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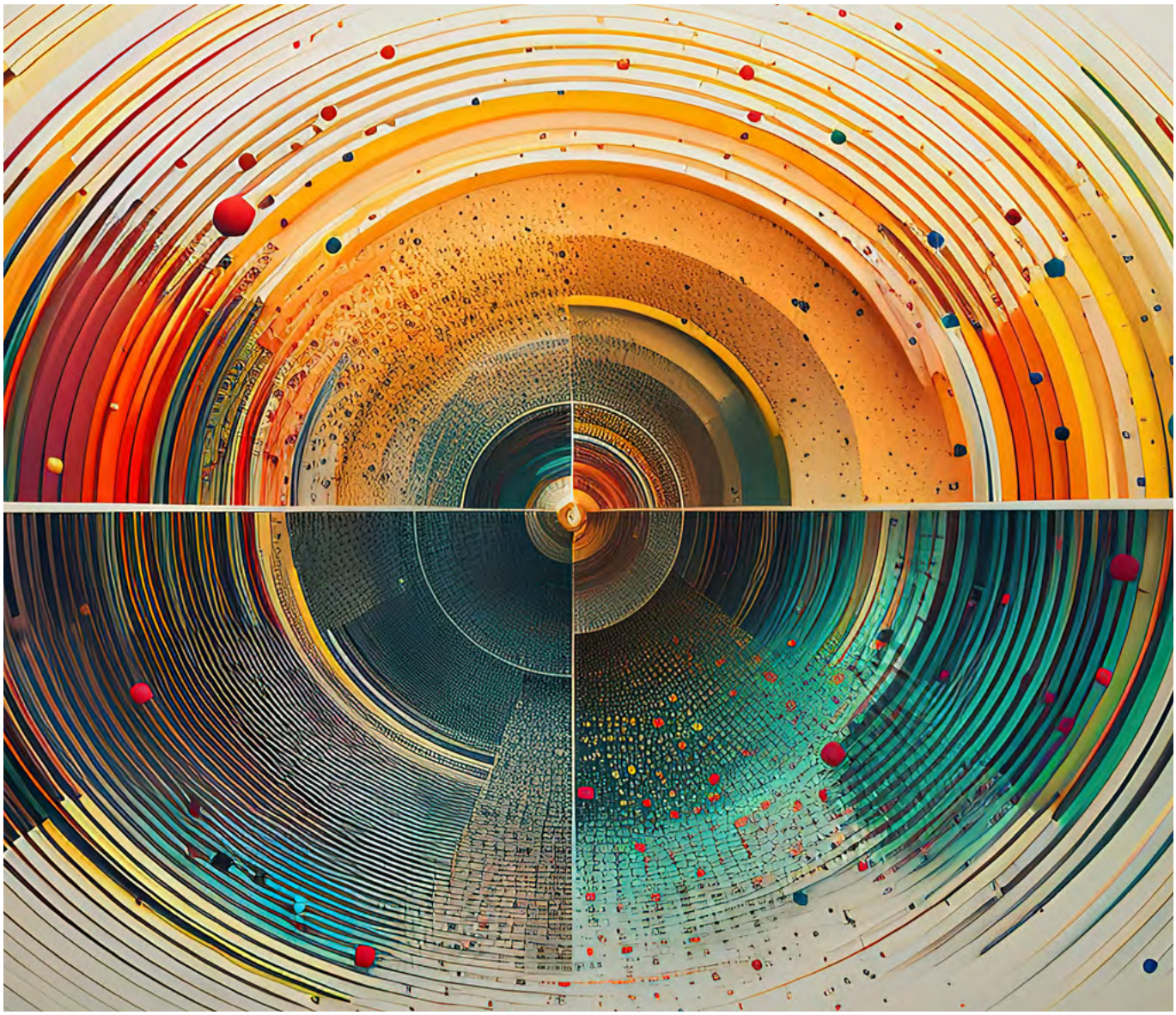
Finance for Europe

Improving the Settlement Efficiency Landscape in Europe

October 2023



Association for Financial Markets in Europe
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Contents

Executive Summary

The settlement efficiency of European securities markets has become a topic of significant interest and relevance for market participants, resulting from a combination of "push" factors, such as the introduction of the CSDR settlement discipline rules and increased regulatory scrutiny on settlement fail rates, and "pull factors", including opportunities to generate significant efficiencies, and reduce risks and costs, through the use of continually-improving technology and tooling available for post-trade processing. The growing global initiative towards the adoption of a T+1 settlement cycle has further heightened focus on settlement efficiency issues.

Against this background, AFME and its members recognise that it is appropriate to study opportunities for improvements in settlement efficiency across Europe, with an initial focus on unmatched fails, and to develop recommendations to address these. This builds on previous work performed by AFME and various other industry bodies.

The report process

Accordingly, we have carried out an exercise starting in the first quarter of 2023, working with our membership to produce and validate this report articulating a set of recommendations and next steps, supported by input from a number of the relevant market infrastructures and solution providers and by a team from Deloitte.

The process of producing the report involved the review of available market data, as well as extensive work with members to identify, classify and collate issues and challenges affecting European securities market, and to agree recommended approaches to address these.

One key constraint that was apparent in performing this analysis was the difficulty in obtaining suitably comprehensive and consistent data to inform our analysis – this is reflected in our recommendations below. Improving data quality and standards throughout the lifecycle, as well as the provision of more granular CSD-level data is critical to enabling the industry to identify issues and develop solutions.

Findings and recommendations

It should be noted that both the root causes of and potential solutions to settlement fails are frequently interrelated. However, the analysis carried out has a clear conclusion that, whilst issues related to market standards, regulation and limitations of financial market infrastructure do impact settlement efficiency, the principal direct drivers of settlement inefficiency relate to:

- Counterparty behavioural factors, affecting the ability to match and allocate trades
- Data quality issues, likewise affecting the ability to match and allocate trades
- Inventory management issues affecting the ability to settle matched trades

"The growing global initiative towards the adoption of a T+1 settlement cycle has heightened focus on settlement efficiency issues"

We draw an important distinction between "matched fails" and "unmatched fails". Although matched fails, which typically result from a lack of inventory, are widely acknowledged to make up the larger proportion of overall fails, our analysis also focuses on addressing unmatched fails: i.e. instructions which are not paired at the CSD by Intended Settlement Date. Our view is that the majority of such fails are preventable, through robust and comprehensive pre-settlement processes that ensure all transactions are processed in an accurate and timely manner, all information[1] necessary to facilitate settlement is exchanged, and any exceptions are identified and resolved. Reducing unmatched fails is also likely to have a net positive effect on reducing matched fails, in chains of linked transactions.

The importance of these pre-settlement processes is even greater in European markets than for other jurisdictions, which may not require instructions to be matched at the CSD prior to settlement, and may have lower levels of cross-border settlement activity and thus a lower likelihood of counterparties instructing in different CSDs.

The group has developed recommendations to address these issues; these can be summarised as follows:

Reduce exceptions

- All information necessary for settlement to be provided on Trade Date, supported by a regulatory requirement to complete allocation and confirmation processes on Trade Date.
- Develop solutions to known reference data issues (including instrument and calendar data) and improve the exchange of non-economic trade data, such as SSIs.

Expedite exception resolution

- Assess the possible adoption of a Unique Transaction Identifier (UTI) in post-trade processes
- Address known gaps and inconsistencies in market standards, including on "give-up" transactions
- Ensure consistent criteria and tolerances between pre-settlement matching and CSD-level matching, including Place of Settlement (PSET) as a matching criterion.

Optimise settlement of available inventory

- CSDs to offer auto-partial settlement and hold with partial release
- Intermediaries to facilitate and encourage use of auto-partial/partial release by end users
- CSDs to increase frequency of settlement batches or adopt real-time settlement, with increased harmonisation to support cross-border settlement

The effective execution of these recommendations, and ongoing improvement of settlement efficiency metrics, would be greatly enabled by improved availability of good quality, standardised and comparable data. Measures to deliver more and better data constitute an additional fourth group of recommendations, towards which AFME members themselves are also committed to work. The fails reporting methodology used under CSDR should be reviewed to ensure that it accurately identifies risks and inefficiencies in the settlement process.

1 Including SSIs, account information and place of settlement

Key considerations and next steps

In identifying and planning implementation steps, as well as in interpreting data regarding settlement performance, it should be noted that the European market context is a complex one with multiple jurisdictions, markets and infrastructures, and materially differing operational profiles in different asset classes.

Given this, a set of proposals have been developed to drive adoption of the above recommendations and are detailed in this report. It should also be noted that whilst these recommendations and proposals do not intend to deliver a roadmap to a T+1 settlement cycle, towards which there is at the time of publication no defined or mandated trajectory in Europe, many of these proposals will enable and promote settlement acceleration.

These proposals include steps to be taken by AFME itself, and by its members, as well as certain changes suggested for practices of CSDs, and envisaged advocacy for potential changes to regulatory guidelines and market practices. AFME and its members intend to work towards execution of those steps within their control and look forward to working in constructive partnership with the broader market, core infrastructures, and public authorities in pursuing this agenda. We support the creation of a target cross-industry action group to review relevant data and define appropriate performance metrics, find solutions to common issues and coordinate their implementation.

"We support the creation of a target cross-industry action group to review relevant data and define appropriate performance metrics, find solutions to common issues and coordinate their implementation"

Introduction

Scope and objectives of the report

This report looks to provide a detailed and evidence-based analysis of the current settlement efficiency landscape in European securities markets, including levels of settlement efficiency and the root causes of fails. AFME has held several workshops with a number of industry stakeholders, conducting a full trade lifecycle review to identify the existing operational and technical inefficiencies and issues which lead to settlement fails. Addressing these issues has become an area of increasing focus for AFME and its members, driven in part by the introduction of the settlement discipline rules of the Central Securities Depositories Regulation (CSDR). As global securities markets consider possible initiatives to accelerate the settlement cycle (e.g. to T+1), the need for accurate, timely and efficient post-trade processes will become even more important.

The paper aims to set out industry recommendations for operational and behavioural initiatives focusing on their impact to efficiency and operational risk of front-to-back settlement processes.

Approach

Over the first half of 2023, AFME and Deloitte convened a Task Force of 21 market participants, including broker-dealers, global custodians, and settlement agents. Task Force members articulated issues and challenges in current post trade processes that hindered pre-settlement matching and overall settlement efficiency. Following the comprehensive list of issues, workshops were conducted to collaboratively explore each issue's root causes and potential solutions. These sessions also included thematic categorisations of each issue (see Section 4). Finally, a survey was disseminated amongst market participants to rank the identified root causes and validate the prioritised issues. This step aimed to uncover prevalent industry patterns that could be addressed as high-priority concerns. Additional data was collated from a range of vendors and technology providers, detailing the key reasons for settlement failures and inefficiencies detected across the industry based on processing transaction data via their platforms.[2]

What is a securities settlement?

Settlement is a critical step in the securities trade lifecycle and represents the point at which the contractual obligations agreed at the time of trading are discharged. In other words, the buyer receives the purchased securities, and the seller receives the corresponding cash in exchange for those securities.

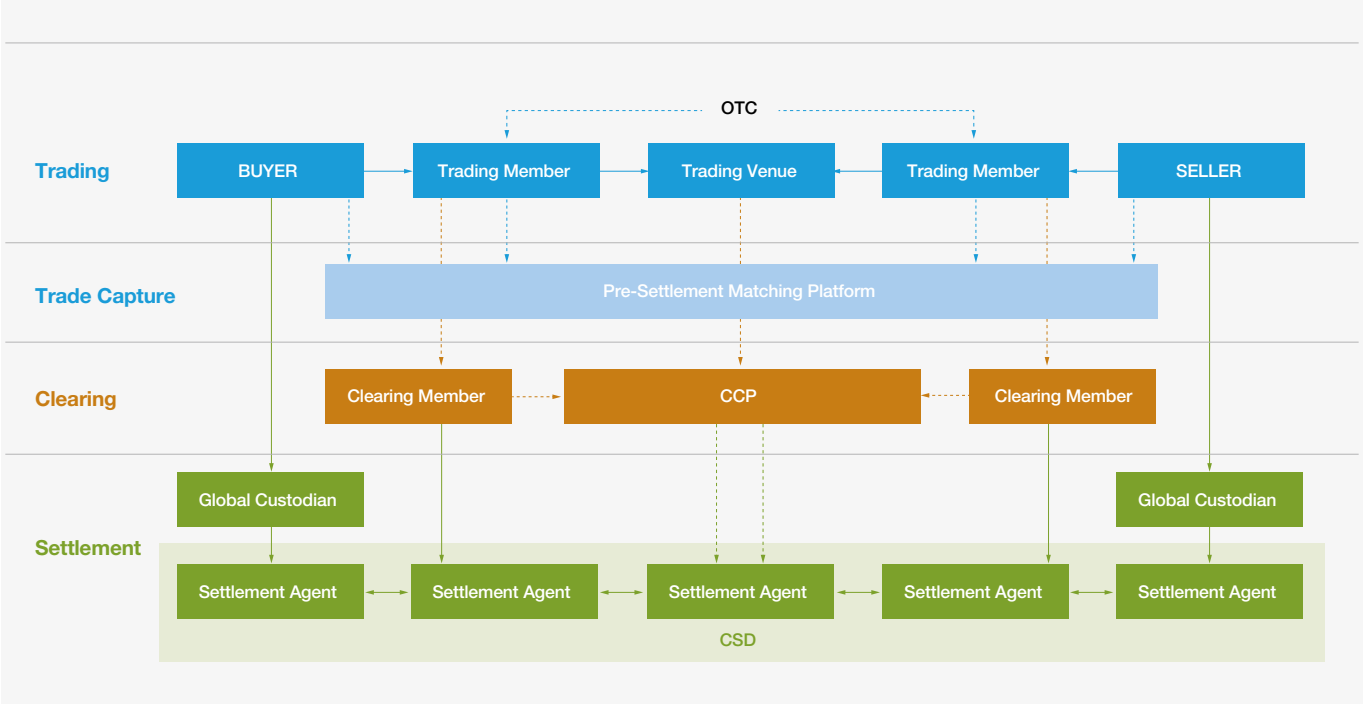
Typically, most securities transactions in Europe are currently settled on "T+2" – i.e. there is a period of two business days between trading and settlement[3]. This window allows for several important processing steps to take place, ensuring a high degree of control and efficiency in the settlement process.

