GLOBAL FOREIGN EXCHANGE DIVISION

ECB

22 June 2023

Settlement Risk in FX

- Defined as the risk of paying away currency without receiving the currency being bought
  - Also known as Principal/Herstatt Risk; Payment v Payment (PvP) used to mitigate
  - Re-emerged as an industry concern with SVB, Signature Bank, First Republic etc

- History
  - 1974 Bank Herstatt went bankrupt after receiving DEM, failing to pay USD
  - 2002 CLS went live, enabling PvP settlement for FX transactions
  - 2013 Supervisory Guidance for measuring risks associated with the settlement of FX trades
  - 2020 CPMI Project to improve cross-border payments

- To mitigate Settlement Risk, CLS Bank went live in 2002 – main industry PvP mechanism
  - Currently settles 18 currencies, 70+ settlement members, 30,000+ third party clients
  - Balances are multilaterally netted which has significant funding benefits
  - CLS report this reduces the daily USD 6trillion settlement requirement by 96%

- BIS Report *31% of turnover settles without risk mitigation* - Why do trades settle outside of CLS?
  - Counterparty is not a member of, or eligible for CLS membership (e.g., central banks, SVB)
  - Currency is not be eligible (e.g., CNY)
  - The trade is not eligible (e.g., out leg of CLS in/out swaps)
  - The trade may be eligible but does not settle in CLS (e.g., unresolved trade mis-matches before CLS cut-offs)

Measuring Settlement Risk

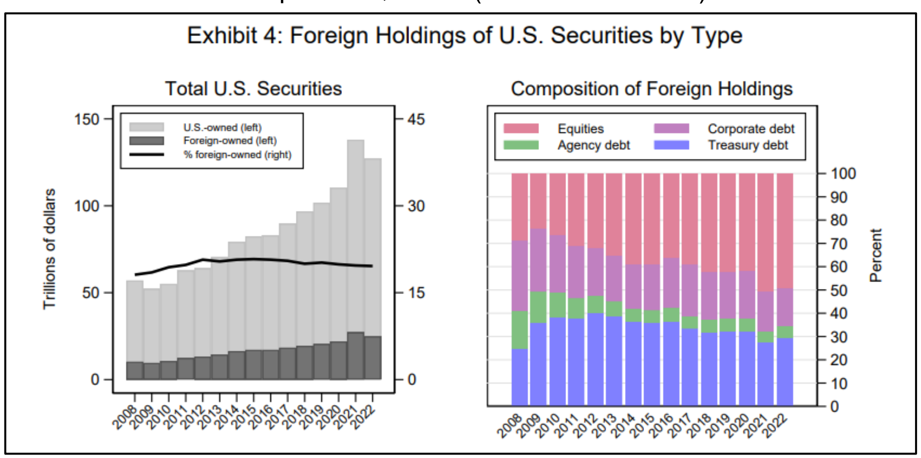
- 2019 December Quarterly Review: $8.9 trillion/day settlement at risk
- 2022 December Quarterly Review: $2.1 trillion/day turnover at risk
- Does the current analysis of the Triennial Survey accurately reflect the Settlement Risk number?
  - Does all non PvP settlement carry equal Settlement Risk?
  - How do market participants reduce Settlement Risk?
- GFXC discussed in the June meeting
- Opportunity to:
  - Improve the quality of the data collated – be explicit in the ask and avoid any data interpretation issues
  - Define the questions that the data will be used to answer
  - Focus on settlement volume instead of turnover volumes
- Recommendation for industry to engage with Central Bank FX groups to input into the design of the new survey

gfma

T+1 Considerations for FX

- U.S. Securities settlement will move from T+2 to T+1 effective May 28th, 2024
  - U.S. have commenced work on the migration; securities include cash equities, corporate debt and unit investment trusts (US Treasuries already settle T+1)
  - Part of the global shift towards T+1 and shortened settlement cycle. Other countries are migrating or considering move to T+1. India (January 2023) Canada (May 2024) Europe & UK are reviewing
- GFXD paper "FX Considerations for T+1 U.S. Securities Settlement" to assist broader financial market participants understanding of the key considerations for FX
  - https://www.gfma.org/wp-content/uploads/2023/05/gfxd-fx-considerations-for-t1-u.s-securities-settlement-may23-003.pdf
- T+1 raises the risk that transaction funding dependent on FX settlement may not occur in time
- Scale of any issues not yet understood – but foreign investment in US securities is significant

