2012/13 Assessment of ASX Clearing and Settlement Facilities

September 2013

Contents

ISSN 2201-1226 (Online)

1. Introduction and Executive Summary

In accordance with its responsibilities under the *Corporations Act 2001*, the Reserve Bank (the Bank) carries out periodic assessments of how well each clearing and settlement (CS) facility licensee is complying with applicable Financial Stability Standards (FSS) determined by the Bank and the more general obligation to do all other things necessary to reduce systemic risk.[1] The Bank's findings are reported to the Minister with portfolio responsibility for Corporations Law, and since 2007 have also been published on the Bank's website.

This report presents the Bank's Assessment of the four licensed CS facilities in the ASX Group (ASX) – the two central counterparties (CCPs), ASX Clear Pty Limited (ASX Clear) and ASX Clear (Futures) Pty Limited (ASX Clear (Futures)); and the two securities settlement facilities (SSFs), ASX Settlement Pty Limited (ASX Settlement) and Austraclear Limited (Austraclear) – for the year ending 30 June 2013.[2] This is the first assessment of these facilities against new FSS determined by the Bank in December 2012.[3]

All four facilities were found to have either observed or broadly observed all relevant requirements under the FSS in the Assessment period (Section 2 and Appendix B). Accordingly, it is the Bank's assessment that the facilities have conducted their affairs in a way that causes or promotes overall stability in the Australian financial system. The Bank has, however, made a number of recommendations to strengthen the ASX facilities' observance with the relevant FSS. The Bank also notes that ASX has governance arrangements in place that motivate and encourage continuous improvement, which contributes to the ASX facilities' compliance with the obligation to do all other things necessary to reduce systemic risk.

The new FSS are aligned with the requirements in the *Principles for Financial Market Infrastructures* (the Principles), developed by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) that address matters relevant to financial stability. The Bank's Assessment applies the rating system used in the assessment methodology that supports the Principles.[4] The Assessment will also form the basis for future assessments against the Principles.

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1 Until June 2013, the Bank was obliged to carry out such assessments annually. A recent legislative amendment restricts the obligation to carry out annual assessments to CS facility licensees prescribed by regulation. No CS facility licensee has yet been prescribed for annual assessment. The Bank has nevertheless clarified in a policy statement that it intends to continue to carry out assessments of the ASX CS facility licensees on an annual basis; see <http://www.rba.gov.au/payments-system/policy-framework/frequency-of-assessments.html>.

2 In this report, the terms CS facility and CS facility licensee are used interchangeably.

3 The new FSS are available at <http://www.rba.gov.au/payments-system/clearing-settlement/standards/index.html>. Transitional relief was granted for a subset of the FSS, covering matters related to recovery and resolution, account segregation and portability, and liquidity risk. These standards will come into force on 31 March 2014.

4 See <http://www.bis.org/publ/cpss101.htm> for the Principles and related Assessment Methodology and Disclosure Framework.

1.1 Overview of Activity in the ASX Clearing and Settlement Facilities

In 2012/13, price volatility was generally lower for markets cleared and settled by the ASX facilities. Daily average trading value fell for both debt securities settled by Austraclear and cash equities, while the number of derivatives contracts traded on ASX 24 continued to grow. Margins held at both the ASX CCPs increased in 2012/13, although peak levels remained well below those of 2008.

During the Assessment period, all ASX CS facilities operated in accordance with targets for availability, capacity utilisation and peak usage. Indeed, all four facilities recorded 100 per cent availability throughout the period. Some minor systems and processing issues occurred, but these were resolved with only minor impacts on operations and appropriate remedial action was taken to ensure no recurrence. Also during the period, Austraclear further progressed an ongoing project discussed in the 2011/12 Assessment to insource development and support for its core system, EXIGO.

1.2 New Products and Services

The Bank's 2011/12 Assessment identified some important strategic initiatives in train at ASX. The three main initiatives identified – over-the-counter (OTC) derivatives clearing, centralised collateral management and retail trading of Commonwealth Government securities (CGS) – were developed further during the period under review, and have now been launched.

- On 1 July 2013, ASX launched its interdealer clearing service for Australian dollar-denominated over-the-counter (OTC) interest rate derivatives. ASX clears standardised interest rate swaps and overnight indexed swaps. These trades are negotiated bilaterally, and submitted for central clearing to ASX Clear (Futures). Nine banks have become Foundation Customers, and under the terms of the Foundation Customer Program all are expected to be admitted as participants by 1 January 2014.
- The centralised collateral management service, ASX Collateral, has been developed jointly with Clearstream, a Luxembourg-based financial market infrastructure provider. The service automates the optimisation and allocation of collateral, initially in respect of securities held in Austraclear. ASX Collateral was launched in late July 2013, with 12 participants having signalled their intention to join the service.
- ASX launched a retail trading, clearing and settlement service for depository interests in CGS in late May 2013. These depository interests are traded on ASX Trade, novated to ASX Clear and settled in ASX Settlement, with a three-day settlement cycle. Since launch, trading activity on the new platform has been limited.

As encouraged in the 2011/12 Assessment, ASX remained in close dialogue with the Bank as these projects progressed, providing the Bank with the opportunity to ensure that the design of the new services was consistent with the relevant facilities' ongoing observance of the FSS. Prior to the launch of the OTC derivatives and collateral management services, the Bank carried out detailed assessments relative to the FSS. These have been incorporated into the detailed assessments of ASX Clear (Futures) and Austraclear, and the key matters considered are discussed in Section 4.

1.3 Material Developments and Assessment

As foreshadowed in the 2011/12 Assessment, in December 2012 the Bank introduced two new sets of FSS, for central counterparties (CCP Standards) and securities settlement facilities (SSF Standards). The new FSS came into force on 29 March 2013. Consistent with the Principles on which they are based, the new FSS are more detailed than the pre-existing standards, and also introduce requirements in several new areas. Accordingly, many of the material developments during the Assessment period relate to steps taken by the facilities to observe the new FSS. Several other material developments relate to the introduction of new products and services and the implementation of changes recommended in previous Assessments.

1.3.1 CCP risk management

Risk management has been an important focus for the ASX CCPs over the period, and for the Bank in its Assessment. The new FSS set more detailed standards in relation to risk review, stress testing and model validation processes, as well as the coverage of financial resources.

- *Risk review, stress testing and model validation processes*. During the Assessment period, stress-testing models were amended and ASX began developing analytical tools to enhance its model review, margin backtesting, sensitivity analysis and reverse stress-testing capabilities. ASX also introduced a new internal standard under which all models that are critical to ASX will undergo a full annual validation.

- *Pooled financial resources*. In June 2013, ASX conducted a capital raising by means of a stock entitlement offer to support changes to the pooled financial resources of ASX Clear and ASX Clear (Futures). ASX raised $533 million, with $250 million used to replace existing resources across the two CCPs previously funded by a commercial bank loan, $20 million replacing participant funds in ASX Clear (Futures), and $180 million used to increase the level of cover of financial resources at ASX Clear (Futures). This increase was in part to support ASX's new OTC derivatives clearing service. It also anticipated the Bank's interpretation that ASX Clear (Futures) is systemically important in multiple jurisdictions, and therefore subject to higher financial resource cover requirements. The remaining funds have contributed to an increase in the business risk capital allocated to the CS facilities.

Consistent with the FSS, and also in accordance with recommendations in previous Assessments and ongoing process enhancements, ASX Clear completed the implementation of new margining arrangements for both cash equities and equity derivatives:

- *Cash market margining*. On 11 June 2013, ASX Clear began to routinely collect margins on unsettled cash equity transactions, consistent with requirements under the new FSS and recommendations in previous Assessments. ASX Clear collects both initial and mark-to-market margin. Daily initial margin averaged $140 million in June.

- *CME SPAN*. In December 2012, ASX introduced the CME SPAN system for margining of derivatives at ASX Clear. With CME SPAN having been introduced at ASX Clear (Futures) in the last Assessment period, both CCPs are now using a consistent approach to the margining of derivatives, which is sensitive to a broader range of risk factors. Over time, this will permit ASX to improve the consistency of margin reports and margin data.

The Bank welcomes the enhancements that have been made to the ASX CCPs' risk management framework over the Assessment period, and notes in particular the introduction of cash market margining and the increase in pooled financial resources at ASX Clear (Futures). In order to fully observe CCP Standard 4 (Credit risk), however, ASX should implement plans to strengthen both CCPs' analysis of capital stress-test models, through comprehensive annual validation, periodic reverse stress testing, and more detailed monthly reviews of stress-testing scenarios, models and underlying parameters and assumptions. These should include sensitivity analysis and analysis of concentration risk. In order to fully observe CCP Standard 6 (Margin), ASX should also implement plans to conduct monthly sensitivity analysis of material model assumptions. The Bank will also monitor the implementation of annual validation of margin and stress-testing models under ASX's new Model Validation Standard, and the implementation and further enhancement of the new margin backtesting regime.

1.3.2 Governance and comprehensive management of risks

ASX made a number of enhancements to clearing risk governance arrangements during the Assessment period, most notably establishing a new Clearing Risk Policy Committee (CRPC) to review and maintain the Clearing Risk Policy Framework. ASX also established a Risk Quantification Group in early 2013 to strengthen the technical oversight of risk management policy.

A further important enhancement to governance of risk management at ASX Clear (Futures), arising initially from participant engagement in the development of OTC derivatives clearing service, is the establishment of a Risk Committee. This committee, with membership drawn from among futures and OTC derivatives clearing participants, will be consulted on matters such as changes to risk management policies, participation criteria and new products.

In addition, further to Council of Financial Regulators (CFR) recommendations subsequently endorsed by government, ASX has enhanced transparency and user engagement in relation to its cash equity market clearing and settlement activities in ASX Clear and ASX Settlement. In particular, in July ASX released a *Code of Practice for Clearing and Settlement of Cash Equities in Australia*, in which ASX commits, among other things, to enhance user engagement through the establishment of an advisory forum comprising senior representatives of users and other stakeholders.[5]

The Bank notes the important enhancements made to governance arrangements during the Assessment period and will monitor their ongoing implementation.

1.3.3 Participant default rules and procedures

In the current Assessment period, ASX undertook a review of its Default Management Framework in light of new requirements of the FSS and the introduction of clearing for OTC interest rate derivatives. The emerging international standard for default management in the case of OTC derivatives products is to involve participants in the process, in particular to assist in hedging and auctioning a defaulting participant's positions, and to bid at such an auction. Accordingly, ASX Clear (Futures) has established OTC Default Management Groups, with rotating participation from among its participants, to perform this function. Particularly since ASX Clear (Futures) anticipates participation by Australian banks in its OTC derivatives clearing service, ASX has also undertaken some initial analysis on the interaction between bank resolution proceedings and CCP default management processes.

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5 See <http://www.asx.com.au/cs/documents/Code_of_Practice_9Aug13.pdf> for the Code. The CFR's advice on competition in clearing of the cash equity market is available at <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2013/competition-of-the-cash-equity-market>.

While the Bank has concluded that both ASX CCPs fully observed CCP Standard 12 (Participant default rules and procedures) during the Assessment period, in light of the launch of its OTC derivatives clearing service in July 2013, ASX Clear (Futures) should further develop its default rules and procedures. In particular, in accordance with commitments made to the Bank prior to the launch of the service, ASX should develop an appropriate mechanism to encourage competitive bidding in any auction of a defaulting participant's positions, doing so within the context of a more fully articulated default management process. Further, given the role participants play in default management, the Bank will monitor closely the implementation of ASX Clear (Futures)' plans to test default arrangements for OTC derivatives clearing participants, including through participant involvement in testing of the auction process.

1.3.4 Business and investment risks

The Bank's 2011/12 Assessment encouraged ASX to carry out a review of its treasury investment policy in consultation with the Bank. The Bank had expressed the concern that the policy allowed relatively large and concentrated credit exposures to large domestic banks. ASX carried out this review during the Assessment period, concluding that a gradual move towards lower concentration of investments in the major banks and a greater reliance on secured investments would be appropriate. As a first step, ASX has reduced the unsecured limit on exposures to the large domestic banks. The Bank acknowledges the initial amendments to the policy and the proposed move to lower unsecured exposures to the large domestic banks. To fully observe CCP Standard 15 (Custody and investment risks), however, ASX Clear (Futures) and ASX Clear should implement plans to further reduce, over time, the concentration of unsecured exposures to the large domestic banks. The Bank will continue to monitor treasury investment policy and continues to encourage a more rapid transition to lower unsecured exposures.

Also in 2013, and in accordance with new requirements under the FSS, ASX revised its approach to setting its business risk capital requirements. The capital raising in June 2013 contributed to an increase in ASX's capital allocations for operational and business risk from $50 million to $225 million across the ASX Group. Of this, $15 million has been attributed to ASX Clear, $60 million to ASX Clear (Futures), and $140 million across the two SSFs, with a further $10 million attributed to other group entities. ASX holds this capital at the group level on behalf of the CS facilities. To fully observe CCP Standard 14 (General business risk), ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to the CS facilities.

1.3.5 Operations

During the Assessment period, ASX progressed a number of product development projects, including in relation to delivery of its strategic initiatives. At the same time, ASX has undertaken extensive work to implement enhancements to its risk management policies and other processes in accordance with the requirements of the new FSS. This has tested the capacity of ASX's existing resources. ASX has increased its capacity by hiring additional staff, making use of consultants and establishing partnerships with external service providers, and the Bank is satisfied that resource constraints have not compromised routine risk management during the period. However, the Bank will continue to monitor developments to ensure that this remains the case.

Events during the Assessment period also highlighted operational interdependencies between ASX and participant systems, which ASX is examining further. In December 2012, following the introduction of

CME SPAN at ASX Clear, ASX worked with the vendor of a third-party system to more closely align its estimates of margin requirements to those calculated by ASX's own systems. Separately, in January 2013 operational problems at a participant arising from reliance on an overseas back-office service provider highlighted potential risks from the increasing incidence of offshore outsourcing. The Bank welcomes, and will continue to monitor, actions taken by ASX to address these issues.

1.3.6 Participation and access

There were also a number of developments during the Assessment period in relation to participation requirements and access.

- *Participation in CCPs by authorised deposit-taking institutions (ADIs).* In recognition of increased interest among ADIs in becoming direct participants of CCPs, ASX has taken a number of steps to accommodate greater ADI participation in the two CCPs, and has made ADI status a requirement for participants in its new OTC derivatives clearing service. The Australian Prudential Regulation Authority (APRA) has also clarified the capital treatment of bank exposures to CCPs.
- *Participation requirements*. ASX has commenced a comprehensive review of both minimum capital requirements at ASX Clear and the future role of the existing risk-based capital regime. This work will continue through the second half of 2013, and the Bank will closely monitor progress.
- *Tiered participation*. The new FSS place obligations on the CS facilities to monitor and manage material risks associated with indirect participation. This is of particular importance to the CCPs. Existing arrangements at the ASX CCPs, while sufficient to monitor and manage material risks, are subject to limitations that preclude comprehensive analysis of tiered participation arrangements. Both CCPs are therefore encouraged to investigate options to improve their oversight of risks associated with tiered participation.

1.3.7 Disclosure

All ASX CS facilities make publicly available their rules and procedures and a range of additional information on risk management arrangements and activities. In response to new requirements under the FSS, ASX has published a high-level disclosure document.

To fully observe CCP Standard 20 and SSF Standard 18 (Disclosure of rules, key policies and procedures, and market data), ASX should publish an expanded Disclosure Framework document in a form consistent with that prescribed by CPSS and IOSCO, that sets out in detail how each CS facility meets the requirements of the Principles. Further, ASX is encouraged to provide a central location on the ASX website linking to all information that is subject to disclosure requirements under the FSS. Currently this information is spread across a range of pages.

1.3.8 Transitional relief

Acknowledging that international guidance had yet to be finalised in respect of matters related to recovery and resolution of financial market infrastructures (FMIs), and that certain changes necessary to meet account segregation and portability and liquidity risk requirements could involve significant industry-wide or legislative change, the Bank granted transitional relief for 12 months in respect of a small number of sub-standards.[6] The Bank has, however, made it clear to ASX that it is unwilling to extend the period of transitional relief for these sub-standards, except in exceptional circumstances. It is therefore anticipated that the sub-standards for which relief is currently available will become effective from 31 March 2014.

- *Recovery and resolution*. The Bank and other CFR agencies are supporting the Australian Treasury in the development of legislative proposals for a comprehensive resolution regime for FMIs consistent with international standards. In principle, however, by executing an effective recovery plan, supported by provisions in its operating rules, an FMI should be able to restore its financial soundness without the need for direct intervention by a resolution authority. To meet the requirements of the relevant standards when they come into effect, each ASX CS facility should prepare a recovery plan based on identified scenarios that may threaten the ongoing provision of critical services. Further, ASX Clear and ASX Clear (Futures) should implement mechanisms that would fully address any uncovered credit losses and replenish financial resources following a participant default, and that would fully meet any liquidity shortfall. Plans and mechanisms implemented to meet these requirements should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning. The facilities should also review their operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.
- *Account segregation and portability*. The new FSS require that CCPs have in place account structures that support appropriate segregation of house and client positions and associated collateral. In addition, CCPs are required to maintain effective arrangements for transferring (porting) client positions and collateral to another clearing participant in the event of participant default. The ASX CCPs have commenced work on initiatives to bring client account structures at each CCP more fully into line with these requirements. In particular, ASX Clear should complete development and commence implementation of arrangements for client account segregation in its cash equity clearing service, while ASX Clear (Futures) should begin implementation of its proposals to complement the existing omnibus client account structure for exchange-traded products with individual client account segregation in both its exchange-traded and OTC derivatives clearing services.
- *Liquidity risk*. While both CCPs' liquid resources would be expected to be sufficient to meet the required level of cover in relation to derivatives obligations, this may not be the case at ASX Clear in relation to cash equity transactions. Under current arrangements, ASX Clear would address any liquidity shortfall by rescheduling trades. However, this will no longer be permitted when the new CCP Standard for liquidity risk becomes effective. ASX therefore consulted in July 2013 on a proposal under which it would replace the need to reschedule transactions by entering into committed liquidity arrangements with participants. ASX should develop and implement appropriate arrangements by March 2014.

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6 Details of the scope of transitional relief granted may be found at <http://www.rba.gov.au/payments-system/clearing-settlement/applications/index.html>.

1.4 ASX Clear (Futures) Recognition in the European Union

Under the *European Regulation on OTC derivatives, central counterparties and trade repositories* (EMIR), which took effect in August 2012, non-European Union (EU) CCPs that provide clearing services to participants established in the EU must obtain recognition from the European Securities and Markets Authority (ESMA). Since three of ASX Clear (Futures)' participants are branches of EU-headquartered banks, ASX Clear (Futures) must apply to ESMA for recognition by 15 September.

A prerequisite for recognition is that the European Commission (EC) deems the home regulatory regime of a CCP seeking recognition to be equivalent to that in the EU. In order to inform its decision, the EC requested that ESMA provide it with advice on the equivalence of certain jurisdictions, including Australia. Accordingly, the Bank and colleagues from the other CFR agencies have for some months been assisting ESMA in the preparation of technical advice for the EC on the equivalence of the Australian regime.

While the Bank considers that the EU regulatory framework for CCPs and that in Australia achieve equivalent regulatory outcomes, the technical standards issued by ESMA under EMIR are more detailed than the FSS. There are therefore some areas in which ESMA has sought additional clarification regarding how the Bank interprets the FSS. Accordingly, the Bank has issued supplementary interpretation of a subset of standards, by way of an exchange of letters with ASX (Appendix A). Except in the case of those standards for which transitional relief is currently in place, the supplementary interpretation was effective from 16 August.

The remainder of this report is structured as follows. Section 2 summarises in tabular form the conclusions and recommendations arising from Bank's detailed assessment of each ASX CS facility against the FSS. Section 3 draws out key developments over the Assessment period and discusses the considerations underlying each recommendation. Section 4 presents a 'special topic' on ASX's key strategic initiatives, OTC derivatives clearing and centralised collateral management, and retail trading, clearing and settlement of CGS. The Appendices conclude with details of the supplementary interpretation of the FSS to clarify equivalence of the Australian and EU regulatory regimes, an overview of the corporate structure of the ASX Group, and the detailed assessments against the FSS for each CS facility.

The Bank welcomes ASX's continued efforts towards ensuring its CS facilities contribute to the stability of the Australian financial system and appreciates the cooperation of ASX staff and management during the preparation of this Assessment and the open and constructive dialogue throughout the Assessment period.

2. Summary of Ratings and Recommendations

The following tables summarise the Reserve Bank's 2012/13 Assessment of ASX's CS facilities against the Financial Stability Standards (FSS). In setting out its Assessment, the Bank has applied the rating system used in the *Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology* produced by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) in December 2012.[7] Under this rating system a facility's observance of a standard may be rated as:

Observed – Any identified gaps and shortcomings are not issues of concern and are minor, manageable and of a nature that the facility could consider taking them up in the normal course of its business.