Settlement takes place in a securities settlement system operated by a Central Securities Depository ("CSD"), and typically involves an array of financial market intermediaries, who connect the buyer and seller (a) to each other; and (b) to the CSD. These can include broker-dealers, prime brokers, central clearing counterparties ("CCPs"), global custodians and local settlement agents. This network helps ensure the safety and protection of the buyers' and sellers' assets, and allows them to benefit from substantial efficiencies.

2 It is important to note that these platforms are not utilised by all market participants, and as such, data from these sources can only be taken as an illustrative estimation of the market as a whole. No single entity has a complete picture of the full post trade lifecycle, and our analysis relies on combining several data sources in an attempt to build a clearer picture of the current landscape.

3 T+1 settlement is the default cycle for certain products such as UK Treasuries, and will become the default settlement cycle in the US, Canada and some Latin American securities markets as of May 2024.

Figure 1: **Illustration of typical network of participants in a securities transaction.**



Source: AFME

What are settlement fails?

The vast majority of securities transactions settle on the Intended Settlement Date ("ISD"). However, the settlement efficiency rate is not 100%, and thus some transactions do fail to settle on ISD. It is important to note that a settlement fail on ISD does not invalidate the original contractual obligation – instead, the transaction is 'rolled over' for settlement on the next available business day. The existence of settlement fails is a source of additional frictions and costs in the post trade ecosystem. Reasons for settlement fails can typically be categorised into two main types:

"Matched" fails – both the buyer's and seller's settlement instructions have been input to the CSD system, facing the correct account and identifier of their counterparty, and the relevant trade details (such as direction, quantity, settlement date and cash amount) are matched. The transaction may not settle due to the buyer not holding sufficient cash to meet their payment obligation, or the seller not holding sufficient securities to meet their delivery obligation, or because one party has placed their instruction 'on hold'.

"Unmatched" fails – the buyer's and seller's instructions are not matched in the CSD system. This could be because one party has not input their instruction or is not facing the correct account or identifier of their counterparty, or there is a difference in the relevant trade details, such as economic or SSI mismatches.

AFME analysis, consistent with previous industry analysis, identifies inventory issues – i.e. the seller not having sufficient securities available for delivery – as the most common cause of settlement fails. However, it is possible that an unmatched fail could cause further settlement fails, which were contingent on the settlement of the first transaction. The Bank of England conducted an analysis of this "cascade effect" on a subset of settlement fails in UK blue chip equities, and estimated that over 80% of such fails were part of a cascade[4].

Issues and inefficiencies can occur throughout the trade lifecycle and ultimately lead to settlement fails if not addressed in a timely and accurate manner. For that reason, our report covers the full post-trade lifecycle, focusing on common issues and challenges that prevent or delay the timely and accurate processing and matching of transactions, as well as inventory issues. Please refer to Annex 1 for a more detailed overview of the trade and post-trade lifecycle.

4 https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2019/securities-settlement-fails-network-and-buy-in-strategies.pdf

Why are settlement fails an area of focus for the industry and regulators?

Reducing costs, inefficiencies and risks

Inefficient settlement processes that lead to delays or inaccuracies in trade allocation, confirmation, settlement instructions, and reconciliation processes can cause settlement fails. These fails can lead to financial losses, reputational damage, and increased compliance and legal costs.

Lack of a seamless automated processes and overreliance on non-STP functions can result in higher operational costs due to the need for additional resourcing to manage manual processes, and resolve discrepancies and errors.

Central Securities Depositories Regulation (CSDR) objectives

Ensuring the stability and settlement efficiency of the European Union (EU)'s financial markets is one of the main objectives of CSDR, as well as protecting investors in EU capital markets. Settlement inefficiency can lead to various risks and costs for market participants, financial institutions, and the overall stability of the EU financial system.

The introduction of the Settlement Discipline Regime provisions in 2022 set out a number of common requirements for central securities depositories (CSDs) operating securities settlements systems across the EU, and the application of cash penalties to participants responsible for securities settlement fails.

These cash penalties have instituted a direct economic cost for causing a settlement fail and were thus intended to incentivise market participants to take action to prevent settlement fails. AFME members, and the wider industry, have invested significant resource and efforts into this initiative: both to facilitate the penalties process and to improve settlement efficiency to reduce its economic impact.

According to data from TARGET2-Securities (T2S)[5], the engine responsible for calculating and generating cash penalties for several major connected CSDs, an approximate total of 12.9 million euro-denominated penalties were issued in 2022, against a total of approximately 182 million instructions processed. Monthly averages fell from over 1.3 million in the first two months of operation to below 1 million in each of the last four months of 2022, showing signs that the cash penalty regime is having its intended effect.

Potential future T+1 settlement

Achieving increased levels of post trade operational efficiency and harmonisation should be considered as an enabler for acceleration of the settlement cycle in Europe. In a T+1 settlement scenario, a compressed settlement window would require market participants to run their post trade processes in an expedient manner. Previous AFME analysis has estimated an approximate reduction in post-trade processing time of 83%, when measured as the time between close of trading on trade date and the start of settlement on settlement date. Increasing the efficiency of these processes is key for European market participants to be in a stronger position when dealing with the time constraints that would be derived from a move to T+1. Reducing the amount of manual intervention will also likely translate into more efficient and streamlined processing with less inefficiencies.

Similarly, given the number of intermediaries and the complexity of the custody chain, the development of common market standards and the adoption of harmonised industry practises will contribute to the reduction of settlement exceptions and the resolution of these in a more agile pace, which will be critical when operating on a shorter settlement cycle window.

Whilst there is as yet no regulatory mandate for T+1 adoption in Europe, we believe it is prudent for the industry to consider this as a potential future state, and plan accordingly. The risks and costs arising from settlement fails could be exacerbated if Europe decided to move to a shorter settlement cycle, unless supported by significant changes to the post trade operating environment.

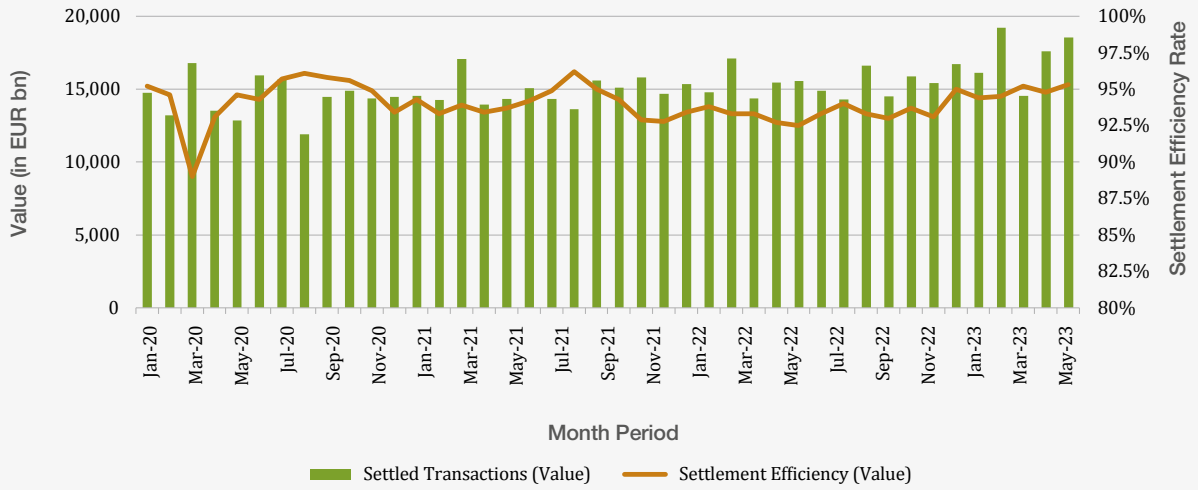
5 https://www.ecb.europa.eu/paym/intro/publications/html/ecb.t2sar2022.en.html#toc14

Benchmarking of European markets

Through conducting research for this report, it became clear that assessing the current settlement efficiency landscape in Europe is complex. The industry suffers from a lack of high-quality, granular public data on settlement performance. Indeed, there is no universal methodology for calculating settlement rates, leading to differences in figures reported by different sources. Of the data that is publicly available, there is very limited analysis on how settlement fails differ across various types of instrument, and on the average duration of settlement fails. CSDs should be the "golden record" of settlement fails. CSDs subject to the delegated regulation on CSDR settlement discipline measures, are required to submit periodic fail reporting to the relevant National Competent Authority and ESMA which is ultimately publicly disclosed (see Figure 5). However, the reporting methodology may create an incomplete or distorted view of settlement fails, and published data is much less granular than that which is provided to regulatory authorities. For example, CSDs are required to count an instruction as a fail for everyday that it is recycled, and instructions that are cancelled after ISD are also counted as fails. There is also limited information available on the underlying causes of settlement fails, which is often not visible to the CSD, especially in the case of an unmatched fail.

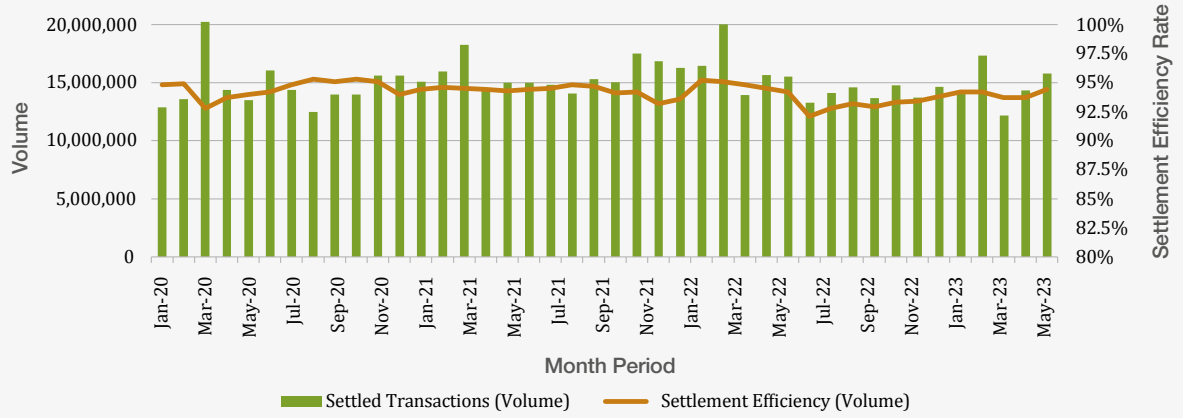
Although T2S does not process all transactions in European securities markets, its data serves as a useful starting point for analysing the current landscape. Between January 2020 and June 2023, the average settlement rate when measured by value was 94.0%, and when measured by volume was 94.2%, both remaining relatively consistent throughout that period. It is notable that the value measure is more volatile, ranging between 89.0% (March 2020) and 96.2% (August 2021). The data highlights the potential impact that market conditions can have on settlement efficiency, with notable peaks of settlement fails in times of high-market stress, such as the Covid-19 pandemic.

Figure 2: **T2S Settlement Transactions and Efficiency by Value (January 2020 – June 2023)**



"Market conditions can impact settlement efficiency, with notable peaks of settlement fails in times of high-market stress"

Figure 3: **T2S Settlement Transactions and Efficiency by Volume (January 2020 – June 2023)**



Further analysis of the current landscape for European securities settlement, leveraging public data as well as additional insight provided to AFME by our data partners, highlighted four high-level conclusions.

