

2009/10 Assessment of Clearing and Settlement Facilities in Australia

OCTOBER 2010

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1. Introduction and Executive Summary

Under the *Corporations Act 2001*, the Reserve Bank is required to conduct an assessment at least once a year of whether licensed clearing and settlement (CS) facilities have complied with the Reserve Bank's *Financial Stability Standards* (FSS) and done all other things necessary to reduce systemic risk. This report presents the Reserve Bank's assessment of licensed CS facilities for 2009/10. There are two licensed central counterparties – ASX Clear Pty Limited (formerly Australian Clearing House) (ASX Clear) and ASX Clear (Futures) Pty Limited (formerly SFE Clearing Corporation) (ASX Clear (Futures)) – and two licensed securities settlement facilities – ASX Settlement Pty Limited (formerly ASX Settlement and Transfer Corporation) (ASX Settlement) and Austraclear Limited – that fall within the scope of the FSS.¹ These facilities are all owned by the Australian Securities Exchange (ASX) group. All four facilities were found to have complied with the relevant FSS.

The recovery in financial markets over 2009/10, following the turbulent conditions during the previous year, resulted in a strong increase in the equities and derivatives transactions processed by the licensed CS facilities during the year. Despite this increase in activity, none of the CS facilities experienced capacity or other issues relevant to the stability of market infrastructure.

For the central counterparties, notwithstanding increased activity, risk exposure declined due to the lower market volatility. Nevertheless, the facilities continued to improve their risk and operating frameworks. In particular, the central counterparties made changes in the following areas:

- *Composition of pooled risk resources:* Following the ratings downgrade of the default insurer for ASX Clear and ASX Clear (Futures), both ASX Clear and ASX Clear (Futures) have now replaced this insurance with a subordinated loan from ASX Clearing Corporation Limited (ASXCC). This is in turn funded by a commercial bank principal-reducing loan facility. Like the previous insurance facility, this new facility covers any loss arising from a clearing participant default in excess of that covered by prior ranking default resources (since principal owed under the facility would be reduced by a corresponding amount). But it improves the composition of the central counterparties' risk resources because the loan facility is fully drawn (and thus more liquid than the previous default insurance) and under certain conditions has provision for use to cover loss arising from an investment counterparty default.
- *Improvements to participant-monitoring arrangements:* A number of enhancements have been made to the capital- and liquidity-monitoring arrangements for ASX Clear and ASX Clear (Futures) participants.
- *Improvements to default-management arrangements:* Following a number of default management 'fire drills', improvements have been made to information management in default situations at the central counterparties. ASX has also formalised arrangements with the broker it will use in each market to effect any necessary close-out of positions in a default situation.

¹ The licensed entities (other than Austraclear) were renamed with effect from August 2010.

- *Refinements to ASX Clear's risk framework:* During 2009/10, ASX Clear replaced its uniform stress-test exposure limits (STELs) with rating-based limits – exposures beyond these limits require additional collateral to be posted – thus allowing ASX Clear to better manage its exposures to lesser-rated participants. ASX Clear also announced proposed system enhancements to allow intraday margin calls in respect of participants' derivatives positions (reflecting both price and position changes).
- *Triggers for an increase in fixed resources:* ASX documented guidance on the important issue of the circumstances in which ASX Clear and ASX Clear (Futures) would consider an increase to their fixed risk resources, rather than relying on additional collateral, which may only be received with a delay. The Reserve Bank welcomes this action since, as noted in the 2008/09 Assessment, there are shortcomings to relying too heavily on variable calls for additional collateral, particularly given lags in the calculation and settlement of such calls.
- *Account segregation:* In the last Assessment, the Reserve Bank noted that segregation of house and client cash equity market positions in ASX Clear would be consistent with international best practice and would assist in the management of a clearing participant default. The Reserve Bank accepts ASX Clear's judgement, informed by industry feedback, that the costs of segregating unsettled cash equity market obligations into house and client accounts would currently outweigh the benefits, but notes that should international standards be amended to recommend or require this, this issue will be revisited.

Progress has also been made in the following areas by the central counterparties, although work in these areas remains underway:

- *Routine margining of cash equities:* In the 2008/09 Assessment, the Reserve Bank set out the strong case for ASX Clear to introduce margining for cash equities in line with international best practice. Margining is desirable because it provides participants with incentives to manage the risk they bring to the central counterparty, and reduces reliance on pooled risk resources, use of which in the event of a participant default may carry reputational costs. The Reserve Bank welcomes ASX Clear's plans to introduce routine margining of cash equities. The Reserve Bank will remain in dialogue with ASX regarding the refinement and implementation of the proposal during the next assessment period.
- *Harmonisation and linking of central counterparty activity:* The Reserve Bank welcomes the announcement of further initiatives to harmonise and link the activities of the two central counterparties, including the migration of both central counterparties' margining systems to CME SPAN. The Reserve Bank will continue to monitor progress in these initiatives in the coming year.
- *Business Continuity Management Policy:* ASX updated its Business Continuity Management Policy – which covers all four licensed facilities – during the assessment period, with a number of improvements to arrangements planned in line with international best practice. Notably, ASX is working towards ensuring redundancy of all key systems at the backup, as well as the main, site. The Reserve Bank welcomes these plans and will monitor their progress over the period ahead.

In other developments, ASX Settlement progressed its planned improvements to the batch-settlement model and implemented the securities lending disclosure regime – both these projects stemmed from recommendations made by the Reserve Bank in its *Review of Settlement Practices for Australian Equities* following the significant delays to the completion of settlement of Australian equities transactions on two days in early 2008.

- *Improvements to the batch-settlement model:* ASX Settlement has now removed ASX Clear derivatives margins from the Clearing House Electronic Sub-register System (CHES) settlement batch (thus ensuring that ASX Clear's risk management arrangements are not dependent on the completion of settlement in the cash equity market) and is in the process of establishing an earlier deadline for the back out of settlement obligations in the event that a participant fails to meet its payment obligations. Setting an earlier deadline will reduce the potential for settlement delay and thus reduce the uncertainty that may affect the market at large in the event a participant fails to meet its obligations. The Reserve Bank will continue to monitor ASX Settlement's progress in this area.
- *Securities lending disclosure regime:* This regime – developed by the Reserve Bank in conjunction with ASX and industry participants – was implemented in stages over late 2009 and early 2010. ASX now collects and publishes data on both a transactional and positional basis. As reporting is only compulsory for ASX Settlement participants, however, the coverage of the data is incomplete. The Reserve Bank continues to work with ASX and industry to improve coverage.

The key focus for the assessment of Austraclear remained operational risk management. Although Austraclear experienced a number of operational incidents during the assessment period, the Reserve Bank is satisfied with both ASX's immediate responses to the situations, as well as the follow-up action to prevent reoccurrence.

Another important development during the past year has been the preparations for potential competition between markets for trading in equities in Australia. In August 2010, responsibility for market supervision was transferred from ASX to the Australian Securities and Investments Commission (ASIC). With ASIC as the whole-of-market supervisor, streamlined and complete supervision of trading on the market is ensured should any new trading platforms enter the Australian market; in March 2010, the Minister for Financial Services, Superannuation and Corporate Law (the Minister) gave in-principle approval to the application for a market licence from Chi-X, which plans to offer a platform to conduct secondary trading in ASX-listed shares.² In response to the prospect of approved market operators (AMOs) entering the Australian market, ASX has announced a new Trade Acceptance Service (TAS), which will allow trades executed on AMOs' platforms to be cleared and settled through ASX Clear and ASX Settlement respectively. The Reserve Bank cannot see any reason why the TAS, as currently proposed, would affect the compliance of ASX Clear and ASX Settlement with the relevant FSS.

As in the previous Assessment, this report contains a detailed assessment of the licensed CS facilities against one measure of the FSS. This year the governance measure of the *Financial Stability Standard for Central Counterparties* was chosen for this focus. It is the Reserve Bank's assessment that the governance arrangements of the ASX central counterparties – ASX Clear and ASX Clear (Futures) – comply with the governance measure of the Financial Stability Standard for Central Counterparties. The governance arrangements are effective, accountable and transparent. Arrangements are in place to ensure the boards of ASX Clear and ASX Clear (Futures) have appropriate expertise and independence; indeed, the independence of these boards was bolstered during the year by reducing the number of executive directors and increasing the number of independent directors sitting on them. The ASX Clear and ASX Clear (Futures) boards are responsible for oversight of the operation of the central counterparties, and the independence of the risk control functions of the central counterparties is assured by the positioning of the business units responsible for financial risk management under a Chief Risk Officer, who reports directly to the CEO.

² Final approval of Chi-X's licence is dependent on Chi-X meeting all of the necessary legislative requirements and the finalisation of the regulatory framework for competition in trading services.

The report is organised as follows. Section 2 introduces the Australian clearing and settlement landscape. Sections 3 and 4 satisfy a requirement under section 25M of the *Reserve Bank Act 1959* for the Payments System Board to report annually to the Minister on material developments in clearing and settlement in Australia and any changes to the FSS. Sections 5 and 6 fulfil the Reserve Bank's statutory obligations under section 823CA of the Corporations Act to report to the Minister, and to ASIC, on its annual assessment of the licensed CS facilities.

The Reserve Bank welcomes ASX's continued efforts towards ensuring its CS facilities contribute to financial stability, and appreciates the open and constructive dialogue between the Reserve Bank and ASX in relation to financial stability issues.

2. Clearing and Settlement in Australia

Two types of CS facilities operate in Australia: central counterparties and securities settlement facilities. Under the Corporations Act, these facilities are required to hold a CS facility licence and to comply with the relevant FSS determined by the Reserve Bank.

Central Counterparties

A central counterparty interposes itself as the legal counterparty to all purchases and sales undertaken on a market via a process known as novation. This process involves the replacement of the original contract by separate contracts between the buyer and the central counterparty and between the seller and the central counterparty. These arrangements provide significant benefits in terms of counterparty risk management as well as greater opportunities for netting of obligations. At the same time, they result in a significant concentration of risk in the central counterparty. This risk can crystallise if a participant defaults on its obligations to the central counterparty, in which case the central counterparty must continue to meet its obligations to the defaulter's original counterparties. Accordingly, it is important that the central counterparty has appropriate risk controls and other measures in place to provide confidence that, in all but the most extreme circumstances, such a default can be accommodated without threatening its solvency or significantly disrupting financial markets or the financial system more generally. It is also important that central counterparties identify and properly control other risks associated with their operation in order to contribute to the stability of the Australian financial system. The objective of the Reserve Bank's Financial Stability Standard for Central Counterparties is to ensure that these outcomes are achieved.

The following licensed central counterparties are required to comply with the Standard:

- ASX Clear – provides central counterparty services for a range of financial products traded on the ASX market, including cash equities, pooled investment products, warrants, certain interest-rate products and equity- and commodity-related derivatives; and
- ASX Clear (Futures) – provides central counterparty services for derivatives traded on the ASX 24 market (formerly the SFE market), including futures and options on interest rate, equity, energy and commodity products.³

Securities Settlement Facilities

A securities settlement facility provides for the final settlement of transactions undertaken on securities markets. Settlement involves transfer of the title to the security and transfer of cash consideration. These functions are linked via delivery-versus-payment (DVP) arrangements established within the settlement process. As an

³ The SFE market was renamed with effect from August 2010.

important financial market infrastructure key to the smooth operation of the financial system, it is important that securities settlement facilities identify and properly control risks associated with their operation in order to contribute to the stability of the Australian financial system. The objective of the Reserve Bank's *Financial Stability Standard for Securities Settlement Facilities* is to ensure these outcomes are achieved.

The following licensed securities settlement facilities are required to comply with the Standard:

- ASX Settlement – provides for the settlement of equities and warrants traded on the ASX market; and
- Austraclear – offers securities settlement services for over-the-counter (OTC) trades in debt securities.

Although ASX Clear, ASX Clear (Futures), ASX Settlement and Austraclear are all part of a single corporate group, ASX, each facility holds an individual CS facility licence.

3. Developments in the Clearing and Settlement Industry in 2009/10

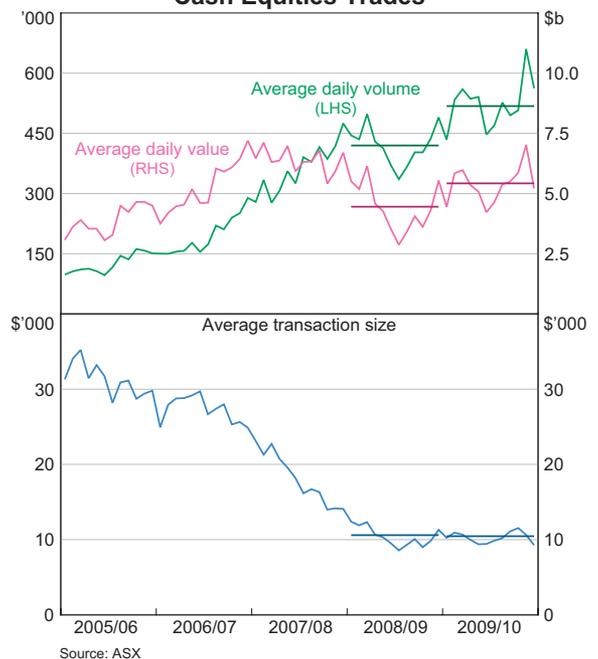
Activity in the financial markets served by Australian CS facilities increased significantly over 2009/10, as financial markets recovered from the severe dislocation experienced in late 2008 and early 2009. The risks faced by both central counterparties – as measured by the value of margin collected from participants – generally declined over the year due to reduced market volatility. However, these risks increased again towards mid 2010, with increased market volatility stemming from concerns about sovereign credit risk in Europe.

There have been several developments over the past year with implications for the future form of Australia's clearing and settlement industry. The prospect of AMOs entering the Australian market has prompted ASX to develop a TAS, which will allow trades executed on AMOs' platforms to be submitted directly to ASX Clear for clearing and ASX Settlement for settlement. Internationally, regulatory efforts to increase the resilience of the financial system – prompted by the recent financial crisis – are yielding prospective changes in financial markets and their regulation around the world. In Australia, the industry has been encouraged by the financial regulators (Australian Prudential Regulation Authority (APRA), ASIC and the Reserve Bank) to consider central counterparty clearing services for OTC derivatives, and a review of international standards underway may prompt the Reserve Bank to in turn review its own FSS.

Activity in the Licensed CS Facilities

Reflecting the recovery in financial markets over the year, there was a strong increase in the value and volume of equities and derivatives transactions processed by the licensed CS facilities in 2009/10. Both the value and volume of trades in the cash equity market grew strongly in 2009/10. The average daily value of turnover increased by 21 per cent, in part reflecting the general rise in share prices over the year. Growth in the average daily number of trades was slightly stronger at 24 per cent, associated with a small fall in the average trade size (Graph 1). The average trade size fell by only 3 per cent in 2009/10, compared with substantial falls in earlier years, reflecting the long-term trend towards breaking up large orders for gradual release into the market, as well as the share price falls over 2008.

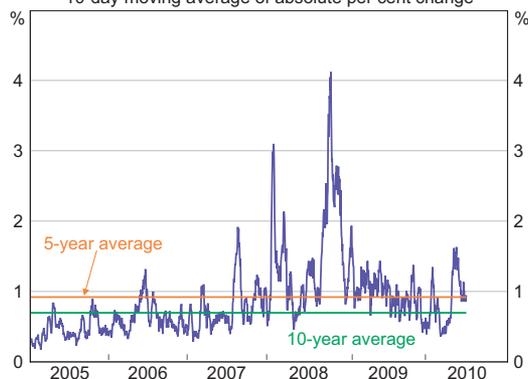
Graph 1
Cash Equities Trades



Graph 2

All Ordinaries Volatility

10-day moving average of absolute per cent change



Source: Bloomberg

The strong growth in trading activity in 2009/10 reflected an increase in risk appetite as the recovery in financial markets progressed. Average volatility, as measured by the absolute per cent change in the S&P ASX All Ordinaries index, almost halved from 1.5 per cent in 2008/09 to 0.8 per cent in 2009/10 (Graph 2). Volatility picked up towards the middle of 2010, as concerns arose regarding public debt levels in some European countries, although it remained below the levels of the previous financial year.

Activity in the ASX and ASX 24 derivatives markets also increased in 2009/10 in response to the recovery in global financial markets. Volumes traded on the ASX 24 market grew by 19 per cent, while volumes traded on the smaller ASX derivatives market grew by 14 per cent.

The value of securities transactions settled by ASX Settlement increased by 6 per cent in 2009/10 to an average daily value of \$8.5 billion. (The growth in settlement values differs from the growth in traded values because it includes settlement of non-market transactions and multilateral netting of clearing participants' obligations.) In contrast, the average daily value of debt securities settled through Austraclear edged downwards by 1 per cent to \$41.8 billion. (This value includes outright purchases and sales of securities, and securities transferred to effect a repurchase agreement.)

Risk Management in the Licensed Central Counterparties

Notwithstanding the increase in trading activity on equities and derivatives markets, the risks faced by the central counterparties decreased during 2009/10 as market volatility declined.

In the case of ASX Clear's exposure to the cash equities market, average daily exposure to participants' settlement obligations arising from cash equities trades on the ASX market (almost three-quarters of which are novated to ASX Clear) decreased by 10 per cent to \$889 million.⁴ This decline, which occurred despite the increase in activity, reflected the effect of netting. The risks faced by ASX Clear in relation to these exposures are likely to have declined by even more due to the reduction in volatility.⁵

The reduction in market volatility also saw the risk associated with derivatives positions in the ASX and ASX 24 markets fall, despite higher traded volumes of derivatives across both markets. Both ASX Clear and ASX Clear (Futures) generally reduced initial margin rates for derivatives over 2009/10. As a result the daily average initial and mark-to-market margin collected by ASX Clear fell by 31 per cent to \$1.1 billion (Graph 3). The daily average initial margin collected in respect of trades on the ASX 24 market fell by 51 per cent to \$1.8 billion.

⁴ The daily exposure faced by ASX Clear arises from unsettled trades through the three-day settlement cycle. ASX Clear's average total settlement exposure from a single day's trades was \$421 million in 2009/10, down by 10 per cent from the previous year.

⁵ ASX Clear calculates notional margin in respect of participants' cash equity positions – although margin is not currently routinely collected – but the calculations cannot be compared for 2008/09 and 2009/10 because from July 2009 ASX Clear expanded the range of securities used to calculate exposures, from just the largest and most liquid 200 listed securities to include other less-liquid securities. This expansion has led to a material increase in total notional margin.

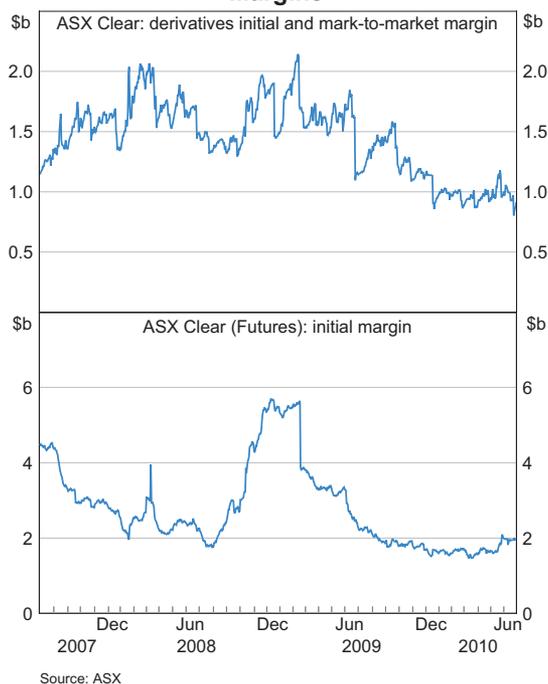
Prospective Changes in the Clearing and Settlement Landscape

In late March 2010 the Minister gave in-principle approval for a market licence application by Chi-X, which plans to offer a platform to conduct secondary trading in ASX-listed shares. Final approval of Chi-X's licence is dependent on Chi-X meeting all of the necessary legislative requirements and the finalisation of the regulatory framework for competition between markets for trading equities. In response to the prospect of AMOs entering the Australian market, ASX has announced the creation of a TAS, which will allow trades executed on AMOs' platforms to be submitted directly to ASX Clear for clearing and ASX Settlement for settlement. The Reserve Bank is satisfied that the TAS, as currently proposed, will not affect the compliance of ASX Clear and ASX Settlement with the relevant FSS.

The Reserve Bank, together with APRA and ASIC, continues to work with the industry to encourage improvements to transparency and risk management in OTC derivatives markets. This is occurring in the context of similar efforts by the international regulatory community and industry, which have gained increased attention following the financial market turbulence of recent years. The Reserve Bank's particular focus is on encouraging, where appropriate, use of central counterparties by Australian participants in OTC derivatives markets. To date, industry feedback has suggested there are some concerns regarding the viability of a stand-alone domestic central counterparty, and alternative solutions may be preferable.⁶ As part of this, the Australian financial authorities have been engaging with the (typically international) market infrastructures regarding Australian market participants' access to their services on terms appropriate to the scale and scope of their business. (The Reserve Bank finalised its regime for oversight of overseas central counterparties, which facilitates cross-border provision of clearing services by minimising regulatory duplication, in 2008/09.) This is an important issue for Australia, as the existing market infrastructures have not typically catered to the needs of participants in smaller markets, such as Australia. Through their participation in the OTC Derivatives Regulators' Forum – established in late 2009 to provide regulators around the world with a means to cooperate, exchange views and share information related to OTC derivatives central counterparties and trade repositories – the Australian financial authorities have sought to bring the importance of this issue to the attention of the international regulatory community.

In February 2010, the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) announced a comprehensive review of the international standards for clearing and settlement systems in light of the financial crisis and developments in

**Graph 3
Margins**



⁶ See the 2009 report on the 'Survey of the OTC Derivatives Market in Australia' conducted by APRA, ASIC and the Reserve Bank, available at: <http://www.rba.gov.au/payments-system/clearing-settlement/survey-otc-deriv-mkts/index.html>.

the industry (including OTC derivatives markets) since the standards were initially introduced. One aspect of this review is ensuring that the CPSS-IOSCO *Recommendations for Central Counterparties* (RCCP) appropriately cover central counterparties clearing OTC derivatives; CPSS and IOSCO have undertaken a public consultation on proposed changes to the RCCP to ensure this. It is intended that the outcomes of this review will be subject to public consultation by early 2011. To the extent that the standards are amended, the Reserve Bank will consider whether any related changes to the FSS are appropriate.

