



FEDERAL RESERVE BANK *of* NEW YORK

FX Settlement Risk

New York Foreign Exchange Committee

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Important note

The views expressed in this presentation do not necessarily reflect the views of the Federal Reserve Bank of New York or any other component of the Federal Reserve System.



What is FX settlement risk?

- FX settlement risk is the risk that a firm will pay the currency it sold, but fail to receive the currency it bought
 - FX settlement risk is a bilateral credit exposure to the counterparty
 - Often referred to as *Principal Risk* or *Herstatt Risk*
 - Payment-versus-payment (PVP) settlement eliminates FX settlement risk
 - Ensures sold currency will be paid if and only if bought currency is received
- Without PVP protection, if a counterparty fails between trade and settlement...
 - A firm could lose the full principal value of the trade
 - The principal value greatly exceeds the replacement cost of the trade
- This bilateral credit exposure ...
 - **Begins** when a firm is no longer certain it could cancel its instruction to pay the currency it sold (“unilateral cancellation deadline”)
 - Can begin one or more business days prior to settlement day, leading to bilateral credit exposures over night and over weekends and holidays
 - **Ends** when a firm receives, with finality, the purchased currency.
- A variety of factors can determine the duration of FX settlement risk
 - Time-zone differences
 - A bank’s internal payment processes
 - Processes and arrangements with correspondent(s)



Central Bank strategy to reduce FX settlement risk

- Since the 1970s, FX settlement risk has been considered one of the greatest sources of global systemic risk
 - Failure of Bankhaus Herstatt (1974)
 - Led to the creation of the Basel Committee on Banking Supervision
- In 1994, NYFXC issued “Reducing Foreign Exchange Settlement Risk”, which analyzed the size, duration, and underlying causes of FX settlement risk, along with recommendations
- In 1996, the Group of Ten central banks leveraged the NYFXC analysis and launched a comprehensive strategy to reduce FX settlement risk
 - The strategy called for action by individual banks, industry groups, and central banks
 - A key result was the launch of CLS in 2002
 - Several regional PvP systems have also been built (e.g., Hong Kong, India, Colombia)
- Despite significant initial success, progress appears to be stalling, if not regressing
 - As reported by CPSS in 2008*, 63% of surveyed traders underestimated their bilateral FX settlement exposures by failing to recognize the full duration
 - 23% had peak daily credit exposures to a single counterparty $\geq 10\%$ of capital, and they failed to limit and control these exposures like more “traditional” credit exposures
- In response, the BCBS developed supervisory guidance jointly with CPSS in 2013 to address the need for further action by individual banks
 - Provides comprehensive guidance for managing FX settlement risk, as well as for managing other FX settlement-related risks. (See **Appendix: BCBS Guidance**)

*CPSS, *Progress in reducing foreign exchange settlement risk*, May 2008. Estimates based on a survey of 109 institutions covering 80% of FX market.



FX settlement risk remains a systemic concern

- The 2019 BIS FX Triennial Survey shows that FX settlement risk is still significant:

Trading activity and payments		Table A.1
Description		Trades/payments
Trading activity		USD billions
A. Spot		1,987
B. Deliverable forwards		741
C. FX and currency swaps		3,311
D. NDFs and options ¹		556
E. Total (= A + B + C + D)		6,595
Settlement		
F. Gross payment obligations (= 2 × (A + B) + 4 × C)		18,701
G. Bilateral netting ²		(3,516)
H. Net payment obligations (F – G)		15,185
I. Of which: settled with PVP ³		6,311
J. Of which: settled without PVP protection ⁴		8,874

¹ NDFs and some options are settled with a single payment and are therefore not subject to FX settlement risk. ² Bilateral netting reduces the amount of payment obligations to be settled; it is calculated by applying the proportion of netting shown in the Triennial Survey. ³ Calculated using the CLS settlement data for April 2019 and the “Other PVP” proportion in the Triennial Survey. ⁴ “Without PVP protection” is the residual.

Sources: CLS; BIS Triennial Central Bank Survey; authors’ calculations.