2022 Total foreign holders of US securities $24.9 tri (19.6%)
Equities = $12.2tri (16% of US market)



Source: Dept of US Treasury "Foreign Portfolio Holdings of U.S. Securities June 30,2022" (May23)

T+1 Considerations for FX

- T+1 is not an issue for FX but knock on challenges occur because of the need to *execute the securities transaction followed by the related FX transaction* with compressed remediation time available

- Key considerations for both sell side and buy side

  - The timing of FX and security trades needs to occur as close to each other as possible
    - T+1 FX settlement is already in practice - reprioritisation of the FX execution within the security trade lifecycle is required to ensure timely settlement can be completed for <u>both</u> the FX and security trades
    - Challenging for Asian-based investors; local markets may have closed before US security can be transacted

  - There is potential for increased Settlement Risk as shortened securities settlement cycle may cause risk of missing CLS cut-off for the related FX transaction

  - Operational risk may increase - enhanced pre-trade vigilance is required to ensure smooth straight-through-processing e.g., supporting institutional block trading/new account set-up

  - Awareness needed of RTGS, local and correspondent bank cut-off times, holiday schedules and currency restrictions

  - Capability gaps may require buy-side to investigate solutions – e.g., establishing US trading and operations, pre-funding or increasing trade automation of both FX and security trades through multi-asset trading platforms

  - New operational processes may increase costs, risks and errors and costs. Cost considerations include pre-funding, late payment fees and system enhancements

gfma

For consideration

- Settlement Risk
  - Please ensure your organisations engage with Central Banks on any new Settlement Risk surveys

- T+1
  - What FX issues (e.g. increase in FX Settlement Risk) are being raised internally or by clients?
  - Are there any sectors of the market that are unaware of the US moves?
  - Do you know the size of the FX impact of any changes to US securities settlement?
  - Do you expect any FX structural market changes on the back of US security moves to T+1?
  - Please ensure you engage in UK and EU exercises on T+1

Appendix

GFXD – The Voice of the Global FX Industry

- Formed in June 2010
- Recognition that there was no coordinated trade body representing the FX dealer industry globally
- The GFXD now has 25 members, representing the largest global FX dealers and accounting majority of dealer market share (Euromoney survey)
- The Division is global, and represents the FX interests of the three Global Financial Markets Association (GFMA) bodies:
  - AFME – Association for Financial Markets In Europe
  - ASIFMA – Asia Securities Industry and Financial Markets Association
  - SIFMA – Securities Industry and Financial Markets Association
- Led out of London by MD with staff in London, NY, HK
- Desire to represent a truly global association representing the industry in multiple locations
  - Frequent interaction with dealers outside the GFXD membership
  - Industry outreach to end users – corporates and real money as well as other investors
  - Outreach sessions with infrastructure providers, exchanges, CCP, technology providers
- 4 key global groups: Board; Steering Committee; Operations Committee; AsiaPac Committee
  - Working groups established for key issues and projects
  - Market Architecture Group has become increasingly important

gfma

T+1 Settlement Cycle

Impact, risks, challenges and benefits
ECB OMG Survey

22 June 2023

Janusz Ryzner,
DGM/Financial Operations Services Division
ECB Operations Managers Group

