

Reducing Settlement Fails in Sweden



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Background

Efficient securities settlement means settlement occurs on time, on the intended settlement date. The consequences for participants of securities not settling on time fall into two broad categories: impact on liquidity and impact on operations. Liquidity is affected because cash due from settlement is not received as forecast. Operations are affected as manpower is needed to follow-up and resolve issues: operational risk is particularly increased where a fail coincides with a corporate action impacting shareholder rights and benefits.

The importance of settlement efficiency is underscored by the Central Securities Depositories Regulation (CSDR), which stipulates that, “Any participant in a securities settlement system that settles in that system on its own account or on behalf of a third party transactions in transferable securities... shall settle such transactions on the intended settlement date.” To improve settlement discipline, a cash penalty is imposed on the “failing participant”, the party that fails a settlement. The CSDR entered into force in September 2014. The rules on settlement discipline apply from the date of entry into force of the relevant technical standards, which is expected to be in 2018.¹

The CSDR specifies that central securities depositories (CSDs) must implement efficiency enhancing measures, “...a CSD shall establish procedures that facilitate the settlement of transactions in financial instruments ... on the intended settlement date...a CSD shall put in place measures to encourage and incentivise the timely settlement of transactions by its participants. CSDs shall require participants to settle their transactions on the intended settlement date.”²

The Swedish CSD Euroclear Sweden (Euroclear) uses a *settlement ratio* to measure settlement efficiency.³ Euroclear published statistics that show the settlement ratio declining in each of three periods: 1. in 2007 and before the financial crisis, 2. following the introduction of central counterparty (CCP) clearing after the financial crisis in October 2009, and 3. after the shortening of the settlement period from 3 days after trade execution to two days (T+3 to T+2) in October 2014 as required by CSDR.

¹ REGULATION (EU) No 909/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012, Title II, Chapter II, Article 5. For ease of reference, the relevant text of the CSD Regulation is included in Appendix 1.

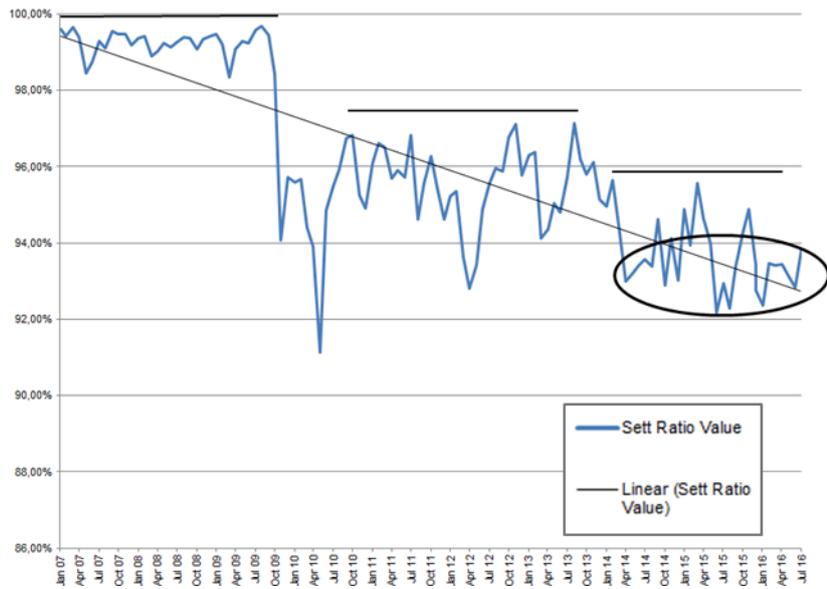
² Title II, Chapter II, Article 6,.

³ Euroclear Sweden's definition of settlement ratio:

All settled instructions with the same settlement day

All settled instructions with the same settlement day + All not settled transactions with the same settlement day

Exhibit 1: Euroclear Sweden settlement ratio by value



Source: Euroclear Sweden, Sep 2016

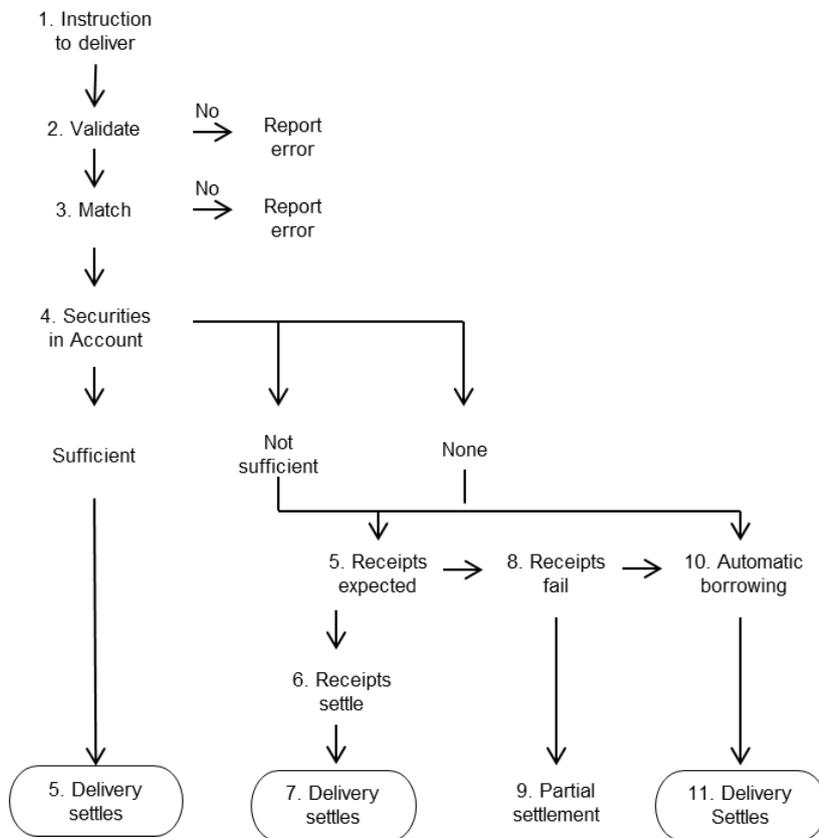
EuroCCP has prepared this paper for stakeholders to help explore the root causes of the downward trend, and to recommend measures that can be taken by stakeholders to improve settlement efficiency in Sweden. This is based on our experience as a direct CSD participant in Sweden - and also in a growing number of other markets in Europe. This problem requires the collaboration of all stakeholders in identifying and resolving the causes. We encourage stakeholders to consider the desirability and feasibility of each recommendation presented in this paper, and to work as a community to agree the implementation of necessary changes.

