

A2. Details Supporting Assessment of Securities Settlement Facilities

The following provides detailed evidence relevant to the Australian Securities and Investments Commission's (ASIC's) and the Reserve Bank's (the Bank's) assessment of how the securities settlement facilities (SSFs) ASX Settlement Pty Limited (ASX Settlement) and Austraclear Limited (Austraclear) observe each of the relevant Principles and underlying Key Considerations of the *Principles for Financial Market Infrastructures* (the PFMI) developed by the Committee on Payment and Settlement Systems (CPSS, now the Committee on Payments and Market Infrastructure (CPMI)) and the Technical Committee of the International Organization of Securities Commissions (IOSCO). It includes ASIC's and the Bank's ratings of how well ASX Settlement and Austraclear comply with each of the Principles at 30 June 2014.¹

A2.1 ASX Settlement

ASX Settlement is a wholly owned subsidiary of ASX Settlement Corporation Limited, itself a wholly owned subsidiary of ASX Limited (see 'ASX Group Structure' in Section 2.3.1). ASX Settlement is an SSF that provides settlement services for the ASX market and, through ASX's Trade Acceptance Service, Approved Market Operators (AMOs) such as Chi-X Australia Pty Ltd (Chi-X). ASX Settlement also provides a delivery-versus-payment (DvP) settlement service for a small number of transactions undertaken on other markets that provide a platform for trading securities that are not listed on the ASX market, such as the National Stock Exchange of Australia, through ASX's Settlement Facilitation Service. This service is an alternative to the transfer service previously offered to these Approved Listing Market Operators (ALMOs). In May 2014 ASX Settlement launched the mFund Settlement Service for unlisted managed funds.

Principle 1: Legal basis

A securities settlement facility should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 1. The legal basis of ASX Settlement is described in further detail under the following Key Considerations.

1.1 The legal basis should provide a high degree of certainty for each material aspect of a securities settlement facility's activities in all relevant jurisdictions.

Legal basis

ASX Settlement's settlement and netting arrangements for transactions entered into by its participants require a high degree of legal certainty. Key components of the legal framework under which the SSF operates are:

¹ For an explanation of ASIC's and the Bank's Assessment approach and the ratings scale used, see Section 3.1.

- ASX Settlement holds a clearing and settlement (CS) facility licence, under Part 7.3 of the *Corporations Act 2001*. This licence is administered by ASIC in consultation with the Bank, with the Minister acting as ultimate decision-maker on licensing matters.
- ASX Settlement has defined Operating Rules and Procedures. Under section 822B of the Corporations Act, these Operating Rules and Procedures have effect as a contract under seal between: ASX Settlement and each of its participants; each participant and each other participant; and each participant and each issuer. The Operating Rules and Procedures set out the rights and obligations of participants and ASX Settlement, including in the event of default or suspension.
- The netting arrangements contained in ASX Settlement's Operating Rules are protected as an 'approved netting arrangement' under Part 3 of the PSNA, and the finality of money settlements is supported by the approval of the Reserve Bank Information and Transfer System (RITS) as a real-time gross settlement (RTGS) system under Part 2 of the PSNA (Key Consideration 1.4).
- ASX Settlement is a 'prescribed CS facility' for the purposes of Part 7.11, Division 4, of the Corporations Act. Section 1074D of the Corporations Act protects the validity of the transfer of a financial product effected through a prescribed CS facility in accordance with that facility's Operating Rules. Section 10 of the ASX Settlement Operating Rules specifies when transactions are taken to be settled.

The legal basis of ASX Settlement's activities is reviewed by ASX Legal whenever there are material amendments to the Operating Rules or Procedures. Four such reviews occurred for ASX Settlement during 2013/14.

Legal entity

ASX Settlement is a wholly owned subsidiary of ASX Settlement Corporation Limited, which is itself a wholly owned subsidiary of ASX Limited. As a separate legal entity, ASX Settlement's securities settlement activities are separate from the activities conducted by ASX's other clearing and settlement (CS) facilities and the rest of the ASX Group, notwithstanding the sharing of operational resources across multiple entities within the group.

ASX Settlement's services are limited to settlement services for the ASX market and other AMOs, such as Chi-X, through the Trade Acceptance Service, a DvP settlement service for a small number of transactions undertaken on ALMOs through the Settlement Facilitation Service, and the mFund Settlement Service for subscriptions and redemption transactions in unlisted managed funds. Accordingly, ASX Settlement does not provide any services that have a distinct profile from, or pose additional risks to, its activity of operating a SSF.

Rights and interests

The rights and interests of ASX Settlement, its participants and, where relevant, its participants' customers in securities held in the Clearing House Electronic Sub-register System (CHES) are defined in ASX Settlement's Operating Rules and Procedures (see Principle 11).

1.2 A securities settlement facility should have rules, procedures and contracts that are clear, understandable, and consistent with relevant laws and regulations.

Section 822A of the Corporations Act establishes a framework to prescribe the matters that must be dealt with in the Operating Rules and those that may be considered under the Procedures. Rule changes are subject to a ministerial disallowance process.

ASX Settlement's Operating Rules and Procedures are supplemented with explanatory material, published on ASX's public website and ASX's restricted participant website, to support participants' (and prospective participants') understanding of the risks they face through participation in the system. Publicly available material includes high-level descriptions of ASX Settlement's operations and settlement process, business continuity arrangements and the Default Management Framework (as it applies to participants that also participate in ASX Clear). Participants have access to additional manuals, reports and explanatory notes covering such topics as the application process for new participants, compliance, technical and operational details and fees.

There is a clear process for changing ASX Settlement's Operating Rules and Procedures. Proposed rule changes may be submitted informally to ASIC. In consultation with the Bank, ASIC will consider the changes and advise ASX of any regulatory concerns. Once such concerns are satisfactorily addressed, ASIC will invite formal submission of the proposed changes, which triggers a 28-day 'disallowance' period, during which the Minister may choose to disallow the changes. The Minister considers a number of factors, including whether the proposed changes are consistent with the public interest. To assist the Minister in this process, ASIC provides detailed advice to the Minister, incorporating the views of the Bank as appropriate. If changes to the Operating Rules are not disallowed by the Minister, they are notified to participants via the ASX website.

1.3 A securities settlement facility should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

The legal basis for the activities of ASX Settlement and the facility's protection as an approved netting arrangement under the PSNA – see also Key Consideration 1.4 – are described on the ASX public website in its Disclosure Framework document, which sets out in detail how each CS facility meets the requirements of each Principle within the *Principles for Financial Market Infrastructures* (PFMIs) developed by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO) (see Key Consideration 23.2).²

On behalf of each licensed entity within the ASX Group, including all CS facilities, ASX Limited submits an Annual Group Licence Report to ASIC and the Bank. This report sets out the legal basis for the CS facilities' activities under their licence obligations, and is used by ASIC in the preparation of ASIC's Market Assessment Report for the ASX Group.

ASX Settlement may seek independent legal opinions on relevant legal matters relating to significant new services, including any implications that their introduction may have for the legal basis of existing functionality. These opinions may, in some circumstances, be shared with participants or other stakeholders for their information, particularly to demonstrate that new Operating Rules will have the intended legal effect.

1.4 A securities settlement facility should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the securities settlement facility under such rules and procedures will not be voided, reversed, or subject to stays.

² Available at <http://www.asx.com.au/documents/regulation/pfmi_disclosure_framework.pdf>.

Settlement finality

The finality of ASX Settlement's settlement process is protected by:

- its approval as a netting arrangement under Part 3 of the PSNA. This approval protects the finality of settlements made in ASX Settlement's multilateral net batch in the event of a participant entering external administration (see Key Consideration 8.1)
- the approval of RITS as an RTGS system under Part 2 of the PSNA (see Principle 9). This approval protects payments from being voided in the case of a Payment Provider entering external administration
- its designation as a 'prescribed CS facility' for the purposes of Part 7.11, Division 4 of the Corporations Act, in relation to the transfer of financial products effected through the settlement facility.

Enforceability of ASX rules while under external administration

ASX Legal has analysed the legal enforceability of ASX Settlement's Operating Rules upon the SSF's entry into external administration, and has identified no material legal risk to enforceability.

1.5 A securities settlement facility conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

Although ASX Settlement's operations are based in Australia, participants of ASX Settlement include subsidiaries and branches of entities that are based in foreign countries. ASX Settlement's Operating Rules are governed by Australian law and require that all of its participants submit to the non-exclusive jurisdiction of New South Wales courts. ASX Legal's analysis of potential conflicts of law across jurisdictions has identified no material legal risks.

Principle 2: Governance

A securities settlement facility should have governance arrangements that are clear and transparent, promote the safety and efficiency of the securities settlement facility, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 2. ASX Settlement's governance arrangements are described in further detail under the following Key Considerations.

2.1 A securities settlement facility should have objectives that place a high priority on the safety and efficiency of the securities settlement facility and explicitly support financial stability and other relevant public interest considerations.

The high-level objectives of ASX Settlement are set out in the CS Boards' Charter, which is available on the ASX public website. The objectives prioritise the Boards' responsibilities in the area of risk management and, in particular, ASX Settlement's responsibility for complying with the Bank's Financial Stability Standards (FSS), which are aligned with stability-related requirements of the Principles.

ASX Settlement's objectives recognise the public interest. These objectives are reflected in the ASX Limited Board Charter, which provides that the Board has a responsibility to oversee the conduct of the affairs of the ASX Group consistent with licence obligations, as well as public policy objectives directed at financial market and payments system integrity. The CS Boards' Charter also specifically acknowledges the Board's public interest responsibilities, as well as its obligations under Part 7.3 of the Corporations Act (dealing with licensing of CS facilities). These include that ASX Settlement, to the extent that is reasonably practicable to do so, comply with relevant FSS and do all other things necessary to reduce systemic risk arising from its services, and that its services are provided in a fair and effective way.

To support the interests of its customers, ASX has developed a Customer Charter, which is referenced in the CS Boards' Charter. The Customer Charter commits that ASX: work with its customers to deliver products and services that meet their needs and provide them with choice; make its products and services available on a non-discriminatory basis and on reasonable commercial terms; and manage its businesses and operations on a commercial basis to benefit its customers and provide appropriate returns to ASX shareholders. The Customer Charter recognises ASX's role as a provider of critical infrastructure to the Australian financial markets and commits to make the necessary investments to ensure it can fulfil this role and provide confidence to market participants, investors and regulators.

