

# 2006/07 ASSESSMENT OF CLEARING AND SETTLEMENT FACILITIES IN AUSTRALIA

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# 1. Introduction

This report sets out information that the Reserve Bank is required to report in relation to its role in the oversight of clearing and settlement (CS) facilities in Australia. This includes an assessment of how well CS facilities have complied with Financial Stability Standards determined by the Bank, along with information on developments in clearing and settlement and any changes in the Financial Stability Standards themselves that have occurred during the reporting period.

Under the *Corporations Act 2001*, the Reserve Bank has the power to determine Financial Stability Standards. The purpose of these standards is to ensure that licensed CS facilities serving financial markets operate in a way that promotes overall stability in the Australian financial system. At least once each year, the Reserve Bank is required to assess how well CS facilities have met these standards, along with their obligation to do all things necessary to reduce risk in the financial system. Under s823CA of the *Corporations Act*, the Bank must report its assessment to the Minister with portfolio responsibility for financial markets, as well as to the Australian Securities and Investments Commission (ASIC).

In addition, under s25M of the *Reserve Bank Act 1959*, the Payments System Board must report to the Minister any developments in the clearing and settlement industry that are relevant to Australia's financial stability, as well as any changes to the Financial Stability Standards. This report must be completed for the year to June.

This year, the Payments System Board has chosen to meet these reporting obligations through this single report. This has necessitated a change in the assessment timetable for CS facilities under the *Corporations Act*, to bring it into alignment with the requirements of the *Reserve Bank Act*. Whereas in recent years CS facilities have been assessed over the year to September, this assessment focuses on the nine months to June 2007. From 2008, assessments will relate to the full year to June.

The Payments System Board has also elected for the first time to make this report publicly available. The Board believes that this will lead to greater transparency of the risk controls used by CS facilities and the regulatory process. It will complement the public reporting of ASIC on other aspects of the operation of CS facilities.

The remainder of this report is divided into four parts. The first part provides a general description of clearing and settlement in Australia, the functions performed by CS facilities, and the main licence holders. The following two parts provide information required under the *Reserve Bank Act*. The first of these reports that no changes were made to the Financial Stability Standards during the year to June. The second of these parts sets out information on general developments in the clearing and settlement industry during the year. The final part of this report details the assessment of CS facilities undertaken under s823CA of the *Corporations Act*. This includes information on developments in the operations and risk management of individual facilities, which is also relevant to reporting under the *Reserve Bank Act*.

Two attachments to this report are also provided. The first attachment gives a detailed summary of each CS facility's compliance with the measures that the Reserve Bank considers relevant to meeting the Financial Stability Standards. The second attachment summarises approvals under the *Payment Systems and Netting Act 1998* of relevance to CS facilities.

## 2. Clearing and Settlement in Australia

Two types of licensed CS facilities operate in Australia – central counterparties and securities settlement facilities.

Central counterparties provide novation of trades between buyers and sellers. Under novation, the original contract is replaced by separate contracts between the buyer and the central counterparty and between the seller and the central counterparty.<sup>1</sup> While these arrangements provide significant benefits in terms of counterparty risk management and greater opportunities for netting of obligations, 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. The central counterparty must therefore have measures in place to provide confidence that, in all but the most extreme circumstances, such a default can be accommodated without threatening the central counterparty's solvency or significantly disrupting financial markets or the financial system more generally.

There are two central counterparties licensed as CS facilities under the *Corporations Act*:

- Australian Clearing House (ACH), which provides central counterparty services for a range of financial products traded on the ASX market, including equities, warrants and equity-related derivatives, among other products; and
- SFE Clearing Corporation (SFECC), which provides central counterparty services for derivatives on the SFE market.

These facilities are required to comply with the *Financial Stability Standard for Central Counterparties*, as determined by the Reserve Bank.

Securities settlement facilities provide for the final settlement of transactions undertaken on securities markets. Settlement involves up to three steps. Firstly, title to the security must be transferred from seller to buyer. Securities settlement facilities provide the mechanism for the transfer of securities title and may maintain records of title. Secondly, cash must be transferred from the buyer of the security to the seller. Thirdly, where the buyer and seller hold accounts at different financial institutions, funds must be transferred from the buyer's financial institution to that of the seller.

Unless these three settlement functions are linked effectively, there is a risk that a participant may pay away securities or cash without receiving consideration in kind. Thus a key consideration of a securities settlement facility's operations is the effectiveness of its delivery-versus-payment (DVP) arrangements. The legal and operational mechanisms that underpin these arrangements are also crucial.

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<sup>1</sup> Typically a central counterparty deals only with the small number of direct central counterparty participants. Most buyers and sellers must appoint a central counterparty participant to act on their behalf. The central counterparty will therefore have a contract with the participant acting on behalf of the buyer and the participant acting on behalf of the seller, rather than directly with the buyer and seller.

Two main securities settlement facilities are licensed under the *Corporations Act*:

- ASX Settlement and Transfer Corporation (ASTC), which provides for the settlement of equities and warrants traded on the ASX market; and
- Austraclear, which offers securities settlement services for over-the-counter trades in debt securities.

These facilities are required to comply with the *Financial Stability Standard for Securities Settlement Facilities*.<sup>2</sup>

Following the merger of Australian Stock Exchange Limited and SFE Corporation Limited in July 2006, ACH, SFECC, ASTC and Austraclear are part of a single corporate group, now known as Australian Securities Exchange (ASX). However, each continues to hold an individual licence under the *Corporations Act*.

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<sup>2</sup> A third securities settlement facility – operated by IMB Limited – falls outside the application of the *Financial Stability Standards* due to its small size and the low likelihood of it affecting the overall stability of the Australian financial system.

### 3. Determination, Variation and Revocation of Financial Stability Standards in 2006/07

Section 25M(1)(a)-(c) of the *Reserve Bank Act* requires the Payments System Board to describe standards for CS facilities determined during the year and any variations or revocations of existing standards. No standards for CS facilities were determined by the Reserve Bank under s827D(1) of the *Corporations Act* during the year to June 2007. No existing standards were varied or revoked.

## 4. General Developments in the Clearing and Settlement Industry in 2006/07

The continued rapid growth in trading in Australian financial markets in 2006/07 saw the value of transactions processed by the four CS facilities also expand rapidly. Trading in equities and warrants on the ASX market increased by 35 per cent in 2006/07, to average \$5.3 billion per day, while the notional value of equity derivatives traded on that market grew by 7 per cent to an average of \$2 billion per day. The notional value of derivatives traded on the SFE market increased by 33 per cent in the year, to average \$148 billion per day. Because debt securities are traded in an over-the-counter market, trading values are not directly observable, but settlements of debt securities through Austraclear averaged \$34 billion per day in 2006/07, an increase of 36 per cent from 2005/06.

Around 70 per cent of cash equities trades are novated to the equities central counterparty, ACH. Netting within ACH reduced the central counterparty's exposure from each day's novated equities trades to an average of \$450 million in 2006/07, an increase of 30 per cent from 2005/06. However, because equities typically settle three days after the trade date, ACH's cumulative exposures were higher. These averaged \$950 million during 2006/07 – once again an increase of 30 per cent over the previous year.

Equities settlements through ASTC incorporate both trades novated to ACH and non-novated transactions. After netting, the average daily value of ASTC settlements was \$525 million in 2006/07, 37 per cent higher than in 2005/06.

Quantification of the derivatives exposures managed through central counterparties is more difficult. The average volume of open derivatives contracts increased by 7 per cent during the year for ACH and by 40 per cent for SFECC. A more complete measure of the exposures managed is initial margins held by the central counterparty, which reflects both open interest and the central counterparty's assessment of the riskiness of individual contracts, as embodied in margin requirements. Margins held by ACH for ASX derivatives increased by 45 per cent, to average \$503 million in 2006/07, while initial margins held by SFECC increased by 80 per cent, to an average of \$3 billion.

Discussion of developments in the operations, risk management and legal framework of CS facilities is incorporated in individual assessments in the following section.



## 5. Assessment of CS Facilities against the Financial Stability Standards

The Reserve Bank determined Financial Stability Standards for central counterparties and securities settlement facilities in May 2003. The standard for central counterparties is as follows:

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.

The standard for securities settlement facilities was varied in June 2005. It is as follows:

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.

The threshold value for the application of the *Financial Stability Standard for Securities Settlement Facilities* was established to ensure that small securities settlement facilities, which are unlikely to affect the overall stability of the Australian financial system, are not subject to unnecessary regulation.

The standards are supplemented by the minimum measures that the Reserve Bank considers relevant for meeting each standard. These apply across a range of subject areas (See Table 1). The full text of the associated measures is available on the Reserve Bank's website.

