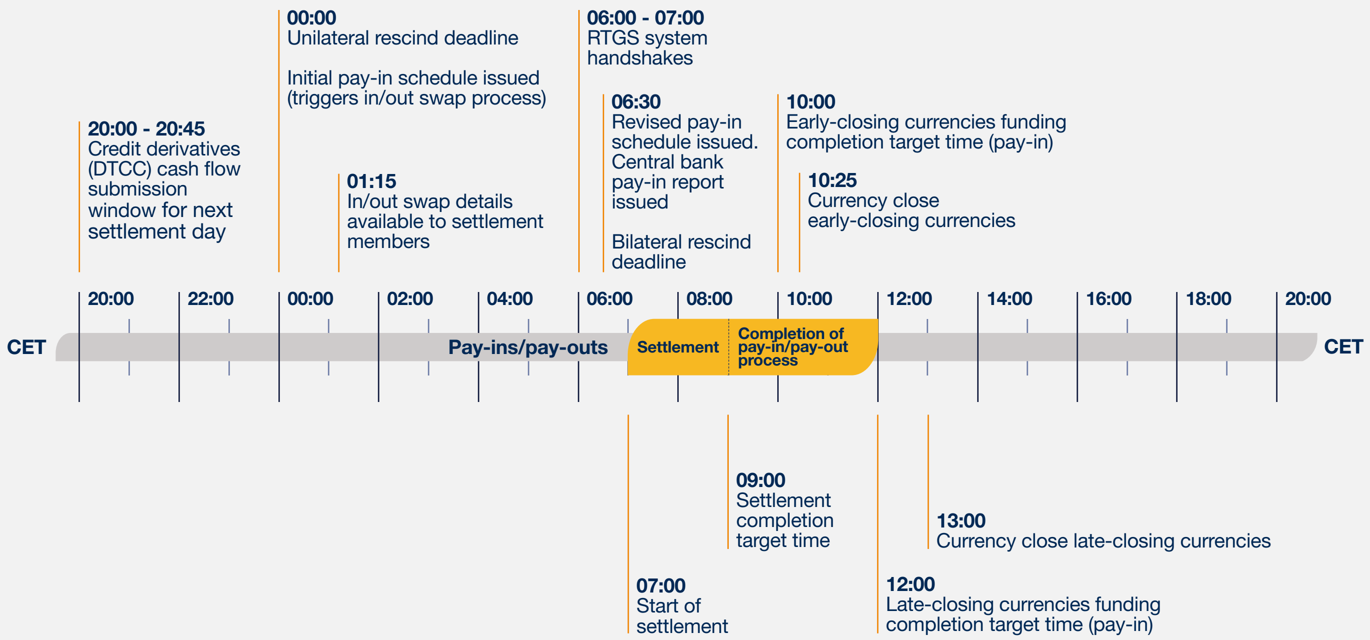
Settlement takes place over a two-hour period (07:00 to 09:00 CET). CLS settles each payment instruction[6] individually by making the appropriate debit and credit across the accounts of the relevant CLS settlement members on CLS's books.[7]

Funding

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 overlapping processing hours. Each CLS settlement member satisfies its funding obligations by making payments to CLS through the RTGS systems for each currency (pay-ins). CLS, in turn, makes its payments to settlement members through the applicable RTGS systems (pay-outs).

Figure 2: **CLS funding and settlement cycle**

- **We operate 24 hours a day**
- **We operate 5.5 days per week**
- **Closing 02:00 CET Saturday morning**
- **Re-opening 22:00 CET Sunday evening**