Broadly observed – The assessment has identified one or more issues of concern that the facility should address and follow up on in a defined timeline.

Partly observed – The assessment has identified one or more issues of concern that could become serious if not addressed promptly. The facility should accord a high priority to addressing these issues.

Not observed – The assessment has identified one or more serious issues of concern that warrant immediate action. Therefore, the facility should accord the highest priority to addressing these issues.

Not applicable – The standard does not apply to the type of facility being assessed because of the particular legal, institutional, structural or other characteristics of the facility.

Section 821A(aa) of the Corporations Act requires that a CS facility licensee, to the extent reasonably practicable to do so, comply with the FSS and do all other things necessary to reduce systemic risk. The Bank has assessed how well each CS facility has complied with each CCP or SSF Standard, and applied a single overall rating to each standard, reflecting this assessment.

Where a facility has been assessed to *observe* a CCP or SSF Standard, the Bank nevertheless expects ASX to work towards continual strengthening of its observance of the standard. ASX recognises this and has governance arrangements in place to motivate and encourage continuous improvement. The tables include some recommendations encouraging such improvement in some specific areas. These are not exhaustive, and ASX is encouraged to continue to seek further improvements to its observance of the FSS over the coming Assessment period. This is in accordance with the general obligation on CS facilities to do all things necessary to reduce systemic risk.

Where a facility has been assessed to *broadly observe* a CCP or SSF Standard, the Bank will have sought evidence that a plan is in place to address the identified issue of concern within a clear, defined and reasonable timeframe, and that it would not be reasonably practicable for the facility to take such actions immediately in order to fully observe the standard. The tables include recommendations that identify the steps required by ASX to address the relevant issues of concern and fully observe the applicable CCP or SSF Standard.

The recommendations in the tables are discussed in more detail in Section 3 and in Appendix B.

7 Available at <http://www.bis.org/publ/cpss106.htm>.

Table 1: ASX Clear Ratings and Recommendations

Standard	Rating	Recommendation
1. Legal basis	Observed	
2. Governance	Observed	
3. Framework for the comprehensive management of risks	Observed (transitional relief for CCP Standard 3.5)	In order to meet the requirements of CCP Standard 3.5, which comes into effect on 31 March 2014, ASX Clear should prepare an appropriate recovery plan based on addressing identified scenarios that may threaten ASX Clear's ability to provide its critical services as a going concern. This plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning.
4. Credit risk	Broadly observed (transitional relief for CCP Standard 4.8)	To fully observe CCP Standard 4, ASX Clear should implement plans to strengthen the analysis of capital stress-test models, through comprehensive annual validation, periodic reverse stress testing, and more detailed monthly reviews of stress-testing scenarios, models and underlying parameters and assumptions. These should include sensitivity analysis and analysis of concentration risk. In order to meet the requirements of CCP Standard 4.8, which comes into effect on 31 March 2014, ASX should implement mechanisms consistent with forthcoming CPSS-IOSCO guidance on recovery planning that would fully address any uncovered credit losses and replenish financial resources following a participant default.
5. Collateral	Observed	
6. Margin	Broadly observed	To fully observe CCP Standard 6, ASX Clear should implement plans to conduct monthly sensitivity analysis of material model assumptions. The Bank will also monitor annual validation and ongoing review of margin and stress-testing models under ASX's new Model Validation Standard, and the implementation and further enhancement of the new margin backtesting regime.
7. Liquidity risk	Observed (transitional relief for CCP Standards 7.3 and 7.9)	In order to observe CCP Standard 7.3, which comes into effect on 31 March 2014, ASX Clear should develop and implement appropriate alternative arrangements to rescheduling, to cover its largest liquidity exposure to a single participant and its affiliates in respect of cash equity transactions. In order to meet the requirements of CCP Standard 7.9, which comes into effect on 31 March 2014, ASX Clear should implement mechanisms consistent with forthcoming CPSS-IOSCO guidance on recovery planning that would fully address any uncovered liquidity shortfall following a participant default.
8. Settlement finality	Observed	
9. Money settlements	Observed	
10. Physical deliveries	Not applicable	
11. Exchange-of-value settlements	Observed	
12. Participant default rules and procedures	Observed	
13. Segregation and portability	Observed (transitional relief for CCP Standards 13.1, 13.2 and 13.3)	In order to meet the requirements of CCP Standards 13.1, 13.2 and 13.3, which come into effect on 31 March 2014, ASX Clear should complete development and commence implementation of arrangements for client account segregation in its cash equity clearing service.

Standard	Rating	Recommendation
14. General business risk	Broadly observed (transitional relief for CCP Standard 14.3)	To fully observe CCP Standard 14, ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to ASX Clear. In order to meet the requirements of CCP Standard 14.3, which comes into effect on 31 March 2014, ASX Clear should develop and maintain a viable recovery plan and ensure that the capital it holds under CCP Standard 14.2 is sufficient to fund this plan. The plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning. As ASX Clear develops its recovery plan, it should also review and integrate the recapitalisation processes described under CCP Standard 14.5 with broader recovery planning arrangements.
15. Custody and investment risks	Broadly observed	To fully observe CCP Standard 15, ASX Clear should implement plans to further reduce, over time, the concentration of unsecured exposures to the large domestic banks. The Bank will continue to monitor treasury investment policy and continues to encourage a more rapid transition to lower unsecured exposures.
16. Operational risk	Observed (transitional relief for CCP Standard 16.11)	In order to meet the requirements of CCP Standard 16.11, which comes into effect on 31 March 2014, ASX Clear should review its operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.
17. Access and participation requirements	Observed	ASX Clear is encouraged to carry out the planned review of risk-based capital requirements for participants.
18. Tiered participation arrangements	Observed	ASX Clear is encouraged to investigate options to improve its ability to monitor risks associated with tiered participation.
19. FMI links	Observed	
20. Disclosure of rules, key policies and procedures, and market data	Broadly observed	To fully observe CCP Standard 20, ASX Clear should publish an expanded Disclosure Framework document, in a form consistent with that prescribed by CPSS-IOSCO, setting out in detail how ASX Clear meets the requirements of each of the Principles. ASX Clear is also encouraged to provide a central location on the ASX website linking to all information that is subject to disclosure requirements under the FSS.
21. Regulatory reporting	Observed	

Table 2: ASX Clear (Futures) Ratings and Recommendations

Standard	Rating	Recommendations
1. Legal basis	Observed	
2. Governance	Observed	
3. Framework for the comprehensive management of risks	Observed (transitional relief for CCP Standard 3.5)	In order to meet the requirements of CCP Standard 3.5, which comes into effect on 31 March 2014, ASX Clear (Futures) should prepare an appropriate recovery plan based on addressing identified scenarios that may threaten ASX Clear (Futures)' ability to provide its critical services as a going concern. This plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning.
4. Credit risk	Broadly observed (transitional relief for CCP Standard 4.8)	To fully observe CCP Standard 4, ASX Clear (Futures) should implement plans to strengthen the analysis of capital stress-test models, through comprehensive annual validation, periodic reverse stress testing, and more detailed monthly reviews of stress-testing scenarios, models and underlying parameters and assumptions. These should include sensitivity analysis and analysis of concentration risk. In order to meet the requirements of CCP Standard 4.8, which comes into effect on 31 March 2014, ASX Clear (Futures) should implement mechanisms consistent with forthcoming CPSS-IOSCO guidance on recovery planning that would fully address any uncovered credit losses and replenish financial resources following a participant default.
5. Collateral	Observed	
6. Margin	Broadly observed	To fully observe CCP Standard 6, ASX Clear (Futures) should implement plans to conduct monthly sensitivity analysis of material model assumptions. The Bank will also monitor annual validation and ongoing review of margin and stress-testing models under ASX's new Model Validation Standard, and the implementation and further enhancement of the new margin backtesting regime.
7. Liquidity risk	Observed (transitional relief for CCP Standards 7.3 and 7.9)	To meet the requirements of CCP Standard 7.9, which comes into effect on 31 March 2014, ASX Clear (Futures) should implement mechanisms consistent with forthcoming CPSS-IOSCO guidance on recovery planning that would fully address any uncovered liquidity shortfall following a participant default.
8. Settlement finality	Observed	
9. Money settlements	Observed	
10. Physical deliveries	Observed	
11. Exchange-of-value settlements	Observed	
12. Participant default rules and procedures	Observed	In order to continue to fully observe CCP Standard 12 in light of the new OTC derivatives clearing service, ASX Clear (Futures) should further develop its default rules and procedures. In particular, in accordance with commitments made to the Bank prior to the launch of the service, ASX should develop an appropriate mechanism to encourage competitive bidding in any auction of a defaulting participant's positions, doing so within the context of a more fully articulated default management process. Further, given the role participants play in default management, the Bank will monitor closely the implementation of ASX Clear (Futures)' plans to test default arrangements for OTC derivatives clearing participants, including through participant involvement in testing of the auction process.
13. Segregation and portability	Observed (transitional relief for CCP Standards 13.1, 13.2 and 13.3)	In order to meet the requirements of CCP Standard 13.3, which comes into effect on 31 March 2014, ASX Clear (Futures) should begin implementation of its proposals to complement the existing omnibus client account structure for exchange-traded products with individual client account segregation in both its exchange-traded and OTC derivatives clearing services.

Standard	Rating	Recommendations
14. General business risk	Broadly observed (transitional relief for CCP Standard 14.3)	To fully observe CCP Standard 14, ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to ASX Clear (Futures). In order to meet the requirements of CCP Standard 14.3, which comes into effect on 31 March 2014, ASX Clear (Futures) should develop and maintain a viable recovery plan and ensure that the capital it holds under CCP Standard 14.2 is sufficient to fund this plan. The plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning. As ASX Clear (Futures) develops its recovery plan, it should also review and integrate the recapitalisation processes described under CCP Standard 14.5 with broader recovery planning arrangements.
15. Custody and investment risks	Broadly observed	To fully observe CCP Standard 15, ASX Clear (Futures) should implement plans to further reduce, over time, the concentration of unsecured exposures to the large domestic banks. The Bank will continue to monitor treasury investment policy and continues to encourage a more rapid transition to lower unsecured exposures.
16. Operational risk	Observed (transitional relief for CCP Standard 16.11)	In order to meet the requirements of CCP Standard 16.11, which comes into effect on 31 March 2014, ASX Clear (Futures) should review its operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.
17. Access and participation requirements	Observed	
18. Tiered participation arrangements	Observed	ASX Clear (Futures) is encouraged to investigate options to improve its ability to monitor risks associated with tiered participation.
19. FMI links	Observed	
20. Disclosure of rules, key policies and procedures, and market data	Broadly observed	To fully observe CCP Standard 20, ASX Clear (Futures) should publish an expanded Disclosure Framework document, in a form consistent with that prescribed by CPSS-IOSCO, setting out in detail how ASX Clear (Futures) meets the requirements of each of the Principles. ASX Clear (Futures) is also encouraged to provide a central location on the ASX website linking to all information that is subject to disclosure requirements under the FSS.
21. Regulatory reporting	Observed	

Table 3: ASX Settlement Ratings and Recommendations

Standard	Rating	Recommendations
1. Legal basis	Observed	
2. Governance	Observed	
3. Framework for the comprehensive management of risks	Observed (transitional relief for SSF Standard 3.5)	In order to meet the requirements of SSF Standard 3.5, which comes into effect on 31 March 2014, ASX Settlement should prepare an appropriate recovery plan based on addressing identified scenarios that may threaten ASX Settlement's ability to provide its critical services as a going concern. This plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning.
4. Credit risk	Not applicable	
5. Collateral	Not applicable	
6. Liquidity risk	Observed	
7. Settlement finality	Observed	
8. Money settlements	Observed	
9. Central securities depositories	Observed	
10. Exchange-of-value settlement systems	Observed	
11. Participant default rules and procedures	Observed	
12. General business risk	Broadly observed (transitional relief for SSF Standard 12.3)	To fully observe SSF Standard 12, ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to ASX Settlement. In order to meet the requirements of SSF Standard 12.3, which comes into effect on 31 March 2014, ASX Settlement should develop and maintain a viable recovery plan and ensure that the capital it holds under SSF Standard 12.2 is sufficient to fund this plan. The plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning. As ASX Settlement develops its recovery plan, it should also review and integrate the recapitalisation processes described under SSF Standard 12.5 with broader recovery planning arrangements.
13. Custody and investment risks	Not applicable	
14. Operational risk	Observed (transitional relief for SSF Standard 14.11)	In order to meet the requirements of SSF Standard 14.11, which comes into effect on 31 March 2014, ASX Settlement should review its operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.
15. Access and participation requirements	Observed	
16. Tiered participation arrangements	Observed	
17. FMI links	Observed	
18. Disclosure of rules, key policies and procedures, and market data	Broadly observed	To fully observe SSF Standard 18, ASX Settlement should publish an expanded disclosure framework document, in a form consistent with that prescribed by CPSS-IOSCO, setting out in detail how ASX Settlement meets the requirements of each of the Principles. ASX Settlement is also encouraged to provide a central location on the ASX website linking to all information that is subject to disclosure requirements under the FSS.
19. Regulatory reporting	Observed	

Table 4: Australclear Ratings and Recommendations

Standard	Rating	Recommendations
1. Legal basis	Observed	
2. Governance	Observed	
3. Framework for the comprehensive management of risks	Observed (transitional relief for SSF Standard 3.5)	In order to meet the requirements of SSF Standard 3.5, which comes into effect on 31 March 2014, Austraclear should prepare an appropriate recovery plan based on addressing identified scenarios that may threaten Austraclear's ability to provide its critical services as a going concern. This plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning.
4. Credit risk	Not applicable	
5. Collateral	Not applicable	
6. Liquidity risk	Observed	
7. Settlement finality	Observed	
8. Money settlements	Observed	
9. Central securities depositories	Observed	
10. Exchange-of-value settlement systems	Observed	
11. Participant default rules and procedures	Observed	
12. General business risk	Broadly observed (transitional relief for SSF Standard 12.3)	To fully observe SSF Standard 12, ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to Austraclear. In order to meet the requirements of SSF Standard 12.3, which comes into effect on 31 March 2014, Austraclear should develop and maintain a viable recovery plan and ensure that the capital it holds under SSF Standard 12.2 is sufficient to fund this plan. The plan should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning. As Austraclear develops its recovery plan, it should also review and integrate the recapitalisation processes described under SSF Standard 12.5 with broader recovery planning arrangements.
13. Custody and investment risks	Observed	
14. Operational risk	Observed (transitional relief for SSF Standard 14.11)	In order to meet the requirements of SSF Standard 14.11, which comes into effect on 31 March 2014, Austraclear should review its operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.
15. Access and participation requirements	Observed	
16. Tiered participation arrangements	Observed	
17. FMI links	Observed	
18. Disclosure of rules, key policies and procedures, and market data	Broadly observed	To fully observe SSF Standard 18, Austraclear should publish an expanded disclosure framework document, in a form consistent with that prescribed by CPSS-IOSCO, setting out in detail how Austraclear meets the requirements of each of the Principles. Austraclear is also encouraged to provide a central location on the ASX website linking to all information that is subject to disclosure requirements under the FSS.
19. Regulatory reporting	Observed	

3. Assessment of Clearing and Settlement Facilities against the Financial Stability Standards

3.1 Introduction to the ASX Clearing and Settlement Facilities

The ASX Group operates four clearing and settlement (CS) facilities: two central counterparties (CCPs) and two securities settlement facilities (SSFs). Each of these facilities holds a CS facility licence, and each is required under the *Corporations Act 2001* to comply with applicable Financial Stability Standards (FSS) determined by the Reserve Bank (the Bank) and to do all other things necessary to reduce systemic risk.

3.1.1 Central counterparties

A CCP acts as the buyer to every seller, and the seller to every buyer in a market. It does so by interposing itself as the legal counterparty to all purchases and sales via a process known as novation. These arrangements provide substantial benefits to participants in terms of counterparty risk management as well as greater opportunities for netting of obligations. At the same time, however, they result in a significant concentration of risk in the CCP. This risk can crystallise if a participant defaults on its obligations to the CCP, since the CCP must continue to meet its obligations to all of the non-defaulting participants. Accordingly, it is critical that the CCP identifies and properly controls risks associated with the operation of the CCP and conducts its affairs in accordance with the Bank's *Financial Stability Standards for Central Counterparties* (CCP Standards) in order to promote overall stability of the Australian financial system. Primary responsibility for the design and operation of a CCP in accordance with the CCP Standards lies with a CS facility licensee's board and senior management.

The ASX Group includes two CCPs that are required to observe the CCP Standards:

- ASX Clear Pty Limited (ASX Clear), which provides CCP services for a range of financial products traded on the ASX and Chi-X Australia Pty Ltd (Chi-X) markets, including cash equities, pooled investment products, warrants, certain debt products and equity-related derivatives.
- ASX Clear (Futures) Pty Limited (ASX Clear (Futures)), which provides CCP services for derivatives traded on the ASX 24 market, including futures and options on interest rate, equities, energy and commodity products. In July 2013, ASX Clear (Futures) began offering a clearing service for Australian dollar-denominated over-the-counter (OTC) interest rate derivatives (see Section 4).

3.1.2 Securities settlement facilities

An SSF provides for the final settlement of securities transactions. Settlement involves transfer of the title to the security, and transfer of cash. These functions are linked via appropriate delivery-versus-payment arrangements incorporated within the settlement process. Since SSFs are important financial market infrastructures (FMIs) that are critical to the smooth functioning of the financial system, it is critical that each SSF identify and properly control risks associated with its operation and conducts its affairs in accordance with the Bank's *Financial Stability Standards for Securities Settlement Facilities* (SSF Standards) in order to promote overall stability of the Australian financial system. Primary responsibility for the design and operation of an SSF in accordance with the SSF Standards lies with a CS facility licensee's board and senior management.

The ASX Group includes two SSFs that are required to observe the SSF Standards:

- ASX Settlement Pty Limited (ASX Settlement), which provides for the settlement of cash equities, debt products and warrants traded on the ASX and Chi-X markets. ASX Settlement also provides a settlement service for non-ASX listed securities.
- Austraclear Limited (Austraclear), which offers securities settlement services for trades in debt securities, including government bonds and repos.

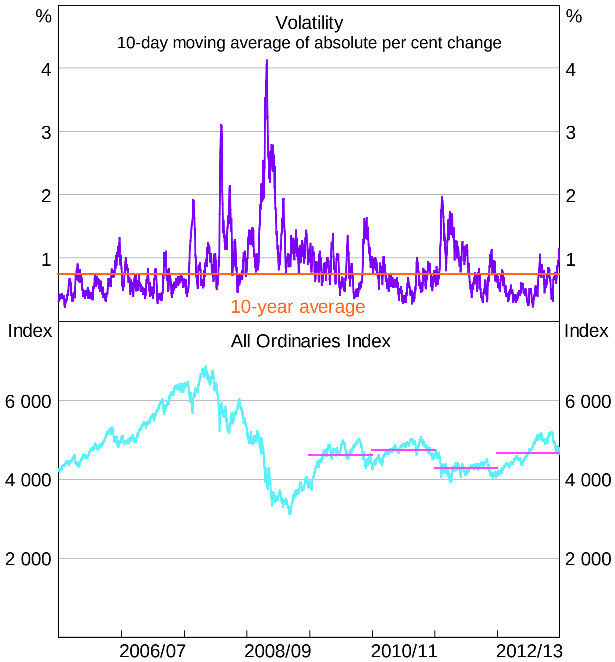
3.2 Activity in the ASX Clearing and Settlement Facilities

In 2012/13, price volatility was generally lower than in the previous year for markets cleared and settled by the ASX CS facilities. Daily average values for cash equity trades cleared by ASX Clear and debt securities settled by Austraclear fell, while the number of derivatives contracts traded on ASX 24 continued to grow.

3.2.1 Cash equities

The average volatility in equity prices, as measured by the average of absolute daily percentage changes in the S&P ASX All Ordinaries Index, was lower in 2012/13 compared with 2011/12, decreasing from 0.9 per cent to 0.5 per cent (Graph 1). In response to renewed concerns about European sovereign debt, volatility rose above the 10-year average in late February and remained above this level for much of the remainder of the financial year. Peaks in volatility in 2012/13, however, were well below peaks in previous years.