Measuring settlement efficiency

Studies on settlement efficiency carried out by the European Central Securities Depositories Association (ECSDA) and the European Central Bank show that that efficiency can be measured in many different ways, making comparisons between institutions difficult.⁴

To avoid this confusion, this paper charts a securities delivery from the moment an instruction is sent to a CSD to the moment when it settles (or fails) on intended settlement date. We then describe some approaches to measuring settlement efficiency to illustrate the different perspectives of various stakeholders. For simplicity, it is assumed that cash is available in all scenarios.

Exhibit 2: Securities delivery: from instruction to settlement



From the perspective of the CSD participant (or instructing party), the universe of instructions could be all instructions sent ①, or all validated instructions ②. It is clear that the participant can only have expectations that a transaction will be settled once it is acknowledged as valid by the CSD.

⁴ SETTLEMENT FAILS – REPORT ON SECURITIES SETTLEMENT SYSTEMS (SSS) MEASURES TO ENSURE TIMELY SETTLEMENT, European Central Bank, April 2011 <https://www.ecb.europa.eu/pub/pdf/other/settlementfails042011en.pdf>. A list of ECSDA surveys and reports can be found in Appendix 2.

From the perspective of the CSD, the universe of relevant instructions for the calculation of settlement efficiency could be smaller than the sum of the expectations of all participants. The CSD might include only those that have been validated and matched, and are therefore eligible for settlement ③. The exclusion of unmatched instructions in the CSD's calculation of efficiency will of course result in a higher settlement efficiency rate than approaches ① and ②, as the same number of successful settlements make up a larger percentage of this reduced number of eligible instructions.

There could be differences in which settled instructions are included to calculate the settlement success rate. A possible CSD definition of success rate on a given settlement processing date is the inclusion of only those instructions with an intended settlement date being the processing date (Intended Settlement Date or ISD basis). Alternatively, the CSD could also include all instructions with prior intended settlement dates that have failed to settle previously and are re-processed on that day (Instruction Processing Date or IPD basis). The two approaches involve different numbers of settled instructions.

A further example of how the CSD's perspective could be different from that of the participants' can be illustrated by the following example. If the CSD's processing system does not accept settlement instructions with an ISD before processing date, settlements achieved by manual splitting of failed deliveries for processing the following day (through cancelation and new instructions) will appear to be in time for the CSD. The more the successful splits of a transaction, the higher the CSD settlement efficiency rate. The CSD's settlement efficiency measure will not reconcile with the participants', even if each party is measuring efficiency on an ISD basis from its own perspective.

In counting what has settled, there could also be different perspectives. An efficiency measurement might include "assisted" settlements, such as those that have been settled by automatic securities borrowing to cover a delivery that could otherwise fail, or it might not.

Settlement efficiency could be measured by value or by the number of transactions. From a liquidity perspective, the value of transactions that fail to settle would be the relevant measure. If a large transaction is partially settled, then only the value that remains unsettled should be counted as failed. From an operations perspective, the number of transactions that fail to settle would be the relevant measure as individual transactions require follow-up. Fails could significantly increase operational risk which needs to be carefully managed. From an operations perspective, then, if a large transaction is only partially settled, it could be more appropriate to count that transaction as a fail because follow-up will be required.

This implies that in considering comparative figures of fail rates among participants, a ratio should be accompanied by volume metrics in order to assess market impact. Similarly, comparing percentages over time yields an incomplete picture of impact, if the value and the number of transactions are also changing over time. This is especially important when looking at a run of years, when the volumes may well have changed significantly.

Finally, in using statistics which may stretch back many years, care must be taken that the basis of measurement has not changed over time to make different periods non-comparable.

Recommendation 1

The CSD's methodology in calculating efficiency ratios should be transparent and must be explained in such a way as to be replicable by the participants. An early adoption of CSDR technical standards in the definition and monitoring of fails would be desirable.

Change one thing, and everything changes

There have been significant changes in both trading and CCP clearing in the period 2007 to 2016. Euroclear statistics highlight the drop in settlement efficiency concurrent with the introduction of CCP clearing in October 2009. In order not to confuse correlation with causation, the relevant changes that also occurred in this period, either independent of or related to CCP clearing, should also be identified, and analysis undertaken to consider whether the elimination of CCP clearing would result in a return to the 99.5% settlement ratio of 2007.

Increase in non-Swedish, institutional participation

While it is true that the introduction of CCP clearing in 2009 changed the procedures, the quantity and the average value of trades, as well as the pattern of settlement, it is also true that the equities market has undergone a transformation from 2007 until now. The multilateral trading facilities, including Bats Europe and Turquoise, had not started operation in 2007; by 2016 they have grown to account for 42% of traded value in Swedish equities.⁵ Add to this the increased share of Nasdaq volume traded by non-Swedish firms and it becomes clear that the composition of market participants has changed significantly since 2007. They now include a larger portion of intermediated and more complex business operations. Some of these may have found the introduction of T+2 in 2014 a particular challenge; there are more foreign market participants using agent banks to settle, and these participants, in turn, have foreign clients also using intermediaries such as global custodians. It is likely that the liquidity of the market has benefitted from this wider access, in compensation for the added complexity.

Recommendation 2

If reversing certain changes in the market that have taken place during the past nine years, such as the introduction of CCP clearing and the move to T+2, is impractical or undesirable, then a more appropriate benchmark settlement rate instead of the rate of 2007 should be used.