Overview

1 Background

- **T+0 Settlement Cycle in China and T+1 in India** (as of January 2023)
- **T+1 transition and implementation deadline in the US:** 28 May 2024 and in Canada: 27 May 2024
- **UK: Accelerated Settlement Taskforce:** initial findings by December 2023, and a full report with recommendations by December 2024
- **The European Union:** initial analysis
  - Association for Financial Markets in Europe (AFME) Paper: **T+1 Settlement in Europe: Potential Benefits and Challenges**, September 2022
- The ECB OMG Survey (May 2023):
  - Operational implications of T+1 Settlement Cycle
  - 21 replies and feedback from the OMG meeting on 20 June 2023

2 T+1 Settlement cycle in the US and Canada

Timeline and preparations for the implementation of T+1:

- Adequate time
- In the planning or implementation phase

Affected areas:

- Settlement • Fails management • Corporate actions
- Foreign exchange • Trading

Main impact:

- Policy/procedures changes • IT upgrades • Staffing costs

Concerns/issues:

- **Spill over** to the FX spot market: liquidity management becoming key
- Higher importance of **timely forecast data** and correct **customer information**
- Potential **limitation of CLS processing**, particularly for Asian markets
- T+1 Settlement cycle: **end result or intermediary step to T+0**?

3 T+1 Settlement cycle in the EU: Benefits and challenges

Benefits:

- Reduction of the exposure against counterparties and of the financial risk
- Decreasing capital and margin requirements
- Alignment of the markets and harmonisation of settlement practices
- Possible limitation of short selling

Risks and challenges:

- Market infrastructure limitations:
  - Market practices
  - Fragmentation
  - EU-UK alignment
- Internal systems / processes limitations
- Reporting & Regulatory implications – CSDR: The risk of increasing settlement fails and increased CSDR cash penalties

4 T+1 Settlement cycle in the EU: Implementation criteria

Move to T+1 in the EU should be implemented:

- As soon as soon as possible if the US/Canada experience is positive
- Gradually involving different asset classes
- Consistently for all markets in the EU

The change to T+1 should be preceded by:

- Review and adaptation of existing market practices
- Coordination with other global markets
- New regulatory framework
- Creation of an industry task force to conduct a detailed assessment of the benefits, costs and challenges of T+1 adoption

2 T+1 Settlement cycle: Questions and issues

1. How do you assess the impact and prepare for the implementation of T+1 Settlement Cycle in the US?
2. Would you have any recommendations to address challenges related to the lack of global harmonisation of settlement cycles?

Questions?

Thank you!

EUROPEAN CENTRAL BANK

BANKING SUPERVISION

FX Settlement review in the SSM

Single Supervisory Mechanism (ECB Banking Supervision)

22 June 2023

Thomas Jorgensen (Deputy DG-SIB)
Lola Delgado Castillo (Team lead DG-SIB)

Agenda

1. 2022 BIS Triennial Survey confirms FX settlement exposure remains high and increasing

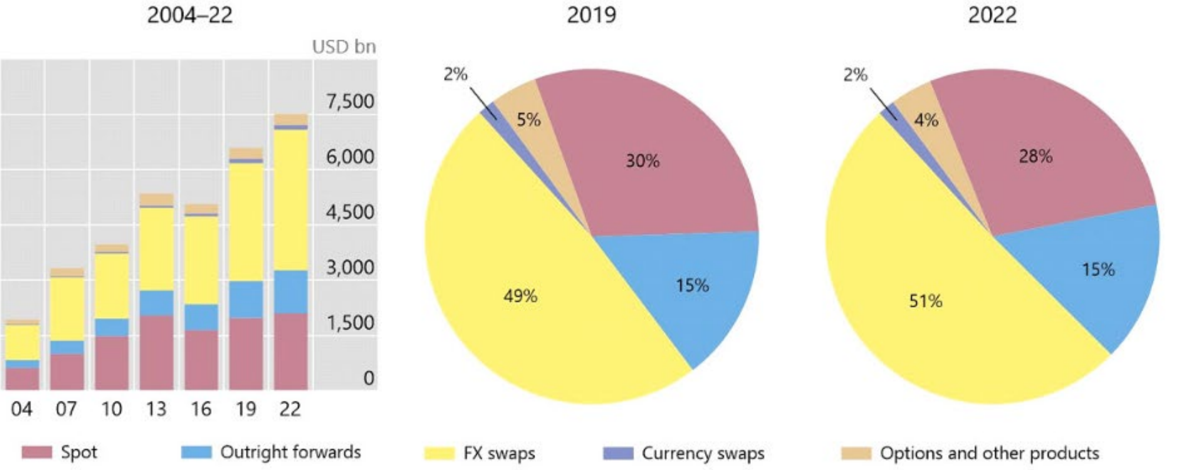
- **Important increase ($1 trillion) in FX risk since the last survey** (2019) which triggered the review of FX settlement

