

Box 19

MORE THAN THIRTY YEARS AFTER THE “HERSTATT” CASE, FOREIGN EXCHANGE SETTLEMENT RISK IS STILL AN ISSUE

On 26 June 1974, the German banking supervisory authority decided to close a German bank, Bankhaus Herstatt, because of heavy losses it had endured as a result of speculative foreign exchange positions it had taken. Its foreign exchange dealers had sold a sizeable amount of US dollars against the Deutsche mark, but the market moved against them. The bank was closed in the middle of the German business day, before the opening of US markets. By this time, it had already received – via the German payment system – the marks it had bought two days earlier. However, because of the time zone difference, Bankhaus Herstatt had not yet delivered the dollars it had sold. As a result, several financial institutions were adversely affected and the US-based CHIPS system had to close for 24 hours.¹

Up until the Herstatt incident, market participants had thought that their foreign exchange risk was limited to market movements. However, the Herstatt case demonstrated very clearly how risky the lack of synchronism between the settlement of the two legs of a foreign exchange

¹ CHIPS denotes Clearing House Interbank Payments System. Today, it is the premier bank-owned payments system for clearing large value US dollar payments using bilateral and multilateral netting for maximum liquidity efficiency.

trade could be, and market participants realised that they also faced a principal risk. “Herstatt risk”, as it has come to be known, is a type of risk that payment systems had not been, and for a long time afterwards were still not, designed to cope with adequately. In the mid-1990s, the Basel-based Committee on Payment and Settlement Systems (CPSS) created a sub-group to investigate potential solutions to the issue, and a risk-reduction strategy to eliminate foreign exchange (FX) settlement risk was subsequently agreed upon by G10 central banks.² This strategy included three tracks:

Track 1: Action by individual banks to control their FX settlement exposures

Individual banks should take immediate steps to apply an appropriate credit control process to their FX settlement exposures. This recognises the considerable scope for individual banks to address the problem by improving their practices for measuring and managing their FX settlement exposures.

Track 2: Action by industry groups to provide risk-reducing multi-currency services

Industry groups are encouraged to develop well constructed multi-currency services that would contribute to the risk-reduction efforts of individual banks. This recognises the significant potential benefits of multi-currency settlement mechanisms and bilateral and multilateral obligation netting arrangements, and the G10 central banks’ view that such services would best be provided by the private sector rather than the public sector.

Track 3: Action by central banks to induce rapid private sector progress

Each central bank, in cooperation, where appropriate, with the relevant supervisory authorities, will choose the most effective steps to foster satisfactory private sector action over the next two years in its domestic market. In addition, where appropriate and feasible, central banks will make or seek to achieve certain key enhancements to national payment systems and will consider other steps to facilitate private sector risk-reduction efforts. This recognises the likely need for public authorities to encourage action by individual banks and industry groups, and to cooperate with these groups, to bring about timely, market-wide progress.

In July 1998 the CPSS published its first progress report.³ This report acknowledged that “encouraging progress” had been made on all three tracks of the strategy but that “more needs to be done.” The creation of the Continuous Linked Settlement system (CLS) by major private sector banks and operated by CLS Bank International, a single-purpose bank, is a direct consequence of the central banks’ FX risk reduction strategy. CLS started its operations in September 2002. Similar payment-versus-payment (PVP) arrangements operate elsewhere, for instance in Hong Kong, involving HKD, USD and EUR.

Ten years after the first CPSS report and four years after the launch of CLS, the G10 central banks considered the time to be right to organise a survey on whether further progress has been made or whether more needs to be done to contain FX settlement risk. This survey,

² See CPSS (1996), “Settlement Risk in Foreign Exchange Transactions”, BIS, March.

³ See CPSS (1998), “Reducing foreign exchange settlement risk: a progress report”, BIS, July.

including both quantitative and qualitative aspects, was conducted in 2006 and the findings were published in a consultative report in July 2007.⁴

Overall, the assessment of the CPSS is that the comprehensive central bank strategy for reducing FX settlement risk has achieved significant success but further action is still needed. The CPSS acknowledges that progress is evidenced most visibly by the launch and growth of CLS which, based on the survey data, settles on average the equivalent of more than USD 3 trillion each day in payment obligations generated by both sides of an FX trade.⁵ This important accomplishment reflects the strong policy commitment, resources devoted and efforts made by major banks and other institutions around the globe in taking up the central banks' call for industry action to reduce FX settlement risk.