Larger size of settlement obligations

After the collapse of Lehman Brothers, market participants agreed to introduce CCP clearing. EMCF, a predecessor company of EuroCCP, started clearing trades executed on Nasdaq markets in the Nordics in October 2009. The introduction of CCP clearing enables multilateral netting of trades into far fewer obligations for settlement, which reduces operational costs and market risk. In September this year, on average each day, the number of trade sides in Swedish equities that required settlement was reduced by over 99% or 600,000 by EuroCCP, while the value of trades that required settlement was reduced by over 70% or EUR 2.9 billion.⁶

An important change during this period that will have had an impact on the settlement efficiency ratio is the average value of settlement obligations. In 2008, the average trade size on Nasdaq Nordic Exchange was EUR 15,000, which was the same as the average value of individual settlement obligations since there was no multilateral netting by a CCP. The average value of individual settlements after multilateral netting at EuroCCP is now more than ten times higher, at EUR 200,000.

⁵ Source: Bats Europe web site
http://www.batstrading.co.uk/market_data/market_share/market/

⁶ As a significant number of statistics is published in euros, this currency is used throughout this document for consistency.

The much larger value of obligations is a factor influencing the lower settlement ratio. A firm that has to wait for a number of stock receipts before it can deliver will find it easier to accumulate EUR 15,000 per delivery than to accumulate EUR 200,000.

In the vast majority of CSDs, an automatic partialling service is offered, whereby all the available securities in an account are used to fulfil deliveries to the extent possible.

Additionally, where the CCP or a CSD participant initiates the split of large transactions into smaller, easier to settle pieces, the vast majority of CSDs offer a power of attorney arrangement whereby the CCP could automatically create split instructions on behalf of a CSD participant, thereby saving time, mitigating operational risk and improving settlement efficiency. These facilities are extremely important for market efficiency.

Exhibit 3: Overview of CSD settlement efficiency enhancing services

Market Segment	CSD service	
	Auto Partialling	Power of Attorney
Austria	Feb 2017	Feb 2017
Belgium	Y	Y
Denmark	Y	N
Finland	Y*	N
France	Y	Y
Germany	Feb 2017	Feb 2017
IDR	Y	Y
Ireland	Y	Y
Italy	Y	Y
Netherlands	Y	Y
Norway	Y	Y
Portugal	Y	Y
Spain	Y	Y
Sweden	N	N
Switzerland	Y	Y
United Kingdom	Y	Y

* A last processing cycle is run for CCPs which achieves similar results as auto partialling

Recommendation 3

The CSD should implement a) automatic partialling or b) a last processing cycle for CCPs to maximise possible settlement, and c) measures that will achieve the same or similar results as a power of attorney to instruct split settlement.

Automatic partialling requires an omnibus account holder to have controls that avoid using one client's securities to fulfil another client's obligations. If such controls are not available until Euroclear's new system is implemented, then a last processing cycle for CCPs could be introduced to materially improve settlement efficiency.

Failed back-to-back transactions inflate the value of fails

When securities received are required for onward delivery, a failed receipt will cause one or more failed onward deliveries. The longer this chain, the more the impact of the first failed delivery will be amplified. A CCP has only back-to-back obligations: the total value of receipts equals the total value of deliveries. If all obligations settle on ISD, then at the end of the process the CCP has a zero position in its account. If the parties delivering to the CCP fails on ISD, the CCP cannot make onward deliveries to the waiting parties. Each failed delivery to the CCP is counted twice in the fail statistics, inflating the total value of fails.

It is important to understand where and why the fails originate in order to find ways to eliminate them. The current focus on CCP trades is not sufficient to improve the situation as the market should be seen as a whole, including bilateral and OTC transactions.

Recommendation 4

Root cause analysis needs to trace typical chains of fails and cure it at its source, by identifying circumstances and participant processes which create blockages. A CSD is in the unique position to trace a chain of fails to its source as it has complete visibility of all transactions between accounts in its settlement system.

Short Selling Regulation might have side effects

The imposition of penalties and buy-in for trades concluded on organised venues by the Short Selling Regulation (SSR) in 2012 may have incentivised some market participants to use available stock for delivery to the CCP rather than to market counterparties.⁷ This is because SSR requires failed deliveries of securities to CCPs to be subject to buy-in by the CCP four days after intended settlement date, whereas delivery of securities bilaterally between market participants is not subject to buy-in.

In this context, local retail brokers complain about late deliveries of securities to them, causing an issue with their clients who expect receipt of securities on the due date. In OTC transactions, partial delivery is not market practice; if more than one receipt is required to make one delivery, a failed receipt will cause the OTC delivery to fail until the full position has been received. The current focus in reducing fails has paradoxically not targeted the bilateral settlement sector of the local market but instead focused on the centrally cleared sector where there is no indication of a market-wide liquidity problem.

A second side effect of the application of the SSR concerns deliveries from one interoperating CCP to another which are not subject to buy-in. As a result of how one CCP implements SSR requirements, it consistently fails on deliveries to interoperating CCPs for periods of time well beyond the buy-in period. The receiving interoperating CCP then becomes unable to fulfil delivery obligations to its own members.

Recommendation 5

Fails and the duration of fails in bilateral transactions that are not subject to buy-in should be examined and root causes tackled. These include transactions between market participants and between interoperating CCPs.

⁷ Regulation (EU) No 236/2012 of the European Parliament and the Council of 14 March 2012 on short selling and certain aspects of Credit Default Swaps (OJ L 86/1)

Improving the settlement ratio

The Euroclear fail fine

Euroclear introduced a fine in April 2015 of SEK 500 (EUR 50) per late delivery regardless of value, charged to the party not delivering securities on ISD. This fine is imposed on all delivery fails, including parties that fail to deliver because they have suffered a fail to receive.

It is worth noting that in various reports on the enforcement of settlement discipline, including those from the European Central Bank and ECSDA, it is observed that fines imposed on late deliveries typically are not levied on innocent parties in back-to-back transactions not at the source of a chain of fails.

The CSDR achieves the same result by stipulating that a party in the middle of a fail chain will be charged a cash penalty by the party downstream to whom it failed to deliver, and will receive a compensation from the party upstream who failed to deliver to it. This method ensures that, in the end, only the party which is the source of the chain of fails will suffer a penalty but receive no compensation.

