



CLS Bank – improved risk management in the foreign exchange market

After several years of development work, it will soon be possible to apply the principle of payment-versus-payment in the foreign exchange market too with the launch of CLS Bank next year. Set up by a large group of international banks, CLS Bank will offer a settlement system for eligible currencies that markedly reduces the risks normally associated with foreign exchange trading. Problems may nevertheless arise in the form of liquidity risks and operational risks in the new system but the banks believe these risks to be manageable and transient. The following looks in detail at the principles underlying the new settlement system and at its technical aspects.

Settlement risks in foreign exchange trading

A bank will normally use banks in other countries to make payments in foreign currencies. For example, a Swedish bank wishing to make payments in USD will open a USD account with a US bank. This account can be likened to a standard transaction account for inward and outward payments. The US bank is known as the correspondent bank and participates in turn in the US payment system, through which payments are forwarded to the final beneficiary. In this way the large banks form a network of correspondent banks in many different countries. Similarly the Swedish banks operate SEK accounts for foreign banks and forward payments via the Swedish payment system to the foreign banks' Swedish counterparties. In the case of Sweden's banks, more than 96 per cent of the value of foreign payments is settled through correspondent bank arrangements.⁵⁴ Other transactions are settled via clearing houses.

A bank generally sends a payment instruction to its correspondent bank for the relevant currency the day before settlement day. Depending on the agreement that the bank has with its correspondent bank, the payment instruction may then be rescinded up until an agreed time. On settlement day the two currencies are transferred between the buyer and seller. The correspondent bank then sends a statement to the bank so that it can check that the payments have arrived as planned. This statement is generally issued the day after settlement day, so it is only then that reconciliation can take place.

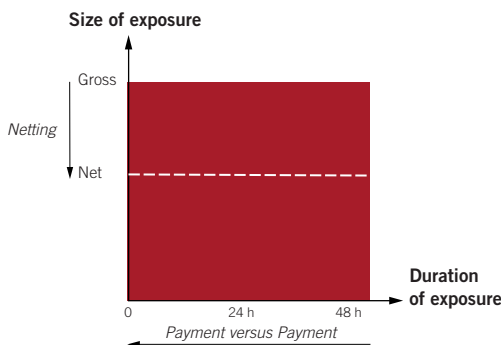
In foreign exchange trading, one currency is sold against another and so there are payment flows in both directions between the counterparties. The lack of coordination of these payment flows means that the bank cannot be certain that a counterparty will per-

⁵⁴ Excluding the euro.



form his side of the bargain. The time lag between trade, payment instruction, payment and delivery leads to a settlement risk that lasts throughout the transaction chain. As soon as a trade is made, there is a risk that the bank's counterparty will default and so necessitate a replacement trade at a less favourable price – the *replacement cost risk*. However, this risk relates only to price movements and is therefore of marginal significance compared to the other risks involved. There is a risk that the currencies bought might not arrive as expected – the *liquidity risk*. During the settlement phase there is also a risk that one party to a foreign exchange contract will pay in the currency sold but not subsequently receive the currency bought – the *full credit risk*.⁵⁵ The bank is exposed to the full credit amount from the time an irrevocable payment instruction is sent to the time receipt of funds is confirmed, which takes around two days.⁵⁶ The total exposure at any given time is therefore the value of two days' foreign exchange transactions (today's and yesterday's). This phase of settlement is therefore associated with the greatest risk for the parties to a foreign exchange transaction, and it is therefore this risk – the full credit risk – that it is most important to reduce.

Until now the banks' attempts to reduce settlement exposure have focused primarily on limiting the payment flows – and so the exposure – through bilateral netting or multilateral netting via clearing houses such as ECHO.⁵⁷ However, it is only by linking payment and delivery that the players can completely eliminate the full credit risk associated with foreign exchange transactions. This type of linkage is known as payment-versus-payment (PvP) and has not previously been available for foreign exchange transactions.⁵⁸



Risk management via CLS Bank

Global currency trading has grown rapidly in recent decades. Total daily trading volumes reached an estimated USD 1 200 billion in April 2001. These huge sums, combined with the way that a relatively small number of players account for the bulk of trading in the foreign exchange market, mean that even a single failure can have major consequences for a bank. This has led the central banks to pay particular attention to settlement risks over the last decade.

