The CLS Bank: Managing Risk in Foreign Exchange Settlements

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The foreign exchange market is the largest financial market in the world, with an average daily turnover of approximately US$1.2 trillion (BIS 2002). Participants in this market take on significant risks in settling their transactions. Indeed, these risks are so significant that exposures created by disruptions in settling these transactions have the potential to pose systemic risk.[1]

The CLS Bank International was created to address foreign exchange settlement risk, particularly its most significant component, credit risk. It does this by providing a form of payment-versus-payment settlement for foreign exchange transactions, virtually eliminating credit risk for counterparties settling through the system.

The CLS Bank began operations on 9 September 2002. It is a significant contribution to the global financial system generally and to the Canadian financial environment specifically, since the Canadian dollar is one of seven currencies that can be settled through the system.[2]

Foreign Exchange Settlement Risk

Foreign exchange traders engage in various kinds of transactions that involve exchanging one currency for another. But once a deal has been struck, how does the actual exchange take place? To understand how a typical foreign exchange transaction is settled (without the CLS Bank), consider the following example involving two banks. Bank A is based in Japan and is a participant in the Japanese large-value payments system, BOJ-NET. Bank B is based in Canada and is a participant in the Canadian large-value payments system, the LVTS. Bank A and Bank B enter into a foreign exchange transaction when Bank A sells yen to Bank B for Canadian dollars. How is this transaction settled?

Bank A will pay Bank B the yen through the BOJ-NET. Since Bank B is not a participant in the BOJ-NET, it must engage a bank that is a participant to receive the payment on its behalf. This is Bank B's correspondent, or "nostro," bank. Likewise, Bank B will pay Canadian dollars to Bank A through the LVTS via Bank A's nostro bank.

Foreign exchange trades are two-way transactions: each counterparty pays one currency and receives another in return. One source of risk for counterparties arises when payments systems are in different time zones. In the above example, Bank A pays out the yen through the BOJ-NET before the Canadian payments system is open. If Bank B defaults in the interim, Bank A will have paid out the yen but will not receive the Canadian dollars. This is often termed "principal risk," a type of credit risk. As well, because of limitations on current information-management practices, it could be several days from the time a counterparty initiates the process to pay the "sold" currency until it knows with certainty whether it has received the "bought" currency, subjecting it to liquidity risk and replacement risk if the bought currency arrives later than expected. Finally, given that countries have different legal and regulatory regimes, legal risk may also be a factor in the event a counterparty fails to deliver a currency. All risks that arise in the settlement of foreign exchange transactions comprise foreign exchange settlement risk, with credit risk being the most significant component.

1. Systemic risk in this context is often defined as the risk that the failure of one participant in a financial system to meet its required obligations will cause other financial institutions to be unable to meet their obligations when due.
2. For more information on the topics discussed here, see Miller and Northcott (2002).

The CLS Bank

Based in New York City, the CLS Bank is designed specifically for the settlement of foreign exchange transactions. Seven currencies can currently be settled through the system: the Australian, Canadian, and U.S. dollars, the euro, the yen, the Swiss franc, and the pound sterling.[3]

The CLS Bank virtually eliminates the credit risk associated with settling foreign exchange transactions. It does this by providing a payment-versus-payment arrangement, settling both sides of a transaction simultaneously across accounts that financial institutions (settlement members) hold at the CLS Bank.[4] So, if the transaction from our previous example is settled in the CLS Bank, Bank A and Bank B receive their expected currencies simultaneously in their respective settlement accounts at the CLS Bank. Counterparties do not give up the sold currency without receiving something in return.

Settlement members pay currencies that are owed to the CLS Bank's accounts, which are held at central banks, through domestic payments systems. Currencies that are due to settlement members are paid out by the CLS Bank in the same way.

Risk Management in the CLS Bank

The simultaneous settlement of foreign exchange transactions across the books of the CLS Bank means that the settlement asset for foreign exchange transactions is an intraday claim on the CLS Bank. For this to be acceptable to participants and to the central bank community, the CLS Bank must be virtually risk-free. Therefore, risk-management controls are applied to each trade before it is settled to protect the CLS Bank from credit and liquidity risk. First and foremost, although each settlement member will owe some currencies and be owed other currencies over the course of settlement, the balance in each member's settlement account at the CLS Bank over all currencies must always be positive. There are also limits on how much a