**Table 1: Measures Relevant to the Financial Stability Standards**

Financial Stability Standard for Central Counterparties	Financial Stability Standard for Securities Settlement Facilities
Legal framework	Legal framework
Participation requirements	Participation requirements
Understanding risks	Understanding risks
Novation	Certainty of title
Settlement	Settlement
Default arrangements	External administration
Risk controls	Operational risk
Governance	Regulatory reporting
Operational risk	
Regulatory reporting	

## Approach to assessment

The assessments against the standards have been compiled on the basis of information collected from a variety of sources. All four ASX licensees report financial information to the Reserve Bank quarterly, while the two central counterparties also report risk management information. The Bank also holds regular discussions with the licensees on issues relevant to compliance at both an operational and a policy level. The information gathered from these sources is supplemented with a detailed written questionnaire at the end of the assessment period, which requests both qualitative and quantitative information on issues relevant to the assessment. Follow-up discussions are held as required.

From this information, the Bank has assessed each CS facility against each of the minimum measures associated with the relevant standard, as set out in Table 1 above. The primary focus has been on assessing areas of operation that have changed materially since the previous assessment, to determine whether they continue to meet the relevant measure. Where there has been no material change in operations, the Bank must nonetheless also verify that the facility remains compliant. The Bank has also taken into account data which are relevant to ongoing compliance with some measures. For example, stress testing data have been used to provide information on the strength of the central counterparties' risk management arrangements and to supplement information on the specific risk management tools in place. Data on operational reliability, capacity and business continuity testing have also been used to determine how well a CS facility has managed operational risk.

The summary assessments that follow draw on all available information in order to make an overall assessment of each facility's compliance with the relevant standard. Detailed evaluations of how the facilities address each measure are outlined in the attachment.

## 5.1 Australian Clearing House (ACH)

It is the Bank's assessment that Australian Clearing House complied with the *Financial Stability Standard for Central Counterparties* in the nine months to June 2007.

### **Background on ACH arrangements**

ACH operates within a sound legal framework, based on its Clearing Rules, which under s822B of the *Corporations Act* have effect as a contract under seal between ACH and each of its participants, and between each participant and each other participant. Among other things, the rules set out the rights and obligations of ACH and each of its participants, including the clearing support provided by ACH as central counterparty and the conditions under which the settlement of obligations occurs. In addition, the netting arrangements contained in ACH's Clearing Rules are protected as a 'netting market' under Part 5 of the *Payment Systems and Netting Act*, providing certainty for the netting process in the event of the insolvency of a participant (See Attachment 2).

ACH addresses the risks arising from the potential for a participant default through participation requirements, monitoring of exposures, margining of derivatives contracts, participant contributions and its own financial resources.

Requirements for participation are set out in the Clearing Rules and deal with business integrity, operational capacity and financial resources. Most participants are required to have minimum liquid assets, comprising a fixed component of \$100,000 and a variable component based on market and operational risk characteristics. Futures-only clearing participants may elect to comply with an alternative regime. ACH requires participants to report their capital positions monthly.

ACH levies margins on equity derivatives products, but not physical equity products. Depending on the product type, derivatives margins can include premium margins (reflecting the current value of an option), risk margins (designed to protect the central counterparty against future price movements should a participant default) and variation margins (based on price movements over the preceding day). ACH also has in place a system of participant contributions which allows additional collateral to be called where participants' cash equities positions are large relative to ACH's resources.

While a defaulting participant's margins and other assets are ACH's first line of defence against losses arising from a default, ACH has access to additional resources designed to meet losses from any participant in more extreme market conditions. In order of application, these are:

- the "Risk Resource Requirement" of \$150 million, consisting of funds paid into a restricted capital reserve from the National Guarantee Fund in 2005 and other ACH capital;
- default insurance of \$100 million;

- surviving participants' contributions; and
- the capacity to levy 'emergency assessments' totalling up to \$300 million on surviving participants.

ACH also has access to a line of credit to provide it with liquidity at short notice to facilitate daily settlement in the event of a default.

ACH conducts stress-testing of participants' positions on a daily basis to assess the risk it faces as a central counterparty.

At the end of the assessment period, ACH had 67 participants, including 20 broker-subsidiaries of foreign banks, 8 subsidiaries of Australian banks, and 36 Australian brokers. During the course of the assessment period two clearing participants resigned and one new participant joined.

## **Developments during the assessment period**

ACH has overseen a number of changes to its risk management during the assessment period which have significantly increased its capacity to meet its obligations should a participant default. It has also improved its ability to assess the risks it faces through stress testing. The main changes are outlined below.

In March 2007 ACH increased its pooled resources available to meet the default of a participant. The minimum funds ACH holds for this purpose, the Risk Resource Requirement, were increased from \$110 million to \$150 million through an injection of capital from ASX.

This change also flowed through to the maximum 'emergency assessments' that ACH can call from surviving participants following a default. The potential pool of emergency assessments is twice the Risk Resource Requirement and increased from \$220 million to \$300 million. These resources may be called in the event that the loss to the central counterparty following a default exceeds the Risk Resource Requirement and ACH's default insurance of \$100 million.

Also in March, ACH introduced requirements for individual participants to post cash or collateral to cover potential losses from large cash equities exposures. In particular, participants are now required to post collateral with ACH when their position with the central counterparty exceeds certain thresholds. This system is designed to provide a high degree of confidence that the central counterparty will be able to meet its obligations, even where losses from a participant default exceed ACH's 'Risk Resource Requirement' of \$150 million. ACH implemented comparable arrangements for derivatives positions in December 2007, along with some adjustments to the existing arrangements.

In order to enable it to access liquidity quickly in the event of a participant default, ACH increased a line of credit it holds with a bank from \$100 million to \$150 million in May 2007. Combined with the Risk Resource Requirement, which is held in liquid assets, this took the liquid funds at ACH's disposal to \$300 million.

In order to increase its capacity to assess the risks faced by participants and the central counterparty, ACH introduced the first stage of a new stress testing framework in June 2007. The new arrangement uses a significantly expanded range of scenarios based on market-wide shifts,

sector-specific scenarios and movements in individual stocks. The scenarios also incorporate options volatility shifts for the first time. ACH intends to further increase the range of scenarios used in its stress testing framework in the first quarter of 2008.

The new framework has significantly improved ACH's stress testing capacity overall. That said, this framework embodies down-side market-wide stresses which are less than those previously used – 15 per cent, rather than 25 per cent. Up-side market-wide stresses were unchanged during the assessment period, but have subsequently also been reduced – from 10 per cent to 7 per cent in normal market conditions, with triggers in place to increase the severity in turbulent market conditions. During the assessment period, participant contributions continued to be based on a market fall of 25 per cent and an increase of 10 per cent, although the new scenarios are to apply from December 2007.

ASX argues that the stresses previously used by ACH were very conservative, to take account of the fact that only market-wide movements could be tested. Now that a more sophisticated approach is available, it argues that such a conservative approach is no longer required. The Bank is satisfied ACH's arrangements remain consistent with the *Financial Stability Standard for Central Counterparties*.

ACH also introduced a new model to assess the adequacy of its liquidity arrangements based on a subset of its stress test scenarios. This model is significantly more sophisticated than ACH's previous methodology. It calculates the maximum funds that ACH would be required to inject in closing out a defaulter's obligations. For participants rated 'strong' or less, ACH assumes that all obligations that can be settled without buying in equities are settled on time. For higher rated participants, it assumes that funds are injected only to meet losses, rather than to facilitate settlement. Hence settlement is assumed to be deferred until cash market positions can be liquidated.

ACH finalised internal default procedures which set out a framework for evaluating and dealing with a participant default. ACH has indicated that further work in this area is likely as a part of efforts to harmonise processes and procedures across ACH and SFECC.

ACH's systems were highly operationally reliable during the course of the assessment period, with no outages recorded and significant excess capacity available. ACH has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. ACH has regularly tested its ability to operate its production systems from its back-up site during the assessment period. An additional step of utilising back-up systems as the production system for a day's processing was taken in November, subsequent to the assessment period.

## **Assessment**

It is the Bank's assessment that ACH has complied with the *Financial Stability Standard for Central Counterparties* during the assessment period. The detailed assessment provided in the attachment indicates how ACH has met the various measures that the Bank has set out as the minimum it considers relevant for meeting the standard.

Most importantly, the various risk management measures that ACH has in place provide a high degree of confidence that ACH could settle its obligations in the event of a participant default.

The changes to ACH's risk management arrangements since the previous assessment period – particularly the increased Risk Resource Requirement and the capacity to levy contributions on participants with large exposures – have clearly enhanced the central counterparty's ability to deal with the default of a participant in adverse market conditions. While the certainty with which different resources could be accessed varies, the notional value of ACH's resources at the end of the assessment period, excluding margins and participant contributions, was \$550 million. ACH has supplied the Bank with stress testing data in order to enable it to verify the adequacy of these resources.