ASX Settlement's governance arrangements allow for appropriate consideration of stakeholder views. When considering major operational or risk management changes, or new services, ASX uses stakeholder forums, and formal and informal consultation processes to communicate proposed changes to relevant stakeholders (see Key Consideration 2.7). Consultations and responses to consultations are made available on the ASX website. In addition, the ASX Group has disclosure obligations under the Corporations Act and Listing Rules, which it manages in accordance with those laws and rules.

Under the Code of Practice, a new advisory forum (the Forum) met for the first time in October 2013. The Forum provides user feedback in relation to the ongoing development of cash market clearing and settlement infrastructure and services.³ One objective of the Forum is to consider any matters of common interest arising under the Code of Practice or in the principles set out in the *Competition in Clearing Australian Cash Equities* report prepared by the Council of Financial Regulators (see Key Consideration 2.7).⁴

2.2 A securities settlement facility should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants and, at a more general level, the public.

The governance arrangements of ASX Settlement are documented on the ASX public website. This documentation includes the Charters of the ASX Limited Board, the CS Boards (including that of ASX Settlement), and other subsidiary boards and committees. The charter documents provide information about the role and composition of the CS Boards and Board committees, as well as the key senior managers of the settlement facilities; namely the Managing Director and CEO, and the Executive responsible for settlement risk. Profiles of CS facility directors are

³ Available at <<http://www.asx.com.au/cs/index.htm>>.

⁴ Available at <<http://www.treasury.gov.au/~media/Treasury/Publications%20and%20Media/Publications/2013/Council%20of%20Financial%20Regulators%20advice%20on%20competition/Downloads/Competition%20in%20clearing%20and%20settlement%20of%20the%20Australian%20cash%20equity%20market.ashx>>.

also publicly available online. Key governance policies and charters are reviewed regularly by the relevant boards and committees.

The ASX Limited Annual Report provides information about ASX Group's risk management arrangements, including the role of boards, key committees, key subsidiary boards (e.g. ASX Compliance) and the roles of senior group executives who report directly to the Managing Director and CEO. Explanatory documentation on the website also describes: the FSS and CPSS-IOSCO Principles; group and business structure, including an organisational chart showing senior group executives; and risk management policies (in summary form).

Under the Corporations Act, ASX must notify ASIC as soon as practicable after a person becomes or ceases to become a director, secretary or senior manager of ASX Settlement, including when a person changes from one of those positions to another. Changes to senior risk management personnel are also notified to the Bank.

2.3 The roles and responsibilities of a securities settlement facility's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

Ultimate responsibility for the oversight of risks faced by ASX Settlement lies with the ASX Limited Board and the ASX Settlement Board. The ASX Limited Board is responsible for the overall business strategy of the ASX Group, and oversight of enterprise risk management policy. The ASX Limited Board Charter delegates certain responsibilities to the ASX Settlement Board, including the review and oversight of ASX Settlement's settlement-related risk, and its compliance with the FSS. The CS Boards' Charter elaborates on other roles and responsibilities of the ASX Settlement Board. The CS Boards' Charter places requirements on the structure of the CS Boards, including that the majority of directors and the Chair be independent. The ASX Settlement Board meets regularly (seven times in 2013/14) and receives detailed reports on ASX Settlement's business and operations, risk management and financial performance.

Board performance is dealt with periodically in private session by the relevant boards. The process may be facilitated by external independent consultants. A number of tools are used, which may include private session review, skills matrices and surveys, and externally facilitated group discussions. Details of Board performance reviews are set out in the ASX Limited Annual Report (the same process applies for the key subsidiary boards).

The CS Boards' Charter also sets out how the Boards address directors' interests and potential conflicts. Directors of the CS Boards must disclose all material personal interests (such as shareholdings, directorships and consultancy arrangements) which may potentially conflict with their duties. If there is a change in a director's material personal interests, the director must notify that change at the next meeting. If there is a real possibility of a material conflict of interest and duty on a matter subject to vote at a meeting of the CS Boards, the director must not be present for the discussion or vote related to that matter.

2.4 The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).

At the end of 2013/14, the ASX Limited Board had eight members, comprising the ASX CEO and seven independent, non-executive directors. As set out in the CS Boards' Charter, the CS

Boards, in consultation with the Nomination Committee and the ASX Limited Board, determine the composition of the CS Boards, with directors selected based on relevant skills and expertise. Currently, the ASX Settlement Board comprises one executive director (the ASX CEO) and five non-executive directors. During 2013/14, one non-executive director resigned and two new directors were appointed. Two of the non-executive directors are also members of the ASX Limited Board, while the remaining three, including the Chair, are external directors appointed for their expertise in clearing and settlement operational and risk management matters. This ensures that directors have the capacity to conduct informed independent review of relevant issues. During 2013/14 ASX made changes to the composition of the CS Boards. Previously, all four CS Boards shared common directors; now, the ASX Clear and ASX Settlement Boards share common directors, but one of these directors does not serve on the ASX Clear (Futures) or Austraclear Boards. This change was made primarily for business reasons, but also supports ASX's conflict handling arrangements (see below under 'Group structure').

ASX has adopted a policy that the majority of directors on each of its CS Boards must be independent. The Board Policy and Guideline to Relationships Affecting Independent Status is available on the ASX website.⁵ The independence of directors is assessed according to this policy, which is aligned to the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations* for listed companies. The policy requires, for example, that independent directors be free of business or other relationships that could interfere with the independent exercise of the director's judgement. Specifically considered is whether the director is a substantial shareholder of ASX, as well as whether in the last three years the director was previously employed by ASX or was an adviser to ASX. The biographies of the directors, which show their relationship with other ASX Group companies, are set out on the ASX website.

Selection, succession planning and training for board members are dealt with in private session by the Nomination Committee and Boards at appropriate intervals. New directors receive a comprehensive induction from Board and Nomination Committee members, as well as senior managers and other key staff. Directors' fees at both ASX Limited and ASX Settlement are considered by the ASX Limited Remuneration Committee, recognising the level of skill and expertise that a director must have to effectively meet its responsibilities. Remuneration of directors is determined in private session by the ASX Limited Board on the recommendation of the Remuneration Committee at regular intervals. The ASX Limited Board reviews its fees regularly to ensure that ASX non-executive directors are remunerated fairly for their services, recognising the level of skill and experience required. It also reviews its fees to ensure that it has in place a fee scale that enables ASX to attract and retain appropriately skilled and qualified non-executive directors. Non-executive directors' fees are broadly aligned to the top quartile of the marketplace. In conducting a review, the Board may take advice from an external remuneration consultant. The process involves benchmarking against a group of peer companies. The last fee review took place at the end of 2013 following changes to relevant governance and regulatory arrangements. The revised fees took effect on 1 January 2014.

Group structure

⁵ Available at < http://www.asx.com.au/documents/regulation/ASXL_guidelines_affecting_independent_status.PDF>.

The potential for intragroup conflicts arising from ASX's group structure is addressed by 'intragroup' service agreements, which set out the basis on which other group entities will provide services to the CS facilities and specify that the entities providing the services must have sufficient financial and other resources to meet their obligations. These agreements provide that ASX Group staff are under a duty to act in the best interests of the facility that is receiving the services.

ASX's governance arrangements are designed to ensure that shared directorships within the ASX Group cannot compromise each CS facility's compliance with its licence obligations and the Principles. ASX considers that there is limited potential for shared directorships to create conflicts between ASX's group-wide commercial interests and the risk management function of the CS facilities. More broadly, it considers that conflicts between directors' roles on the CS Boards and the ASX Limited Board are unlikely given the distinct roles the separate entities perform, and in view of group-wide arrangements to manage matters such as operations and compliance. If a conflict were to arise, a director sitting on multiple CS Boards would be expected to make decisions in the best interests of each facility.

The restructuring of the CS Boards to reduce the number of common directors between each of the CS facilities and ASX Limited further limits the potential for conflict. Two directors will now be able to form a quorum of the ASX Settlement Board, allowing matters that raise potential conflicts of interest to be considered and voted on without the involvement of directors that are also on the ASX Limited Board.

2.5 The roles and responsibilities of management should be clearly specified. A securities settlement facility's management should have the appropriate experience, mix of skills and integrity necessary to discharge their responsibilities for the operation and risk management of the securities settlement facility.

ASX has clear and direct reporting lines between management and the CS Boards. This is set out in the CS Boards' Charter, along with the roles and responsibilities of the Managing Director and CEO, the Chief Risk Officer (CRO), and the Group Executive, Operations (GE, Operations). The Managing Director and CEO has responsibility for the overall operational and business management and profit performance of ASX, while the GE, Operations is responsible for the overall settlement risk management of the CS facilities and for ensuring that the SSFs meet the regulatory obligations placed on them. The GE, Operations has a direct reporting line to the CS Boards.

ASX has a comprehensive remuneration policy and performance management framework in place, which aims to ensure that management personnel have an appropriate mix of skills and experience to discharge their responsibilities. The ASX Limited Remuneration Committee has delegated responsibility from the ASX Limited Board to conduct detailed examination of matters including oversight of the remuneration and incentive framework, succession plans, recruitment, retention and termination strategies, and the remuneration of the Managing Director and CEO and ASX Group non-executive directors. The Committee members are appointed by the ASX Limited Board, and must consist of only non-executive directors, with at least three members, a majority of independent directors, and an independent chair who is not Chairman of ASX Limited. The Committee has direct access to ASX senior management and the authority to seek independent advice. The CS Boards have delegated responsibility to the Committee for compensation arrangements and performance management processes relating to the CRO and the GE, Operations. The CS Boards provide input on the setting of Key

Performance Indicators and may review the performance outcomes for the CRO and the GE, Operations.

ASX carries out succession planning and management processes in order to ensure leadership continuity in key positions, and develop intellectual depth and business knowledge. This includes the biannual review of a 'talent assessment tool' by Group Executives and Human Resources to identify and manage the development of high potential staff according to individual and business needs. Succession and contingency planning is conducted for Group Executives, General Managers and other key staff.

2.6 The board should establish a clear, documented risk management framework that includes the securities settlement facility's risk tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision-making in crises and emergencies. Governance arrangements should ensure that the risk management and internal control functions have sufficient authority, independence, resources and access to the board.

ASX has a documented risk management framework, which is described under Key Consideration 3.1. The CS Boards are responsible for approving and reviewing high-level risk management policy. The Boards approve all new clearing and settlement risk policies and standards, as well as material changes to existing clearing and settlement policies and standards. The Boards consider these policies and standards at a concurrent meeting; where the policy or standard is relevant to more than one facility, the Boards of those facilities would simultaneously determine whether to approve the policy or standard. If the policy requirements under consideration differ across facilities, the Boards of each relevant facility would separately determine whether to approve the policy or standard (during the concurrent meeting). Board feedback is incorporated before risk policies and standards are approved.