- Nearly a **third of deliverable FX turnover remains subject to settlement risk (see annex page 11&12)**, in detail: $2.2 trillion (April 2022) up from $1.9 trillion (April 2019) remains at risk of FX settlement as it presents no risk mitigation (because existing PvP arrangements are unavailable, or unsuitable for certain trades, or market participants find them too expensive).

Foreign exchange market turnover by instrument[1]

Net-net basis, daily averages in April

Graph 1



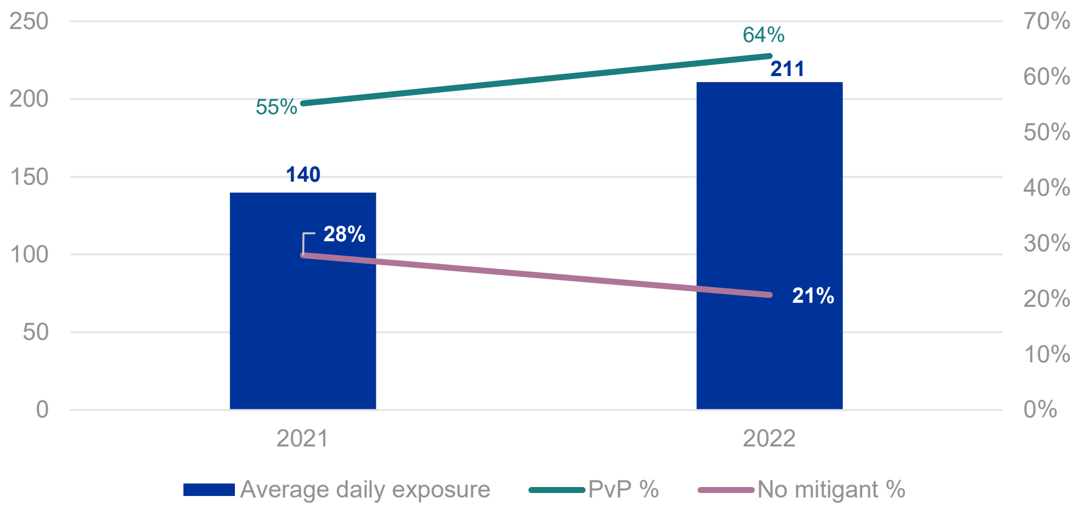
[1] Adjusted for local and cross-border inter-dealer double-counting, ie "net-net" basis.

Source: BIS Triennial Central Bank Survey. For additional data by instrument, see Table 1.

1. Despite being a tail-risk, FX settlement exposure is significant for SSM institutions in scope

- Compared 2021 submission, latest reporting (reference Dec-22) shows **relevant increase in exposure for most of the banks in scope**.
- **Portion with no mitigants remains significant albeit slightly decreasing. Despite being a tail-risk, magnitude in absolute terms and lack of mitigants raise concerns**.
- **Improvements in the share of PvP which is increasing across sample.** All **banks have reached circa 50% or higher** of total FX trades settled through PVP. **Still there is room for improvement**
- The largest exposure to a single counterparty without mitigants as a percentage of CET1 ranges between 1-3% for most banks.

