

Out-of-cycle assessment of ASX Clear Pty Ltd and ASX Settlement Pty Ltd: Operational Risk Standard

March 2025

Following the CHES batch settlement failure incident (CHES incident) on 20 December 2024, the Reserve Bank of Australia (RBA) has carried out an out-of-cycle assessment of ASX Clear Pty Ltd (ASX Clear) and ASX Settlement Pty Ltd (ASX Settlement) against the RBA's Financial Stability Standard for Operational Risk.¹ The RBA conducts an annual assessment of the four clearing and settlement facilities within the ASX Group against the RBA's Financial Stability Standards (FSS). Assessments are generally published in September or October each year. Due to the seriousness of the CHES incident, the RBA has decided, for the first time, to revise its assessment against one of the FSS outside the usual annual cycle.

The Payments System Board has endorsed an immediate downgrade of ASX Clear and ASX Settlement to *not observed* in relation to the Operational Risk standard. The RBA has conducted this Assessment in accordance with its 'Approach to Supervising and Assessing Clearing and Settlement Facility Licensees'.² The downgrade applies to both ASX Clear and ASX Settlement as both are reliant on CHES as critical infrastructure for their respective operations.

The ratings for the ASX clearing and settlement facilities, as adjusted following this out-of-cycle assessment are presented in Table 1.

Table 1: March 2025 Ratings of FSS Observance*

Standard	ASX Clear	ASX Clear (Futures)**	ASX Settlement	Austraclear**
Operational Risk (CCP 16/SSF 14)	Not observed (↓)	Partly observed	Not observed (↓)	Partly observed

* Arrows in brackets indicate the ratings change from the 2024 ASX Assessment: a down arrow indicates a downgrade.

** ASX Clear (Futures) and Austraclear ratings as at 2024 ASX Assessment. They have not been assessed in March.

- ¹ *Financial Stability Standards for Central Counterparties and Financial Stability Standards for Securities Settlement Facilities*.
- ² See RBA (2024), ['The Reserve Bank's Approach to Supervising and Assessing Clearing and Settlement Facility Licensees'](#), 6 December.

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1. Key Developments

1.1 December 2024 Incident

Due to an ASX technology issue in CHESSE, batch settlement of equity market transactions failed on Friday, 20 December 2024. The settlement of the failed batch transactions was rescheduled to Monday, 23 December when settlement occurred successfully. This is the first time that a full settlement batch of ASX equity transactions needed to be re-scheduled to a later day.

The overarching cause was the CHESSE memory allocation being insufficient for the number of settlement participants on 20 December 2024. This was due to incorrect logic in the CHESSE code for the calculation of the number of settlement participants. The incorrect logic has existed since 2014. One week prior to the incident, a settlement participant resigned. This caused the number of settlement participants to fall below a specific threshold at which point the memory allocation was substantially reduced. On 20 December, the number of settlement participants with settlement obligations for that day was more than could be accommodated by the reduced memory allocation. This caused a step in the settlement process to fail.

ASX was unable to resolve the issue on 20 December 2024 and did not have planned and fully tested alternative settlement arrangements (contingency arrangements) for this scenario. The only option was to defer and reschedule settlement of the batch to the next business day. Technical functionality was available to do this. However, there were no established plans which had been tested with participants for the use of this process across the full settlement batch. Communication with stakeholders, and the regulators, was not proactive or timely and added to the uncertainty of whether settlement would be completed by the end of the day or rescheduled.

ASX teams worked to resolve the issue over the weekend of 21–22 December: the root cause was identified on the morning of Sunday, 22 December and a fix was deployed on the Sunday afternoon.

1.2 CHESSE Replacement

In November 2022, ASX announced it was pausing the CHESSE Replacement Program to reassess all its aspects. ASX subsequently announced the solution design and selected vendors for the new CHESSE Replacement in November 2023. CHESSE Replacement will occur in two phases. The first release, expected to go live in the first half of 2026, will provide a new messaging interface for Approved Market Operators. It will also replace clearing functionality, removing the current capacity constraints. The second release (the settlement and sub-register replacement) is estimated for 2029.

Until CHESSE Replacement is completed it is critical that current CHESSE is operated and supported in a manner that promotes safety and stability in the Australian financial system. This has been highlighted in the RBA's 2023 and 2024 Assessments of the ASX and in letters of expectations to ASX from the RBA and the Australian Securities and Investments Commission (ASIC).