Responsibilities under the high-level risk management policy are distributed as follows:

- Detailed reporting to the CS Boards occurs quarterly on the implementation of risk management policies and standards relevant to clearing and settlement operations, and on broader management and operational matters. Internal Audit conducts a rotational risk-based audit program, which includes ensuring that relevant operational departments comply with Board-approved policies and standards, where necessary using external specialists to assist with reviews. The CS Boards may also request external reviews. The ASX Settlement Risk Policy Framework, which provides a formal structure for the development, governance and review of settlement risk policies and standards, was approved by the CS Boards in November 2013, and will be reviewed annually. ASX are currently in the process of formally documenting the policies and standards referenced in the Framework. The Bank will continue to monitor the implementation of those policies and standards.
- The Audit and Risk Committee has responsibility for the oversight of the Enterprise Risk Framework.
- The Enterprise Risk Management Committee, comprising executives from across the departments, is responsible for enterprise risk management policy and reviewing controls, processes and procedures to identify and manage risks. This committee is also responsible for formally approving significant operational risk policies prepared by individual departments.

- Individual departments are responsible for: identifying business-specific risks; applying controls; maintaining risk management systems; reporting on the effectiveness of risk controls; and implementing enhancements and taking remedial action as appropriate. Each department is required to maintain a record of its risk profile, reviewing this on a six-monthly basis and updating as appropriate. This record includes 'Key Risk Indicators' and action plans to address any identified risk that is not adequately mitigated. Policies are formally reviewed every 18 months to three years. More frequent reviews are undertaken where there are potential changes to technology, legal or regulatory requirements, or business drivers.

The Clearing and Settlement Operations and Settlement Services departments have responsibilities relevant to the management of settlement risks that are defined in ASX's Settlement Risk Policy Framework.

Directors are entitled to obtain independent advice. The Annual Report addresses directors' access to information, management and advice. To the extent that directors wish to seek independent advice, they can raise this in board meetings, with the Managing Director and CEO, or with the Chairman.

Internal audit

ASX maintains an internal audit plan that provides for a three-to-five year review cycle of key operational and risk management processes, and internal control mechanisms that are governed by ASX's Enterprise Risk Framework, business continuity framework, enterprise compliance framework and internal audit methodology. The internal audit plan is approved by the ASX Limited Audit and Risk Committee and the audit work that is relevant to the CS Boards and ASX Compliance Board is endorsed by those Boards. The key governance frameworks are reviewed by external independent experts, as required. ASX's internal audit arrangements are set out in an Internal Audit Charter, which is reviewed and approved by the ASX limited Audit and Risk Committee on an annual basis and made available on the ASX public website.

The Internal Audit department is a separate department within ASX that reports to the CRO for administrative purposes, and the Audit and Risk Committee and Managing Director and CEO for audit purposes. The Internal Audit department's reporting structure also includes reports to the CS Boards and ASX Compliance Board. Internal Audit's principal objective is to 'provide independent, objective assurance and consulting services designed to add value and improve the operations of ASX'. Its scope covers the policies, processes and procedures of all risk management and internal control systems. The General Manager of Internal Audit has direct access to the ASX Limited Audit and Risk Committee, CS Boards and ASX Compliance Board. Members of the Internal Audit department are required to hold appropriate undergraduate and postgraduate qualifications relevant to their roles.

The role and performance of the Internal Audit function is regularly reviewed by the ASX Limited Audit and Risk Committee. Internal Audit is also reviewed by external independent auditors on a three-year cycle. The last such audit was carried out in 2011, with the next assessment scheduled for October/November 2014.

ASX has a clearly defined methodology for internal audit, based on the International Professional Practices Framework set out by the Institute of Internal Auditors.⁶ The audit process includes phases for planning, fieldwork, reporting, final sign-off, and issues logging and follow-up. The planning phase includes the preparation of terms of reference that define the purpose, timing, approach and scope of the audit.

The internal audit methodology allows for ad hoc reviews if, for example, material new risks are identified or other changes to ASX's business occur. This is a matter which the General Manager, Internal Audit and the Audit and Risk Committee consider. The ASX Compliance Board and the CS Boards may also request ad hoc reviews.

2.7 The board should ensure that the securities settlement facility's design, rules, overall strategy and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

The interests of direct and indirect participants and other relevant stakeholders are recognised in the ASX Limited Board Charter, the CS Boards' Charter and the ASX Customer Charter (see Key Consideration 2.1).

The views of participants and other stakeholders are sought through formal and informal means. ASX Settlement routinely conducts public consultations when considering major changes to existing services or new service offerings, such as ASX's new managed funds settlement service. These consultations allow for written submissions and discussion in both bilateral and open forums. Participants' views may also be gathered through the induction program for new participants, as well as ongoing participant liaison and compliance checks.

Under the Code of Practice, ASX has established the Forum, an advisory body that allows users of ASX's cash market clearing and settlement services, and other industry stakeholders, to provide input to the Boards of ASX Clear and ASX Settlement on those services. The Forum provides a mechanism for ASX to engage with users in relation to the ongoing development of cash market clearing and settlement infrastructure and services, to help ensure that these meet the needs of users and are aligned with global standards. The Forum has three objectives:

- to provide user input to the Boards of ASX Clear and ASX Settlement from a wide range of users in relation to ongoing investment in the design, operation and development of the core clearing and settlement infrastructure for the Australian cash equity market, including CHES
- to consider any matters of common interest arising under the Code of Practice or in the principles set out in the report prepared by the Council of Financial Regulators
- to provide a formal mechanism for the Boards of ASX Clear and ASX Settlement to report to users on their strategic plans and investment decisions in relation to the design, operation and development of the core clearing and settlement infrastructure for the Australian cash equity market, including CHES.

⁶ The Institute of Internal Auditors is the leading international organisation representing internal auditors. It has developed a set of standards that provide a framework for carrying out and evaluating the performance of internal audits.

The Forum comprises 22 senior representatives from clearing and settlement participants, an alternative market operator, and other stakeholders including system vendors, custodial service providers, share registries, investors, listed companies and the superannuation industry. Members are appointed for a term of two years. It is chaired by a non-executive member of the CS Boards and also includes a non-executive director representing ASX Limited. The Forum will meet at least three times each year, with the first meeting held in October 2013. Upcoming meeting dates, agendas and minutes are all published on a dedicated website, together with a summary of key issues discussed and the Forum's recommendations for the CS Boards. Under the Code of Practice, ASX has also established a Business Committee to support the Forum. This Committee comprises representatives of clearing participants, settlement participants and AMOs, and provides business and operational input on the Forum's forward work program. Business Committee meetings are held four to six weeks prior to Forum meetings.

The Forum and Business Committee have progressed three main work streams during 2013/14:

- a proposed move to a shortened two-day settlement cycle for equities
- replacement of the CHESSE clearing and settlement system, including review of messaging standards
- international benchmarking of cash market clearing and settlement prices.

Principle 3: Framework for the comprehensive management of risks

A securities settlement facility should have a sound risk management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Rating: Broadly observed

The Bank's assessment is that ASX Settlement broadly observes the requirements of Principle 3. In order to fully observe Principle 3, ASX Settlement should:

- implement plans to enhance its recovery plan consistent with forthcoming CPSS-IOSCO guidance on recovery planning.

ASX Settlement's risk management framework is described in further detail under the following Key Considerations.

3.1 A securities settlement facility should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the securities settlement facility. Risk-management frameworks should be subject to periodic review.

Identification of risk

ASX's high-level framework for risk management is described in its Enterprise Risk Management Policy. This policy divides risks identified by ASX into two broad categories: strategic risks and operational risks. Operational risks are further categorised into financial risks, legal and regulatory risks, and technological and operational risks. Specific risks identified by ASX are described within these broad categories. For each identified risk, ASX judges how likely it is the risk event will occur within the next 12 months and the potential

impact. Reputational and participant impacts are considered along with the financial, operational and regulatory impacts of risks.

Comprehensive risk policies, procedures and controls

ASX's Enterprise Risk Management Policy has been developed with reference to the international standard ISO 31000 *Risk Management – Principles and Guidelines on Implementation* (see Key Consideration 2.6).⁷ At a high level, the ASX Enterprise Risk Management Policy outlines: the overall risk environment in the ASX Group; the objectives of risk management policies; the process by which risks are identified and assessed; the controls in place to detect and mitigate risks; and how risks are monitored and communicated. ASX's stated tolerance for financial, operational, legal and regulatory risks is 'very low'.

ASX uses Key Risk Indicators to measure levels of risk in the organisation and categorise risk levels according to a scale: satisfactory; within risk tolerance but requiring action to further control the level of risk; exceeding ASX's risk tolerance.

The Enterprise Risk Management Policy also assigns specific risk responsibilities across the ASX Group, including to the ASX Limited Board of Directors, the Audit and Risk Committee, the Enterprise Risk Management Committee, the General Manager, Enterprise Risk and managers of individual departments. Managers of each department are responsible for identifying and monitoring risks relevant to their department's activities, as well as for designing and implementing risk management policies and controls to manage identified risks. Department managers assess the appropriateness and operational effectiveness of these controls twice a year; these assessments are reviewed by Internal Audit and the Enterprise Risk Management Committee.

In 2013/14, ASX adopted an updated and formalised settlement risk policy framework to better align both it and related governance structures with the requirements of the Principles embedded in the FSS. The Settlement Risk Policy Framework sets out a comprehensive set of settlement-related risk policies to support the risk management approach of ASX's SSFs, including ASX Settlement. These policies govern more detailed internal standards, which in turn govern specific procedures for the management of settlement-related risks. The structure of policies, standards and procedures reflects the requirements of the FSS. ASX will be continuing work to finalise and update the policies and standards covering all relevant aspects of the FSS, which it aims to complete during 2014/15. The Bank will continue to monitor the progress made in this work.

A number of boards and internal committees oversee settlement risk management policy, including:

- *The CS Boards.* Each CS facility has a board (see Key Consideration 2.3 and 'ASX Group Structure' in Section 2.3.1), which shares members with the other ASX CS facilities, has oversight of the Settlement Risk Policy Framework, and is responsible for any significant amendments. Policies and designated key standards under the Framework are governed by the CS Boards.

⁷ ISO is an international standard-setting body and ISO 31000 is considered to be relevant guidance for enterprise risk management. The ISO 31000 standard has been reproduced by Standards Australia and Standards New Zealand as AS/NZS 31000.