As noted above, ACH's new stress testing framework will greatly increase the risk information available to the central counterparty. It nonetheless embodies a reduction in the market-wide down-side stress applied to positions. The Bank accepts that the more targeted approach to stress testing that is now possible under the new arrangements reduces the need for conservatism in the market-wide stresses applied. It therefore considers that ACH's arrangements, including the new scenarios, remain consistent with the *Financial Stability Standard for Central Counterparties*. The Bank is also satisfied that ACH's stress testing arrangements are at least equivalent to those of central counterparties overseas.

At present, ACH's risk management systems do not allow it to monitor changes in its participants' derivatives exposures intraday. While ACH is able to monitor changes in derivatives *prices* intraday, it is not able to update participants' *positions* intraday. It instead relies on applying up-to-date prices to participants' positions at the close of trading the previous day. ACH anticipates that upgrades to its systems will soon allow it to monitor additional risks from new positions, as well as movements in prices, on an intraday basis. The Bank considers that this feature will represent a significant enhancement of ACH's risk management capabilities.

## 5.2 SFE Clearing Corporation (SFECC)

It is the Bank's assessment that SFE Clearing Corporation complied with the *Financial Stability Standard for Central Counterparties* in the nine months to June 2007.

### **Background on SFECC arrangements**

SFECC operates within a sound legal framework, based on its Clearing Rules, which under s822B of the *Corporations Act* have effect as a contract under seal between SFECC and each of its participants, and between each participant and each other participant. Among other things, the Clearing Rules define the nature and scope of SFECC's obligation to provide clearing support to participants and describe the conditions under which final and irrevocable settlement of obligations has occurred. The rules also set out the rights and obligations of SFECC and each of its participants, including in the event of default or suspension. The netting arrangements contained in SFECC's rules are protected as a 'netting market' under Part 5 of the *Payment Systems and Netting Act*. This provides legal certainty for the netting process in the event of the insolvency of a participant (See Attachment 2).

To manage the risks it faces as a central counterparty, SFECC relies on a combination of controls over participation, monitoring of exposures, margins, participant contributions and its own financial resources. Stress testing is used to assess risks on an ongoing basis.

The SFECC Clearing Rules set out requirements for participation, including in relation to business integrity, operational capacity and financial resources. SFECC requires its participants to have net tangible assets of at least \$5 million and to report capital positions monthly.

SFECC levies margins on all derivative products, including variation margins (based on price movements over the preceding day) and initial margins (designed to protect the central counterparty against future price movements should a participant default). It also levies Additional Initial Margins (AIMs), which can be used to call collateral from participants where large exposures are identified by stress testing.

SFECC holds additional financial resources (the Clearing Guarantee Fund) to protect against losses in excess of margins held. These include capital of \$80 million (which was increased from \$30 million in September 2006), participant contributions of \$60 million, and default insurance of \$60 million. SFECC has the capacity to call additional participant contributions of up to \$30 million. It can request further contributions if required, but participants may opt out of the central counterparty rather than pay the additional funds.

As at the end of June 2007, SFECC had 16 participants – predominantly large foreign banks and their subsidiaries, along with two local banks and a local futures broker. Two participants resigned during the assessment period and two joined.

## Developments during the assessment period

In May, SFECC announced a widening of the collateral it accepts for satisfying AIM requirements. Previously SFECC had accepted only cash. It now also accepts Commonwealth Government securities, bank bills, negotiable certificates of deposit and letters of credit issued by selected ADIs.

From February 2007, SFECC altered the calculation of stress test exposure limits (STELs) used to derive AIMs. STELs impose a limit beyond which potential losses identified by stress tests must be collateralised by participants. For highly rated participants, the STEL had previously been set at 50 per cent of the value of SFECC's Clearing Guarantee Fund. From February the threshold was raised to 100 per cent of the Clearing Guarantee Fund.

SFECC also discontinued the practice of calling 'double margins' on occasions where public holidays led to the trading system being open while the banking system was closed (precluding margin payments on that day). The SFECC Board considered that existing initial margin and AIM arrangements adequately cover the risks associated with this situation.

For some time SFECC has recognised that some of the stress test scenarios that were being used had become outdated, and required modification. In particular, the scenarios being used for movements in the share price index had become less relevant over time due to the strong increase in share prices. SFECC had intended to implement more appropriate stress tests across all contract types over the assessment period, but the new arrangements were deferred twice to allow additional time for consultation with both industry participants and the Bank. The Bank did not object to these delays, recognising that any new arrangements had to consider the overall risk management framework and the efficiency of the market. The new framework was introduced on 20 November 2007, for all but the individual share price index scenarios. SFECC is planning to introduce these new scenarios in the first quarter of 2008, in conjunction with a significant increase in its financial resources.

SFECC's systems were highly operationally reliable during the assessment period; they were available for 99.98 per cent of the required time. Systems also had significant excess system capacity throughout the period. SFECC has announced its intention to bring key levels of support for its systems in-house. This work is expected to be completed in mid 2008.

SFECC has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. In the past it has operated back-up systems as the production system from time to time. Although such a test did not occur in the assessment period, testing was completed later in 2007.

## Assessment

It is the Bank's assessment that SFECC has complied with the *Financial Stability Standard for Central Counterparties* during the assessment period.

The various risk management measures that SFECC has in place provide a high degree of confidence that SFECC could settle its obligations in the event of a participant default.

SFECC's capital, participant contributions and default insurance totalled \$200 million at the end of the assessment period. Margins totalled around \$4.5 billion, while second level



contributions could total up to \$30 million. SFECC has supplied the Bank with stress testing data to enable it to verify the adequacy of its financial resources. The use of AIMs by SFECC provides added confidence that it could meet potential losses from a participant failure if the price movements embodied in its stress tests were to occur.

The delays in SFECC implementing its new stress testing framework resulted in SFECC continuing to rely on outdated stress tests for share price index contracts during the assessment period. Reflecting this, SFECC adopted a conservative approach to margining share price index contracts and actively monitored any large participant exposures. The Reserve Bank was consulted regularly on progress with the new arrangements over the year and recognises that the extension of the new stress testing framework to share price index contracts in early 2008 will represent a significant improvement over current arrangements.

The detailed assessment provided in the attachment indicates how SFECC has met the various measures that the Bank has set out as the minimum it considers relevant for meeting the standard.

## 5.3 ASX Settlement and Transfer Corporation (ASTC)

It is the Bank's assessment that ASX Settlement and Transfer Corporation complied with the *Financial Stability Standard for Securities Settlement Facilities* in the nine months to June 2007.

### Background on ASTC arrangements

ASTC operates within a sound legal framework, based on its Settlement Rules which under s822B of the *Corporations Act* have effect as a contract under seal between ASTC and each of its participants, and between each participant and each other participant. Among other things, the Settlement Rules specify the rights and obligations of ASTC and each of its participants, including in the event of default or suspension. During the assessment period ASTC's netting arrangements were 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 ASTC participant or a payment provider (See Attachment 2).

ASTC addresses settlement risk by the use of a model 3 delivery-versus-payment (DVP) mechanism, whereby settlement of payments occurs in a multilateral net batch, with interbank payment made across Exchange Settlement accounts at the Reserve Bank. Securities title is updated upon notification of funds settlement. Securities accounts are prevented from facilitating transfer prior to funds settlement so that one leg of a settlement cannot proceed without the other.

### Developments during the assessment period

As discussed above, ASTC sought to improve the legal certainty of the netting that takes place within its facility during the assessment period by gaining approval of its arrangements under the *Payment Systems and Netting Act*.

Each day ASTC calculates settlement obligations between its participants arising from financial market transactions. This involves the calculation of net settlement positions in funds and equity securities for each participant. The net payment positions between ASTC's participants give rise to interbank payment obligations. ASTC also calculates net interbank obligations between 'payment providers' acting on behalf of ASTC's participants. Payment providers settle those obligations across Exchange Settlement accounts held at the Reserve Bank.

ASTC applied to the Bank for these netting procedures to be approved under Part 3 of the *Payment Systems and Netting Act*. An approval protects the net amounts calculated in a multilateral netting arrangement in the event of legal challenge should a party to the arrangement enter external administration. Given the importance of legally robust clearing and settlement

arrangements to the financial markets which ASTC serves, the Bank issued an approval on 1 May 2007.

ASTC's systems were highly operationally reliable during the course of the assessment period, with no outages recorded. ASTC upgraded the capacity of its main system (CHES) in December 2006, to a target of 1,000,000 daily transactions. A system limit which constrains the number of instruments that can be lodged within CHES has also been identified and was upgraded subsequent to the assessment period.

ASTC has arrangements in place to allow the timely recovery of operations in the event of a contingency. ASTC has tested its ability to operate its production systems from its back-up site during the assessment period. An additional step of utilising back-up systems as the production system for a day's processing was taken in November 2007, subsequent to the assessment period.