Graph 1
All Ordinaries



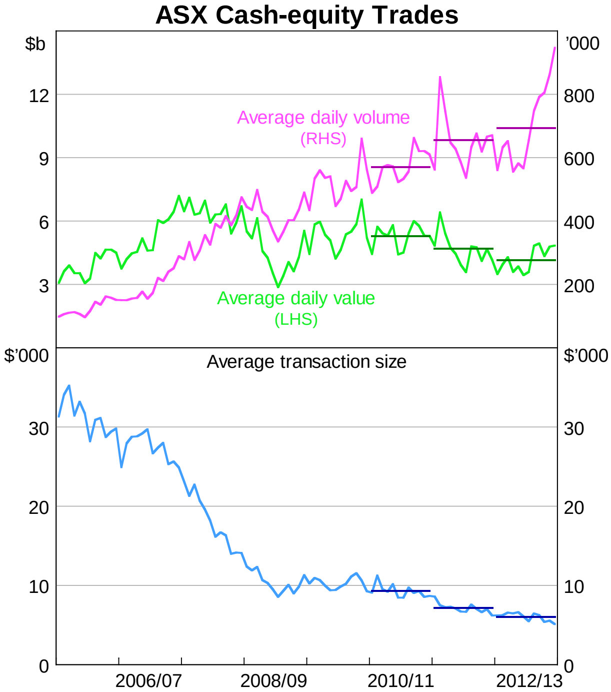
Source: Bloomberg

Trends in the growth of the number and value of cash equity trades continued to diverge over 2012/13. The daily average number of such trades increased by 6 per cent in 2012/13, while the daily average value fell by 11 per cent (Graph 2). As a result of this divergence, which is a continuation of a long-term trend associated with the growth in algorithmic trading, the average size of trades in 2012/13 declined by 16 per cent. Further contributing factors include market fragmentation from the break-up of large orders across venues, and the increasing prevalence of automated or semi-automated processing.

Settlement values differ from trade values because they reflect both market traded and non-market transactions, as well as multilateral netting of participants' obligations. The average daily value of securities transactions settled by ASX Settlement decreased by 12 per cent in 2012/13, to $8.2 billion.

Graph 2

ASX Cash-equity Trades



Source: ASX

3.2.2 Derivatives

The daily average number of derivatives contracts traded on the ASX 24 market rose by 12 per cent in 2012/13. This included significant increases for several major contracts, most notably 10-year Treasury bond futures (up 24 per cent), 3-year Treasury bond futures (up 12 per cent) and 90-day bank bill futures (up 20 per cent). The volume of ASX SPI 200 futures contracts traded was, however, down by 13 per cent. The average daily number of equity options contracts traded on the ASX market also decreased by 4 per cent in 2012/13.

3.2.3 Debt securities

In 2012/13, the average daily value of debt securities settled through Austraclear decreased by around 5 per cent to $38 billion. This includes outright purchases and sales of securities, and securities transferred to effect repurchase agreements (other than intraday repurchase agreements with the Bank).

3.3 Risk Management in the ASX Central Counterparties

A CCP is exposed to potential losses arising in the event of participant default. ASX Clear and ASX Clear (Futures) manage this risk in a number of ways, including participation requirements, margin collection, the maintenance of pooled risk resources, and risk monitoring and compliance activities.

3.3.1 Participation requirements

Participants in each CCP must meet minimum capital requirements. While capital is only a proxy for the overall financial standing of a participant, minimum capital requirements offer comfort that a participant has adequate resources to withstand an unexpected shock, perhaps arising from operational or risk-control failings.

- ASX Clear requires Direct Participants that clear cash equities or derivatives to hold at least $5 million in core capital, with a higher requirement for General Participants (which clear on behalf of third parties) of $20 million. See Section 3.5.6 for further discussion of participation requirements at ASX Clear.
- ASX Clear (Futures) requires participants to hold at least $5 million in net tangible assets (NTA). Over time, ASX Clear (Futures) plans to increase this NTA requirement to $10 million, with a higher requirement for those that clear for third parties. Further to the launch of the OTC derivatives clearing service on 1 July (see Section 4), ASX has introduced higher minimum NTA (or Tier 1 Capital) requirements for OTC derivatives participants. Further, participants in the OTC derivatives clearing service must be authorised deposit-taking institutions (ADIs) or related entities.

3.3.2 Margin collection

The CCPs cover their credit exposures to their participants by collecting several types of margin.

- *Variation margin*. Variation (or 'mark-to-market') margin is collected on positions to cover gains or losses arising from observed price movements over the previous day.
- *Initial margin*. The CCPs are also exposed to credit risk arising from potential changes in the market value of a defaulting participant's open positions between the last settlement of variation margin and the close out of these positions by the CCP. To mitigate this risk, both CCPs routinely collect initial margin from participants.
- *Additional initial margin*. The CCPs may also make calls for 'Additional Initial Margin' (AIM) when exceptionally large or concentrated exposures are identified through stress testing, or when predefined limits on the ratio of positions to capital are exceeded.

ASX Clear has historically collected margin only in respect of derivatives exposures, but since June 2013 has also begun to collect both initial margin and mark-to-market margin on cash market transactions (see Section 3.5.1).

As measured by margin requirements, the CCPs' total credit exposure increased in 2012/13.

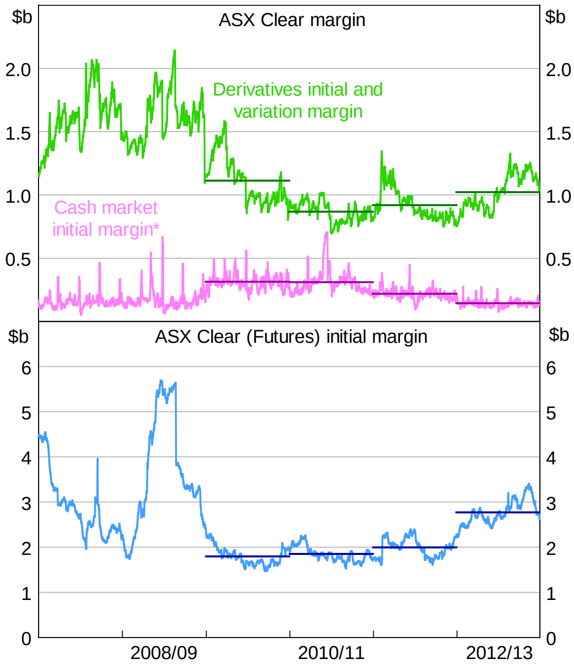
- Margins held by ASX Clear against equity derivatives increased by 12 per cent in 2012/13 (Graph 3, top panel). This was largely the result of an increase in share prices, which increases the value of contracts written on equities, and, to a lesser extent, the introduction of the CME SPAN margin methodology (see Section 3.5.1). By contrast, initial margins calculated by

ASX Clear for the cash equity market decreased by 34 per cent in 2012/13, reflecting a number of factors including lower volatility and smaller net end-of-day positions (on which margin is calculated).

- Margins held by ASX Clear (Futures) increased by 39 per cent in 2012/13, reflecting a higher value of participants' end-of-day exposures, as well as an increase in trading volumes (Graph 3, bottom panel).

Graph 3

Central Counterparty Margins



* Notional amount until 7 June 2013; Real Risk methodology used until 18 July 2012, Cash Market Margining used thereafter

Source: ASX

The CCPs call margin on an intraday basis when exposures due to changes in market value and the opening of new positions exceed predefined limits. Intraday margin calls include both variation and initial margin.

- ASX Clear calculates margin when there is a significant market movement, with margin called from participants if the calculated call amount exceeds $100 000, or if there is an erosion of initial margin of 40 per cent or greater.

- ASX Clear (Futures) calculates intraday margin at 8.00 am and 12.00 pm, and at other times if there are significant movements in the prices of individual contracts. As with ASX Clear, margin is called if the calculated call amount exceeds $100 000, or if initial margin is eroded by at least 40 per cent.

During the Assessment period, there were 77 intraday margin calls at ASX Clear totalling $119 million, and 531 calls at ASX Clear (Futures) totalling $1 409 million. The larger number and value of calls at ASX Clear (Futures) in part reflects the larger size of exposures. Intraday calls at ASX Clear (Futures) may also result from arrangements for the allocation of positions to accounts, with delays in participants' allocation of positions to client accounts resulting in calls on their house accounts (to which positions are initially allocated by default). The average amount of intraday margin called (on those days when calls were made) for ASX Clear and ASX Clear (Futures) was $3.8 million and $6 million, respectively, or less than 1 per cent of average daily initial margin called in either facility. The highest intraday margin call for a single participant over 2012/13 was $15 million for ASX Clear and $73 million for ASX Clear (Futures).

The CCPs conduct regular and ad hoc margin reviews to ensure that margin rates are set at levels appropriate to the prevailing risk environment. During the Assessment period, ASX Clear made a total of 117 margin rate changes across all its derivatives products, although scheduled reviews were not held during the March Quarter of 2013 owing to the introduction of the CME SPAN margin methodology (see Section 3.5.1). In the Assessment period, ASX Clear (Futures) made six changes to the price margin intervals ('price scanning range') of its five major futures contracts (SPI 200, 30-day interbank cash rate, 90-day bank accepted bills, 3-year government bonds and 10-year government bonds).

To validate their margin rate settings, the CCPs compare margin rates with observed price movements. Margin breaches are recorded whenever mark-to-market losses exceed 30 per cent of initial margin collected. During the Assessment period, 51 margin breaches were recorded for ASX Clear and 231 breaches were called for ASX Clear (Futures). Breaches at ASX Clear (Futures) were predominantly due to volatility in contracts with low liquidity, such as electricity futures.

3.3.3 The maintenance of pooled financial resources

The margin and other collateral posted by a participant would be drawn on first in the event of that participant's default. Should this prove insufficient to meet the CCP's obligations, it may draw on a fixed quantity of pooled financial resources.

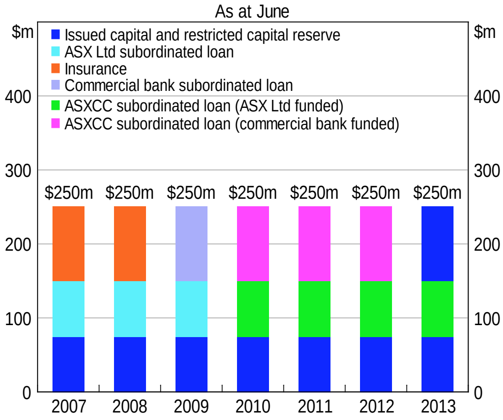
- During the majority of the Assessment period, ASX Clear's prefunded pooled financial resources totalled $250 million (Graph 4). This comprised $3.5 million of own equity, $71.5 million paid into a restricted capital reserve from the National Guarantee Fund in 2005, and fully drawn-down subordinated loans totalling $175 million provided by ASX Clearing Corporation (ASXCC), of which $100 million was funded by a principal-reducing commercial bank loan facility. The $100 million commercial bank loan was repaid on 28 June 2013 and replaced with $100 million of own equity. If exhausted, prefunded resources may be supplemented by 'emergency assessments' of up to $300 million, which surviving clearing participants must pay within a reasonable time frame if called.
- During the majority of the Assessment period, ASX Clear (Futures)' prefunded pooled financial resources remained at $370 million (Graph 5). This amount comprised $30 million of ASX Clear (Futures)' own capital, $120 million of prefunded participant contributions, and a $220 million fully drawn-down subordinated loan from ASXCC, in turn funded by a $150 million principal-reducing commercial bank loan facility, and a $70 million subordinated loan from ASX Limited. The $150 million commercial bank loan was repaid on 28 June 2013 and replaced with $100 million of own equity.

Since the Assessment period, ASX has conducted a significant capital raising, which has led to changes in the composition of both CCPs' pooled financial resources, and an increase in the size of ASX Clear (Futures)' pooled resources. ASX Clear (Futures) has implemented rule changes to increase participant contributions in support of the introduction of OTC derivatives clearing. Further details are provided in Section 3.5.1.

Graph 4

ASX Clear: Prefunded Pooled Financial Resources*

As at June



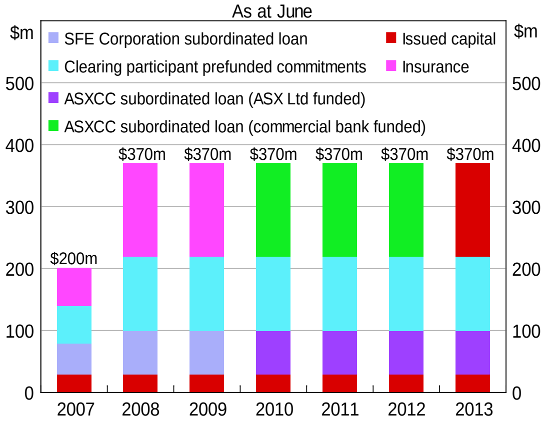
* The order of the bars reflects the order of application, starting from the bottom and working upward

Source: ASX

Graph 5

ASX Clear (Futures): Prefunded Pooled Financial Resources*

As at June



* The order of the bars reflects the order of application, starting from the bottom and working upward

Source: ASX

In order to assess the adequacy of its risk resources, the CCPs perform daily capital stress tests which compare their available prefunded resources against the largest potential loss in the event of the default of a participant (and affiliates of the participant) under a range of extreme but plausible test scenarios.

- ASX Clear's maximum projected stress-test losses remained well below the total prefunded pooled financial resources (Graph 6).
- ASX Clear (Futures)' maximum projected stress-test losses exceeded the prefunded pooled financial resources for 17 days in the March 2013 quarter, peaking at $44 million above the level of prefunded pooled financial resources (Graph 7). These results were investigated by ASX Clear (Futures), but since they were due to temporary trading activity by particular participants, an increase in pooled financial resources was not considered necessary.

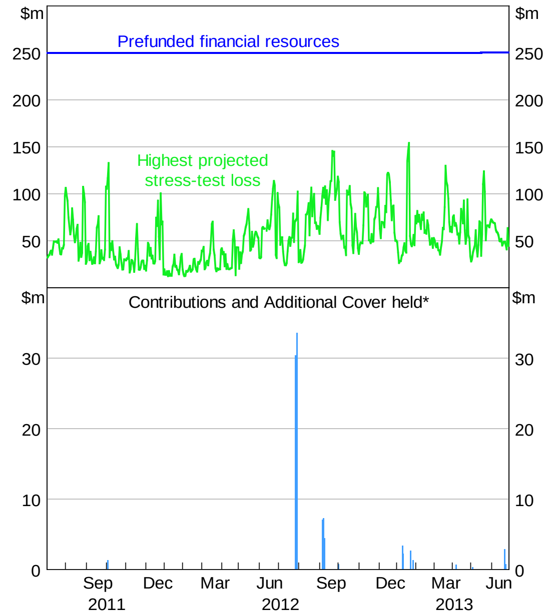
Since 16 August, ASX Clear (Futures) has commenced stress testing the adequacy of its financial resources against requirements to meet obligations in the event of the default of the largest two participants and their affiliates (by exposure) in extreme but plausible circumstances. This reflects the Bank's supplementary interpretation of certain FSS, issued in the context of an EU regulatory equivalence assessment (see Section 3.5.1 and 3.7).

The CCPs call additional initial margin (AIM) when capital stress-test results are in excess of stress-test exposure limits (STELs), which are based on ASX's internal credit ratings of participants. During the Assessment period, the introduction of initial margining for cash equities allowed ASX Clear to move from a system of 'contributions and additional collateral' (CAC), which contained a pooled component for cash equities, to the AIM methodology that provides participant-specific cover. Since B- or lower-rated participants have STELs lower than the total prefunded resources at both CCPs, AIM can be called even when stress-test exposures do not exceed total resources.

ASX Clear (Futures) made STEL AIM calls on three participants across 58 days, with the largest call totalling $119 million. ASX Clear made AIM or CAC calls on 14 days against six participants, with the largest totalling $33.5 million. ASX Clear allows for discounts on AIM calls for highly rated (A-rated and B-rated) participants in times of low volatility; however, these discounts were suspended in April 2010 and they have not since been reapplied.

Graph 6

ASX Clear: Highest Projected Stress-test Losses

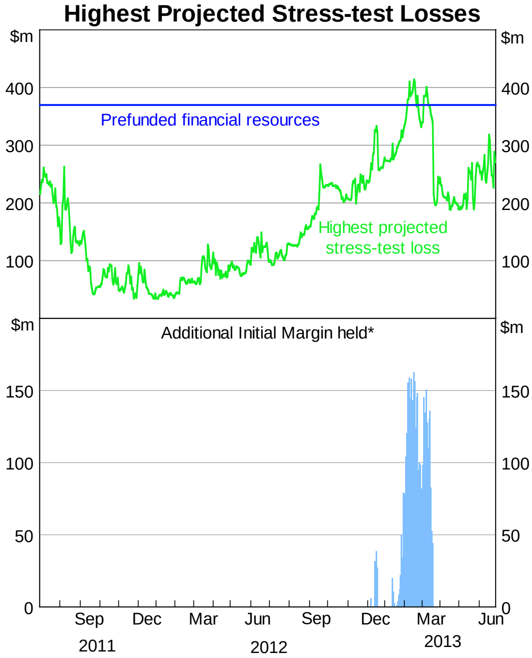


* Contributions and Additional Cover is called whenever a participant's highest stress-test exposure exceeds its stress-test exposure limit; this does not include Contributions and Additional Cover based on capital-based position limits; Additional Initial Margin from 10 June 2013

Source: ASX

Graph 7

ASX Clear (Futures): Highest Projected Stress-test Losses



* Additional Initial Margin is called whenever a participant's highest stress-test exposure exceeds its stress-test exposure limit; this does not include Additional Initial Margin called based on capital-based position limits

Source: ASX

The CCPs also perform daily liquidity stress testing in order to verify that they have sufficient financial resources readily available to make payments in the event of a participant default.

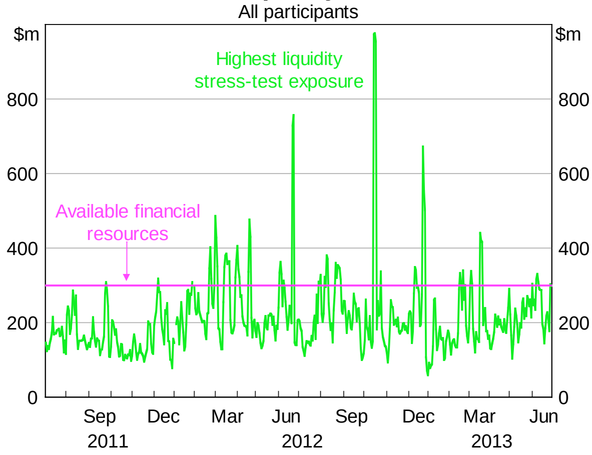
- ASX Clear conducts separate liquidity stress tests based on a range of close-out scenarios to give a daily maximum potential liquidity requirement, which is then compared with the available financial resources (AFR) (Graph 8). To be considered a breach, a stress-test result must exceed the AFR for more than three days, reflecting the three-day cash market settlement cycle. During the Assessment period, stress-test results at ASX Clear exceeded the AFR on 17 occasions, but only one of these constituted a breach. ASX reviews all breaches, but concluded in this case that its financial resources were adequate.

- ASX Clear (Futures)' liquidity stress-test scenarios are based on the same scenarios as used in its capital stress tests. During the Assessment period, there were no sustained or widely distributed breaches at ASX Clear (Futures) that would call into question the adequacy of its liquidity arrangements.

Graph 8

ASX Clear Liquidity Stress Tests

All participants



Source: ASX

3.3.4 Risk monitoring and compliance

The two CCPs actively monitor their exposure to financial risk. This includes monitoring of day-to-day developments regarding, among other things, financial requirements, risk profiles, open positions and settlement obligations to the CCPs. The CCPs carry out a range of participant monitoring spot checks and other examinations designed to validate the accuracy of the financial and operational information that participants are required to submit to the CCPs. The CCPs also determine and review participants' internal credit ratings, drawing in part on information provided by participants in their regular financial returns to ASX, and maintain a 'watch list' of participants deemed to warrant more intensive monitoring.

The CCPs have wideranging powers to sanction participants in order to preserve their financial and operational integrity. The CCPs may suspend or terminate a participant's authority to clear all market transactions in the event of a default, or in the event of a breach of the Operating Rules and Procedures that may have an adverse impact on the CCP. The action taken in the event of a breach will depend on a number of factors, including the participant's history of compliance and whether the breach implies negligence, incompetence or dishonesty. Where a breach has been identified and the participant has taken appropriate steps to rectify it, the CCPs will typically continue to monitor the participant closely for a period of time.

As an example of these risk management activities, in July 2012 a participant of ASX Clear was unable to meet a CAC call. As a result, this participant: was required to provide additional general cover; had conditions placed on its trading and clearing participation; had its STEL significantly reduced; and was subject to an external audit of its risk management framework. The participant was also placed on ASX's watch list. Another participant was placed on the watch list in April 2013 due to concerns about internal controls, but was taken off in May after these concerns were reviewed. The only other participants on the watch list during the Assessment period were the three MF Global subsidiaries, which were placed on the watch list and suspended after the default of MF Global in November 2011, until their formal resignation in February 2013.

3.4 Operational Performance of the ASX Clearing and Settlement Facilities

ASX manages its operational risks in the context of its group-wide Enterprise Risk Management Framework, applying consistent operational risk controls across all of its CS facilities. Key operational objectives are minimum availability of 99.8 per cent (99.9 per cent for Austraclear) and peak capacity utilisation of 50 per cent. These objectives were met over the Assessment period (Table 5). For all systems, availability was 100 per cent and peak usage was below the target of 50 per cent.