- *The Settlement Risk Policy Committee (SRPC)*. The SRPC was formed in November 2013, to review and approve clearing risk policies and standards prior to submission to the CS Boards. The SRPC is chaired by the GE, Operations and includes the ASX Group Legal Counsel, General Manager of Clearing and Settlement Operations and the General Manager of Settlement Services. It will meet as needed when settlement risk policy matters arise.
- *The Capital and Liquidity Committee (CALCO)*. CALCO is constituted to ensure the structural integrity and efficient use of the liquidity, on- and off-balance sheet assets, liabilities and capital resources of the ASX Group. CALCO advises on changes to settlement risk policies related to developments in capital, liquidity and balance sheet management. CALCO is chaired by the CRO and comprises senior managers and executives from Finance, Risk and Internal Audit. CALCO generally meets on a quarterly basis.
- *The SSF Risk, Operations and Compliance Committee (SROCC)*. SROCC is chaired by the GE, Operations and is made up of senior managers and executives from the settlement operations and compliance areas of ASX. The Committee acts as an information-sharing and discussion body for the purpose of enhancing ASX's ability to identify, assess and reduce systemic risk, operational or compliance risk, and manage settlement risk. The SROCC currently meets on a monthly basis.
- *The Participant Incident Response Committee (PIRC)*. The PIRC is responsible for coordinating ASX's response to a settlement participant incident, and provide input into policy determinations and settings as necessary in response to such an incident. The PIRC is chaired by the GE, Operations, and is made up of senior staff from operational, risk management, compliance and legal departments. Meetings of the PIRC are convened as required to address an actual or potential participant incident.

Internal controls

ASX's risk management policies are generally reviewed formally every 18 months to 3 years, although more frequent reviews may occur depending on changes to technology, business drivers or legal requirements. Reviews are conducted by specific working groups and committees. Final approval of reviews for more significant policies is the responsibility of the Enterprise Risk Management Committee. Under the Enterprise Risk Management Policy, ASX's departments are required to update a risk profile every six months, which identifies relevant risks and sets out planned actions to respond to those risks.

Risk management arrangements are also subject to periodic review by Internal Audit. Such audits provide assurance that the risk management framework continues to be effective. Risk management arrangements may also be subject to review by external experts from time to time. The last such review of the Enterprise Risk Management Policy was undertaken by PricewaterhouseCoopers in 2011 and the next review is scheduled for the second half of 2015.

Previously, the Enterprise Risk Management Policy was reviewed by the Audit and Risk Committee approximately every three years, with the committee informed of material changes in the interim. Following the most recent review in August 2013, future reviews will be conducted on a two year cycle.

3.2 A securities settlement facility should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the securities settlement facility.

ASX Settlement may apply sanctions to, or place additional requirements on, participants that fail to comply with its Operating Rules. Participants may ultimately be required to seek alternative settlement arrangements.

3.3 A securities settlement facility should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies, and develop appropriate risk-management tools to address these risks.

ASX Settlement reviews the material risks that it bears from and poses to other entities in the context of its ongoing review of enterprise risks (such as the six-monthly update of department risk profiles, see Key Consideration 3.1), and its processes for identifying risks associated with new activities. In the case of new products and services, ASX undertakes risk assessments when undertaking an expansion of its activities or in the event of material changes to its business. Risk assessments are built into ASX's project management framework (see Key Considerations 15.1, 17.4).

For instance, ASX Settlement has identified risks to its operational activities arising from participants' increased usage of third-party vendors for back-office systems, and participants' offshore outsourcing of back-office processing. ASX Settlement has also identified interdependencies with service providers. ASX Settlement's response to these interdependencies is outlined in Key Consideration 17.4.

Interdependencies with ASX Clear for the settlement of novated transactions are managed within the context of ASX Group's broader risk management framework (see Principle 20).

3.4 A securities settlement facility should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. A securities settlement facility should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, a securities settlement facility should also provide relevant authorities with the information needed for purposes of resolution planning

ASX Settlement has developed a basic recovery plan that identifies scenarios that could threaten its ongoing provision of critical settlement services. The plan describes how ASX Settlement would respond to such scenarios using existing powers under its Operating Rules and Procedures. The recovery plan sets out the likely sequence of actions that ASX would take under each identified recovery scenario, and analyses the advantages and disadvantages of tools available to ASX Settlement to respond to such scenarios.

ASX Settlement has commenced work to develop a more comprehensive recovery plan in line with forthcoming CPSS-IOSCO guidance on recovery planning, expected to be published in late 2014. As part of this process, ASX will consider whether there is a need for enhancements to the ASX Settlement Operating Rules to address non default-related losses in light of the forthcoming guidance.

Principle 4: Credit risk

A securities settlement facility should effectively measure, monitor and manage its credit exposures to participants and those arising from its payment, clearing and settlement processes. A securities settlement facility should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a central counterparty that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the central counterparty in extreme but plausible market conditions. All other central counterparties should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the central counterparty in extreme but plausible market conditions.

Rating: Not applicable

ASX Settlement does not extend credit to participants or provide a settlement guarantee. Accordingly, ASX Settlement does not assume credit risk as principal. ASX Settlement's use of a DvP settlement mechanism ensures that participants do not face credit risks arising from ASX Settlement's settlement processes (see Principle 12).

The Bank has concluded that SSF Standard 4 does not apply to ASX Settlement.

- 4.1 A securities settlement facility should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposures may arise from current exposures, potential future exposures, or both.**

Not applicable to ASX Settlement.

- 4.2 A securities settlement facility should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk management tools to control these risks.**

Not applicable to ASX Settlement.

- 4.3 A payment system or securities settlement facility should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a deferred net settlement payment system or deferred net settlement securities settlement facility in which there is no settlement guarantee, but where its participants face credit exposures arising from its payment, clearing and settlement processes such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.**

Not applicable to ASX Settlement.

- 4.4 A central counterparty should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a**

central counterparty that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the central counterparty in extreme but plausible market conditions. All other central counterparties should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the central counterparty in extreme but plausible market conditions. In all cases, a central counterparty should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

Key Consideration 4.4 is not relevant to securities settlement facilities.

- 4.5** A central counterparty should, determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A central counterparty should have clear procedures to report the results of its stress tests to appropriate decision makers at the central counterparty and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a central counterparty should perform a comprehensive and thorough analysis of stress-testing scenarios, models and underlying parameters and assumptions used to ensure they are appropriate for determining the central counterparties required level of default protection in light of current and evolving market conditions. A central counterparty should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a central counterparty's participants increases significantly. A full validation of a central counterparty's risk management model should be performed at least annually.

Key Consideration 4.5 is not relevant to securities settlement facilities.

- 4.6** In conducting stress testing, a central counterparty should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

Key Consideration 4.6 is not relevant to securities settlement facilities.

- 4.7** A securities settlement facility should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the securities settlement facility. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds a securities settlement facility may borrow from liquidity providers. These rules and procedures should also indicate the securities settlement facility's process to replenish any financial resources that the

securities settlement facility may employ during a stress event, so that the securities settlement facility can continue to operate in a safe and sound manner.

Not applicable to ASX Settlement.

Principle 5: Collateral

A securities settlement facility that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity and market risks. A securities settlement facility should also set and enforce appropriately conservative haircuts and concentration limits.

Rating: Not applicable

Since ASX Settlement does not assume credit risk as principal (see Principle 4), it does not collect collateral from participants.

The Bank has concluded that Principle 5 does not apply to ASX Settlement.

5.1 A securities settlement facility should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity and market risks.

Not applicable to ASX Settlement.

5.2 A securities settlement facility should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

Not applicable to ASX Settlement.

5.3 In order to reduce the need for procyclical adjustments, a securities settlement facility should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

Not applicable to ASX Settlement.

5.4 A securities settlement facility should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

Not applicable to ASX Settlement.

5.5 A securities settlement facility that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

Not applicable to ASX Settlement.

5.6 A securities settlement facility should use a collateral management system that is well designed and operationally flexible.

Not applicable to ASX Settlement.

Principle 6: Margin

A central counterparty should cover its credit exposures to its participants for all products through an effective margin system that is risk based and regularly reviewed.

Rating: Not applicable

Principle 6 is not relevant to securities settlement facilities.

Principle 7: Liquidity risk

A securities settlement facility should effectively measure, monitor and manage its liquidity risk. A securities settlement facility should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the securities settlement facility in extreme but plausible market conditions.

Rating: Observed

The Bank's assessment is that ASX Settlement observes the requirements of Principle 7. ASX Settlement's arrangements to measure and monitor liquidity risk for its participants are described in further detail under the following Key Considerations.

7.1 A securities settlement facility should have a robust framework to manage its liquidity risks from its participants, commercial bank money settlement agents, nostro agents, custodians, liquidity providers and other entities.

ASX Settlement conducts its settlements on a DvP Model 3 basis in a multilateral net batch (see Key Consideration 12.1). While ASX Settlement does not assume any payment obligations in the batch settlement process, and hence does not assume liquidity risk as principal, the nature of the multilateral net batch creates liquidity exposures between participants.

The default of a participant with a payment obligation in the batch may require the reconstitution of the batch to bring the payment obligations of the defaulting participant down to zero (net of any liquidity injection by ASX Clear in respect of novated transactions).⁸ For non-novated transactions, this is done by removing transactions of the defaulting participant from the batch. These transactions are typically entered into solely to 'prime' the settlement accounts of participants to meet delivery obligations related to the settlement of novated transactions and occur late in the settlement cycle, at a time when the relevant participant is well positioned to meet these obligations. Non-novated transactions are bilateral and hence not subject to the protection of the central counterparty (CCP).

For novated transactions, however, reconstitution of the batch is achieved by injecting new transactions by way of 'offsetting transaction arrangements' with participants due to deliver securities (see Key Consideration 13.3 and Appendix A1.1, Key Consideration 7.4). Offsetting transaction arrangements were introduced by ASX Clear and ASX Settlement in April 2014 to deal with shortfalls of funds related to novated transactions. Under these arrangements, ASX Clear would meet any payment obligations to allow securities delivery transactions to settle as intended, with participants providing the funds for settlement via separate repurchase

⁸ ASX Clear will seek to meet payment obligations of the defaulting participant out of its prefunded liquid resources where possible and prudent. However, if it was not possible or prudent to rely solely on prefunded liquidity, ASX Clear may rely on the use of offsetting transaction arrangements with participants to allow novated transactions of the defaulting participant to settle.

transactions for the same stock to unwind the next day. These arrangements provide *ex ante* clarity by explicitly recognising and formalising the role of participants in providing liquidity to ASX Clear to allow settlement to occur as scheduled.