## **Assessment**

It is the Bank's assessment that ASTC has complied with the *Financial Stability Standard for Securities Settlement Facilities* during the assessment period. The approval of its netting arrangements further strengthens its legal framework. The detailed assessment provided in the attachment indicates how ASTC has met the various measures that the Bank has set out as the minimum it considers relevant for meeting the standard.

## 5.4 Austraclear

It is the Bank's assessment that Austraclear complied with the *Financial Stability Standard for Securities Settlement Facilities* in the nine months to June 2007.

### Background on Austraclear arrangements

Austraclear operates within a sound legal framework, based on its Regulations, which under s822B of the *Corporations Act* have effect as a contract under seal between Austraclear and each of its participants, and between each participant and each other participant. Among other things, the Regulations specify 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 real-time gross settlement (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 (See Attachment 2).

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

### Developments during the assessment period

Austraclear introduced a new settlement system, EXIGO, in August 2006 to replace the FINTRACS system, which had operated for more than 20 years. During the assessment period EXIGO was operationally available for 99.33 per cent of the required time. Over this period, nine outages occurred, including three in excess of two hours – in October and November 2006 and February 2007. These outages were caused by a range of factors, including insufficient initial hardware capacity, database problems and software faults. During its early months of operation, EXIGO also at times performed slowly or participants had difficulty connecting. These problems were in part driven by higher than expected use of the system. The number of users of the new system was well in excess of the number that had been able to access FINTRACS and new functionality offered in EXIGO led to more intensive use of data query functions.

Austraclear has responded in a number of ways to these issues. It has upgraded and reconfigured system hardware and has modified its database management processes. A number of software patches have been implemented to address faults and streamline querying functionality. At a higher level, Austraclear has also conducted a review of system architecture and software code.

At times during the assessment period, loads on EXIGO were in excess of some of the key maximum performance indicators set out in the service level agreement between ASX and its outsourcing partner, OMX. These excesses included the peak volume of settlement

instructions processed by EXIGO, both in daily and hourly terms. Although there were no apparent performance issues as a result of these higher than agreed loads, it is important that Austraclear and its users be confident that the system can accommodate peak volumes and that this is reflected in contractual arrangements. Austraclear has recognised this and significantly higher performance standards have now been established in a revised service level agreement, implemented in July 2007.

Austraclear has announced its intention to bring key levels of operational support for EXIGO in-house. This work is expected to be completed in mid 2008.

The Bank recognises that Austraclear has taken the post-implementation problems with EXIGO very seriously and has devoted considerable resources to overcoming them. Recent availability experience has been much better than in late 2006 and early 2007.

Austraclear has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. Austraclear tests back-up arrangements quarterly. Due to the operational issues discussed above, Austraclear utilised its back-up systems as the production environment during the assessment period and did not undertake further testing of this type.

## **Assessment**

While the operational reliability of the EXIGO system during its early months of operation was a concern, the Bank is satisfied that the issue has been given a very high priority within the ASX group and that responses – including bringing key levels of support in-house – have been appropriate. It is the Bank's assessment that Austraclear has complied with the *Financial Stability Standard for Securities Settlement Facilities* during the assessment period. The detailed assessment provided in the attachment indicates how Austraclear has met the various measures that the Bank has set out as the minimum it considers relevant for meeting the standard.

# Attachment 1: Detailed Assessment against the Financial Stability Standards

## A1. Financial Stability Standard for Central Counterparties

The *Financial Stability Standard for Central Counterparties* requires that:

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.

There are ten measures that the Reserve Bank considers relevant in determining whether a facility has met the standard. The Bank has assessed ACH and SFECG against each of these measures; these assessments are outlined below. The full text of the measures is available on the Bank's website.

### A1.1 Australian Clearing House (ACH)

#### 1. Legal framework

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

ACH Pty Limited is a wholly owned subsidiary of ASX Limited. It acts as the central counterparty for equities, equity derivatives, certain interest rate products and warrants traded in ASX markets.

The legal basis for ACH's operation is set out in its Clearing Rules. Under s822B of the *Corporations Act*, these rules have effect as a contract under seal between ACH and each of its participants, and between each participant and each other participant. Furthermore, the netting arrangements contained in ACH's Clearing Rules 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 (see Attachment 2).

ACH's Clearing Rules 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 has occurred. The Clearing Rules 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.

At the end of June 2007, ACH had 67 participants. Sixty-five of these were also participants of ASX markets, while two provided specialist third-party clearing and settlement services.

ACH's participation requirements are designed to promote the safety and integrity of the central counterparty. Participants are subject to a risk-based capital requirement, which is determined according to the markets they serve and the exposures they face through counterparty, position and operational risks.<sup>3</sup> Participants must report their capital position on a monthly basis, with more stringent reporting requirements applying where a participant's capital falls below certain thresholds. The monitoring, assessment and investigation of matters relating to financial requirements is dealt with by the Prudential Risk Management section of ASX Markets Supervision, which is a separate subsidiary within the ASX group, with its own Board.

ACH participants are also subject to requirements regarding business and management integrity which are aimed at ensuring compliance with the ACH Clearing rules. Other requirements also pertain to technical and connectivity issues, as well as business continuity arrangements.

ACH has wide-ranging powers to sanction its participants in order to preserve the integrity of the central counterparty. ACH may terminate a participant's authority to clear all, or any, category of market transactions in the event of a default, or a breach of the Clearing Rules which ACH considers may have an adverse impact on the central counterparty.

Fair and open access to the central counterparty is maintained through the objectivity of participation requirements. Transparency is aided through the publication of these requirements, which are part of the Clearing Rules and procedures. The Clearing Rules also provide for an appeal process where applicants for participation are rejected or where a participant is terminated.

### **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.**

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

ACH must lodge any changes to its Clearing Rules with ASIC. Under s822E of the *Corporations Act* the Minister has 28 days to disallow any rule changes made by a licensed CS facility. ACH consults with its participants on important rule changes, and notifies participants of all changes to the Clearing Rules or procedures.

### **4. Novation**

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

- (a) the nature and scope of novation; and**
- (b) the point in the clearing process at which trades are novated.**

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<sup>3</sup> *Participants who only clear futures transactions may be subject to alternative prudential requirements under the ACH Clearing Rules.*

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

The point at which trades are novated is set out in the Clearing Rules. These specify that a broker-to-broker transaction on ASX markets is novated to ACH upon the acceptance and registration of the details of that market transaction within the clearing system operated by ACH. For physical equities transactions, novation occurs soon after the matching of the trade on the market. In the case of derivatives transactions, novation normally takes place on 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.**

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

- the exchange of one asset for another – mainly physical equities transactions. In this case, ACH utilises the settlement facility provided by ASTC; or
- payments to or from the central counterparty, such as in the case of margin payments relating to derivatives positions. In this instance, the facilities provided by either ASTC or Austraclear may be used.

In either case, ACH calculates bilateral net positions between itself and each of its clearing participants. These positions reflect payment obligations as well as securities obligations. These netting arrangements contained in ACH's Clearing Rules are protected as a 'netting market' under Part 5 of the *Payment Systems and Netting Act* (see Attachment 2).

The ASTC settlement process for the exchange of assets and settlement of other payments in relation to derivatives involves the use of a model 3 delivery-versus-payment (DVP) mechanism, whereby settlement of payments occurs in a multilateral net batch. ASTC calculates the settlement obligations of each of its settlement participants each day. These obligations may include net equities and derivatives transactions involving ACH as central counterparty, margin and other payments to and from ACH, and settlement of equities transactions not novated to ACH. The end result of this process is that ASTC participants have net payment positions to or from ASTC, and a net position in each type of equity security.

Once these net obligations have been calculated, ASTC confirms that sufficient securities are present in each participant's settlement account in ASTC's Clearing House Electronic Sub-register System (CHES). These accounts are then locked. The net payment obligations are forwarded for settlement between providers of cash settlement nominated by ASTC participants. Cash settlement between payment providers occurs as a batch across Exchange Settlement (ES) accounts held at the Reserve Bank in the Reserve Bank Information and Transfer System (RITS). Once this settlement has occurred, ASTC effects the net transfer of securities within CHES.



Where a participant elects to settle cash derivatives obligations using Austraclear, settlements are made via cash transfers. These settle in real-time through RITS across ES accounts.

ACH also clears grain and wool futures, which may be physically settled. Grain and wool futures are settled through commodity warehouses, where ACH holds title and transfers it to the buyer if, and only if, payment is received by the seller.