In connection with the publication of the G10 report in March 1996, the players in the foreign exchange market were given a dead-

⁵⁵ The settlement risk in foreign exchange trading is also known as the foreign exchange settlement risk, cross currency settlement risk and Herstatt risk.

⁵⁶ Definition and measurement as set out in "Settlement Risk in Foreign Exchange Transactions", BIS, March 1996. The time lag varies, depending partly on the agreement the bank has with its correspondent bank and partly on differences arising due to time zones, which means in turn that different currency pairs have different exposure times. Calculations of exposure times for different currency pairs are presented in the report "Reducing Foreign Exchange Settlement Risk: A Progress Report", BIS, July 1998.

⁵⁷ Multinet and ECHO formally merged with CLS in December 1997.

⁵⁸ With the current foreign exchange trading systems, a trade will practically always result in separate settlement of the two currencies involved. This is because the settlement of each side of the transaction is governed by the laws and infrastructure of that currency's home country.



line for improving risk management if they wanted to avoid regulation in this area.⁵⁹ CLS (Continuous Linked Settlement) Bank can be seen as the market's response to this. It was set up by a number of major international banks and is currently owned by almost 70 international banks, including two in Sweden.

CLS Bank plans to offer PvP settlement for gross transactions in eligible currencies for the first time. Each member has an account at CLS divided into sub-accounts for each currency. CLS transfers the two currencies simultaneously across these currency sub-accounts: the currency sold is debited from one sub-account at exactly the same time as the currency bought is credited to another sub-account. CLS in turn has settlement accounts with the relevant participating central banks. Payments between members and CLS go through the relevant local RTGS systems.⁶⁰

After a number of delays, the bank is scheduled to go live in 2002 with a first wave of eligible currencies: EUR, GBP, USD, CAD, CHF, JPY and AUD.

Discussions about a second wave of eligible currencies are under way with Sweden, Norway, Denmark, Hong Kong, Singapore and New Zealand, the idea being to bring in the Scandinavian currencies within a year of CLS going live. Once the Scandinavian currencies are included, CLS will offer settlement for currencies accounting for 82 per cent of all global foreign exchange transactions. In the longer term CLS aims to bring in as many currencies as possible.⁶¹ As a rough estimate, Swedish member banks will be able to channel around 30 per cent of their transactions through CLS on the basis of its current membership and eligible currencies. This figure should rise to around 70 per cent once the Scandinavian currencies are on board.

Membership criteria

Members must be regulated and supervised financial institutions. There is no lower limit on size but members must be shareholders in CLS. There is a minimum short-term credit rating (A3) and CLS is also setting various operational requirements to reduce the risk of missed payments due to operational problems.

A financial institution can use CLS in two different ways: it can be either a settlement member or a user member. Settlement members are direct participants and hold accounts at CLS. User members can submit trades directly to CLS but payments must go through a settlement member's account. Both types of member can under-

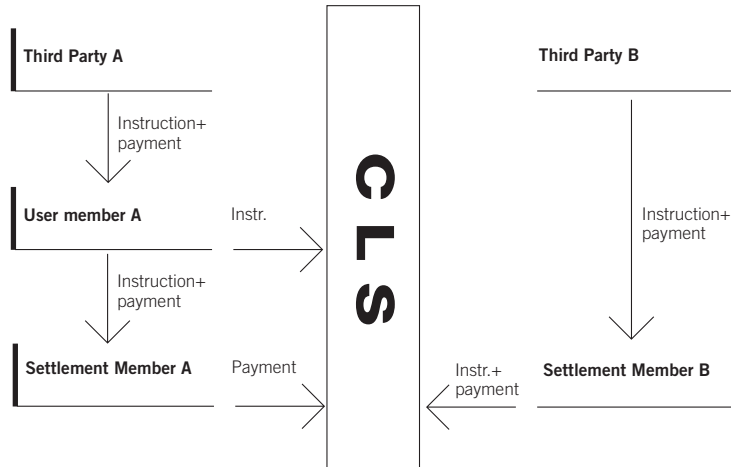
59 See "Settlement Risk in Foreign Exchange Transactions", BIS, March 1996.

