

## Foreign Exchange Settlement Risk and Continuous Linked Settlement – A Central Bank Perspective

a report by

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A new international financial institution, the Continuous Linked Settlement (CLS) Bank, is expected to commence operations in October 2001, settling the foreign exchange transactions of the world’s major banks and helping them to reduce one of the major risks associated with this process. This article looks at the concerns of central banks over foreign exchange settlement risk and why CLS Bank was created, provides an overview of how the CLS system will work and examines some of the practical and theoretical issues it will raise.

### Foreign Exchange Settlement Risk – Central Bank Concerns

Central banks have long been concerned about the risks inherent in wholesale payment, clearing and settlement systems. One of the major sources of risk is counterparty credit risk – the risk that another party will not complete their part of a transaction, leading to financial loss for the first party. A bank and its customers can be exposed to two types of counterparty risk arising from the payment and settlement process:

- Its counterparty might fail during the period between the time the trade is agreed and the time in which it is settled, in which case the first party has to enter into a replacement transaction, which may be on less favourable terms if market prices have shifted in the meantime. Replacement cost risk is also sometimes called forward risk.
- If the first party is required to deliver its side of the transaction irrevocably before it has received value from its counterparty, it is exposed to loss of the full value of the transaction if the counterparty fails in the meantime (principal risk).

Principal risk is a major component of foreign exchange settlement risk – the risk of loss if paying the currency sold but not receiving the currency bought in a foreign exchange transaction. This risk is also commonly known as Herstatt Risk, after the insolvency of Bankhaus Herstatt, a small German bank, in 1974. Herstatt was forced into liquidation in the middle of the European trading day when counterparties had paid Deutschmarks irrevocably to

Herstatt against anticipated receipt of US dollars. Herstatt’s correspondent bank in New York was required to freeze payments from Herstatt’s US dollar account, leaving the counterparties that had already paid their Deutschmarks exposed for the full amount of the transaction. As is clear from this incident, time zone differences can play a major part in this risk, but banks’ own settlement practices, the use of intermediaries such as correspondent banks and inefficiencies in local payment systems are also important factors.

The Allsopp Report found many deficiencies in banks’ management of foreign exchange settlement risk and evidence of very large exposures – in some cases banks were unknowingly exposed to a single counterparty for more than the bank’s capital. These large exposures raised significant concerns, not only for individual banks, but also for the international financial system as a whole, due to their potential systemic risk implications – the failure of one market participant to meet its required foreign exchange settlement obligations could create significant difficulties for other participants, and hence threaten the stability of the international financial system. The Allsopp Report set out a three-track strategy for reducing foreign exchange settlement risk, involving action by individual banks to control their foreign exchange settlement exposures, action by private-sector industry groups to provide risk-reducing multi-currency services and action by central banks to induce rapid private-sector progress.

Over a quarter of a century after the collapse of Bankhaus Herstatt, settlement risk still looms large over the foreign exchange market, not least because of the market’s enormous size. The Bank for International Settlements (BIS) estimated in its last survey a global daily turnover of around US\$1,500 billion in 1998 in foreign exchange transactions, suggesting (taking account of estimates of a reduction in flows due to bilateral netting arrangements) total daily interbank exposure of as much as US\$1,200 to US\$1,400 billion. A progress report by the G10 central banks in 1998 found that, while encouraging progress had been made in tackling the problem of

foreign exchange settlement risk, much remained to be achieved. In particular, there remained scope for collective industry solutions to reduce substantially the foreign exchange settlement risk faced by individual banks.

### CLS – A New Design

In response to the call by central banks for the private sector to develop risk-reducing multi-currency services, a group of major international commercial banks (the G20) set up CLS Services Ltd in 1997 to implement plans for a payment-versus-payment (PvP) settlement service for the global foreign exchange market using a new system, CLS. Despite significant delays (perhaps not untypical for a large and complex information technology project), CLS Bank (the institution that will provide the service) now looks to be on a firm footing to commence its operations in October 2001.

CLS is a foreign exchange settlement system whereby the trades of members and their customers will settle on a PvP basis over members' accounts with CLS Bank. Its main features are as follows.

- Each settlement member will hold a single multi-currency account at CLS Bank, with balances for

each currency. Members will start and finish the day with zero balances on these accounts.