Settlement through either ASTC or Austraclear is final and irrevocable. ASTC's Settlement Rules state that settlement according to the terms of those rules is irrevocable. Furthermore, the netting undertaken by ASTC is reinforced through its approval under Part 3 of the *Payment Systems and Netting Act*. Settlement according to Austraclear's Regulations is final and irrevocable by virtue of its approval under Part 2 of the *Payment Systems and Netting Act*. Interbank transactions arising from settlements in ASTC and Austraclear are settled across ES accounts held with the Reserve Bank. Payments within this system are also final and irrevocable; this is again reinforced through the approval of RITS under Part 2 of the *Payment Systems and Netting Act* (see Attachment 2).

## 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.**

ACH's Clearing Rules set out notification requirements which participants must meet in relation to a default. A participant is required to inform ACH should it default under the Clearing Rules, which outline a range of incidents which constitute a default. These include the appointment of an external administrator (or a reasonable expectation that one will be appointed), a breach of ACH's capital requirements, or a failure to meet payment or settlement obligations to ACH.

The Clearing Rules provide ACH with the authority and flexibility to deal with a participant default and to ensure that settlement of novated positions occurs. For equities, ACH is able to reschedule any settlements involving the failed participant, or those affected by its failure. ACH may enter into market transactions to sell or purchase securities to ensure that final settlement of novated transactions occurs. For derivatives, ACH 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 rules are supplemented by an internal default management plan, which was finalised during the assessment period.

ACH 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 Risk controls, below).

## 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 is able to meet its obligations in the event of a participant failure. The inability of a central counterparty to do so could be extremely disruptive to the financial system. The focus of the Reserve Bank in this area is not on specifying which risk controls a central counterparty should use, but rather on ensuring that the combination of risk controls that is relied upon achieves a very low probability of a failure of the central counterparty.

The tools used by ACH to control risks operate at three broad levels: calling collateral based on participants' positions; pooled financial resources to cover the failure of a participant; and stress testing aimed at assessing the adequacy of financial resources overall and monitoring the risks being undertaken by individual participants. These risk controls are supplemented by ACH's participation requirements (Measure 2) and sophisticated monitoring and supervisory arrangements.

ACH levies margins on equity derivatives products, but not cash equity products. Margins protect the central counterparty should a participant default on its obligations and prices move against the central counterparty before it can close out the participant's positions. Premium margins are called on sold option positions to reflect their close-out price, and are updated on a daily basis to ensure that they are current. Variation margins are called on futures positions in order to 'mark-to-market' by settling gains or losses arising from price movements over the preceding day. Risk (or initial) margins are calculated for each derivative instrument to cover potential price movements over the period until a defaulted position could be closed out.

ACH calculates total risk margin requirements across each participant's portfolio using the internationally accepted Theoretical Inter-market Margining System (TIMS) methodology, developed by the Options Clearing Corporation. Margins are calculated overnight based on closing contract prices each day, and are notified to participants the next morning. Margin obligations must be met by 10.30am that day. Participants generally meet these obligations through cash, although they may also use collateral, such as equities and warrants.

Should conditions warrant, ACH is able to call margins intraday. Participants are generally required to meet such calls within two hours of notification. ACH is currently only able to

calculate intraday margin calls on the basis of price movements, not on the basis of changes to participants' positions during the day. ACH anticipates that upgrades to its Risk Management System will allow intraday monitoring of participant positions in the near future.

In March 2007, ACH implemented a system of Contributions based on participants' equities exposures. These differ from margins in that they are intended to cover potential losses from very large positions with the central counterparty in extreme, rather than normal, market conditions. Where a participant has a total net long position exceeding \$600 million, it must contribute collateral equivalent to 25 per cent of that excess to ACH. Where a participant has a net short position exceeding \$1.5 billion, it must contribute collateral equivalent to 10 per cent of that excess. This system is designed to provide a high degree of confidence that the central counterparty will be able to meet its obligations, even where losses from a participant default exceed ACH's 'Risk Resource Requirement' of \$150 million (see below). Participants are notified of their contributions by 9.30am and are required to meet them within two hours, either through a transfer of cash through the Austraclear system or through the provision of a bank guarantee from an approved authorised deposit-taking institution.

Some enhancements were made to the Contributions system in December 2007, including linking it directly to the new stress testing framework and the establishment of an equivalent margining regime for equity derivatives.

ACH maintains financial resources to protect against losses in excess of margins and other assets of a defaulting participant should a default occur. ACH's core financial resources – the 'Risk Resource Requirement' – consist of funds paid into a restricted capital reserve from the National Guarantee Fund (NGF) in 2005 and other ACH capital. The Risk Resource Requirement was increased during the assessment period and now totals \$150 million. In addition, ACH holds default insurance of \$100 million. ACH also has the ability through its Clearing Rules 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.

The liquidity needed to enable a central counterparty to meet its obligations in a timely manner may be quite different to the financial resources needed to meet losses arising from a default. For instance, additional liquidity may be required to allow cash market settlement to proceed even if the failed participant's positions can ultimately be liquidated without loss. ACH holds liquid assets (referred to as its Default Liquidity Requirement) of \$300 million. This is made up of the Risk Resource Requirement of \$150 million, as well as a bank credit line, also of \$150 million.

ACH uses daily stress tests to monitor the risks undertaken by individual participants and the adequacy of the central counterparty's financial resources. In June 2007 it implemented a new range of stress test scenarios which significantly increase the information it has to undertake this analysis. Stress tests are now based on 24 scenarios covering market-wide events, sector-specific scenarios and individual equity movements for major stocks. Volatility shifts are now incorporated in addition to price movements. While the new framework allows more nuanced analysis, the largest market-wide fall embodied in the tests has been reduced from 25 per cent to 15 per cent.

ACH also uses a subset of the new stress test scenarios to calculate a measure of the liquidity that would be required in the event of a participant default. This new model takes into account the practical processes that would need to be followed by the central counterparty to settle outstanding obligations, such as the rescheduling of settlements and any transfers of client accounts to surviving participants. ACH uses the results from this analysis to assess the adequacy of its Default Liquidity Requirement, which is currently \$300 million.

During the assessment period, there were a number of occasions when stress tests identified a potential loss from default in extreme market conditions in excess of ACH's Risk Resource Requirement and default insurance, although these excesses could have been covered by Emergency Assessments. Since Contributions were introduced in March, no potential losses have exceeded the combination of the Risk Resource Requirement, default insurance and Contributions. The Bank is satisfied that this meets the *Financial Stability Standard for Central Counterparties*.

## 8. Governance

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

The ACH Board is responsible for oversight of the operation of the central counterparty. It meets between six and eight times each year, and receives detailed reports on ACH's business and operations, risk management and financial performance. It is responsible for approving capital, liquidity and stress testing arrangements.

The ACH Board consists of ten directors. These include four members of ASX management (including the CEO and CFO), four ASX directors, and two external directors (one of whom chairs the Board). The ten directors filling these positions are also on the Boards of SFECC, ASTC and Austraclear. ACH and ASTC share a common chair, as do SFECC and Austraclear.

As a result of post-merger reorganisation within ASX, the risk policy and risk operations areas have been separated, with each having separate functions and reporting lines to the ACH Board. In addition, an internal Capital and Liquidity Committee has been established in order to provide greater focus to capital and liquidity issues across the ASX group.

## 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.**

ACH's key systems are the Derivatives Clearing System (DCS) and the Clearing House Electronic Sub-register System (CHESS). Operational risk in the CHESS system is dealt with in the assessment of ASTC.

DCS has been highly operationally reliable, with the system available for 100 per cent of the time over the period of this assessment. DCS also has sufficient capacity to meet future requirements. The average number of trades processed per day was around 4,650 (30 per cent of system capacity) with a peak number of daily trades of around 6,510.

The security of the DCS system is supported by access controls which are subject to external audit. External penetration testing of DCS is also conducted regularly.

ACH has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. It maintains an unmanned remote back-up facility which replicates the systems at the primary site. ACH has detailed contingency procedures which focus on the potential effects of a disruptive event. The plans focus on systems availability, access delays, capacity, continuity and the risk of loss of personnel supporting the system.

A test is completed annually to demonstrate that normal functions can be carried out using systems located at the back-up site. ACH also regularly tests its ability to operate its primary systems from its back-up site. A more extensive test, involving utilisation of back-up systems as the production environment for a day, took place subsequent to the assessment period. Through its Clearing Rules, ACH also requires its participants to have appropriate disaster recovery arrangements.

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

## **10. Regulatory reporting**

CS facility licensees are required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standards. These obligations include obligations to report breaches of the standard or breaches of risk management requirements. There are also obligations to report financial and stress-testing results on a quarterly basis. ACH satisfied all reporting obligations during the assessment period.

ACH has also voluntarily undertaken to report stress test outcomes that exceed its capital and default insurance – currently \$250 million.

### **A1.2 SFE Clearing Corporation (SFECC)**

#### **1. Legal Framework**

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

SFE Clearing Corporation Pty Limited (SFECC) is a wholly owned subsidiary of ASX Limited. It acts as the central counterparty for the SFE market.