In a public letter dated 15 December 2022³, ASX gave the RBA an undertaking to “maintain the resources and capabilities to support the ongoing operation, maintenance and investment in current CHES to ensure it will continue to service Australia’s cash equities markets reliably until CHES replacement goes live.”

Consistent with a requirement from ASIC, ASX published a Special Report on the CHES system in 2023. This Report was the subject of independent assurance. The Special Report included a CHES Roadmap that details the initiatives related to the support and maintenance of the CHES system. The CHES Roadmap has subsequently been updated in accordance with a recommendation made in the RBA’s 2023 ASX Assessment. The RBA expects ASX to review the initiatives on the CHES Roadmap, in light of the incident, to assess whether they remain appropriate to comprehensively prevent, detect and mitigate risks in the CHES system.

3 See ASX Media Release, 15 December 2022: [‘ASX acknowledges ASIC and RBA requirements related to CHES](#)

2. Assessment

2.1 Summary

The incident has revealed serious issues of concern regarding ASX's resourcing and contingency arrangements for current CHES. Both warrant immediate attention given the potential for delayed settlement to create liquidity stress among participants and undermine confidence in the financial system. The incident occurred against the backdrop of other operational risks the RBA has highlighted over recent assessments. This is consistent with a rating of *not observed* for the Operational Risk standard.

2.1.1 Resourcing

The FSS require ASX to ensure it can reliably access and utilise well-trained and competent personnel, as well as technical and other resources. These arrangements should be designed to ensure that all key systems are operated securely and reliably in all circumstances. The incident has raised concerns about the level and capacity of ASX's resourcing for the maintenance and support of CHES.

During the incident, ASX only had one core engineering team working on the issue and progressing towards a solution. There was no capacity to replace members of the core engineering team during breaks. On the morning of Saturday, 21 December, investigation of the root cause was paused for a four-hour period while the core engineering team took a break. As a result, the RBA observed limited progress on identification or resolution throughout most of 21 December. ASX's core engineering team was unable to solve the issue after more than 24 hours. Twenty-eight hours after the incident was first detected, ASX sought additional external resources. The appropriate relevant third-party specialist engineer was unavailable until the following morning, approximately 41 hours after the incident was detected. This specialist engineer ultimately helped identify the root cause and resolve the issue. External support should have been sought more promptly.

Recommendation.

- (i) By 30 April, ASX should:
 - a. outline to the regulators how it plans to strengthen its resourcing and third-party support arrangements considering the 20 December 2024 CHES batch settlement failure incident and ASX's existing obligations and commitment to the public and regulators. This should include an analysis of how the strengthened arrangements will be designed to ensure that all key systems are operated securely and reliably in all circumstances. It will include details on the level and capabilities of the resources that will support the CHES system.
 - b. communicate publicly its high-level plans for improving the levels of resources and capabilities to support the ongoing operation, maintenance and investment in the current CHES.
- (ii) ASX should implement its plans to strengthen its resourcing and third-party support arrangements on a timeline agreed with the RBA.

2.1.2 Contingency arrangements

Under the FSS, ASX must have a business continuity plan designed to ensure that critical information technology systems can resume operations within two hours following disruptive events and that settlement is completed by the end of the day of the disruption.

The incident revealed that ASX does not have recognised and tested contingency arrangements in place for failure at each step of the CHES batch settlement process. Contingency arrangements exist only in respect of a failure at the point of submission of the batch into the Reserve Bank Information and Transfer System (RITS); this is only one stage in a multi-stage process. These contingency arrangements were developed by the RBA and are used as contingency arrangements for some other systems that settle through RITS. While ASX was ultimately able to reschedule the batch to the next business day, this was not a procedure that had been regularly tested with, and communicated to, participants.

Recommendation.

- (i) By 30 April 2025, ASX should outline option(s) and its plans for implementing contingency arrangements for the current CHES. The option(s) should ensure there are contingency arrangements that are designed to enable settlement to be completed by the end of the day in the event of failure of any of the seven steps of the batch settlement process outlined in 'CHES Batch Settlement Operational Overview'.⁴
- (ii) ASX should implement contingency arrangements for the current CHES on a timeline agreed with the RBA.

4 Available at: ['CHES Batch Settlement Operational Overview'](#).