4. The Financial Stability Standards

The Financial Stability Standards

The Reserve Bank has determined Financial Stability Standards for central counterparties and securities settlement facilities under powers conferred in the Corporations Act (see Appendix A). The Standards are supplemented by a set of detailed measures that the Reserve Bank considers relevant for meeting each Standard (see Appendix B).

The Standards comprehensively cover matters relevant to the assessment of systemic risks arising from the activities of licensed domestic facilities. As such, in assessing these facilities' compliance with the Standards, the Reserve Bank also fulfils its obligation under the Corporations Act to assess whether a facility is 'doing all other things necessary to reduce systemic risk'. In the case of overseas facilities granted a licence under section 824B(2) of the Corporations Act, the Reserve Bank is relying to some extent on the overseas regulatory authority. Therefore, other factors may need to be taken into account to assess whether the facility is doing all things necessary to reduce systemic risk. There are not currently any CS facilities licensed under section 824B(2).

Determination, Variation and Revocation of Financial Stability Standards

Section 25M(1)(a)-(c) of the Reserve Bank Act requires that the Payments System Board describe standards for CS facilities determined during the year and any variations or revocations of existing standards.

No new standards for CS facilities were determined by the Reserve Bank under section 827D(1) of the Corporations Act during the year to June 2010. No existing standards were varied or revoked.

During the period, the Reserve Bank did, however, publish guidance on how it would assess the sufficient equivalence of an overseas regulatory regime for clearing and settlement facilities in relation to 'protection from systemic risk'.⁷ The exemption from full assessment against the Financial Stability Standard for Central Counterparties for overseas central counterparties under certain conditions – introduced in February 2009 – applies only to central counterparties licensed under section 824B(2) of the Corporations Act. A licence may be granted under this section at the Minister's discretion, and only where the applicant is deemed to be subject to a regulatory regime in its principal place of business that is sufficiently equivalent to that in Australia 'in relation to the degree of protection from systemic risk and the level of effectiveness and fairness of services they achieve'. The Reserve Bank's assessment of sufficient equivalence takes into account the clarity and coverage of the overseas regime, the oversight process of the overseas regulator and the observed outcomes of the regime.

⁷ This is available at: <http://www.rba.gov.au/payments-system/clearing-settlement/standards/overseas-equivalence.html>.

5. Assessment of CS Facilities against the Financial Stability Standards

The Reserve Bank monitors licensed CS facilities' compliance with the Financial Stability Standards on an ongoing basis and reports on its assessment once a year, covering the period to end June. All four ASX licensees report financial information to the Reserve Bank quarterly, with the two central counterparties also reporting detailed risk-management information, including stress-test outcomes. These reporting requirements are supplemented by a regular dialogue with the licensees on issues relevant to compliance at both an operational and a policy level, and the provision of data on activity, exposures and operational performance.

The assessments that follow describe the key developments over the year to end June 2010 for each facility and consider the implications of these developments for each facility's compliance with the relevant Standard. All four facilities were found to comply with the relevant Standards.

Details of the information that the Reserve Bank has used to assess each facility against the relevant measures is presented in Appendix B, which builds on material included in prior Assessments.

5.1 ASX Clear (formerly Australian Clearing House)

Background

ASX Clear provides central counterparty services for a range of financial products traded on the ASX market, including cash equities,⁸ pooled investment products, warrants, certain interest-rate products and equity- and commodity-related derivatives. Through a process known as novation, ASX Clear becomes counterparty to every eligible trade, managing the associated risk by applying a range of risk-management tools.

The rights and obligations of ASX Clear and its participants are set out in the ASX Clear Operating Rules and Procedures (referred to as the ACH Clearing Rules prior to August 2010). Under section 822B of the Corporations Act, these rules constitute a contract under seal between ASX Clear and each of its participants, and between participants. The netting arrangements contained in the ASX Clear Operating Rules and Procedures are further protected under Part 5 of the *Payment Systems and Netting Act 1998*. A change to the ASX Clear rule book to clarify the protections afforded by the Payment Systems and Netting Act was made in 2009/10.

ASX Clear applies three layers of risk-management protections:

- *Participation requirements and ongoing monitoring:* ASX Clear participants clearing cash equities or options are required to hold at least \$2 million in 'core capital'.⁹ Starting 1 July 2010, this requirement was increased to \$5 million. ASX intends to further increase the requirement to \$10 million over time. Minimum capital requirements, while imperfect, provide a broad measure of the financial standing of a participant and offer comfort that a participant has adequate resources to withstand an unexpected shock, perhaps arising from operational or risk-control failings.
- *Margining and other collateralisation of exposures by participants:* Margins are routinely collected from participants in respect of derivatives exposures, but not currently for cash equities. Where exceptionally large or concentrated exposures in either derivatives or cash equities are identified through capital stress testing, calls are made under the Contributions and Additional Cover (CAC) regime. The margins and other collateral posted by a defaulting participant would be drawn on first by ASX Clear in the event of their default.¹⁰
- *The maintenance of pooled risk resources:* Finally, ASX Clear has access to pooled risk resources of \$550 million to meet losses arising from a participant default in extreme but plausible market conditions. Of these additional resources, \$250 million are fully paid up and comprise \$3.5 million of own equity, \$71.5 million

8 On 28 June 2010, ASX introduced a new trade execution facility and new order types for ASX-listed products. The new trade execution facility, called VolumeMatch, enables end-users to anonymously search for liquidity and execute orders greater than \$1 million at a price derived from the central limit order book. The new order types, including hidden and iceberg orders, will be available on ASX's main trade execution facility, Integrated Trading System (ITS), and will interact with other orders submitted to ITS. VolumeMatch trades and the new order types clear and settle on the same basis as other ASX trades.

9 '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. In addition, ASX Clear participants are subject to a risk-based requirement under which they must hold sufficient 'liquid capital' to cover counterparty risk, large exposure risk, position risk and operational risk.

10 Margin, posted by a participant in respect of derivatives positions, is not a mutualised resource and is available only to cover the default of that participant. 'Additional Cover', is additional margin. 'Contributions', posted in respect of cash equities positions, are a mutualised resource and may be applied against the default of any participant. In due course, ASX Clear expects to introduce margining for cash equities positions, which could result in CAC calls in respect of either cash equities or derivatives positions being treated on a consistent margin-equivalent basis.

paid into a restricted capital reserve from the National Guarantee Fund (NGF) in 2005, and subordinated loans provided by ASXCC, which in turn are funded by a subordinated loan from ASX Limited (\$75 million) and a principal-reducing¹¹ loan from a commercial bank (\$100 million). (Under certain conditions, this latter loan also has provision for use to cover loss arising from an investment counterparty default.) These funds are supplemented by 'emergency assessments' of up to \$300 million, which can be levied on surviving participants in the event of a participant default.

At the end of the assessment period, ASX Clear had 54 participants, including 23 Australian brokers, 20 subsidiaries of foreign banks and brokers, eight subsidiaries of Australian banks, and three specialist clearers. Five participants resigned during the period, while one new participant and one new specialist clearer joined.

Assessment of Developments in 2009/10

Over the assessment period, ASX Clear continued to develop its risk and operating framework. Among the most notable developments, ASX Clear:

- changed the composition of its pooled risk resources for use in case of loss arising from a clearing participant default. (Part of these resources may, under certain conditions, now also be used to cover loss arising from investment counterparty default.);
- is developing a proposal to margin ASX Clear's cash equities positions; and
- implemented a number of changes arising from its detailed reviews of participant-monitoring arrangements and default-management processes.

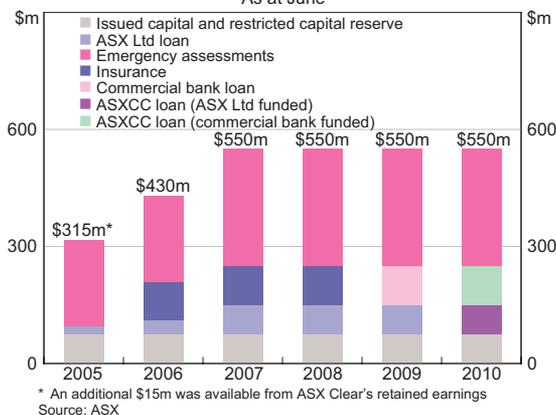
There have also been developments arising from the prospect of AMOs entering the Australian market. Over the period, ASX announced the development of the TAS, that will allow trades executed on AMOs' platforms to be cleared and settled through ASX Clear and ASX Settlement respectively. Finally, during the period some changes were made to ASX's enterprise-wide governance arrangements, which cover ASX Clear.

Adequacy of ASX Clear's risk resources

The risk resources available to ASX Clear to meet losses arising in the event of participant default comprise any margin or other collateral collected from the defaulting participant, and ASX Clear's pooled risk resources. Having risen significantly between 2005 and 2007, the aggregate value of ASX Clear's pooled risk resources has remained at \$550 million over the past three years (Graph 4).

ASX Clear's risk resources comprise \$250 million of paid-up resources and \$300 million of committed promissory resources. During the 2008/09 assessment period, the paid-up component increased by \$100 million following a decision to replace default insurance arrangements with a fully drawn down subordinated loan facility from a commercial bank.

Graph 4
ASX Clear: Risk Resources
As at June



11 Any loss in excess of that covered by prior-ranking default resources reduces the principal to be repaid by an equivalent amount.

This was prompted by the downgrade of ASX Clear's provider of default insurance. There was a further change to the composition of paid-up resources during the 2009/10 assessment period, following the transfer of responsibility for funding the central counterparties' risk resources to ASXCC. In December 2009, the \$100 million commercial bank loan facility was replaced with a subordinated principal-reducing intra-group loan from ASXCC of the same value. This is a fully drawn facility which in turn is funded by a bank loan facility to ASXCC. It is discussed in more detail in the following section.

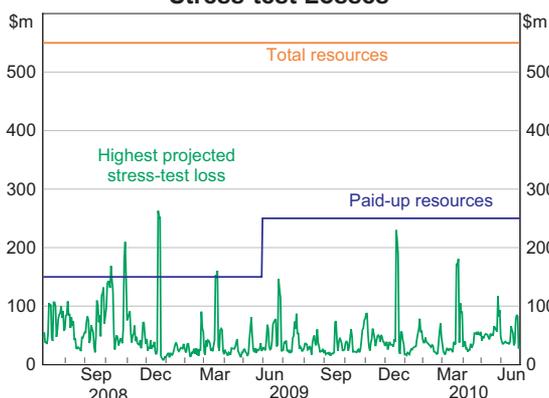
ASX Clear calls for CAC whenever a participant's projected stress-test losses on its cash equity and derivatives positions exceed a STEL. Starting 1 October 2009, ASX Clear introduced a regime where STELs are linked to participants' Internal Credit Ratings (ICRs). Previously, ASX Clear set the STEL at \$150 million for all participants (taking into account any margin already posted).¹² Highly rated (i.e., A- and B-rated) participants are eligible for discounts on the additional collateral called.¹³ Similar arrangements have been in place at ASX Clear (Futures) for some time. The Reserve Bank welcomes the implementation of this regime, as it provides a means to manage ASX Clear's exposures to lesser-rated participants.

Comparison of projected stress-test losses with the level of available risk resources offers some guidance as to the resilience of the central counterparty to a participant default in extreme market conditions (Graph 5).¹⁴ During the assessment period, there were two days on which a single participant's stress-test exceeded its ICR-based STEL. CAC was called, notwithstanding that stress-test exposures did not exceed the paid-up component of risk resources. Like previous periods, this excess was at quarter end, reflecting large cash

equity trades associated with the quarterly expiry of equity index futures contracts.¹⁵

During the assessment period, ASX documented guidance on the circumstances in which it would consider an increase to the central counterparties' fixed risk resources, rather than relying on additional collateral. This guidance considers the size, frequency, duration and distribution across participants of the additional collateral calls. The Reserve Bank welcomes the documentation of this guidance. As noted in the 2008/09 Assessment, there are shortcomings to relying too heavily on variable calls for additional collateral, particularly given lags in the calculation and settlement of such calls.

Graph 5
ASX Clear: Highest Projected Stress-test Losses



Source: ASX

12 This was the fully paid up component of ASX Clear's pooled risk resources.

13 These discounts are removed if the exponentially weighted moving average (EWMA) of SPI S&P/ASX 200 volatility is 20 per cent higher than historical volatility.

14 ASX Clear regularly reviews stress test scenarios and amends them to reflect current market conditions. See Section A1.1 for details of changes to scenarios made during the assessment period.

15 These positions are related to index-arbitrage transactions. Index arbitrage is a trading strategy which seeks to profit from a difference between the actual and theoretical spread between futures prices and prices in the underlying physical market. The trading strategy involves taking either a long futures position and selling stock, or taking a short futures position and buying stock. The gains from the trading strategy are realised when the futures position expires: the future position is liquidated and the stock is either bought (if stock had originally been sold) or sold (if the stock had originally been bought). The scale of these cash equity trades can cause spikes in ASX Clear participants' projected stress losses.

ASXCC and composition of risk resources

In 2008 ASX created a new corporate entity, ASXCC, which sits between ASX Limited and the two central counterparties in the corporate structure. It is intended that ASXCC will manage the investment of all assets held by ASX Clear and ASX Clear (Futures) (including margins and other risk resources), and also take over the central counterparties' funding and capital-management processes. This section discusses arrangements for both ASX Clear and ASX Clear (Futures) in order to avoid subsequent repetition.

ASXCC has taken over subordinated loans to ASX Clear (for \$75 million) and ASX Clear (Futures) (for \$70 million) from ASX Limited and SFE Corporation respectively; ASX Limited now provides loans to ASXCC, which in turn lends to the two central counterparties. These funds would be called upon in the event of a clearing participant default after use of the central counterparties' own capital. Previously, the next tier of default resources to be called was, for ASX Clear, a \$100 million subordinated loan from a commercial bank, and for ASX Clear (Futures), a \$150 million insurance agreement. These arrangements have now been replaced by a \$250 million loan facility ASXCC has with a commercial bank that funds further subordinated loans to the central counterparties.

The new arrangement through ASXCC has a number of advantages over previous arrangements. It is fully drawn (from December 2009), compared with ASX Clear (Futures)' previous insurance arrangement, which was dependent on the legal robustness of the claim and the financial capacity of the insurer. In terms of reliability, this arrangement is equivalent to ASX Clear's previous loan facility from a commercial bank, which was also fully drawn. Unlike the previous facility, however, this facility is principal-reducing (i.e., a drawdown in accordance with the terms of the agreement would not need to be repaid). Further, this facility has, under certain conditions, provision for use to cover loss arising from investment counterparty default; both ASX Clear and ASX Clear (Futures)' previous arrangements covered only loss arising from a participant default.

Cash received under the facility is invested in accordance with ASX Clear and ASX Clear (Futures)' treasury investment mandates, which specify high-quality assets and a minimum liquidity requirement calibrated with reference to liquidity needs both in the normal course and in the event of default. Thus in terms of liquidity, the facility is superior to ASX Clear (Futures)' previous default insurance since the funds would be realisable at short notice, whereas an insurance claim (even if robust) could take some time. On the basis of liquidity, the arrangement is similar to ASX Clear's previous loan facility, funds from which were required to be invested according to the central counterparty's treasury investment policy.

Risk management controls consultation

In October 2009, ASX released a market consultation paper seeking feedback from stakeholders on options for strengthening the risk management controls of ASX Clear. As part of the consultation process, ASX undertook a comprehensive review of ASX Clear's risk control framework with respect to domestic market conditions and international emerging best practice. The review concluded that while ASX Clear's risk controls are robust and have historically served the market well, there was scope to further enhance the risk control framework to meet future market challenges and international best practice.

ASX set out, and sought stakeholder feedback on, two potential enhancements to ASX Clear's risk controls: the introduction of routine margining by ASX Clear in the cash equity market; and clearing participant contributions to a mutualised guarantee (default) fund. Both of these controls ensure that the first financial resources used to cover losses are those of the defaulter, providing incentives for clearing participants to manage the risks they bring to the central counterparty.

ASX set out for consideration two margining alternatives: a 'futures-style' margining approach, which measures (and calls) daily margin requirements based on current positions; and a 'look-back' approach, which averages margin over a historical period. ASX also outlined a potential mutualised guarantee fund methodology, which would be apportioned between clearing participants based on risk. ASX also noted that segregation of house and client accounts for cash equities positions would facilitate protection of client margin in the event of a participant default. (Account segregation currently occurs only for derivatives trades at ASX Clear and ASX Clear (Futures).)

Feedback from market participants and industry bodies indicated greatest support for futures-style margining; ASX is now developing a proposal based on this model. In June 2010 ASX released a consultation paper that sought further feedback from clearing participants and interested stakeholders on how to optimise and refine the margining model. ASX is particularly concerned with minimising swings in margin requirements, proposing to account for the settlement of the next day's transactions in margin calculations,¹⁶ and prolong margining in the options market for exercised exchange traded options (rather than margin these in the cash equity market). Based on industry feedback, ASX does not at this stage plan to implement a mutualised default fund. Account segregation is also not being pursued at this stage, with the costs of doing so judged to outweigh the benefits. ASX expects that the specific details of the margining arrangements will be finalised in the second half of 2010, with implementation possibly occurring in late 2011.

The Reserve Bank welcomes ASX Clear's proposed introduction of margining in the cash equity market. In the 2008/09 Assessment, the Reserve Bank set out the strong case for margining of cash equities – it provides participants with incentives to manage the risk they bring to the central counterparty, and reduces reliance on pooled risk resources, use of which in the event of a participant default may carry reputational costs.

Furthermore, margining (or an equivalent collateralisation of potential losses in normal market conditions) of cash equities is the usual practice in overseas markets: introducing it at ASX Clear will bring it more into line with international best practice. In the previous Assessment the Reserve Bank also noted that segregation of house and client accounts in ASX Clear would be consistent with international best practice and assist in the management of a clearing participant default. Nevertheless, the Reserve Bank accepts ASX's judgement that, at this stage, the costs of account segregation would outweigh the benefits. However, should the CPSS-IOSCO review of international standards currently underway result in account segregation being recommended or required, it will be appropriate for this issue to be revisited.

Derivatives margins: system capabilities

ASX Clear is in the process of enhancing its system capabilities to make intraday margin calls in response to sizeable intraday changes in participants' positions; previously intraday calls could only be made on the basis of changes in prices. In past Assessments the Reserve Bank has encouraged ASX Clear to pursue this functionality, and welcomes its ongoing work in this area. This system enhancement is one part of ASX Clear's Derivatives Intraday Risk Quantification project (DIRQ). The DIRQ project also involves the migration of margin-setting calculations from an outsourced system, the Theoretical Intermarket Margin System (TIMS), to ASX Clear's in-house Derivatives Clearing System (DCS). Nevertheless, the algorithm in DCS used to calculate margin will be based on its TIMS counterpart. Longer term, ASX intends to replace both central counterparties' derivatives

¹⁶ ASX Clear will calculate participants' required margin both before and after the settlement of the next day's trades and call the larger of these two amounts. This will reduce the need for intraday margin calls, which may cause liquidity problems for some participants.

margin systems with the CME version of the Standard Portfolio Analysis of Risk (SPAN) margin system, as discussed under 'Harmonisation and linking of central counterparties' below.¹⁷

Participation requirements

Starting 1 July 2010, ASX Clear's minimum 'core capital' requirement for Direct Participants increased from \$2 million to \$5 million (and \$10 million for General Participants, which may act as third-party clearers). Most clearing participants affected by these changes have chosen to inject capital; others have chosen to use third-party clearers. One participant has chosen to clear trades through its parent, who meets the minimum capital requirements.

ASX Clear is proposing to further increase the minimum capital requirement to \$10 million from 1 January 2012. As noted in the 2008/09 Assessment, the Reserve Bank and ASIC view depth in the third-party clearing market as a precondition for ASX Clear's plans to further increase capital requirements. During the assessment period there was one new entrant into the third-party clearing market, Penson Financial Services. It is expected that ASX will consider developments in the third-party clearing market in making decisions regarding further increases in the minimum capital requirement; ASIC and the Reserve Bank will monitor these developments.

Participant monitoring

Monitoring of clearing participants is predominantly conducted by two units within ASX: ASX Compliance Pty Limited (formerly ASX Markets Supervision Pty Limited) (ASX Compliance),¹⁸ a separate subsidiary with its own board; and Clearing Risk Management,¹⁹ which covers both central counterparties. The monitoring, assessment and investigation of matters relating to financial requirements are dealt with by the Capital Monitoring unit of ASX Compliance. Clearing Risk Management focuses more on day-to-day participant activity and monitors risk profiles, open positions and settlement of obligations to the central counterparties. It is also responsible for determining and reviewing participants' ICRs, drawing on information provided by participants in their returns to ASX Compliance.

It was noted in last year's Assessment that during 2008/09 ASX reviewed a number of aspects of its capital- and liquidity-monitoring arrangements and had set in train a number of projects to deliver enhancements. These workstreams continued in 2009/10, with some finalised during the year:

- A new system for the lodgement of participants' capital returns was implemented for end May 2010 returns.
- Spot checks were conducted on the accuracy of participants' financial returns. Individual spot checks were typically triggered by two or more historical inaccuracies in a participant's returns, while industry-wide checks were undertaken to look at multiple participants' compliance with a specific aspect of the capital rules.
- A self-assessment program was developed for participants to ensure that they are completing the returns appropriate for the range of business activities that they undertake and will be rolled out after the Capital Monitoring education sessions are conducted in the second half of 2010.

¹⁷ ASX Clear (Futures) currently uses the RIVA version of the SPAN system.

¹⁸ ASX Markets Supervision Pty Limited was renamed ASX Compliance in August 2010.

¹⁹ Previously known as Clearing Risk Operations.

- The *pro forma* auditor's report, that provides an audit opinion on a participant's financial return, was reviewed. ASX's proposed changes have been circulated to the four major accounting firms for their feedback.
- ASX appointed an external consultant to undertake research on regulatory capital requirements in place in a number of other jurisdictions. The consultant's report is being reviewed by ASX management to assess whether any changes should be made to ASX's rules.