Comparative data between different regions is not publicly available

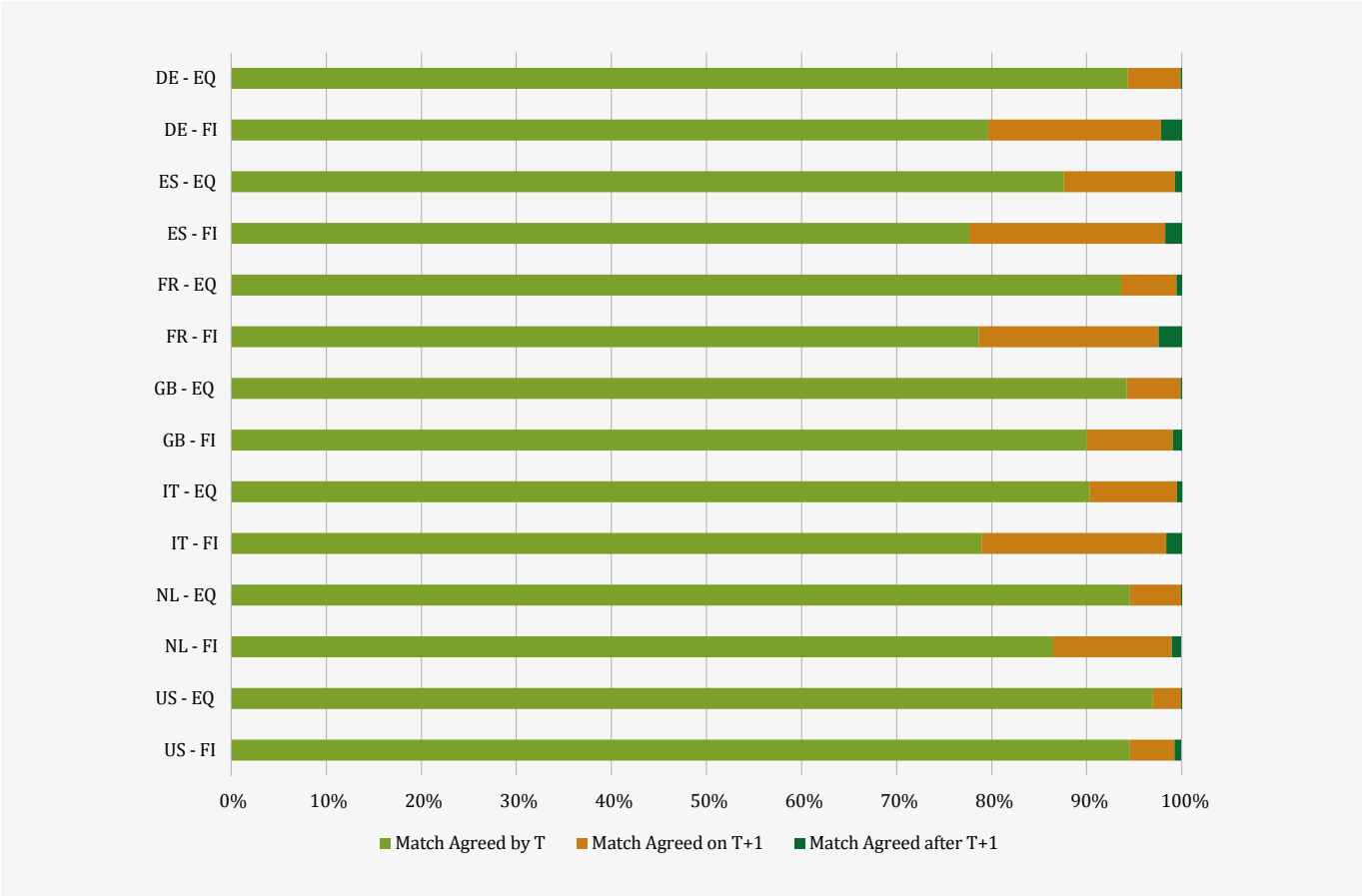
It is generally accepted that European settlement rates may be generally lower than global averages. However, during our researchfor this paper it is has not been possible to source comparative data.

AFME considers that this perception of greater inefficiency in Europe is, in part, due to the complexity of European securities markets, compared to global peers.. In the US for example, trading, clearing and settlement is concentrated in significantly fewer financial market infrastructures as compared to the European Union. The higher proportion of cross-border transactions creates additional complexity in Europe – for example, in trade matching and position management processes. Whereas US market participants can assume with a high degree of certainty that their transaction will be settling in DTC; in Europe, it is important that counterparties proactively communicate and agree the place of settlement, to reduce the likelihood of a mismatch. European CSDs also operate with bilateral matching and irrevocable settlement finality whereas, for example, the US can operate with 'delivery without matching' and certain types of transaction can be 'kicked back' post settlement. Generally, a higher proportion of transactions are centrally cleared in US markets under a 'continuous net settlement' model which nets new and outstanding instructions (not only those facing the CCP) to settle for a specific day. Markets in the Asia-Pacific region are not homogenous, with local market practices varying across jurisdictions. However, many markets require the pre-placement of securities and cash prior to the execution of a transaction, which may contribute to lower levels of settlement fails – but possibly at the expense of increased costs and barriers to participation in these markets.

There is some variance in pre-settlement matching rates across markets

DTCC's CTM platform[6] allows market participants to exchange and match economic and non-economic details of a transaction prior to instructing the CSD. Pre-settlement, or trade-level, matching can be used to identify and resolve potential issues early in the trade lifecycle. However, it is important to note that not all transactions are submitted to a central platform for pre-settlement matching and thus the below data only represents a proportion of market activity. Their data shows that, for transactions entered into CTM for both equities and fixed income, major European markets have a lower proportion of transactions matched on trade date than the US. Within Europe, there is significant variation in matching rates. For fixed income, T+0 matching rates range from 77.6% (Spain) to 90.0% (UK). For equities, the range is 87.6% (Spain) to 94.5% (Netherlands).

Figure 4: **Matching Times in DTCC CTM Platform (H1 2023) – Major European Markets + US**



Source: DTCC

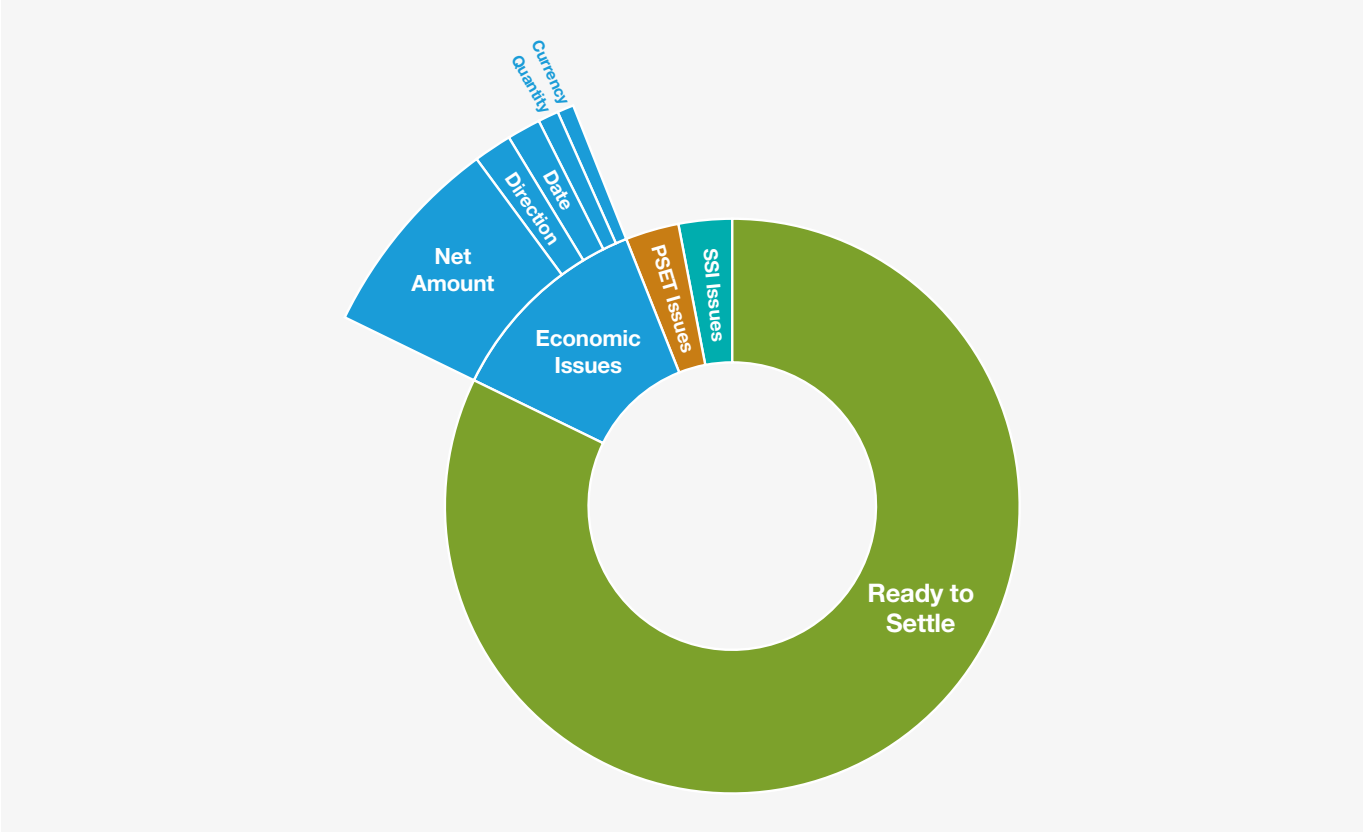
Reasons for pre-settlement mismatches are diverse

Analysis shared by Access Fintech[7] highlights that – for users of their platform – 82% of transactions in European markets are 'ready to settle' by end of trade date – pending inventory checks. This is lower than the global average of 90% 'ready to settle'. Of the remaining transactions, 6% are mismatched due to differences in SSIs or place of settlement, and 12% are mismatched on economics. These economic mismatches are for a number of reasons, the most common being net amount differences.

6 CTM is a global platform used by over 2000 counterparties, where transaction details can be input by both sides to be centrally matched, automating the trade confirmation process.

7 Access Fintech (AFT) provides a real-time exception workflow tool, in which counterparties input their trading and settlement instructions to be pre-matched. AFT processes approximately 10 million transactions per month

Figure 5: **Status at End of Trade Date in Access Fintech – European markets**



Source: Access Fintech

There is a high degree of variance in settlement rates across markets

According to data published by CSDs as required by CSDR, 2022 annual average settlement fail rates based on volume varied between 0.05% and 27.39%. Our analysis shows that, typically, larger CSDs (when measured by number of instructions processed) have a higher rate of settlement fails than smaller CSDs. Whilst this may be somewhat surprising, given that larger CSDs may be expected to have additional functionalities, such as auto-partial and partial release, we also note that smaller CSDs may only provide settlement services for a more limited, 'vanilla' scope of securities. Asset classes or transaction flows with a typically higher settlement fail rate, such as ETFs or cross-border instructions, are generally settled in larger CSDs. More volume may also imply longer chains of contingent transactions, increasing the 'cascade effect' of each settlement fail. However, within each category, we note that there is still significant variation in settlement fail rates, indicating that there are likely several factors that influence the performance of each individual CSD/market. We strongly encourage further investigation as to the reasons for this variation. As highlighted elsewhere in the report, the provision of more granular, detailed data using an appropriate methodology would be of significant benefit to the wider industry.