Recommendation 6

Euroclear should stop fining parties in the middle of back-to-back transactions. There should not be fines that do not serve to increase the settlement rate. Euroclear should at a minimum stop fining CCPs, as it only creates administrative burden.

The “2nd Package”

The Euroclear fail fine seems not to have resulted in improving the settlement ratio as measured by Euroclear (although it is possible to justify the fine by hypothesising that the ratio would have become much worse if the fine had not been introduced).

The significant changes that occurred concurrently with the introduction of CCP clearing – more activity from non-Swedish market participants, far fewer but much larger individual settlement obligations, and the increased number of back-to-back dependencies – require the settlement infrastructure to modernise. Many innovations require adjustment of the existing infrastructure. CCP clearing is one of the innovations in post-trade which require adjustment of the Swedish settlement infrastructure.

Swedish regulators have asked Euroclear to implement further actions to reduce settlement fails in collaboration with the market – the “2nd package”, which Euroclear is expected to be publishing soon. Effective measures should not take the form of a larger blunt instrument but should be based on an analysis of the root cause of fails. The 2nd package should avoid measures which consume resources but not yield the desired results.

The following section offers a detailed description of the kind of data needed to identify the root cause of problems, the types of actions that can solve each situation, and the parties that have to take action.

The impact of failed settlement and its possible causes

A transaction that fails to settle on settlement due date results in:

- The delivering party not receiving funds on time, thereby incurring a liquidity cost.
- The receiving party holding excess cash, thereby incurring a funding cost.
- Consecutive fails down the chain if the receiving party has onward delivery obligations of the security it did not receive on time.

There are four proximate causes of securities transactions not settling on due date. It would be helpful if the CSD could produce an analysis showing the distribution of the causes of securities not settling on due date.

Exhibit 4: Causes of settlement fails Daily average, [time period covered]

Cause of fail	Value in SEK MM	As % of all delivery instructions
1. Unmatched		
2a. Insufficient securities, start of chain		
2b. Insufficient securities, next in chain		
3. Late receipts, unable to split in time		
4. Insufficient funds		
Total		
For reference: Deliveries settled on ISD		

Below is an explanation of the four immediate causes of fails.

Unmatched

1. Settlement instructions have not matched in time for settlement.
2. Delivering party has insufficient securities to deliver. There could be a variety of reasons for this.

Insufficient securities, start of chain

- 2.a. The SSR prohibits naked short selling and specifies that if securities are not delivered within 4 business days of ISD (i.e., with a T+2 settlement cycle, at the latest T+6 or SD+4) the CCP must initiate buy-in.⁸ Insufficient securities to deliver on T+2 ISD could be due to a number of reasons, including borrowed securities not arriving on time.

Insufficient securities, next in chain

- 2.b. Delivering party is awaiting an incoming delivery which has not settled on ISD and is therefore failing the onward delivery to a

⁸ REGULATION (EU) No 236/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 March 2012 on short selling and certain aspects of credit default swaps

waiting party on the same day or on following days. The effect of one fail is transmitted and increases the total value of fails in the system. This amplification is a structural feature of CCP clearing as every fail by a party upstream to deliver to a CCP causes one or more fails by the CCP delivering to the waiting party or parties downstream.

Late receipts, unable to split in time

3. Delivering party receives securities too late to be able to make an onward delivery on the same day before the CSD's deadline. The shapes of delivery obligations to the CCP are different to the shapes of obligations which are due to be delivered by the CCP. If an incoming delivery is smaller than an outgoing delivery - for example, if the CCP already has 30 units of a security available but needs to wait for a further 50 units to make an onward delivery of 80, then the CCP will fail on its onward delivery. Almost all CSDs have an auto-partialling function which will avoid this kind of problem and optimise settlement by delivering the available amount in the delivering account, in this case, 30 units. The Swedish CSD has a shaping service for bonds but no auto partialling service for equities. But in any case, many local market participants do not see sufficient benefit to justify making their own IT investment to cater for auto-partialling.

In the absence of automation at the CSD level, in the example above the CCP has to cancel the original instruction of 80 units and split it into two instructions: one of 30 units that can settle, and one of 50 units that awaits settlement. Towards the end of the day, the volume may be too big to complete this manual operation in time, as every affected counterparty must also agree to act upon the changes and instruct the CSD accordingly. Agent banks operating omnibus accounts at the CSD typically withhold deliveries of clients with back-to-back transactions until the incoming securities have been received, in order to avoid using one client's securities for another client's delivery. This control often results in late deliveries to the CCP, impeding the CCP's ability to maximise onward deliveries through splitting.

Insufficient funds

4. The receiving party has insufficient funds. A firm is able to calculate its net funding needs on ISD based on its anticipated receipts and deliveries but it cannot anticipate the impact of fails on its cash management. If securities have been paid for but the onward delivery cannot settle, the firm's subsequent receipts against payment might fail due to insufficient funds. That having been said, cash is fungible and represents less of a challenge than securities which are issue-specific.

Making data available showing the distribution of fails due to the four main causes, as shown in Exhibit 4, will illustrate where the focus needs to be placed to make the greatest progress on improving settlement efficiency.

More needs to be known about the business reasons and practices that lead to there being a pattern of insufficient securities at the source of the fail-chain, why deliveries are made late, and why there could be a lack of funds. This will require more quantitative analysis such as identifying back-to-back chains and separate analysis of against-payment and free-of-payment transactions. Qualitative root cause analysis is also needed.

For example, a number of business practices could all possibly lead to failed deliveries:

- shortage of securities to deliver at the end of futures contracts;
- illiquid stocks without the possibility of borrowing;
- a large order being executed over a number of days and only delivered on completion;

- a continuous pair-off across settlement dates that a party offers as a fail-evasion service to its clients;
- participants gaming the system where the cost of stock borrowing is higher than the cost of the Euroclear fine;
- important corporate events and trading activity which cause settlement rates to fall on specific days.

Measures to prevent settlement fails

There are specific measures to counter every of the four main causes of settlement fails. Some of these measures may not be available in the Swedish market for some time.