Effective participant monitoring is crucial to a central counterparty's ability to measure and assess the risks brought to it by its participants. The Reserve Bank welcomes the improvements that have been made to ASX's participant-monitoring framework.

Transfer of supervisory responsibilities to ASIC

In August 2010 ASIC took over responsibility for supervising real-time trading on Australia's domestic licensed markets. Previously, this function was performed by ASX Compliance for the ASX and ASX 24 markets. This reform of supervisory arrangements was first announced in August 2009 by the Minister. With ASIC as the whole-of-market supervisor, streamlined and complete supervision of trading on the market is ensured should new trading platforms enter the Australian market.

The transfer of supervisory responsibilities to ASIC has not had any material effect on the central counterparties' arrangements for monitoring clearing participants. However, the ASX Operating Rules and ASX 24 Operating Rules (formerly the ASX Market Rules and SFE Operating Rules respectively) have been rewritten to exclude requirements related to market integrity, which are now covered by a separate set of rules supervised by ASIC. There have also been minor changes to the rules of the central counterparties and securities settlement facilities as a result of the transfer of market supervision.

Default management work

As reported in the 2008/09 Assessment, ASX is undertaking ongoing work to enhance default-management processes for both ASX Clear and ASX Clear (Futures). The work focuses on managing the legal, operational and liquidity risks, and minimising the potential losses and spillovers that could arise in the event of a participant default.

In the initial phase of the work, ASX identified three stages in the default management process: establishment of a default (identification of a trigger event and declaration of a default); close out of a defaulter's positions (for instance, whether and how to liquidate, hedge or transfer positions); and funding any losses arising in the close-out process (or indeed returning surplus funds to a liquidator).

To identify the ways in which information management at each stage of the process could be improved, ASX conducted default management 'fire drills' during the year. The three events considered in the drills were the default of: an ASX Clear (Futures) participant; an ASX Clear participant; and an ASX Clear cash-market-only participant. The outcomes of these drills were used to guide refinements to the format and content of the data available to the central counterparties during a default, and minor updates to the written default-management procedures. ASX plans to conduct more of these drills in the future, but will widen the involvement beyond the central counterparties to include its legal team and ASX Compliance.

ASX also formalised arrangements with the broker it will use in each market to conduct any on-market operations that are necessary in the second stage of the default management process (i.e., the close-out of positions). The second stage of the default management process may also involve the transfer of the defaulting

participant's client derivatives positions; this is not possible for unsettled cash equities transactions primarily because of legal and practical issues that ASX continues to work through.

Harmonisation and linking of central counterparty activity

Since the merger of the Australian Stock Exchange and SFE Corporation in 2006, ASX Clear and ASX Clear (Futures) have continued to operate as separate central counterparties. As noted in last year's Assessment, in December 2008 ASX released a consultation document seeking feedback on several specific initiatives aimed at harmonising and linking the activities of the two central counterparties, with a view to taking advantage of potential efficiencies.

Having considered the responses, ASX outlined in September 2009 the initiatives that it would progress.²⁰ These included the migration of the margining methodology at both central counterparties to CME SPAN. This project involves first bringing ASX Clear's margining system, TIMS, into ASX's in-house DCS before it and ASX Clear (Futures)' margining system, RIVA SPAN, are replaced with CME SPAN. The initial stage of the project involving TIMS is part of the DIRQ project, and is scheduled for completion in late 2010. The introduction of CME SPAN at both central counterparties is expected to occur in 2011.

Upon the implementation of CME SPAN, ASX will look to introduce margin offsets between the two central counterparties. ASX also consulted with clearing participants during the year on the possibility of an interim solution for offsets between the SPI equity index futures contract cleared by ASX Clear (Futures) and the equity index options contract cleared by ASX Clear. However, most clearing participants were of the view that the benefits of an interim solution would not outweigh the operational costs of implementing it.

Finally, ASX plans to widen the definition of a clearing participant's 'house' derivatives business at ASX Clear in line with that used by ASX Clear (Futures). The definition currently used by ASX Clear refers to transactions of the clearing participant legal entity only, whereas the definition used by ASX Clear (Futures) better reflects contemporary corporate structures by also referring to transactions of related parties of the clearing participant. Widening the definition at ASX Clear will improve risk attribution by fully segregating house (i.e., redefined to include proprietary transactions of related entities) and client business. It will also assist the development of margin offsets between the central counterparties. The definition change is planned, subject to regulatory clearance, to occur after the introduction of CME SPAN, with timing dependent on progress on margin offset arrangements.

The Reserve Bank welcomes these practical measures and encourages ASX to, where sensible, further harmonise the risk management practices of the two central counterparties and to continue to evolve the rulebooks of the central counterparties to reflect current risk management practices and expectations.

Operational performance

ASX Clear's core system is DCS. Developments in respect of CHESS are considered in the assessment of ASX Settlement in Section 5.3. DCS experienced only one short outage during the assessment period, in the September quarter 2009, resulting in availability of virtually 100 per cent. The availability target for DCS is 99.8 per cent. Average capacity utilisation of DCS in 2009/10 remained at its 2008/09 level of 23 per cent, while peak utilisation was 60 per cent. In accordance with its capacity headroom policy, ASX will look to increase the capacity of DCS within the next 12 months such that peak utilisation does not exceed 50 per cent.

²⁰ The document 'Delivering Efficiencies to the Marketplace through the Harmonisation and Linking of CCP Activities: The Way Forward' may be found at: http://www.asx.com.au/about/pdf/market_information_paper_delivering_efficiencies.pdf.

As well as monthly connectivity and procedural checks, ASX conducts business continuity tests of its key systems over two-year cycles. The business continuity testing program for 2010 and 2011 was finalised in early 2010, with DCS due to be tested in February 2011. The last test of DCS was conducted in September 2009, and did not reveal any problems.

ASX also updated its Business Continuity Management Policy during the year, with an emphasis on resilience, external providers and recovery objectives. Complementary work was done on business unit pandemic response plans and remote access testing. Under the requirements of the updated Policy, ASX will implement redundancy arrangements available within 24 hours for all four of its core systems at its backup site (currently only Austraclear's EXIGO system has full redundant systems in place). In addition, as noted in the previous assessment, ASX is in the process of implementing arrangements to have some operational staff at its backup site during business hours in order to facilitate rapid recovery in the event of a disruption, and staff familiarity with the site. Although located at the backup site, these staff would ordinarily remotely access systems at the main site. The Reserve Bank welcomes these improvements to ASX's business continuity arrangements in line with international best practice.

Trade acceptance service

A number of prospective market operators have expressed interest in establishing clearing and settlement arrangements through ASX Clear and ASX Settlement. In response ASX has announced the creation of a TAS, which will allow trades executed on AMOs' platforms to be cleared and settled through ASX Clear and ASX Settlement respectively.²¹ The TAS will enable trades originating from AMOs to be submitted to CHESSE, ASX's integrated clearing and settlement system for cash equities. Upon validation by CHESSE, trades will be novated and netted on the same basis as trades originating from the ASX market.

In late December 2009, ASX wrote to the applicant market operators setting out details of the TAS. ASX will make the TAS available under a published set of contractual terms of service. Each AMO will be required to periodically certify that it has complied with the standards in the previous quarter. Any failure to comply must be notified immediately to ASX Clear and ASX Settlement, and may trigger suspension. This arrangement is similar to that required of ASX Clear clearing participants. The Reserve Bank cannot see any reason why the TAS, as currently proposed, would affect the compliance of ASX Clear and ASX Settlement with the relevant FSS.

Governance

ASX Clear and ASX Clear (Futures) have common governance arrangements that sit within ASX's enterprise-wide governance framework. During the year some changes were made to these arrangements, including to the composition of the boards of the CS facilities and to ASX's organisational structure.

These developments are discussed in the detailed assessment of ASX's governance arrangements presented in Section 6.

Summary

It is the Reserve Bank's assessment that ASX Clear complied with the Financial Stability Standard for Central Counterparties during the assessment period.

The Assessment highlights a number of important developments during the period under review. These include the following:

²¹ Details regarding ASX's TAS are available at: http://www.asx.com.au/professionals/trade_acceptance_service/index.htm.

- *Changes to the composition of pooled risk resources:* ASX Clear replaced a \$100 million commercial bank subordinated loan with a subordinated intra-group loan from ASXCC of the same value. This loan remains ultimately funded by a commercial bank loan facility, but is now principal-reducing and has, under certain conditions, provision for use to cover loss arising from an investment counterparty default.
- *Triggers for an increase in fixed risk resources:* ASX documented guidance on the circumstances in which it would consider an increase to the central counterparties' fixed risk resources, rather than relying on additional collateral, which may only be received with a delay. This guidance considers the size, frequency, duration and distribution across participants of the additional collateral calls.
- *Continued refinement to the risk framework:* During 2009/10 ASX Clear replaced its uniform STELs with rating-based limits – exposures beyond these limits require additional collateral to be posted – thus allowing ASX Clear to better manage its exposures to lesser-rated participants. ASX Clear also announced system enhancements to allow intraday margin calls in respect of participants' derivatives positions (reflecting both price and position changes).
- *Improvements to participant-monitoring arrangements:* ASX implemented a number of changes to its capital- and liquidity-monitoring arrangements applicable to ASX Clear and ASX Clear (Futures) participants, including a new system for the lodgement of participants' capital returns.
- *Review of default-management processes:* Following a number of default management 'fire drills', improvements have been made to information management in default situations at the central counterparties. ASX has also formalised arrangements with the broker it will use in each market to effect any necessary close-out of positions in a default situation. ASX continues to work through the legal issues associated with the default management process.
- *Account segregation:* The Reserve Bank accepts ASX Clear's judgement, informed by industry feedback, that the costs of segregating house and client accounts for cash equities positions would currently outweigh the benefits, but notes that should international standards be amended to recommend or require this, this issue should be revisited.

The Assessment also identifies a number of areas for further attention during the forthcoming period. These include:

- *Routine margining of cash equities:* The Reserve Bank welcomes ASX Clear's plans to introduce routine margining of cash equities and will remain in dialogue with ASX regarding the refinement and implementation of the proposal during the next assessment period.
- *Harmonisation and linking of central counterparty activity:* The Reserve Bank welcomes the announcement of initiatives to harmonise and link the activities of the two central counterparties, including the migration of both central counterparties' margining systems to CME SPAN. The Reserve Bank will continue to monitor progress in these initiatives in 2010/11.
- *Participation requirements:* ASX Clear proposes to further increase the minimum 'core capital' requirement to \$10 million from 1 January 2012. It is expected that ASX will consider developments in the third-party clearing market in making decisions regarding further increases in the minimum capital requirement; ASIC and the Reserve Bank will monitor these developments.
- *Business continuity planning:* ASX finalised its business continuity testing program for 2010 and 2011. ASX also reviewed and updated its Business Continuity Management Policy, with a number of improvements to arrangements planned in line with international best practice. The Reserve Bank welcomes these plans and will monitor their progress over the period ahead.

5.2 ASX Clear (Futures) (formerly SFE Clearing Corporation)

Background

ASX Clear (Futures) provides central counterparty services for derivatives traded on the ASX 24 market.

ASX Clear (Futures) operates within a sound legal framework, based on its Operating Rules and Procedures (referred to as the SFECC Clearing Rules prior to August 2010). Under section 822B of the Corporations Act, these rules constitute a contract under seal between ASX Clear (Futures) and each of its participants, and between participants. Among other things, the rules set out the rights and obligations of ASX Clear (Futures) and each of its participants in respect of ASX Clear (Futures)' provision of central counterparty services. The netting arrangements contained in the ASX Clear (Futures) Operating Rules and Procedures are further protected under Part 5 of the Payment Systems and Netting Act. A change to the ASX Clear (Futures) rule book to clarify the protections afforded by the Payment Systems and Netting Act was made in 2009/10.

Given the concentration of counterparty risk in a central counterparty, effective risk-management processes are crucial. ASX Clear (Futures) manages the risk associated with the potential for a participant default through a range of measures:

- *Participation requirements and ongoing monitoring:* ASX Clear (Futures) participants are required to hold at least \$5 million in net tangible assets (NTAs). Over time, ASX Clear (Futures) plans to implement a further increase in this NTA requirement to \$10 million, with a higher requirement for those clearing for third parties.
- *Margining and other collateralisation of exposures by participants:* ASX Clear (Futures) levies margin on all derivatives products to cover any losses potentially arising should a participant default in normal market conditions. ASX Clear (Futures) also calls for Additional Initial Margins (AIMs) from participants when individually large or concentrated exposures are identified through capital stress testing.
- *The maintenance of pooled risk resources:* Should margin and other collateral collected from a defaulting participant prove insufficient to meet its obligations, ASX Clear (Futures) has access to pooled risk resources in a Clearing Guarantee Fund (CGF). The aggregate value of the CGF is currently \$400 million, calibrated to ensure coverage in extreme but plausible market conditions. The CGF comprises: \$30 million in ASX Clear (Futures)' own capital; a \$70 million subordinated loan from ASXCC, in turn funded by a subordinated loan from ASX Limited; participant commitments of \$150 million, of which \$30 million is promissory; and a subordinated loan from ASXCC of \$150 million, in turn funded by a principal-reducing loan from a commercial bank (i.e., any loss in excess of that covered by prior ranking default resources reduces the amount of principal to be repaid by the same amount), which replaced ASX Clear (Futures)' default insurance agreement as of December 2009. (This latter loan also has, under certain conditions, provision for use to cover loss arising from an investment counterparty default.)

At the end of June 2010, ASX Clear (Futures) had 15 participants, predominantly large foreign banks and their subsidiaries.

Assessment of Developments in 2009/10

Projects to improve ASX Clear (Futures)' risk and operating frameworks were ongoing in 2009/10. These included improvements to participant-monitoring arrangements, a review of default-management processes and an

update of ASX's Business Continuity Management Policy. Some changes were also made to components of ASX Clear (Futures)' risk management framework, including the replacement of the insurance component of ASX Clear (Futures)' pooled risk resources with a subordinated loan from ASXCC. Refinements were also made to parameters in margin setting calculations and stress test scenarios. Finally, during the period some changes were made to ASX's governance arrangements, which cover ASX Clear (Futures).

ASX Clear (Futures)' risk resources

The risk resources available to ASX Clear (Futures) to meet losses arising in the event of a participant default comprise any initial margin or other collateral (e.g., AIMs) collected from the defaulting participant, and pooled risk resources held in the CGF.

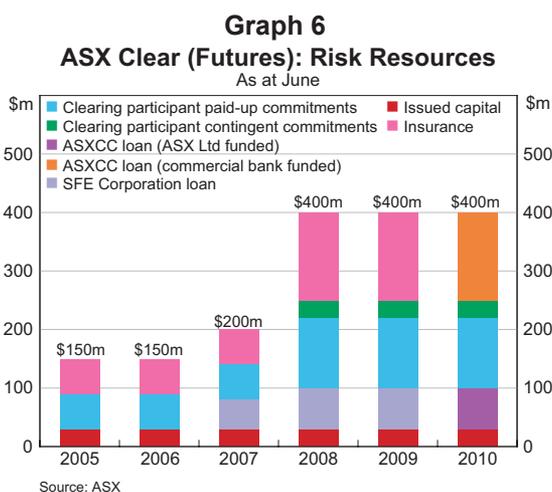
ASX Clear (Futures) calculates total initial margin requirements across each participant's portfolio using the OMX RIVA version of the internationally accepted SPAN methodology. Margin setting policy (i.e., the means by which SPAN parameters are used and determined) is reviewed annually; following this year's review, several minor amendments were made.

Preparations are underway for the replacement of the current RIVA SPAN methodology with CME SPAN. The CME SPAN methodology is widely regarded as international best practice, and its introduction is expected to improve risk estimation and attribution at ASX Clear (Futures). As discussed in Section 5.1, its introduction is also part of broader efforts to harmonise the operations of the two central counterparties.

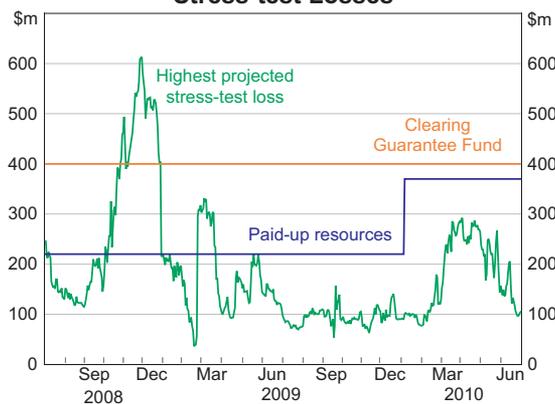
The size of the CGF (i.e., ASX Clear (Futures)' risk resources) was unchanged throughout the assessment period, at \$400 million, although its composition was altered. The \$150 million default insurance component was replaced with a subordinated loan from ASXCC (Graph 6). The decision to replace the insurance component was made in mid 2009 following the downgrade of the credit rating of the insurer to BBB-. The actual replacement occurred in December 2009 when funding for the ASXCC loan facility was finalised via a commercial bank loan. This loan is principal-reducing and available to cover loss arising from a participant default and, under certain conditions, loss arising from an investment counterparty default. For further details see 'ASXCC and composition of risk resources' in Section 5.1.

In order to reduce its reliance on the default insurance prior to its replacement, in July 2009 ASX Clear (Futures) temporarily reduced the STELs of A- and B-rated participants to exclude the value of the insurance. This meant that these participants would be called for AIMs at a lower threshold projected stress-test loss. STELs were returned to their previous levels in early January 2010, following execution of the ASXCC loan agreement in December 2009. There were no breaches of STELs during the year, and therefore no AIMs were collected.

As noted in Section 5.1, during the assessment period ASX documented guidance on the circumstances in which it would consider an increase to the central counterparties' fixed risk resources, rather than relying on additional collateral.



Graph 7
ASX Clear (Futures): Highest Projected
Stress-test Losses



Source: ASX

Comparison of projected stress-test losses with the level of available risk resources offers some guidance as to the resilience of ASX Clear (Futures) to a participant default in extreme market conditions. During 2009/10, the stress-test exposure of the participant with the highest projected loss was typically well below the value of the paid-up component of the CGF (Graph 7).²² A temporary increase in exposures was observed in late March 2010 as the composition of one clearing participant's portfolio shifted, although they remained below the level of paid-up resources.

Participant monitoring

Monitoring of clearing participants is predominantly conducted by two units within ASX: ASX Compliance, a separate subsidiary with its own board; and Clearing Risk Management, which is located within the central counterparties. As noted in last year's Assessment, during 2008/09 ASX reviewed a number of aspects of its capital- and liquidity-monitoring arrangements and set in train a number of projects to deliver enhancements to these arrangements. Section 5.1 provides more detail on participant monitoring and outlines the progress made on these projects during 2009/10.

ASX Clear (Futures) also took steps during the year to improve the quality of the open interest data reported by clearing participants.

Default management project

As reported in the 2008/09 Assessment, ASX is undertaking a project to enhance default-management processes for both ASX Clear and ASX Clear (Futures). The project focuses on managing the legal, operational and liquidity risks, and minimising the potential losses and spillovers that could arise in the event of a participant default. Section 5.1 outlines the progress made on this project during 2009/10.

Operational performance

ASX Clear (Futures)' core system is the SECUR system. SECUR recorded 100 per cent system availability in 2009/10, with average capacity utilisation of 26 per cent and peak utilisation of 66 per cent. This met the minimum availability target of 99.8 per cent, while in accordance with its capacity headroom policy ASX will look to increase the capacity of SECUR within the next 12 months such that peak utilisation does not exceed 50 per cent.

²² The paid-up component of the CGF increased with the replacement of the insurance component with the fully-drawn subordinated loan from ASXCC.

²³ In July 2009 ASX Clear (Futures) also changed its stress-test scenario definitions to be expressed in percentage changes, rather than absolute price point changes, thus reducing the frequency of updates required to scenario definitions.

Since mid 2008 ASX Clear (Futures) has been responsible for first- and second-level operational support of SECUR. This includes business continuity arrangements, and computer system support not involving changes to system components or underlying source code. Previously this support was provided by NASDAQ OMX. Third-level and software support continues to be provided by NASDAQ OMX. A new agreement was finalised during the year to extend this support beyond 2013.

ASX conducts business continuity tests of its key systems over two-year cycles. The testing program for 2010 and 2011 was finalised in early 2010, with the next test of the SECUR system scheduled for late 2010; the previous test was conducted in late 2007 and revealed no problems.

As noted in Section 5.1, ASX also updated its Business Continuity Management Policy during the year and has planned improvements to its business continuity arrangements in line with international best practice.

Governance

ASX Clear and ASX Clear (Futures) have common governance arrangements that sit within ASX's enterprise-wide governance framework. During the year some changes were made to these arrangements, including to the composition of the boards of the CS facilities and to ASX's organisational structure. These developments are discussed in the detailed assessment of ASX's governance arrangements presented in Section 6.

Summary

It is the Reserve Bank's assessment that ASX Clear (Futures) complied with the Financial Stability Standard for Central Counterparties during the assessment period.

The Assessment highlights a number of important developments during the period under review. These include the following:

- *Changes to the composition of pooled risk resources:* ASX Clear (Futures) replaced the \$150 million insurance component of its CGF with a subordinated loan from ASXCC of the same size. As the loan is fully drawn, it has increased the value of ASX Clear (Futures)' paid-up risk resources. This loan is ultimately funded by a principal-reducing loan from a commercial bank that may be used in the event of a loss arising from either a participant default or, under certain circumstances, an investment counterparty default.
- *Triggers for an increase in fixed risk resources:* ASX documented guidance on the circumstances in which it would consider an increase to the central counterparties' fixed risk resources, rather than relying on additional collateral, which may only be received with a delay. This guidance considers the size, frequency, duration and distribution across participants of the additional collateral calls.
- *Improvements to participant-monitoring arrangements:* ASX implemented a number of changes to its capital- and liquidity-monitoring arrangements applicable to ASX Clear and ASX Clear (Futures) participants, including a new system for the lodgement of participants' capital returns.
- *Improvements to default-management arrangements:* Following a number of default management 'fire drills', improvements have been made to information management in default situations at the central counterparties. ASX has also formalised arrangements with the broker it will use in each market to effect any necessary close-out of positions in a default situation. ASX continues to work through the legal issues associated with the default management process.