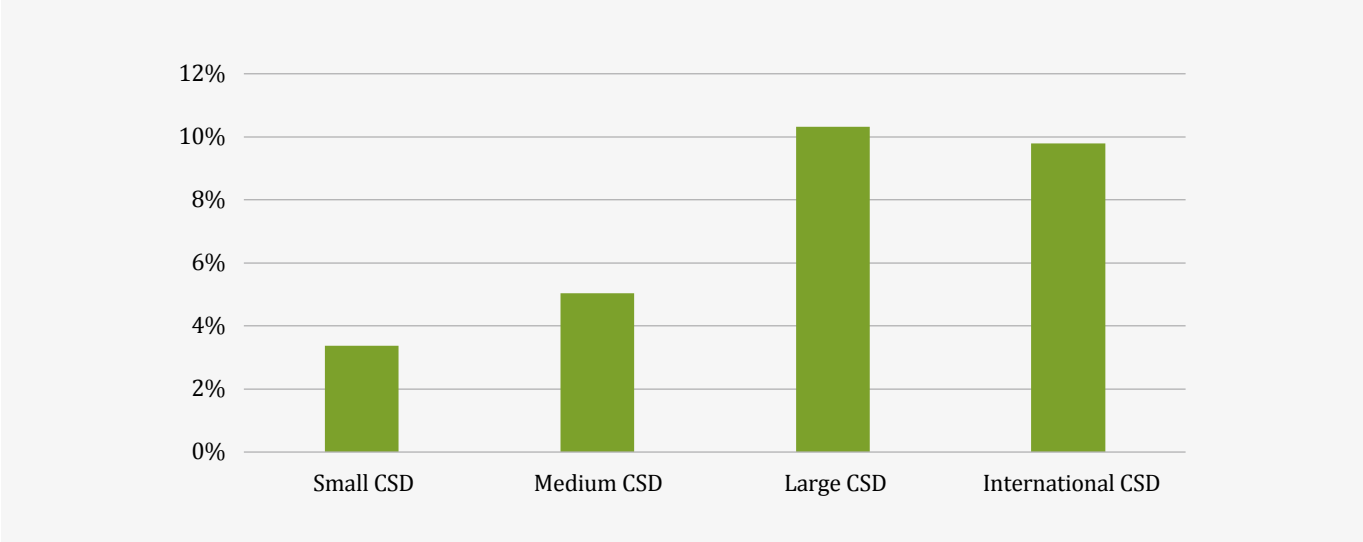
"There is a high degree of variance in settlement rates across markets"

Figure 6: **Annual average settlement fail rate based on volume (2022)**

Category	CSD	Rate of settlement fails based on volume
Small CSD (below 1m instructions processed annually)	**CSD 1**	0.11%
	CSD 2	6.80%
	CSD 3	3.21%
Medium CSD (below 10m instructions processed annually)	**CSD 4**	11.45%
	CSD 5	3.73%
	CSD 6	2.36%
	CSD 7	8.89%
	CSD 8	0.05%
	CSD 9	3.74%
Large CSD (below 100m instructions processed annually)	**CSD 10**	4.04%
	CSD 11	10.71%
	CSD 12	10.17%
	CSD 13	27.39%
	CSD 14	6.60%
	CSD 15	2.96%
International CSD (Euroclear Bank and Clearstream Luxembourg)	**CSD 16**	10.57%
	CSD 17	9.01%

Source: various

Figure 7: **Annual average settlement fail rate based on volume, by CSD category**



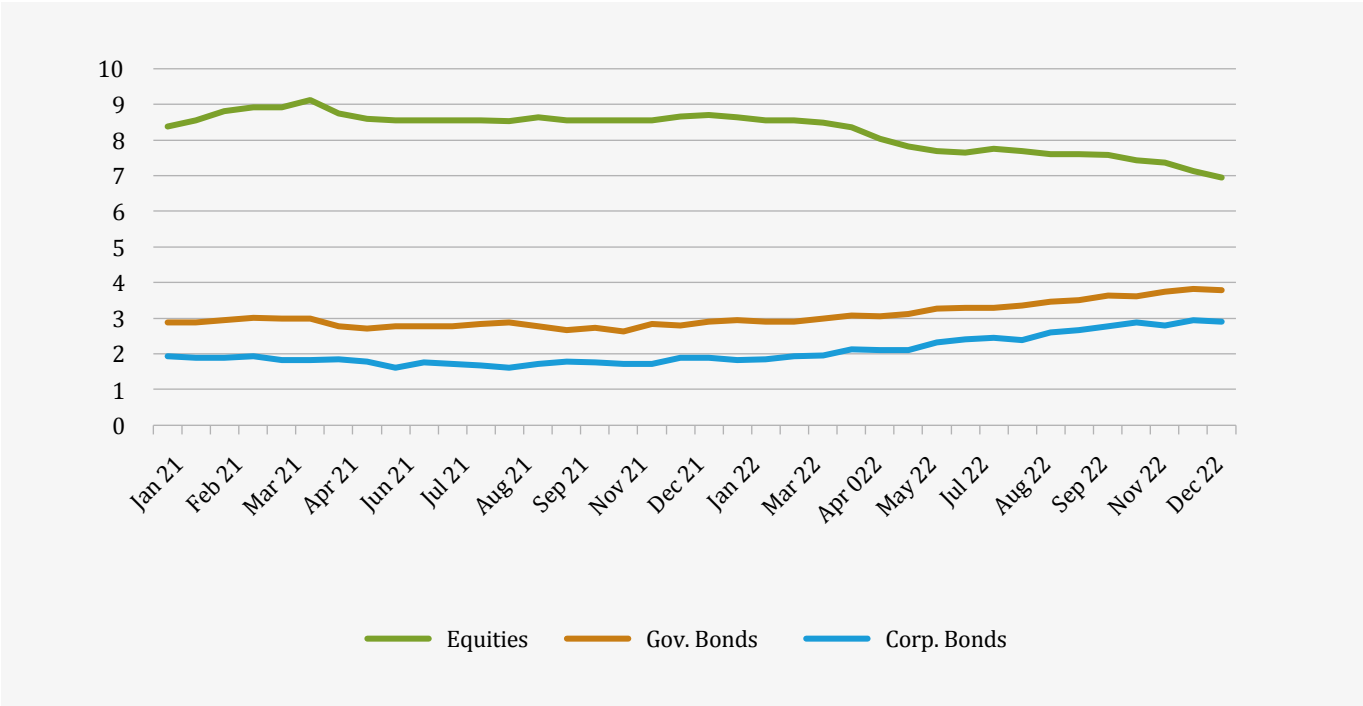
Source: various

There is a high degree of variance in settlement rates across asset classes

Despite having a generally lower level of pre-settlement matching, as shown in Figure 4, the 2023 ESMA Report on Trends, Risks and Vulnerabilities[8] shows that fixed income securities have a lower rate of settlement fails, as compared to equities.

AFME believes that this is an area which would benefit from further detailed analysis. For example, anecdotal evidence suggests that exchange-traded products (ETPs), where trading and settlement activity is typically spread across multiple market infrastructures, have a notably lower settlement rate compared to other asset classes. Further, we note that no public data is available on the average duration of settlement fails, or the correlation between settlement rate and liquidity of the underlying instrument. Further assessment of these factors is required to improve understanding of the reasons for matched fails.

Figure 8: **ESMA Analysis of EEA30 Fail Rate in % of Value (one-year moving average, January 2021 to December 2022)**



Source: ESMA

The data from ESMA indicates that the introduction of cash penalties may have had more effect on reducing settlement fails in Equities (usually subject to a 1 basis point per day penalty) than on Government Bonds (0.1 bp penalty) or Corporate Bonds (0.2 bp penalty). Given the higher relative starting points for each asset class, it is possible that this is because Equities had more 'room to improve' compared to fixed income instruments, and was an area of greater focus for market participants seeking to reduce settlement fails.

8 https://www.esma.europa.eu/sites/default/files/library/ESMA50-165-2438_trv_1-23_risk_monitor.pdf

Identification of Challenges and Thematic Categorisation

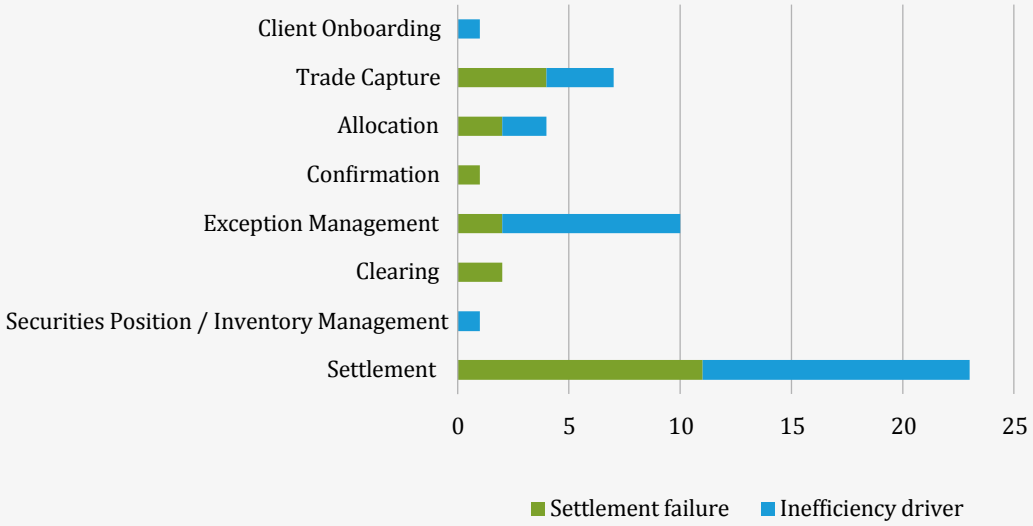
To define a comprehensive list of key current state challenges across the end-to-end securities trade lifecycle, AFME conducted a series of workshops with market participants. AFME collected a total of 49 current state issues across 8 trade lifecycle activities. This section summarises the current state issues collected, as well as a prioritisation of the key issues driving settlement fails and process inefficiencies based on inputs from market participants.

These challenges can broadly be categorised as either:

driving **settlement failure**, meaning they are issues that prevent trades from settling including errors in trade details, late allocations, failed confirmation, or failure to deliver securities or cash;

or contributing to **inefficiencies in the trade lifecycle**, meaning they are issues that hinder trade processing but may not result in settlement failure. Examples of the latter include disputes, incomplete or inaccurate data or documentation, and communication delays throughout the chain.

Figure 9: **Challenges Across the Trade Lifecycle by Driver**



While nearly half of the challenges identified were items arising during the settlement stage of the trade lifecycle, the other half were items impacting pre-settlement activities, in particular trade capture and exception management. Issues identified earlier in the trade lifecycle process may ultimately lead to settlement fails if not addressed in a timely and accurate manner.

Root Causes - Categorisation

The identified challenges shared **common root causes**, which can be summarised into 6 key themes:

Inventory Management: Settlement fails resulting from the delivering party not having sufficient securities available.

There can be several possible reasons behind the seller being unable to deliver the securities. This may be due to a lack of trading-level liquidity in the instrument, for example where a market-maker is unable to source the securities. However, it may also be as a result of internal operational issues, such as a failure to realign securities between different locations or accounts in sufficient time, or external factors, including scenarios where the seller's delivery was contingent on the settlement of a separate receiving transaction on the same instrument.

Data Quality: Delays or fails attributed to incomplete or inaccurate reference data.

The post-trade ecosystem is a complex network of interconnected market participants, exchanging large amounts of information necessary to process and settle transactions. Ideally, reference data should be sourced by all parties from a common, central data source to minimise the risk of a mismatch between two parties. Issues can arise across the trade lifecycle on a variety of types of information. Common examples include:

- Changes in Standing Settlement Instructions (SSIs) not being communicated or updated in relevant systems in good time.
- Delays relating to instrument static data – e.g. new ISINs not being available in trade capture systems.
- Incorrect mappings in internal systems resulting in mismatches – e.g. a system not configured to identify a market settlement holiday resulting in transactions being processed with the wrong settlement date.
- Incorrect or incomplete static data resulting in incorrectly formatted instructions, leading to rejections at the Swift gateway or by an intermediary or the CSD.
- Lack of clarity over whether an instrument should be settled in "units" or "nominal".

"The post-trade ecosystem is a complex network of interconnected market participants, exchanging large amounts of information"

Case Study: "Units vs Nominal"

For certain bonds, there is a disconnect between how a transaction should be booked at a trading level, and how it should be booked for settlement. Typically, the bond is traded in "nominal" and settled in "units", with the nominal amount being a multiple of the unit amount (e.g. 1 unit = 1000 nominal).

This non-standard process can often lead to exceptions in firms' internal systems, and delays in creation of the settlement instruction. If one party incorrectly books the settlement instruction in nominal, there will be a mismatch. Perhaps more significantly, if both parties incorrectly book the instruction in nominal, the transaction could settle with a quantity (and thus net cash amount) multiple times greater than intended. Anecdotally, market participants have reported examples of transactions settling with a net cash amount up to 100,000 times greater. In the case of late settlements, this results in extremely large CSDR cash penalties.

Progress on this issue is likely to involve a combination of solutions.

- Improved data accuracy throughout the chain: Review and ensure that data vendors and trading platforms accurately identify which securities have a different unit and nominal value.
- Improved controls throughout the chain: Trading parties, custodians, and CSDs to review controls within their systems – e.g. to identify and create exceptions on transactions booked with a net value over a certain threshold.
- Industry standard processes for cash penalties treatment: CSDs to review how such cash penalties can be reversed and removed from settlement fails reporting including updating ECSDA CP Framework.
- Conversion of existing securities from "units" to "nominal" and market practice to avoid the issuance of new securities in "units". We note that this will be required in order for these securities to be compatible with the future Eurosystem Collateral Management System (ECMS).

Counterparty Behaviour: Information that is necessary for the timely processing and settlement of a transaction is provided by the counterparty:

- In a non-standard format
- In an incomplete or inaccurate manner
- Late

Anecdotal evidence suggests that, for most firms, a small number of counterparties have an outsized impact on levels of straight-through-processing (STP) in a timely manner. Whilst the majority of transaction volumes can be processed on time and in an automated manner, requiring minimal intervention, issues can typically arise from two types of counterparty:

"Manual" counterparties who are typically less-sophisticated market participants with relatively low levels of market activity. Issues can typically arise at the allocation and matching stage, where allocations are not provided in an STP format or through standard channels (e.g. via email).

"Non-domestic" counterparties who are located in a different timezone, specifically the Asia Pacific region, and often are only able to provide allocations on T+1, leading to processing delays.

Other behavioural issues can manifest later in the settlement process. An important example is counterparties placing a block on their account to prevent the delivery or receipt of partial settlements. This practice means that, at a market-wide level, available inventory in the securities settlement system is not fully optimised. Another example concerns trading parties, or their intermediaries, only releasing instructions to the CSD on Settlement Date or when inventory is in place. Such an approach impedes the matching process and delays the identification of potential matching issues. Settlement intermediaries can instead instruct "on hold" as a more pragmatic approach which allows the early identification and resolution of exceptions, optimising the opportunity for timely settlement.