Euroclear is building a new system scheduled to be implemented in 2018, and has informed market participants that it will not invest in building on its current system to provide efficiency-enhancing features. Many market participants likewise do not see the benefits of investing in changes to their technology to accommodate processes which could eliminate fails. Ultimately, introducing a change that requires investment should be subject to scrutiny of the marginal costs and the marginal benefits - for the market as a whole, rather than looking at individual participants. Costs should be proportionate to benefits.

It should be noted that the implementation of the SSR, whereby CCPs are required to initiate buy-in on participants who fail to settle on SD+4, already provides incentives for timely settlement. CSDR likewise gives a grace period before invoking buy-ins to allow sufficient time for sellers to arrange fails coverage.

It is noteworthy that Euroclear's rules already specify the requirement to settle on time; they need to be enforced in an effective manner: for example, to avoid over-borrowing and to identify the origin of a chain of fails.

The following excerpt is from the Euroclear Participant Terms and Conditions:

3.2.3 Security loans

It is up to the clearing member, by security loans or other means, to ensure that the deliveries registered by the clearing member can be executed on settlement day.

There might be challenges in both the demand and supply for security loans. On the demand side, it would be useful to identify why the originator of a fail does not borrow securities to cover and how that party could be incentivised to do so. On the supply side, the Rules give exemption to participants in the event of the "inaccessibility of the securities required". We understand that the largest and most frequent fails are in fact in liquid stocks. If Euroclear ranked the top stocks that fail by value at the source of fails, it would give visibility of the cases where there is a genuine lack of supply.

Recommendation 7

The CSD should examine why the requirement in its terms and conditions that members should deliver securities on intended settlement day, such as the use of security loans, has been ineffective.

Exhibit 5: Measures to prevent settlement fails

Cause of fail	Measure	Requires action by
1. Unmatched	Incentive for early submission of instruction and provision of hold and release function to separate matching from settlement.	CSD
	Automated instruction by the CCP to the CSD on behalf of clearing participants under power of attorney. Some firms are unwilling to make IT changes to accommodate this practice, as there has never been a precedent in the market.	CCP Account holders
2a. Insufficient securities, start of chain	CSD prioritises deliveries of available positions to CCPs. This is a feature of TARGET2-Securities (T2S).	CSD
	CSD to enforce fail coverage requirement which is already in its rule book.	CSD Account holders
	CSD to introduce automatic securities borrowing, which must be accompanied by measures to avoid over-borrowing.	CSD Account holders
2b. Insufficient securities, next in chain	CSD to implement automatic partialling. ⁹ This is available in T2S and a number of CSDs.	CSD Account holders
3. Late receipts, unable to split in time	Agent banks to accelerate delivery of securities to CCP out of omnibus accounts. Automated hold and release to help agent banks control back-to-back transactions out of omnibus accounts.	Agent banks CSD
	CCP instruct CSD on behalf of clearing participants under power of attorney to cancel original instructions and replace with split instructions. ¹⁰ Some firms are unwilling to make IT changes to accommodate this practice.	CCP Account holders

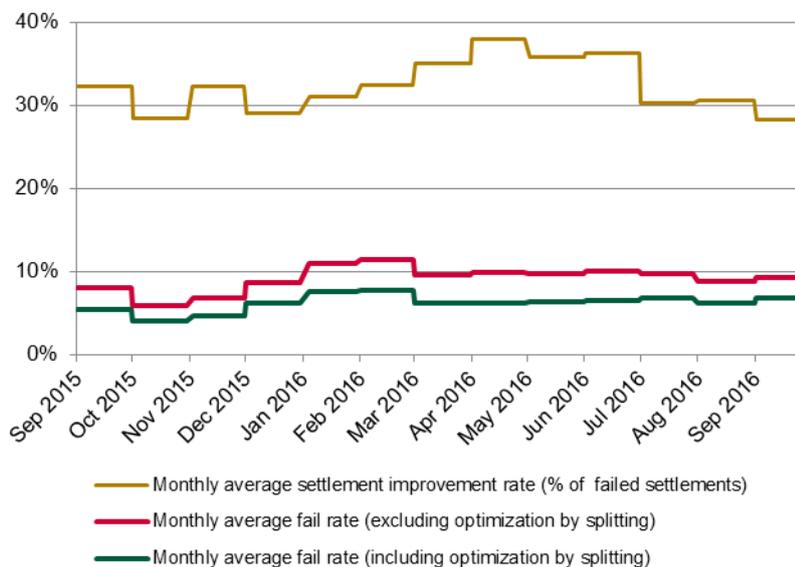
⁹ *Partialling* is settling one unique instruction in multiple phases until the original settlement instruction is fully settled. For partial settlements, the account holder keeps the original instruction. Confirmations / reports on settlement are made on parts of the original quantity and amount. Partial settlements take place on ISD and later. Partialling is typically an automatic feature offered by CSDs. Partialling is already a feature in T2S and is expected to be made compulsory for all CSDs under Articles 10 and 23 of the CSDR Level 2 technical standards. Some CSDs have another process called *sizing or shaping*, in which a large transaction is divided into a number of smaller ones that would be easier to settle, which can be done after the instruction has been matched and before ISD.

¹⁰ *Splitting* is replacing an existing instruction by two instructions to allow partial settlement of the original instruction. At the time of the split, no settlement has taken place. The account holder cancels the original instruction in the CSD and replaces it with two new instructions, one for the number of securities that can be delivered. Each new instruction will have its own unique reference to identify the instruction but for reconciliation purposes, it will also contain a reference back to the original (cancelled) instruction. Split settlements take place on ISD and later. Splitting is typically a manual process used by account holders and CCPs.

Cause of fail	Measure	Requires action by
	CSD's final batch run to auto-partial and deliver all securities remaining in CCP's account.	CSD
4. Insufficient funds	CSD to provide pre-settlement report to aid members' cash management and funding.	CSD
	CSD to implement automatic partialling.	CSD
	Central bank to implement auto-collateralisation whereby the securities in the account can be used to secure credit extension to the account holder.	Central bank Account holders CSD

EuroCCP has an ongoing program to improve settlement efficiency by splitting large-value deliveries into smaller denominations. Through splitting, the value of fails has consistently been reduced by over 30%.