60 The respective country's national payment system, corresponding to the RIX system in Sweden. RTGS stands for Real Time Gross Settlement system.

61 CLS's currency eligibility criteria include the following: the payment system must be an RTGS system; the central bank must allow CLS Bank to operate an account in the system with remote access options; the opening hours of the RTGS system must overlap those of CLS Bank by at least five hours starting from 07:00 CET; the central bank and the RTGS system must provide a suitable form of secured intra-day credit; a legal basis; volatility and devaluation risk will also be assessed together with the independence of the central bank and political risks.



take transactions for their own account and on behalf of third parties. The figure below illustrates a currency transaction between two parties, A and B. A is the client of a participant that can give CLS instructions for transactions, but which in turn uses a settlement member to make the payment. B is a direct client of a settlement member that handles both instructions and payments on behalf of B.



All settlement members must have access to all of the participating payment systems. If they do not themselves have access to a national payment system, for example through their own branch, they must use correspondent banks to make payments on their behalf. Most members have stated that they intend to use other members as correspondent banks.

Payment and settlement kept separate

With a pure PvP system, settlement does not begin until the inward payments (pay-ins) have been made and so no credit risks arise. At no stage in this process does any member have any exposure to any other member.

EXAMPLE 1: FULL PAY-IN BEFORE SETTLEMENT

1a. After trade

Bank A	Assets	Liabilities
	+ EUR 1 m owed by Bank B	+ JPY 100 m owed to Bank B

Bank B	Assets	Liabilities
	+ JPY 100 m owed by Bank A	+ EUR 1 m owed to Bank A

CLS Bank	Assets	Liabilities
	0	0

1b. After pay-in

Bank A	Assets	Liabilities
	+ EUR 1 m owed by Bank B	+ JPY 100 m owed to Bank B
	– JPY 100 m central bank settlement account	
	+ JPY 100 m owed by CLS	

Bank B	Assets	Liabilities
	+ JPY 100 m owed by Bank A	+ EUR 1 m owed to Bank A
	– EUR 1 m central bank settlement account	
	+ EUR 1 m owed by CLS	

CLS Bank	Assets	Liabilities
	+ JPY 100 m central bank settlement account	Currency sub-accounts:
	+ EUR 1 m central bank settlement account	JPY EUR
		Bank A JPY 100 m
		Bank B EUR 1 m

1c. After settlement

Bank A	Assets	Liabilities
	+ EUR 1 m owed by CLS	
	– JPY 100 m central bank settlement account	

Bank B	Assets	Liabilities
	+ JPY 100 m owed by CLS	
	– EUR 1 m central bank settlement account	

CLS Bank	Assets	Liabilities
	+ JPY 100 m central bank settlement account	Currency sub-accounts:
	+ EUR 1 m central bank settlement account	JPY EUR
		Bank A EUR 1 m
		Bank B JPY 100 m

1d. After pay-out

Bank A	Assets	Liabilities
	+ EUR 1 m central bank settlement account	
	– JPY 100 m central bank settlement account	

Bank B	Assets	Liabilities
	+ JPY 100 m central bank settlement account	
	– EUR 1 m central bank settlement account	

CLS Bank	Assets	Liabilities
	0	0

Example 1: Bank A buys EUR 1 m from Bank B for JPY 100 m. On day T+2 each bank pays in the amount owed to CLS through its respective RTGS system. Once both currencies are available to CLS, the transaction is settled by CLS by transferring the relevant amounts between the members' accounts. The currencies bought can then be paid out to the members through the relevant RTGS systems.