Workflow Management: Delays or fails attributed to internal workflow inefficiencies, non-straight through processing (STP) processes, manual booking errors or technology issues that occur within an internal system.

- A common theme of feedback received was that not all issues and potential breaks are detected at the allocation/ confirmation or pre-settlement matching stage, potentially resulting in CSD-level mismatches and delays to settlement.

Market Standards and Regulation: Delays or fails that could be resolved by the creation of new market standards / regulation, or enhancements to existing market standards / regulation.

Over recent decades, efforts to bring about greater levels of harmonisation and standardisation of post-trade processes in European markets have been highly successful. This has been driven by both industry-led initiatives to create and promote market standards and public-sector led initiatives, most notably the introduction of CSDR and the creation of T2S.

AFME's analysis has identified opportunities for the development of further market standards, focused on specific transaction flows such as "give-ups". There also appears to be a lack of full adherence to certain market standards across the post-trade lifecycle, from matching and allocation processes through to partial settlement.

Further to this, our research highlighted particular scenarios where the CSDR cash penalties regime, intended to incentivise timely settlement, actually creates the opposite effect and can lead to delays in resolution of settlement fails. AFME recommends greater collaboration across the industry for the creation of cross-industry market standards for processes which straddle multiple actors or functions.

Case Study: "Give-Ups"

Trade give-ups introduce an additional layer of complexity in the settlement process as they typically require coordination across three parties – e.g. a prime broker (PB), an executing broker (EB) and a client, typically a hedge fund or asset manager.

The give-up process involves a client placing an order through an EB, which when filled, is passed through to the PB. The PB becomes the principal to the transaction with the EB, and faces them on the market leg, or 'hedge'. The PB writes an equity swap against the client, which provides the client with its exposure to the underlying asset, and means that the PB's risk is offset between the market leg and the swap.

The trade capture, matching, and subsequent settlement need to be properly coordinated between the involved entities. Prime brokers typically have internal practices to determine the cut-off point by when they can receive a give-up. Give-ups after the cut-off are considered 'late' and the PB typically will book the market leg with the trade dated rolled over by one business day, but maintaining originally intended settlement date (i.e. for T+1 settlement). This is likely to create a mismatch with the EB's instruction on the 'trade date', a core matching field. This triggers non-STP reconciliation processes between the two parties, which create inefficiencies and can require trilateral communication between client, EB and PB to remediate.

Currently, there is no industry standard as to the cut-off point for determining a late give-up, although typically for many prime brokers this is around 18:00. This leaves only a short window for processing, with most client allocation files (informing the PB of any give-ups) transmitted between 17:00 and 17:30. Further to this, there is no established industry convention for how to resolve trade date mismatches, which may lead to delays in the resolution of such issues and thus ultimately to settlement fails.

Case Study: Adverse Effects of CSDR Cash Penalties

AFME and its members are longstanding supporters of the CSDR cash penalties regime, as a mechanism to incentivise improved settlement efficiency. ESMA data shows early evidence of a reduction in settlement fails, in particular for equities.[9] Further refinement of the penalties regime, including the scope of application, is envisaged by the CSDR Refit proposals agreed by EU policymakers. AFME supports these changes and will provide input into future consultations on this topic.

Although the early signs are that the penalties regime has a positive impact on settlement efficiency, AFME members have also identified certain scenarios in which the existence of cash penalties adversely influences the behaviour of market participants – i.e. does not lead to the timely resolution of a settlement issue.

Example 1: Party A and Party B execute a transaction. Party A instructs the transaction for settlement in CSD 1. Party B instructs for settlement in CSD 2. In order for the transaction to settle, one party must cancel their original instruction, and rebook to a different CSD. If the discrepancy is not identified and resolved prior to Intended Settlement Date (ISD), the rebooking will incur a Late Matching Fail Penalty (LMFP). Depending on the size of the penalty, this can discourage either party from wanting to rebook their instruction, at least without agreement that the penalty amount can be reclaimed from their counterparty. This leads to delays and inefficiencies in the settlement process.

Example 2: A similar scenario can occur in relation to manual partials. If the seller has available inventory, but not the full amount, a partial delivery should be offered by the seller and accepted by the buyer. Ideally, this happens on an automated basis. If either party, or the CSD, cannot facilitate an "auto-partial", this will need to be instructed manually. Cancelling and rebooking the original instruction into two separate instructions[10] with a back-dated ISD will incur LMFPs for whichever party is last to input the new instructions. Again, this creates a disincentive for parties to agree a timely resolution to the issue.

ESMA guidance explicitly states that CSDR "should not lead to the application of duplicative penalties for the same settlement instructions on the period between the ISD and the date of the introduction of the new settlement instruction into the securities settlement system". However, there is currently no systematic means for CSDs to identify and exclude such instructions from the application of penalties

Market Infrastructure Limitations: Lack of functionality or adherence to market standards by Financial Market Infrastructures (FMI) - including CCPs, CSDs and matching platforms- inhibits the timely processing and settlement of a transaction.

We note that market infrastructure limitations, for example a CSD's inability to facilitate partial settlement on an automated basis, may not themselves be the cause of the settlement fail. Rather, the enhancement of market infrastructure functionality would help to remediate issues in a more timely and automated manner and optimise the flow of inventory through securities settlement system.

9 See Chart 45 https://www.esma.europa.eu/sites/default/files/library/ESMA50-165-2438_trv_1-23_risk_monitor.pdf

10 Instruction 1 for the amount that the seller is able to deliver, Instruction 2 for the remaining amount. This will enable Instruction 1 to settle, leaving only Instruction 2 outstanding.

We analysed 39 CSDs within the European region, including UK and Switzerland, across four key metrics:

1. Whether the CSD offers Auto Partial functionality – i.e. available positions below the full amount are automatically settled by the CSD, if both the delivering and receiving participant have enabled this.

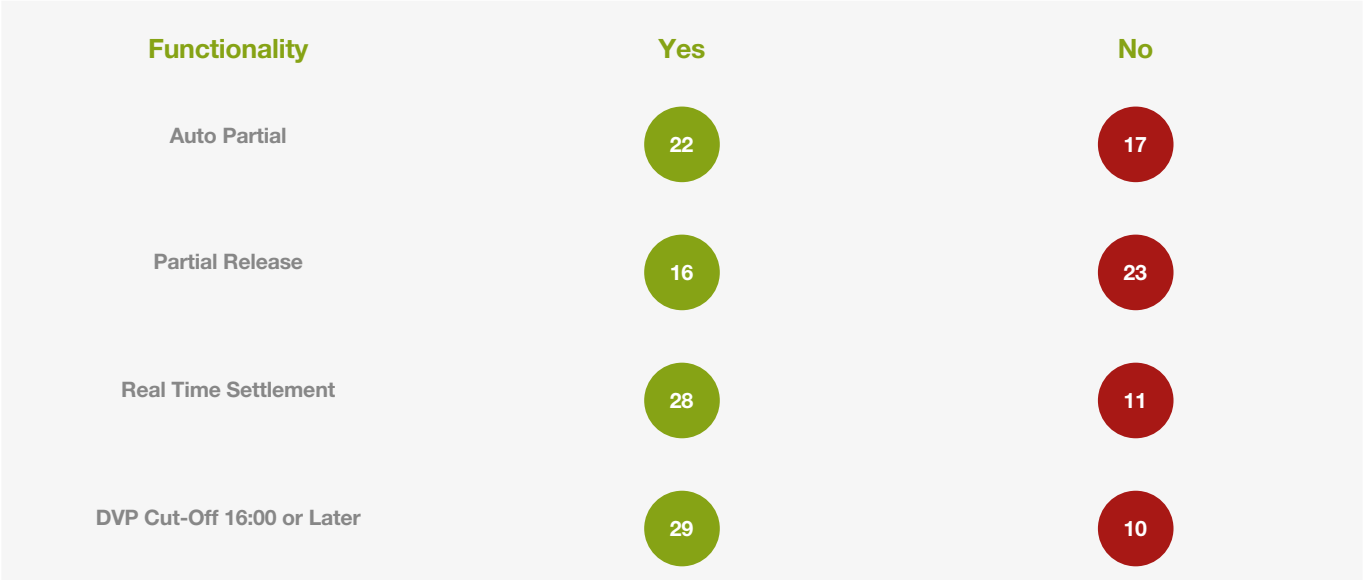
2. Whether the CSD offers Partial Release functionality – i.e. partially available positions held in omnibus accounts can be released from hold to enable partial settlement.

3. Whether CSD offers real time settlement – i.e. settlement happens on a near-continuous basis throughout the settlement window, rather than in fixed batches.

4. Whether the CSD allows DVP settlement until at least 16.00 CET.

Please refer to **Annex 2** for a more detailed summary.

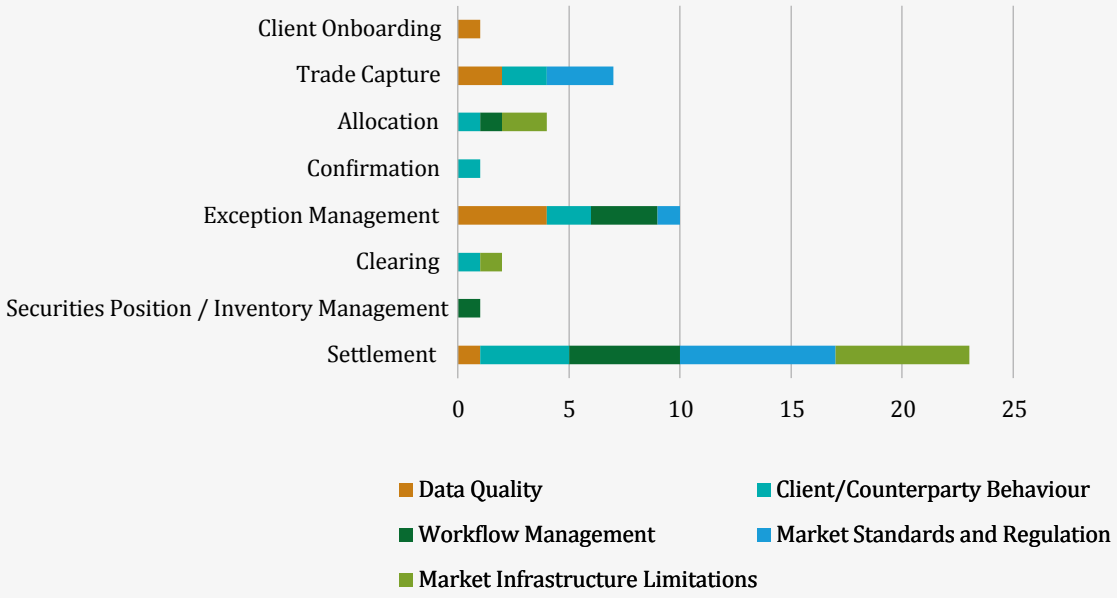
Figure 10: **Overview of European CSD's functionality and cut-off times**



Root Causes - Frequency

Market Standards and Regulation and Counterparty Behaviour were identified as the most common root causes of the trade lifecycle challenges, when measured by identification of unique issue types. Issues resulting from the lack of or underdeveloped market standards and regulation primarily surfaced in the settlement stage, followed by trade capture. Issues resulting from timely and accurate provision of data required for trade processing from a client or counterparty primarily impacted the settlement stage, while also surfacing across other pre-settlement stages of the lifecycle.