FX settlement – Evolution 2021-2022 (EUR bn)*



**Average daily exchange excluding intragroup exposures*

2. SSM has been active in the review of FX settlement risk since 2019

What has been done so far in the SSM?

2019

SSM identified weaknesses related to risk management (lack of overarching policy, weak limits, improper duration calculation, lack of incentives to use PvP, limited involvement of BoD, no reporting or weak reporting in place).

2020

Feedback letters were sent in June 2020 to banks in scope. Banks requested to answer the letter by December 2020.

18 December: **BCBS and CPMI letter to supervisors and market participants (supervisors to incorporate BCBS guidance into supervisory framework and assess compliance for material institutions).**

2021

Joint Supervisory Teams **follow-up of action plans**

2022

- **Follow-up of banks action plans and ad-hoc discussions with institutions**
- **Benchmarking** of FX Settlement exposure and use of PvP
- Analysis of **SSM institutions incentives to reduce principal risk with focus on incentives to PvP**
- Ad-hoc review of calculation of FX settlement **own fund requirements**

2. Concerns remain in relation to the management of FX settlement even after implementation of action plans

FX settlement activities and correspondent banking are essential components of the global payment system. Awareness of FX settlement has increased across the board, however concerns remain…

Identified concerns

1. **FX settlement frameworks need enhancement.** Imprecise **definition** and **calculation** of **duration. Approximation methods widely used without evidences of such method not causing underestimation of the risk** (also under stressed conditions).

2. **Lack of prudent limits for FX settlement exposures** (high levels to facilitate trading). Creditworthiness of counterparty not always properly reflected in limit setting. Limits set as guidelines instead of binding.

3. **Inadequate management of failed trades and limit setting.** Issues persist on escalation of failed trades.

4. **Incomplete FX Settlement reporting** which shows a non-comprehensive view of the risk

5. **Insufficient incentive system**

6. **Limited involvement of the Board of Directors**

7. **Information systems are fragmented and do not allow for capturing full FX settlement exposure.**

Identified good practices

- Calculation of the duration according to the standard definition by BCBS, or usage of reasonable approximation methods with evidences of no underestimation.
- Binding and prudent limits set to counterparties, considering its creditworthiness. Measurement of exposure to counterparty closely monitored and updated. Limits are influenced by eventual delays in settlement and depend on the rating of the counterparty, size and duration of the trade.
- Management of failed trades by ensuring a failed trade represents continued exposure for the full principal value of the trade to the counterparty. Proper identification and escalation of failed trades. Report of failed trades escalation of incidents included in the Group Policy.
- Reporting covering exposure at Group level with breakdown by type of settlement and top counterparties by ratings and sectors. Information on number of fails and status is included.
- Incentives i) penalties and financial costs resulting from settlement incidents are incorporated into the costs charged to the Business area, thereby affecting the profitability and ii) the remuneration of front office personnel is adjusted to take into consideration the existence of failed trades.
- The board is directly informed (and not only risk committees) on a yearly basis or at least in case of serious incidents or if the materiality of the risk increases.
- Institutions are prepared for crisis or stressed conditions (clear procedures, alternative settlement options, etc).