The Reserve Bank welcomes these improvements to ASX Clear (Futures)' risk and operating framework. As already noted in Section 5.1, the Assessment also identifies two areas where the Reserve Bank will monitor progress over the period ahead: the announced initiatives to harmonise and link the activities of the two central counterparties; and the planned improvements to ASX's Business Continuity Management Policy in line with international best practice.

5.3 ASX Settlement (formerly ASX Settlement and Transfer Corporation)

Background

ASX Settlement operates the securities settlement facility for cash equities and warrants traded on the ASX market.

ASX Settlement operates within a sound legal framework, based on its Operating Rules and Procedures (referred to as the ASTC Settlement Rules prior to August 2010). Under section 822B of the Corporations Act, these rules constitute a contract under seal between ASX Settlement and each of its participants, and between participants. Among other things, the rules set out the rights and obligations of ASX Settlement and each of its participants, including in the event of default or suspension. ASX Settlement's netting arrangements are approved under Part 3 of the Payment Systems and Netting Act. This provides certainty for the netting process in the event of the insolvency of an ASX Settlement participant or a payment provider.

ASX Settlement's securities settlement system is CHES. Settlement risk in CHES is mitigated by the use of a Model 3 DVP mechanism, whereby settlement of securities transfers and associated cash payments occurs in a multilateral net batch at around noon each day, with interbank cash payments made across Exchange Settlement (ES) accounts in the Reserve Bank's real-time gross settlement (RTGS) system, RITS. Securities title is updated upon confirmation of cash settlement from RITS.

Assessment of Developments in 2009/10

Following the disruption to the equity settlement process in January 2008, the Reserve Bank published a Review of Settlement Practices for Australian Equities and recommended that ASX Settlement consider a number of enhancements to its settlement arrangements.²⁴ After seeking participant feedback, ASX announced that it would implement a number of enhancements.²⁵ This implementation was the focus of the 2008/09 Assessment, with particular emphasis on improvements to the functioning of the batch-settlement model; and improving the transparency of securities-lending activity. Over 2009/10 the Reserve Bank continued its focus on ASX Settlement's progress towards implementation of these enhancements. During the period, ASX Settlement implemented additional improvements to the batch-settlement model, as well as continuing to improve transparency in the securities-lending market through implementation of the securities-lending disclosure regime.

Improvements to the batch-settlement model

The Reserve Bank's Review of Settlement Practices for Australian Equities recommended a number of potential enhancements to the functioning of the batch-settlement model following the significant delays to the completion of settlement in January 2008. In September 2009, after consultation with industry participants, ASX announced that it would implement a number of changes. While at the time of the announcement ASX

²⁴ The document 'Review of Settlement Practices for Australian Equities', is available at: <http://www.rba.gov.au/payments-system/clearing-settlement/review-practices/index.html>.

²⁵ In late 2008, ASX released a consultation paper, 'Enhancing Australia's Equity Settlement System'. This document is available at: http://www.asx.com.au/about/pdf/consultation_paper_enhancing_equity_settlement_system.doc. In September 2009, ASX announced a number of enhancements to its equity settlement arrangements with input from the above consultation. The document 'Enhancing Australia's Equity Settlement System: The Way Forward' is available at: http://www.asx.com.au/about/pdf/market_information_paper_enhance_equity_settle.pdf.

had already implemented some changes to the batch-settlement model, a number of further improvements were identified.

These included:

- *An earlier deadline for the back out of settlement obligations:* In the event that a participant fails to meet its payment obligations ASX may impose an earlier deadline for the back out of settlement obligations (although some flexibility will be retained in the event of operational problems). Had such arrangements been in place in January 2008, the back out of the troubled participant's settlement obligations and the recalculation of the batch could have been accelerated, reducing the overall length of the settlement delay, and mitigating the uncertainty that may affect the market at large.
- *Increasing ASX Settlement's powers to facilitate same-day settlement of backed-out settlement obligations:* Since the incidence of batch recalculation could increase once an earlier deadline for the back out of settlement obligations has been imposed, ASX Settlement proposed to seek rules-based powers to require and facilitate the intraday settlement of certain backed-out settlement obligations if this was deemed necessary to avoid further disruption to the settlement process.
- *Removal of ASX Clear derivatives margins from the CHESSE settlement batch:* This ensures that ASX Clear's risk-management arrangements are not dependent on the completion of settlement in the cash equity market.
- *Amendment to the LEPO expiry settlement process:* This addresses a potential principal risk to ASX Clear arising because of a mismatch between the nominal \$0.01 option strike price and actual exposure.²⁶
- *Development of standards for payment providers:* ASX consulted on the possibility of pre-agreed settlement limits for payment providers (i.e., those settling payment obligations on behalf of settlement participants), so as to avoid delays associated with the approval of settlement obligations for their clients. Following the consultation process, rather than proceed with pre-agreed limits, ASX Settlement decided to work towards raising minimum standards for payment providers.

Over the assessment period ASX implemented a number of these enhancements. Starting February 2010 the payment of ASX Clear derivatives margins were removed from the CHESSE batch. ASX also plans on making changes to remove netting between house and client margin payments in the settlement process during the next assessment period. ASX has implemented a temporary solution to mitigate risk around the LEPO expiry settlement process. A permanent solution will be considered as part of cash equity margining.²⁷

In July 2010, ASX also clarified some aspects of the CHESSE batch settlement processing cycle in a participant bulletin.²⁸ This bulletin set out the obligations of ASX Settlement and payment providers during the settlement cycle, including a timeline by which payment providers must confirm or reject their willingness to fund settlement participants' obligations. ASX will amend the formal agreements between payment providers and ASX Settlement, in consultation with the Australian Payments Clearing Association (APCA) and payment

26 A LEPO is a European-style call option (i.e., can only be exercised on expiry date) with a strike price of one cent. There is no up-front option premium and both buyer and seller pay margins through the life of the LEPO. Upon exercise at expiry, the buyer pays premium and final margin payments to the seller (via ASX Clear) and the securities are transferred against consideration of just one cent. While the securities are transferred in conjunction with the CHESSE batch, the final margin and premium payments may be settled in either Austraclear or the CHESSE batch. Since the final margin and premium payments represent the full value of the securities, where these are not settled in the CHESSE settlement batch, a daylight principal risk arises between the time at which they settle in Austraclear and the time at which securities are transferred in CHESSE.

27 The temporary solution involves ASX Clear withholding all outward margin payments until it has been confirmed that the CHESSE batch has settled. The longer-term solution will involve settlement of securities delivered at expiry at the prevailing stock price, rather than the strike price of one cent.

28 The bulletin is available at: https://www.asxonline.com/intradoc-cgi/groups/clearing_and_settlement/documents/communications/asx_027540.pdf.

providers, to change the scheduled times in the formal agreements so that they better reflect current market practice, as well as providing clarity to payment providers as to their obligations.

With respect to the remaining enhancements, ASX has projects planned to increase ASX Settlement's powers to facilitate same-day settlement of backed-out settlement obligations. The Reserve Bank will continue to monitor developments in this area in the next assessment period.

Transparency of securities-lending activity

During the assessment period ASX completed the implementation of the securities-lending disclosure regime. The regime was the result of a recommendation by the Reserve Bank to increase transparency in the securities-lending market in the Review of Settlement Practices for Australian Equities. Since securities-lending transactions are currently settled in the CHESST settlement batch alongside equity trades that have been novated to ASX Clear, any disruption to their settlement can have spillover effects on settlement in the wider market. Indeed, the disruption to equity settlement in January 2008 arose, in part, from a participant's inability to meet obligations arising from securities-lending transactions. For this reason, the Reserve Bank saw a strong case for ASX Settlement, regulators and market participants to have access to data on activity in the securities-lending market, and the scale of outstanding positions. With this information, participants gain a better understanding of potential future settlement risks and the role of securities lending in broader market functioning. Transparency of this activity also improves the balance of information in the market; previously, only those directly involved in these transactions had access to such information.

The key features of the disclosure regime, which was developed in consultation with ASX and market participants, are as follows:

- Real-time tagging of all securities loan-related settlement instructions submitted to CHESST. These data are particularly useful for ASX Settlement as operator of the securities settlement facility, to give visibility of loan-related transactions submitted for settlement and allow settlement performance of such trades to be monitored effectively.
- Daily reporting to ASX of settlement participants' outstanding on-loan and borrowed positions, by security. These data offer a gauge of outstanding loans which might be subject to recall, and allow for separate identification of chains of loans.
- Quarterly reporting of the aggregate number of shares committed to lending programs by settlement participants.

On 2 November 2009, ASX started publishing daily reports containing the aggregate number and value of tagged transactions in the CHESST batch and the number of securities-lending transactions effected for each security. Since 14 December 2009, ASX has also published daily reports containing the value of outstanding securities-lending positions in each security. The value of securities committed to lending was added to these reports at the beginning of January 2010.

One issue with the disclosure regime is its coverage. Under ASX Settlement Operating Rules and Procedures, reporting is compulsory for settlement participants in ASX Settlement; firms active in the securities lending market, but who are not settlement participants, however, are not required to report. The incomplete coverage of the regime is evident from the discrepancy between the reported borrowed and loaned securities. To address this issue, the Reserve Bank has been working with ASX, industry participants and industry bodies to raise awareness of the regime and to secure voluntary commitments to provide similar data from non-settlement participants with a material presence in the Australian securities lending market. The Reserve Bank remains

in dialogue with ASX and industry with regards to this issue, and if the current regime's reliance on voluntary reporting ultimately results in insufficient coverage, will consider changes to the regime to remedy this.

Operational performance

ASX Settlement's key system, CHES, achieved a high level of operational reliability during the period, with just one short outage reported in January 2009; availability over the year was virtually 100 per cent. Capacity utilisation averaged 24 per cent during the assessment period, peaking at 50 per cent. Accordingly, ASX Settlement met both its targets of minimum availability of 99.8 per cent and capacity headroom of 50 per cent over peak utilisation.

ASX conducts business continuity tests of its key systems over two-year cycles. The testing program for 2010 and 2011 was finalised in early 2010, with CHES scheduled for testing in May 2011. The last test of CHES was conducted in September 2009, and did not reveal any problems. As noted in Section 5.1, ASX also updated its Business Continuity Management Policy during the year and has a number of improvements to arrangements planned in line with international best practice.

Trade acceptance service

In response to the prospect of AMOs entering the Australian market, ASX has announced the creation of a TAS, that will allow trades executed on AMOs' platforms to be cleared and settled through ASX Clear and ASX Settlement respectively. Details of the TAS are provided in Section 5.1.

Summary

It is the Reserve Bank's assessment that ASX Settlement complied with the Financial Stability Standard for Securities Settlement Facilities during the assessment period.

The Reserve Bank welcomes the enhancements to ASX Settlement's settlement arrangements, including the movement of margin payments from the CHES batch to Austraclear, and clarifications around the CHES batch processing cycle. The Reserve Bank encourages ASX Settlement to implement the other identified enhancements as soon as practicable and will monitor progress over the period ahead. The Reserve Bank also welcomes the implementation of the securities-lending disclosure regime and will continue to monitor the coverage of the regime.

5.4 Austraclear

Background

Austraclear operates a securities settlement facility for trades executed in the OTC market for fixed income securities, including government bonds and repos.

Austraclear operates within a sound legal framework, based on its Regulations. Under section 822B of the Corporations Act, these have effect as a contract under seal between Austraclear and each of its participants, and between participants. Among other things, the rules set out the rights and obligations of Austraclear and each of its participants, including in the event of default or suspension. The finality of settlements undertaken by Austraclear is reinforced by its approval as a RTGS system under Part 2 of the Payment Systems and Netting Act. This approval protects the finality of payments made through Austraclear should a participant enter external administration.

Austraclear addresses settlement risk by the use of a Model 1 DVP mechanism, involving settlement of individual transactions on a gross basis. The interbank cash leg is paid through the Reserve Bank's RTGS system, RITS, with simultaneous transfer of securities title in Austraclear.

Assessment of Developments in 2009/10

There were no substantial changes during the year to the policy or legal frameworks under which Austraclear operates. Accordingly, and in light of a number of operational incidents that occurred during the assessment period, the principal focus of the assessment of Austraclear is operational risk management.

Operational risk management

EXIGO is the core system used by Austraclear. Since mid 2008 Austraclear has been responsible for first- and second-level operational support of EXIGO. This includes business continuity arrangements, and computer system support not involving changes to system components or underlying source code. Previously this support was provided by NASDAQ OMX, which continues to provide third-level and software support. During the year a new agreement was finalised to extend this support beyond 2013.

EXIGO system availability was 99.9 per cent in 2009/10, in line with the target stipulated in Austraclear's 'Step-in and Service Agreement' with the Reserve Bank.²⁹ Average capacity utilisation of 30 per cent was within its normal range, and peak capacity utilisation was 66 per cent. In accordance with its capacity headroom policy, ASX will look to increase the capacity of EXIGO within the next 12 months such that peak utilisation does not exceed 50 per cent.

There were a number of operational incidents involving EXIGO during the assessment period. Two of the most significant outages had a common cause, involving a fault in the underlying Oracle database which caused a long-running system process to initiate unexpectedly, preventing user access to the affected part of the database; the second occurrence revealed that the initial short-term fix to the problem was ineffectual. With a more comprehensive interim fix now in place, ASX intends to implement a permanent solution to the problem in November 2010. One issue coming out of these incidents was the adequacy of ASX's internal alerts. ASX has now enhanced its systems to ensure that a given period of Austraclear settlement inactivity will activate an alert.

²⁹ This agreement reflects the interdependence between Austraclear and the Reserve Bank's high-value payments system, RITS.

Another significant operational incident occurred during a business continuity test in which EXIGO was operated from ASX's backup site. When users tried to log in to the system they were prompted to download EXIGO's graphical user interface again. With multiple users attempting to download and login simultaneously, not all could be serviced and many were timed out. This caused significant delays to users accessing the system and it was necessary to extend the daily session. EXIGO was subsequently operated from the backup site until a system enhancement could be developed which would allow seamless connection regardless of the site from which the system was being operated. Both the operation of EXIGO from the backup site and the eventual switchback of operations to the primary site occurred without disruption.

ASX responded to the incidents described above, as well as a number of smaller operational incidents, quickly and effectively in order to minimise or avoid disruption to Austraclear settlement activity, and action to avoid reoccurrences of the problems has been taken.

As noted in Section 5.1, ASX updated its Business Continuity Management Policy during the year and has a number of improvements to arrangements planned in line with international best practice.

System development

During the year ASX continued work on the Austraclear System Enhancement project, which will deliver the largest set of functional improvements to Austraclear users since the system's introduction in 2006. The project has been split into two parts: part 1 primarily covers user enhancements, while part 2 mainly covers internal operational enhancements. The improvements to user functionality are based on feedback received by ASX via the Austraclear Help Desk, industry working groups and other stakeholders. They cover trade management, trade input, corporate action reporting, market repo trade enhancements and straight-through processing. Part 1 of the project is expected to be implemented in Q3 2011, followed by part 2 in late 2012.

Summary

It is the Reserve Bank's assessment that Austraclear complied with the Financial Stability Standard for Securities Settlement Facilities during the assessment period. Although there were a number of operational incidents during the assessment period, the Reserve Bank is satisfied with both ASX's immediate responses to the situations, as well as the follow-up action to prevent reoccurrence.

6. Special Topic: Governance

Measure 8 of the FSS sets out the relevant requirements for licensed central counterparties with respect to governance:

The central counterparty must have effective, accountable and transparent governance arrangements. This requires that:

- (a) the board of the CS facility licensee have appropriate expertise and independence;
- (b) the board of the CS facility licensee be responsible for oversight of the operation of the central counterparty; and
- (c) the risk-control function of the central counterparty must not be adversely influenced by its business, marketing or other operations.

The guidance provided to the measure states that it applies to the area of management specific to control of financial risk, and is not intended to address broader issues of corporate governance such as obligations in the Corporations Act or good market practice.

In this assessment period, the Reserve Bank undertook a detailed assessment against the governance measure for the two licensed central counterparties. It is the Reserve Bank's assessment that ASX Clear and ASX Clear (Futures)' governance arrangements are consistent with the measure.

This section first describes ASX Clear and ASX Clear (Futures)' governance framework with respect to the control of financial risk, before assessing the framework against the key aspects of the measure, as outlined above. Since the two ASX central counterparties are part of the same corporate group, a common governance framework is applied. In what follows, therefore, the two facilities are treated collectively.

ASX's Governance Framework

Board

ASX Clear and ASX Clear (Futures) are subsidiary companies of ASX Limited. The central counterparties are each governed by a board of directors (the CS Boards), while ASX Group is governed by the ASX Limited Board.

Ultimate responsibility for the control of financial risks faced by the central counterparties lies across the ASX Limited Board and the CS Boards. The ASX Limited Board, which is primarily responsible for the overall performance of ASX Group, has a responsibility to ensure the conduct of the ASX Group is consistent with its licence obligations, as well as 'public policy objectives directed at financial market and payments system integrity'. However, much of the responsibility for oversight and risk management of the central counterparties has been delegated to the CS Boards. Specifically, the ASX Limited Board relies on the CS Boards to provide

oversight in respect of: the management of clearing and settlement risk; compliance with the FSS; and the review of the statutory and management accounts of the central counterparties.

The ASX Limited Board also maintains an Audit and Risk Committee, and a Nomination and Remuneration Committee. The Audit and Risk Committee has responsibility for considering the risk management processes, internal controls and compliance systems within ASX (other than those matters which are the responsibility of the CS Boards), as well as overseeing the internal and external audit of ASX Group. The Nomination and Remuneration Committee is responsible for reviewing the remuneration and incentive framework of the Managing Director and CEO (hereafter the CEO), and of ASX staff more broadly. The Committee also nominates non-executive directors of the ASX Limited Board, assesses the requirements for these directors and reviews their remuneration.

The composition of the boards and committees is discussed in detail below.

Management

Within the ASX Group organisational structure there are five functional areas with at least some responsibility for central counterparty financial risk management. These are:

- the Clearing Risk Policy unit, which has responsibility for determining policies regarding management of central counterparty risks;
- the Clearing Risk Management unit, which is responsible for implementing clearing risk policies;
- the Enterprise Risk and Compliance unit, which, among other things, is responsible for ensuring compliance with the FSS;
- the Internal Audit unit, which, among other things, audits the implementation of risk policy by the Clearing Risk Management unit; and
- the Portfolio Risk Manager, who is responsible for managing counterparty, credit and liquidity risk arising from the investment of cash margins and other cash-based funds of the central counterparty.

Each function is headed by a General Manager, with the exception of the Portfolio Risk Management function, which is solely comprised of the Portfolio Risk Manager. Each function reports to the Chief Risk Officer (CRO), an ASX Group Executive who in turn reports to the CEO. The Internal Audit unit also reports directly to the Audit and Risk Committee and to the CS Boards where appropriate. These arrangements reflect some changes made to ASX's organisational structure over the past year. Previously the Clearing Risk Management unit was called Clearing Risk Operations and sat under the Group Executive Operations. Portfolio Risk Management was previously called Treasury and sat under the Chief Financial Officer.

ASX also maintains a number of executive committees, comprising a range of Group Executives and Executive General Managers, and in some cases, General Managers. The executive committees with some responsibility for financial risk management include the Enterprise Risk Management Committee, the Capital and Liquidity Committee, the Enterprise Portfolio Steering Committee, and the Clearing Risk, Operations and Compliance Liaison Committee.

Assessment against the Governance Measure

The central counterparty must have effective, accountable and transparent governance arrangements.

ASX's governance arrangements are relatively transparent by international standards. ASX Limited publishes information about its governance arrangements online and in its annual report. Information made publicly available includes: a high-level organisational structure; the charters of the boards and board committees; the composition of these boards and committees; and profiles of the board members. In its annual report, ASX Limited also discusses its compliance with the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, which cover a range of issues including the roles of the board and senior management, director independence, the role of board committees and remuneration decisions.

The governance arrangements also ensure accountability. The ASX Limited Board is ultimately accountable to shareholders for the performance of ASX Group. The Board reviews its own performance annually and the Chairman meets with each non-executive director (some of whom also sit on the CS Boards) to discuss individual performance. The Chairman also meets periodically with the external CS Board directors. The Chairman, with assistance from the Nomination and Remuneration Committee, is responsible for overseeing the processes and procedures used to evaluate board members' performance.

Broadly, in order to be effective, a central counterparty's governance arrangements should balance the interests of all relevant stakeholders in corporate decision-making. One aspect of this concerns how the interests of clearing participants are considered. The interests of clearing participants are taken into account in major decisions regarding central counterparty financial risk management through the use of public consultations. Feedback is also provided through ongoing routine interactions with clearing participants (for example, participant monitoring, participant returns, collection of margins) and through quarterly meetings with the Australian Financial Markets Association. Participants also have a designated 'account manager' at ASX, who acts as a conduit for feedback.

The effectiveness of the governance arrangements is considered in more detail in the subsections of the measure discussed below.

(a) The board of the CS facility licensee [must] have appropriate expertise and independence.

This aspect of the measure covers the expertise of the Board members and their independence from management of the central counterparty, other entities owned by the operator and any other boards within the corporate structure in which the central counterparty sits.

Independence

The ASX Limited Constitution requires that the number of directors fixed by the ASX Limited Board should be no less than seven and no more than 15. There are currently nine members of the ASX Limited Board, comprising the ASX Group CEO and eight non-executive directors. Non-executive directors are required to stand for election or re-election, as the case may be, at the ASX Limited annual general meeting as required by the listing rules.

The ASX Limited Board Charter requires that a majority of ASX Limited Board members be independent, and that the Chair of the Board be an independent non-executive director. ASX uses the definition of independence set out in the ASX Corporate Governance Principles and Recommendations, which defines an independent director as 'a non-executive director who is not a member of management and who is free of any business or other relationship that could materially interfere with – or could reasonably be perceived to materially

interfere with – the independent exercise of their judgement.’ The interests of individual ASX Limited Board directors are tabled at every ASX Limited Board meeting. A formal assessment of each director’s independence is also undertaken annually. The 2009 ASX Limited Annual Report noted that all non-executive directors were considered to be independent.