Reconstitution of the batch could create liquidity pressures for non-defaulting participants due to receive funds in respect of transactions that are removed. ASX Settlement seeks to minimise these liquidity pressures through the use of its procedures to back out non-novated transactions or inject offsetting transaction arrangements into the batch in respect of novated transactions (see Key Consideration 13.3). Under these procedures, transactions are removed from the batch or settled by way of offsetting transaction arrangements in such a way as to ensure that non-defaulting participants' payment obligations do not increase. While non-defaulting participants due to receive a net payment of funds in the batch may be exposed to liquidity risk associated with a reduction in expected receipts, ASX Settlement's back-out algorithm is designed to ensure that receipt expected by a participant does not become a payment obligation, and disperses this liquidity risk across a number of participants through a random allocation mechanism.

7.2 A securities settlement facility should have effective operational and analytical tools to identify, measure and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Since ASX Settlement does not assume liquidity risk as principal, it does not have payment obligations related to settlement.

ASX Settlement provides participants with information regarding their money and securities settlement obligations between trade date and settlement date. This information includes individual trade notifications, netted obligations, projected funds obligations and rescheduled settlements following delivery failures. Participants use this information to produce reports that enable them to monitor and manage their funding and delivery obligations and risks.

In the event of a participant default, ASX Settlement uses its backout algorithm to reconstitute the batch and select transactions to be settled via an offsetting transaction arrangement. The outcome of the algorithm is dependent on the mix and profile of transactions scheduled for settlement at the time it is run, so it is not possible for ASX Settlement to provide detailed *ex ante* information to participants on how their settlement obligations might change in the event of a default. However, ASX Settlement's back-out arrangements are described in Section 10 of the ASX Settlement Operating Rules, as well as in related Procedures available to participants. Furthermore, during consultation with participants on the introduction of offsetting transaction arrangements, ASX released a consultation paper and subsequent explanatory note outlining the operation and potential liquidity impact of offsetting transaction arrangements (see Key Consideration 7.1). The Bank will discuss further with ASX whether any additional information could be disclosed to participants on the potential liquidity impact of reconstitution of the batch and implementation of offsetting transaction arrangements. This will be done in the context of ASX Clear's planned review of liquidity stress-testing arrangements (see Appendix A1.1, Key Consideration 7.9).

7.3 A payment system or securities settlement facility including one employing a deferred net settlement mechanism should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate, intraday or multiday settlement of payment obligations with a high degree of confidence under a wide range of potential

stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

Since ASX Settlement does not assume liquidity risk as principal, it does not need to maintain liquid resources to cover payment obligations.

- 7.4 A central counterparty should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the central counterparty in extreme but plausible market conditions. In addition, a central counterparty that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the central counterparty in extreme but plausible market conditions.**

Key Consideration 7.4 is not relevant to securities settlement facilities.

- 7.5 For the purpose of meeting its minimum liquid resource requirement, a securities settlement facility's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If a securities settlement facility has access to routine credit at the central bank of issue, the securities settlement facility may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.**

Since ASX Settlement does not assume liquidity risk as principal, it does not maintain liquid resources to cover payment obligations in stressed scenarios (see Key Consideration 7.3).

- 7.6 A securities settlement facility may supplement its qualifying liquid resources with other forms of liquid resources. If the securities settlement facility does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if a securities settlement facility does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. A securities settlement facility should not assume the availability of emergency central bank credit as a part of its liquidity plan.**

Since ASX Settlement does not assume liquidity risk as principal, it does not maintain liquid resources to cover payment obligations in stressed scenarios (see Key Consideration 7.3).

- 7.7 A securities settlement facility should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the securities settlement facility or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. A securities settlement facility should regularly test its procedures for accessing its liquid resources at a liquidity provider.**

Since ASX Settlement does not assume liquidity risk as principal, it does not maintain liquid resources to cover payment obligations in stressed scenarios (see Key Consideration 7.3).

- 7.8 A securities settlement facility with access to central bank accounts, payment services or securities services should use these services, where practical, to enhance its management of liquidity risk.**

ASX Settlement does not assume liquidity risk as principal.

- 7.9 A securities settlement facility should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. A securities settlement facility should have clear procedures to report the results of its stress tests to appropriate decision-makers at the securities settlement facility and to use these results to evaluate the adequacy of, and adjust, its liquidity risk management framework. In conducting stress testing, a securities settlement facility should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the securities settlement facility, include all entities that might pose material liquidity risks to the securities settlement facility (such as settlement banks, nostro agents, custodian banks, liquidity providers and linked FMIs), and where appropriate, cover a multiday period. In all cases, a securities settlement facility should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.**

Since ASX Settlement does not assume liquidity risk as principal, it does not maintain liquid resources to cover payment obligations in stressed scenarios (see Key Consideration 7.3).

- 7.10 A securities settlement facility should establish explicit rules and procedures that enable the securities settlement facility to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the securities settlement facility's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.**

Since ASX Settlement does not assume liquidity risk as principal, it does not need rules and procedures to address a liquidity shortfall.

Principle 8: Settlement finality

A securities settlement facility should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, a securities settlement facility should provide final settlement intraday or in real time.

Rating: Observed

The Bank's assessment is that ASX Settlement observes the requirements of Principle 8. ASX Settlement's arrangements for ensuring finality of settlements are described in further detail under the following Key Considerations.

8.1 A securities settlement facility's rules and procedures should clearly define the point at which settlement is final.

The point at which settlement is final is defined in the ASX Settlement Operating Rules and Procedures. Settlement of securities transfers is final once ASX Settlement has recorded the transfers of securities in the settlement accounts of participants.

To provide legal certainty to the finality of its settlement process, ASX Settlement has obtained approval under Part 3 of the PSNA. In addition, money settlements between commercial settlement banks (known as Payment Providers) as part of the multilateral net batch fall within the scope of the approval of RITS as an RTGS system under Part 2 of the PSNA. With this approval, a payment executed in RITS at any time on the day on which a RITS participant enters external administration has the same standing as if the participant had gone into external administration on the next day. Accordingly, in the event of insolvency all transactions settled on the day of the insolvency are irrevocable and cannot be unwound.

8.2 A securities settlement facility should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. A securities settlement facility should consider adopting real-time gross settlement or multiple-batch processing during the settlement day.

Settlement of securities transactions in ASX Settlement occurs on a DvP Model 3 basis in a single net batch on the settlement day (value date). This involves the simultaneous transfer of net payment and net securities obligations between buyers and sellers at the end of the settlement cycle (see Key Consideration 12.1).

ASX Settlement has also developed the functionality to settle securities transactions on a DvP Model 1 basis (by individual line of stock) via its CHESST RTGS service. However, this service is not currently in use by any participants due to the relative netting efficiencies inherent in settling on a DvP Model 3 basis via a single batch. For the same reason, ASX Settlement currently has no plans to increase the frequency of batch settlement beyond once per day.

8.3 A securities settlement facility should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

Participants have until settlement cut-off (typically 10.30 am) on the day of settlement to remove payment or transfer instructions from the settlement batch.

Principle 9: Money settlements

A securities settlement facility should conduct its money settlements in central bank money where practical and available. If central bank money is not used, a securities settlement facility should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Rating: Observed

The Bank's assessment is that ASX Settlement observes the requirements of Principle 9. While existing arrangements meet the minimum standard, the Bank encourages ASX Settlement to work with ASX Clear to introduce a framework to formally engage Payment Providers on changes to settlement processes in response to regulatory or market-driven change.

ASX Settlement's money settlement arrangements are discussed in further detail under the following Key Considerations.

The description of money settlement arrangements in this Principle draws a distinction between 'money settlement agents' – the entities whose assets are used to settle the ultimate payment obligation – and 'settlement banks', which maintain accounts with the money settlement agent to settle their own obligations or those of other participants.

9.1 A securities settlement facility should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

ASX Settlement's money settlements are all settled in central bank money. Net payment obligations in ASX Settlement associated with securities transfers are settled between commercial settlement banks, known as Payment Providers, in a single multilateral batch across ESAs at the Bank, via RITS.

9.2 If central bank money is not used, a securities settlement facility should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

Money settlements in ASX Settlement are effected using central bank money.

9.3 If a securities settlement facility settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, a securities settlement facility should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. A securities settlement facility should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

Participants in ASX Settlement use commercial bank Payment Providers to effect money settlements on their behalf. Payment Providers must be approved by ASX Settlement and their provision of this service is governed by the terms of a standard deed (see Key Consideration 9.5). A Payment Provider must submit an application to ASX Settlement and meet the following criteria:

- be approved by APRA as an authorised deposit-taking institution (ADI) for the purpose of carrying out banking business within Australia
- be a member of RITS with an ESA

- have the operational capacity to make payments to participants and on behalf of participants
- have executed the standard client payment deed
- have the technical ability to connect to CHES, and the technical and financial capacity to participate in DvP settlement.

ASX Settlement does not have a formal process to monitor that Payment Providers meet these criteria on an ongoing basis, other than to observe that they remain connected to CHES and continue to meet payment obligations by the required cut-off times. In the event that a Payment Provider experienced operational difficulties or failed to meet cut-off times, ASX Settlement would investigate the matter through senior-level discussions with the affected Payment Provider.

Currently there are 12 Payment Providers. ASX periodically monitors the proportion of participants that use each Payment Provider, but this is not subject to frequent change. ASX has identified that two large Australian banks act as Payment Providers for a large share of participants; however, the average value of daily settlements involved is small relative to the financial and operational capacity of these banks.

The terms of Payment Provider arrangements are covered by the CHES Payment Interface Standard Payments Provider Deed, entered into by ASX Settlement, ASX Clear, APCA and the relevant commercial bank. This deed sets out payment authorisation deadlines and other operational requirements for Payment Providers that act as commercial settlement banks for participants. Changes to the deed may be required to support the introduction of planned enhancements to settlement processes for client securities holdings (see Appendix A1.1, Principle 14). The process of updating the deed involves negotiation with APCA and Payment Providers, which can create delays in implementing changes to authorisation deadlines or other operational requirements required to support changes to the settlement process.

9.4 If a securities settlement facility conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

ASX Settlement does not conduct money settlements on its own books.

9.5 A securities settlement facility's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the securities settlement facility and its participants to manage credit and liquidity risks.

ASX Settlement does not conduct settlements via commercial bank money settlement agents. Participants' arrangements with Payment Providers are conducted under legal agreements between the parties involved. ASX Settlement does, however, maintain separate agreements with Payment Providers regarding operational requirements (see Key Consideration 9.3).

Principle 10: Physical deliveries

A securities settlement facility should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Rating: Not applicable

ASX Settlement does not settle obligations requiring physical delivery.