Source: CLS

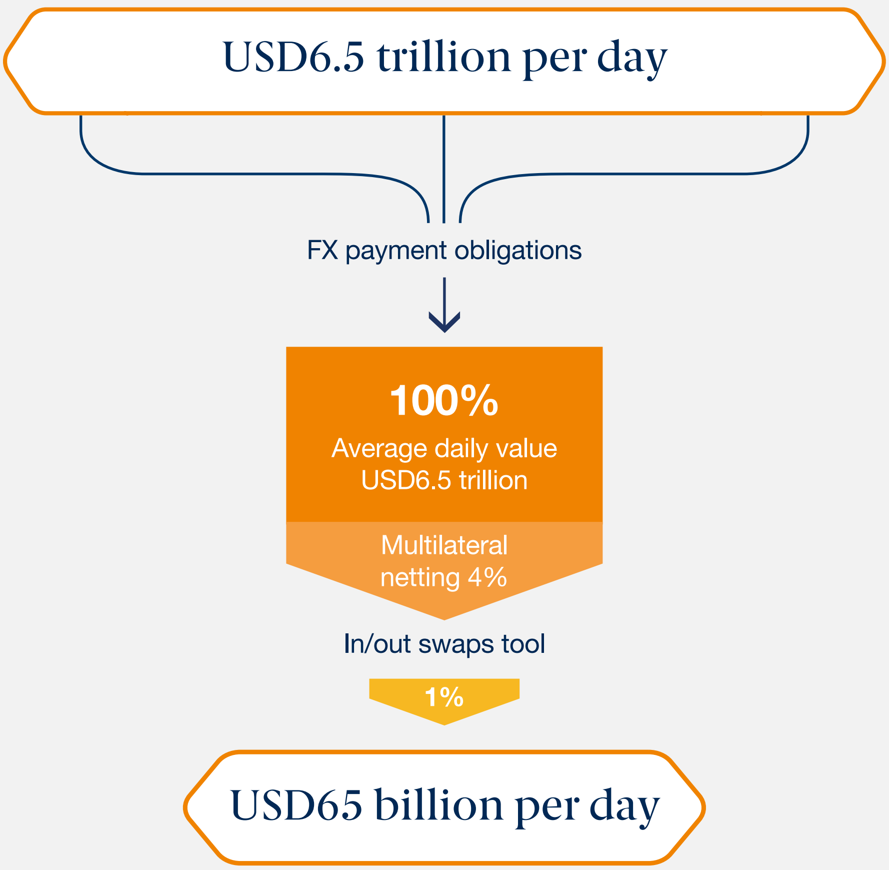
6 In order to further optimize the settlement process, payment instructions above a certain amount are split into two or more payments instructions prior to settlement.
7 Settlement of each payment instruction is contingent on the satisfaction of specific risk management tests; see CLS Principles for Financial Market Infrastructures (PFMI) Disclosure 2022.

While 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 yields significant liquidity benefits for CLS settlement members, resulting in liquidity savings of approximately 96%. Pay-in obligations can be further reduced using an optional in/out swap tool.[8] As a result, CLS settlement members fund only around 1%[9] of the total value of their payment instructions on a typical day (Figure 3). This tremendous reduction in overall funding requirements makes considerable liquidity available to the FX market and beyond.

> “This tremendous reduction in overall funding requirements makes considerable liquidity available to the FX market and beyond.”

Figure 3: **CLS liquidity savings**



Source: CLS

[8] An in/out swap is a swap transaction; the first leg settles inside CLS (the “in” part of the swap) and the second leg settles outside CLS (the “out” part of the swap). The effect of the swap is to reduce the net short position that settles within CLS for the counterparty (with a corresponding reduction in the net long position for its counterparty), and therefore, the funding required by each participant in the swap. While the “in” leg minimizes funding needs, the “out” leg must be settled outside CLSSettlement and thereby introduces settlement risk back into the market.

[9] The funding percentage may be higher at quarter end and when markets are volatile.

CLS liquidity savings in perspective

CLS settles on average USD6.5 trillion of payment obligations per day. Through its liquidity management tools, multilateral netting and in/out swaps, CLS reduces the level of necessary cash balances for settlement by about 99%. If those balances had to be carried overnight, or borrowed from the market, the cost could be substantial, especially as interest rates have risen during the current tightening cycle among central banks in most CLS jurisdictions.

In the absence of CLS, banks would seek to use other liquidity-saving devices, especially bilateral netting, which may reduce exposure by 69%.[10] The additional 30% of liquidity savings in CLSSettlement as compared to bilateral netting amount to almost USD2 trillion per day (Figure 4).