The CS Boards each have the same members: one executive director (the ASX Group CEO) and six non-executive directors, of whom four are members of the ASX Limited Board and two are external directors. This current structure came into effect in February 2010 and represented a strengthening of the independence of the CS Boards – prior to this the CS Boards comprised four executive directors and four non-executive directors, of which two were external directors and two were ASX Limited non-executive directors. Members of the CS Boards are appointed by the ASX Limited Board.

Members of the Audit and Risk Committee are also appointed by the ASX Limited Board. The Charter of the Committee requires that it have at least three members. The Charter further specifies that neither the Chair nor any executive directors of the ASX Limited Board may sit on the Committee. The Committee currently has four members, all of whom are non-executive directors of the ASX Limited Board.

The Nomination and Remuneration Committee is also appointed by the ASX Limited Board. As with the Audit and Risk Committee, it is required to have at least three members and the majority must be independent ASX Limited non-executive directors. The Charter of the Nomination and Remuneration Committee states that its Chairman will be the Chairman of the ASX Limited Board. There are currently five members of this Committee.

While most of the directors on the CS Boards are also on the ASX Limited Board, the Reserve Bank is satisfied that they exhibit independence. As noted above, the ASX Limited Board has delegated responsibility for central counterparty risk management to the CS Boards, and as such the CS Boards essentially act as a specialised ‘risk committee’, with the ASX Limited Board considering broader corporate issues. Decisions on central counterparty risk management are made by the CS Boards and reported to the ASX Limited Board – the ASX Limited Board has no decision-making role in these matters. Furthermore, as noted earlier, the CS Boards have two external directors that are not directors of ASX Limited. This further bolsters the independence of the CS Boards.

Expertise

The Nomination and Remuneration Committee is responsible for establishing and evaluating the ‘necessary and desirable competencies’ of the ASX Limited Board and its committees. The 2009 ASX Limited Annual Report notes that ‘the Board considers that individually and collectively the directors bring a level of skill, knowledge and experience that enables the Board to discharge its responsibilities effectively’. The expertise of the CS Boards is enhanced by the presence of two independent directors who are appointed for their skills and expertise in clearing and settlement, and operational risk management matters. Additionally, members of the Audit and Risk Committee are required to have working familiarity with general finance and accounting practices.

(b) The board of the CS facility licensee [must] be responsible for oversight of the operation of the central counterparty.

The ASX Limited Board Charter sets out the responsibilities of the ASX Limited Board and the CS Boards with respect to their roles in ensuring the central counterparty meets its licence requirements relating to financial risk management. For example, this includes the responsibility of the ASX Limited Board for overseeing ‘the processes for identifying significant risks facing the ASX Group and that appropriate and adequate control,

monitoring and reporting mechanisms are in place', and the fact that the ASX Limited Board relies on the CS Boards to provide oversight in respect of 'the management of clearing and settlement risk' and 'compliance with the FSS'.

ASX has in place a schedule of regular reporting to ensure the appropriate boards and committees are informed regarding central counterparty risk controls and compliance with the FSS. For example, the CS Boards are updated quarterly on the activities of the Clearing Risk Management and Clearing Risk Policy functions, as well as regarding any projects related to the CS facilities. Both the Audit and Risk Committee and the CS Boards are also updated regularly regarding ASX's compliance with the FSS. All reporting to the Boards is generally done through the relevant executive committee.

Through the Audit and Risk Committee the ASX Limited Board also has direct oversight of the Internal Audit function. According to the Committee's charter, its responsibilities include:

- reviewing the adequacy of resources and governance arrangements of the internal audit function;
- reviewing and concurring on the appointment, replacement or dismissal of the General Manager Internal Audit; and
- reviewing the effectiveness of the internal audit function.

Board members are also encouraged to access members of senior management at any time to request relevant information in their role as a director and are entitled, with the approval of the chairman, to seek independent professional advice at the company's expense in matters relating to their role as a director.

To evaluate management, the Board assesses the performance of senior executives against group and individual performance targets, with the assistance of the CEO and the Nomination and Remuneration Committee.

(c) The risk-control function of the central counterparty must not be adversely influenced by its business, marketing or other operations.

Within ASX's governance framework, reporting lines for those units with responsibility for financial risk management are segregated from other business units. As noted above, these units report to the CRO, who in turn reports directly to the CEO. The CRO is not responsible for any other functions, and none of the units within the CRO's portfolio have a revenue or profit objective. The Internal Audit unit also has separate reporting lines directly to the Audit and Risk Committee, and to the CEO.

Summary

It is the Reserve Bank's assessment that ASX Clear and ASX Clear (Futures)' governance arrangements are consistent with the governance measure of the Financial Stability Standards. The governance arrangements are effective, accountable and transparent. Arrangements are in place to ensure the boards of ASX Clear and ASX Clear (Futures) have appropriate expertise and independence; indeed, the independence of these boards was bolstered during the year by the removal of all but one of the executive directors (the ASX Group CEO remains). The ASX Clear and ASX Clear (Futures) boards are formally responsible for oversight of the operation of the central counterparties, and arrangements are in place to ensure this oversight is effectively conducted. Finally, the risk control function of the central counterparties is independent from their other functions, with the business units responsible for financial risk management sitting under the CRO, who reports directly to the CEO.

Appendix A

The Reserve Bank of Australia's Financial Stability Standards

Financial Stability Standard for Central Counterparties

A CS facility licensee must conduct its affairs in a prudent manner, in accordance with the standards of a reasonable facility in contributing to the overall stability of the Australian financial system, to the extent that it is reasonably practicable to do so. This Standard applies to all CS facility licensees that operate a central counterparty with the exception of those CS facility licensees granted a licence under section 824B(2) of the Corporations Act. This exception applies only for such time as the Reserve Bank receives annual documentary evidence from the licensee's overseas regulator that the licensee has complied in all material respects with the requirements of the overseas regulator related to matters affecting stability. Such evidence must be provided in a form and at a time agreed with the Reserve Bank.

The Standard does not apply to CS facility licensees granted a licence under section 824B(2). This exception applies only for such time as the Reserve Bank receives annual documentary evidence from the licensee's overseas regulator that the licensee has complied in all material respects with the requirements of the overseas regulator related to matters affecting stability. The required form of such documentary evidence will be discussed with the licensee and its overseas regulator, but it is expected that it would include the following: details of any assessments carried out over the preceding period relevant to the licensee's compliance with the requirements of the overseas regulator; and details of any specific areas of investigation by the regulator. Such documentary evidence must be received prior to the commencement of operations under the licence and on an annual schedule thereafter.

The Reserve Bank will also, from time to time, seek additional information directly from the licensee regarding its activities and risk management processes. Furthermore, notwithstanding that an overseas regime may be sufficiently equivalent to that in Australia, there may be some differences in the detailed application of principles or standards. The Reserve Bank will, in such cases, seek sufficient information to carry out a direct assessment of the CS facility licensee in respect of specific aspects of its operations. Subject to the outcome of such an assessment, the Reserve Bank may recommend that additional risk-mitigating actions be taken by the licensee.

At a minimum the Reserve Bank would expect to receive the following information on a regular basis:

- details of any material changes in the licensee's activities, processes, or people: The licensee is expected to provide activity reports and information on material changes in the conduct of its business – including changes to products, people and operational processes. The Reserve Bank expects to be informed in advance where material changes in these areas might be relevant to an assessment of systemic risk. Audited annual accounts, quarterly management accounts and data detailing stress-test outcomes relative to the facility's risk resources would also be expected; and

- additional information to allow assessment of specific aspects of the licensee's operations: The form and scope of the information necessary to carry out such an assessment will differ according to the coverage of the overseas regime. The Reserve Bank's expectations in this regard will be discussed periodically with the licensee.

In some cases it may be appropriate to establish a formal framework for cooperative oversight alongside the overseas regulator. Under such circumstances, the required level and frequency of information flow from both the regulator and the facility might be greater.

Financial Stability Standard for Securities Settlement Facilities

A CS facility licensee must conduct its affairs in a prudent manner, in accordance with the standards of a reasonable CS facility licensee in contributing to the overall stability of the Australian financial system, to the extent that it is reasonably practicable to do so.

This Standard only applies to CS facility licensees that provide a facility where the value of financial obligations settled in a financial year exceeds a threshold value of \$100 million. When this threshold is exceeded for the first time, the provider of the facility must meet the Standard by the beginning of the next financial year.

Appendix B

Detailed Information Relevant to Assessment against the Financial Stability Standards

B1. Financial Stability Standard for Central Counterparties

There are 10 measures that the Reserve Bank considers relevant in determining whether a facility has met the Financial Stability Standard for Central Counterparties. The full text of the measures and associated guidance is available on the Reserve Bank's website. The following provides summary details of the information the Reserve Bank has used to assess ASX Clear and ASX Clear (Futures) against each of the relevant measures. This updates the information presented in the Reserve Bank's 2008/09 Assessment for material changes in policies and procedures over 2009/10.

B1.1 ASX Clear (formerly Australian Clearing House)

1. Legal framework

The central counterparty must have a well-founded legal basis.

ASX Clear Pty Limited is a wholly owned subsidiary of ASX Clearing Corporation Limited, itself a wholly owned subsidiary of ASX Limited. It acts as the central counterparty for cash equities, pooled investment products, warrants, certain interest-rate products and equity- and commodity-related derivatives traded on the ASX market.

The legal basis for ASX Clear's operations is set out in the ASX Clear Operating Rules and Procedures. Under section 822B of the Corporations Act, these rules have effect as a contract under seal between ASX Clear and each of its participants, and between each participant and each other participant. Furthermore, the netting arrangements contained in the ASX Clear Operating Rules and Procedures are protected as a 'netting market' under Part 5 of the Payment Systems and Netting Act. This provides certainty for the netting process in the event of the insolvency of a participant. In July 2009, ASX implemented some rule-book clarifications around the protections afforded by the Act.

The ASX Clear Operating Rules and Procedures define the nature and scope of its obligation to provide clearing services to participants, and describe the conditions under which final and irrevocable settlement of obligations is deemed to have occurred. The Operating Rules and Procedures also set out the rights and obligations of participants, including in the event of default or suspension.

2. Participation requirements

The requirements for participation in the central counterparty must promote the safety and integrity of the central counterparty and ensure fair and open access. Participation requirements must:

(a) be based on objective and publicly disclosed criteria;

ASX Clear has objective and transparent participation requirements, which are publicly available and form part of the Operating Rules and Procedures. The Operating Rules and Procedures also provide for an appeals process should an application for participation be rejected or a participant's access be terminated.

At the end of June 2010, ASX Clear had 54 participants – 51 of these were also ASX market participants, while three provided specialist third-party clearing services.

(b) ensure that participants in the central counterparty are of a sufficient financial standing such that the central counterparty is not exposed to unacceptable credit risks;

ASX Clear's participation requirements are designed to promote the safety and integrity of the central counterparty. Participants clearing cash equities or options are required to comply with a risk-based capital regime under which, subject to maintaining a minimum of \$2 million in 'core capital' – as of 1 July 2010 this amount was increased to \$5 million for Direct Participants and \$10 million for General Participants – they must hold capital in excess of a 'total risk requirement', which reflects counterparty risk, large-exposure risk, position risk and operational risk. Brokers that do not have a need to undertake their own clearing, or choose not to hold the required amount of capital, may use the services of specialist third-party clearers. Subject to sufficient depth and competition in the third-party clearing market, ASX Clear intends to subsequently further increase 'core capital' requirements to \$10 million for Direct Participants, and are reviewing requirements for General Participants. Participants that clear futures only may elect to be covered by an alternative capital regime, based either on a NTA requirement or compliance with the regime of another prudential supervisor. At the end of the assessment period all but three of ASX Clear's 54 participants were subject to the risk-based regime; two were subject to NTA requirements and one was subject to the regime of another prudential supervisor.

Participants are subject to ongoing monitoring by ASX Clear, with this conducted by two units within ASX, ASX Compliance and Clearing Risk Management:

- The monitoring, assessment and investigation of matters relating to financial requirements are dealt with by the Capital Monitoring unit of ASX Compliance, a separate subsidiary within the ASX group with its own board. Participants are required to submit capital liquidity returns on a monthly basis, which ASX Compliance then monitors for exceptions. ASX Compliance applies a number of triggers for follow-up enquires, including: a fall to below 1.7 in the ratio of liquid capital to the total risk requirement; sustained losses on outstanding positions; and a significant fall in liquid capital held. More stringent reporting requirements apply where a participant's capital falls below certain stated thresholds. ASX Compliance also undertakes a range of 'spot checks' to verify the accuracy of participant returns. Individual spot checks are typically triggered by two or more historical inaccuracies in the submitter's returns, while industry-wide spot checks are conducted to look at multiple participants' compliance with a specific aspect of the capital rules.
- Clearing Risk Management, a unit that covers both central counterparties, focuses on day-to-day participant activity and monitors risk profiles, open positions and settlement of obligations to the central counterparties. It also determines and reviews participants' ICRs, drawing on information provided by participants in their returns to ASX Compliance. The ICR is based on the participant's external credit rating (if available) or that of its parent, if either that parent provides a formal guarantee to the central counterparty or the participant carries the parental corporate name. Otherwise, the rating is based on the participant's capital position. Clearing Risk Management also maintains a 'watch list' of participants deemed to warrant more intensive monitoring. Inclusion on the watch list might, for instance, reflect issues arising

from routine review of financial returns by ASX Compliance, or concerns emerging from a specific event or media report. Participants on the watch list are subject to greater scrutiny in respect of the exposures they bring to the central counterparty and, should a participant's perceived financial standing deteriorate further, restrictions may be placed on its trading, clearing and settlement activities.

ASX has developed policies that allow for relevant information to flow between ASX Compliance and other business units within ASX. These are embodied in a 'Supervisory Code of Conduct' and 'Commercial and Supervisory Conflict of Interest Policy', which together aim to ensure that conflicts and potential conflicts between ASX's supervisory responsibilities and its commercial interests are appropriately managed. ASX has revised (and, where appropriate, replaced) these policies in conjunction with the transfer of market supervisory responsibilities to ASIC, to better reflect the changed licence obligations, operating environment and organisational structure of ASX Group and its licensed subsidiaries. To facilitate exchange of clearing risk-relevant information on clearing participants, a formal liaison meeting is held between ASX Compliance, Clearing Risk Policy, Clearing Risk Management and Clearing and Settlement Operations.

(c) require that participants have the operational capacity to settle their obligations with the central counterparty in a timely manner; and

Under the Operating Rules and Procedures, ASX Clear participants are subject to requirements regarding technical and operational capacity, including business continuity. The Rules also include provisions to ensure that a participant's management structure is designed to achieve compliance with the ASX Clear Operating Rules and Procedures, including meeting settlement obligations.

(d) allow the CS facility licensee as operator of the central counterparty to suspend or cancel the participation of an institution which breaches the applicable participation or other risk-control requirements.

ASX Clear has wide-ranging powers to sanction its participants in order to preserve the integrity of the central counterparty. ASX Clear may terminate a participant's authority to clear all, or any category of, market transactions in the event of a default, or in the event of a breach of the Operating Rules and Procedures which may have an adverse impact on the central counterparty. 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 is suggestive of negligence, incompetence or dishonesty. Where a breach has been identified and the participant has taken appropriate steps to rectify it, ASX Clear will typically continue to monitor the participant closely for a period of time. Breaches are also referred to ASIC and, in most cases, are investigated by ASX Compliance.

3. Understanding risks

The central counterparty's rules and procedures must enable each participant to understand the central counterparty's impact on each of the financial risks the participant incurs through participation in the central counterparty.

The ASX Clear Operating Rules and Procedures are comprehensive and publicly available on the ASX website. The Operating Rules and Procedures explain the role and responsibilities of each category of participant and ASX Clear. Some background information on ASX Clear's operations and risk management is also available on the ASX website.

ASX Clear must lodge any changes to its Operating Rules with ASIC. Under section 822E of the Corporations Act, the Minister has 28 days to consider, and potentially disallow, any rule changes made by a licensed CS

facility. ASX Clear consults with its participants on important rule changes, and notifies participants of all changes to the Operating Rules and Procedures.

4. Novation

The rules and procedures governing the central counterparty must clearly identify:

(a) the nature and scope of novation; and

The nature and scope of novation is set out in the ASX Clear Operating Rules and Procedures. Through the process of novation, ASX Clear takes on the financial obligations of the seller to the buyer, and the buyer to the seller. The obligations of ASX Clear are to each clearing participant as principal, irrespective of whether that participant is acting as an agent on behalf of a client.

(b) the point in the clearing process at which trades are novated.

The point at which trades are novated is set out in the Operating Rules and Procedures. These specify that a broker-to-broker transaction on the ASX market is novated to ASX Clear upon the acceptance and registration of the details of that market transaction within the clearing system. For equities market transactions, novation occurs with effect from the matching of the trade on the market. In the case of derivatives transactions, novation takes place no later than the evening of the day of the trade, when trade details are allocated to participants' accounts.

5. Settlement

Settlement arrangements must ensure that the central counterparty's exposures are clearly and irrevocably extinguished on settlement. This requires that:

(a) where settlement involves the exchange of one asset for another, it must be done on an appropriate delivery-versus-payment basis; and

(b) where payments, including net payments, are made to extinguish other obligations, payment must be made by real-time gross settlement.

Settlement of obligations between a central counterparty and its participants can involve two processes:

- The exchange of one asset for another, such as cash equities. In this case, ASX Clear utilises the settlement facility provided by ASX Settlement.
- Payments to or from the central counterparty, including margin payments relating to derivatives positions. In this instance, the facility provided by Austraclear must be used.

In each case, ASX Clear calculates bilateral net positions between itself and each of its clearing participants. These positions reflect both cash payment and securities obligations. The relevant netting arrangements are outlined in the ASX Clear Operating Rules and Procedures and are protected as a 'netting market' under Part 5 of the Payment Systems and Netting Act.

ASX Settlement's settlement process involves the use of a Model 3 DVP mechanism, whereby cash payments and securities transfers are settled simultaneously in a single daily multilateral net batch. As the outcome of this process, ASX Settlement participants face a net cash settlement obligation to or from ASX Settlement and a net securities settlement obligation in respect of each line of stock. Once participants' net obligations have been calculated, ASX Settlement confirms that sufficient securities are available in each participant's securities account in CHES. The transfer of securities within the system is then restricted until the settlement process has been completed. Net cash payment obligations are forwarded for settlement in RITS across payment providers'

ES accounts. Once cash settlement has been confirmed, ASX Settlement effects the net transfer of securities within CHESS.

Participants settle routine margin payments in respect of ASX derivatives positions via cash transfers in Austraclear, which settle in real time via RITS. Prior to February 2010 these payments could also be made alongside securities-related settlement obligations in the daily batch-settlement process in CHESS. The change ensures that ASX Clear's risk-management arrangements are not dependent on the completion of settlement in the cash equity market. The settlement of routine margin is now consistent with the requirement that all intraday margin payments and obligations under the CAC regime be settled via Austraclear.

In a related development, foreshadowed in the 2008/09 Assessment, ASX Clear started operation of its ES account with the Reserve Bank during this assessment period. ASX Clear now uses the account for margin-related funds movements and treasury investment-related settlements in RITS. These payments were previously settled under an agency agreement with a commercial bank.

Settlement in both ASX Settlement and Austraclear is final and irrevocable. In the case of ASX Settlement, finality is supported both by its Operating Rules and Procedures and ASX Settlement's approval under Part 3 of the Payment Systems and Netting Act. Settlement according to Austraclear's Regulations is also final and irrevocable by virtue of its approval under Part 2 of the Payment Systems and Netting Act.³⁰

ASX Clear also clears grain and wool futures. These instruments may be physically settled through commodity warehouses, with ASX Clear transferring title to the buyer only once payment is received from the seller.

6. Default arrangements

The CS facility licensee as operator of the central counterparty must ensure that it has clear rules and procedures to deal with the possibility of a participant being unable to fulfil its obligations to the central counterparty. The arrangements for dealing with a default must ensure that in this scenario timely action is taken by the central counterparty and the participants in the central counterparty, and that risks to the central counterparty and its participants are minimised. In meeting this requirement, the CS facility licensee as operator of the central counterparty must:

(a) require its participants to inform it immediately if they:

- (i) become subject to external administration, or have reasonable grounds for suspecting that they will become subject to external administration; or
- (ii) have breached, or are likely to breach, a risk-control requirement of the central counterparty; and

The ASX Clear Operating Rules and Procedures set out notification requirements that participants must meet in relation to a default. A participant is required to inform ASX Clear should it default under the Operating Rules and Procedures. A range of default events are set out in the Operating Rules and Procedures, including: the appointment of an external administrator (or a reasonable expectation that one will be appointed); a breach of ASX Clear's capital requirements; or a failure to meet payment or settlement obligations to ASX Clear.

(b) have the ability to close out, or otherwise deal with a participant's open contracts in order to appropriately control risk if a participant:

³⁰ As noted, interbank transactions arising from settlements in ASX Settlement and Austraclear are settled in RITS across ES accounts held with the Reserve Bank. RITS is also approved under Part 2 of the Payment Systems and Netting Act.

- (i) becomes subject to external administration; or
- (ii) breaches a risk-control requirement of the central counterparty.

The Operating Rules and Procedures provide ASX Clear with the authority and flexibility to deal with a participant default and to ensure that settlement of novated positions occurs. For equities, ASX Clear is able to reschedule any settlements involving the failed participant, or those affected by its failure. ASX Clear may also enter into market transactions to sell or purchase securities to facilitate the settlement of novated transactions. For derivatives, ASX Clear has the ability to close out a defaulted participant's positions, or to seek to transfer the client positions of the defaulted participant to a surviving participant.

These formal rules are supplemented by an internal default management plan. ASX is working to enhance default-management processes for both central counterparties, with the aim of managing legal, operational and liquidity risk, and minimising potential losses and spillovers that could arise in a default scenario (see Section 5.1 for more detail).

ASX Clear also has a range of financial resources available to ensure that it can meet its obligations in the event of a participant default (Measure 7).

7. Risk controls

The CS facility licensee as operator of a central counterparty must have comprehensive risk-control arrangements in place. These arrangements must provide the operator of the central counterparty with a high degree of confidence that, in the event of extreme volatility in relevant markets, the central counterparty will be able to settle all of its obligations in a timely manner. As a minimum, the risk-control arrangements must provide the CS facility licensee as operator of the central counterparty with a high degree of confidence that the central counterparty will be able to settle its obligations in the event that the participant with the largest settlement obligations cannot meet them. In all but the most extreme circumstances, a central counterparty must be able to settle its obligations using liquid assets as defined in this standard.