Exhibit 6: Settlement efficiency – Sweden

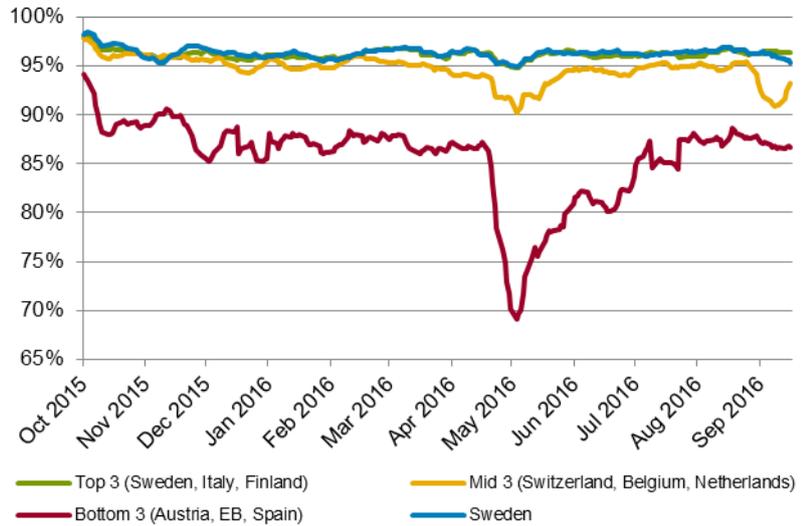


At present, due to the manual nature of the process and in order to avoid unnecessary intervention, splitting is done towards the end of the settlement day and cannot always be accomplished before the CSD's settlement deadline. Many CSDs have implemented automatic partialling to ensure that all available positions are delivered. As already mentioned, we recommend that Euroclear undertakes this development with urgency, and at a minimum introduce a last processing cycle for CCPs which achieves similar results as auto partialling

Sweden in perspective

EuroCCP settles equities in 18 markets across Europe. Sweden ranks in the top 3 markets for settlement efficiency.

Exhibit 7: Settlement efficiency (in number of settlement instructions)



In our experience, settlement efficiency is highly influenced by the processing method employed by the settlement system. The most obvious example is Monte Titoli, the CSD in Italy, where almost immediately after its migration to T2S in September 2015, EuroCCP's overnight securities position went from a daily average of EUR 14.8 million to near zero. There were no changes in the client base or trading volume in this period that could have caused this dramatic improvement, which has been sustained since.

Conclusion

The evolution of settlement fail rates in Sweden over time needs to be interpreted along with the market changes resulting in different values and volumes of settlement and fails in each period: before the introduction of CCP clearing, after CCP clearing, and after conversion from T+3 to T+2 settlement.

There needs to be a comparison of the value of the fails and not just the percentage of fails in each period. The total value of settlement obligations could have changed significantly over time. An economic impact analysis requires differentiating the change in settlement efficiency and the effect of CCP clearing which eliminates over 70% of the value of trades that require settlement.

The move to T+2 has removed one business day to prepare for settlement, a stress for the intermediated and increasingly international investment industry.

With the combination of these factors, and taking into consideration that Sweden's fail rate, among European countries, is one of the lowest in the experience of a pan-European CCP, a return to 0.5% fails is unlikely to make economic sense in cost/benefit terms.

Root cause analysis is needed to control the risk that valuable resources are spent on ineffective measures.

CCP clearing has eliminated over 99% of the number of trades that would otherwise have required individual settlement, thereby delivering tremendous savings to market participants in settlement agent and CSD processing fees. Few market participants would probably support reverting to non-netted, trade-by-trade settlement in exchange for a 0.5% fail rate, even if this measure is feasible.

Recommendations and next steps

EuroCCP fully supports continued pursuit of operational efficiency. Below is a recap of the recommendations offered in this paper. We encourage stakeholders to seek agreement on the desirability, feasibility and implementation timing of each recommendation.

- Recommendation 1** The methodology in calculating efficiency ratios should be transparent and must be explained in such a way as to be replicable by the participants. An early adoption of CSDR technical standards in the definition and monitoring of fails would be desirable.
- Recommendation 2** If reversing certain changes in the market that have taken place during the past nine years, such as the introduction of CCP clearing and the move to T+2, is impractical or undesirable, then a more appropriate benchmark settlement rate instead of the rate of 2007 should be used.
- Recommendation 3** The CSD should implement a) automatic partialling or b) a last processing cycle for CCPs to maximise possible settlement, and c) measures that will achieve the same or similar results as a power of attorney to instruct split settlement.
- Recommendation 4** Root cause analysis needs to trace typical chains of fails and cure it at its source, by identifying circumstances and participant processes which create blockages. A CSD is in the unique position to trace a chain of fails to its source as it has complete visibility of all transactions between accounts in its settlement system.
- Recommendation 5** Fails and the duration of fails in bilateral transactions that are not subject to buy-in should be examined and root causes tackled. These include transactions between market participants and between interoperating CCPs.
- Recommendation 6** Euroclear should stop fining parties in the middle of back-to-back transactions. There should not be fines that do not serve to increase the settlement rate. Euroclear should at a minimum stop fining CCPs, as it only creates administrative burden.
- Recommendation 7** The CSD should examine why the requirement in its terms and conditions that members should deliver securities on intended settlement day, such as the use of security loans, has been ineffective.

Appendices

Appendix 1: Excerpt from CSD Regulation of text related to settlement efficiency

CHAPTER II, Settlement periods

Article 5, Intended settlement date

1. Any participant in a securities settlement system that settles in that system on its own account or on behalf of a third party transactions in transferable securities, money-market instruments, units in collective investment undertakings and emission allowances shall settle such transactions on the intended settlement date.
2. As regards transactions in transferable securities referred to in paragraph 1 which are executed on trading venues, the intended settlement date shall be no later than on the second business day after the trading takes place. That requirement shall not apply to transactions which are negotiated privately but executed on a trading venue, to transactions which are executed bilaterally but reported to a trading venue or to the first transaction where the transferable securities concerned are subject to initial recording in book-entry form pursuant to Article 3(2).
3. The competent authorities shall ensure that paragraph 1 is applied.