In this pure PvP scenario, CLS would never have any credit exposure to either of the banks. However, in reality CLS has decided to strike a balance between credit risk and the impact on liquidity. While the receipt of pay-ins before settlement even starts eliminates the credit risk for CLS, dividing these payments into a number of instalments over several hours will reduce the impact on liquidity in the local markets. In this respect CLS departs from a pure PvP principle by not only beginning but also completing settlement before all of the members have made all of their pay-ins. The following example shows how this is made possible by CLS permitting *intra-day short positions* in the individual currency sub-accounts.

Example 2: Bank A buys EUR 1 m from Bank B for JPY 100 m. On day T+2 each bank first pays in one fifth of the amount owed to CLS through its respective RTGS system. The whole transaction is settled by CLS by transferring the relevant amounts between the members' accounts, even though only part of the amount owed has been paid in. This results in short balances on each member's sub-account. Later in the day the outstanding amounts are paid in and the currencies bought are paid out to the members through the relevant RTGS systems.

EXAMPLE 2: PART PAY-IN BEFORE SETTLEMENT

2a. After trade

Bank A	Assets	Liabilities
	+ EUR 1 m owed by Bank B	+ JPY 100 m owed to Bank B

Bank B	Assets	Liabilities
	+ JPY 100 m owed by Bank A	+ EUR 1 m owed to Bank A

CLS Bank	Assets	Liabilities
	0	0

2b. After part pay-in

Bank A	Assets	Liabilities
	+ EUR 1 m owed by Bank B	+ JPY 100 m owed to Bank B
	- JPY 20 m central bank settlement account	
	+ JPY 20 m owed by CLS	

Bank B	Assets	Liabilities
	+ JPY 100 m owed by Bank A	+ EUR 1 m owed to Bank A
	- EUR 0.2 m central bank settlement account	
	+ EUR 0.2 m owed by CLS	

CLS Bank	Assets	Liabilities
	+ JPY 20 m central bank settlement account	Currency sub-accounts:
	+ EUR 0.2 m central bank settlement account	JPY EUR
		Bank A JPY 20 m
		Bank B EUR 0.2 m

2c. After settlement

Bank A	Assets	Liabilities
	+ EUR 1 m owed by CLS	+ JPY 80 m short position (owed to CLS)
	- JPY 20 m central bank settlement account	

Bank B	Assets	Liabilities
	+ JPY 100 m owed by CLS	+ EUR 0.8 m short position (owed to CLS)
	- EUR 0.2 m central bank settlement account	

CLS Bank	Assets	Liabilities
	+ JPY 20 m central bank settlement account	Currency sub-accounts:
	+ EUR 0.2 m central bank settlement account	JPY EUR
		Bank A -JPY 80 m EUR 1 m
		Bank B JPY 100 m -EUR 0.8 m

**2d. After full pay-in**

Bank A	Assets	Liabilities
	+ EUR 1 m owed by CLS	
	– JPY 100 m central bank settlement account	

Bank B	Assets	Liabilities
	+ JPY 100 m owed by CLS	
	– EUR 1 m central bank settlement account	

CLS Bank	Assets	Liabilities
	+ JPY 100 m central bank settlement account	Currency sub-accounts:
	+ EUR 1 m central bank settlement account	JPY EUR
		Bank A EUR 1 m
		Bank B JPY 100 m

2e. After pay-out

Bank A	Assets	Liabilities
	+ EUR 1 m central bank settlement account	
	–JPY 100 m central bank settlement account	

Bank B	Assets	Liabilities
	+ JPY 100 m central bank settlement account	
	– EUR 1 m central bank settlement account	

CLS Bank	Assets	Liabilities
	0	0

However, this short position option results in the risk of a member with a short position not paying in the outstanding instalments after a transaction is settled. CLS will deal with this risk by using various tests that must be satisfied for the gross amounts to be settled simultaneously. The tests for short balances on the currency sub-accounts are as follows:

- *Short position limit (SPL)*: This is a limit on how large a short balance can build up on a currency sub-account during the day. An SPL is set for each currency and is the same for all members.
- *Aggregated short position limit (ASPL)*: This limit is member-specific and relates to the total short balances on all of a member's currency sub-accounts. The ASPL is reached by weighing up the member's capital base, short rating and long rating, and can in principle be set to zero for a member believed to be in trouble.
- *Overall position*: The overall net balance on a member's currency sub-accounts translated into USD must be greater than or equal to zero. This is the most important test as it means that CLS will never take on any credit exposure.

PvP settlement is self-collateralising – in other words, if we ignore exchange rate movements, the value of the currency sold is the same as that of the currency bought. This means that the transaction could be settled without any pay-in being made without departing from the principle of a positive overall position (the positions simply swap places in the currency sub-accounts). However, exchange rate movements between trade and settlement will generally result in a loss for one of the parties and so a pay-in corresponding to this loss must be made for settlement to begin.

The exchange rate can also fluctuate between settlement and the final pay-in instalment, which could result in a negative net position. To allow for this, the system uses *haircuts* based on the historical volatility of each currency pair.

The following example shows how the system runs through the transactions in sequential order on the basis of the haircut-adjusted positions to check compliance with the risk management tests discussed above.

Example 3: Assume SPLs of 1 billion for both USD and EUR, and an ASPL for Bank A of USD 1.08 billion. After the settlement process begins on day T+2, Bank A's positions in the respective currency sub-accounts are as follows:

Currency	Position – original currency	Exchange rate	Position – base currency	Haircut	Haircut-adjusted position
AUD	400 000 000	1.567	255 264 837	8.00%	234 843 650
CAD	170 720 000	1.452	117 575 758	7.00%	109 345 455
CHF	763 960 000	1.650	463 006 061	7.50%	428 280 606
EUR	-69 120 000	1.025	-67 434 146	7.50%	-72 491 707
GBP	322 330 000	0.618	521 569 579	7.00%	485 059 709
JPY	76 548 820 000	107.330	713 209 913	8.00%	656 153 120
USD	-908 300 000	1.000	-908 300 000	7.00%	-971 881 000
Net position			1 094 892 002		
Adjusted position					869 309 833
Aggregated short position					-1 044 372 707

The next instruction in the settlement processing queue is for Bank A to sell USD 100 000 000 and buy EUR 99 980 000 from Bank B. Since CLS has an SPL for USD of USD 1 billion, the transaction will not be settled but moved to the back of the queue because it would have led to Bank A having a short balance of USD 1 008 300 000, which is above the currency's SPL.

The next instruction in the queue is for Bank A to sell EUR 93 475 000 and buy CHF 150 000 000. Although this would not result in the SPL for EUR being exceeded, the instruction will not be settled but moved to the back of the queue because it would have led to Bank A exceeding its ASPL.

These transactions are tested in sequential order as shown above. If the tests are not satisfied, a transaction will stay in the queue until they are. Settlement begins at 07:00 CET (Central European Time) and will normally be completed by 09:00. Test results from simulations show that 98 per cent of transactions are settled within 30 minutes and 99 per cent within one hour.⁶²

62 The corresponding figures for transactions by value rather than by number are 80 per cent within 30 minutes and 90 per cent within one hour.

Pay-ins and pay-outs

The banks are required to submit their payment instructions before midnight on the day before settlement day. For this reason, CLS knows in advance which settlements will be made on that day and can calculate the net position of each member in each currency. CLS issues a projected pay-in schedule for each customer and currency after midnight CET.⁶³

Currency	Gross buy instructions	Gross sell instructions	Projected positive net position, i.e. projected pay-out	Projected negative net position, i.e. to be paid in (in 5 instalments)
AUD	435 000 000	606 020 000		171 020 000
CAD	423 002 000	265 600 000	157 402 000	
CHF	7 696 665 000	4 542 000 000	3 154 665 000	
EUR	11 372 888 000	11 578 500 000		205 612 000
GBP	3 302 030 000	2 530 340 000	771 690 000	
JPY	75 047 588 500	50 474 473 300	24 573 115 200	
USD	17 227 038 000	20 333 882 000		3 106 844 000