The CS facility licensee as operator of a central counterparty must:

- (a) ensure that its risk-control measures, typically a combination of its own capital, margins, guarantee funds and pre-determined loss-sharing arrangements, provide sufficient coverage and liquidity; and
- (b) undertake regular and rigorous stress testing to ensure the adequacy of its risk controls.

The adequacy of risk-control measures must be approved by the board of the central counterparty, or an appropriate body as delegated by the board.

The risk controls of a central counterparty are crucial in providing a high degree of confidence that it would be able to meet its obligations in the event of a participant failure. The inability of a central counterparty to meet its obligations could be extremely disruptive to the financial system. The focus of the Reserve Bank in this area is on ensuring that the combination of risk controls applied achieves a very low probability of failure of the central counterparty.

At the core of ASX Clear's risk controls is its financial resources. These comprise: margin and other collateral calls based on participants' positions; and pooled financial resources of \$550 million (of which \$250 million is fully paid up and invested in high-quality liquid assets). Stress testing is carried out daily to gauge the adequacy of financial resources and to monitor the risks associated with individual participants' positions. Where large

or concentrated exposures are identified by stress testing, additional collateral calls are made on participants. These risk controls are supplemented by ASX Clear's participation requirements and participant-monitoring arrangements (Measure 2).

i. Margins

ASX Clear levies margin on derivatives products. Initial (risk) margin provides cover in the event that a participant defaults and an adverse price change occurs before the central counterparty can close out the participant's positions. Initial margin is calibrated so as to cover three standard deviations of the distribution of price movements until a position can be closed out, assuming a close-out period of either one or two days. ASX Clear also levies so-called premium margin on sold exchange-traded option positions, updating this daily to reflect mark-to-market changes in the close-out price, and levies mark-to-market margin on both bought and sold LEPOs, and all futures positions. All margin rates are reviewed on a three-monthly cycle, supplemented with *ad hoc* reviews in volatile market conditions.

ASX Clear calculates total initial margin requirements across each participant's portfolio using a margining engine based on the internationally accepted TIMS methodology, supported by the Options Clearing Corporation. ASX Clear has a project underway to migrate the calculation of margin to ASX Clear's in-house DCS. The TIMS methodology will continue to be used in the near term, although a longer-term project is planned to replace it with CME SPAN (see Section 5.1).

Margin requirements are calculated overnight based on closing contract prices each day, and are notified to participants the next morning. As discussed in Measure 5, from February 2010, all margin obligations are settled via Austraclear and must be met by 10.30 am. Participants generally meet their margin obligations using cash, although they may also use non-cash collateral. Securities are eligible to be used as collateral only if strict criteria set by ASX Clear are met, and they are subject to a haircut. The list of acceptable collateral is reviewed annually, with one new security (SPDR S&P/ASX 200 Fund) added during the assessment period. ASX Clear also manages the potential risk of correlated default of a participant and collateral issuer (e.g., where parental collateral is posted).

In the event of sharp intraday price movements, ASX Clear may also call mark-to-market margin intraday. This must be met by participants within two hours of notification. System enhancements will enable intraday margin calls to be made on the basis of changes in participants' positions; previously intraday margin calls could only be made on the basis of price movements.

Under ASX Clear's CAC methodology, a participant is also required to post additional collateral should stress-test outcomes (see below) reveal that the projected stress loss arising from its positions as at the close of the previous day exceed a STEL. Comparison of projected stress-test losses with the STEL offers some guidance as to the resilience of the central counterparty to a participant default in extreme market conditions. Commencing 1 October 2009, ASX Clear introduced a regime where STELs are linked to participants' ICRs.³¹ Previously, ASX Clear set the STEL at \$150 million for all participants (taking into account any margin already posted). Participants are required to lodge CAC with ASX Clear if stress-test losses exceed their STEL. In normal market conditions, highly-rated (i.e., A- and B-rated) participants are eligible for discounts on the additional collateral called.³²

31 Such a regime had already been in place at ASX Clear (Futures) for some time.

32 These discounts are removed if the EWMA of SPI S&P/ASX 200 volatility is 20 per cent higher than historical volatility.

Calls are typically made on participants by 9.30 am and must be settled within two hours, either via the transfer of cash in Austraclear, or through the provision of a bank guarantee from an approved authorised deposit-taking institution (ADI).

ii. Guarantee fund

ASX Clear maintains additional pooled financial resources to protect against losses in excess of margin and other collateral assets posted by a defaulting participant. ASX Clear holds paid-up financial resources of \$250 million, which consist of: own equity (\$3.5 million); funds held in a restricted capital reserve (\$71.5 million); and a fully-drawn subordinated loan from ASXCC (\$175 million), which is ultimately funded by a commercial bank loan facility (\$100 million) and a subordinated loan from ASX Limited (\$75 million). ASX Clear also has the right under its Operating Rules and Procedures to levy its participants up to \$300 million collectively in 'Emergency Assessments' should a loss caused by a participant's default exceed its other resources.

ASX Clear uses daily capital stress tests to monitor the risks undertaken by individual participants and the adequacy of the central counterparty's financial resources. Stress tests are based on 99 scenarios, each calibrated to a one-in-30-year probability of occurring. The scenarios cover extreme price moves and volatility shifts at the market-wide, sector and individual stock levels. ASX Clear regularly reviews stress test scenarios and occasionally amends them to reflect current market conditions. During 2009/10, several changes to stress test parameters were made. In early August 2009 ASX Clear reduced the maximum market up scenario from 10 per cent to 7 per cent. This was reversed in late May 2010, however, when growing volatility warranted a return to 10 per cent. The annual review of parameters occurred in October 2009 and resulted in marginal increases in the strength of several scenarios and marginal decreases in the strength of one scenario.

In respect of both cash margin collected and pooled risk resources, ASX Clear invests funds in accordance with a defined treasury investment policy, endorsed by the ASX Clear Clearing Board (one of the CS Boards). The policy is designed to ensure that risk resources can be reliably accessed on a timely basis. The policy restricts treasury investments to liquid assets – such as bank bills and certificates of deposit – and applies issuer investment limits scaled according to the credit standing of the issuing counterparty. Eligible investment counterparties are APRA-supervised ADIs, with a minimum short-term credit rating of A1. With the exception of instruments issued by the four largest domestic banks, individual counterparty limits are set within the value of ASX Clear's capital resources. Concentration limits also apply; the maximum exposure to any investment counterparty is 33 per cent.

The policy also sets upper limits for the average maturity of investments and the market risk of the portfolio (i.e., price value of a basis point), and an overarching liquidity requirement based on assumed 'ordinary' liquidity needs (e.g., for the return of margin to participants) and liquidity needs in the event of a default (referred to as the default liquidity requirement or DLR). To ensure the adequacy of the DLR, ASX Clear carries out regular liquidity stress tests. The DLR is currently set at \$300 million and is met by liquid assets held in respect of ASX Clear's paid-up risk resources of \$250 million, and a further \$50 million available under a committed standby liquidity facility. This \$50 million committed liquidity facility was previously provided to ASX Clear by a commercial bank, but upon expiry of this facility in June 2010 it was replaced with a similar facility provided by ASX Limited.

iii. Loss sharing

This measure of the Standard applies to arrangements where participants commit to meet any settlement shortfall. The arrangement does not require that a facility have loss-sharing arrangements in place, but where they exist they should be documented, legally enforceable and acknowledged by all participants in the central counterparty. One element of ASX Clear default resources is a promissory component up to a fixed amount (the Emergency Assessments referred to in the previous section). This is not an open-ended commitment and does not constitute a loss-sharing arrangement as contemplated by Measure 7(iii).

8. Governance

The central counterparty must have effective, accountable and transparent governance arrangements.

Details of governance arrangements across both central counterparties in the ASX Group are provided in Section 6.

9. Operational risk

The CS facility licensee as operator of a central counterparty must identify sources of operational risk and minimise these through the development of appropriate systems, controls and procedures.

ASX Clear's key system is DCS.

i. Security and operational reliability

The security of DCS is supported by access controls, restricting access both physically and virtually. The process to request access to systems is documented, monitored and formally audited. ASX Clear performs external penetration and vulnerability testing on DCS regularly. Technology-security policy is considered by external auditors twice a year. ASX's Internal Audit unit routinely monitors compliance with policy, reporting to the Audit and Risk Committee on a quarterly basis.

ASX Clear has a number of arrangements in place to ensure DCS is operationally reliable:

- operational processes are documented and supported by internal procedures;
- the design and effectiveness of control procedures supporting the core operational and systems processes are subject to regular independent external and internal audit;
- critical IT infrastructure is designed to ensure resilience against component failure, including full redundancy at the primary site;³³ and
- availability targets are documented and defined formally for critical services.

Nevertheless, should an infrastructure failure occur at the primary site, failover to ASX's backup site is targeted to occur within one hour. A comprehensive test is completed over a two-year cycle to demonstrate that normal functions can be carried out using systems located at the backup site. ASX Clear also regularly tests its ability to operate its primary systems from the backup site.

Over the 2009/10 assessment period, DCS achieved high operational reliability. DCS was available 99.99 per cent of the time, with just one short outage reported in the September quarter 2009. The availability target for DCS is 99.8 per cent.

³³ ASX also intends to introduce full redundancy at its backup site for DCS.

DCS capacity is monitored on an ongoing basis, with monthly reviews of current and projected capacity requirements. ASX Clear requires that it has sufficient technical and human resource capacity to operate DCS during peak periods, including in the event of operational incidents or system failure. Average capacity utilisation of DCS over the assessment period was 23 per cent, while peak utilisation was 60 per cent. In accordance with its capacity headroom policy, ASX will look to increase the capacity of DCS within the next 12 months such that peak utilisation does not exceed 50 per cent.

ASX Clear has arrangements in place to ensure that changes to DCS and supporting infrastructure do not disrupt its usual operations. ASX Clear operates a separate test environment for DCS and has a formal, documented change-management process.

ASX Clear also has arrangements in place to ensure it has well-trained and competent personnel operating DCS. Staff are provided with relevant policies and guidelines from commencement of employment, with weekly communications thereafter. Staff are evaluated with reference to each defined operational process. ASX Clear has a formal succession-planning and management process in place.

ii. Business continuity procedures

ASX maintains extensive contingency plans detailing the appropriate operational response to a CS facility disruption, including coverage of the various lines of authority, means of communication, and failover procedures. These plans are periodically updated. The risk that an operational incident at the main site disrupts DCS is mitigated through maintenance of a backup site. ASX also has procedures in place to manage the availability of specific staff skill sets in the event of a contingency, with migration to the backup site targeted to occur within one to two hours. In addition, as noted in the previous assessment, ASX is in the process of implementing arrangements to have some operational staff at its backup site during business hours in order to support rapid recovery in the event of a disruption.

ASX Clear rules require participants to maintain adequate business continuity arrangements to allow the recovery of usual operations within approximately one to two hours following a contingency event. If a participant fails to do so, ASX Clear may impose sanctions.

ASX Clear regularly tests business-recovery arrangements. Connectivity and procedural testing of the backup site are performed monthly by representatives from ASX Clear. Live tests (i.e., where market and clearing and settlement services are provided in real time from the backup site) are conducted on a two-year cycle. Test results are formally documented and reported to ASX senior management and are also made available to internal and external auditors.

The adequacy of ASX Clear's business continuity procedures is reviewed regularly, as part of broader reviews of ASX Clear's operational risk policy.

iii. Outsourcing

No operational functions are outsourced by ASX Clear. However, external suppliers are used for various services, such as utilities, hardware maintenance, operating system and product maintenance, and certain security-related specialist independent services. ASX Clear also currently relies on an external vendor for the software underpinning margining for DCS (that is, TIMS software, discussed in Section 5.1). However, this reliance will be removed with the integration of the TIMS margin calculations within DCS.

iv. External administration of a related body

Within the ASX group structure, most operational resources are provided by ASX Operations Limited, a subsidiary of ASX Limited. In the event that ASX Operations Limited became subject to external administration and this particular event did not impact upon the capacity of ASX Clear to continue operating, ASX Clear would be able to retain use of resources under provisions within the written support agreement between it and ASX Operations Limited (to the extent permissible by law).

10. Regulatory reporting

ASX Clear, as a CS facility licensee, is required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standard for Central Counterparties. These obligations include the reporting of: breaches of the Standard; the failure of a participant to fulfil the central counterparty's risk-control requirements; and the central counterparty's failure to enforce its own risk-control requirements. There are also obligations to report financial and stress-testing results on a quarterly basis. ASX Clear satisfied all reporting obligations during the assessment period.

B1.2 ASX Clear (Futures) (formerly SFE Clearing Corporation)

1. Legal framework

The central counterparty must have a well-founded legal basis.

ASX Clear (Futures) Pty Limited is a wholly owned subsidiary of ASX Clearing Corporation Limited, itself a wholly owned subsidiary of ASX Limited. It acts as the central counterparty for all futures and options products which are traded on the ASX 24 market.

The legal basis for ASX Clear (Futures) Pty Limited's operations is set out in its Operating Rules and Procedures. Under section 822B of the Corporations Act, these rules have effect as a contract under seal between ASX Clear (Futures) and each of its participants, and between each participant and each other participant. Furthermore, the netting arrangements contained in ASX Clear (Futures)' Operating Rules and Procedures are protected as a 'netting market' under Part 5 of the Payment Systems and Netting Act. This provides certainty for the netting process in the event of the insolvency of a participant. In July 2009, ASX implemented some rule-book clarifications around the protections afforded by the Act.

ASX Clear (Futures)' Operating Rules and Procedures define the nature and scope of its obligation to provide clearing support to participants, and describe the conditions under which final and irrevocable settlement of obligations is deemed to have occurred. The Operating Rules and Procedures also set out the rights and obligations of participants, including in the event of default or suspension.

2. Participation requirements

The requirements for participation in the central counterparty must promote the safety and integrity of the central counterparty and ensure fair and open access. Participation requirements must:

(a) **be based on objective and publicly disclosed criteria;**

ASX Clear (Futures) has objective and transparent participation requirements, which are publicly available and form part of the Operating Rules and Procedures. The Operating Rules and Procedures also provide for an appeals process should an application for participation be rejected or a participant's access be terminated.

At the end of June 2010, ASX Clear (Futures) had 15 participants, predominantly large foreign banks and their subsidiaries.

(b) ensure that participants in the central counterparty are of a sufficient financial standing such that the central counterparty is not exposed to unacceptable credit risks;

ASX Clear (Futures)' participation requirements are designed to promote the safety and integrity of the central counterparty. They cover: minimum capital and financial obligations; business and managerial requirements; operational resources; business continuity arrangements; and risk- and liquidity-management arrangements.

Participants are subject to a minimum NTA requirement of \$5 million, with management discretion to impose a higher requirement. Over time, ASX Clear (Futures) plans to implement a further increase in this NTA requirement to \$10 million, with a higher requirement for those participants clearing for third parties. Participants are obliged to lodge a detailed financial report with the Capital Monitoring unit (prior to 1 August 2010, the Futures Supervision unit) of ASX Compliance on a monthly basis.

Participants are subject to ongoing monitoring by ASX Clear (Futures), with this conducted by two units within ASX, ASX Compliance and Clearing Risk Management:

- The monitoring, assessment and investigation of matters relating to financial requirements are dealt with by the Capital Monitoring unit of ASX Compliance, a separate subsidiary within the ASX group with its own board. Participants are required to submit NTA returns on a monthly basis, which ASX Compliance then monitors for exceptions.
- Clearing Risk Management, a unit that covers both central counterparties, focuses on day-to-day participant activity and monitors risk profiles, open positions and settlement of obligations to the central counterparties. It also determines and reviews participants' ICRs, drawing on information provided by participants in their returns to ASX Compliance. The ICR is based on the participant's external credit rating (if available) or that of its parent, if either that parent provides a formal guarantee to the central counterparty or the participant carries the parental corporate name. Otherwise, the rating is based on the participant's capital position. Clearing Risk Management also maintains a 'watch list' of participants deemed to warrant more intensive monitoring. Inclusion on the watch list might, for instance, reflect issues arising from routine review of financial returns by ASX Compliance, or concerns emerging from a specific event or media report. Participants on the watch list are subject to greater scrutiny in respect of the exposures they bring to the central counterparty and, should a participant's perceived financial standing deteriorate further, restrictions may be placed on its trading, clearing and settlement activities.

ASX Clear (Futures) has developed policies that allow for relevant information to flow between ASX Compliance and other business units within ASX. These are embodied in a 'Supervisory Code of Conduct' and 'Commercial and Supervisory Conflict of Interest Policy', which together aim to ensure that potential conflicts between ASX's supervisory responsibilities and its commercial interests are avoided. Monthly liaison meetings are also held between ASX Compliance, Clearing Risk Management, and Clearing and Settlement Operations to facilitate the exchange of clearing risk-relevant information on clearing participants.

(c) require that participants have the operational capacity to settle their obligations with the central counterparty in a timely manner; and

Under the Operating Rules and Procedures, the ASX Clear (Futures) Clearing Board (one of the CS Boards) must be satisfied that a potential participant has (or will have) managerial, operational, financial and appropriate

complementary business continuity arrangements in place to enable it to meet its ongoing obligations, and is in a position to make an immediate transfer of funds to meet its obligations.

(d) allow the CS facility licensee as operator of the central counterparty to suspend or cancel the participation of an institution which breaches the applicable participation or other risk-control requirements.

Under the Operating Rules and Procedures, a clearing participant may be automatically suspended under a number of circumstances, including the participant's default, the appointment of external management, or the breach of financial requirements. The ASX Clear (Futures) Clearing Board can also suspend a clearing participant for misconduct, breaches of the Operating Rules and Procedures, or if it ceases to satisfy the admission requirements.

3. Understanding risks

The central counterparty's rules and procedures must enable each participant to understand the central counterparty's impact on each of the financial risks the participant incurs through participation in the central counterparty.

ASX Clear (Futures)' Operating Rules and Procedures are comprehensive and publicly available. The Rules and Procedures explain the role and responsibilities of participants and ASX Clear (Futures). Background information on ASX Clear (Futures)' operations and risk management is also available on the ASX website.

ASX Clear (Futures) must lodge any changes to its Operating Rules with ASIC. Under section 822E of the Corporations Act, the Minister has 28 days to consider, and potentially disallow, any rule changes made by a licensed CS facility. ASX Clear (Futures) consults with its participants on important rule changes. Announcements affecting participants are issued as 'ASX 24 Notices' ('SFE Notices' prior to August 2010).

4. Novation

The rules and procedures governing the central counterparty must clearly identify:

(a) the nature and scope of novation; and

The nature and scope of novation is set out in ASX Clear (Futures)' Operating Rules and Procedures. Through the process of novation, ASX Clear (Futures) takes on the financial obligations of the seller to the buyer, and the buyer to the seller. The obligations of ASX Clear (Futures) are to each participant as principal, irrespective of whether that participant is acting as an agent on behalf of a client.

(b) the point in the clearing process at which trades are novated.

The point at which trades are novated is set out in the Operating Rules and Procedures. These specify that a transaction on the ASX 24 market is novated to ASX Clear (Futures) upon the registration of a matched trade by the market. Non-market trades are novated once their details have been approved and registered by ASX Clear (Futures).

5. Settlement

Settlement arrangements must ensure that the central counterparty's exposures are clearly and irrevocably extinguished on settlement. This requires that:

- (a) where settlement involves the exchange of one asset for another, it must be done on an appropriate delivery-versus-payment basis; and
- (b) where payments, including net payments, are made to extinguish other obligations, payment must be made by real-time gross settlement.

The vast majority of ASX Clear (Futures) settlements involve cash payments to or from the central counterparty. These include margin payments and the settlement of cash-settled derivative contracts. Settlement of payments generally occurs on a net basis. Each day, ASX Clear (Futures) calculates the net obligations of each of its participants. ASX Clear (Futures) participants calculated to have a net obligation to the central counterparty are required to make payments to ASX Clear (Futures) in Austraclear by 11.00 am. Once these payments have been received, ASX Clear (Futures) makes payments to those participants with a net obligation from the central counterparty. Interbank settlement of these payments occurs between participants' appointed bankers and ASX Clear (Futures) in real time across ES accounts at the Reserve Bank.

In some cases, the settlement of derivatives contracts cleared by ASX Clear (Futures) involves the transfer of a security or physical asset, with a corresponding transfer of cash. For each type of security or asset, ASX Clear (Futures)' arrangements ensure that delivery occurs if, and only if, payment occurs and vice versa. For 90-day bank accepted bill futures, ASX Clear (Futures) utilises the standard settlement process in Austraclear. The delivery of greasy wool is via a warehouse, with ASX Clear (Futures) retaining title documentation until payment has been made.

The settlement of obligations is final and irrevocable according to the terms of ASX Clear (Futures)' Operating Rules and Procedures and ASX 24's Operating Rules, which set out contract specifications, including the means of settlement. For payments and securities obligations settled through Austraclear, finality is reinforced by Austraclear's Regulations and its approval under Part 2 of the Payment Systems and Netting Act. Any interbank transactions arising from these settlements are settled in real time across ES accounts held with the Reserve Bank. Payments within this system are also final and irrevocable; this is again supported by the approval of RITS under Part 2 of the Payment Systems and Netting Act.

6. Default arrangements

The CS facility licensee as operator of the central counterparty must ensure that it has clear rules and procedures to deal with the possibility of a participant being unable to fulfil its obligations to the central counterparty. The arrangements for dealing with a default must ensure that in this scenario timely action is taken by the central counterparty and the participants in the central counterparty, and that risks to the central counterparty and its participants are minimised. In meeting this requirement, the CS facility licensee as operator of the central counterparty must:

- (a) require its participants to inform it immediately if they:
 - (i) become subject to external administration, or have reasonable grounds for suspecting that they will become subject to external administration; or
 - (ii) have breached, or are likely to breach, a risk-control requirement of the central counterparty;
- and

The ASX Clear (Futures) Operating Rules and Procedures require that participants inform ASX Clear (Futures) immediately in the event of a default, or if there is a reasonable expectation of such an event. The Operating Rules and Procedures envisage a number of possible events of default. These include: becoming subject to external administration; being unable to meet obligations relating to open contracts; and being in breach

of the central counterparty's risk-control requirements, such as failing to fulfil margin or other payment obligations to the central counterparty.