Figure 11: **Challenges Across the Trade Lifecycle by Root Cause**



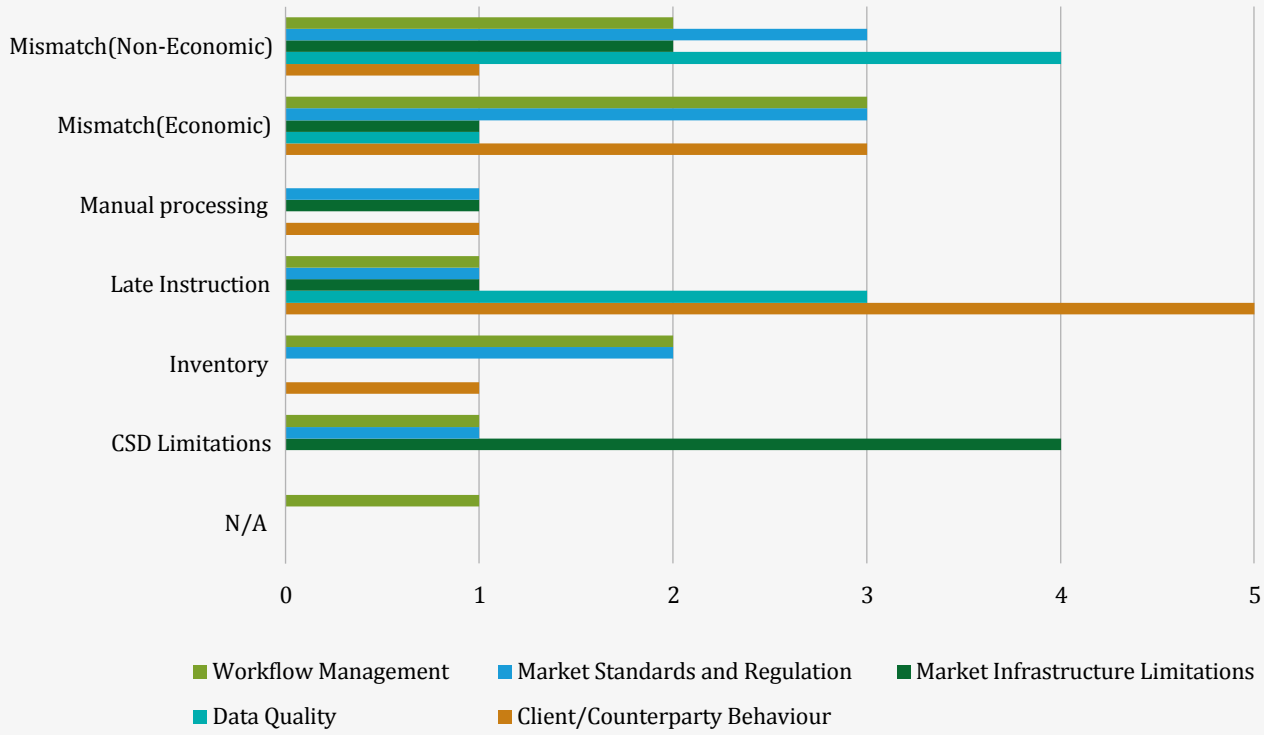
Moreover, the most common break types associated with the key lifecycle challenges identified by market participants were non-economic and economic mismatches and late instructions. The primary causes of these breaks differed. Non-economic mismatches appeared to be primarily caused by incomplete or inaccurate data and a lack of market standards. Economic mismatches appeared to be equally driven by workflow management issues, a lack of market standards and lack of timely and accurate provision of data by clients or counterparties. Lastly, late instructions appeared to be mainly caused by lack of timely and accurate provision of data by clients or counterparties.

Note that economic mismatches are defined as discrepancies between the core values of a transaction (e.g. trade date, net cash amount, security identifier), whereas a non-economic mismatch, such as a difference in the standard settlement instructions (SSIs) or place of settlement (PSET), will not impact the financial or economic terms of the transaction[11].

"Late instructions appeared to be mainly caused by the lack of timely and accurate provision of data by clients or counterparties"

11 However, if this results in a delay to settlement, may give rise to financial repercussions such as cash penalties or interest claims.

Figure 12: **Break Types by Root Cause**



Given the variety of root causes of these challenges, break types, and when these challenges arise in the trade lifecycle, it was important to prioritise the challenges in order to focus on identifying meaningful potential solutions. As a result, AFME conducted deep dive sessions with market participants to qualitatively determine the impact of the 49 pain points across the industry, as well as leverage quantitative data from vendors and a survey of market participants in order to identify highest priority items.

Survey respondents were asked to rank the different root cause themes according to the impact at various key points in the settlement process.

1. Their impact on causing a transaction to remain unallocated at the end of T+0

2. Their impact on causing a transaction to remain unmatched at CSD-level at the end of T+1

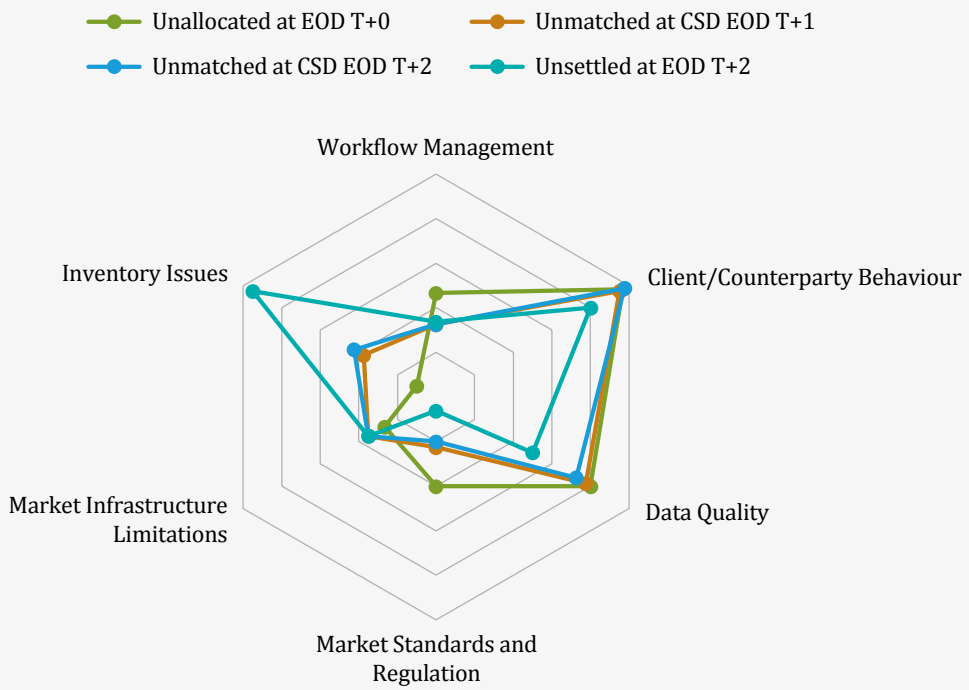
3. Their impact on causing a transaction to remain unmatched at CSD-level at the end of T+2 (Unmatched Fails)

4. Their impact on causing a transaction to remain unsettled at CSD-level at the end of T+2 (Matched and Unmatched Fails)

Figure 13 represents the survey findings on what market participants consider to be the key root causes for settlement failures. Our analysis of this feedback shows that:

- **Data Quality** and **Counterparty Behaviour** are consistently ranked as high priority issues, in particular with the allocation and matching process.
- **Market Infrastructure** limitations and **Market Standards** issues were consistently ranked as lower priority issues, despite the number of unique issue types identified in these categories.
- **Workflow Management** challenges appear to become less important as the trade lifecycle progresses, suggesting that the issues are more pronounced in the trade matching process.
- **Inventory Issues** was consistently ranked as the most common reason for settlement fails. Intuitively, this is a much less significant factor in the allocation and matching processes, as a lack of securities will not prevent a transaction from being instructed and matched at the CSD, unless the settlement intermediary places the instruction on hold.

Figure 13: **AFME Member Survey Ranking Root Causes of Allocation, Matching and Settlement Issues**



Source: AFME

Please refer to **Annex 3** for a full summary of the survey results.

Recommendations

As set out in the introduction of the report, AFME members' objective was to assess possible measures not only to reduce settlement fails, but also to improve efficiency of post-trade processes. These two aspirations are complementary and mutually inclusive, and our recommendations aim to address both goals.

Our recommendations are broad-ranging, and include actions for individual firms as well as calls for further industry collaboration. Progress will require a variety of solutions, including technology changes, development of market standards, educational outreach, and internal process enhancements.

The intended outcomes of the collective recommendations can be broadly divided into four categories: Firstly, to **reduce exceptions** through targeted measures to improve the timeliness and accuracy of how information is exchanged and processed between market participants. The second category of recommendations involves measures to **expedite resolution of exceptions**, to enable faster identification of the root cause of issues and clear pathways to resolution. Together, these measures aim to improve efficiency and lead to a higher volume of transactions being ready to settle on Intended Settlement Date. The third category is related to **optimising settlement of available inventory.** Lack of securities has been identified as the main cause of settlement fails and, whilst there is no "silver bullet" solution, it is important that market participants improve 'liquidity' in the settlement ecosystem by ensuring that securities that are available for delivery are fully utilised. Finally, we call for improvements to the methodology, quality and availability of public settlement fails data.

Reducing exceptions

Recommendation 1: All information necessary for the settlement of a transaction should be provided on Trade Date

- Allocation and confirmation processes should be completed on Trade Date in line with the requirements of Article 2 of the CSDR regulatory technical standards.
- Where possible, market participants should use centralised industry platforms for pre-settlement matching and allocation processes. Market participants who cannot utilise such platforms should follow agreed industry standards for exchanging information in an STP format.
- The pre-settlement criteria used on central platforms or bilateral exchanges should be reviewed to ensure it is consistent with CSD-level settlement matching criteria, including PSET and SSIs.
- Increased bilateral engagement between counterparties to conduct root-cause analysis on late or incomplete allocations and confirmations.
- Where possible, allocations/instructions should be sent intraday rather than as a bulk end-of-day process. Information provided should be accurate and final.
- Reference data, such as SSIs, should be provided in advance and any changes communicated as soon as possible.

Recommendation 2: Industry participants should work collectively on solutions to known instrument data quality issues and holiday calendars

- Market participants should collaborate on solutions to addressing the "Units vs Nominal" issue, including targeted engagement with data vendors to ensure accuracy of the data, and establish additional controls to identify potentially incorrect bookings.
- Firms should undertake a comprehensive review of internal processing logic to ensure its up to date – e.g. to ensure default SSIs mapping are up-to-date, leveraging industry SSI repositories where possible.
- Firms should ensure that their settlement holiday calendar is configured to exactly match the CSD, and any potential conflicts that may impede cross-border settlement are highlighted.

Expediting resolution of exceptions

Recommendation 3: Industry should adopt enhanced status monitoring and exception management processes, including further consideration of the adoption of a unique transaction identifier for use in post-trade operations

- Firms should consider opportunities to explore how to leverage the benefits of using a UTI to enhance post-trade processing working with vendors to define what market best practice could look like.
- As an intermediate step, each relevant party in the chain should ensure that reports on failed transactions transmitted to clients contain as much information as possible on the root cause of the fail.
- Custodian and settlement agents should send settlement instructions to the market on hold[12] to provide visibility to the counterparty or their agent, and to optimise matching, rather than wait for the securities before instructing. CSDs should ensure that alleged instructions are reported to participants, who should transmit onwards through the custody chain to promote early visibility of missed bookings or booking exceptions.
- In T2S, the safekeeping account number and the BUYER/SELLER field should be used by participants as an additional matching field to reduce the likelihood of cross-settlement[13].

Case Study: "UTIs"

Unique Transaction Identifiers (UTIs) have already been used across the finance industry – notably in the securities and derivatives regulatory reporting space.

The use of UTIs significantly increases transparency and allows for a more efficient root-cause analysis when trying to resolve breaks. Generally, one of the counterparties will be the UTI generator who will then communicate the alphanumeric reference to the other party.

Given that UTIs have already proved to be a useful tool in the regulatory reporting space, due consideration should be given on whether their use could be exported in other business areas, since an industry-wide adoption would require upfront investments by firms so these can be implemented across various systems and platforms. Furthermore, there would be a need to develop a commonly agreed rulebook of industry standards that should capture the rules for UTI generation and how these could be adopted along the full trade lifecycle.

In the post trade space, given the complexity of the custody chain, UTIs would allow intermediaries to be able to track transactions and visualise at which stage of the trade lifecycle discrepancies occur, regardless of the usage of different platforms.

AFME participated in a Swift-led working group with other major trade associations. A discussion paper[14] published in 2022 sets out some of the benefits that the working groupenvisaged could be achieved by an industry-wide adoption of UTIs:

- A reduction by 50% in the number of pre-settlement matching and timing exceptions that require active investigation with the other party.
- A reduction by 90% in the number of matching and timing fails.

12 Where such functionality is available.

13 An additional matching field means that if either counterparty populates the field on their instruction, their counterparty must also instruct with the same value. If neither party populates the field, this does not prevent the instructions from being matched.

14 https://www.swift.com/es/node/308350

Recommendation 4: Industry should work together to identify and address gaps in existing market standards

- Give-ups: Establish industry standards for the identification and remediation of late give-ups, including a harmonised cut-off time for determining late give-ups and an agreed convention for Trade Date and Settlement Date capture.
- Trade Date Allocation and Confirmation: Establish standardised cross-industry market practices to ensure that trades are allocated and confirmed in accordance with CSDR requirements. Counterparties that do not input allocation instructions in a timely manner can cause onward matching and settlement delays without repercussion.

Recommendation 5: Firms and providers, including trade matching vendors, should review internal controls to ensure consistent matching criteria, thresholds, and static data throughout the chain

- Place of Settlement (PSET) should be a mandatory matching field in all allocation and pre-settlement matching tools.
- Firms' thresholds for matching the net cash amount on a transaction should be identical to the CSD thresholds, noting that in the CSDs subject to CSDR, the thresholds are: 2 EUR on settlement amounts up to 100,000 EUR; or 25 EUR on settlement amounts over 100,000 EUR.
- The cash tolerance used for matching in vendor platforms should align with market convention and match to the same tolerance as the CSD (again noting the CSDR tolerances) to avoid matching issues at the CSD.
- Firms should collaborate to devise market standards to agree decimal rounding convention to avoid cash differences promoting Trade Date matching on vendor platforms and at the CSD.