Table 5: ASX CS Facility System Availability and Usage Statistics for 2012/13

Facility	Core system	Availability Per cent	Peak usage Per cent	Average usage Per cent
ASX Clear	DCS	100	40	16
ASX Clear (Futures)	SECUR	100	15	10
ASX Settlement	CHESS	100	23	14
Austraclear	EXIGO	100	32	22

As indicated by the availability statistics for ASX's CS facilities, the Assessment period was free of major operational incidents. There were some less serious incidents, two of which are discussed below. ASX is also improving its capacity to directly manage operational risk at Austraclear through an insourcing project to take over all support of the core EXIGO system. The CS facilities must also manage operational interdependencies with their participants. These and other operational performance matters are described in the detailed assessment in Appendix B.

3.4.1 Minor incidents

There were two notable minor incidents in the Assessment period: a reporting issue at ASX Clear, whereby a database problem lead to the failure of key risk management reports, and a problem leading to the incorrect calculation of margin at ASX Clear (Futures). In response to these issues, ASX has further strengthened its systems and procedures for overnight processing. The Bank is satisfied with both ASX's initial response to these issues and ASX's ongoing work to strengthen its operational processes.

Risk management reporting incident at ASX Clear

In late July 2012, a data purging issue in ASX Clear's CORE database lead to a failure of some of ASX Clear's risk management reports. As a result, a call for CAC margin of $1.5 million was not made on that day. An initial workaround to purge the database failed, which led to problems with the production of key risk-management reports. However, the database issues were later successfully corrected and the risk-management reports regenerated. ASX has implemented a number of steps to mitigate the risk of a problem of this nature recurring.

- ASX has cleaned up its CORE database and instituted plans for periodic database purges.
- Improvements have been made to the report generation process, including changes to allow reports to be checked and re-run at the component level (to remove the need to re-run entire reports).

- A procedure was introduced to make reports available earlier in the day, thereby allowing additional time to resolve any problems, as well as a performance requirement that sets a limit on report delays.

ASX is also undertaking a broader review of end-to-end reporting processes, due for completion in late 2013.

Over-margining incident at ASX Clear (Futures)

On 12 February 2013, an operational incident resulted in excess initial margin being called and collected at ASX Clear (Futures). The error arose from a technical issue during a scheduled switch to ASX's backup site, which was being used for several days as part of ASX's business continuity testing. During the switch, a file containing margin rate parameters for CME SPAN was not successfully replicated from the production site to the backup site. As a consequence, margin calls were calculated at the backup site based on three-month-old margin parameters. This resulted in small errors in the calculation of participant margins collected on 12 February. The issue was corrected before the next end-of-day margin calculation and participants were offered the full cash rate on excess margin posted as compensation.

As a consequence of this incident, ASX has introduced a number of changes to improve its margin processing. Of particular concern was that the system had logged that the parameter file had failed to update, but this did not trigger a system alert. To rectify this, ASX has now fully automated the process to replicate margin files to its backup site. In addition, system changes have been made to ensure that any error will halt processing and to require human intervention to recommence processing.

3.4.2 EXIGO insourcing

EXIGO is the core system used by Austraclear. During 2011/12, Austraclear commenced an insourcing project to take over EXIGO's third-level operational and software support (requiring expert knowledge of the core system), which is currently provided by a third-party vendor. This project has the potential to significantly reduce operational risk by giving ASX control over future development of the system, both in terms of the nature and the timing of system enhancements. The project will improve operational risk by significantly simplifying the system through the removal of unused components. It should also improve the timeliness of ASX's responses to operational incidents, given the current reliance on highly technical 24-hour support across different time zones. The project is due for completion in 2014.

Insourcing EXIGO will require that ASX can manage the transition process and adequately resource third-level support for Austraclear. ASX has recruited developers for this project and a senior developer from the third-party vendor has been seconded to Sydney during the development phase. As a contingency, ASX also has the option to extend existing third-party support arrangements for as long as required.

3.4.3 Participation in the ASX CS facilities

Table 6 provides summary information on participation levels in the ASX CS facilities. These were broadly steady over the Assessment period. Participation requirements and the effect of participation structures on operational risk management are discussed in Sections 3.5.5 and 3.5.6.

Table 6: ASX CS Facility Participation Levels

Facility	End June 2013	End June 2012	Comments
ASX Clear	40	44	At end of June 2013 there were 11 participants offering third-party or related-entity services; excludes inactive participants.
ASX Clear (Futures)	14	17	Participants are predominantly large foreign banks and their subsidiaries. Three participants resigned in 2012/13, including two MF Global entities.
ASX Settlement	119	136	The 119 participants at end of June 2013 included 34 temporary special-purpose participants.
Austraclear	786	747	At end of June 2013 there were 184 full participants, 183 associate participants, 293 public trust participants and 126 special-purpose participants.

3.5 Material Developments and Recommendations

As foreshadowed in the 2011/12 Assessment, in December 2012 the Bank revoked the pre-existing FSS and determined two new sets of FSS, for central counterparties (CCP Standards) and securities settlement facilities (SSF Standards). The new FSS came into force on 29 March 2013.[8] Consistent with the Principles on which they are based, the new FSS are more detailed than the pre-existing standards, and also introduce requirements in several new areas. Accordingly, the ASX CS facilities have implemented a number of enhancements over the course of the Assessment period to ensure observance of the new FSS. In addition, the ASX CS facilities have responded to recommendations in previous Assessments, made commercially driven improvements to existing processes and implemented changes related to the launch of new products and services.

3.5.1 CCP risk management

Risk management has been an important focus for the ASX CCPs over the period, and for the Bank in its Assessment. The new FSS set more detailed standards in relation to risk review, stress testing and model validation processes, as well as the coverage of financial resources.

Risk review, stress testing and model validation processes

In 2012/13, ASX adopted an updated and formalised clearing risk policy framework to better align the governance of clearing risk policy with the new FSS (see Section 3.5.2). The Clearing Risk Policy Framework comprises a comprehensive set of clearing and treasury risk policies to support risk management in the ASX CCPs. ASX will continue to refine and update standards covering all relevant aspects of the FSSs, aiming to complete this work by the first quarter of 2014. The Bank will continue to monitor progress in this regard.

As part of this work, in accordance with the FSS, ASX is developing analytical tools to enhance its model review, margin backtesting, sensitivity analysis and reverse stress-testing capabilities. An enhanced daily margin backtesting regime was introduced in July 2013. In respect of model review, ASX has introduced a Model Validation Standard which requires that all models critical to ASX undergo a full annual validation, with less critical models reviewed on a longer cycle. Criticality is measured according to a series of factors, including the internal and external impact of the model,

[8] The standards are available at <http://www.rba.gov.au/payments-system/clearing-settlement/standards/index.html>.

frequency of use and complexity. This naturally includes ASX's margining models and both the capital and liquidity stress-testing models. Validation of the models will be coordinated by internal audit, with external consultation sought where deemed necessary according to the Risk Quantification Group (RQG). The first validations will be undertaken during the 2013/14 Assessment period.

Also under development is an internal standard that formalises and enhances ASX's approach to monitoring and mitigating concentration risks. This includes monitoring of key indicators that measure concentration across clearing participants, across clients and across products. The policy will also address possible mitigating action.

Pooled financial resources

The new FSS strengthen some key requirements, particularly with regard to credit and liquidity risks. Stress testing is carried out daily to gauge the adequacy of the CCPs' financial resources and to monitor the risks associated with individual participants' positions. Capital stress testing estimates the credit exposure that would result from the realisation of extreme but plausible price changes. Liquidity stress testing estimates the liquidity exposure that would result from extreme but plausible price changes.

In accordance with new requirements under the FSS, during the Assessment period stress-testing models were amended to test the adequacy of financial resources to meet obligations arising in the event of the default of the participant *and its affiliates* to which the CCP has the largest exposure in extreme but plausible circumstances, rather than the default of the largest participant alone. This was only relevant for ASX Clear during the period, since there are currently no affiliated participants in ASX Clear (Futures). Similar changes were made in respect of liquidity stress tests.

Further, ASX Clear (Futures) recently began testing the adequacy of financial resources – both from a capital and a liquidity perspective – to meet obligations in the event of the default of the largest two participants plus affiliates in stressed circumstances ('cover two'). This follows the clarification that ASX Clear (Futures) is considered 'systemically important in multiple jurisdictions', in part reflecting its provision of services to participants established in the European Union (EU) and the need for recognition under EU regulation (see Section 3.7).

In June 2013, ASX conducted a capital raising by means of a stock entitlement offer to support changes to increase the pooled financial resources of ASX Clear (Futures) and alter the composition of resources for both CCPs. ASX raised $533 million, of which $450 million was used to restructure existing resources by replacing $250 million in commercial bank-funded loans across the two CCPs; and, at ASX Clear (Futures), increasing total resources by $180 million, and replacing $20 million of participant contributions. The remaining funds have contributed to an increase in the business risk capital allocated to the CS facilities. More specifically:

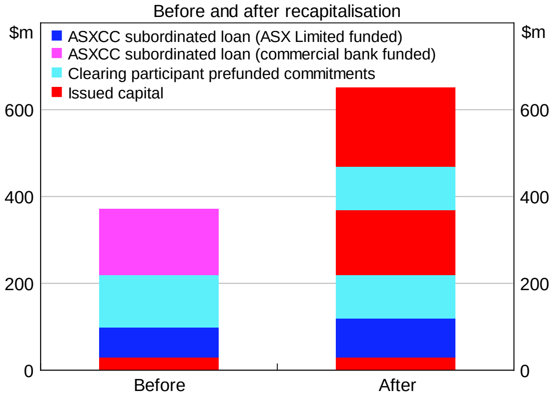
- ASX Clear (Futures) is in the process of increasing its pooled financial resources from $370 million to $650 million, in part to reflect the launch of ASX Clear (Futures)' OTC derivatives clearing service, and in part to reflect the transition to cover two stress tests. The magnitude of this increase is based on stress tests of participant portfolios provided to ASX Clear (Futures) as part of a design study for the OTC derivatives clearing service carried out in 2012. The new composition of ASX Clear (Futures)' resources will include $200 million in pooled participant contributions (with an anticipated injection of $100 million from participants in the OTC clearing service) and $450 million of ASX capital (Graph 9). The additional ASX contribution represents a $180 million increase in total resources in the form of equity, $150 million to replace an existing loan from ASXCC funded by a principal-reducing commercial bank loan, and $20 million to replace contributions from existing (futures) participants. In addition, ASX Clear (Futures) has withdrawn its power to call an additional $30 million in promissory commitments from futures participants in the event that prefunded resources are exhausted.

- ASX Clear's total pooled financial resources have not increased. However, $100 million of the capital raising was used to replace an existing loan from ASXCC funded by a principal-reducing commercial bank loan that had previously formed part of prefunded resources. ASX Clear's $250 million of prefunded financial resources now consists of: own equity ($103.5 million); funds held in a restricted capital reserve ($71.5 million); and fully-drawn subordinated loans from ASXCC (totalling $75 million), which are ultimately fully funded by a subordinated loan from ASX Limited (Graph 10).

Graph 9

ASX Clear (Futures): Prefunded Pooled Financial Resources

Before and after recapitalisation



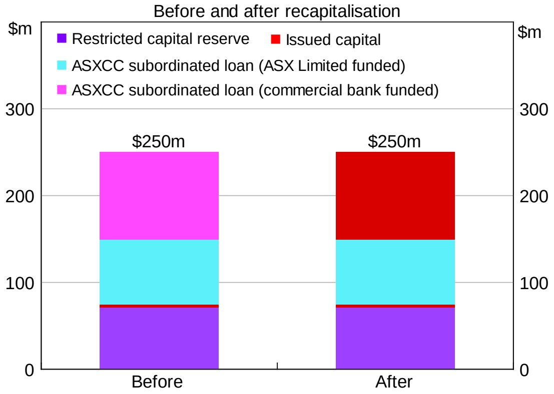
* The order of the bars reflects the order of application, starting from the bottom and working upward

Source: ASX

Graph 10

ASX Clear: Prefunded Pooled Financial Resources*

Before and after recapitalisation



* The order of the bars reflects the order of application, starting from the bottom and working upward

Source: ASX

Both CCPs retain the capacity to require that a participant post additional collateral should stress-test outcomes reveal that the potential loss arising from that participant's positions, as at the close of the previous day, exceeds a predetermined STEL. STELs are calibrated to ensure that prefunded financial resources are not exceeded.

In April 2013, ASX Clear reduced the STEL available to C-rated participants (previously $125 million), while in June 2013 it made changes to STELs consistent with the recalibration of stress tests to take into account affiliated groups. Under the latter changes, where a group of participants are affiliated (i.e. part of the same corporate group), STELs are set such that the sum of affiliated participants' STELs is equal to or lower than ASX Clear's prefunded financial resources. Accordingly, ASX Clear's combined exposure to these affiliated participants cannot increase above its available financial resources without triggering a call for an additional contribution.

In light of the increase in ASX Clear (Futures) financial resources, and the move to stress testing against multiple participant defaults, ASX Clear (Futures) has similarly adjusted participant STELs to ensure that they are consistent with the new level of cover.

Margin

Consistent with the FSS, and also in accordance with previous recommendations by the Bank and ongoing process enhancements, ASX Clear completed the implementation of new margining arrangements for both cash equities and equity derivatives.

On 11 June 2013, ASX Clear began to routinely collect margins on unsettled cash equity transactions, consistent with requirements under the revised FSS and recommendations in previous Assessments. ASX Clear collects both initial and mark-to-market margin. Daily initial margin averaged $140 million in June. The selected methodology for initial margin calculation in respect of actively traded stocks is historical simulation of value at risk (HSVAR). The HSVAR methodology calculates hypothetical changes in the value of a portfolio of securities, using historical price moves, and determines a margin requirement from these taking into account the target level of confidence. For less liquid stocks, or securities with an insufficient price history to apply HSVAR, ASX Clear applies flat rate margins. Margins calculated using HSVAR currently make up around 70 per cent of total margins collected by ASX Clear in respect of cash equities.

In December 2012, ASX Clear replaced its previous proprietary Theoretical Intermarket Margin System with CME SPAN for the margining of derivatives positions. The CME SPAN methodology is a widely used version of the internationally accepted Standard Portfolio Analysis of Risk (SPAN) methodology. Following the introduction of CME SPAN at ASX Clear (Futures) in the last Assessment period, both CCPs are now using a consistent approach to the margining of derivatives, which is sensitive to a broader range of risk factors. Over time, this will permit ASX to improve the consistency of margin reports and margin data.

The adoption of CME SPAN is intended to facilitate better calibration of exposures to ASX Clear's risk tolerance. The CME SPAN methodology calculates initial margin requirements that reflect the total risk of each portfolio – for ASX Clear, each house or client account is considered a separate portfolio. Following the implementation of CME SPAN, ASX worked with the vendor of a third-party system to more closely align its estimates of margin requirements to those calculated by ASX Clear's own systems (see Section 3.5.5).

Recommendation. The Bank welcomes the enhancements that have been made to the ASX CCPs' risk management framework over the Assessment period, and notes in particular the introduction of cash market margining. In order to fully observe CCP Standard 4 (Credit risk), ASX Clear (Futures) and ASX Clear should implement plans to strengthen the analysis of capital stress-test models, through comprehensive annual validation, periodic reverse stress testing, and more detailed monthly reviews of stress-testing scenarios, models and underlying parameters and assumptions. These should include sensitivity analysis and analysis of concentration risk. In order to fully observe CCP Standard 6 (Margin), the ASX CCPs should also implement plans to conduct monthly sensitivity analysis of material model assumptions. The Bank will also monitor annual validation and ongoing review of margin and stress-testing models under ASX's new Model Validation Standard, and the implementation and further enhancement of the new margin backtesting regime.

3.5.2 Governance and comprehensive management of risks

The new FSS impose several more detailed requirements on licensed CS facilities around governance of risk and other aspects of CS facilities' activities. A number of enhancements have been implemented during the Assessment period.

Governance of risk management

During the period, ASX enhanced the governance of risk at the CCPs through the introduction of three new policy committees (see discussion of ASX Group structure in the introduction to Appendix B):

- The Clearing Risk Policy Committee (CRPC) was formed in June 2013 to review and approve clearing risk policies and standards organised under ASX's Clearing Risk Policy Framework prior to submission to the CS Boards. That framework sets out a comprehensive set of clearing and treasury risk policies to support the risk management approach of ASX's CCPs. The CRPC is currently reviewing the framework to ensure that its policies and standards fully align with the FSS. Completion of that review will consolidate observance of Standard 3 (Framework for the comprehensive management of risks). The CRPC is chaired by the Chief Risk Officer (CRO) and includes the ASX Group Legal Counsel, Chief Financial Officer and Executive General Manager of Operations. It generally meets quarterly in line with meetings of the CS Boards.

- ASX also established the RQG in early 2013 to strengthen the technical oversight of risk management policy. The RQG is chaired by the CRO and is made up of key staff from ASX's clearing risk policy and management units most familiar with ASX's margin and other risk management models. The focus of the RQG is the review and application of quantitative risk policies, including oversight of model governance and regular reviews of margining. The group meets at least quarterly, but can (and currently typically does) meet more frequently as required.

- A number of important changes to governance have also arisen from the establishment of the OTC derivatives clearing service. In particular, ASX has established additional formal structures for participant consultation, most notably through the introduction of a Risk Committee for ASX Clear (Futures) which will meet for the first time in late 2013. This committee will be a self-governing body, chaired by an elected member and with membership open to both futures and OTC participants. The Risk Committee will be consulted on changes to the margin methodology, financial resources, position or liquidity limits, participation criteria, new products, and other changes relevant to either the risk model or associated Operating Rules. The Risk Committee's proposals and recommendations will be presented to the ASX Clear (Futures) Board, which will be required to justify any decision not to follow the Risk Committee's advice. The Bank will discuss with ASX whether a risk committee structure similar to that at ASX Clear (Futures) would also be appropriate at ASX Clear.

Conflict handling procedures

The four CS facilities share a common set of eight directors; five of these directors are also members of the ASX Limited Board (see introduction to Appendix B). The new FSS require ASX to address the potential for conflicts created by shared directorships between the CS facilities and other group entities. These include potential conflicts between group-wide commercial interests and the risk management function of the CS facilities. ASX considers that conflicts between directors' roles on the CS Boards and the ASX Limited Board are unlikely to arise given the distinct roles the separate entities perform, and in view of group-wide arrangements to manage matters such as operations and compliance. If a conflict were to arise, a director sitting on multiple CS Boards would be expected to make decisions in the best interests of each facility. The Bank intends to work with ASX to understand better the arrangements in place for conflict handling.

Code of Practice for Clearing and Settlement of Cash Equities

During 2012, the CFR, in collaboration with the Australian Competition and Consumer Commission, undertook a detailed analysis of the implications of competition in the clearing and settlement of ASX-listed equities.[9] On 11 February 2013, the government accepted the recommendations of the CFR to defer consideration of competition for two years and in the meantime request that ASX develop *a*

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[9] The CFR's advice on competition in clearing of the cash equity market is available at <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2013/competition-of-the-cash-equity-market>.

Code of Practice for Clearing and Settlement of Cash Equities in Australia (the Code).[10] The Code is designed to address concerns expressed by industry stakeholders about transparency, access and user representation. It is intended that the Code create and reflect conditions consistent with those that might be expected under a competitive setting for clearing and settlement of cash equities.

Accordingly, in July, following extensive consultation with stakeholders, ASX released the Code, which commits ASX to:

- enhance user engagement through the establishment of an advisory forum, the Forum, comprising senior representatives of users and other stakeholders
- maintain transparent and non-discriminatory pricing of cash equity clearing and settlement services, including via the development of a transfer pricing policy and regular independent benchmarking of costs of clearing and settlement against other international providers
- maintain transparent and non-discriminatory terms of access to its cash equity clearing and settlement infrastructure, including via an access protocol and a commitment to offer access to alternative market operators on terms consistent with those that would exist in a competitive setting.

In conjunction with these commitments, ASX also established a new microsite for detailed information on its clearing and settlement services and announcements in accordance with the Code.[11]

3.5.3 Participant default rules and procedures

The 2010/11 Assessment included a special topic on Default Arrangements, which described the ASX CCPs' Default Management Framework (DMF). The DMF is intended to assist in the management of a clearing participant default and covers each stage of a default from its identification through to its conclusion. The DMF is intended to be flexible, rather than prescriptive, and may be developed and adapted as appropriate in the circumstances. In the 2011/12 Assessment period, the DMF was updated to incorporate lessons learned from the default of MF Global. In the current Assessment period, ASX undertook a further review of the DMF in light of new requirements of the FSS and the introduction of clearing for OTC interest derivatives at ASX Clear (Futures).

As an input into ongoing review of the DMF, ASX conducts regular 'fire drills', in which all relevant ASX decision-makers and supporting staff conduct a real-time simulation of a hypothetical clearing participant default (based on observed participant positions). To date, fire drills have been conducted in-house without participant involvement. At the end of 2012, the Bank began attending as an observer.