3. Way-forward for 2023 and 2024

2023

- **Feedback letters to banks in March for banks in scope**
- **Supervision newsletter published in May**
- **Bi-annual reporting**
- **Follow-up latest developments and implications for FX settlement risk (for instance change in settlement to T+1 in US and Canada)**

2024

- **Assessment and identification of main weaknesses** paying particular attention to **medium-high and high weaknesses** (capital requirements calculation, escalation of failed trades and limits setting).
- **Inclusion in 2024 SREP if relevant.**

Conclusions

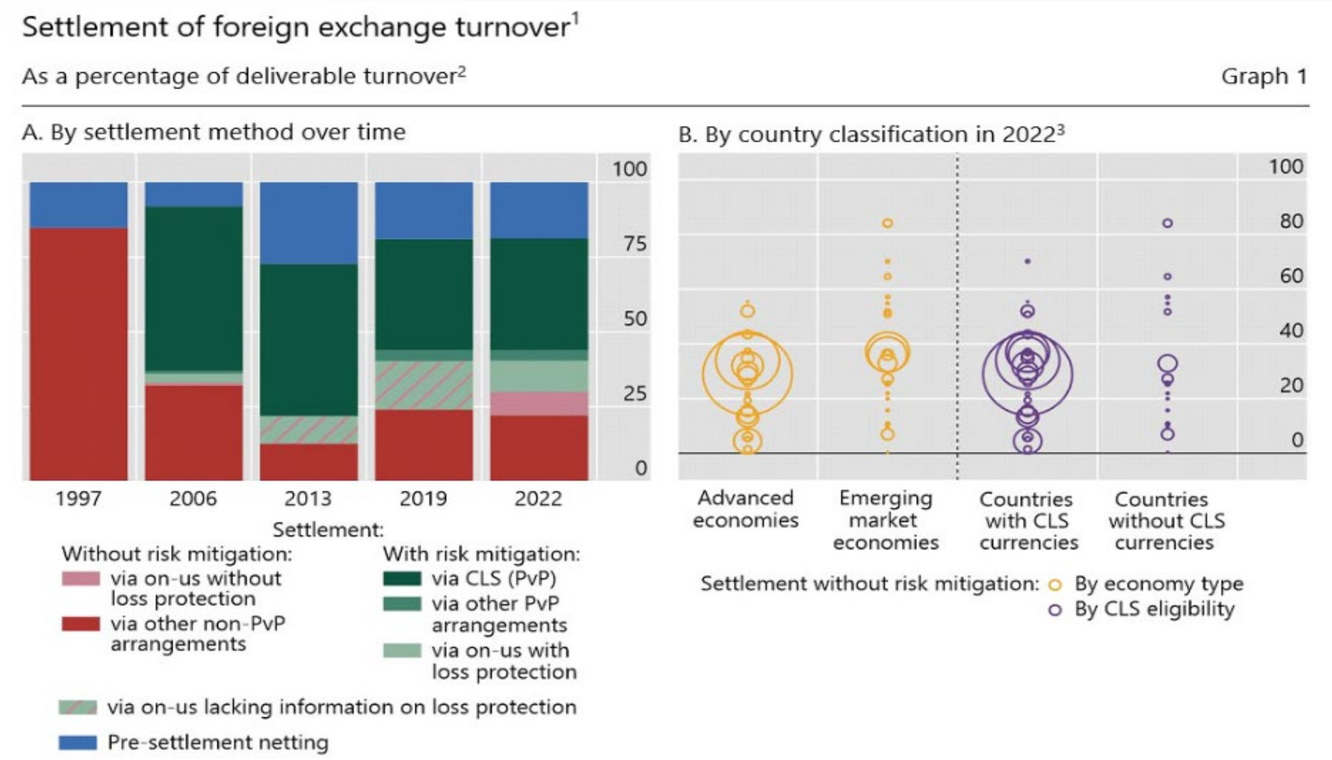
- **Despite being a tail-risk, FX settlement exposure is significant for SSM institutions in scope. Share of PvP increasing but portion with no mitigants remains high**
- **Areas for improvement in the risk management of FX settlement** still present mainly related to the need to strengthen calculation of duration, management of failed trades, prudent limits, involvement of the Board of Directors, acceptable reporting and sufficient incentives.
- **Further actions to be taken if necessary during 2023 and 2024. Outcome of the above, will feed our SREP in 2024 if relevant.**