(b) have the ability to close out, or otherwise deal with a participant's open contracts in order to appropriately control risk if a participant:

- (i) becomes subject to external administration; or**
- (ii) breaches a risk-control requirement of the central counterparty.**

The Operating Rules and Procedures provide ASX Clear (Futures) with the authority and flexibility to deal with a participant default. ASX Clear (Futures) has the ability to close out any open contracts, to exercise or terminate open contracts, or to seek to transfer client positions along with related margin payments.

These formal rules are supplemented by an internal default management plan. ASX is working to enhance default-management processes for both central counterparties, with the aim of managing legal, operational and liquidity risk, and minimising potential losses and spillovers that could arise in a default scenario (see Section 5.1 for more detail).

ASX Clear (Futures) also has a range of financial resources available to enable it to act on the default powers set out above and to meet its obligations as central counterparty (see Measure 7).

7. Risk controls

The CS facility licensee as operator of a central counterparty must have comprehensive risk-control arrangements in place. These arrangements must provide the operator of the central counterparty with a high degree of confidence that, in the event of extreme volatility in relevant markets, the central counterparty will be able to settle all of its obligations in a timely manner. As a minimum, the risk-control arrangements must provide the CS facility licensee as operator of the central counterparty with a high degree of confidence that the central counterparty will be able to settle its obligations in the event that the participant with the largest settlement obligations cannot meet them. In all but the most extreme circumstances, a central counterparty must be able to settle its obligations using liquid assets as defined in this standard.

The CS facility licensee as operator of a central counterparty must:

- (a) ensure that its risk-control measures, typically a combination of its own capital, margins, guarantee funds and pre-determined loss-sharing arrangements, provide sufficient coverage and liquidity; and**
- (b) undertake regular and rigorous stress testing to ensure the adequacy of its risk controls.**

The adequacy of risk-control measures must be approved by the board of the central counterparty, or an appropriate body as delegated by the board.

The risk controls of a central counterparty are crucial in providing a high degree of confidence that it would be able to meet its obligations in the event of a participant failure. The inability of a central counterparty to meet its obligations could be extremely disruptive to the financial system. The focus of the Reserve Bank in this area is on ensuring that the combination of risk controls applied achieves a very low probability of failure of the central counterparty.

At the core of ASX Clear (Futures)' risk controls are its financial resources. These comprise: margin and other collateral calls based on participants' positions; and pooled financial resources of \$400 million (of which \$30 million is promissory). Stress testing is carried out daily to gauge the adequacy of financial resources and

to monitor the risks associated with individual participants' positions. Where large or concentrated exposures are identified by stress testing, additional collateral calls are made on participants. These risk controls are supplemented by ASX Clear (Futures)' participation requirements and participant-monitoring arrangements (Measure 2).

i. Margins

ASX Clear (Futures) levies margin on the derivatives products it clears.

Initial margin is calibrated so as to cover three standard deviations of the distribution of price movements until a position can be closed out, assuming a close-out period of either one or two days. All margin rates are reviewed on a three-monthly cycle, with the possibility of more frequent *ad hoc* reviews in times of greater market volatility.

ASX Clear (Futures) calculates total initial margin requirements across each participant's portfolio using the OMX RIVA version of the internationally accepted SPAN methodology.³⁴ Margin requirements are calculated overnight based on closing contract prices each day, and are notified to participants by 7.00 am the next day. Margin obligations must be met via Austraclear by 11.00 am – breaches of any margin payment deadline are escalated to ASX Compliance and may attract a financial penalty. Participants generally meet these obligations using cash, although they may also use high-quality liquid non-cash collateral, such as eligible debt securities, certain equities and foreign-currency deposits. Acceptable collateral is reviewed annually, and haircuts are applied in respect of all non-cash collateral posted. ASX Clear (Futures) introduced an improved system for the management of all collateral held in March 2010. ASX Clear (Futures) does not accept parental/self guarantees in order to reduce the possibility that it might face the correlated default of a clearing participant and a collateral issuer.

ASX Clear (Futures) also levies variation (mark-to-market) margin on derivatives positions to cover gains or losses arising from price movements over the preceding day. Should conditions warrant, ASX Clear (Futures) is also able to call variation margin intraday, based on movements in either positions or prices. Intraday margin calls can be made at various times throughout the day. Participants are required to meet an intraday margin call within two hours of notification. Both variation and intraday margin obligations must be settled in cash.

ASX Clear (Futures) also uses a system of AIMs, based on participants' exposures in ASX 24's four largest contracts. AIMs are intended to cover potential losses from large or concentrated positions with the central counterparty in extreme market conditions. ASX Clear (Futures) calculates potential exposures using a system of stress tests (see below) and makes AIMs calls to cover projected stress losses in excess of a stated threshold – the participant's STEL – which is linked to the value of ASX Clear (Futures)' risk resources and varies according to the credit quality of the participant. In normal market conditions highly rated participants with NTAs above a minimum threshold are eligible for discounts on their AIMs calls.³⁵

This system is designed to provide a high degree of confidence that the central counterparty will be able to meet its obligations, even in the event that losses arising from a participant default exceed ASX Clear (Futures)' pooled risk resources (see below). Like other margins, AIMs are calculated overnight, notified to participants at 7.00 am the next day, and must be met by 11.00 am. Participants may meet these obligations using cash

34 As outlined in Sections 5.1 and 5.2, ASX plans to migrate the margining methodologies at both central counterparties to the latest version of CME SPAN.

35 ASX Clear (Futures) applies discounts only under normal market conditions. It will suspend discounting – thereby reverting to full collateralisation of AIMs – if EWMA volatility is 20 per cent higher than historical volatility. ASX Clear (Futures) uses seven years of daily SPI movements for both volatility measures.

or non-cash collateral, including Commonwealth Government securities and bank bills or letters of credit from ADIs.

In accordance with the Operating Rules and Procedures, in the event of a default by a participant, ASX Clear (Futures) would first apply margin, securities or other property from the defaulter to satisfy its obligations to other participants.

ii. Guarantee fund

ASX Clear (Futures) maintains a buffer of financial resources to protect against losses arising in the event of a default that exceed the value of margin and other collateral assets contributed by the defaulting participant. The value of ASX Clear (Futures)' CGF is \$400 million, comprising \$30 million in ASX Clear (Futures)' own capital, a \$70 million subordinated loan provided by ASXCC (ultimately funded by ASX Limited), participant commitments of \$150 million (of which \$30 million is promissory), and a subordinated loan from ASXCC of \$150 million (ultimately funded by a subordinated commercial bank loan and which replaced ASX Clear (Futures)' default insurance agreement in December 2009). The ASX Clear (Futures) Operating Rules and Procedures state that the ASX Clear (Futures) Board shall be entitled to apply these resources upon default by a Clearing Participant. The rules stipulate the order in which the resources will be applied, and make it clear that the contributions of all participants, not just those in default, may be called upon in a default event.

ASX Clear (Futures) uses daily stress tests of its four major contracts to monitor the risks undertaken by individual participants and the adequacy of the CGF. ASX Clear (Futures) uses a suite of portfolio and single-contract stress-test scenarios based on statistical analysis of historical market movements. These provide consistent tests across contract types and are tailored to ASX Clear (Futures)' risk tolerance, as defined by its board. The stress scenarios aim to capture one-in-30 year events for single asset scenarios and one-in-100 year events for multi-asset scenarios.

In respect of both cash margin collected and pooled risk resources, ASX Clear (Futures) invests funds in accordance with a defined treasury investment policy, endorsed by the ASX Clear (Futures) Clearing Board, which is designed to ensure that risk resources can be reliably accessed on a timely basis. The policy restricts treasury investments to liquid assets – such as bank bills and certificates of deposit – and applies issuer investment limits scaled according to the credit standing of the issuing counterparty. Eligible investment counterparties are APRA-supervised ADIs, with a minimum short-term credit-rating of A1. With the exception of instruments issued by the four largest domestic banks, individual counterparty limits are set within the value of ASX Clear (Futures)' capital resources. Concentration limits also apply (the maximum exposure to any investment counterparty is 33 per cent).

The policy also sets upper limits for the average maturity of investments and the market risk of the portfolio (i.e., price value of a basis point), and an overarching liquidity requirement based on assumed 'ordinary' liquidity needs (e.g., for the return of margin to participants) and liquidity needs in the event of a default: a so-called default liquidity requirement or DLR. ASX Clear (Futures) uses a liquidity stress-testing model to assess the adequacy of its liquidity arrangements. The model, which is similar to that used by ASX Clear, calculates the maximum liquid funds that ASX Clear (Futures) would need to access in order to meet obligations arising in the event of a clearing participant default. The model is based on ASX Clear (Futures)' capital stress tests.

The results of the liquidity stress tests are compared with the DLR. The DLR is currently set at \$370 million – equal to the non-promissory component of ASX Clear (Futures)' CGF. Breaches of the DLR trigger a review of

the adequacy of the DLR. This review will take into account the outcome of the capital stress tests, as any AIMS calls will provide extra liquidity.

iii. Loss sharing

This measure of the Standard applies to arrangements where participants commit to meet any settlement shortfall. The arrangement does not require that a facility have loss-sharing arrangements in place, but where they exist they should be documented, legally enforceable and acknowledged by all participants in the central counterparty. One element of ASX Clear (Futures)' default resources is a promissory component up to a fixed amount (the promissory participant commitments referred to in the previous section). This is not an open-ended commitment and does not constitute a loss-sharing arrangement as contemplated by Measure 7 (iii).

8. Governance

The central counterparty must have effective, accountable and transparent governance arrangements.

Details of governance arrangements across both central counterparties in the ASX Group are provided in Section 6.

9. Operational risk

The CS facility licensee as operator of a central counterparty must identify sources of operational risk and minimise these through the development of appropriate systems, controls and procedures.

ASX Clear (Futures)' key system is SECUR.

i. Security and operational reliability

The security of SECUR is supported by access controls, restricting access both physically and virtually. The process to request access to systems is documented, monitored and formally audited. ASX Clear (Futures) performs external penetration and vulnerability testing on SECUR regularly. Technology-security policy is considered by external auditors twice a year. ASX's Internal Audit unit routinely monitors compliance with policy, reporting to the Audit and Risk Committee on a quarterly basis.

ASX Clear (Futures) has a number of arrangements in place to ensure SECUR is operationally reliable:

- operational processes are documented and supported by internal procedures;
- the design and effectiveness of control procedures supporting the core operational and systems processes are subject to regular independent external and internal audit;
- critical IT infrastructure is designed to ensure resilience against component failure, including full redundancy at the primary site;³⁶ and
- availability targets are documented and defined formally for critical services.

Nevertheless, should an infrastructure failure occur at the primary site, failover to ASX's backup site is targeted to occur within one hour. A comprehensive test is completed over a two-year cycle to demonstrate that normal functions can be carried out using systems located at the backup site. ASX Clear (Futures) also regularly tests its ability to operate its primary systems from its backup site.

³⁶ ASX also intends to introduce full redundancy at its backup site for SECUR.

Over the 2009/10 assessment period, SECUR was available 100 per cent of the time. The availability target for SECUR is 99.8 per cent.

SECUR capacity is monitored on an ongoing basis, with monthly reviews of current and projected capacity requirements. ASX Clear (Futures) requires that it has sufficient technical and human resource capacity to operate SECUR during peak periods, including in the event of operational incidents or system failure. Average capacity utilisation of SECUR over the assessment period was 26 per cent, while peak utilisation was 66 per cent. In accordance with its capacity headroom policy, ASX will look to increase the capacity of SECUR within the next 12 months such that peak utilisation does not exceed 50 per cent.

ASX Clear (Futures) has arrangements in place to ensure that changes to SECUR and supporting infrastructure do not disrupt its usual operations. ASX Clear (Futures) operates a separate test environment for SECUR and has a formal, documented change-management process.

ASX Clear (Futures) also has arrangements in place to ensure it has well-trained and competent personnel operating SECUR. Staff are provided with relevant policies and guidelines from commencement of employment, with weekly communications thereafter. Staff are evaluated with reference to each defined operational process. ASX Clear (Futures) has a formal succession-planning and management process in place.

ii. Business continuity procedures

ASX maintains extensive contingency plans detailing the appropriate operational response to a CS facility disruption, including coverage of the various lines of authority, means of communication, and failover procedures. These plans are periodically updated. The risk that an operational incident at the main site disrupts SECUR is mitigated through maintenance of a backup site. ASX also has procedures in place to manage the availability of specific staff skill sets in the event of a contingency, with migration to the backup site targeted to occur within one to two hours. In addition, as noted in the previous assessment, ASX is in the process of implementing arrangements to have some operational staff at its backup site during business hours in order to support rapid recovery in the event of a disruption.

ASX Clear (Futures) rules require participants to maintain adequate business continuity arrangements to allow the recovery of usual operations within approximately one to two hours following a contingency event. If a participant fails to do so, ASX Clear (Futures) may impose sanctions.

ASX Clear (Futures) regularly tests business-recovery arrangements. Connectivity and procedural testing of the backup site are performed monthly by representatives from ASX Clear (Futures). Live tests (i.e., where market and clearing and settlement services are provided in real time from the backup site) are conducted on a two-year cycle.³⁷ Test results are formally documented and reported to ASX senior management and are also made available to internal and external auditors.

The adequacy of ASX Clear (Futures)' business continuity procedures is reviewed regularly, as part of broader reviews of ASX Clear (Futures)' operational risk policy.

iii. Outsourcing

No operational functions are outsourced by ASX Clear (Futures). However, external suppliers are used for various services, such as utilities, hardware maintenance, operating system and product maintenance, and

³⁷ The next live test of SECUR is scheduled for late 2010.

certain security-related specialist independent services. As noted above, NASDAQ OMX provides third-level and software support to SECUR.

iv. External administration of a related body

Within the ASX group structure, most operational resources are provided by ASX Operations Limited, a subsidiary of ASX Limited. In the event that ASX Operations Limited became subject to external administration and this particular event did not impact upon the capacity of ASX Clear (Futures) to continue operating, ASX Clear (Futures) would be able to retain use of resources under provisions within the written support agreement between it and ASX Operations Limited (to the extent permissible by law).

10. Regulatory reporting

CS facility licensees, as operators of central counterparties, are required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standard for Central Counterparties. These obligations include the reporting of: breaches of the Standard; the failure of a participant to fulfil the central counterparty's risk-control requirements; and the central counterparty's failure to enforce its own risk-control requirements. There are also obligations to report financial and stress-testing results on a quarterly basis. ASX Clear (Futures) satisfied all reporting obligations during the assessment period.

B2. Financial Stability Standard for Securities Settlement Facilities

There are eight measures that the Reserve Bank considers relevant in determining whether a facility has met the Financial Stability Standard for Securities Settlement Facilities. The full text of the measures and associated guidance is available on the Reserve Bank's website. The following provides summary details of the information the Reserve Bank has used to assess ASX Settlement and Austraclear against each of the relevant measures. This updates the information presented in the Reserve Bank's 2008/09 Assessment for material changes in policies and procedures over 2009/10.

B2.1 ASX Settlement (formerly ASX Settlement and Transfer Corporation)

1. Legal framework

The securities settlement facility must have a well-founded legal basis.

ASX Settlement Pty Limited is a wholly owned subsidiary of ASX Limited.³⁸ It provides settlement services for ASX markets, as well as a transfer service for a small number of transactions undertaken on the National Stock Exchange.

The legal basis for ASX Settlement's operations is set out in its Operating Rules and Procedures. Under section 822B of the Corporations Act, these rules have effect as a contract under seal between ASX Settlement and each of its participants, and between each participant and each other participant. The Operating Rules and Procedures set out the rights and obligations of participants and ASX Settlement, including in the event of default or suspension.

The netting arrangements undertaken by ASX Settlement with respect to its participants' obligations have approval as a netting arrangement under Part 3 of the Payment Systems and Netting Act.

³⁸ As of 1 July 2010, ASX Settlement is a wholly owned subsidiary of ASX Settlement Corporation Limited, which is itself a wholly owned subsidiary of ASX Limited.

This provides certainty for the netting process in the event of the insolvency of an ASX Settlement participant or a payments provider.

2. Participation requirements

The requirements for participation in the securities settlement facility must promote the safety and integrity of the securities settlement facility and ensure fair and open access. Participation requirements must:

(a) be based on objective and publicly disclosed criteria;

ASX Settlement has objective and transparent participation requirements, which are publicly available and form part of the Operating Rules and Procedures. The Operating Rules and Procedures also provide for an appeals process should an application for participation be rejected or a participant's access be terminated. ASX Settlement had 106 participants as at end June 2010.

(b) require that participants have the operational capacity and financial standing to settle their obligations through the securities settlement facility in a timely manner; and

Participation requirements address financial and business integrity issues, as well as operational and technical matters.

A participant that is neither subject to prudential supervision as an ADI, nor monitored as either a clearing or market participant under ASX Clear Operating Rules and Procedures or ASX Operating Rules, must post a performance bond of \$500 000. In addition, a sponsoring participant (i.e., a participant that also acts in ASX Settlement on behalf of non-participants) that is not subject to prudential or market supervision and is not covered by the NGF compensation arrangements (under the Corporations Act) must post a sponsorship bond of \$500 000.

Performance and sponsorship bonds must be issued by an Australian bank or appropriately regulated insurance company. Funds held under a performance bond would be drawn upon by ASX Settlement in the event that the participant breached ASX Settlement rules. In a similar vein, funds held under a sponsorship bond would be drawn upon to meet any losses suffered by ASX Settlement, an issuer, or a holder sponsored by an ASX Settlement participant arising from a breach, by the participant, of the rules or other offence. The monitoring, assessment and investigation of matters relating to financial requirements is dealt with by ASX Compliance, a separate subsidiary within the ASX group, with its own board.

(c) allow the CS facility licensee as operator of the securities settlement facility to suspend or cancel the participation of an institution which breaches the applicable participation or other risk-control requirements.

The ASX Settlement Operating Rules and Procedures allow it to suspend or terminate a participant from its facility in the event of a failure to comply with the Operating Rules and Procedures, or where a payment provider fails to authorise a participant's payment for interbank settlement.

ASX Settlement also levies fail fees on a participant that does not meet its settlement obligations on a timely basis. The minimum and maximum fees applied in respect of fails are set at \$100 and \$5 000, respectively (with an *ad valorem* fee of 0.1 per cent). Participants are also required to close out any positions remaining unsettled on the fifth day after trade date (i.e., two days after the scheduled settlement date). ASX Settlement also operates a benchmarking regime for settlement-fails performance. This regime makes use of peer-group

benchmarking and provides a participant's compliance unit with a ranking of its settlement-fails performance (based on the value of its trades which have failed to settle) against its market group peers.

3. Understanding risks

The securities settlement facility must make sufficient information publicly available, via its rules and procedures and the provision of relevant information on settlement activity, such that each participant is able to understand the securities settlement facility's impact on each of the financial risks the participant incurs through participation in the facility.

The ASX Settlement Operating Rules and Procedures are comprehensive and publicly available. The Rules and Procedures explain the role and responsibilities of each category of participant and ASX Settlement. Background information on ASX Settlement's operations and risk management is also available on the ASX website.

ASX Settlement must lodge any changes to its Operating Rules with ASIC. Under section 822E of the Corporations Act, the Minister has 28 days to consider, and potentially disallow, any rule changes made by a licensed CS facility. ASX Settlement consults with its participants on important rule changes, and notifies participants of all changes to the Operating Rules and Procedures.

Further to a variation to this measure of the Standard in February 2009, a licensed CS facility as operator of a securities settlement facility is required to make publicly available any relevant information on settlement activity. To this end, during the 2009/10 assessment period ASX implemented a regime, developed in consultation with the Reserve Bank and industry participants, for the disclosure of data on equities securities lending. With effect from November 2009, settlement participants 'tag' securities-lending-related settlement instructions submitted to CHES and, from December 2009, participants disclose outstanding on-loan and borrowed positions. ASX publishes the aggregate data on its website daily.

4. Certainty of title

The CS facility licensee as operator of the securities settlement facility must ensure that under the facility's rules and procedures, participants, or where relevant, their clients, have a clear and unambiguous title to, or interest in, securities held, deposited or registered on their behalf, including in circumstances where the solvency of the operator of a securities settlement facility is in doubt. This requires that its rules and procedures:

- (a) clearly identify the type of title or interest held by participants for particular securities, to the extent such title or interest is recognised by the facility's rules or procedures;

All securities held by ASX Settlement are dematerialised and held in CHES. Title is held in the name of clients of ASX Settlement participants. The system does not record any details of encumbrances, other than collateral lodged in favour of ASX Clear.

A CHES sub-register forms part of the issuer's securities register. Maintenance and reconciliation of the complete register is the responsibility of the issuer or its appointed agent. Most ASX Settlement participants settle across a centralised settlement account and subsequently allocate securities to end-clients in the CHES sub-register. As part of its end-of-day processes, CHES reports net movements on each sub-register to the holder of the issuer's complete register. Settlement participants utilise the centralised account under 'trust' provisions and are obliged to give irrevocable legal title to an end-client as long as that client has met all relevant conditions in respect of the settlement.

- (b) clearly identify the way in which the transfer of (or any other forms of dealing with) securities and related payments can be effected through the facility; and**

The transfer of title to securities in CHESS is given effect by book entry, with ownership details updated electronically. Settlement occurs via a DVP process in a daily scheduled batch-settlement cycle (see Measure 5). The ASX Settlement Operating Rules and Procedures also provide for transferring securities without payment, where required.

- (c) ensure that, to the extent permissible by law, the creditors of the operator of the securities settlement facility have no claim over securities or other assets held, deposited or registered by participants in the facility.**

In the event of ASX Settlement's insolvency, the rules and arrangements for title within ASX Settlement provide a high degree of assurance that participants' securities will be immune from claims by ASX Settlement's creditors. ASX Settlement is not the legal owner of any participant or client assets, with these assets recorded in CHESS in the name of the participant or sponsored client.

5. Settlement

The CS facility licensee as operator of a securities settlement facility must ensure that its operations do not expose its participants, or the financial system more broadly, to unacceptable levels of risk. The operator of a securities settlement facility must pay particular attention to ensuring settlement finality and the use of high-quality settlement assets in payment for securities.