ASX has also undertaken analysis of the potential impact of ADI resolution proceedings on a CCP's default management processes. While acknowledging that ADI resolution authorities may have broad powers to intervene in the arrangements of an insolvent ADI participant, the analysis suggests that, in general, resolution proceedings should not impede a CCP's default management processes. ASX will conduct further analysis of the interaction between ADI and FMI resolution once international work on FMI resolution and the proposed domestic regime for FMI resolution have been finalised (see Section 3.6.1).

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10 The Code is available at <http://www.asx.com.au/cs/documents/Code_of_Practice_9Aug13.pdf>.

11 See <http://www.asx.com.au/cs/> for ASX's microsite.

A number of changes were made to the DMF during the Assessment period to accommodate the introduction of the OTC derivatives clearing service at ASX Clear (Futures). ASX Clear (Futures)' intention would be to hedge the defaulter's OTC derivatives portfolio (including cross-margined futures), before auctioning the hedged portfolio to non-defaulting participants. To provide advice and assist with the hedging process, ASX will convene Default Management Groups (DMGs) with respect to one or more groups of open contracts, comprised of trading and risk professionals drawn from non-defaulting OTC participants, selected on a rotational basis for an annual term. While ASX is not obliged to follow the recommendations of a DMG, it must justify any decision not to do so. ASX will also seek the advice of DMGs on ASX Clear (Futures)' default management policy and processes at regular intervals.

Each OTC derivatives clearing member will also be involved directly in regular default simulations, including testing of the auction process. While ASX has set out a general auction process, it retains the flexibility to tailor the process. In the event of a default, and after consulting with the relevant DMG, ASX will divide the hedged portfolio into auction pools and specify the terms of the auctions.

While all OTC participants are required to bid in any auction of a defaulting participant's portfolio, ASX is still in the process of developing a mechanism to encourage competitive bidding. Competitive bidding in the auction is important since in the event that an auction fails, ASX's only option currently is to hold the hedged position until it can re-run the auction successfully or bilaterally negotiate a sale. To incentivise competitive bidding, ASX is developing a mechanism for ordering the allocation of losses against survivors' contributions to financial resources based on the quality of their bids; for instance, (some proportion of) the contributions of the participants with the 'worst' bids could be used before those of the participants with the 'best' bids. Such a mechanism is particularly important when managing the default of a participant with a large or complex portfolio. In designing its recovery plans (discussed in Section 3.6.1), ASX will also need to consider the implications for participants' incentives in the auction process.

Recommendation. While the Bank has concluded that both ASX CCPs fully observed CCP Standard 12 (Participant default rules and procedures) during the Assessment period, in light of the launch of its OTC derivatives clearing service in July 2013, ASX Clear (Futures) should further develop its default rules and procedures. In particular, in accordance with commitments made to the Bank prior to the launch of the service, ASX should develop an appropriate mechanism to encourage competitive bidding in any auction of a defaulting participant's positions, doing so within the context of a more fully articulated default management process. Further, given the role participants play in default management, the Bank will monitor closely the implementation of ASX Clear (Futures)' plans to test default arrangements for OTC derivatives clearing participants, including through participant involvement in testing of the auction process.

3.5.4 Business and investment risks

The Bank's 2011/12 Assessment encouraged ASX to carry out a review of its treasury investment policy in consultation with the Bank. In accordance with the treasury investment policy endorsed annually by the CS Boards, ASXCC invests both cash margin collected and pooled risk resources in short-dated highly rated assets. The policy establishes counterparty eligibility criteria and sets investment limits to control investment counterparty risk. The Bank had expressed concerns that, notwithstanding limits on both the absolute level and share of exposure to each of the four large domestic banks, the policy still allowed relatively large and concentrated credit exposures to these banks. The Bank also expressed concern that where an entity related to the issuer counterparty was also a clearing participant, the performance of investments in the portfolio could be correlated with the very default event against which the CCPs' financial resources sought to provide cover.

ASX carried out this review during the 2012/13 Assessment period, concluding that a gradual move towards lower concentration of investments in the major banks and a greater reliance on secured investments would be appropriate. As a first step, ASX has modified the ASXCC Investment Mandate to reduce the unsecured limit on exposures to the large domestic banks. In the event that one of those banks became a clearing participant, ASX would further reduce these limits. ASX plans to review concentration limits to investment counterparties again in 2014 and 2015. Further reductions will be required to fully align ASX's investment strategy with its CCP risk management framework as required under CCP Standard 15. Over the coming Assessment period, the Bank will continue discussions with ASX regarding the reduction in exposure concentrations required to fully observe this Standard.

Recommendation. To fully observe CCP Standard 15 (Custody and Investment Risks), ASX Clear (Futures) and ASX Clear should implement plans to further reduce, over time, the concentration of unsecured exposures to the large domestic banks. The Bank will continue to monitor treasury investment policy and continues to encourage a more rapid transition to lower unsecured exposures.

Also in 2013, ASX revised its approach to business risk capital to take into account the requirements of the new FSS, and requirements arising from its own strategic projects; in particular, the introduction of the OTC derivatives clearing service. Under this revised approach, ASX has calibrated its holdings of general business risk capital for each CS facility to cover the higher of:

- the estimated largest uninsured business loss that each facility may incur, across a range of scenarios, including external shocks such as a pandemic, or an unauthorised funds transfer
- operating expenses required to fund a recovery or orderly wind-down plan (estimated at six months of operating expenses)
- in the case of ASX Clear (Futures), an amount calculated in accordance with business capital requirements under EU regulations (see Section 3.7)
- in the case of Austraclear and ASX Settlement, a charge calculated on the value of securities held in each facility, according to a methodology applied by fund managers, custodians and other SSFs.

The June 2013 capital raising contributed to an increase in ASX's total capital allocations for operational and business risk from $50 million to $225 million across the ASX Group in line with the above requirements. ASX Group has also historically held surplus capital of $200 to $250 million, and a little over half of the increase in capital allocated to operational and business risk represents a specific allocation from that surplus. This formalises ASX's previous approach to business risk capital, under which business losses would be met by the surplus capital held.

Of the $225 million allocation, $15 million has been attributed to ASX Clear, $60 million to ASX Clear (Futures) and $140 million across the two SSFs, with the balance attributed to non-clearing and settlement activities. ASX holds this capital at the group level to ensure that it cannot be applied by facilities to meet losses caused by a participant default. A group-wide capital buffer provides protection to allocated business risk capital against potential losses sustained elsewhere in the group. While ASX considers that its existing framework provides a sufficient legal basis for the use of funds allocated to the CS facilities at the group level to cover a business risk loss, ASX is enhancing its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to the CS facilities to support their obligations under the FSS.

Recommendation. To fully observe CCP Standard 14 and SSF Standard 12 (General business risk), ASX should implement plans to enhance its intragroup legal agreements to explicitly reflect the allocation and availability of business risk capital to the CS facilities.

3.5.5 Operations

During the Assessment period, ASX's arrangements for managing its operations were tested by the execution of several major projects (see Section 4), and enhanced in response to the requirements of the new FSS and events that highlighted interdependencies with participants and external service providers.

Updates to service agreements

The new FSS place heightened requirements on the arrangements that ASX has with service providers, including that ASX ensures its outsourcing arrangements or dependencies on external service provision are subject to the same operational risk management requirements as its own internally provided operations. In addition, the new FSS require that the Bank be able to access information regarding the performance of service providers.

Over the first half of 2013, ASX developed a set of standard clauses that provide the Bank with the necessary access to information on service providers, and that provide for renegotiation of service agreements where additional enhancements to the service provider's operational risk controls are required. These clauses were included in new outsourcing and service provision contracts relating to the OTC derivatives clearing service in ASX Clear (Futures) and the ASX Collateral service (see Section 4), and were also written into service agreements with all existing critical service providers. Similar clauses were also incorporated into agreements between each CS facility and an ASX Group entity, ASX Operations Pty Ltd, for the provision of internal operational services. In negotiating the insertion of these new clauses, ASX also included clauses requiring that service providers notify the Bank prior to terminating their provision of services, to enable action to support continued service provision under a future resolution regime (see Section 3.6.1).

Resource management

In 2012/13, ASX undertook work on over 30 projects, including major projects such as the OTC derivatives clearing service in ASX Clear (Futures) and the collateral management service for Austraclear (see Section 4). In addition to work on these projects, often to challenging time frames, ASX has undertaken extensive work to enhance its risk management policies in order to meet the requirements of the new FSS. This has tested the capacity of ASX's existing resources. Although targeted deadlines for key projects have largely been met, the Bank observes that the focus on achieving deadlines for the launch of new products creates the risk that work to maintain and enhance the core risk management framework for the CS facilities could be compromised. The Bank is satisfied that this has not occurred to date, but will continue to monitor developments to ensure that this remains the case.

In order to mitigate the risks associated with the increased demand on its resources, ASX has taken steps to increase its resource levels through additional staff, the use of consultants, and partnerships with external service providers. For example, in developing the OTC derivatives clearing service, ASX entered into agreements with third-party consultants, service providers and software vendors. ASX has also employed additional staff in its Clearing Risk Policy unit, including a senior manager and senior analyst brought in to enhance ASX's quantitative framework for CCP risk management.

Dependencies on participant systems

Two matters during the Assessment period highlighted operational interdependencies between ASX and participant systems.

First, the December 2012 introduction of CME SPAN in ASX Clear highlighted the reliance of participants on systems provided by third-party vendors for the estimation of margin requirements. Following implementation, ASX worked with the vendor of a third-party system used by several participants to estimate margin requirements resulting from hypothetical trades to ensure that these estimates were aligned as closely as possible to margin requirements calculated by ASX's margin system. This issue highlighted the importance of close coordination with the providers of vendor systems that are used by multiple participants.

Accordingly, ASX has commenced a program to formalise its relationships with key participant vendors. As a first step, ASX conducted workshops with vendors in preparation for the introduction of cash market margining.

A second incident involved operational problems at a participant that caused a partial failure of settlements for that participant over several days in mid January 2013. While an initial concern related to the participant's use of third-party vendor software, it was ultimately determined that an overseas back-office service provider had caused the operational problems. While the January incident had only a minor impact on system-wide settlements and was resolved within a week, ASX has acknowledged that similar outsourcing arrangements could introduce operational risk to its own systems and is examining options to mitigate these risks. ASX Compliance has initiated a review of participants' outsourcing arrangements that will benchmark selected participants against APRA's prudential standard on outsourcing. In addition, ASX will investigate contingency plans for participant connection to ASX infrastructure.

The Bank welcomes ASX's steps to address operational interdependencies with vendor service providers and participant systems, and will continue to monitor ASX's introduction of additional steps to mitigate these risks.

3.5.6 Participation and access

There were also a number of developments during the Assessment period in relation to participation requirements and access.

Participation by authorised deposit-taking institutions

Although both ASX CCPs currently allow direct participation by ADIs supervised by APRA, levels of ADI participation in ASX Clear have historically been low. At the end of the Assessment period there was only one ADI participant in ASX Clear, while there were seven ADI members of ASX Clear (Futures). Capital incentives for central clearing under prudential standards have led to greater interest among ADIs in becoming members of ASX Clear and ASX Clear (Futures). In recognition of this, ASX has taken steps to accommodate greater ADI participation in the two CCPs, and has made ADI status a requirement for participants in its new OTC derivatives clearing service.

To address the likelihood of greater ADI participation in central clearing, APRA has taken two steps to clarify the capital treatment of bank exposures to CCPs. In April 2013, APRA confirmed that it would treat both ASX Clear and ASX Clear (Futures) as qualifying CCPs (QCCPs) for capital purposes.[12] ADIs

[12] An exchange of letters between APRA and the Bank and ASIC can be found at <http://www.cfr.gov.au/publications/member-publications/pdf/letter-qccp-status-apra-response.pdf>.

may apply a lower capital requirement for exposures to a QCCP. In June, APRA wrote to all ADIs to outline its policies regarding membership of a central counterparty by ADIs or their affiliates, including that membership must not expose the ADI (or a group member) to an unlimited contingent liability to support the CCP.[13]

In ASX Clear (Futures), ADI (or related entity) status is a prerequisite for participation in the new OTC derivatives clearing service. ASX requires that OTC derivatives clearing participants are Australian ADIs, or subsidiaries. This requirement provides an additional level of comfort for the CCP (and the Bank as its overseer), since the participant is regulated directly by APRA. Potential OTC derivatives participants must be able to demonstrate to the satisfaction of ASX Clear (Futures) their ability to participate in the default management process, including any auction of a defaulting participant's positions. They are also required to have either minimum Tier 1 capital (if an Australian bank) of $50 million, or net tangible assets of $50 million. These requirements are significantly higher than those for futures participants. This is appropriate in light of the greater complexity of OTC derivatives markets, and the potential that a participant may be required to play a role in default management should a participant default occur.

In ASX Clear, ADI participation has been limited by risk-based capital requirements that apply to participants clearing cash equities or equity options (see discussion below), and which may not be appropriate for ADIs subject to a more comprehensive prudential capital regime. The only current ADI participant in ASX Clear is subject to an alternative capital regime that places reliance on compliance with the regime of a prudential supervisor, but during the Assessment period this alternative was only available to participants clearing futures transactions and not cash equities or equity derivatives. However, in August 2013, this alternative capital regime was extended to participants undertaking clearing activities for all products in ASX Clear. This is expected to support greater ADI participation in ASX Clear.

Review of risk-based participation requirements

At the end of the Assessment period, all but two of ASX Clear's 40 participants were subject to the risk-based capital regime.[14] Under this regime, participants must hold sufficient 'liquid capital' to cover counterparty risk, large exposure risk, position risk and operational risk (the so-called 'total risk requirement').[15] Participants are also required to maintain minimum levels of 'core capital': $5 million for participants that do not clear for other brokers; and $20 million for participants that offer third-party clearing services.[16] These requirements have risen significantly in recent years from a core capital requirement of $100 000 for all participants prior to 2009. A further increase in core capital requirements to $10 million for participants that do not offer third-party clearing services has been under consideration for some time.

In the second half of 2013, ASX will be reviewing whether to implement the proposed increase in core capital requirements, in the context of a broader review of the risk-based capital regime. The increase in core capital requirements has been postponed on several occasions on the basis that there is

13 APRA's letter to ADIs is available at <http://www.apra.gov.au/adi/PrudentialFramework/Documents/130604-Letter-to-ADIs-re-CCPs.pdf>.

14 Participants clearing futures only could elect to be covered by an alternative capital regime, either on a net tangible asset (NTA) requirement or compliance with the regime of a prudential supervisor. As discussed above, the latter alternative was extended to participants undertaking clearing activities for all products in ASX Clear in August 2013.

15 'Liquid capital' is defined by ASX to comprise total tangible shareholders' funds held in liquid assets, net of any guarantees and indemnities.

16 'Core capital' is defined by ASX to be the sum of: all paid-up ordinary share capital; all non-cumulative preference shares; all reserves, excluding revaluation reserves; and opening retained profits/losses, adjusted for current year movements.

insufficient depth in the third-party clearing market to accommodate smaller brokers. This is consistent with the recommendations of the Bank and the Australian Securities and Investments Commission (ASIC) in their 2009 'Review of Participation Requirements in Central Counterparties', which concluded that an increase in core capital requirements to $10 million would be beneficial but should be implemented gradually to allow greater depth in the third-party clearing market to develop.[17] In view of the repeated postponements of the proposed increase in core capital requirements, ASX intends to consult with participants later this year on whether to implement the increase. ASX will also be conducting a broader review of capital requirements across both ASX Clear and ASX Clear (Futures), which will seek to achieve greater consistency in approach across the two CCPs.

A related review will examine the role of the risk-based capital regime in light of the increase in NTA requirements in recent years, and consider the appropriateness of the risk-based formula used in quantifying the risks generated by the activities of larger participants in particular. Although the future role of the risk-based capital regime is subject to question, consideration will need to be given to how valuable information gathered by ASX under the risk-based capital regime may be retained. This information may remain useful for broader risk-monitoring purposes.

Monitoring indirect participation

The new FSS place obligations on the CS facilities to monitor and manage material risks associated with indirect participation. This is of particular importance to the CCPs, where the activities of a large indirect participant could increase the probability of a participant default if not appropriately managed. Under existing arrangements, ASX Clear (Futures) gathers information on indirect participation in the form of daily reports from participants that provide details of client contracts. These data are aggregated and reviewed on a daily basis, with particular regard to potential risks arising from unusual client activity around the expiry of futures options, including potential concentration of client activity. There are, however, some practical limitations with the use of these data for a comprehensive analysis of tiering; in particular, the account codes of an entity or related entities may vary from participant to participant. One solution that ASX Clear (Futures) has considered is the introduction of a suitable client indicator at trade level.

ASX Clear is able to gather information on indirect clearing of equity derivatives by virtue of the individually segregated account structure employed for these products. However, given the commingled account structure for cash equities, ASX is unable to separately identify client positions either at an aggregate or individual level. Enhancing ASX Clear's ability to routinely monitor indirect clearing of securities trades will depend, at least in part, on the outcome of its consultation on account structures (see Section 3.6.2). ASX Clear does, however, monitor potential risks arising from tiered participation arrangements in the third-party clearing market on an ongoing basis in the context of its regular engagement with participants, including third-party clearers. Over the Assessment period, the largest third-party clearer in the cash market represented a relatively small proportion of positions held at ASX Clear. Both CCPs have also conducted a broad review of concentration risk policies in order to identify triggers for further investigation of tiered participation arrangements and possible mitigants.

The SSFs do not bear financial risk exposures to their participants. Nevertheless, indirect participation arrangements have the potential to concentrate operational risks in direct participants. ASX Settlement operates separate participant identifiers for trades settled by settlement participants on behalf of other clearing or trading participants, allowing it to access information on such indirect

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[17] ASIC and RBA (2009), 'Review of Participation Requirements in Central Counterparties', March. Available at <http://www.rba.gov.au/payments-system/clearing-settlement/review-requirements/rprcc-032009.pdf>.

participation arrangements. Since Austraclear settles for a wholesale market in debt securities, participation is generally direct, as evidenced by the relatively large number of Austraclear participants. Significant activity associated with indirect participation is likely to be recorded in sub-accounts that Austraclear is able to monitor.

Recommendation. ASX Clear and ASX Clear (Futures) are encouraged to investigate options to improve their ability to monitor risks associated with tiered participation.

3.5.7 Disclosure

All ASX CS facilities make publicly available their Operating Rules and Procedures and a range of additional information on risk management arrangements and other relevant information on activities. As part of its FSS disclosure requirements, each CS facility must also publish details of its operations in accordance with the CPSS-IOSCO Disclosure Framework for Financial Market Infrastructures.[18] This is intended to ensure that ASX provides comprehensive and detailed disclosures regarding each facility, demonstrating how its governance, operations and risk management framework meet the requirements of the Principles. ASX has published an initial version of a combined disclosure document for all of its facilities, which outlines ASX's approach to meeting disclosure requirements, including a summary of ASX's self-assessment of how its CS facilities meet the applicable Principles. ASX will, however, need to update this document with more detail in order to fully satisfy its disclosure requirements. ASX intends to update the document to reflect information provided to the Bank through the annual Assessment process, adding greater detail on how the CS facilities meet the Principles and corresponding FSSs. ASX plans to update the document at least annually.

ASX also publishes a range of information on its website to meet other aspects of its disclosure requirements. Currently, this information is spread across a range of pages and therefore may be difficult for participants and other interested stakeholders to find and understand its context. The Bank has encouraged ASX to consider a more centralised approach to the presentation of information subject to disclosure requirements on its website.

Recommendation. To fully observe CCP Standard 20 and SSF Standard 18, ASX should publish an expanded Disclosure Framework document in a form consistent with that prescribed by CPSS-IOSCO. ASX is also encouraged to improve its observance of the disclosure standards by providing a central location on the ASX website for each CS facility with links to all information that is subject to disclosure requirements under the FSS.

3.6 Transitional Relief

Acknowledging that international guidance had yet to be finalised in respect of matters related to recovery and resolution of FMIs, and that certain changes required in relation to account segregation and liquidity risk could involve significant industry-wide or legislative change, the Bank granted transitional relief for 12 months in respect of a small number of sub-standards.[19] The Bank has, however, made it clear to ASX that it is unwilling to extend the period of transitional relief for these sub-standards, except in exceptional circumstances. It is therefore anticipated that the sub-standards for which relief is currently available will become effective from 31 March 2014.

18 Available at <http://www.bis.org/publ/cpss106.htm>.

19 Details of the scope of transitional relief granted may be found at <http://www.rba.gov.au/payments-system/clearing-settlement/applications/index.html>.