The Bank has concluded that Principle 10 does not apply to ASX Settlement.

10.1 A securities settlement facility's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

Not applicable to ASX Settlement.

10.2 A securities settlement facility should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

Not applicable to ASX Settlement.

Principle 11: Central securities depositories

A central securities depository should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A securities settlement facility should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 11. ASX Settlement's arrangements for its central securities depository activities are described in further detail under the following Key Considerations.

11.1 A central securities depository should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

ASX Settlement employs a range of controls to ensure the integrity of securities held in CHESS. It maintains dual redundancy and a synchronous data update model which ensures that securities holding data are consistent across primary and backup data centres (see Principle 17). A monthly statement is sent to securities holders to report changes in their holdings of securities on the CHESS sub-register, and issuer registries are sent daily information on the movement of securities to enable them accurately to maintain company registers.

Annual audits of CHESS system controls are conducted by an external auditor and the resulting report is published on the ASX website. These audits assess controls over transaction processing, as well as change management, security protocols, data system operations and disaster recovery planning. The auditor's opinion is provided under the Australian Government Auditing and Standards Board standard ASAE 3402 – Assurance

Report on Controls at a Service Organisation. ASX Internal Audit performs an additional risk-based audit of key CHES functions on a rolling three-year cycle.

Securities are dematerialised (electronic) and held in CHES. Title is held in the name of clients of ASX Settlement participants. Encumbrances are recorded by placing a holding lock on securities that have been pledged for collateral against margin obligations to ASX Clear or are subject to participation in a buy-back or takeover, or that are subject to actions such as court orders or bankruptcy proceedings. Sub-positions of securities pledged as collateral to ASX Clear are reconciled against records in the Derivatives Clearing System (DCS) at least annually.

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

For securities that cannot be directly held in a dematerialised form in CHES (e.g. Commonwealth Government Securities (CGS)), ASX Settlement utilises the CHES Depository Interest (CDI) structure. Under this structure, the security is held in a separate securities depository, in which legal title is recorded, but a beneficial interest known as a CDI is created and maintained in CHES. Holders of CDIs have beneficial, but not legal, ownership of the underlying security. Legal title is held by a related entity of ASX Settlement, CHES Depository Nominees Pty Limited, or another nominee as appointed by the issuer.

The transfer of title to securities in CHES is given effect by electronic book entry. Settlement occurs via a DvP Model 3 process in a daily scheduled batch settlement cycle (see Key Consideration 12.1). The ASX Settlement Operating Rules and Procedures also provide for the free-of-payment transfer of securities, where required.

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

11.2 A central securities depository should prohibit overdrafts and debit balances in securities accounts.

Participants do not maintain cash accounts with ASX Settlement, removing the possibility of overdrafts or the extension of credit. CHES does not allow the movement of securities from a holding that exceeds the available securities in the holding, preventing any potential debit balance in securities accounts.

11.3 A central securities depository should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a central securities depository should provide incentives to immobilise or dematerialise securities.

Securities held in CHESS are dematerialised; securities underlying a CDI are immobilised and held by a nominee on behalf of the beneficial owner (see Key Consideration 11.1).

11.4 A central securities depository should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

ASX Settlement has identified potential custody risks arising from negligence, misuse of assets, fraud, poor administration, or inadequate recordkeeping. Operational controls to mitigate these risks include segregation of duties, access restrictions and authorisation checks. ASX Settlement's Operating Rules allow ASX Settlement to give advice to a participant or issuer to correct an error that it has caused. If ASX Settlement causes an error in its securities holdings, it is responsible for correcting that error.

ASX Settlement is covered by the ASX Group general and professional indemnity insurance policy for civil liabilities arising from its central securities depository activities. Where losses are the result of employee wrongdoing or a computer manipulation, ASX Settlement is covered by the ASX Group comprehensive Crime Policy.

11.5 A central securities depository should employ a robust system that ensures segregation between the central securities depository's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the central securities depository should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

ASX Settlement is not the legal owner of any participant or client assets; these assets are recorded in CHESS in the name of the participant or sponsored client. CHESS provides an account structure that ensures the legal and operational segregation of participants' securities in CHESS and the segregation of clients' securities from those of participants. Under this account structure, securities are held against a unique Holder Identification Number for each client or participant.

However, during the settlement cycle there is a period in which securities have to be transferred into a separate 'entrepot' settlement account with no operational segregation between participant and client securities (reflecting the account structure at ASX Clear – see Appendix A1.1, Principle 14; see also Key Consideration 12.1). ASX Settlement's Operating Rules limit this period to 3 days. Prior to transfer to the settlement account, client securities may also be temporarily placed in an 'accumulation' account in the name of the participant. However, the client remains the beneficial owner of securities in the accumulation account until the point of transfer to the settlement account. ASX Settlement implemented rule changes in April 2014 to clarify the beneficial ownership of client securities held in accumulation accounts. In addition, ASX Settlement has proposed changes to the settlement process, due to be implemented in May 2015, that would allow client securities to be transferred into the settlement account shortly before settlement, minimising the time during which these are commingled with participant securities.

11.6 A central securities depository should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

ASX Settlement does not perform any ancillary activities that may pose a risk to the operation of its central securities depository function. It does not provide a centralised securities lending facility or act as a principal in securities lending transactions.

Principle 12: Exchange-of-value settlement systems

If a securities settlement facility settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Rating: Observed

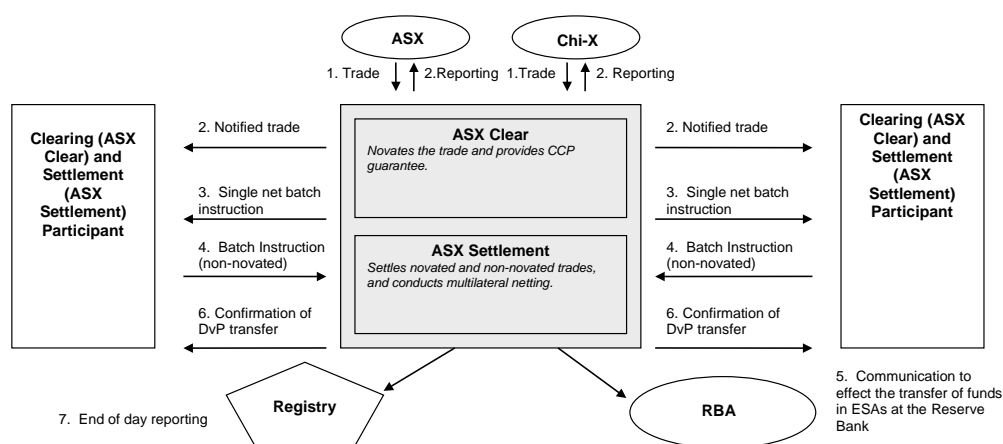
The Bank's assessment is that ASX Settlement observes the requirements of Principle 12. ASX Settlement's arrangements for exchange-of-value settlements are described in further detail under the following Key Considerations.

12.1 A securities settlement facility that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the securities settlement facility settles on a gross or net basis and when finality occurs.

ASX Settlement eliminates principal risk by ensuring that the settlement of securities delivery obligations occurs if and only if associated payment obligations are settled. It does so by linking the final settlement of securities and payment obligations through a DvP Model 3 mechanism, where final securities and payments transfers occur contemporaneously on a multilateral net basis through a single batch of instructions. The settlement of securities via this mechanism involves several steps (including related steps taken for the clearing of novated transactions in ASX Clear and the 'priming' of settlement accounts) (Figure 1).

Figure 1

Current ASX Clearing and Settlement Arrangements



Step 1: Once a trade has been executed on either the ASX or Chi-X markets, a trade-related instruction is sent to CHES.

Step 2: Once CHES validates these trades they are novated in real time to ASX Clear and CHES sends messages to the relevant clearing participants (and to Chi-X if the trade was

executed on its market), notifying them that the trade has been accepted and cleared. Trades that have the same clearing participant as buyer and seller, called clearing crossings, are not novated, netted or scheduled for settlement in the CHES batch. To facilitate the remaining back-office processes for these trades, CHES sends a single message to the clearing participant confirming the trade's details. The settlement of clearing crossings is negotiated bilaterally between brokers and their clients and occur when securities are transferred between broker and client settlement accounts.

Step 3: At T+1, CHES generates a single net batch instruction reflecting the net position of each participant's novated trades in each line of stock. Before netting, clearing participants can mutually agree to block a transaction from netting, or delete or modify existing novated transactions. If matching instructions are sent from both clearing participants that are counterparties to a particular trade, CHES sends messages to the clearing participants confirming that instructions for that trade have been processed.

Step 4: Between T+1 and T+3, participants can also instruct CHES to include additional non-novated (off-market) transactions in the batch at T+3. During 2013/14, an average of around 84 per cent of the value of net securities settled in the final batch was in respect of non-novated transactions. Non-novated trades mainly arise from three types of activities: pre-positioning transfers of securities across accounts; securities lending to cover a short sale or a shortfall in a participant's securities account; and off-market trades. Pre-positioning involves transferring securities to a participant's entrepot settlement account, i.e. a centralised settlement account.

Step 5: On the evening before settlement, ASX Settlement notifies each participant of its projected net cash payment obligations. Participants have until 10.30 am to negotiate any additional non-novated transfers necessary to 'prime' their accounts for settlement. After the cut-off for new instructions, transfer of securities positions is stopped in CHES pending completion of transfer once cash movements have been confirmed (Step 6), and participants' Payment Providers are requested to fund the net cash obligations of settlement participants.

Step 6: Payment obligations are settled between Payment Providers in RITS as a single daily multilateral net batch. Immediately upon confirmation from RITS that the funds transfers have been settled, ASX Settlement completes the net securities transfers in CHES, thus ensuring DvP settlement. This typically occurs at around 11.30 am. CHES then notifies the participants that settlement has been completed successfully.

Step 7: At the end of the day CHES reports net movements on each sub-register to the holder of the issuer's complete register.

There is considerable activity in the hours prior to the 10.30 am cut-off for settlement instructions as participants arrange to lend and transfer securities in order to prime their settlement accounts. Settlement participants may wait until the morning of T+3 to complete the priming of their accounts, partly due to the need to wait for final matched settlement instructions from offshore clients. As a consequence, fails in delivery of securities are a daily occurrence, although fail rates are relatively low by international comparison. The failure of a participant to meet payment obligations is a much rarer occurrence and may be indicative of problems that are not merely operational.