- Transactions are queued. A member's account is credited in one currency and debited in another when a transaction is settled. The other credits to members' accounts are payments in by those members and the other debits are payments out to members by CLS Bank.
- CLS provides protection against principal risk by synchronising settlement of both sides of a trade gross across settlement members' accounts. Settlement of a transaction can proceed as long as certain risk controls are satisfied. In particular, a member's account in an individual currency can be overdrawn during the settlement process, but only to the extent that the member retains net positive value overall across its multi-currency account. This rule ensures that, if a member defaults, CLS Bank will not be owed money overall by that member and thus will have sufficient funds to pay survivors.
- An important (and novel) part of the CLS process is that, although each day's trades are settled gross (i.e. trade-by-trade) across members' accounts, members are required to make payments of net amounts only (where a member has a net short



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position for the day in a currency across all its deals) and they receive pay-outs also in net terms (where a member has a long position overall in a currency).

- CLS Bank itself banks in each currency with the relevant central bank, maintaining a credit balance intra-day and making and receiving payments through the local large-value realtime gross settlement (RTGS) payments system.

### Some Liquidity and Operational Risks Remain

Like other payment system developments of recent years aimed at reducing credit risk, CLS raises some other risk issues and liquidity management issues. CLS is designed to minimise its liquidity demands on both individual settlement members and domestic payment systems. Settlement members will have the opportunity to spread their pay-ins over five instalments. Also, an important part of the CLS settlement process is that it is continuous – CLS Bank does not need to wait until all projected short positions are funded in full before starting to make pay-outs to members with projected net long positions. These are paid out in an incremental process as soon as long balances are available. However the pay-ins will still be subject to a schedule, with minimum amounts to be paid in by specific times over a relatively short period, between 07:00 and 12:00 hours Central European Time (CET).

This intra-day time criticality will present the banking community with a new dimension to their daily liquidity management. It also means that short-term operational problems could be a more significant source of disruption in the settlement of foreign exchange transactions than at present. Both CLS Bank and its members are aware of these new risk dimensions, and have been working to manage them. Settlement members will be required by CLS Bank to meet high operational and technical standards in order to minimise the risk of such failures. In turn, settlement members will demand similarly high standards from their correspondent banks when these will be making the payments to CLS Bank. User groups have also been looking closely at the liquidity issues. For instance, new tools have been proposed to reduce the potential large pay-in requirements that may arise during the first few months of CLS Bank's operation.

Central banks are conscious of these risk issues raised by CLS. The CLS Bank, a New York chartered bank, will be regulated by the Federal Reserve, which is already overseeing the design of the system as a whole and is formally consulting other interested central banks (those whose currencies will be settled by the system) under the Lamfalussy principles for co-operative oversight. The main forum for this is the sub-group on foreign exchange settlement risk of the G10 Committee on Payment and Settlement Systems. Its

focus is all the areas covered by the *Lamfalussy Report*, including legal risk, financial (credit and liquidity) risk, operational risk and fair and open access. An integral part of the central banks' work is to explore the issues fully with CLS Bank and its members.

### Not a Final Solution

CLS Services, CLS Bank's parent company, now has around 60 shareholders, including most of the world's largest foreign exchange players. All will be capable of becoming settlement members and, hence, settling their own transactions and those of their customers (including other banks). However, CLS Bank's footprint does not cover the whole foreign exchange market. In terms of currencies, only the US, Canadian and Australian dollars, euro, Japanese yen, UK pound and Swiss franc will be settled at the start. Six other currencies are lined up to be settled in CLS within the following two years – the Danish krone, Hong Kong dollar, New Zealand dollar, Norwegian krone, Singapore dollar and Swedish krona – but the prospect of more exotic currencies being settled in the system is much further down the road.

Although in principle the whole market can use the system, either directly as a settlement member or indirectly by using the services of a settlement member, not all counterparties are likely to use it because their currency/counterparty structure or low volumes make it inappropriate. CLS Bank does not guarantee to settle all transactions that are submitted to it. Under certain circumstances, if members default, some transactions may not settle and may be sent back to the counterparties for settlement outside the system. Therefore, supervisors will continue to require banks to follow the recommendations of the Allsopp Report regarding appropriate management of foreign exchange settlement risk. Banks will still need to measure risk accurately, have counterparty settlement limits in place and an appropriate senior management control for this risk.

### Conclusion

CLS has the potential to greatly reduce the financial risk currently involved in settling foreign exchange transactions. It thus has the potential to form a key element of a bank's strategy to control its foreign exchange settlement risk. It is, however, unlikely to be a complete solution and raises its own operational and supervisory issues. The message from central banks and banking supervisors to the banking community therefore will be to do not ignore it, use it well, understand it and integrate it into an overall strategy to manage foreign exchange settlement risk. ■

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