Recommendation 6: Industry and Regulators should review scenarios where CSDR cash penalties regime creates disincentives to timely settlement, and implement regulatory or market practice changes where necessary

- Market participants should jointly collaborate to review any unintended consequences of the application of CSDR cash penalties and bring forward solutions to remediate these issues.
- This should include a systemic means for CSDs to identify instructions that relate to transactions that have already been penalised and exclude these from duplicative penalties, to comply with ESMA guidance.

Optimising settlement of available inventory

Recommendation 7: Auto-partial settlement and hold with partial release should be offered by all CSDs

- Authorities should consider the deletion of Article 12 of the regulatory technical standards on CSDR settlement discipline, which provides a derogation for certain CSDs from the requirements to provide a partial settlement and hold and release mechanism.
- CSDs which do not currently offer partial release should consider the possibility of developing this functionality.

Recommendation 8: Settlement intermediaries should facilitate and encourage the use of auto-partial and partial release by their clients

- Industry participants should continue to promote existing recommendations for partial settlement, such as those developed by AFME[15] and ICMA[16]
- Intermediaries should engage with clients and counterparties to understand potential barriers to the use of partial settlement, and work collaboratively towards solutions.
- Custodian and settlement agents should operate full functionality that allows their clients to optimise settlement and maximise the use of available inventory through auto-partial and partial release.

Recommendation 9: CSDs and settlement intermediaries explore further opportunities to optimise the flow of securities through settlement systems.

- A review is required to ensure that all CSDs are meeting the requirements of Article 5 of the CSDR regulatory technical standards, which requires CSDs to "provide to participants a functionality that supports fully automated, continuous real-time matching of settlement instructions throughout each business day."
- Market participants should collaborate through relevant industry fora, including the ECB AMI-SeCo SEG to define the optimal means to promote and optimise settlement by reviewing current batch times.
- Market participants should review solutions to remove barriers to timely cross-border settlement. CSD cycles and market cut-offs should be widely aligned, including partial settlement cycles which currently differ substantially, and a simplified and harmonised process for realignment of assets between CSDs should be established.

Enhancing Visibility of Current Settlement Efficiency Landscape

Recommendation 10: A single, granular fails reporting methodology to be used by the entire industry.

- The CSDR Refit and amendments to the RTS should be used as an opportunity to redefine the fails reporting methodology, to create a blueprint for the reporting of settlement fails that will provide richer insight and identification of issues and trends.
- The data parameters should be granular and include all transaction types and fail reasons (not just "lack of securities" and "lack of cash"). Data should also capture the liquidity profile of the instrument and the duration of settlement fails more explicitly, avoiding duplicative counting of instructions which fail for multiple business days.

15 https://www.afme.eu/Portals/0/DispatchFeaturedImages/AFME%20Recommendations%20for%20Partial%20Settlement.pdf

16 https://www.icmagroup.org/assets/Uploads/Compilation-of-ERCC-BP-on-settlement-efficiency.pdf?vid=2

Case Study: Euroclear Sweden

As noted earlier in the Report, EU markets have shown signs of improvement in settlement efficiency since the introduction of the CSDR cash penalties regime, most notably in equities transactions. One market in which there has been a more eye-catching success in addressing settlement fails is Sweden. For equities, the settlement efficiency rate has improved significantly: from 84.93% in Q1 2021, to 96.38% in Q3 2023.

In the case of Sweden, CSDR cash penalties replaced an existing penalty regime in operation since 2015, and modified in 2019, which applied a flat penalty of SEK 1500 to any failing delivery instruction to a CCP. The improvement is therefore more likely due to a combination of other initiatives implemented by the CSD, Euroclear Sweden, and its users.

In Q1 2021, Euroclear Sweden first enabled participants to instruct a partial settlement of positions held in omnibus accounts. This functionality was further refined in Q4 2021, as well as enabling the simultaneous partial settlement of multiple instructions in a chain of linked transactions.

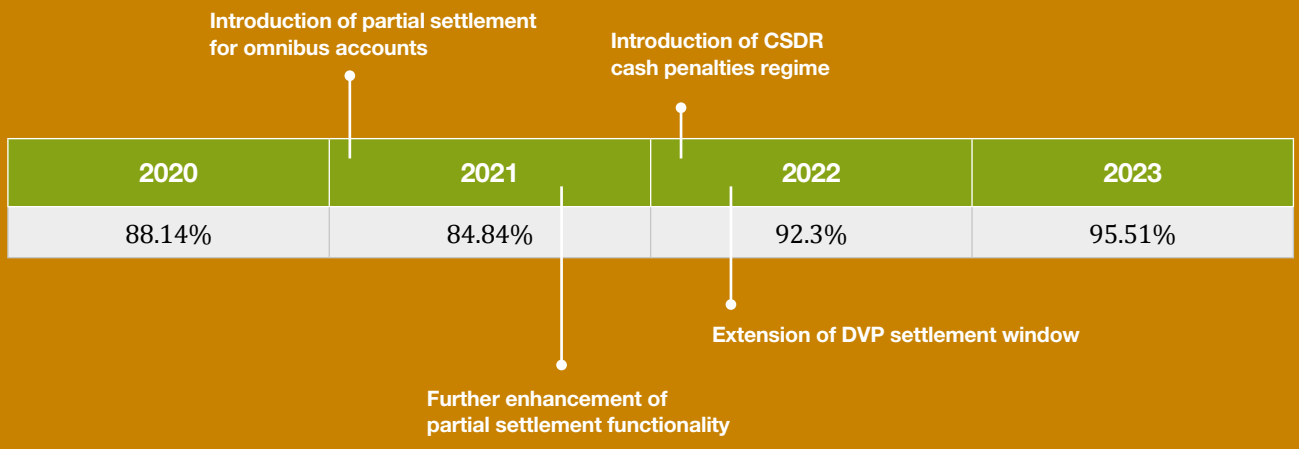
Euroclear Sweden note that between 2020 and 2023, the portion of valued settled through use of partial settlement approximately tripled. The impact was particularly noticeable in non-cleared OTC transactions. For this flow, over 9% of the value settled involves some degree of partial settlement in 2023, compared to below 1% in 2020.

A further significant change took place in Q1 2022, with the extension of the DVP settlement window from 14.00 CET to 15.30 CET. Market participants advocated for this extension, on the basis that this would allow additional time for the booking and settlement of securities lending transactions, particularly for those firms with US-based operations.

Euroclear Sweden note that other changes in market dynamics may have also contributed to the improvement in settlement efficiency, including settlement volumes becoming concentrated across fewer custody providers. It was also noted that the introduction of CSDR cash penalties acted as a catalyst for market participants to focus time and resources on addressing settlement issues.

Taken together, these market changes, primarily driven by a proactive CSD engaging with their users, have contributed to an improvement in the settlement efficiency environment on a scale which AFME has not observed in other European markets

Figure 14: **Timeline of Euroclear Sweden CSD changes**



AFME Roadmap / Book of Work

Progress towards the objective of increased settlement efficiency in European markets will require broad collaboration across the full spectrum of securities participants. AFME members are encouraged by the increased focus from all segments of the industry on addressing these issues, and are fully committed to playing their part.

As such, the below table is intended to reflect the concrete next steps that AFME members commit to undertaking, in order to continue the journey towards increased settlement efficiency, to reduce risks and costs and facilitate the anticipated adoption of shorter settlement cycles.

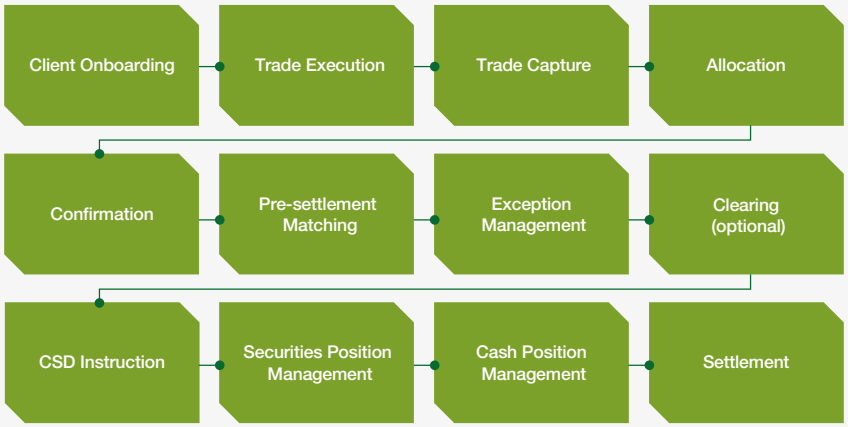
#	Recommendation	Action
1	All information necessary for the settlement of a transaction should be provided on trade date	1a. Contribute to broader industry work (e.g. FMSB in the UK) to establish and promote common standards for the exchange of non-economic trade data
		1b. Produce template materials which can be used by firms when conducting engagement with counterparties who do not comply with standards
		1c. Develop and promote market standards for allocation and confirmation processes, in line with requirements of CSDR.
2	Industry participants should work collectively on solutions to known data quality issues	2a. Establish industry working group with relevant stakeholders (including brokers, custodians, CSDs and data providers) to review potential solutions to "units v nominal" issue and other instrument data issues
3	Industry should increase efforts towards the adoption of a unique transaction identifier for use in settlement operations	3a. Contribute to broader industry efforts to analyse the potential benefits and feasibility of adopting a UTI, and define appropriate market standards.
		3b. AFME members to review reporting distributed to clients and identify additional fields that can be provided to support quicker resolution of fails, implementing changes to operational processes and technology needed to support enhancements.
		3c. Develop and promote market standards for custodians and settlement agents to release instructions on hold, where such functionality is available.
4	Industry should work together to identify and address gaps in existing market standards	4a. Develop best practice recommendations for late give-ups, including determining the time at which a give-up is considered as “late” and a standard convention for the trade-date and settlement-date to be used.
5	Firms and providers should review internal controls to ensure consistent matching criteria, thresholds, and static data throughout the chain	5a. Advocate for the introduction of PSET as a mandatory matching field in pre-settlement matching platforms.
		5b. Establish annual process with relevant stakeholders (including CSDs) to develop and publish industry-agreed settlement holiday calendar.
		5c. Develop and promote market standards on decimal rounding conventions.

#	Recommendation	Action
6	Industry and Regulators should review scenarios where CSDR cash penalties regime creates disincentives to timely settlement, and implement regulatory or market practice changes where necessary	6a. Review AFME Bilateral Claims guidelines and update where necessary.
		6b. Provide input to ESMA consultation on potential amendments to RTS on CSDR Settlement Discipline
		6c. Partner with ECSDA to find a solution to the CSDR Level 3 guidance by ESMA that determines that the same trade should not be penalised twice.
7	Auto-partial settlement and partial release should be offered by all CSDs	7a. Advocate for removal of Article 12 of the RTS on CSDR Settlement Discipline (derogation from certain measures to prevent settlement fails)
		7b. Develop and promote market standards for settlement agents and custodians when operating omnibus settlement accounts.
8	Settlement intermediaries should facilitate and encourage the use of auto-partial and partial release by their clients	8a. Update and recirculate AFME Recommendations for Partial Settlement[17]
		8b. Engage with CSDs and buy-side to monitor NPAR usage and understand reasons why this is used.
9	CSDs and settlement intermediaries increase efforts towards "real time settlement"	9a. Conduct analysis of current timing and frequency of batch settlement process at European CSDs (including partials).
		9b. Conduct targeted advocacy with specific CSDs as required.
10	A single, granular fails reporting methodology to be used by the entire industry.	10a. Provide input to public authorities on AFME's view of an appropriate methodology for the reporting of settlement fails
		10b. Support the establishment of a cross-industry working group to define appropriate performance metrics and key data points to monitor.

17 https://www.afme.eu/Portals/0/DispatchFeaturedImages/AFME%20Recommendations%20for%20Partial%20Settlement.pdf

Annex 1 – Trade Lifecycle View

Figure 15: **Illustration of securities trade lifecycle process**



Pre-Trade

Description

Pre-trade refers to a number of different activities which must take place before a transaction can be executed between two counterparties. A core element of this is the client onboarding process, whereby a market participant establishes its relationship with a new customer. This includes putting in place required legal agreements, conducting due diligence, and setting up accounts in relevant systems.

Common Challenges

A common issue identified relates to the timing at which existing clients inform their brokers or custodians of new sub-accounts that they wish to allocate (part of) a block trade to. If this is done before the account has been created in the provider's internal systems, this can lead to delays in the booking of the transaction.

Trade Execution

Description

The execution of a transaction is the point at which it is agreed by two trading counterparties (buyer and seller). This may be done on a trading venue or bilaterally (over-the-counter, or "OTC"). Investors and asset managers typically access markets through a broker, who helps buyers find sellers and sellers find buyers.

Common Challenges

No major issues identified.

Trade Capture

Description

After the trade is executed, it must be recorded and enriched in the booking systems of both trading parties and their intermediaries.

Common Challenges

Delays in the trade capture process may lead to delays in downstream processes, ultimately impacting settlement. Issues could arise from poor static data quality – e.g. new security identifiers such as ISINs not being available in the booking system.