3.6.1 Recovery and resolution

In February 2012, the CFR recommended legislative change to strengthen regulatory powers in respect of FMIs.[20] These recommendations include the capacity to appoint a statutory manager to a distressed FMI. In parallel, the Financial Stability Board (FSB) has been extending work on bank resolution to FMIs, and CPSS-IOSCO has been developing guidance on recovery plans and tools that a distressed FMI may utilise to restore its financial soundness.[21] Resolution refers to actions taken by public authorities to either return an FMI to viability or facilitate its orderly wind-down, while recovery refers to actions taken by a distressed FMI itself to return to viability. In parallel, the Bank and other CFR agencies are supporting treasury work to develop a proposal for an FMI resolution regime consistent with international principles on recovery and resolution. From March 2014, the new FSS will place obligations on ASX CS facilities to develop and maintain a recovery plan, and support the taking of resolution actions by the Bank or other relevant authorities.

In principle, by executing an effective recovery plan, supported by provisions in its Operating Rules, an FMI should be able to restore its viability without the need for direct intervention by a resolution authority. To meet the requirements of the relevant standards when they come into effect, each ASX CS facility will need to prepare an appropriate recovery plan based on addressing identified scenarios that may threaten that facility's ability to provide its critical services as a going concern. For ASX Clear and ASX Clear (Futures), these plans will need to address very extreme scenarios under which the CCPs' financial resources are not sufficient to cover credit losses and/or liquidity obligations following a participant default. This will require the development of mechanisms that fully address any uncovered credit losses and replenish financial resources following a participant default, and fully meet any liquidity shortfall. Plans and mechanisms implemented to meet these requirements should be consistent with the forthcoming CPSS-IOSCO guidance on recovery planning. At a minimum, by the end of March 2014, ASX should have articulated a basic recovery plan and a timetable for enhancing that plan to fully comply with the relevant FSS requirements in light of the final CPSS-IOSCO guidance.

In addition, each ASX CS facility will be required to ensure that its operational arrangements are able to support resolution actions under the proposed Australian FMI resolution regime. During the 2012/13 Assessment period, the CS facilities introduced standard clauses into their agreements with service providers requiring that they give the Bank notice of any intention to terminate the agreement as a consequence of the facility's insolvency or failure to meet its obligations. This is intended to give the Bank an opportunity to take action to remedy the breach or otherwise ensure continued service provision under the proposed FMI resolution regime. ASX should review its operational arrangements more broadly to ensure that they are consistent with the form of the regime once finalised.

[20] The CFR's letter to the Deputy Prime Minister and Treasurer is available at <http://www.treasury.gov.au/ConsultationsandReviews/Submissions/2012/Council-of-Financial-Regulators-Financial-Market-Infrastructure-Regulation>.

[21] See FSB (2011), 'Key Attributes of Effective Resolution Regimes for Financial Institutions', October, available at <http://www.financialstabilityboard.org/publications/r_111104cc.pdf>; and CPSS-IOSCO (2013), 'Recovery of Financial Market Infrastructures: Consultative Report', August, available at: <http://www.bis.org/publ/cpss109.htm>.

Recommendation. To meet the requirements of CCP Standards 3.5 and 14.3, and SSF Standards 3.5 and 12.3, which come into effect on 31 March 2014, each ASX CS facility should prepare a recovery plan based on identified scenarios that may threaten the ongoing provision of critical services. Further, to meet the requirements of CCP Standards 4.8 and 7.9, ASX Clear and ASX Clear (Futures) should implement mechanisms that would fully address any uncovered credit losses and replenish financial resources following a participant default, and that would fully meet any liquidity shortfall. Plans and mechanisms implemented to meet these requirements should be consistent with forthcoming CPSS-IOSCO guidance on recovery planning.

To meet the requirements of CCP Standard 16.11 and SSF Standard 14.11, which come into effect on 31 March 2014, each ASX CS facility should review its operational arrangements in light of the proposed Australian FMI resolution regime, to ensure that they are consistent with the form of the regime once finalised.

3.6.2 Segregation and portability

New sub-standards that come into effect in March 2014 will require ASX Clear and ASX Clear (Futures) to have in place account structures that support the segregation of client positions and collateral from participants' proprietary ('house') positions and collateral. In addition, the CCPs will be required to maintain effective arrangements for transferring client positions and collateral to another clearing participant in the event that their original participant was to default (known as portability). Together, these requirements are intended to provide additional protection to clients against the default of their clearing participant, and to provide CCPs an alternative to closing out client positions in the event of such a default. A change to legislation in July 2013 removed a key legal impediment to portability, by allowing a CCP to transfer client collateral without the need to seek approval from a defaulting participant's external administrator.[22]

ASX has commenced work on two initiatives to bring its client account structures at each CCP into line with these requirements.

ASX Clear (Futures)

The existing account structure for futures products in ASX Clear (Futures) segregates client and house positions and collateral between a house account and a single omnibus account for clients, with margin applied to portfolios netted within each account. While this account structure achieves segregation, given the margining of client positions on a net basis in the omnibus account, there may be insufficient collateral to support the transfer of individual client positions to alternative clearing participants. Further, supplementary interpretation of the FSS issued by the Bank in the context of ASX Clear (Futures)' prospective application for recognition under EU regulation clarifies that where a CCP clears a range of derivatives products with different characteristics and for a variety of participant and underlying customer types (such as ASX Clear (Futures)), it should offer a choice of account structures, including individual segregation (see Section 3.7). In anticipation of this requirement, ASX sought market feedback on changes to derivatives account structures in late 2012, and in light of this feedback undertook to develop an alternative account structure for both futures markets and its proposed client clearing service for OTC derivatives, planned for introduction in the first half of 2014.

[22] The relevant legislation amended Part 5 of the *Payment Systems and Netting Act 1998*.

The alternative client account structure proposed for ASX Clear (Futures) provides the option of segregation of client positions on an individual client basis, with omnibus segregation remaining available to clients for which the costs of additional protection outweigh the benefits. Under the proposed ASX model for client clearing, client positions would be recorded against individual accounts, and a margin requirement calculated on a gross basis at the level of each client account. Margin posted by the participant on behalf of clients would be managed as a commingled pool of collateral by ASX Clear (Futures), but clients would be entitled to the full value of initial margin calculated against their positions in the event of a participant default. This supports portability by ensuring that clients would have sufficient collateral transferred with their positions to ensure that their full margin requirements could be met after transfer.

ASX will be seeking feedback from participants and clients on its proposed model for client clearing in ASX Clear (Futures) during the second half of 2013. It plans to introduce its new client account model for OTC derivatives and futures transactions in the first half of 2014. A second stage would consider arrangements to support the lodgement of excess collateral by clients.

ASX Clear

While ASX Clear offers individually segregated client accounts for derivatives transactions, consistent with the FSS, securities transactions are currently cleared via a single commingled house/client account for each participant. While acknowledging that the scope for transfer of client positions would be limited under any account structure due to the short (three-day) equity settlement cycle, ASX Clear's current account structure for cash equities does not provide the minimum level of segregation that the new FSS will require. In acknowledgement of this, ASX released a consultation paper in July 2013 seeking feedback on the existing single house account structure, and two further options: a client omnibus account and an individually segregated client account structure.[23]

ASX's consultation paper noted the additional operational costs involved in maintaining individual client accounts, and a loss of netting efficiencies creating additional margin requirements and increased settlement obligations under either model of segregation. However, it also noted that the status quo alone was unlikely to provide the necessary degree of client protection to satisfy new FSS requirements. Stakeholders were asked to comment on their preferred model, as well as to provide details of operational implications. ASX will consider market feedback in the second half of 2013 and develop its proposals.

Recommendation. To meet the requirements of CCP Standards 13.1, 13.2 and 13.3, which come into force on 31 March 2014, ASX Clear should complete development and commence implementation of arrangements for client account segregation in its cash equity clearing service, while ASX Clear (Futures) should begin implementation of its proposals to complement the existing omnibus client account structure for exchange-traded products with individual client account segregation in both its exchange-traded and OTC derivatives clearing services.

[23] ASX's consultation paper, 'Financial Stability Standards Implementation – the way forward', may be found at <https://www.asxonline.com/intradoc-cgi/groups/derivatives/documents/communications/asx_037706.pdf>.

Both CCPs' liquid resources are currently sufficient to meet the required level of cover for liquidity exposures related to derivatives transactions under CCP Standard 7.3, which comes into effect in March 2014. However, in extreme but plausible market conditions, ASX Clear's liquid resources may not be sufficient to cover the single largest liquidity exposure to a participant and its affiliates arising from cash equity transactions. The size of this liquidity shortfall is potentially large – around $1.2 billion under current market conditions, and around $3 billion at the height of the global financial crisis in 2008. The reason for this large shortfall lies with a mismatch between the timing of payment obligations for securities purchases arising from a participant default, and the receipt of funds realised from the sale of the securities purchased by the CCP in such circumstances. This timing mismatch (typically three days in line with the equities settlement cycle) means that ASX Clear's liquidity exposure to participants in respect of cash equity transactions may be significantly greater than its credit exposure on the same transactions.

ASX Clear would currently address any liquidity shortfall by rescheduling trades. However, this will no longer be permitted under the new FSS requirements for liquidity risk management. ASX therefore consulted in July 2013 on a proposal under which it would enter into committed liquidity arrangements with participants that would replace the need to reschedule transactions. These arrangements would only be used once other liquid resources had been exhausted.

The proposed arrangements would allow the original trades of a defaulting participant to settle when due, but participants due to deliver securities under such trades would enter into a simultaneous stock repurchase arrangement (repo) with ASX Clear. This offsetting transaction would re-deliver to the participant the same securities that it delivered to ASX Clear, and would provide ASX Clear with the funds necessary to settle its payment obligation for the original trade. The offsetting transaction would unwind once ASX Clear was able to liquidate the securities and access the funds required to meet the defaulting participant's payment obligations (see Table 7). Accordingly, the proposed arrangements would replicate the economic effect of current rescheduling arrangements, but would explicitly recognise and formalise the role of participants in providing liquidity to ASX Clear to allow settlement to occur as scheduled.

In the period prior to new liquidity requirements coming into effect in March 2014, ASX plans to develop rule changes to implement committed liquidity arrangements, subject to feedback received from stakeholders during its consultation. It is proposed that the committed liquidity arrangements be governed by amended provisions in the rules of ASX Settlement, rather than via separate contractual arrangements with participants.

Recommendation. To meet the requirements of CCP Standard 7.3, ASX is expected to develop and implement appropriate arrangements to source liquidity for the settlement of cash equity transactions in the event of a participant default, and thereby avoid rescheduling settlements.

Table 7: Managing the Cash Equity Liquidity Impact of a Participant Default*

Day	Current Rescheduling Arrangements	Proposed Participant Committed Liquidity Arrangements
T+3	Selected settlements of non-defaulting participants to deliver stocks purchased by the defaulting participant would be rescheduled to T+4. ASX Clear would enter into close-out trades to sell stocks that it would receive once the rescheduled transactions settle. Close-out trades would typically settle on T+6.	All novated settlements would take place as originally scheduled. Selected non-defaulting participants due to deliver stocks purchased by the defaulting participant would be required to enter into an overnight repo with ASX Clear. Under this repo, they would receive back stocks delivered to ASX Clear and provide funds required to allow original novated transactions to settle. The repos would exactly offset the payment obligations of the defaulting participant assumed by ASX Clear. ASX Clear would enter into a close-out trade to sell stocks that it would receive once the repo unwinds. The close-out trade would typically settle on T+6.
T+4	If ASX Clear does not have sufficient liquidity to settle rescheduled transactions on T+4, these would be further rescheduled to T+5.	ASX Clear would settle the unwinding of repos, but if it does not have sufficient liquidity to settle its payment obligations on T+4, it would enter into replacement repo transactions due to unwind on T+5.
T+5	If ASX Clear does not have sufficient liquidity to settle rescheduled transactions on T+5, these would be further rescheduled to T+6.	ASX Clear would settle the unwinding of repos, but if it does not have sufficient liquidity to settle its payment obligations on T+5, it would enter into replacement repo transactions due to unwind on T+6.
T+6	ASX Clear would receive funds from the settlement of close-out trades and use these (and any other resources required to cover losses on the close-out trade) to settle rescheduled transactions.	ASX Clear would receive funds from the settlement of close-out trades and use these (and any other resources required to cover losses on the close-out trade) to unwind repo transactions.

* The process described in this table assumes prefunded liquid resources are not sufficient to meet ASX Clear's cash equity payment obligations assumed on behalf of the defaulting participant.

3.7 Recognition in Europe

Under the *European Regulation on OTC derivatives, central counterparties and trade repositories* (EMIR), which took effect in August 2012, non-EU CCPs that provide clearing services to participants established in the EU must obtain recognition from the European Securities and Markets Authority (ESMA). Since three of ASX Clear (Futures)' participants are branches of European headquartered banks, ASX Clear (Futures) must apply to ESMA for recognition by 15 September.

A prerequisite for recognition is that the European Commission (EC) deems the home regime of a CCP seeking recognition to be equivalent in terms of its regulatory framework and rules to that under EMIR. In order to inform its decision, the EC requested that ESMA provide it with advice on the equivalence of certain jurisdictions, including Australia. Accordingly, the Bank and colleagues from the other CFR agencies have for some months been assisting ESMA in the preparation of technical advice for EC on the equivalence of the Australian regime.

While the Bank considers that the EU regulatory framework for CCPs and that in Australia achieve equivalent regulatory outcomes, the technical standards issued by ESMA under EMIR are more detailed than the FSS. There are therefore some areas in which ESMA has sought additional clarification regarding how the Bank interprets the FSS. Accordingly, the Bank has issued supplementary interpretation of a subset of standards, by way of an exchange of letters with ASX.[24] The letter notes that the supplementary interpretation would apply in the case of any domestically licensed derivatives central counterparty that provides services to participants established in the EU.

The letter also confirms that, given current facts and circumstances, the Bank believes that, in order to be assessed as observed in relation to a CCP Standard specified in column 1 of Table A1 in Appendix A, ASX Clear (Futures) will need to meet the requirements specified in the corresponding row of the second column of the table. The Bank has applied this interpretation of the relevant CCP Standards with effect from 16 August, and will formally assess ASX Clear (Futures) with reference to this interpretation in its published Assessment of ASX Clear (Futures) for the period 2013/14. This interpretation will hold unless and until the Bank notifies ASX Clear (Futures) in writing to the contrary, which the Bank reserves the right to do in response to relevant domestic or international developments.

Among the most substantive matters for interpretation is the requirement around the coverage of a CCP's financial resources. The relevant FSS require that a CCP considered to be systemically important in multiple jurisdictions maintain default resources and liquidity sufficient to cover obligations arising in the event of the default of its two largest participants (plus affiliates) in stressed circumstances. Under EMIR, this cover two requirement applies to all CCPs, whereas under the FSS the cover two requirement only applies to CCPs that are systemically important in multiple jurisdictions. The proposed supplementary interpretation clarifies that recognition requirements in other relevant jurisdictions, including the EU, would be taken into account (alongside other factors) in judging whether a CCP was systemically important in multiple jurisdictions, and therefore subject to cover two requirements. In anticipation of becoming subject to a cover two requirement, ASX recently completed a significant capital raising (see Section 3.5.1), and with effect from 16 August began testing the adequacy of its financial resources against a cover two benchmark.

[24] The Bank's letter to ASX is available at <http://www.rba.gov.au/payments-system/clearing-settlement/pdf/supplementary-guidance-domestic-derivatives-ccps.pdf>.

4. Special Topic – ASX Strategic Initiatives

The 2011/12 Assessment identified some key strategic initiatives in train at ASX, most notably, clearing of over-the-counter (OTC) interest rate derivatives and a centralised collateral management service, and a trading, clearing and settlement service for retail investors in Commonwealth Government securities (CGS). The 2011/12 Assessment encouraged ASX to continue the detailed dialogue with regulators as these plans developed to ensure that these initiatives were pursued in a manner consistent with ASX's ongoing compliance with the Financial Stability Standards (FSS). A detailed dialogue has indeed continued over the 2012/13 Assessment period, as all three initiatives have been progressed to launch.

The Bank has taken a particularly close interest in the OTC interest rate derivatives clearing service, ultimately launched by ASX Clear (Futures) on 1 July 2013, and ASX Collateral, the centralised collateral management service, which launched on 29 July 2013, initially facilitating optimisation of collateral securities held in Austraclear. Both services represent major developments for ASX, ASX's participants and the Australian financial system more broadly. Given their importance, the Bank carried out detailed assessments of the prospective new services, with particular reference to their implications for ASX Clear (Futures)' and Austraclear's continued compliance with the relevant FSS. This section summarises some of the key design features of these services considered in the Bank's assessments, and also introduces the new retail CGS service.

4.1 Clearing of OTC Interest Rate Derivatives

ASX Clear (Futures) launched a clearing service for OTC interest rate derivatives on 1 July 2013. Initially, ASX has limited its offering to the clearing of participants' proprietary positions in standardised Australian dollar-denominated interest rate swaps (IRS) referencing either the bank bill swap rate or the overnight indexed swap rate. Nine banks have become Foundation Customers, and under the terms of the Foundation Customer Program all are expected to be admitted as participants by 1 January 2014. By the end of 2013, ASX plans to provide for client clearing, and to expand its product scope to Australian dollar-denominated IRS indexed to forward-rate agreements, and New Zealand dollar denominated IRS.

The provision of an OTC derivatives clearing service has implications for ASX Clear (Futures)' observance of several of the FSS. Prior to the launch of the service, therefore, the Bank carried out a detailed assessment of the new service against the relevant standards and sub-standards. The Bank's assessment is incorporated in the detailed assessment of ASX Clear (Futures) in Appendix B1.2. At the time of the assessment, some risk management policies and parameters had not yet been finalised, but these were addressed to the Bank's satisfaction prior to the launch of the service. One area remained outstanding at the time of launch: the development of an appropriate mechanism for ensuring competitive bidding in an auction of a defaulting participant's positions. As a condition of approval to launch, ASX committed to developing such a mechanism prior to the extension of the service to provide for client clearing, in the context of a more fully articulated 'hedge-then-auction' process (see Section 3.5.3).

4.1.1 Rule changes

To give effect to this service, ASX Clear (Futures) sought regulatory approval for a number of significant changes to its Operating Rules, including the introduction of a new OTC-specific Rulebook and an OTC Handbook, which sets out the procedures, timings, contract terms and other details of the service.[25] The key aspects of the rule changes are summarised below in Table 8.

Table 8: Scope of Changes to ASX Clear (Futures) Rules

Aspect	Purpose
Participation requirements	Introduced a new 'OTC participant' category, with separate, risk-based participation criteria. This included amendments to the resignation and termination arrangements.
Registration	Set out the criteria and process for submitting OTC derivatives trades for novation to ASX Clear (Futures), including the circumstances under which a trade would be novated.
Accounts and Margining	Set out the account and margining arrangements for OTC derivatives positions, including the types of collateral accepted as initial and variation margin and the basis of portfolio margining (including cross-margining).
Pooled financial resources	Introduced an obligation for OTC participants to contribute to ASX Clear (Futures)' pooled financial resources, and amended the obligations of 'futures' participants' commitments to resources. The rules also implemented an amended default waterfall that varies according to the clearing activities of the defaulter.
Default management	Set up a hedge-then-auction process for a defaulter's OTC derivatives positions, including establishing what constitutes an event of default, the participation arrangements for Default Management Groups and the requirement for OTC participants to bid in an auction.
Risk Committee	Established the arrangements for a new Risk Committee, designed to allow both futures and OTC participants to make recommendations on changes to ASX Clear (Futures) risk management and rules.
OTC Product Committee	Established the arrangements for a new OTC Product Committee, designed to allow OTC participants to provide recommendations on the types of OTC derivatives transactions that are eligible for clearing and material changes to the terms of OTC derivatives contracts.
Obligation to consult on rule changes	Formalised ASX's practice of consulting on rule changes by introducing a requirement in the rules.

As well as engaging with ASIC and the Bank during the development of the service, ASX conducted a 'design study' involving prospective participants, and a public consultation on its rule changes.

4.1.2 Key design features

Design features related to credit risk, margin and default management were examined particularly closely in the Bank's assessment. Some key observations and areas for continued monitoring are highlighted below.

Credit risk

ASX offers 'real-time' novation of interest rate swaps (IRS) transactions submitted for clearing, consistent with the existing novation process for exchange-traded products. To manage the additional risk exposure arising from real-time novation, ASX Clear (Futures) will place a limit on the acceptable

[25] The OTC Rulebook and OTC Handbook are available at <http://www.asxgroup.com.au/asx-clear-futures-operating-rules-and-waivers.htm>.

size of new transactions, introduce approximately hourly portfolio exposure checks, and have the ability to prevent further novation until an intraday margin call is met. The Bank will continue to monitor the effectiveness of these risk management measures.