If a participant is unable to settle its scheduled obligations in the batch, due to a shortfall in either securities or funds, ASX Settlement's rules allow for all or some of the transactions of

the affected participant to be either 'backed out' or settled by means of an offsetting transaction (see Appendix A1.1, Key Consideration 7.4). If the failed transactions relate to a shortfall of securities, these are rescheduled for settlement on the next settlement day. If the failed transactions related to a shortfall of funds, however, ASX Clear would, as part of its default management strategy, consider injecting liquidity to ensure the settlement of novated trades. If this did not occur, ASX Clear would settle novated trades by entering into offsetting transaction arrangements with participants due to deliver securities. These offsetting transactions would be scheduled for settlement on the next settlement day.

ASX Settlement's back-out algorithm is used to identify transactions to be rescheduled or settled by means of offsetting transactions. The algorithm seeks to remove or roll over as few transactions from the batch as possible, maximising settlement values and volumes, while minimising the spillover to other participants. Transactions unrelated to novated settlement obligations would typically be backed out first. In 2013/14, an average of 0.06 per cent of settlement transactions were recorded as 'initial fails' (where a participant has insufficient stock on t+3), with an average of 0.32 per cent of settlements rescheduled following the application of the back-out algorithm. Both initial fails and rescheduled settlements were slightly lower as a proportion of total settlements than in 2012/13.

The Forum and Business Committee established under the Code of Practice are overseeing work on a proposal to shorten the equities settlement cycle described above to a two-day cycle. The transition to a T+2 settlement cycle is being targeted for early 2016.

The use of the DvP Model 3 settlement mechanism described above is acceptable for ASX Settlement given the relatively low average value of securities transactions involved. In 2013/14, the average value of individual gross settlement instructions in ASX Settlement (for both novated and non-novated transactions) was around \$10 800. This compares with an average of \$29.5 million for an individual DvP settlement instruction for debt securities in Austraclear.

DvP Model 1 settlement (real time exchange of individual obligations) has certain risk management advantages over DvP Model 3 settlement, since the latter framework may only settle on an all or nothing basis. However, DvP Model 3 may be advantageous for a settlement system servicing a CCP that manages its risk on a net portfolio basis. Partial settlement (due to a clearing participant default) under DvP Model 1 would alter net exposures upon which the CCP's risk controls are based. This issue may be addressed within a DvP Model 1 framework by managing the order in which obligations are settled. However, achieving this may be complex and introduce inefficiencies from a liquidity viewpoint. Accordingly, while in its 2008 *Review of Settlement Practices for Australian Equities*, the Bank encouraged ASX to consider introducing a DvP Model 1 settlement mechanism for cash equities over the medium term, the Bank accepts that, taking into account these complexities, neither ASX nor market participants are persuaded of the need to move to a new settlement model. Furthermore, ASX has taken actions since the 2008 review to further strengthen the resilience of the batch settlement process.

During 2013/14 the average daily value of CGS settled in the CHES batch was less than \$1 million, compared with \$40.5 billion in debt securities transactions settled in Austraclear, suggesting that there has been no significant movement of wholesale CGS transactions into the CHES batch. In May 2014, ASX Settlement launched the mFund Settlement Service for payments related to unlisted managed funds. Initial settlement values from the mFund service have been small relative to the size of the gross value of settlements in the CHES

batch. While neither the settlement of CGS or mFund transactions within the CHES batch currently pose significant risks to the batch process, the Bank will continue to monitor the use of both services.

Principle 13: Participant default rules and procedures

A securities settlement facility should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the securities settlement facility can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 13. ASX Settlement's default management arrangements are described in further detail under the following Key Considerations.

13.1 A securities settlement facility should have default rules and procedures that enable the securities settlement facility to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

ASX Settlement does not provide participants with a guarantee against credit or liquidity risk. Nevertheless, the design of the system precludes principal credit exposures arising between participants. ASX Settlement is not exposed to risk as a participant and has no settlement obligations arising from its role as a provider of a settlement facility, including in the event of a default. Settlement occurs on a DvP Model 3 basis, with contemporaneous multilateral net settlement of securities transfers in ASX Settlement and associated funds movements in RITS (see Key Consideration 12.1). Finality of settlement is protected by ASX Settlement's approval as a netting arrangement under the PSNA. The default of a participant in ASX Settlement would not require the SSF to meet obligations on its behalf, although it could alter the obligations of non-defaulting participants if the default resulted in the reconstitution of ASX Settlement's multilateral net batch prior to settlement (see Key Consideration 13.3).

Section 12 of the ASX Settlement Operating Rules sets out the circumstances in which ASX may suspend or impose restrictions on participation. These include events of 'non-compliance', such as: entry or suspected entry into external administration, or the failure to comply with participation requirements; a failure or anticipated failure of a participant's Payment Provider to authorise its net payment obligation; or a failure to comply with legal or regulatory obligations. ASX Settlement maintains documented procedures for dealing with the default of a participant, including back-out procedures to reconstitute the multilateral net batch. The default of a settlement-only participant would be managed by the PIRC, while the default of a settlement participant that is also a participant in ASX Clear would be managed by the ASX Default Management Committee in accordance with ASX Clear's Default Management Framework (see Appendix A1.1, Principle 13). The PIRC is chaired by the GE, Operations, and is made up of senior staff from operational, risk management, compliance and legal departments.

13.2 A securities settlement facility should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

ASX Settlement's Operating Rules and Procedures provide for the cancellation or suspension of a participant or a Payment Provider in the event that it becomes subject to external

administration, or if ASX Settlement reasonably suspects that this may occur. A participant or a Payment Provider is also required to notify ASX Settlement if it, or any other participant or Payment Provider to its knowledge, becomes subject to external administration or where it reasonably suspects that this may occur.

The ASX Settlement Operating Rules and Procedures allow a participant to nominate a new Payment Provider if its current provider is subject to, or is reasonably likely to become subject to, external administration.

13.3 A securities settlement facility should publicly disclose key aspects of its default rules and procedures.

ASX Settlement's Operating Rules and Procedures are published on the ASX public website. These include requirements for participants to give notice of insolvency or the reasonable possibility of insolvency and the rights of ASX Settlement to suspend or terminate participant status in an event of non-compliance.

If a participant is unable to settle its scheduled obligations in the batch, due to a shortfall in either securities or funds, ASX Settlement's Operating Rules allow for all or some of the transactions of the affected participant to be either 'backed out' or settled by means of an offsetting transaction (see Appendix A1.1, Key Consideration 7.4). If the failed transactions relate to a shortfall of securities, these are rescheduled for settlement on the next settlement day. If the failed transactions related to a shortfall of funds, however, ASX Clear would, as part of its default management strategy, consider injecting liquidity to ensure the settlement of novated trades. If this did not occur, ASX Clear would settle novated trades by entering into offsetting transaction arrangements with participants due to deliver securities. These offsetting transactions would be scheduled for settlement on the next settlement day.

ASX Settlement's back-out algorithm is used to identify transactions to be rescheduled or settled by means of offsetting transactions. The algorithm seeks to remove or roll over as few transactions from the batch as possible, maximising settlement values and volumes, while minimising the spillover to other participants. Transactions unrelated to novated settlement obligations would typically be backed out first.

ASX Settlement's back-out arrangements are described in Rule 10.11 of the ASX Settlement Operating Rules, as well as in related Procedures available to participants.

13.4 A securities settlement facility should involve its participants and other stakeholders in the testing and review of the securities settlement facility's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

ASX conducts regular in-house default management 'fire drills' to test default procedures as they would apply to participants across one or more of the ASX CS facilities. While the focus of the fire drills is on the more complex scenario of a clearing participant default, procedures for managing the default of an ASX Settlement participant are also tested to the extent that clearing participants also participate in ASX Settlement. Settlement-only aspects of default management are less complex, and ASX has determined that its testing of default procedures in the context of a clearing participant default is sufficient to ensure that ASX Settlement's default procedures are practical and effective.

Principle 14: Segregation and portability

A central counterparty should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the central counterparty with respect to those positions.

Rating: Not applicable

Principle 14 is not relevant to securities settlement facilities.

Principle 15: General business risk

A securities settlement facility should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Rating: Broadly observed

ASIC's and the Bank's assessment is that ASX Settlement broadly observes the requirements of Principle 15. In order to fully observe Principle 15, ASX Settlement should:

- carry out plans to enhance its recovery plan in line with forthcoming CPSS-IOSCO guidance, and ensure that the capital it holds under Key Consideration 15.2 continues to be sufficient to fund the enhanced plan. As ASX Settlement further develops its recovery plan, it should also review and integrate its recapitalisation processes with its broader recovery planning arrangements.

ASX Settlement's management of general business risk is described in further detail under the following Key Considerations.

15.1 A securities settlement facility should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

ASX's approach to business risk is consistent with its overall Enterprise Risk Management Policy and Framework (see Principle 3). Under the Framework, formal policies are in place for individual risk categories such as accounting, authorisations, business continuity, technology, fraud control and procurement.

ASX monitors a variety of financial business risks, including market risk, credit risk, liquidity risk and capital risk.

- Group funds (as distinct from collateral lodged by participants) may be exposed to market risk due to changes in market variables such as interest rates, foreign exchange rates and equity prices. Mitigants for market risk include hedging of foreign exchange risk and monitoring of equity price risk, with appropriate capital allocation.
- Credit risk for the Group's general business activities arises in the collection of receivables, which principally comprise fees from market participants, issuers, users of market data and other customers. Mitigants include active collection procedures on trade receivables and 'ageing' of receivable amounts.

- Liquidity risk arises from the Group's time-critical payables, and is mitigated by prudent liquidity management, with forward planning and forecasting of liquidity requirements.
- ASX may be exposed to capital risk if equity in group entities falls below prudent or regulatory minimum levels. ASX manages its capital at a group level, in accordance with an objective of maintaining a prudent level of surplus net tangible equity. Ongoing monitoring of cash flows and capital adequacy is conducted via quarterly meetings of CALCO.

ASX undertakes periodic strategic risk assessments in the context of its overall business plans. Through this process, ASX identifies new strategic business initiatives, such as the projects that delivered the ASX Collateral and over-the-counter (OTC) derivatives clearing services. These are subject to financial analysis, which includes high, low and base case revenue assumptions and forecasts. Impacts on capital are also determined and analysed.

ASX undertakes risk assessments when undertaking an expansion of its activities or in the event of material changes to its business. Risk assessments are built into ASX's project management framework (see Key Consideration 17.4). Under this framework an initial high-level risk indication is defined at the project concept stage. This is followed by a formal project risk assessment covering both project delivery risks and impacts to business activities. ASX typically conducts a series of workshops involving project staff to discuss risks associated with any planned new service. Prior to the approval of a project for launch/production, ASX prepares an operational readiness summary and conducts a final workshop to discuss possible risks associated with initial launch. This includes consideration of potential failure scenarios and workarounds, procedures for escalation of issues, and help desk and key staff availability.