Allocation

Description
Typically, a single block transaction may be split across several different accounts. Allocation refers to the process by which the asset manager or investor informs their counterparty of the details of the split.

Common Challenges
The allocation process was identified as a common cause of delays and inefficiencies in the post trade process, due to clients or counterparties not providing allocations in a timely and accurate manner or in a format that does not allow straight-through-processing. Often, such delays can be due to clients being located in a different timezone or not having the requisite technology capabilities to use automated solutions.

Confirmation

Description
The confirmation process is where key economic and non-economic data relating to the trade is finalised and confirmed by the parties.

Common Challenges
As with allocations, delays in the confirmation process can lead to further downstream delays.

Pre-settlement Matching

Description
Trading parties may make use of third-party systems, which allow both sides of the transaction to enter their trade details. If the details are the same, the trade is 'matched'.

Common Challenges
Trade-level matching reduces the likelihood of a mismatch occurring at settlement-level. Issues and delays may arise if discrepancies are not detected at trade-level – e.g. if the controls and matching criteria are different between trade-level and settlement-level. Notably, attributes such as place of settlement ("PSET") are not mandatory matching criteria.

Exception Management

Description
Exception Management is an ongoing process through different parts of the trade lifecycle, as the trade/settlement instruction is entered into each system. Exceptions typically require manual investigation and action to remediate, and may require communication between multiple parties.

Common Challenges
If exceptions are not resolved in a timely manner, this can result in delays to the settlement process.

Clearing

Description
Clearing is an optional process for securities transactions, whereby a central counterparty (CCP) becomes the buyer to any seller and the seller to any buyer, so the counterparty risk is transferred to the CCP from the actual parties to the trade. Clearing is typically relevant to transactions executed on a trading venue, since market operators mostly choose to feed CCPs with their market executions. This also allows for "street-side" transactions to be settled on a netted basis, separately and independently to the "client-side" transaction.

Common Challenges
No major issues identified. The settlement of the "street-side" transactions is already optimised and fully STP.

Instruction to CSD

Description
Following the allocation/confirmation process, the details of the transaction must be propagated through the custody chain and input to the CSD for settlement.

Common Challenges
As noted, if any issues have not been identified and resolved earlier in the process, this may result in an exception on the CSD instruction. For example, if upstream trade capture systems did not correctly identify a market settlement holiday, or a restriction on the minimum settleable quantity, these issues will only come to light at the point of CSD instruction, potentially leading to delays in settlement, although these are generally not considered to be regular causes of issues.

Settlement-level matching

Description
Once both sides of the instruction are entered correctly, the CSD will match them in the settlement system. If an equal and offsetting instruction cannot be found, the instruction will remain unmatched. Details of the status of the instruction should feed back up the custody chain to the trading parties. Instructions can be sent in 'already matched' status for CCP-netted transactions.

Common Challenges
In many instances, both sides of a transaction may be entered into the CSD, but remain unmatched. If the CSD cannot link the two instructions (e.g. because one or both parties has used the incorrect SSIs) then there may be a lack of visibility as to why the instructions are not matched, causing delays to resolving the underlying issue. Not all CSDs and Custodians support and report allegements, resulting in a lack of visibility of what has been instructed against an account. This can impede matching, exception management and fail resolution processes. Other issues can occur, such as "cross-matching" in cases of multiple settlement instructions with the same economics.

Securities position management

Description
Trading parties and intermediaries will need to ensure that securities that have been sold are ready and available for settlement on intended settlement date. This may involve borrowing or recalling securities which have been loaned out.

Common Challenges
Delays in the booking and settlement of loan recalls can result in delays to the settlement of the original transaction. A common issue arises when a transaction is booked for settlement in one CSD, but the position is held in a different CSD. This requires a realignment of the securities between CSDs, which can create additional delays.

Cash position management

Description

Trading parties and intermediaries ensure that for securities purchases, the relevant cash amount is ready and available for settlement on intended settlement date. This may involve executing an FX transaction to ensure funds in the appropriate settlement currency.

Common Challenges

No major issues identified.

Settlement

Description

Settlement is the final stage of the process whereby the cash and securities are exchanged simultaneously. The process is managed by the CSD as the entity responsible for the operation of the settlement system and maintenance/update of the securities and cash accounts.

Common Challenges

Our analysis has highlighted differences in the functionalities available at different CSDs, which may impact overall performance levels. For example, not all CSDs can facilitate automated partial settlement (whereby the CSD identifies that part, but not all, of the agreed quantity of securities is available for settlement, and automatically enacts this, reducing the outstanding quantity and notional accordingly.) There are also differences in the timing and frequency of the 'batch' settlement processes that CSDs run. Generally speaking, more frequent batches and a longer settlement window increase settlement efficiency.

Annex 2 – Summary of European CSD Functionality and Cut-off Times

Market	CSD Name	Connected to T2S? (Y/N)	Auto Partial? (Y/N)	Partial Release? (Y/N)	Real-time Settlement? (Y/N)	No. of daily batches	DVP Cut-off	FOP Cut-off	Comments
AT	OeKB	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
BE	Euroclear Belgium	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
BE	NBB-SSS	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
BG	CD AD	Y	N	N	N	3 FOP 14 DVP	17:00 EET (16:00 CET)	19:00 EET (18:00 CET)	
BG	BNB	Y	N	N	Y	-	16:45 EET (15:45 CET)	16:45 EET (15:45 CET)	
CH	SIX SIS	Y	Y*	N	N	?	16:50 CET**	21:50 CET**	*for on-exchange or T2S transactions only **T2S transactions follow T2S cut-offs
CY	CSE	N	N	N	N	2	14:00 EET (13:00 CET)	14:00 EET (13:00 CET)	
CZ	CSD Prague	N	Y	Y	N	9	13:00 CET*	17:00 CET	*Local currency. DVP EUR until 15:30 CET
CZ	SKD	N	N	N	Y	-	16:00 CET	17:00 CET	
DE	Clearstream Banking Frankfurt	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
DK	Euronext Securities Copenhagen	Y	Y	Y	Y	-	14:15 CET*	15:30 CET*	*T2S Transactions follow T2S cut-offs
EE	Nasdaq CSD (Estonia)	Y	N	N	Y	-	17:00 EET (16:00 CET)	19:00 EET (18:00 CET)	
ES	Iberclear	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
FI	Euroclear Finland	Y	Y	Y	Y	-	17:00 EET (16:00 CET)	19:00 EET (18:00 CET)	
FR	Euroclear France	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
GR	ATHEX CSD	N	N	N	N	25	17:00 EET (16:00 CET)	18:15 EET (17:15 CET)	
GR	Bank of Greece (BoG)	Y	Y	Y	Y	-	16:00 EET (15:00 CET)	18:00 EET (17:00 CET)	
HR	SKDD	Y	N	N	N	32	16:00 CET	18:00 CET	
HU	KELER	Y	Y	N*	Y	-	17:30 CET	18:00 CET	*expected in 2024
ICSD	Clearstream Banking Luxembourg	N	Y	Y	Y	-	16:00 CET*	20:00 CET*	*EUR. Different cut-offs for other currencies
ICSD	Euroclear Bank	N	Y	N	Y	-	16:00 CET*	19:30 CET*	*EUR. Different cut-offs for other currencies
IR	Euroclear Bank	Y	Y	N	Y	-	15:30 GMT (16:30 CET)	18:30 GMT (19:30 CET)	

Market	CSD Name	Connected to T2S? (Y/N)	Auto Partial? (Y/N)	Partial Release? (Y/N)	Real-time Settlement? (Y/N)	No. of daily batches	DVP Cut-off	FOP Cut-off	Comments
IS	Nasdaq CSD (Iceland)	N	N	N	N	?	15:20 GMT (16:20 CET)	17:00 GMT (18:00 CET)	
IT	Euronext Securities Milan	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
LT	Nasdaq CSD (Lithuania)	Y	N	N	Y	-	17:00 EET (16:00 CET)	19:00 EET (18:00 CET)	
LU	LuxCSD	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
LV	Nasdaq CSD (Latvia)	Y	N	N	Y	-	17:00 EET (16:00 CET)	19:00 EET (18:00 CET)	
MT	MSE	Y	N	N	Y	-	14:55 CET	17:55 CET	
NE	Euroclear Nederland	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
NO	Euronext Securities Oslo	Y	Y	N	N	3	14:15 CET	14:15 CET	
PL	KDPW	N	N*	N*	Y**	1 FOP 3 DVP	17:00 CET	18:30 CET	*expected in 2024 **Batch settlement until 15:30 CET, real-time thereafter
PL	CRBS	N	N*	N*	N	1 FOP 3 DVP	17:30 CET	17:30 CET	*expected in 2024
PT	Euronext Securities Porto	Y	Y	Y	Y	-	16:00 CET	18:00 CET	
RO	Depozitarul Central S.A.	Y	N	N	Y*	2	14:30 EET** (13:30 CET)	16:30 EET (15:30 CET)	**For on-exchange transactions, 16:30 EET for OTC
RO	NBR	N	N	N	Y	-	16:45 EET (15:45 CET)	17:40 EET (16:40 CET)	
SI	KDD	Y	N	N	Y	-	16:00 CET	18:00 CET	
SK	CDCP	Y	N*	N*	Y	-	16:00 CET	18:00 CET	*expected in 2024
SW	Euroclear Sweden	N	Y	Y	N	5	15:30 CET	17:00 CET	
UK	Euroclear UK and International	N	Y	N	N	?	15:45 GMT (16:45 CET)	18:00 GMT (19:00 CET)	

Annex 3 – Results of AFME Survey on Root Causes of Settlement Efficiency Issues

Question 1: Rank the below root causes of transactions being unallocated by EOD T+0

(1 = most important, 6 = least important)

	Root Cause	Broker Avg	Custodian Avg	Avg
a	Data Quality	2.0	2.0	2.0
b	Counterparty Behaviour	1.3	1.0	1.2
c	Workflow Management	3.5	4.0	3.7
d	Market Standards and Regulation	4.3	3.5	4.0
e	Market Infrastructure Limitations	4.8	4.5	4.7
f	Inventory Issues	5.3	6.0	5.5

Question 2: Rank the below root causes of transactions being unmatched at the CSD by EOD T+1

(1 = most important, 6 = least important)

	Root Cause	Broker Avg	Custodian Avg	Avg
a	Data Quality	1.8	2.5	2.1
b	Counterparty Behaviour	1.3	1.3	1.3
c	Workflow Management	4.0	4.8	4.4
d	Market Standards and Regulation	4.8	5.0	4.9
e	Market Infrastructure Limitations	4.3	4.3	4.3
f	Inventory Issues	5.0	3.3	4.1

Question 3: Rank the below root causes of transactions being unmatched at the CSD by EOD T+2 (Unmatched Fails)

(1 = most important, 6 = least important)

	Root Cause	Broker Avg	Custodian Avg	Avg
a	Data Quality	2.3	2.5	2.4
b	Counterparty Behaviour	1.3	1.0	1.1
c	Workflow Management	3.8	5.0	4.4
d	Market Standards and Regulation	4.8	5.3	5.0
e	Market Infrastructure Limitations	4.8	3.8	4.3
f	Inventory Issues	4.3	3.5	3.9

Question 4: Rank the below root causes of transactions being unsettled at the CSD by EOD T+2 (All Fails)

(1 = most important, 6 = least important)

	Root Cause	Broker Avg	Custodian Avg	Avg
a	Data Quality	2.7	4.3	3.5
b	Counterparty Behaviour	2.0	2.0	2.0
c	Workflow Management	4.3	4.4	4.3
d	Market Standards and Regulation	6.0	5.4	5.7
e	Market Infrastructure Limitations	4.3	4.0	4.3
f	Inventory Issues	1.7	1.0	1.3

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AccessFintech is the Financial Markets Data and Insights Network. ***Bringing efficiencies in Capital Markets through a single unified view of Post Trade data, Cross-Asset, in real-time.***

AccessFintech's Synergy is the real-time post trade data network generating insights which enable balance sheet benefits, reduced transaction costs and greater operational and Technology capacity. Through its Synergy platform, AFT enables workflow optimization and collaboration, using normalised data and shared technology access.

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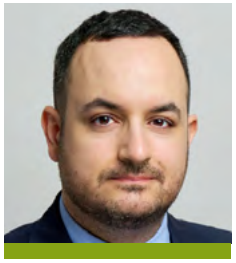

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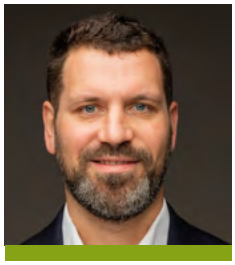

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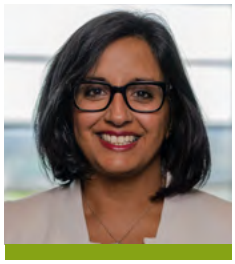

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The Association for Financial Markets in Europe (AFME) is the voice of all Europe's wholesale financial markets, providing expertise across a broad range of regulatory and capital markets issues.

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