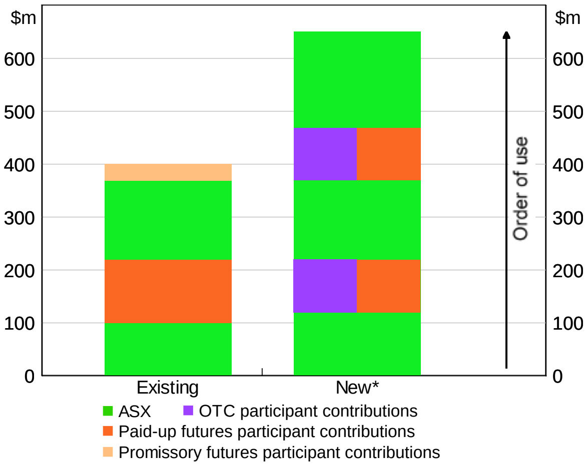
ASX operates a single commingled pool of default resources to support ASX Clear (Futures)' OTC and exchange-traded derivatives clearing activities. While some OTC derivatives CCPs that also clear exchange-traded products have opted for segregated default resources, others, including SGX and Eurex, also have commingled models. ASX has committed formally to reviewing the default fund arrangements annually, including considering whether a commingled default fund remains appropriate. The Bank will take a close interest in this review process.

With reference to the relevant FSS, the Bank's particular focus in assessing the appropriateness of this structure was on:

- *The size of pooled financial resources*. The initial amount of paid-up pooled financial resources is based on stress tests of OTC derivatives position data collected in a design study in 2012. Further to the recent capital raising and rule changes that provide for an additional $100 million in contributions from OTC participants, ASX Clear (Futures) is in the process of increasing the total size of its prefunded pooled resources to $650 million. It is intended that this will provide cover sufficient to meet with a high degree of confidence ASX Clear (Futures)' obligations in the event of the default of the two participants to which it has the largest exposures in extreme but plausible circumstances. ASX has also amended its stress-test scenarios to take into account the longer assumed close-out period for OTC derivatives positions (five days as opposed to one to two days for exchange-traded positions), as well as adding scenarios that consider the potential basis risk resulting from a change in the economic relationship between interest rate futures and IRS, particularly in stressed circumstances. Since actual stress-test results, and associated financial resource requirements, will depend on observed participation in the service, the Bank will remain in close dialogue with ASX around the adequacy of resources as the service evolves.
- *Proportionality*. In conjunction with for the increase in pooled financial resources, ASX also took steps to equalise the futures and OTC participant contribution pools to $100 million each. To address any residual concerns around mutualisation of participant-contributed financial resources, ASX also introduced different default waterfalls (i.e. the order in which survivors' contributed default resources would be used) depending on the defaulter's share of initial margin for exchange-traded compared with OTC derivatives products (including cross-margined futures) over the previous 90 days (Graph 11).
- *Implications for contagion*. ASX regards the commingling of financial resources as appropriate in light of the homogeneity of both the products to be cleared and the clearing participants: around half of the risk (as measured by initial margin) currently managed by ASX Clear (Futures) is related to AUD interest rate products; and 11 of the 14 ASX Clear (Futures) participants at the time of the launch were active in the AUD IRS market. Accordingly, the majority of participants already have some exposures to the default of a participant in this market and therefore the commingling of the default fund may not be a material incremental source of contagion between these markets.

Graph 11

Default Waterfall Scenarios



* Assuming receipt of $100 million of OTC participant contributions
Source: ASX

Margin

ASX uses historical value-at-risk (VaR) to calculate margin requirements for OTC derivatives positions, based on a five-year sample period with an assumed close-out period of five days, and a 99.7 per cent confidence interval. This is closely aligned with the methodology used by existing international OTC derivatives CCPs and consistent with the Bank's supplementary interpretation of CCP Standard 6 (see Section 3.7). ASX also offers OTC participants the ability to choose to cross margin their direct interest rate futures by allocating these positions to their OTC derivatives portfolio. If participants choose to do so, the allocated interest-rate futures are margined under VaR, rather than using the CME SPAN methodology that is currently in place for exchange-traded positions. Under the FSS, ASX is also required to analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting and sensitivity analysis, and its risk management processes will be subject to periodic reviews by external experts. ASX introduced backtesting arrangements in July 2013 and has plans in place to further develop its other model validation processes. The Bank will monitor progress towards delivering on these plans over the coming months (see Section 3.5.1).

Participant default rules and procedures

ASX's approach to default management is broadly in accordance with the emerging standard for OTC derivatives CCPs. In the event of the default of an OTC participant, ASX's intention is to terminate the defaulting participant's open positions and hedge the defaulter's OTC derivatives portfolio (including cross-margined futures), before auctioning the hedged portfolio to non-defaulting participants. To provide advice and assist with the hedging process, ASX will convene Default Management Groups (DMGs), comprised of experts from non-defaulting OTC participants, selected on a rotational basis for an annual term. ASX will also seek the DMGs' advice on ASX Clear (Futures)' default management policy and processes at regular intervals. The DMGs will also be involved in default simulations at least once a year.

While the default management framework articulated for the OTC derivatives service is broadly consistent with the relevant FSS, there is one key stability-relevant matter outstanding: the absence of a clear incentive for participants to bid competitively at a default management auction. ASX is currently negotiating with participants to develop an agreed mechanism for incentivising competitive bidding within the context of more fully elaborated default management processes (see Section 3.5.3).

4.2 Centralised Collateral Management

ASX launched a centralised collateral management service (CCMS), ASX Collateral, on 29 July. This service has been developed in partnership with Clearstream, a Luxembourg-based financial market infrastructure provider. Impending regulatory changes and other market developments are increasing demands on a limited pool of high-quality collateral, giving market participants a strong incentive to optimise their use of collateral. 12 participants have signalled their intention to join the service.

In delivering this service, ASX has established a subsidiary, ASX Collateral Management Services Pty Limited, a wholly owned subsidiary of ASX Operations Pty Limited, to act as a 'triparty' collateral management agent. This subsidiary will have full operational control of collateral related transfers between CCMS participants' dedicated securities accounts in order to perform the operations of the new service. For the purposes of providing the CCMS, ASX Collateral Management Services Pty Limited holds an Australian Financial Services Licence (AFSL), permitting it to arrange dealings in securities.

Key functions of the service are that it automates the optimisation and allocation of collateral, substitutes collateral as required, and re-hypothecates or re-uses collateral received. Title remains and settlement continues to take place in the existing SSFs.

- Optimisation of collateral is a process whereby a collateral provider seeks to meet its obligations by using collateral in the most efficient way. The provider aims to minimise the opportunity cost of providing collateral subject to pre-determined constraints, which may include regulatory requirements, collateral receivers' eligibility criteria and haircuts, alternative uses for collateral-eligible assets, and its own risk preferences.
- Substitution is the process whereby collateral that has been lodged or pledged is replaced by unused collateral of equivalent or greater value – provided that it meets the eligibility criteria set by the collateral receiver. Events that may trigger substitution include sale of securities by the collateral provider, a corporate event, collateral becoming ineligible (e.g. because of a change to counterparty criteria), or optimisation of the collateral allocation.
- Re-use is the process by which collateral received from another participant can in turn be given as collateral, thereby allowing for the creation of chains of re-use involving many participants. Where a participant in the re-use chain needs to perform a substitution of collateral, a series of substitutions may be required to retrieve the collateral.

In automating the optimisation process, ASX Collateral applies an optimisation algorithm developed and operated by Clearstream. This scans a collateral provider's portfolio to identify the securities that most efficiently meet any given collateral demand, subject to preferences established by the collateral receiver (on criteria such as issuer, security type and rating, and concentration limits). The algorithm is run regularly throughout the day and may recommend substitutions of collateral in response to relative collateral price movements and to changes in the collateral provider's portfolio of eligible assets. The CCMS then effects a transfer of collateral, in Austraclear, between participants to achieve this optimal allocation.

Initially, ASX is offering the service for collateral held in Austraclear, with plans to extend coverage in due course to collateral settled by ASX Settlement. In later phases, ASX Collateral plans to extend the service to permit participants to use collateral held in overseas depositories to meet collateral needs in Australia, and ultimately also to permit the use of collateral held in Austraclear and ASX Settlement to meet collateral needs overseas. Any such extensions would be subject to further regulatory approval.

ASX Collateral has the potential to become an important piece of infrastructure in Australian financial markets, and will be closely linked to the ASX securities settlement facilities. Accordingly, prior to the launch of the service, the Bank carried out a detailed assessment of the implications of introduction of the new service for Austraclear's continued observance of the relevant FSS. The Bank's assessment is incorporated in the detailed Assessment of Austraclear in Appendix B2.2. The Bank looked particularly closely at operational contingency arrangements. The Bank has an interest in the service beyond the oversight of Austraclear: in particular, in relation to the Bank's role as operator of RITS, for which Austraclear is a feeder system, and also the Bank's role as a potential collateral receiver via ASX Collateral.

4.2.1 Rule changes

ASX Collateral has the potential to become an important piece of infrastructure in Australian financial markets, and will be closely linked to ASX's licensed SSFs. Initially, ASX Collateral will provide for centralised management of collateral-eligible assets held in Austraclear to meet domestic collateral obligations. Clearstream will perform portfolio optimisation and operate the web interface for users of the service, while ASX Collateral will provide a gateway between Clearstream and Austraclear, feeding price and account information into the optimisation engine and generating settlement instructions for Austraclear based on collateral movements recommended by the optimisation engine or delivered via the web interface.

Austraclear has implemented a number of changes to its Regulations to provide for a Collateral Management System within Austraclear (Table 9). While many of the changes are not, in principle, materially different from prior amendments to facilitate other special types of settlement, the heightened regulatory attention on the collateral management functionality reflects the likelihood that this will become critical functionality for the financial system.

4.2.2 Key design features

In the Bank's assessment, particular attention was paid to interdependencies between ASX Collateral and Austraclear related to legal basis, operational risk, settlement, and participant default rules and procedures.

Table 9: Scope of Changes to the Austraclear Regulations*

Aspect	Purpose
Collateral Management System	The Regulations provide for a Collateral Management System to be provided within Austraclear for the management and movement of collateral between collateral givers and collateral receivers on the instruction of a Collateral Manager.
Collateral Manager as a Participant	Revisions to the Regulations provide for a Collateral Manager to be admitted as Special Purpose Participant, subject to specific requirements. A Collateral Manager may submit settlement instructions as long as it is authorised to do so under the terms of a Collateral Management Agreement with both the collateral giver and the collateral receiver. The Regulations allow for the admission of Collateral Managers other than ASX Collateral.
Account structures	The Regulations provide for new account types and account structures that facilitate the identification of source securities available for use in the Collateral Management System (Collateral Source Accounts), and transferred or pledged collateral (Collateral Accounts). The Regulations clarify restrictions on participants' access to transferred collateral; i.e. that such collateral may be transferred to/from a Collateral Account only by a Collateral Manager acting on behalf of the collateral receiver.
Participation	A participant in the Collateral Management System must be a full participant of Austraclear. In the event that Austraclear considers that a participant no longer meets its participation requirements it may direct that participant to transfer securities out of its collateral accounts, or effect such transfers itself. The Regulations indemnify Austraclear against any loss or claim arising in respect of any such actions taken.
Rights and obligations	Without affecting the rights and obligations of Austraclear, the Regulations uphold the rights, obligations and interests of collateral givers and collateral receivers under underlying bilateral contracts between collateral givers and collateral receivers (Principal Agreements).
Default	The Regulations clarify the role of a Collateral Manager in the event of the default of a participant in the Collateral Management System. In such circumstances, and in accordance with the terms of the Principal Agreement, a Collateral Manager may, on the sole instruction of a collateral receiver, instruct Austraclear to transfer securities held in a Collateral Account. The Regulations indemnify Austraclear against any loss or claim arising in respect of any actions taken in accordance with such instructions.

* The table sets out, at a high level, the broad scope of changes to the Austraclear Regulations that give effect to the centralised collateral management service.

Legal basis

ASX Collateral Management Services Pty Limited is a special class of Austraclear participant, which is permitted to send instructions to the Austraclear system on behalf of ASX Collateral service users in relation to collateral movements. Recognising that the CCMS has the potential to be a crucial Austraclear dependency, ASIC, in consultation with the Bank, has required that the Austraclear Regulations and Procedures set additional operational resilience and business continuity requirements for this class of participant.

Transfer of title to securities occurs through Austraclear accounts. Accordingly, a prerequisite for use of the CCMS is participation in Austraclear. ASX Collateral participant arrangements are specified in Collateral Management Services Agreements (CMSAs), with separate agreements covering the receipt and provision of collateral. These agreements give ASX Collateral Management Services Pty Limited, as Collateral Manager, full operational control of collateral related transfers between CCMS participants' dedicated securities accounts in order to perform the operations of the new service, and intend to preserve participants' rights and obligations under bilateral counterparty contracts (Principal Agreements).

Operational risk

To facilitate the operations of the CCMS, the new Austraclear Regulations give effect to two new types of sub-account in Austraclear:

- 'Source Account'. A participant transfers to the Source Account the pool of securities from which ASX Collateral can allocate securities to meet collateral demands. Source Accounts may be controlled by both the participant (since collateral may need to be withdrawn for sale or other uses outside of the system) and ASX Collateral (in performing optimisation and allocations).
- 'Collateral Account'. These accounts maintain a record of all securities provided and received. Collateral Accounts are solely managed by ASX Collateral. These securities may be re-used within the CCMS (unless received via a pledge or otherwise agreed between the collateral provider and collateral receiver) to collateralise other obligations of the collateral receiver. The collateral receiver may also instruct ASX Collateral to transfer such securities to another account (e.g. for sale or repo outside of the CCMS), as long as equivalent replacement securities are transferred to the Collateral Account.

A key difference between these arrangements and existing bilateral collateral arrangements is that participants no longer have direct access to all securities held in their own name at Austraclear. While a collateral receiver's title to collateral held is not altered by these arrangements, participants' access to collateral securities received may, to some extent, be constrained relative to existing bilateral contractual and operational arrangements. This introduces new operational dependencies for market participants.

Particularly in light of these dependencies, the Bank has sought to establish that the standards for operational resilience at ASX Collateral are appropriate for a critical system and equivalent to those of Austraclear. Targets for system availability and capacity utilisation, as well as standards for operational redundancy and failover, are indeed equivalent; that is, 99.9 per cent availability and minimum capacity headroom of 50 per cent of total capacity. Further, ASX Collateral's domestic systems are located at ASX's primary and backup sites, with failover to occur within one to two hours. More generally, ASX's operational risk management framework applies equally to ASX Collateral, involving the documentation of operational processes and procedures, with independent external and internal audits. As with other operational services provided to the clearing and settlement corporate entities, a written support agreement between ASX Collateral and ASX Operations Pty Limited aims to ensure continuity of service (to the extent permissible by law), even in the event of insolvency of ASX Operations Pty Limited.

Key operations of the new CCMS are outsourced to Clearstream in Luxembourg. As noted, Clearstream operates the optimisation engine and the web interface for service users, while ASX Collateral Management Services Pty Limited operates the gateway between the outsourced Clearstream operations and Austraclear. This 'Clearing Services Gateway' (CSG) communicates with Clearstream systems over dual dedicated leased lines between Sydney and Luxembourg, sending price and account information to Clearstream's Collateral Management Exchange (CmaX) system and receiving recommended settlement instructions from the optimisation engine and web interface. It then converts the settlement recommendations into the appropriate sets of settlement instructions for Austraclear (or ASX Settlement in future).

Reliance upon externally supplied software is not new, and Austraclear has for some time outsourced certain core system services to a third-party vendor. Clearstream provides 'round the clock' operational and technical support via its network of operational centres. In addition, ASX has established a local service desk to deal with all participant requirements and queries, including liaison with Clearstream as required. Clearstream reliability targets are broadly equivalent to those of ASX Collateral: 99.8 per cent availability and average capacity utilisation of no more than 20 per cent.[26] Clearstream also has broadly equivalent security practices to ASX, including the use of geographically separated underground data centres with security huts, managed firewalls, anti-virus and anti-malware protection for email, and data encryption.

The Service Level Agreement between ASX Collateral and Clearstream sets out contingency plans for a range of scenarios that identify potential service issues and impacts, as well as actions and responsibilities. Provided that Austraclear is still operational, there is the option to fall back to manual submission of repos and other instructions for collateral transfers, based on existing bilateral functionality. It is acknowledged, however, that once the transition to centralised collateral management has occurred, market participants' functional knowledge of pre-existing processes is likely to decay.

Settlement

Substitutions of collateral are settled in such a way as to prevent any occurrence of principal risk – even if only for a very short time in the settlement process. Where substitutions occur between two participants, settlement is on a delivery-versus-delivery basis (i.e. the transfer of title to one security is dependent upon the simultaneous transfer of title to the second security). However, since transferred collateral may be re-used, chains of substitutions may be necessary to recall collateral from the ultimate holder of a particular security to a collateral provider that seeks its return. Potentially, collateral substitutions between two participants may need to pass through intervening participants. To achieve this, the CCMS may generate sets of settlement instructions that must all successfully settle, or all instructions are rejected if one element fails to settle. The Bank is satisfied that this mechanism does not give rise to principal risk. However, a long re-use chain may have implications for timely completion of transactions at end of day. Use of cash as collateral of last resort is intended to mitigate this risk where participants engage in re-use of collateral.

Default management

The intent of the CMSAs is to preserve participants' rights and obligations under the Principal Agreement, including in the circumstances of a participant default. A default event is as defined by the Principal Agreement and would typically include situations such as a participant becoming subject to external administration or failing to meet its obligations in relation to a collateral transaction. Upon notification of a default under a Principal Agreement, ASX Collateral will act as the collateral receiver's agent and, upon instructions from the collateral receiver, instruct Austraclear to transfer collateral held from the receiver's Collateral Account to its Source Account or Austraclear trading account. ASX Collateral's role as an agent is strictly limited. Nothing in its contractual arrangements obligates ASX Collateral Management Services Pty Limited to enquire into the validity of any matters in connection with the Principal Agreement. Any such dispute is a matter for the parties to the Principal Agreement.

[26] Clearstream is subject to assessment by the Central Bank of Luxembourg against relevant international principles (including operational risk), as are Austraclear and RITS.

4.3 Retail Commonwealth Government Securities

On 21 May 2013, ASX launched a service to trade, clear and settle interests in CGS via its existing ASX Market, ASX Clear and ASX Settlement infrastructure. This initiative was launched in 2010 by the Australian Government, in order to facilitate trading of CGS by retail investors. Under the new service, investors trade depository interests, which represent units of beneficial ownership of CGS held in Austraclear. Securities traded include both Treasury Bonds and Treasury Indexed Bonds (with face value indexed to the consumer price index), of varying maturities and coupon rates.

Trades entered into via the new service are novated to ASX Clear and settled on a T+3 basis in ASX Settlement, as for cash equities. This is a departure from existing arrangements for wholesale trading in CGS, which occurs on an OTC basis, with no central clearing, and with settlement in Austraclear. In clearing CGS, ASX Clear applies the same risk management framework as for cash equities, levying initial and mark-to-market margin on transactions. Retail CGS are currently margined at a flat rate in accordance with ASX Clear's policy for cash equities and fixed-interest securities with an insufficient price history to apply the full HSVAR margin methodology. The flat rate applied to calculate initial margin for retail CGS aims to cover one or two day movements in price for a single security type to a 95 per cent confidence level. ASX's recent enhancements to margin backtesting will be used to verify that, at a portfolio level across all securities (including cash equities), the desired 99 per cent confidence level for margin coverage is met.

The Bank noted in its 2011/12 Assessment that it would be concerned if wholesale activity in CGS, which currently settles in Austraclear, migrated to the new facility. While Austraclear settles wholesale CGS on a delivery-versus-payment (DvP) model 1 basis, retail CGS are settled in a single multilateral net batch with cash equity transactions in ASX Settlement (i.e. DvP model 3). The settlement arrangements for the new facility would be acceptable only if the facility remained retail oriented. Since launch, settlement activity in retail CGS has indeed remained low. The Bank will continue to monitor developments in the service.

Appendix A: Supplementary Interpretation of Financial Stability Standards

Table A1 sets out supplementary interpretation of certain sub-standards of the *Financial Stability Standards for Central Counterparties* (CCP Standards), provided to ASX Clear (Futures) in the context of its seeking recognition in the European Union (EU), under the *European Regulation on OTC derivatives, central counterparties and trade repositories* (EMIR). The background to this supplementary interpretation is discussed in Section 3.7.