The legal basis for SFECC's operation is set out in its Clearing Rules. Under s822B of the *Corporations Act*, these rules have effect as a contract under seal between SFECC and each of its participants, and between each participant and each other participant. Furthermore, the netting arrangements contained in SFECC's Clearing Rules 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 (see Attachment 2).

SFECC's Clearing Rules 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 has occurred. The Clearing Rules 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.**

At the end of June 2007, SFECC had 15 participants. Thirteen of these were also participants of the Sydney Futures Exchange, while two provided specialist clearing and settlement services.

SFECC's 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 net tangible asset requirement of \$5 million, with management discretion to impose a higher requirement. Participants are obliged to lodge a detailed financial report with SFECC on a monthly basis, or more frequently where their net tangible assets fall below certain thresholds. These monthly reports are used to calculate the capital based position limit, which restricts a participant's initial margin obligations to twice its net tangible assets requirement. The monitoring, assessment and investigation of matters relating to financial requirements is dealt with by the Prudential Risk Management section of ASX Markets Supervision, which is a separate subsidiary within the ASX group, with its own Board.

Under the Clearing Rules, a clearing participant may be automatically suspended under a number of circumstances, including where the participant is in default, if external management has been appointed, or if it has breached financial requirements and not rectified that breach. The SFECC Board can also suspend a clearing participant for misconduct, breaches of the Clearing Rules or if it ceases to satisfy the admission requirements. The Clearing Rules require SFECC to provide notice of a suspension, and detail appeal procedures for participants.

Fair and open access to the central counterparty is maintained through the objectivity of participation requirements. Transparency is aided through the publication of these requirements, which are part of the Clearing Rules and procedures. The Clearing Rules also provide for an appeal process where applicants for participation are rejected or where a participant is terminated.

## **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.**

SFECC's Clearing Rules and procedures are comprehensive and publicly available. The rules and procedures explain the role and responsibilities of participants and SFECC. Substantial

background information on SFECC's operations and risk management is also available on the ASX website.

SFECC must lodge any changes to its Clearing Rules with ASIC. Under s822E of the *Corporations Act*, the Minister has 28 days to disallow any rule changes made by a licensed CS facility. SFECC consults with its participants on important rule changes. Announcements affecting participants are issued as 'SFE Notices' which are targeted to participants and market users.

#### **4. Novation**

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

- (a) the nature and scope of novation; and
- (b) the point in the clearing process at which trades are novated.

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

The point at which trades are novated is set out in the Clearing Rules. These specify that a transaction on the SFE market is novated to SFECC upon the registering of a matched trade by the market. Non-market trades are novated once their details have been approved and registered by SFECC.

#### **5. Settlement**

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

The vast majority of settlements undertaken to extinguish exposures of SFECC 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 SFECC calculates the net positions of each of its participants. SFECC participants who have a net short cash position with the central counterparty are required to make payments to SFECC in Austraclear by 11.00am each morning. Once these payments have been received, SFECC makes payments to participants who have a net long cash position with the central counterparty. Interbank settlement of these payments occurs between providers of cash settlement assets across Exchange Settlement (ES) accounts held at the Reserve Bank in the Reserve Bank Information and Transfer System (RITS).

In some cases, the settlement of derivatives contracts cleared by SFECC involves the transfer of a security or physical asset with a corresponding transfer of cash. For each type of security or asset, SFECC's arrangements ensure that delivery occurs if, and only if, payment occurs and vice versa.

For 90-day bank bill futures, SFECC utilises the standard settlement process in Austraclear. SFECC makes use of the ASTC settlement system for the settlement of deliverable equity futures. In this case, the buyer makes payment to SFECC's Austraclear account and the payment is only released to the seller when both the buyer and the seller have confirmed the transfer of securities.

Similar procedures exist for the delivery of New Zealand equities with the transfer of securities occurring in the New Zealand Stock Exchange's settlement system. The delivery of greasy wool is via a warehouse, with SFECC retaining title documentation until payment has been made.

The settlement of obligations is final and irrevocable according to the terms of SFECC's Clearing Rules and SFE's Market 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 across ES accounts held with the Reserve Bank. Payments within this system are also final and irrevocable; this is again supported through the approval of RITS under Part 2 of the *Payment Systems and Netting Act*. The settlement of equities through ASTC is also final and irrevocable according to the terms of ASTC's Clearing Rules, which are also supported through an approval under the *Payment Systems and Netting Act* (see Attachment 2).

## 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.

SFECC's Clearing Rules set out notification requirements which participants must meet in relation to a default. Participants are required to inform SFECC immediately should they default according to the Clearing Rules, or if they reasonably expect that this will occur. An event of default under the Clearing Rules includes where a participant becomes subject to external administration, is unable to meet any obligations relating to open contracts, or is in breach of the central counterparty's risk control requirements, such as meeting margin or other payments to the central counterparty.

The Clearing Rules provide SFECC with the authority and flexibility to deal with a participant default. SFECC has the ability to close out any open contracts, to exercise or abandon open contracts, or to transfer client positions along with related margin payments. These formal rules are supplemented by an internal default management plan.

SFECC 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 Risk controls, below).

## 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 is able to meet its obligations in the event of a participant failure. The inability of a central counterparty to do so could be extremely disruptive to the financial system. The focus of the Reserve Bank in this area is not on specifying which risk controls a central counterparty should use, but rather on ensuring that the combination of risk controls that is relied upon achieves a very low probability of a failure of the central counterparty.

The tools used by SFECC to control risks operate at three broad levels: calling collateral based on participants' positions; pooled financial resources to cover the failure of a participant; and stress testing aimed at both assessing the adequacy of financial resources overall and monitoring the risks being undertaken by individual participants. These risk controls are supplemented by SFECC's participation requirements (Measure 2) and sophisticated monitoring and supervisory arrangements.

SFECC levies margins on the derivatives products it clears. Margins protect the central counterparty should a participant default on its obligations and prices move against the central counterparty before it can close out the participant's positions. Initial (risk) margins are calculated for each derivative instrument so as to cover a minimum of 99 per cent of the distribution of underlying two-day price movements. SFECC calculates total initial margin requirements across each participant's portfolio using the internationally accepted Standard Portfolio Analysis of Risk (SPAN) methodology, developed by the Chicago Mercantile Exchange. Margins are calculated overnight based on closing contract prices each day, and are notified to participants by 7.00am the next morning. Margin obligations must be met by 11.00am. Participants generally meet these obligations using cash, although they may also use collateral, such as eligible debt securities and equities, and foreign currency deposits. All collateral is subject to haircuts.

SFECC also levies variation margins on derivatives positions in order to 'mark-to-market' by settling gains or losses arising from price movements over the preceding day. Should conditions warrant, SFECC is also able to call variation margins intraday, based on movements in positions and prices. Participants are usually given up to two hours from the notification of an intraday margin call to meet this obligation. Both variation and intraday margin obligations must be met using cash.

SFECC also uses a system of additional initial margins (AIMs), based on participants' exposures in SFE's four largest contracts. AIMs are intended to cover potential losses from very

large positions with the central counterparty in extreme, rather than normal, market conditions. SFECC calculates potential exposures using a system of stress tests (see below). Participants must contribute cash or collateral equivalent to the excess of any exposure above their stress test exposure limit (STEL). This limit is \$200 million for highly-rated participants. For lower-rated participants, the limit is calculated as 50 per cent of a participant's net tangible assets, up to a maximum of \$100 million. This system is designed to provide a high degree of confidence that the central counterparty will be able to meet its obligations, even where losses from a participant default (or the default of two lower-rated participants) exceed SFECC's capital and insurance resources (see below). Like other margins, AIMS are calculated overnight, notified to participants at 7.00am the next day, and must be met by 11.00am. Participants may meet these obligations using cash or collateral, including Commonwealth Government securities and bank bills or letters of credit from authorised deposit-taking institutions.

SFECC maintains financial resources to protect against losses in excess of margins and other assets of a defaulting participant should a default occur. SFECC's core financial resources include SFECC capital of \$80 million and participant contributions of \$60 million. In addition, SFECC holds default insurance of \$60 million. SFECC also has the ability through its Clearing Rules to levy its participants a further \$30 million.

SFECC uses daily stress tests of its four major contracts to monitor the risks undertaken by individual participants and the adequacy of the central counterparty's financial resources. The scenarios utilised during the assessment period stressed different contracts unevenly and had in some cases become less relevant over time. This was particularly the case for share price index scenarios, given the strong rise in share prices over recent years. In response, SFECC has developed a new suite of portfolio and single-contract stress test scenarios based on statistical analysis of historical market movements. These provide more consistent tests across contract types and are tailored to SFECC's risk tolerance, as defined by its Board. Stresses applied to equity index contracts are significantly stronger than under the existing framework.