The actual cost associated with the need to pre-position approximately USD2 trillion every day depends on many factors (e.g., market interest rates, ability to generate liquidity at lower cost). Using a stylized example, if counterparties needed to borrow them from the market, each basis point of interest paid may translate into an equivalent of around USD200 million of financing cost per day. Put into perspective, the savings the market accrues in as short a period as one day exceeds the annual running cost of CLS.[11]

Figure 4: **Liquidity savings provided by CLS**

Liquidity savings	US billion (approximations)
CLS average daily turnover	6,500
Funding needs (with multilateral netting and in/out swaps)	65
Liquidity savings in CLS (up to 99%)	**6,435**
Liquidity savings that could be achieved with bilateral netting (69%)	4,485
Additional liquidity savings that CLS brings compared to bilateral netting (99% - 69% = 30%)	**1,950**

Source: CLS

[10] CPSS (2007) "Progress in reducing foreign exchange settlement".
[11] CLS revenue for the year 2022: GBP253 million (Source: CLS Group Holdings AG – Annual Report & Consolidated Accounts 31 December 2022).

Optimizing operational efficiency

FX settlement risk mitigation and the significant reduction (99%) in funding requirements are key benefits of CLSSettlement. But there is more. It also delivers operational efficiencies from the automation it provides:

Straight-through processing (STP):

The CLS system authenticates and matches CLS settlement members' payment instructions relating to an FX trade, which provides confirmation to CLS settlement members and reduces the time spent confirming matched trades.

Failed trades management:

Each failed trade can have significant operational, financial/liquidity and legal ramifications. CLSSettlement offers pre-settlement matching, which in principle eliminates failed settlement and any resulting claims. Anecdotal evidence from CLS settlement members suggests that the failed trades rate outside CLSSettlement ranges between 0.1% and 0.5%, so for a high-volume business CLSSettlement yields noticeable improvements in back-office efficiency.

Automation leverage:

CLS's infrastructure can be leveraged for other technical systems within a CLS settlement member, including its payment and accounting systems. Furthermore, the STP and automation in CLSSettlement can facilitate the integration of a counterparty's affiliates and subsidiaries into the system, helping extend the efficiencies throughout the organization.

Simplified processes:

Maintaining cash accounts with multiple banks acting as FX counterparties can be costly and operationally cumbersome. CLSSettlement offers simplified and standardized interaction.

The operational benefits enabled by CLS are readily apparent in the back offices of CLS settlement members. In fact, CLS-related activities tend to consume considerably less resources than those of other post-trade arrangements. A recent survey of selected CLS settlement members corroborates this. The survey found that while around 50% - 60%[12] of CLS settlement members' FX settlement activities are channelled through CLS, on average it only requires less than 10% of back-office team resources.

Funds, banks, non-bank financial institutions and multinational corporations that access CLSSettlement indirectly via settlement members can also benefit from CLSSettlement's risk mitigation, operational efficiencies and netting and liquidity management benefits.[13]

[12] See Shaping FX // 02 FX settlement risk: To PvP or not to PvP, May 2023.
[13] In addition, CLS's funding requirements apply only to its settlement members, which eliminates the need for funds and other third-party participants to maintain multicurrency accounts at multiple banks.

Facilitating market growth

CLS's multi-faceted contribution to the FX ecosystem cannot be underestimated. The advantages it offers – FX settlement risk mitigation, substantial liquidity savings and far-reaching operational efficiencies – directly benefit CLS settlement members and their clients. CLS is also progressing initiatives to reach a broader roster of counterparties and further extend the low-risk environment it creates.

The value that CLS brings is tangible and not only to its clients. Since its launch in 2002, turnover in the global FX market has increased six-fold,[14] and CLS has been key to this growth.

[14] Source: BIS Triennial survey: USD 1.2 trillion in 2001 to USD7.5 trillion in 2022.

FX Global Code

Using CLS products and services plays an integral part in helping you comply with the FX Global Code. Find out more at cls-group.com

For more information please email info@cls-group.com

Trusted by thousands of counterparties within the global FX ecosystem, CLS makes FX safer, smoother and more cost effective. Trillions of dollars' worth of currency flows through our systems each day.

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