Example: Bank A has sent in 2 862 instructions to CLS for settlement on day T+2. The gross position and projected net position for each currency are as follows:

As the example shows, Bank A's aggregate instructions result in negative net positions in only three currencies: AUD, EUR and USD. With each currency divided into five instalments (see below), this means that Bank A needs to make fifteen payments at the most for all 2 862 instructions to be settled. The total net pay-in is also considerably less than would have been the case if the gross amounts had had to be paid in.

CLS has decided to spread pay-ins over five instalments at hourly intervals (08:00–12:00 CET) in order to reduce the liquidity effect on national markets.⁶⁴ The pay-in schedule stipulates minimum amounts, but members can choose to meet their funding obligations earlier than required.⁶⁵ CLS will continually make payments to members with expected positive net positions via the national RTGS systems.⁶⁶ The hours during which the national RTGS systems are open have been adjusted to ensure that there is a period of five hours, starting at 07:00 CET, during which all payment systems are open simultaneously. This means that this period occurs at the end of, or after, the working day for the JPY and AUD, and very early in the day for North America.⁶⁷ Compared with the present system, CLS thus involves not only a marked change as regards the

63 When the projected pay-in schedule reaches the member, that member can see its net position in each currency. The member then has an opportunity to make same-day trades with other members to trade down its position between midnight and 06:30, in which case a revised pay-in schedule will then be issued.

64 Pay-ins are divided into three instalments (08:00, 09:00 and 10:00) for Asia, which then closes.

65 If the projected pay-in schedule shows that the SPL will not be met when settlement is completed, the emphasis is changed in favour of accelerated funding at the beginning of the day.

66 For pay-outs to be made, various risk management tests must be satisfied, such as a positive overall position.

67 17:00–22:00 local time in Sydney and 01:00–06:00 local time in New York.

number of pay-ins and their size, but also the concentration of transactions globally into the space of a few hours.

In most cases CLS will be a direct participant in the national RTGS systems, but in other cases (CAD and GBP) CLS will have access to the systems as a customer of the central bank. In those cases where CLS is a direct participant, it will be the first time anyone is allowed remote access to the national payment systems.

What happens when pay-ins are missed or a member defaults?

A bank defaults or a temporary operational problem, for example as a result of a computer system crashing, can cause a payment to be missed. If a member misses a scheduled payment, an automatic reminder is sent out. If the member is still unable to settle a short position in a particular currency, CLS has a back-up solution to enable the beneficiary to receive the expected amount of currency bought at the expected time despite these problems, and so reduce liquidity risks. The back-up solution consists of a private *liquidity provider*, often a settlement member, contractually undertaking to deliver the amount CLS requires to cover transactions already settled.

If there is a shortage of a certain currency in CLS (because one or more members have not paid in according to schedule), a pay-in call goes to the liquidity providers for that currency, which pay in the amount requested to CLS via the local RTGS system. The defaulting member's other positive currency holdings are used as security (each member must have a positive overall position).⁶⁸

For each currency there are agreements with at least two private liquidity providers. Their agreed supply of the national currency determines the size of the SPL for that currency.⁶⁹ As there is an agreed upper limit as to the amount the liquidity providers are obliged to pay in, a certain currency can run out if, for example, several members or liquidity providers fail. In such cases pay-outs may have to be made in a third currency until the right currency has come in.

The defaulting member has until the morning of the following day to settle the short position, and the liquidity provider is then repaid. If the member also misses this pay-in, the member is barred from further trading until the pay-in is made. If the member does not pay in anything at all, the member's other currency holdings are used to cover the short position (the member's overall position is always positive). In principle, a loss can occur if the member does not pay in any currency at all and the exchange rate also moves more than the set haircut during the day (from settlement to the covering of this loss). The difference arising is then distributed between the other members.