Types of Risk

Banker risk	The risk that the bank where a settlement account is held could become insolvent.
Credit risk	The risk that a counterparty will not settle an obligation for full value, either when due or at any time thereafter. This includes principal risk, the risk that a counterparty could pay the currency sold without receiving the currency bought (BIS 2001).
Legal risk	The risk of loss because of the unexpected application of a law or regulation, or because a contract cannot be enforced (BIS 2001).
Liquidity risk	The risk that a counterparty will not settle an obligation for full value when due but will settle at some unspecified time thereafter (BIS 2001).
Operational risk	The risk that deficiencies in information systems or in internal controls, human errors, or management failures will cause or exacerbate credit or liquidity risks (BIS 2001).
Replacement risk	The risk that a counterparty to an outstanding transaction will fail to perform on the settlement date. The resulting exposure is the cost of replacing, at current market prices, the original transaction (BIS 1996).
Systemic risk	The risk that the failure of one participant in a financial system to meet its required obligations will cause other financial institutions to be unable to meet their obligations when due (BIS 2001).

3. More currencies are expected to be added in the future.
4. Financial institutions can participate in the CLS Bank in various ways, but only settlement members hold settlement accounts at the CLS Bank.

settlement member can owe in aggregate across all currencies, and how much it can owe in a particular currency.

To protect itself from legal risk, the CLS Bank has obtained legal opinions that the finality of transactions settling across its books can be supported in the legal systems of all jurisdictions with currencies settling through the system. As well, all payments to the CLS Bank from settlement members are made through payments systems that provide intraday finality.[5] The CLS Bank holds these payments in accounts at central banks, ensuring that the CLS Bank is protected from banker risk. Finally, the CLS Bank has an explicit plan to address operational risk.

For participants in the CLS Bank, the risk-management controls and other arrangements ensure that, in virtually all circumstances, participants will receive either the currency transacted for or a refund of the amount they contributed, even if another participant defaults on its payment obligations. That is, participants are protected from credit risk arising from the failure of another participant.[6] Nevertheless, in the event of a failure, participants do continue to be potentially exposed to liquidity risk and replacement risk, although it is expected that these risks are manageable.

The CLS Bank and the Canadian Financial System

The CLS settlement cycle takes place during the North American overnight period, normally from 1 a.m. until 6 a.m. ET. The approved payments system for the Canadian dollar is the Large Value Transfer System (LVTS), and the Debt Clearing Service (DCS) will continue to be used to support LVTS collateral operations. Currently, only one Canadian bank is a settlement member, the Royal Bank of Canada, with some others intending to enter the system as settlement members in the future.

The Bank of Canada plays three key roles with respect to the CLS Bank in the Canadian financial system.

- To mitigate major disruptions caused by the operational failure of a Canadian settlement member, a nostro agent, or the LVTS, the Bank of Canada is prepared to assist, if necessary, by entering payments directly across the CLS Bank's and participants' settlement accounts with the Bank of Canada.
- The Bank of Canada acts as banker for the CLS Bank, providing it with two main services. First, the Bank of Canada provides a settlement account to the CLS Bank. Second, the Bank of Canada makes and receives payments through the LVTS on behalf of the CLS Bank.
- The CLS Bank is subject to regulation by the Board of Governors of the Federal Reserve System in the United States. Supported by the Federal Reserve Bank of New York, the Board is therefore the lead overseer of the system and consults with the central banks of those countries whose currencies will settle in the CLS Bank, including the Bank of Canada. In addition, the Governor of the Bank of Canada has designated the Canadian-dollar operations of the CLS Bank for Bank of Canada oversight under the Payment Clearing and Settlement Act. The Bank of Canada is satisfied that the system meets the standards that the Bank has set for designated systems.

Conclusion

Through the co-operative efforts of private sector financial institutions, central banks, and the operators of domestic payments systems, the CLS Bank has been created to address foreign exchange settlement risk—particularly credit risk, which use of the CLS virtually eliminates. The world's largest foreign-exchange-dealing institutions are shareholders of the CLS Bank, and it is expected that most will interact directly or indirectly with it. Growing participation has the potential to position the CLS Bank as the dominant global mechanism for settling foreign exchange transactions.

5. Intraday finality indicates that once a payment has been accepted within a payments system, the receiver has irrevocable access to the funds that same day.
6. Only under the most extreme conditions does some element of credit risk remain. See Miller and Northcott (2002).

References

Bank for International Settlements (BIS). 1996. *Settlement Risk in Foreign Exchange Transactions.* Report prepared by the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten Countries. Basel: BIS, March.

———. 2001. *Core Principles for Systemically Important Payment Systems.* Committee on Payment and Settlement Systems Report No. 43. Basel: BIS, January.

———. 2002. *Central Bank Survey of Foreign Exchange and Derivatives Market Activity in 2001*. Basel: BIS, March.

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