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Barriers to reducing FX settlement risk

- Initial follow-up work by BCBS-CPMI suggests that the issues highlighted in 2008 still exist today across most markets
 - Many firms still underestimate their FX settlement exposures by not recognizing and accurately measuring the full duration of their exposures
 - Many firms fail to treat and control their bilateral FX settlement exposures equivalent to other bilateral credit exposure of the same size and duration
 - Many firms do not use PVP settlement methods even when available for a variety of reasons, including:
 - Initial or ongoing costs
 - Competitive concern of insisting that counterparties use PVP if others do not
 - Lack of awareness or internal incentives to reduce FX settlement risk
- As noted in the BIS Quarterly Review* ...

“It may therefore be necessary to both encourage FX market participants to use PVP where available and widen that availability to include EME currencies.”

“The task of reducing global risk is now firmly on the agenda of bank supervisors.”

*BIS Quarterly Review, *FX settlement risk remains significant*, December 2019



Potential areas of support from NYFXC/GFXC

- **FX Global Code**
 - Consider strengthening the current principles related to the management and reduction of FX settlement risk as part of the GFXC's triennial review and updating of the FX Global Code (see **Appendix: Principles 35 and 50**)
 - Such strengthening could reflect industry perspectives on the challenges and opportunities for increasing the use of PvP when available, and for promoting the appropriate measurement and control of FX settlement risk when PvP is not used
- **FX settlement data**
 - NYFXC and other regional FX committees could consider collecting FX settlement data as part of their semiannual surveys to help measure and keep a focus on the evolution of FX settlement exposures and industry progress in reducing these exposures
 - This effort could be supported by collaboration with the CPMI and Markets Committee to “clean up” and to improve upon the data fields and associated instructions that could be used semi-annually, based on experience with the initial data collection conducted as part of the 2019 Triennial survey



Appendix



BCBS guidance for FX settlement risk*

- **Governance:** Banks should have a comprehensive risk management process and active engagement by the Board of Directors
- **Principal Risk:** Banks should use FMIs providing PVP settlement to eliminate principal risk. Where this is not practicable, banks should properly identify, measure, control, and reduce the size and duration of the principal risk.
- **Replacement Cost Risk:** Banks should employ prudent risk mitigation regimes to identify, measure, monitor, and control replacement cost risk until settlement is confirmed and reconciled.
- **Liquidity Risk:** Banks should properly identify, measure, monitor, and control for liquidity needs and risks in each currency.
- **Operational Risk:** Banks should properly identify, assess, monitor, and control operational risks. Systems should support appropriate risk management controls and should be able to handle FX volumes under normal and stressed conditions
- **Legal Risk:** Banks should ensure legal agreements and contracts are legally enforceable for each aspect of its activities in each jurisdiction.
- **Capital for FX transactions:** Banks should consider all FX settlement related risks when analyzing the capital it needs. Sufficient capital should be held against potential exposures.

* BCBS, *Supervisory guidance for managing risks associated with the settlement of foreign exchange transactions*, February 2013



Principle 35

Market Participants should take prudent measures to manage and reduce their Settlement Risks, including prompt resolution measures to minimise disruption to trading activities.

Settlement fails can expose Market Participants to market and credit risks. Market Participants should have policies and procedures designed to properly monitor and limit settlement exposures to counterparties.

Where applicable, Market Participants should consider payment netting and bilateral obligation netting to reduce Settlement Risks.

Principle 50

Market Participants should measure and monitor their Settlement Risk and seek to mitigate that risk when possible.

Market Participants should develop timely and accurate methods of quantifying their FX Settlement Risk. The management of each area involved in a participant's FX operations should obtain at least a high-level understanding of the settlement process and the tools that may be used to mitigate Settlement Risk.

The netting of FX settlements (including the use of automated settlement netting systems) is encouraged. Where used by Market Participants, a process of settling payments on a net basis should be supported by appropriate bilateral documentation. Such netting may be bilateral or multilateral.

The initial confirmation of trades to be netted should be performed as it would be for any other FX transaction. All initial trades should be confirmed before they are included in a netting calculation. In the case of bilateral netting, processes for netting settlement values used by Market Participants should also include a procedure for confirming the bilateral net amounts in each currency at a predetermined cut-off point that has been agreed upon with the relevant counterparty. More broadly, settlement services that reduce Settlement Risk—including the use of payment-versus-payment settlement mechanisms—should be utilised whenever practicable.