- **What incentives could be internally set to increase the use of PvP?**
- **What are the main impediments in the use of PvP when the currency pair is CLS eligible?**
- **What implications do you think the change to T+1 in US and Canada will have for FX settlement?**

Thank you very much for your attention

Annexes

FX settlement risk remains a concern



Source: 2022 BIS Triennial Survey

Breakdown of FX settlement by type of counterparty

Settlement of foreign exchange (FX) turnover in April 2022[1]

In billions of US dollars

Table 1

	All counterparties		Reporting Dealers		Other financial institutions		Non-financial customers	
Deliverable turnover[2]	6,988	100%	3,248	100%	3,348	100%	392	100%
Pre-settlement netting[3]	1,337	19%	591	18%	665	20%	82	21%
Turnover settled	5,651	81%	2,658	82%	2,683	80%	310	79%
with risk mitigation	3,495	50%	1,783	55%	1,563	47%	149	38%
via CLS (PvP)	2,518	36%	1,333	41%	1,125	34%	59	15%
via other PvP arrangements	257	4%	101	3%	127	4%	30	8%
via on-us with loss protection	720	10%	349	11%	310	9%	60	15%
without risk mitigation	2,155	31%	875	27%	1,120	33%	161	41%
via on-us without loss protection	550	8%	259	8%	231	7%	60	15%
via other non-PvP arrangements	1,606	23%	616	19%	889	27%	101	26%

Source: 2022 BIS Triennial Survey

Capital requirements for Settlement risk: CRR (I)

Unsettled transactions Art. 378 CRR	RWAs for **unsettled transactions**: charge on the price difference after 5 days (replacement cost). **For example:** Bank A sells a 1-year FX forward to Bank B. On settlement day, neither Bank A nor Bank B deliver their legs. From Bank A's point of view (and for Bank B) the transaction is unsettled, and a replacement would be needed.
Free deliveries Art. 379 CRR	RWAs for **delayed incoming payments (free delivery):** charge on the entire exposure from day 1. **For example:** Bank A sells a 1-year FX forward to Bank B. On settlement day, Bank A delivers its leg, but Bank B fails to settle his. From Bank A's point of view there is a delayed incoming payment (a free delivery) and from day 1 it must compute capital requirements.

Capital requirements for Settlement risk: CRR (II)

Art. 378 CRR – Unsettled transactions

An institution shall calculate the price difference, as the difference between the agreed settlement price for the debt instrument, equity, foreign currency or commodity in question and its current market value. The institution shall multiply that price difference by the appropriate factor in the right column of the following Table.

Number of working days after due settlement date	%
5 - 15	8
16 - 30	50
31 - 45	75
46 or more	100

Art. 379 CRR - RWAs for delayed incoming payments (free delivery)

Charge on the entire exposure from day 1. Capital treatment for free deliveries

Column 1	Column 2	Column 3	Column 4
Transaction type	Up to first contractual payment or delivery leg	From first contractual payment or delivery leg up to four days after second contractual payment or delivery leg	From 5 business days post second contractual payment or delivery leg until extinction of the transaction
Free delivery	No capital charge	Treat as an exposure	Deduction or risk weight 1250%

Room for improvement in the calculation of own funds for FX settlement risk. Guidance needed

Own funds requirements	**Currently there is no prudential reporting in place covering FX settlement incidents and related losses.** From the ad-hoc request, **important data quality issues were spotted mainly due to constrains in the institutions' IT systems.** A number of institutions **do not have in place a sound system** to calculate capital requirements for FX settlement related risks.
Divergence Interpretations	One of the most important outcomes of the review was the recognition of **divergence interpretations of Art. 378 and 379 CRR**. While some institutions follow the distinction foreseen in the Basel Framework (CRE70) where free deliveries requirements are calculated for non-PvP transactions and unsettled transactions requirements are calculated for PvP transactions only; other institutions follow the literality of CRR where that distinction is not prescribed. **Literal interpretation should prevail**