Implementation of the new framework was deferred twice during the assessment period to allow additional time for consultation with both industry participants and the Bank. The Bank did not object to these delays, recognising that any new arrangements had to consider the overall risk management framework and the efficiency of the market. SFECC implemented its new framework, for all but the individual share price index scenarios, on 20 November 2007. It is seeking to introduce the remaining individual share price index scenarios in the first quarter of 2008, in conjunction with a significant increase in its financial resources.

## 8. Governance

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

The SFECC Board meets around seven times each year. At each meeting it receives reports on participant activity, management of treasury and risk functions, financial position, and operational performance. It is responsible for approving capital, liquidity and stress testing arrangements.

The SFECC Board consists of ten directors. These include four members of ASX management (including the CEO and CFO), four ASX directors, and two external directors (one of whom chairs the Board). The ten directors filling these positions are also on the Boards of ACH, ASTC and Austraclear. ACH and ASTC share a common chair, as do SFECC and Austraclear.

As a result of post-merger reorganisation within ASX, the risk policy and risk operations areas have been separated, with each having separate functions and reporting lines to the SFECC Board. In addition, an internal Capital and Liquidity Committee has been established in order to provide greater focus to capital and liquidity issues across the ASX group.

## 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.**

SFECC's key system is SECUR. OMX manages the primary and back-up sites for the SECUR system. SECUR has been highly operationally reliable, with the system available for 99.98 per cent of the time over the period of this assessment. SECUR also has sufficient capacity to meet future requirements. The average number of trades processed per day was 22,059 (around 12 per cent of system capacity) with a peak number of daily trades of 51,382.

The security of SECUR is supported by access controls which are subject to external audit. External penetration testing of systems is also conducted regularly.

SFECC has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. OMX maintains an unmanned remote back-up facility which replicates the systems at the primary site. SFECC maintains a separate back-up site for other systems, including clearing risk systems. SFECC has detailed contingency procedures which focus on the potential effects of a disruptive event. The plans focus on systems availability, access delays, capacity, continuity and the risk of loss of personnel supporting the system.

Critical areas regularly test their ability to operate from the back-up site using systems at the primary site. Back-up systems are usually tested at least annually, although a full test of back-up systems was not held over the assessment period. A more extensive test, utilising back-up systems as the production environment for a day, was undertaken in late 2007. Through its Clearing Rules, SFECC also requires its participants to have appropriate disaster recovery arrangements.

Within its key outsourcing arrangement with OMX, SFECC has a prescribed disengagement plan that provides access to required infrastructure and resources to continue operation in the event that OMX becomes insolvent. SFECC also sources some key resources from ASX Operations, a subsidiary of ASX Limited, which is responsible for supplying the ASX Group with personnel and technological resources.

## 10. Regulatory reporting

CS facility licensees are required to meet certain reporting obligations to the Reserve Bank under the Financial Stability Standards. These obligations include obligations to report breaches of the standard or breaches of risk management requirements. There are also obligations to report

financial and stress-testing results on a quarterly basis. SFECC satisfied all reporting obligations during the assessment period.

## **A2. Financial Stability Standard for Securities Settlement Facilities**

The *Financial Stability Standard for Securities Settlement Facilities* requires that:

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.

The 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.

The threshold value for the application of the standard was established to ensure that small securities settlement facilities, which are unlikely to affect the overall stability of the Australian financial system, are not subject to unnecessary regulation.

There are eight measures that the Reserve Bank considers relevant in determining whether a facility has met the standard. The Bank has assessed ASTC and Austraclear against each of these measures; these assessments are outlined below. The full text of the associated measures is available on the Reserve Bank's website.

### **A2.1 ASX Settlement and Transfer Corporation (ASTC)**

#### **1. Legal Framework**

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

ASTC Pty Limited is a wholly owned subsidiary of ASX Limited. It provides settlement services for ASX markets, as well as for a small number of transactions undertaken on the National Stock Exchange (NSX).

The legal basis for ASTC's operation is set out in its Settlement Rules. Under s822B of the *Corporations Act*, these rules have effect as a contract under seal between ASTC and each of its participants, and between each participant and each other participant. The Settlement Rules set out the rights and obligations of participants and ASTC, including in the event of default or suspension.

During the assessment period, the netting arrangements undertaken by ASTC with respect to its participants' obligations were approved as a netting arrangement 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 ASTC participant or a payments provider (see Attachment 2).

#### **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.

At the end of June 2007, ASTC had 115 participants. Its participation requirements are designed to promote the safety and integrity of the facility. They address financial and business integrity issues, as well as operational and technical matters. Performance bonds must be lodged by participants that are not subject to prudential supervision as an ADI or under the ACH Clearing Rules or ASX Market Rules. ASTC may call upon these bonds for compensation of loss incurred due to a participant contravening the Settlement Rules.

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

Fair and open access to the securities settlement facility is maintained through the objectivity of participation requirements. Transparency is aided through the publication of these requirements, which are part of the Settlement Rules and procedures. The Settlement Rules also provide for an appeal process where applicants for participation are rejected or where a participant is terminated.

### **3. Understanding risks**

**The securities settlement facility's rules and procedures must enable each participant to understand the securities settlement facility's impact on each of the financial risks the participant incurs through participation in the facility.**

ASTC's Settlement Rules are comprehensive and publicly available. The rules and procedures explain the role and responsibilities of each category of participant and ASTC. Substantial background information on ASTC's operations and risk management is also available on the ASX website.

ASTC must lodge any changes to its Settlement Rules with ASIC. Under s822E of the *Corporations Act* the Minister has 28 days to disallow any rule changes made by a licensed CS facility. ASTC consults with its participants on important rule changes, and notifies participants of all changes to the Settlement Rules or procedures.

### **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.**

All securities held by ASTC are dematerialised and held in its Clearing House Electronic Sub-register System (CHESS). Title is held in the name of clients of ASTC participants. The system does not record any details of encumbrances, other than collateral lodged in favour of ACH. CHESS sub-registers form part of the issuer's securities register.

The transfer of title to securities in CHESS is effected by book entry, with ownership details updated electronically. Settlement occurs through a delivery-versus-payment (DVP) process which is effected via a daily scheduled batch settlement cycle. ASTC's Settlement Rules also provide for transferring securities without payment, where required.

In the event of ASTC's insolvency, the rules and arrangements for title within ASTC provide a high degree of assurance that participants' securities will be immune from claims by ASTC's creditors. ASTC is not the legal owner of any participant or client assets, which are recorded in CHES 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 ASTC occurs on a model three delivery-versus-payment (DVP) basis.<sup>4</sup> This involves the transfer of net payment and net securities obligations between buyers and sellers together at the end of the processing cycle. ASTC also provides for the settlement of cash obligations in relation to derivatives, which are also settled on a net basis. ASTC's Settlement Rules establish that settlement according to the terms of those rules is final and irrevocable. This is reinforced through legislation (see Legal Framework, above).

"Payment providers" hold Exchange Settlement (ES) accounts at the Reserve Bank and act on behalf of ASTC settlement participants. Payment obligations are settled between payment providers in the Reserve Bank's RITS system in a single daily multilateral net batch. Hence settlement is in central bank money. ASTC is notified immediately upon settlement of the batch and securities holdings in CHES are adjusted, thus ensuring DVP settlement.

The finality of the ASTC'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 a real-time gross settlement (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 (see Attachment 2).

## 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.

ASTC's Settlement Rules allow it to cancel or suspend a participant or a payment provider if they become subject to external administration, or if they reasonably suspect that it may occur.

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<sup>4</sup> There is provision for DVP to occur on a trade-by-trade basis using CHES RTGS, but this option has yet to be used.

Participants and payment providers are required to notify ASTC if they, or any other participant or payment provider, become subject to external administration or where they reasonably suspect it may occur.

ASTC's Settlement Rules 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.

ASTC's Settlement Rules allow it to remove transactions from batch settlement under certain circumstances, including where a participant is subject to external administration. ASTC has procedures and mechanisms in place to allow it to recast a batch ensuring that settlement would be carried out in a timely manner.

## **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.**

ASTC's key system is the Clearing House Electronic Sub-register System (CHES).

CHES has been highly operationally reliable, with the system available for 100 per cent of the time over the period of this assessment. CHES also has sufficient capacity to meet future requirements. The system capacity of CHES was upgraded in December 2006, to a target of 1,000,000 transactions per day. Since this upgrade, the average number of trades processed per day has been around 270,000 (27 per cent of system capacity) with a peak number of daily trades of around 340,000.

The security of the CHES system is supported by access controls which are subject to external audit. External penetration testing of CHES is also conducted periodically.

ASTC has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. It maintains an unmanned remote back-up facility which replicates the systems at the primary site. ASTC has detailed contingency procedures, which focus on the potential effects of a disruptive event. The plans focus on systems availability, access delays, capacity, continuity and the risk of loss of personnel supporting the system.