The authorities competent for the supervision of trading venues shall ensure that paragraph 2 is applied.

CHAPTER III, Settlement discipline

Article 6, Measures to prevent settlement fails

1. Trading venues shall establish procedures that enable the confirmation of relevant details of transactions in financial instruments referred to in Article 5(1) on the date when the transaction has been executed.
2. Notwithstanding the requirement laid down in paragraph 1, investment firms authorised pursuant to Article 5 of Directive 2014/65/EU shall, where applicable, take measures to limit the number of settlement fails.

Such measures shall at least consist of arrangements between the investment firm and its professional clients as referred to in Annex II to Directive 2014/65/EU to ensure the prompt communication of an allocation of securities to the transaction, confirmation of that allocation and confirmation of the acceptance or rejection of terms in good time before the intended settlement date.

ESMA shall, in close cooperation with the members of the ESCB, issue guidelines in accordance with Article 16 of Regulation (EU) No 1095/2010 on the standardised procedures and messaging protocols to be used for complying with the second subparagraph of this paragraph.

3. For each securities settlement system it operates, a CSD shall establish procedures that facilitate the settlement of transactions in financial instruments referred to in Article 5(1) on the intended settlement date with a minimum exposure of its participants to counterparty and liquidity risks and a low rate of settlement fails. It shall promote early settlement on the intended settlement date through appropriate mechanisms.

4. For each securities settlement system it operates, a CSD shall put in place measures to encourage and incentivise the timely settlement of transactions by its participants. CSDs shall require participants to settle their transactions on the intended settlement date.
5. ESMA shall, in close cooperation with the members of the ESCB, develop draft regulatory technical standards to specify the measures to be taken by investment firms in accordance with the first subparagraph of paragraph 2, the details of the procedures facilitating settlement referred to in paragraph 3 and the details of the measures to encourage and incentivise the timely settlement of transactions referred to in paragraph 4.

ESMA shall submit those draft regulatory technical standards to the Commission by 18 June 2015.

Power is delegated to the Commission to adopt the regulatory technical standards referred to in the first subparagraph in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.

Article 7, Measures to address settlement fails

1. For each securities settlement system it operates, a CSD shall establish a system that monitors settlement fails of transactions in financial instruments referred to in Article 5(1). It shall provide regular reports to the competent authority and relevant authorities, as to the number and details of settlement fails and any other relevant information, including the measures envisaged by CSDs and their participants to improve settlement efficiency. Those reports shall be made public by CSDs in an aggregated and anonymised form on an annual basis. The competent authorities shall share with ESMA any relevant information on settlement fails.
2. For each securities settlement system it operates, a CSD shall establish procedures that facilitate settlement of transactions in financial instruments referred to in Article 5(1) that are not settled on the intended settlement date. These procedures shall provide for a penalty mechanism which will serve as an effective deterrent for participants that cause settlement fails.

Before establishing the procedures referred to in the first subparagraph, a CSD shall consult the relevant trading venues and CCPs in respect of which it provides settlement services.

The penalty mechanism referred to in the first subparagraph shall include cash penalties for participants that cause settlement fails ('failing participants'). Cash penalties shall be calculated on a daily basis for each business day that a transaction fails to be settled after its intended settlement date until the end of a buy-in process referred to in paragraph 3, but no longer than the actual settlement day. The cash penalties shall not be configured as a revenue source for the CSD.

3. Without prejudice to the penalty mechanism referred to in paragraph 2 and the right to bilaterally cancel the transaction, where a failing participant does not deliver the financial instruments referred to in Article 5(1) to the receiving participant within 4 business days after the intended settlement date ('extension period') a buy-in process shall be initiated whereby those instruments shall be available for settlement and delivered to the receiving participant within an appropriate time-frame.

Where the transaction relates to a financial instrument traded on an SME growth market the extension period shall be 15 days unless the SME growth market decides to apply a shorter period.

4. The following exemptions from the requirement referred to in paragraph 3 shall apply:
 - a. based on asset type and liquidity of the financial instruments concerned, the extension period may be increased from four business days up to a maximum of seven business days where a shorter extension period would affect the smooth and orderly functioning of the financial markets concerned;
 - b. for operations composed of several transactions including securities repurchase or lending agreements, the buy-in process referred to in paragraph 3 shall not apply where the timeframe of those operations is sufficiently short and renders the buy-in process ineffective.
5. Without prejudice to paragraph 7, the exemptions referred to in paragraph 4 shall not apply in relation to transactions for shares where those transactions are cleared by a CCP.
6. Without prejudice to the penalty mechanism referred to in paragraph 2, where the price of the shares agreed at the time of the trade is higher than the price paid for the execution of the buy-in, the corresponding difference shall be paid to the receiving participant by the failing participant no later than on the second business day after the financial instruments have been delivered following the buy-in.
7. If the buy-in fails or is not possible, the receiving participant can choose to be paid cash compensation or to defer the execution of the buy-in to an appropriate later date ('deferral period'). If the relevant financial instruments are not delivered to the receiving participant at the end of the deferral period, cash compensation shall be paid.

Cash compensation shall be paid to the receiving participant no later than on the second business day after the end of either the buy-in process referred to in paragraph 3 or the deferral period, where the deferral period was chosen.
8. The failing participant shall reimburse the entity that executes the buy-in for all amounts paid in accordance with paragraphs 3, 4 and 5, including any execution fees resulting from the buy-in. Such fees shall be clearly disclosed to the participants.
9. CSDs, CCPs and trading venues shall establish procedures that enable them to suspend in consultation with their respective competent authorities, any participant that fails consistently and systematically to deliver the financial instruments referred to in Article 5(1) on the intended settlement date and to disclose to the public its identity only after giving that participant the opportunity to submit its observations and provided that the competent authorities of the CSDs, CCPs and trading venues, and of that participant have been duly informed. In addition to consulting before any suspension, CSDs, CCPs and trading venues shall notify, without delay, the respective competent authorities of the suspension of a participant. The competent authority shall immediately inform the relevant authorities of the suspension of a participant.