Table A1: Interpretation of CCP Standards for Domestically Licensed CCPs that Provide Services to Clearing Participants Established in the EU

CCP Standard	Additional Interpretation
Governance CCP Standard 2.6. The board should establish a clear, documented risk management framework that includes the central counterparty's risk tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision-making in crises and emergencies. Governance arrangements should ensure that risk management and internal control functions have sufficient authority, independence, resources and access to the board, including through the maintenance of a separate and independent internal audit function.	The guidance to this CCP Standard, in 2.6.3, states that '…a central counterparty should have a risk committee responsible for advising the board on the central counterparty's overall current and future risk tolerance and strategy, or equivalent...' It is the Bank's judgement that, in accordance with the guidance, establishment of an independent risk committee is the most appropriate way to help the board discharge its risk-related responsibilities. The risk committee should comprise representatives of participants, and depending on the scale and nature of client clearing activity, also indirect participants. The Bank will interpret CCP Standard 2.6 accordingly in the case of ASX Clear (Futures).
Credit Risk CCP Standard 4.2. A central counterparty should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk management tools to control these risks. To assist in this process, a central counterparty should ensure it has the capacity to calculate exposures to participants on a timely basis as required, and to receive and review timely and accurate information on participants' credit standing. CCP Standard 4.4. A central counterparty should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources. In addition, a central counterparty that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates	The guidance in 4.2.4 discusses the role of prefunded financial resources in managing losses caused by participant defaults. The guidance recognises that the default waterfall may include '…a defaulter's initial margin, the defaulter's contribution to a prefunded default arrangement, a specified portion of the central counterparty's own funds, and other participants' contributions to a prefunded default arrangement'. The guidance does not prescribe a particular composition of prefunded financial resources, nor does it prescribe the order in which such funds should be drawn. Nevertheless, the Bank would expect that a material proportion of pooled financial resources comprised a central counterparty's own resources, and, further, that a sufficient proportion of such resources would be drawn first in the event that a defaulting participant's margin and other contributions were exhausted, so as to ensure that the central counterparty faced appropriate incentives to set robust risk management standards. The Bank will interpret CCP Standard 4.2 accordingly in the case of ASX Clear (Futures). Separately, the guidance in 4.4.2, states that '…determinations of whether a central counterparty is systemically important in multiple jurisdictions should include consideration of, among other factors: the location of the central counterparty's participants; the aggregate volume and value of transactions that originate in each jurisdiction in which it operates; the proportion of its total volume and value of transactions that originate in each jurisdiction in which it operates; the range of currencies in which the instruments it clears and cleared or settled; any links it has with FMIs located in other jurisdictions; and the extent to which it clears instruments that are subject to mandatory clearing obligations in multiple jurisdictions…'.

CCP Standard	Additional Interpretation
that would potentially cause the largest aggregate credit exposure for the central counterparty in extreme but plausible market conditions…	In forming a judgement on systemic importance with reference to these factors, the Bank will take into account the (implicit or explicit) views of the relevant overseas regulatory authorities. In the case of a central counterparty foreign to the EU that provides services to clearing participants established in the EU, the need to obtain recognition under EMIR may be regarded as evidence that the EU authorities consider such a central counterparty to be a vehicle for the transmission of risks to the EU, and may therefore be evidence of systemic importance in multiple jurisdictions. If a systemically important domestic Australian central counterparty not only required recognition in the EU, but also had material participation of clearing participants established in the EU and cleared a range of derivatives products with different characteristics (including levels of liquidity), the Bank would expect to conclude that such a central counterparty was systemically important in multiple jurisdictions. The Bank will interpret CCP Standard 4.4 accordingly in the case of ASX Clear (Futures) and hold ASX Clear (Futures) to the higher standard that it should maintain additional financial resources to cover the default of the largest two participants and their affiliates (by credit exposure).
Margin CCP Standard 6.3. …Initial margin should meet an established single-tailed confidence interval of at least 99 per cent with respect to the estimated distribution of future exposure… The model should: use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of product cleared by the central counterparty…	The guidance to this CCP Standard elaborates further. In particular, the guidance in paragraphs 6.3.1–6.3.3 requires that: • '…the method selected by the central counterparty to estimate its potential future exposure should be capable of measuring and incorporating the effects of price volatility and other relevant product factors and portfolio effects over a close-out period that reflects the market size and dynamics for each product cleared by the central counterparty…' • '…close-out periods should be set on a product-specific basis because less liquid products might require significantly longer close-out periods…' • '…a central counterparty should select an appropriate sample period for its margin model to calculate required margin for each product that it clears…' • '…selection of the period should be carefully examined based on the theoretical properties of the margin model and empirical tests on these properties using historical data…' In accordance with the guidance summarised above, the Bank will interpret CCP Standard 6.3 in such a way that a central counterparty with the profile of ASX Clear (Futures) – which clears a range of derivatives products with varying degrees of liquidity and provides services to systemically important financial institutions headquartered in multiple jurisdictions – would typically be expected to : • apply a higher confidence interval, of at least 99.5 per cent, in relation to less liquid products, such as OTC derivatives, to reflect increased uncertainty around potential future exposure for products with such characteristics • use a close-out assumption of at least five days for less liquid products, such as OTC derivatives, and the higher of a one or two day close-out period for more liquid exchange-traded products • consider a range of sample periods to inform the calibration of margin requirements.
Liquidity Risk CCP Standard 7.3. A central counterparty should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios... In addition, a central counterparty that is involved in activities with a more complex	Consistent with the equivalent requirement in relation to credit risk, the Bank will, in determining whether a central counterparty is systemically important in multiple jurisdictions, take into account the (implicit or explicit) views of the relevant overseas regulatory authorities. In the case of a central counterparty foreign to the EU that provides services to clearing participants established in the EU, the need to obtain recognition under EMIR may be regarded as evidence that the EU authorities consider such a central counterparty to be a vehicle for the transmission of risks to the EU, and may therefore be evidence of systemic importance in multiple jurisdictions. If a systemically important domestic Australian central counterparty not only required recognition in the EU, but also had material participation of clearing participants established in the EU and cleared a range of derivatives

CCP Standard	Additional Interpretation
risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the central counterparty in extreme but plausible market conditions.	products with different characteristics (including levels of liquidity), the Bank would expect to conclude that such a central counterparty was systemically important in multiple jurisdictions. The Bank will interpret FSS 7.3 accordingly in the case of ASX Clear (Futures), and hold ASX Clear (Futures) to the higher standard that it should maintain additional liquid resources to cover liquidity needs in the event of the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the central counterparty in extreme but plausible market conditions.
Segregation and Portability <u>CCP Standard 13.2</u>. A central counterparty should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A central counterparty should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts, or equivalent. <u>CCP Standard 13.3</u>. To the extent reasonably practicable under prevailing law, a central counterparty should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.	CCP Standards 13.2 and 13.3, which come into force on 31 March 2014, do not explicitly require that a central counterparty offer the choice between individual and omnibus account structures. However, associated guidance (particularly 13.2.2–13.2.9) draws out the relevant considerations for a central counterparty in determining appropriate account structures, while the guidance in 13.3.1 observes that 'in order to achieve a high likelihood of portability, a central counterparty will need to: have the ability to identify positions that belong to customers; identify and assert rights to related collateral held by or through the central counterparty; transfer positions and related collateral to one or more other participants…'. Where a central counterparty that clears a range of derivatives products with different characteristics (including levels of liquidity) and for a variety of participant and underlying customer types, the Bank will interpret CCP Standards 13.2 and 13.3 as requiring that the central counterparty employ an account structure that enables its participants to offer their customers a choice between individual and omnibus segregation. Such choice should be sufficient to enable customers to choose clearing arrangements that deliver protections appropriate to the scale, scope and nature of their business. Accordingly, ASX Clear (Futures) will be expected to make available to its participants an account structure that enables its participants to offer their customers, in addition to a net omnibus client account structure, an option that allows for separate identification and protection of individual customers' gross positions and collateral (or collateral value). To further protect customers, ASX Clear (Futures) will be expected to make available an account structure that enables excess customer collateral to be held directly with the central counterparty.
Custody and Investment Risks <u>CCP Standard 15.4</u>. A central counterparty's investment strategy should be consistent with its overall risk management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.	Although not explicitly stated in CCP Standard 15.4 or associated guidance (15.4.1), the Bank will interpret this requirement as applying in all market conditions, including in periods of market stress. Furthermore, since CCP Standard 15.4 also requires that a central counterparty's investment strategy should be 'consistent with its overall risk management strategy' and that 'investments should be secured by, or be claims on, high-quality obligors', and since the guidance (15.4.1) notes that investments should be subject to appropriate controls for wrong-way risk, the Bank would not consider investments in a central counterparty's own, or an affiliated entity's, securities to be consistent with these requirements. The Bank will interpret CCP Standard 15.4 accordingly in the case of ASX Clear (Futures).
Regulatory Reporting <u>CCP Standard 21</u>. A central counterparty should inform the Reserve Bank in a timely manner of any events or changes to its operations or circumstances that may materially impact its management of risks or ability to continue operations. A central counterparty should also regularly provide information to the Reserve Bank regarding its financial position and risk controls on a timely basis.	CCP Standard 21 sets out a range of reporting requirements for CCPs. The Bank plans, in the coming period, to review its regular information requirements and will inform ASX Clear (Futures) accordingly. In the meantime, that Bank would like to clarify that in accordance with CCP Standard 21.1(i), which requires notification to the Bank if '…any internal audits or independent external reviews are undertaken of its operations, risk management processes or internal control mechanisms, including providing the conclusions of such audits or reviews', a central counterparty such as ASX Clear (Futures) will be expected to provide the Bank with a copy of any review of its margin methodology.

Appendix B: Detailed Assessment of Clearing and Settlement Facilities against the Financial Stability Standards

Introduction

This Appendix sets out the Reserve Bank's assessment of how well ASX Clear Pty Limited (ASX Clear) and ASX Clear (Futures) Pty Limited (ASX Clear (Futures)) have complied with the *Financial Stability Standards for Central Counterparties* (CCP Standards), and how well ASX Settlement Pty Limited (ASX Settlement) and Austraclear Limited (Austraclear) have complied with the *Financial Stability Standards for Securities Settlement Facilities* (SSF Standards) during the year to 30 June 2013 (the 2012/13 Assessment period).[27] In setting out its assessment, the Bank has applied the rating system used in the Committee on Payment and Settlement Systems' (CPSS) and the Technical Committee of the International Organization of Securities Commissions' (IOSCO) *Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology*.[28] Under this framework, the Bank has assessed each of the ASX CS facilities' observance of the requirements of each of the applicable CCP Standards or SSF Standards (together the FSS) as being:

- **Observed** – Any identified gaps and shortcomings are not issues of concern and are minor, manageable and of a nature that the facility could consider taking them up in the normal course of its business.
- **Broadly observed** – The assessment has identified one or more issues of concern that the facility should address and follow up on in a defined timeline.
- **Partly observed** – The assessment has identified one or more issues of concern that could become serious if not addressed promptly. The facility should accord a high priority to addressing these issues.
- **Not observed** – The assessment has identified one or more serious issues of concern that warrant immediate action. Therefore, the facility should accord the highest priority to addressing these issues.
- **Not applicable** – The standard does not apply to the type of facility being assessed because of the particular legal, institutional, structural or other characteristics of the facility.

Section 821A(aa) of the Corporations Act requires that a CS facility licensee, to the extent reasonably practicable to do so, comply with the FSS and do all other things necessary to reduce systemic risk. In assessing how well a CS facility complies with a CCP or SSF standard, the Bank has assessed how well the facility complies with the headline standard and each of the 'sub'-standards listed under the

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27 The full text of the detailed assessments of each of these CS facilities is available at <http://www.rba.gov.au/payments-system/clearing-settlement/assessments/2012-2013/index.html>.

28 Available at <http://www.bis.org/publ/cpss106.htm>.

headline standard. A single overall rating is applied to each CCP or SSF Standard, reflecting this assessment.

Where a facility has been assessed to *observe* a CCP or SSF Standard, the Bank nevertheless expects ASX to work towards continual strengthening of its observance of the standard. ASX recognises this and has governance arrangements in place to motivate and encourage continuous improvement. This Appendix includes some recommendations encouraging such improvement in some specific areas. These are not exhaustive, and ASX is encouraged to continue to seek further improvements to its observance of the FSS over the coming Assessment period. This is in accordance with the general obligation on CS facilities to do all things necessary to reduce systemic risk.

Where a facility has been assessed to *broadly observe* a CCP or SSF Standard, the Bank will have sought evidence that a plan is in place to address the identified issue of concern within a clear, defined and reasonable timeframe, and that it would not be reasonably practicable for the facility to take such actions immediately in order to fully observe the standard. This Appendix includes recommendations that identify the steps required by ASX to address the relevant issues of concern and fully observe the applicable CCP or SSF Standard.

The Bank's ratings of each of the CS facilities against relevant FSS are supplemented by detailed information under each sub-standard that is relevant to the Bank's assessment. The Bank gathered this information through its regular liaison with ASX staff, the supply of regular data and reports by ASX, and a series of specific information requests and meetings with ASX during and immediately following the Assessment period to gather information relevant to assessing compliance with the new FSS. Arrangements for regular liaison and the supply of data and reports by ASX are described in further detail under the detailed assessments of CCP Standard 21 and SSF Standard 19.

ASX Group Structure

All four CS facilities are part of the ASX Group (ASX). In the ASX corporate structure, the two central counterparties (CCPs) – ASX Clear and ASX Clear (Futures) – are subsidiaries of ASX Clearing Corporation Limited (ASXCC), while the two securities settlement facilities (SSFs) – ASX Settlement and Austraclear – are subsidiaries of ASX Settlement Corporation Limited (Figure 1). ASXCC and ASX Settlement Corporation Limited are in turn subsidiaries of the ASX Group's parent entity, ASX Limited. ASX Limited is the licensed operator of the ASX market, while another subsidiary, Australian Securities Exchange Limited, is the licensed operator of the ASX 24 market. The ASX market provides a trading platform for ASX listed securities and equity derivatives, while ASX 24 is an exchange for futures products. ASX Clear and ASX Settlement provide clearing and settlement services for the ASX market, and ASX Clear (Futures) provides clearing services for the ASX 24 market.

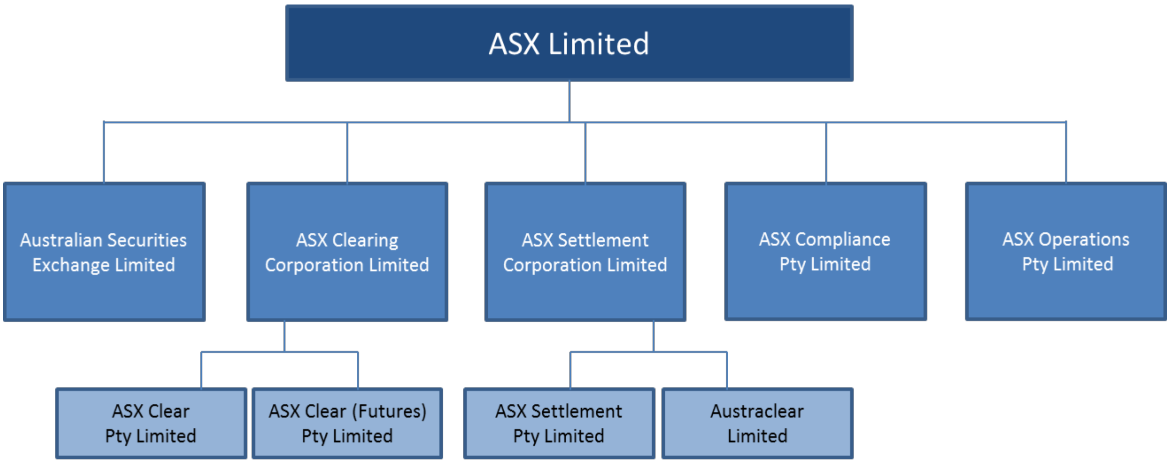
ASX Limited is a listed company. The ASX Limited Board is responsible for overseeing the processes for identifying significant risks to ASX and ensuring that appropriate policies as well as adequate control, monitoring and reporting mechanisms are in place. In addition, ASX Limited's Board assigns certain responsibilities to subsidiaries within the group, including the boards of the four CS facilities (the CS Boards). The CS Boards are responsible for managing the particular clearing and settlement risks faced by each respective CS facility, including through compliance with the FSS. The CS Boards all have the same directors, and are subject to common governance arrangements with high-level objectives set out in the CS Boards' Charter.

ASX Clearing Corporation Limited (ASXCC) is a wholly owned subsidiary of ASX Limited. ASXCC is the holding company for and manages the financial resources of the two CCPs. It invests the assets of the two CCPs and their participants according to a treasury investment policy and investment mandate approved by the CS Boards.

The CS facilities rely in the delivery of their services on group-wide operational and compliance resources that reside in ASX Operations Pty Limited, which is a wholly owned subsidiary of ASX Limited.

- ASX Operations Pty Limited (ASX Operations) provides most operational resources required by the CS facilities, including services to enable ASX Compliance to perform its services.
- ASX Compliance Pty Limited (ASX Compliance) provides compliance services to the licensed entities of the ASX Group, including monitoring and enforcing participants' compliance with the Operating Rules of the CS facilities.

Figure 1



ASX has adopted a group-wide organisational structure to manage the business operations of its various entities, including the CS facilities. Its business units are organised into nine main areas:

- Office of the Chief Executive Officer (CEO)
- Risk
- Operations
- Technology
- Business Development
- ASX Compliance
- Corporate Affairs and Government Relations
- General Counsel and Company Secretariat
- Chief Financial Officer (CFO) Office
- People and Development.

Risk contains a number of business units that play key roles in the management of risks faced by the CS facilities:

- Clearing Risk Policy – develops and maintains policies and standards related to CCP risk management.
- Clearing Risk Management – implements CCP risk management policies and standards, and maintains effective procedures for carrying out those policies and standards.
- Enterprise Risk – responsible for enterprise-wide risk management, including general business risk.
- Portfolio Risk Management – responsible for managing investment and liquidity risks associated with ASXCC's investment portfolio.
- Internal Audit – conducts risk-based reviews of internal controls and procedures across ASX. Internal Audit reports to the Chief Risk Officer for administrative purposes only.

ASX's clearing risk policy framework also sets out roles for a number of internal committees that bring together decision makers and experts from business units across the group:

- Clearing Risk Policy Committee (CRPC) – reviews policies and standards prior to CS Board submission.
- Capital and Liquidity Committee (CALCO) – advises on changes to clearing risk policies and standards related to capital, liquidity and balance sheet management.
- CCP Risk, Operations and Compliance Committee (CROCC) – discusses and shares information across relevant operational, compliance and risk management business units.
- Enterprise Risk Management Committee (ERMC) – reviews and approves enterprise risk management policy and related reporting prior to Board submission.
- Risk Quantification Group (RQG) – responsible for quantitative risk management matters.
- Default Management Committee (DMC) – coordinates ASX's response to a clearing participant default, and conducts the review and testing of the CCPs' default management approach.

Abbreviations

ADI	Authorised deposit-taking institution
AFR	Available financial resources
AIM	Additional initial margin
ALMO	Approved Listing Market Operator
AMO	Approved Market Operator
AONIA	Australian overnight index average
APCA	Australian Payments Clearing Association
APRA	Australian Prudential Regulation Authority
ASIC	Australian Securities and Investments Commission
ASXCC	ASX Clearing Corporation
BBSW	Bank bill swap rate
CAC	Contributions and additional cover
CALCO	Capital and Liquidity Committee
CBPL	Capital-based position limit
CCMS	Centralised Collateral Management Service
CCP	Central counterparty
CDI	CHESS Depository Interest
CGS	Commonwealth Government securities
CEO	Chief Executive Officer
CFD	Contract for difference
CHESS	Clearing House Electronic Sub-register System
CMaX	Collateral Management Exchange
CME	Chicago Mercantile Exchange
CMM	Cash Market Margining
CMSA	Collateral Management Services Agreement
CPSS	Committee on Payment and Settlement Systems
CROCC	CCP Risk, Operations and Compliance Committee
CRM	Clearing Risk Management
CRO	Chief Risk Officer
CRPC	Clearing Risk Policy Committee
CS	Clearing and settlement
DBOR	Daily Beneficial Ownership Report
DCS	Derivatives Clearing System
DLR	Default liquidity requirement
DMC	Default Management Committee
DMF	Default Management Framework
DMG	Default Management Group
DMSG	Default Management Steering Group
DvD	Delivery versus delivery
DvP	Delivery versus payment
EGM	Executive General Manager
EMIR	*European Regulation on OTC derivatives, central counterparties and trade repositories*
EPSC	Enterprise Portfolio Steering Committee
ESA	Exchange Settlement Account
ESAS	Exchange Settlement Account System
ESMA	European Securities and Markets Authority
ETO	Exchange-traded option
FMI	Financial market infrastructure
FSS	Financial Stability Standard
HSVAR	Historical simulation of value at risk
ICR	Internal Credit Rating
IRS	Interest rate swap
IOSCO	International Organization of Securities Commissions
NTA	Net tangible asset

OTC	Over-the-counter
PIRC	Participant Incident Response Committee
PMO	Project Management Office
PSNA	*Payment Systems and Netting Act 1998*
PSR	Price scanning range
QCCP	Qualifying central counterparty
RITS	Reserve Bank Information and Transfer System
RQG	Risk Quantification Group
RTGS	Real-time gross settlement
SPAN	Standard Portfolio Analysis of Risk
SSF	Securities settlement facility
STEL	Stress-test exposure limit
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TAS	Trade Acceptance Service
VSR	Volatility scanning range