A test is completed annually to demonstrate that normal functions can be operated using systems located at the back-up site. ASTC also regularly tests its ability to operate its primary systems from its back-up site. A more extensive test, involving utilisation of back-up systems as the production environment for a day, took place subsequent to the assessment period. Through its Settlement Rules ASTC also requires its participants to have appropriate disaster recovery arrangements.

ASTC sources its key resources from ASX Operations, a subsidiary of ASX Limited, which is responsible for supplying the ASX Group with personnel and technological resources. ASTC has a written support agreement with ASX Operations, which helps to ensure its access to these resources in the event of 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 include obligations to report breaches of the standard or breaches of risk management requirements. There are also obligations to report financial results on a quarterly basis. ASTC satisfied all reporting obligations during the assessment period.

### A2.2 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. It provides settlement services for the over-the-counter debt market and for derivatives traded on the SFE and ASX markets.

The legal basis for Austraclear's operation is set out in its Regulations. Under s822B of the *Corporations Act*, these rules 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 a real-time gross settlement (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 (see Attachment 2).

#### 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.**

Austraclear has 736 participants. Its participation requirements are designed to promote the safety and integrity of the facility. They address financial and operational aspects of participation, 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 participant breaching the Regulations.

Fair and open access to the securities settlement facility is maintained through the objectivity of participation requirements. Transparency is aided through the publication of these requirements, which are part of the Regulations and procedures. The Regulations also provide for an appeal process where applicants for participation are rejected or where a participant is terminated.

#### 3. Understanding risks

**The securities settlement facility's rules and procedures must enable each participant 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 rules 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 Clearing Rules with ASIC. Under s822E of the *Corporations Act* the Minister has 28 days to 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 'SFE 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.**

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

*Paper securities* are negotiable instruments such as 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 which are not registered within the Austraclear system. They include Commonwealth Government securities, registrable state and semi-government securities and corporate debt. Austraclear holds legal title in each of the registries 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'.<sup>5</sup> This legal structure imposes rights and obligations which replicate the rights and obligations of a negotiable instrument.

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'<sup>6</sup> which maintains the negotiability of paper securities. 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.

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.

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5 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.

6 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.

## 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 Austraclear occurs on a model one delivery-versus-payment (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.

"Participating banks" hold Exchange Settlement (ES) accounts at the Reserve Bank and act on behalf of other Austraclear participants. Delivery 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. For securities transactions, title is then transferred immediately between participants, ensuring DVP settlement.

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 RTGS system under Part 2 of the *Payment Systems and Netting Act* (see Attachment 2).

## 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.

Austraclear's Regulations allow it to cancel or suspend a participant or a payment provider if they become subject to external administration, or if it reasonably suspects that it may occur. Participants and payment providers are required to notify Austraclear if they, or any other participant or payment provider, become subject to external administration or where they reasonably suspect it may occur.

There is no restriction within the Austraclear Regulations from a participant changing its payment provider, including where that provider is insolvent.

Austraclear does not have arrangements for dealing with the unsettled transactions of its participants, although its model one DVP arrangement ensures that principal risk does not arise. The markets Austraclear serves trade on an over-the-counter (OTC) basis without the presence of a central counterparty. Consequently, replacement risk for any trade left unsettled due to an insolvency is borne directly by trade counterparties.

## 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.**

Austraclear's key system is EXIGO, which replaced the FINTRACS system in August 2006. OMX manages the primary and back-up sites for the EXIGO system.

During the assessment period EXIGO was operationally available for 99.33 per cent of the required time. Austraclear's availability target for EXIGO is greater than 99.9 per cent during its opening hours, which are 11 hours per day in winter and 13 hours per day during Australian Eastern Daylight Time.

There were nine outages during the assessment period, including three in excess of two hours. These outages were caused by a range of factors, including insufficient hardware capacity, database problems and software faults. At other times EXIGO has performed slowly or participants have had difficulty connecting. These problems were in part caused by higher than expected use of the facility. The number of users of the new system was significantly higher than anticipated and the new functionality offered in EXIGO led to more intensive use of data query functions.

Austraclear has responded in a number of ways to these issues. It has upgraded and reconfigured system hardware and has modified its database management processes. A number of software patches have been implemented to address faults and streamline querying functionality. At a higher level, Austraclear has also conducted a review of system architecture and software code. The Bank recognises that Austraclear has taken these problems very seriously and has devoted considerable resources to overcoming them.

At times during the assessment period, loads on EXIGO were in excess of some of the key maximum performance indicators set out in the service level agreement between ASX and its outsourcing partner, OMX. These excesses included the peak volume of settlement instructions processed by EXIGO, both in daily and hourly terms. Although there were no apparent performance issues as a result of these higher than agreed loads, it is important that Austraclear and its users be confident that the system can accommodate peak volumes and that this is reflected in contractual arrangements. Austraclear has recognised this and significantly higher performance standards have now been established in a revised service level agreement implemented in July 2007. Under the new agreement, 30,000 settlement instructions per day will be accommodated, compared with 18,000 under the old agreement. Peak hourly instructions accommodated will rise from 4000 to 10,000.

The security of the EXIGO system is supported by access controls which are subject to external audit. External penetration testing of EXIGO is also conducted periodically.

Austraclear has arrangements in place to allow the timely recovery of its usual operations in the event of a contingency. OMX maintains an unmanned remote back-up site which replicates the systems at the primary site. Austraclear has detailed contingency procedures which address a range of events. The plans detail arrangements for communications, computer systems and key personnel.

Austraclear tests back-up arrangements quarterly. Due to the operational issues discussed above, Austraclear has also utilised its back-up systems as part of the production environment during the assessment period. Through its Regulations, Austraclear requires its participants to have appropriate disaster recovery arrangements.

Within its key outsourcing arrangement with OMX, Austraclear has a prescribed disengagement plan that provides access to required infrastructure and resources to continue operation in the event that OMX becomes insolvent. Austraclear also sources some key resources from ASX Operations, a subsidiary of ASX Limited which is responsible for supplying the ASX Group with personnel and technological resources.

## **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 obligations to report breaches of the standard or breaches of risk management requirements. There are also obligations to report financial results on a quarterly basis. Austraclear satisfied all reporting obligations during the assessment period.

## Attachment 2: Approvals under the *Payment Systems and Netting Act*

The *Payment Systems and Netting Act 1998* sets out a range of legal protections for payments systems and netting arrangements within the Australian financial system. Of particular relevance to licensed clearing and settlement (CS) facilities are three of these protections which apply to:

- market netting contracts;
- approved multilateral netting arrangements; and
- approved real-time gross settlement (RTGS) payment systems.

### **Market netting contracts**

Approvals under Part 5 of the *Payment Systems and Netting Act* are granted by the Minister with portfolio responsibility for financial markets. These approvals provide legal certainty to netting undertaken as part of the process of clearing financial market transactions, and to the novation of transactions to a central counterparty. Part 5 approvals also protect any margin or collateral payments lodged with a central counterparty by a participant in the event that the participant enters external administration, allowing the central counterparty to apply these assets to offset any losses it may incur.

ACH and SFECCE have each been approved under Part 5 for the netting they conduct with respect to transactions undertaken in the ASX and SFE markets respectively.

### **Approved multilateral netting arrangements**

Approvals under Part 3 of the *Payment Systems and Netting Act* are made by the Reserve Bank and relate to multilateral netting arrangements. Rather than routinely paying and receiving gross obligations, some payment systems calculate net amounts which participants in the system are obliged to pay or receive. This is convenient and efficient, but carries the risk that where a participant enters external administration, its administrator might ‘cherry pick’ and insist that solvent institutions meet their gross obligations to pay it while refusing to honour its obligation to do likewise. Solvent parties would then receive little in return for their payments to the failed institution, putting them under liquidity pressures and potentially threatening their own solvency. An approval under Part 3 ensures that the amounts calculated through a multilateral netting arrangement cannot be set aside.

The multilateral netting arrangement operated by ASTC with respect to the settlement of equities and derivatives obligations was approved under Part 3 of the *Payment Systems and Netting Act* in May 2007.

## Approved RTGS payment systems

Approvals under Part 2 of the *Payment Systems and Netting Act* are made by the Reserve Bank and apply to RTGS systems. These systems allow for the continuous settlement of funds or securities transactions individually on an order-by-order basis. The strength of such a system is that payments cannot be unwound if a participant were to fail after having made payments earlier in the day. However, under the so-called ‘zero hour’ rule, a court may date the bankruptcy of an institution from the midnight before the bankruptcy order is made. Such a rule would threaten the irrevocable nature of payments in an RTGS system. An approval under Part 2 exempts transactions in approved RTGS systems from a possible ‘zero hour’ ruling.

Austraclear and RITS have each been approved under Part 2 of the *Payment Systems and Netting Act*.