- (i) The operation of a securities settlement facility must eliminate principal risk between its participants and ensure that settlements, once completed, are final and irrevocable.
- (ii) The assets used to settle the payment obligations in respect of a transaction in the securities settlement facility must carry little or no credit or liquidity risk.
- (iii) Exposures between providers of cash settlement assets must be settled finally and irrevocably.

Settlement of securities transactions in ASX Settlement occurs on a Model 3 DVP basis.³⁹ This involves the simultaneous transfer of net payment and net securities obligations between buyers and sellers at the end of the settlement cycle. The ASX Settlement Operating Rules and Procedures establish that settlement according to the terms of those rules is final and irrevocable. This is reinforced through legislation (see Measure 1).

Once a trade has been executed on the ASX market, a trade-related instruction is sent to CHESS. On T+1, CHESS generates a single net batch instruction reflecting the net position of each participant's novated trades in each line of stock. Between T+1 and T+3, participants can also instruct CHESS to include additional non-novated (off-market) transactions in the batch at T+3. During 2009/10, an average of around 81 per cent (by value) of net securities settled in the final batch was in respect of non-novated transactions. The majority of these transactions were related to the 'priming' of clearing participants' accounts to facilitate settlement of novated trades (i.e., the transfer of securities to a clearing participant's securities account to ensure that they can be delivered in accordance with scheduled obligations).

By 6.00 am on the settlement day, ASX Settlement notifies each participant of its projected net cash and securities settlement obligations. Participants have until 10.30 am to negotiate any additional non-novated transfers necessary to 'prime' their accounts for settlement. After the cut-off for new instructions, transfer of

³⁹ There is provision for DVP to occur on a trade-by-trade basis using CHESS RTGS, but this option has yet to be used.

securities positions is stopped in CHESSE and participants' payment providers are requested to fund the net cash obligations of settlement participants. Payment providers hold ES accounts at the Reserve Bank and act on behalf of settlement participants. There were 12 payment providers operating in ASX Settlement as at 30 June 2010. Payment obligations are settled between payment providers in the Reserve Bank's RITS system in a single daily multilateral net batch. Immediately upon confirmation from RITS that the funds transfers have been settled, ASX Settlement completes the net securities transfers in CHESSE, thus ensuring DVP settlement. This typically occurs at around noon.

The finality of ASX Settlement's settlement process is reinforced by its approval under Part 3 of the Payment Systems and Netting Act.

In addition, the payments between payment providers as part of the multilateral net batch are protected by virtue of the approval of RITS as an RTGS system under Part 2 of the Payment Systems and Netting Act. This approval protects payments from being voided in the case of a payments provider entering external administration.

If, due to a shortfall of either securities or funds, a participant is unable to settle its scheduled obligations in the batch, ASX Settlement's rules allow for all or some of the transactions of the affected participant to be 'backed out'. These transactions are then rescheduled for settlement on the next settlement day. The precise parameters of the back-out process depend upon whether or not the failing participant is in default. If the participant is in default, ASX Clear may assume an obligation for novated settlements in accordance with its default-management arrangements. ASX Settlement's back-out algorithm seeks to remove as few transactions from the batch as possible, maximising settlement values and volumes, while minimising the spillover to other participants. Non-novated settlement obligations are typically backed out first.

As detailed in Section 5.3, during 2009/10 ASX Settlement implemented a number of changes to reduce the risks surrounding the settlement process, with further improvements planned in the period ahead.

6. External administration

The rules and procedures for the securities settlement facility must contain mechanisms to deal with the external administration of a participant, or a provider of cash settlement assets, in such a way as to limit the operational and financial impact on both the securities settlement facility and its participants. This requires that the CS facility licensee as operator of the securities settlement facility must:

- (a) allow for the cancellation or suspension of a participant or a provider of cash settlement assets from the security settlement facility:
 - (i) if the participant or provider of cash settlement assets is in external administration; or
 - (ii) if there is a reasonable suspicion of external administration; and

The ASX Settlement Operating Rules and Procedures allow for the cancellation or suspension of a participant or a payment provider in the event that it becomes subject to external administration, or if it reasonably suspects that this may occur. Participants and payment providers are required to notify ASX Settlement if they, or any other participant or payment provider, become subject to external administration or if they reasonably suspect that this may occur.

- (b) allow participant users of a cash settlement provider which becomes subject to external administration, or which is reasonably likely to become subject to external administration, to quickly nominate a new provider.

The ASX Settlement Operating Rules and Procedures allow participants to nominate a new payment provider if their current provider is subject to, or is reasonably likely to become subject to, external administration.

The ASX Settlement Operating Rules and Procedures allow it to remove transactions from batch settlement under certain circumstances, including where a participant is subject to external administration. ASX Settlement has procedures and mechanisms in place to allow it to recast a batch ensuring that settlement can be carried out in a timely manner (see Measure 5).

7. Operational risk

The CS facility licensee as operator of a securities settlement facility must identify sources of operational risk and minimise these through the development of appropriate systems, controls and procedures.

ASX Settlement's key system is CHES.

i. Security and operational reliability

The security of the CHES system is supported by access controls, restricting access both physically and virtually. The process to request access to systems is documented, monitored and formally audited. ASX Settlement performs external penetration and vulnerability testing on CHES regularly. Technology-security policy is considered by external auditors twice a year. ASX's Internal Audit unit routinely monitors compliance with policy, reporting to the Audit and Risk Committee on a quarterly basis.

ASX Settlement has a number of arrangements in place to ensure CHES is operationally reliable:

- operational processes are documented and supported by internal procedures;
- the design and effectiveness of control procedures supporting the core operational and systems processes are subject to regular independent external and internal audit;
- critical IT infrastructure is designed to ensure resilience against component failure, including full redundancy at the primary site;⁴⁰ and
- availability targets are documented and defined formally for critical services.

Nevertheless, should an infrastructure failure occur at the primary site, failover to the backup site is targeted to occur within one hour. A comprehensive test is completed over a two-year cycle to demonstrate that normal functions can be carried out using systems located at the backup site. ASX Settlement also regularly tests its ability to operate its primary systems from its backup site.

Over the 2009/10 assessment period, CHES achieved high operational reliability. CHES was available close to 100 per cent of the time, with just one short outage reported in the March quarter 2010. The availability target for CHES is 99.8 per cent.

CHES capacity is monitored on an ongoing basis, with monthly reviews of current and projected capacity requirements. ASX Settlement requires that it has sufficient technical and human resource capacity to operate the clearing and settlement systems during peak periods, including in the event of operational incidents or system failure. Average capacity utilisation of CHES over the assessment period was 24 per cent, while peak utilisation was 50 per cent. The capacity headroom target for CHES is 50 per cent over peak utilisation.

⁴⁰ ASX also intends to introduce full redundancy at its backup site for CHES.

ASX Settlement has arrangements in place to ensure that changes to CHES and supporting infrastructure do not disrupt its usual operations. ASX Settlement operates a separate test environment for CHES and has a formal, documented change-management process.

ASX Settlement also has arrangements in place to ensure it has well-trained and competent personnel operating CHES. Staff are provided with relevant policies and guidelines from commencement of employment, with weekly communications thereafter. Staff are evaluated with reference to each defined operational process. ASX Settlement has a formal succession-planning and management process in place.

ii. Business continuity procedures

ASX maintains extensive contingency plans detailing the appropriate operational response to a CS facility disruption, including coverage of the various lines of authority, means of communication, and failover procedures. These plans are periodically updated. The risk that an operational incident at the main site disrupts CHES is mitigated through maintenance of a backup site. ASX also has procedures in place to manage the availability of specific staff skill sets in the event of a contingency, with migration to the backup site targeted to occur within one to two hours. In addition, as noted in the previous assessment, ASX is in the process of implementing arrangements to have some operational staff at its backup site during business hours in order to support rapid recovery in the event of a disruption.

ASX Settlement rules require participants to maintain adequate business continuity arrangements to allow the recovery of usual operations within approximately one to two hours following a contingency event. If a participant fails to do so, ASX Settlement may impose sanctions.

ASX Settlement regularly tests business-recovery arrangements. Connectivity and procedural testing of the backup site are performed monthly by representatives from ASX Settlement. Live tests (i.e., where market and clearing and settlement services are provided in real time from the backup site) are conducted on a two-year cycle. Test results are formally documented and reported to ASX senior management and are also made available to internal and external auditors.

The adequacy of ASX Settlement's business continuity procedures is reviewed regularly, as part of broader reviews of ASX Settlement's operational risk policy.

iii. Outsourcing

No operational functions are outsourced by ASX Settlement. However, external suppliers are used for various services, such as utilities, hardware maintenance, operating system and product maintenance, and certain security-related specialist independent services. ASX Settlement is also reliant on interactions with SWIFT, and would revert to manual processing of SWIFT payments in the event of a SWIFT failure.

iv. External administration of a related body

Within the ASX group structure, most operational resources are provided by ASX Operations Limited, a subsidiary of ASX Limited. In the event that ASX Operations Limited became subject to external administration and this particular event did not impact upon the capacity of ASX Settlement to continue operating, ASX Settlement would be able to retain use of resources under provisions within the written support agreement between it and ASX Operations Limited (to the extent permissible by law).

8. Regulatory reporting

CS facility licensees are required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standards. These obligations include the reporting of: breaches of the Standard; breaches of risk-control requirements; and quarterly financial results. ASX Settlement satisfied all reporting obligations during the assessment period.

B2.2 Austraclear

1. Legal framework

The securities settlement facility must have a well-founded legal basis.

Austraclear Limited is a wholly owned subsidiary of ASX Limited.⁴¹ It provides settlement services for the OTC debt market and for derivatives traded on the ASX 24 and ASX markets.

The legal basis for Austraclear's operations is set out in its Regulations. Under section 822B of the Corporations Act, these regulations have effect as a contract under seal between Austraclear and each of its participants, and between each participant and each other participant. The Regulations set out the rights and obligations of participants and Austraclear, including in the event of default or suspension.

The finality of settlements undertaken by Austraclear is reinforced by its approval as an RTGS system under Part 2 of the Payment Systems and Netting Act. This approval protects the finality of payments made through Austraclear in the event of a participant entering external administration.

2. Participation requirements

The requirements for participation in the securities settlement facility must promote the safety and integrity of the securities settlement facility and ensure fair and open access. Participation requirements must:

- (a) be based on objective and publicly disclosed criteria;
- (b) require that participants have the operational capacity and financial standing to settle their obligations through the securities settlement facility in a timely manner; and
- (c) allow the CS facility licensee as operator of the securities settlement facility to suspend or cancel the participation of an institution which breaches the applicable participation or other risk-control requirements.

Austraclear had 729 participants as at end June 2010. Austraclear has objective and transparent participation requirements, which are publicly available and form part of the Regulations and Procedures. The Regulations also provide for an appeals process should an application for participation be rejected or a participant's access be terminated. Its participation requirements address financial and operational issues, such as capital adequacy, business integrity and business continuity arrangements.

Austraclear's Regulations allow it to suspend or terminate a participant from its facility in the event of a breach of its Regulations. Clearing and Settlement Operations monitors participants' operational processing performance.

⁴¹ As of 1 July 2010, Austraclear is a wholly owned subsidiary of ASX Settlement Corporation Limited, which is itself a wholly owned subsidiary of ASX Limited.

3. Understanding risks

The securities settlement facility must make sufficient information publicly available, via its rules and procedures and the provision of relevant information on settlement activity, such that each participant is able to understand the securities settlement facility's impact on each of the financial risks the participant incurs through participation in the facility.

Austraclear's Regulations and Procedures are comprehensive and publicly available. The Regulations and Procedures explain the role and responsibilities of each category of participant and Austraclear. Background information on Austraclear's operations, technical arrangements and risk management is also available on ASX's website.

Austraclear must lodge any changes to its Regulations with ASIC. Under section 822E of the Corporations Act, the Minister has 28 days to consider, and potentially disallow, any rule changes made by a licensed CS facility. Austraclear consults with its participants on important rule changes. Announcements affecting participants are issued as 'ASX 24 Notices' which are targeted to participants and market users.

4. Certainty of title

The CS facility licensee as operator of the securities settlement facility must ensure that under the facility's rules and procedures, participants, or where relevant, their clients, have a clear and unambiguous title to, or interest in, securities held, deposited or registered on their behalf, including in circumstances where the solvency of the operator of a securities settlement facility is in doubt. This requires that its rules and procedures:

- (a) clearly identify the type of title or interest held by participants for particular securities, to the extent such title or interest is recognised by the facility's rules or procedures;

Austraclear's Regulations identify title for three different classes of securities: paper securities, non-paper securities and dematerialised securities.

Paper securities are negotiable instruments and include some certificates of deposit, promissory notes and bills of exchange. Austraclear holds these securities for the participant as bailee. The participant retains legal and beneficial title. *Non-paper securities* are electronic securities that are not registered within the Austraclear system. They include Commonwealth Government securities, registrable state and semi-government securities and corporate debt. In each of the registries, Austraclear holds legal title for the participant as nominee. The participant retains beneficial title. *Dematerialised securities* are electronic securities which are registered in the Austraclear system rather than externally. They include electronic certificates of deposit, electronic promissory notes and electronic bank-accepted bills of exchange. A dematerialised security is held by a participant as a 'chose in action'.⁴² This legal structure imposes rights and obligations which replicate the rights and obligations of a negotiable instrument.

- (b) clearly identify the way in which the transfer of (or any other forms of dealing with) securities and related payments can be effected through the facility; and

The transfer of title to securities in the Austraclear system is effected by book entry. Paper securities are transferred through updates to participants' security records. Austraclear also uses 'allonges' which maintain

⁴² This is a legal right to intangible property. It allows the holder (in this case, the relevant Austraclear participant) to direct Austraclear to deliver to it securities of a specified description and number.

the negotiability of paper securities.⁴³ Non-paper securities are transferred through the passing of beneficial title from the seller to the buyer. Austraclear retains legal title in the relevant registry. Transfers of dematerialised securities are transfers of contractual rights within the Austraclear system.

(c) ensure that, to the extent permissible by law, the creditors of the operator of the securities settlement facility have no claim over securities or other assets held, deposited or registered by participants in the facility.

In the event of Austraclear's insolvency, the rules and arrangements for title within Austraclear provide a high degree of assurance that participants' securities will be immune from claims by Austraclear's creditors. Austraclear is not counterparty to any transactions settled in its system.

5. Settlement

The CS facility licensee as operator of a securities settlement facility must ensure that its operations do not expose its participants, or the financial system more broadly, to unacceptable levels of risk. The operator of a securities settlement facility must pay particular attention to ensuring settlement finality and the use of high-quality settlement assets in payment for securities.

(i) The operation of a securities settlement facility must eliminate principal risk between its participants and ensure that settlements, once completed, are final and irrevocable.

Settlement of securities transactions in Austraclear occurs on a Model 1 DVP basis. This involves the simultaneous transfer of payment and securities obligations between the buyer and seller on an item-by-item basis through the settlement cycle. Austraclear also provides for one-way cash transfers between participants, which are also settled on an item-by-item basis. Austraclear's Regulations establish the basis for settlement of transactions entered into the system. By volume, DVP settlements accounted for around 47 per cent of total settlements during the assessment period, and one-way cash transfers around 53 per cent. There was also a small volume of free-of-payment securities transfers (less than 1 per cent). By value, however, DVP payments predominate, accounting for 79 per cent of total transfers in the year to end June 2010.

(ii) The assets used to settle the payment obligations in respect of a transaction in the securities settlement facility must carry little or no credit or liquidity risk.

'Participating banks' hold ES accounts at the Reserve Bank and act on behalf of other Austraclear participants. 59 participating banks were operating in Austraclear as at 30 June 2010. Settlement of payment obligations occurs between participating banks across ES accounts on a RTGS basis. As such, settlement occurs in central bank money. Austraclear is notified immediately upon settlement of the payment leg of a securities trade, allowing for the immediate transfer of securities title so as to ensure DVP settlement.

(iii) Exposures between providers of cash settlement assets must be settled finally and irrevocably.

The finality of Austraclear's settlement process is reinforced by its approval under Part 2 of the Payment Systems and Netting Act. In addition, the payments between participating banks are also protected by virtue of the approval of RITS as an RTGS system under Part 2 of the Payment Systems and Netting Act.

⁴³ Allonges are separate sheets of paper attached to a bill of exchange for the purpose of documenting endorsements. As a bill of exchange is transferable through endorsement, the allonge attached to the bill acts as a legal extension of the document.

6. External administration

The rules and procedures for the securities settlement facility must contain mechanisms to deal with the external administration of a participant, or a provider of cash settlement assets, in such a way as to limit the operational and financial impact on both the securities settlement facility and its participants. This requires that the CS facility licensee as operator of the securities settlement facility must:

- (a) allow for the cancellation or suspension of a participant or a provider of cash settlement assets from the security settlement facility:
 - (i) if the participant or provider of cash settlement assets is in external administration; or
 - (ii) if there is a reasonable suspicion of external administration; and
- (b) allow participant users of a cash settlement provider which becomes subject to external administration, or which is reasonably likely to become subject to external administration, to quickly nominate a new provider.

Austraclear's Regulations allow it to cancel or suspend a participant or a participating bank that becomes subject to external administration, or if it reasonably suspects that this may occur. A participant or a participating bank is also required to notify Austraclear if it becomes subject to external administration or where it reasonably suspects that this may occur.

There is no restriction within the Austraclear Regulations on a participant changing its participating bank, including where that entity is insolvent.

As a facility supporting bilateral agreements negotiated on an OTC basis, without the presence of a central counterparty, Austraclear does not have centralised arrangements for dealing with the unsettled transactions of its participants. Consequently, replacement risk for any trade left unsettled due to the insolvency of a participant is borne directly by trade counterparties. By virtue of the application of a Model 1 DVP arrangement, unsettled obligations do not give rise to principal risk.

7. Operational risk

The CS facility licensee as operator of a central counterparty must identify sources of operational risk and minimise these through the development of appropriate systems, controls and procedures.

Austraclear's key system is EXIGO.

i. Security and operational reliability

Since mid 2008 Austraclear has been responsible for first- and second-level operational support of EXIGO. This includes business continuity arrangements, and computer system support not involving changes to system components or underlying source code. Previously this support was provided by NASDAQ OMX, which continues to provide third-level and software support. During the year a new agreement was finalised to extend this support beyond 2013.

During the assessment period EXIGO was available for 99.9 per cent of the required time. This equalled the availability target stipulated in Austraclear's 'Step-in and Service Agreement' with the Reserve Bank. As outlined in Section 5.4, there were three major operational incidents during the assessment period. There were also several smaller incidents. The first occurred in July 2009, when EXIGO users were unable to access the system for a short period due to problems with their digital certificates following non-routine maintenance by the

vendor. Procedures have now been put in place to ensure all maintenance is checked immediately. A second incident occurred in April 2010 when a number of automated overnight processes in EXIGO did not run as expected, causing the first three Austraclear transactions of the following day to fail. ASX has taken action to prevent this reoccurring, and is working toward an automated daily check that confirms overnight processes have been successfully completed. A further incident occurred in May 2010 when the process which submits matched trades in SECUR to EXIGO terminated unexpectedly. There was no disruption to user access to EXIGO, but there was a small delay to some settlements before the process could be restarted. ASX has since improved its process monitoring to ensure that it is immediately informed of such terminations, and NASDAQ OMX will correct some aspects of the process in its next software release for EXIGO. The Reserve Bank is satisfied with both ASX's immediate responses, and the follow-up action taken to prevent reoccurrence, in relation to the operational incidents that occurred during the year.

Average capacity utilisation for EXIGO was 30 per cent during the assessment period, and peak capacity utilisation was 66 per cent. In accordance with its capacity headroom policy, ASX will look to increase the capacity of EXIGO within the next 12 months such that peak utilisation does not exceed 50 per cent.

The security of the EXIGO system is supported by access controls which are subject to external audit. Austraclear also has a fraud control policy in place which seeks to minimise the risk of fraud occurring within Austraclear, as well as providing procedures for its timely identification and appropriate responses should it occur.

ii. Business continuity procedures

ASX maintains extensive contingency plans detailing the operational response to a CS facility disruption, including coverage of the various lines of authority, means of communication, and failover procedures. These plans are periodically updated. The risk that an operational incident at the main site disrupts EXIGO is mitigated through maintenance of a backup site. ASX also has procedures in place to manage the availability of specific staff skill sets in the event of a contingency, with migration to the backup site targeted to occur within one to two hours. In addition, as noted in the previous assessment, ASX is in the process of implementing arrangements to have some operational staff at its backup site during business hours in order to support rapid recovery in the event of a disruption.

Austraclear tests backup arrangements quarterly and carries out connectivity and procedural testing on a monthly basis. Live tests (i.e., where market and clearing and settlement services are provided in real time from the backup site) are conducted on a two-year cycle; the most recent live test of EXIGO occurred in November 2009 and revealed some issues which have now been resolved (see Section 5.4 for detail). The next test is scheduled for August 2011. Through its Regulations, Austraclear also requires that its participants have appropriate disaster recovery arrangements. The adequacy of Austraclear's business continuity procedures is reviewed regularly, as part of broader reviews of Austraclear's operational risk policy.

iii. Outsourcing

No operational functions are outsourced by Austraclear. However, external suppliers are used for various services, such as utilities, hardware maintenance, operating system and product maintenance, and certain security-related specialist independent services. As noted above, NASDAQ OMX provides third-level and software support to EXIGO.

Austraclear is reliant on interactions with SWIFT, and would revert to manual processing of SWIFT payments in the event of a SWIFT failure. The failure of RITS would potentially prevent settlement in EXIGO, although ASX has prepared business plans to consider the potential for EXIGO to continue operating independently.

iv. External administration of a related body

ASX Operations, a subsidiary of ASX Limited, is responsible for supplying Austraclear and other ASX group companies with personnel and technological resources. Austraclear has a written support agreement with ASX Operations which helps to ensure its access to these resources in the event of the external administration of ASX Operations, to the extent permissible by law.

8. Regulatory reporting

CS facility licensees are required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standards. These obligations include the reporting of: breaches of the Standard; breaches of risk-control requirements; and quarterly financial results. Austraclear satisfied all reporting obligations during the assessment period. ✕