⁶⁸ Alternatively a currency swap is executed and then reversed the following day.

⁶⁹ The limit is set in such a way that CLS is able to cope even if it is the largest liquidity provider that has missed the payment – in other words, the supply from the largest supplier of liquidity is excluded when setting the SPL for a currency.



Operational risks and liquidity risks

By means of PvP settlement, CLS will completely eliminate credit risk for the participating currencies and members. However, the question remains as to what new risks the system brings with it. It is primarily the operational risks and liquidity risks that are difficult to assess. The advanced communications and software to be integrated between CLS, central banks, member banks and their customers accounts for the operational exposure. The demanding pay-in schedules also mean that there is very little room for system faults and management errors. In addition, there are legal risks as a result of the many participants and national legal systems.

In order to minimise this type of problem, a long series of tests is being carried out, both between the banks and CLS and using the central banks' RTGS systems. Apart from software tests, full-scale trials are also being carried out where the real transactions of a number of banks are being mirrored in the CLS system. High priority is also being given to the back-up systems of all participants and to contingency planning. Agreements have been drawn up and legal opinions have been obtained regarding the national legal systems of all members. Training and seminars are being held for the parties involved. Because both legs of a transaction are stopped if a pay-in is missed, the incentive for banks to manage their operational risks well should increase.⁷⁰

It will be easier for banks to back out of agreed transactions, which means that the replacement cost risks may increase, albeit from a low level. As regards liquidity risks, the system is designed to limit the effects of missed pay-ins. The system of liquidity providers means that even when pay-ins are missed the other banks should receive the expected currency at the expected time. It therefore means that liquidity risks in terms of expected pay-outs are improved compared with the current system.

However, problems can arise as a result of unexpected pay-ins. If a member misses pay-ins and the transactions with this counterparty can therefore not be settled, revised pay-in schedules are issued to the other members. This can mean that an expected pay-out in a currency can instead be replaced with a pay-in call, or vice versa. A large number of simulations have been carried out regarding liquidity effects in stressed market conditions and after various combinations of failures. The results have been discussed with the officers responsible for liquidity management at the banks. The consensus is that it should also be possible to handle unexpected pay-in calls.

The CLS system's payment model raises important issues for smaller countries. The main rule is that the largest currency and largest balance is paid out first. Greater clarity is needed regarding the consequences of this rule for smaller currencies, such as the Scandinavian ones. The rule could potentially lead to a blocking effect, e.g. for Swedish banks in relation to pay-ins to CLS. The

70 "The CLS bank: A solution to the risks of international payments settlement?", Kahn and Roberds, Carnegie-Rochester Conference Series on Public Policy 54, 2001, North-Holland.



Scandinavian central banks are discussing this issue in various forums, which include the CLS and the commercial banks concerned. This work will be described in more detail in the next Financial Stability Report.

Some member banks are concerned that the imbalance between trades through CLS and outside CLS may result in liquidity pressures, at least at the beginning of its life when large volumes remain outside CLS. This could occur, for example, in cases where a bank expects a net pay-out of USD for its trades through CLS later in the day while a net pay-in of USD for trades outside CLS has to be made earlier in the day. In order to counteract this, CLS is considering using a system called PETRA to help members trade down the net payments between one another via inside/outside swaps, and thus reduce liquidity pressures.⁷¹ To some extent this feeds back the credit risk on the trades settled outside CLS, but the amounts in question are relatively small and so considered an acceptable price to pay for reducing the liquidity risks. The more parties that use CLS for their foreign exchange transactions, the less need there should be for this, and so this type of swap is seen as an instrument for the start-up period.

Regulation and supervision

The organisation that offers the settlement services is called CLS Group Holdings and consists of CLS Bank International and CLS Services. CLS Bank is based in New York, comes under the Edge Act and is regulated by the Federal Reserve. CLS Services will run the system and provide back office routines for CLS Bank. CLS Services is based in London and comes under English law. This structure has been chosen to give CLS insolvency protection under both European and American law. At present the shareholders in the holding company are 67 international banks in sixteen countries.