Public disclosure of suspensions shall not contain personal data within the meaning of point (a) of Article 2 of Directive 95/46/EC.
10. Paragraphs 2 to 9 shall apply to all transactions of the financial instruments referred to in Article 5(1) which are admitted to trading or traded on a trading venue or cleared by a CCP as follows:
 - a. for transactions cleared by a CCP, the CCP shall be the entity that executes the buy-in according to paragraphs 3 to 8;

- b. for transactions not cleared by a CCP but executed on a trading venue, the trading venue shall include in its internal rules an obligation for its members and its participants to apply the measures referred to in paragraphs 3 to 8;
- c. for all transactions other than those referred to in points (a) and (b) of this subparagraph, CSDs shall include in their internal rules an obligation for their participants to be subject to the measures referred to in paragraphs 3 to 8.

A CSD shall provide the necessary settlement information to CCPs and trading venues to enable them to fulfil their obligations under this paragraph.

Without prejudice to points (a), (b) and (c) of the first subparagraph, CSDs may monitor the execution of buy-ins referred to in those points with respect to multiple settlement instructions, on the same financial instruments and with the same date of expiry of the execution period, with the aim of minimising the number of buy-ins to be executed and thus the impact on the prices of the relevant financial instruments.

11. Paragraphs 2 to 9 shall not apply to failing participants which are CCPs.
12. Paragraphs 2 to 9 shall not apply if insolvency proceedings are opened against the failing participant.
13. This Article shall not apply where the principal venue for the trading of shares is located in a third country. The location of the principal venue for the trading of shares shall be determined in accordance with Article 16 of Regulation (EU) No 236/2012.
14. The Commission shall be empowered to adopt delegated acts in accordance with Article 67 to specify parameters for the calculation of a deterrent and proportionate level of the cash penalties referred to in the third subparagraph of paragraph 2 based on asset type and liquidity of the financial instrument and type of transaction that shall ensure a high degree of settlement discipline and the smooth and orderly functioning of the financial markets concerned.
15. ESMA shall, in close cooperation with the members of the ESCB, develop draft regulatory technical standards to specify:
 - a. the details of the system monitoring settlement fails and the reports on settlement fails referred to in paragraph 1;
 - b. the processes for collection and redistribution of cash penalties and any other possible proceeds from such penalties in accordance with paragraph 2;
 - c. the details of operation of the appropriate buy-in process referred to in paragraphs 3 to 8, including appropriate time-frames to deliver the financial instrument following the buy-in process referred to in paragraph 3. Such time-frames shall be calibrated taking into account the asset type and liquidity of the financial instruments;
 - d. the circumstances under which the extension period could be prolonged according to asset type and liquidity of the financial instruments, in accordance with the conditions referred to in point (a) of paragraph 4 taking into account the criteria for assessing liquidity under point (17) of Article 2(1) of Regulation (EU) No 600/2014;
 - e. type of operations and their specific time-frames referred to in point (b) of paragraph 4 that renders buy-in ineffective;

- f. a methodology for the calculation of the cash compensation referred to in paragraph 7;
- g. the conditions under which a participant is deemed consistently and systematically to fail to deliver the financial instruments as referred to in paragraph 9; and
- h. the necessary settlement information referred to in the second subparagraph of paragraph 10.

ESMA shall submit those draft regulatory technical standards to the Commission by 18 June 2015.

Power is delegated to the in accordance with Articles 10 to 14 of Regulation (EU) No 1095/2010.

Article 8, Enforcement

1. The competent authority of the CSD that operates the securities settlement system, the relevant authority responsible for the oversight of the securities settlement system concerned as well as the competent authorities for the supervision of trading venues, investment firms and CCPs shall be competent for ensuring that Articles 6 and 7 are applied by the institutions subject to their supervision and for monitoring the penalties imposed. Where necessary, the respective competent authorities shall cooperate closely. Member States shall inform ESMA about the designated competent authorities that are part of the supervision structure at the national level.
2. In order to ensure consistent, efficient and effective supervisory practices within the Union in relation to Articles 6 and 7 of this Regulation, ESMA may, in close cooperation with the members of the ESCB, issue guidelines in accordance with Article 16 of Regulation (EU) No 1095/2010.
3. An infringement of the rules under this Title shall not affect the validity of a private contract on financial instruments or the possibility for the parties to enforce the provisions of a private contract on financial instruments.

Appendix 2: ECSDA studies in settlement efficiency

As all securities settlement is effected via electronic book entry in central securities depositories, the European Central Securities Depositories Association (ECSDA) has carried out a number of studies on settlement efficiency:

- 2009 September, Market Discipline Regimes in Europe
http://ecsd.eu/wp-content/uploads/2014/07/2009_09_ECSDA_Market_Discipline_Report_WG3.pdf
- 2010 November, Presentation on settlement discipline at the European Central Bank's Contact Group for Euro Securities Infrastructures (COGESI)
https://www.ecb.europa.eu/paym/groups/pdf/ECSDA_settlement_discipline.pdf?46f278f7739757be34d144971f6eb95
- 2011 July, Survey on matching and settlement failures discipline measures
http://ecsd.eu/wp-content/uploads/2014/07/2011_07_07_ECSDA_Fails_Report.pdf
- 2012 June, Status Report on Matching Harmonisation
http://ecsd.eu/wp-content/uploads/2014/07/2012_06_06_ECSDA_Matching_Implementation_Report.pdf
- 2012 September, Statistical Exercise on Matching and Settlement Efficiency
http://ecsd.eu/wp-content/uploads/2014/07/2012_09_18_ECSDA_Statistical_Exercise.pdf
- 2012 Q1, Comparison of the ECSDA survey on fails with that carried out by the European Association of CCP Clearing Houses (EACH), What happens when transactions fail to settle? International Securities Services Magazine, Page 24-25
<http://iss-mag.com/wp-content/uploads/2015/07/ISS-MAG-Q1-2012webaaa.pdf>

In more recent years, ECSDA have not repeated the statistical exercise because the CSD Regulation requirements are expected to change the way data is collected, in particular the way fails statistics are compiled. ECSDA methodology does not provide the same level of granularity as what will be required under the CSD Regulation.