Notwithstanding the important contribution made by CLS, a notable share of FX settlement still generates significant risk across the global financial system and, from a systemic risk perspective, warrants further investigation. According to data reported in the CPSS survey, 32% of total settlement obligations, i.e. approximately USD 1.2 trillion equivalent, are still settled using traditional correspondent banking (see Table A). This involves FX settlement risk with sometimes long-lasting and high exposures which can in some cases even significantly exceed an institution's capital.⁶

4 See CPSS (2007), "Progress in reducing foreign exchange settlement risk - consultative report", BIS, July.

5 For further details on the development of CLS, see the section on Continuous Linked Settlement in this FSR.

6 In general terms, the exposure of an institution starts at the "unilateral cancellation deadline for sold currency" (i.e. when the institution can no longer unilaterally cancel the instruction to pay the currency it is selling and becomes irrevocably committed to making the payment), and ends when the institution receives, with finality, the currency it is buying, which is typically when its correspondent credits its account with the funds. This period, during which the institution is exposed to credit and liquidity risk to the full value of the bought currency, is the so-called irrevocable (or "I") period. As many institutions do not routinely check whether they have received the currencies they are buying until some time after the receipts are due, they create a so-called uncertain (or "U") period regarding their actual exposure after the I period has ended. During this "U period", an institution might still be exposed to its counterparty for the full amount since it is possible that the bought currency was not received when due. To the extent that in practice some trades do fail, exposures will continue into the failed (or "F") period.

Table Breakdown of total foreign exchange obligations settled by method

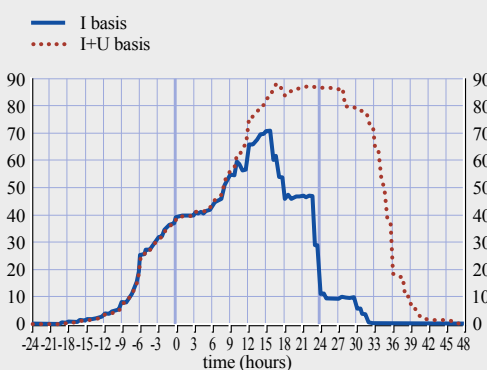
Settlement method	Value (USD billions)	% of total
CLS (PVP)	2,091	55
Traditional correspondent banking ("gross non-PVP")	1,224	32
Bilateral netting	304	8
"On-us" without settlement risk	112	3
"On-us" with settlement risk	53	1
Other PVP	38	1
Total	3,821	100

Source: CPSS "Progress in reducing foreign exchange settlement risk - consultative report", BIS, July 2007.

Note: Figures are based on daily average value of bought currencies ("receivables") reported in the April 2006 CPSS survey. In this table, component figures may not exactly sum to total figures because of rounding. "On-us" settlement is where both legs of FX trades are settled across the books of a single institution.

Chart Average exposure to a single day's settlement obligations

(% of total obligations settled by traditional correspondent banking)



Source: CPSS "Progress in reducing foreign exchange settlement risk - consultative report", BIS, July 2007.

Traditional correspondent banking leads to exposures in the settling of FX trades because, contrary to a PVP service, there is no direct link between the payments of the two currency legs. In general, when using traditional correspondent banking, an institution cannot be certain that it has received the currency it bought until the payment system of the bought currency closes. Although there is wide variation from institution to institution and (within institutions) from currency to currency, the survey results show that it is not unusual for exposure durations to last more than 24 hours and overnight (settlement day V+1) rather than just during day V, particularly when institutions do not immediately reconcile after the final due receipt time (i.e. where there continues to be a period of uncertainty of final receipt). In general, the average exposure duration of almost all currency pairs have either remained unchanged or even lengthened since the 1997 survey was undertaken. The main causes of long-lasting exposures are correspondent bank practices (e.g. the correspondent requires significant notification period to cancel a payment instruction, which means that the unilateral cancellation deadline for instructions to pay the currency sold comes very early) and/or time zone differences (e.g. an institution in the US sells an Asia-Pacific currency against US dollars so it pays in an early time zone and receives in a late time zone). Depending on the currency pair, average durations can be significant (e.g. when selling euro and buying dollars, the average “I period” was 22 hours and the average “U period” eight hours, adding up to an “I+U period” of 30 hours).

Moreover, in the course of settling payment obligations related to FX trades, an estimated 12% of the surveyed institutions had a credit exposure to a single counterparty that exceeded 10% of their capital on an average day, while on peak days 23% of institutions had an exposure of this size. Furthermore, the survey found that 63% of surveyed institutions underestimated their FX settlement exposures to some extent, and most notably their overnight settlement exposures.

Taken together, the survey results suggest that further action is needed to address the system-wide risks to financial stability posed by FX settlement exposures. Accordingly, further action is recommended for individual institutions, industry groups and central banks. One part of this strategy would be for institutions to ensure that they have in place a coherent set of risk controls and incentives across their respective business units to control their FX settlement exposures appropriately. Also included is a recommendation that central banks work with banking supervisors “to explore options that could ensure on an ongoing basis that banks apply appropriate risk management procedures to their FX settlement exposures, thereby addressing FX settlement exposures that remain large and guarding against the potential re-introduction of excessive exposures.”

The CPSS (and also the Eurosystem) believes that the support of banking supervisors is essential in tackling remaining FX settlement exposures that may still present systemic risk. Efforts are underway to further explore the survey’s conclusions together with the Basel Committee on Banking Supervision (BCBS) and to build on the analysis and recommendations contained in the Supervisory guidance for managing settlement risk in foreign exchange transactions, issued by the BCBS in September 2000.