Because CLS Bank is based in New York, the Federal Reserve is the lead overseer of CLS Bank in accordance with the “Principles for co-operative central bank oversight of cross-border and multi-currency netting and settlement schemes”. This means that the Federal Reserve is the central bank that has chief responsibility for oversight of this settlement system. However, before starting up it must receive approval from the rest of the central banks.⁷² For this reason the central banks are monitoring developments and evaluating CLS Bank both individually and collectively. Before the central banks give CLS their approval, a review is being conducted to establish

71 PETRA calculates optimal swap transactions between the members where one leg of the transaction goes through CLS and the other leg outside it.

72 “Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries”, BIS, Basel, November 1990 (“The Lamfalussy Report”). This has previously occurred only with the approval of ECHO, of which the Bank of England was the lead overseer.



whether CLS meets the following minimum standards (the Lamfalussy standards):⁷³

1. CLS should have a well-founded legal basis under all relevant jurisdictions.
2. Class participants should have a clear understanding of the impact of the scheme on each of the financial risks affected by the netting process.
3. CLS should have clearly-defined procedures for the management of credit risks and liquidity risks which specify the respective responsibilities of the netting provider and the participants. These procedures should also ensure that all parties have both the incentives and the capabilities to manage and contain each of the risks they bear and that limits are placed on the maximum level of credit exposure that can be produced by each participant.
4. CLS should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single net-debit position.
5. CLS should have objective and publicly-disclosed criteria for admission, which permit fair and open access.
6. CLS should ensure the operational reliability of technical systems and the availability of back-up facilities capable of completing daily processing requirements.

When the Federal Reserve incorporates the Principles of Systemically Important Payment Systems, CLS is also expected to live up to these.

Conclusions

The introduction of payment-versus-payment for foreign exchange trading involves an important change in the infrastructure for large payments. Delivery-versus-payment (DvP) has been the norm for several years for the settlement of securities transactions. However, CLS departs from a pure PvP system by permitting short balances on the currency sub-accounts during the day. This is done to avoid the necessity of waiting for all pay-ins to be made before settlement can begin, and so improve liquidity for both individual banks and currencies. To reduce the risks that arise as a result of these short positions, various limits must be fulfilled to enable settlement of each transaction.

Pay-ins consist of multilaterally netted amounts of each currency, while all settlements are made gross. The main objective of CLS is to reduce the credit component of the settlement risks. However, there is uncertainty as to how other risks, primarily liquidity and operational risks, will be affected. The system is also designed to minimise liquidity risks as far as possible. By means of agreements

⁷³ Although CLS is not a netting system in the strict sense of the word, the substance and purpose of each standard are considered to be applicable to the system.



with liquidity providers, members will normally receive the currency they expect, paid out at the right time, even if a counterparty has failed. This is an improvement on the present system. The banks also consider that the unexpected liquidity requirements that can result from revised pay-in schedules due to the failure of a counterparty will be manageable.

It is clear that the market will change through:

- fewer payments (a handful of payments to CLS in each currency instead of separate payment to each counterparty for each transaction)
- smaller payments (net amount for each currency)
- payments concentrated into the space of a few hours

This system with relatively few members, which will presumably also act both as correspondent banks for one another and as liquidity providers for CLS, also means that a small number of players will account for the bulk of trades and that, in the event of problems with these players, vulnerability and systemic risk will increase.

Members should be aware of the risks that remain, especially the possibility of a member's missed pay-in leading to revised pay-in calls, possible pay-outs in a third currency and the agreements on the distribution of losses. The tight CLS pay-in schedule with critical intra-day deadlines for payments should lead to a higher degree of automation and streamlining, for both member banks and their customers. Greater demands will accordingly be made of internal liquidity management at the banks and of their operational preparedness, which should in turn reduce risks.