Following launch, the risks of a new activity are captured in risk profiles that are prepared by department management every six months. CALCO also monitors actual and forecast capital and liquidity requirements on a quarterly basis, including requirements related to new projects.

15.2 A securities settlement facility should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity a securities settlement facility should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

ASX has set aside \$232 million for operational and business risk across the four ASX Group CS facilities, \$157 million of which has been attributed specifically to operational and business risks across both Austraclear and ASX Settlement. Since ASX has identified constraints to making business risk capital bankruptcy remote within the SSFs, this capital is held at the ASX Group level. Each CS facility has a separate allocation for business risk capital that is explicitly recognised within group-wide capital holdings. These holdings include an additional buffer against potential losses sustained elsewhere in the group. During 2013/14, ASX made amendments to the ASX Group Support Agreement, placing an obligation on ASX to maintain sufficient capital to support ASX Settlement's continued operations in the event of general business losses. These amendments support the legal certainty of ASX Settlement's access to business risk capital as required.

In determining the sufficiency of the \$157 million in operational and business risk capital set aside for ASX Settlement and Austraclear, ASX first calculated risk amounts for the individual SSFs. This was based on a methodology in use at other SSFs, fund managers and custodians that applies a capital charge for operational and business risk to the value of securities held in the facility. The correlation is modelled on a percentage basis, with the percentage of required risk resources declining as the level of assets increases – recognising that a significant part of the risk resources required will represent a fixed cost. ASX’s application of this methodology results in a 0.79 basis points charge on around \$1.5 trillion of securities held in each SSF, giving a required value of risk resources of around \$111 million for each of ASX Settlement and Austraclear.

ASX assumes that the two facilities will not both require their full risk funds at the same time. This reflects that the custodial and operational risks that this capital is calibrated to cover are unlikely to result in simultaneous peak losses in both SSFs. ASX has applied a ‘square root of the sum of squares’ formula to arrive at the figure of \$157 million to cover the operational and business risk exposure of the two settlement facilities. The business risk capital held in respect of the SSFs is sufficient to ensure that, even if one SSF were to utilise its full capital allocation of \$111 million, sufficient funds would be available to fund the other SSF’s recovery plan and meet the single largest uninsured business loss event for that facility. In addition, ASX’s general capital buffer is sufficient to ensure that it would remain able to provide \$111 million to the second SSF in the event that this was required.

- 15.3 A securities settlement facility should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, a securities settlement facility should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.**

ASX Settlement has developed a plan setting out options for its recovery or wind-down based on its existing Operating Rules, and has commenced work towards enhancing this plan in line with forthcoming CPSS-IOSCO guidance on recovery planning (see Key Consideration 3.4). In calculating the quantum of business risk capital described under Key Consideration 15.2, ASX has sought to ensure access to sufficient liquid net assets to fund operations during the execution of ASX Settlement’s recovery plan, or to cover a minimum of six months of current operating expenses.

- 15.4 Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the securities settlement facility to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.**

The risk capital for ASX’s CS facilities is invested in accordance with the ASX Limited and ASX Operations Pty Limited Investment Mandate. The Investment Mandate specifies investment objectives, responsibilities, approved products and counterparties, and audit and maintenance of the mandate. Approved products are generally highly rated and liquid products such as: cash deposits; bank bills, negotiable certificates of deposit and floating rate notes issued by APRA-approved ADIs; foreign exchange in specified currencies; CGS; and selected semi-government securities. Limits are applied against counterparty, liquidity and market risks. Liquidity limits are specified for maximum instrument maturity and weighted average maturity.

- 15.5 A securities settlement facility should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.**

As noted, ASX Limited manages its operational and business risk capital at the group level. The ASX Limited Board monitors the ongoing capital adequacy of the ASX Group as part of its regular capital planning activities. The Board determines the most appropriate means of raising additional capital when needed, giving due consideration to prevailing market conditions and available alternative financing mechanisms. For example, in June 2013, ASX Limited conducted a capital raising by way of a \$553 million share entitlement offer, with the bulk of the funds being used to increase the business risk capital of the CS facilities and their pooled financial resources to deal with a participant default. Recapitalisation processes will be reviewed and integrated with broader recovery planning arrangements as ASX Settlement further develops its recovery plan in line with forthcoming CPSS-IOSCO guidance.

Principle 16: Custody and investment risks

A securities settlement facility should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. A securities settlement facility's investments should be in instruments with minimal credit, market, and liquidity risks.

Rating: Not applicable

ASX Settlement does not have any financial investments, and its participants do not lodge collateral or other assets with the SSF. General business risk capital covering the needs of ASX Settlement is invested at the group level. Arrangements for the investment of those funds are discussed under Principle 15.

ASIC and the Bank have concluded that Principle 16 does not apply to ASX Settlement.

- 16.1 A securities settlement facility should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.**

Not applicable to ASX Settlement.

- 16.2 A securities settlement facility should have prompt access to its assets and the assets provided by participants, when required.**

Not applicable to ASX Settlement.

- 16.3 A securities settlement facility should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.**

Not applicable to ASX Settlement.

- 16.4 A securities settlement facility's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.**

Not applicable to ASX Settlement.

Principle 17: Operational risk

A securities settlement facility should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the securities settlement facility's obligations, including in the event of a wide-scale or major disruption.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 17. ASX Settlement's arrangements for managing operational risks are described in further detail under the following Key Considerations.

17.1 A securities settlement facility should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

ASX's operational risk policies and controls have been developed in accordance with ASX's group-wide Enterprise Risk Management Framework (see Key Consideration 3.1). Under this Framework, the ASX Limited Board is responsible for reviewing and overseeing the Group's risk management systems (see Key Consideration 2.6). The Board delegates review of the Enterprise Risk Management Framework to its Audit and Risk Committee. An Enterprise Risk Management Committee, comprising executives from across ASX's departments, is responsible for approving enterprise risk policies and reviewing controls, processes and procedures to identify and manage risks, as well as the formal approval of significant operational risk policies prepared by individual departments. Under the Enterprise Risk Management Framework, individual departments are also responsible for: identifying business-specific risks; applying controls; maintaining risk management systems; reporting on the effectiveness of risk controls; and implementing enhancements and taking remedial action. A dedicated security team has responsibility for assessing both physical and cyber security risks, and is overseen by a Security Steering Committee comprising the Chief Information Officer, head of Internal Audit and other senior executives.

Access to resources

ASX Settlement has arrangements in place to ensure that it has well-trained and competent personnel operating CHES. Staff are provided with relevant policies and guidelines from commencement of employment, with weekly communications thereafter. Staff are evaluated with reference to each defined operational process and broader skills matrices, with training provided for identified areas of weakness. ASX Settlement has a formal succession planning and management process in place for key staff. ASX has sought to automate routine operational processes and reporting over recent years, freeing up additional staff resources that would otherwise be devoted to these tasks.

To facilitate rapid recovery in the event of an operational disruption, ASX intends to increase the proportion of operational staff based at its secondary operations site (which is also the primary data centre), to around 30 per cent from the current 20 per cent. In case of a

disruption to staffing arrangements at the primary site for staff, the secondary operations centre has capacity to house 65 per cent of all operational staff.⁹

Resources shared with a related body

Within the ASX group structure, most operational resources are provided by ASX Operations Limited, a subsidiary of ASX Limited (see 'ASX Group Structure' in Section 2.3.1), under a contractual Support Agreement. In the event that ASX Operations Limited became subject to external administration, to the extent permissible by law, provisions within the Support Agreement provide for ASX Settlement and the other clearing and settlement corporate entities to retain the use of operational resources.

Major projects

Major projects are overseen by the Enterprise Portfolio Steering Committee (EPSC), which is comprised of representatives of the Group Executive. The EPSC is responsible for determining project priorities across the ASX Group and overseeing the quality of project execution. The EPSC is also tasked with ensuring that ASX has sufficient well-qualified personnel to cope with periods in which it is simultaneously undertaking a number of projects, including those resulting in significant changes to business. Project management of major projects is undertaken by the Project Management Office (PMO). For projects affecting core systems (including CHES), the PMO rates projects to ensure that they receive appropriate access to resources. Projects incorporate testing processes, which verify that systems or services meet benchmarks set prior to implementation. Testing addresses both technical and operational aspects of projects. The project management process includes engagement with customers and third-party vendors of supporting systems where appropriate, particularly in customer testing. Project plans also include formal checkpoints to ensure all appropriate risk management controls are in place prior to live use of a new or updated system or service.

Over recent years, ASX has undertaken work on close to 60 projects, including major projects such as the OTC derivatives clearing service and enhanced client clearing arrangements in ASX Clear (Futures), and the ASX Collateral service. Work on these projects, often to challenging time frames, in addition to work required by ASX to ensure compliance with the new FSS, has tested the capacity of ASX's existing resources. Targeted deadlines for key projects have nevertheless largely been met. In order to meet increased demand for resources associated with these projects and ongoing business requirements, ASX has taken on new staff, employed consultants and utilised partnerships with service providers.

17.2 A securities settlement facility's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the securities settlement facility's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

The roles and responsibilities for addressing operational risk are defined in the CS Boards' Charter, the Audit and Risk Committee Charter, and the Enterprise Risk Management Framework. As described above, risk responsibilities are shared between the ASX Limited

⁹ ASX currently maintains three main sites for its operations and data processing: a primary operations site (where the majority of staff are located); a secondary operations site that also operates as the primary data centre; and a backup data centre.

Board, the CS Boards, the Audit and Risk Committee, the Enterprise Risk Management Committee and individual departments.

Policies and procedures are the subject of internal and external review. ASX's Internal Audit department routinely monitors compliance with operational policy, reporting to the Audit and Risk Committee on a quarterly basis. Audit findings may prompt a review of policy, which would be conducted in consultation with key stakeholders. Technology-related security policy is considered by external auditors annually.

ASX benchmarks its operational risk policy against relevant international standards. For example:

- ISO 31000 – Risk Management Principles and Guidelines is used to benchmark ASX's overarching framework for operational risk management.
- The business continuity framework is benchmarked against the Business Continuity Institute's Good Practice Guidelines 2013, the international standard ISO 22301:2012 Business Continuity Management Systems, and the British standard BS 25999 1:2006.
- The technology risk management framework is benchmarked against the ISO 27001:2005 Information Security Management Systems standard. Cyber security strategies are further benchmarked against the Australian Signals Directorate's Strategies to Mitigate Targeted Cyber Intrusions.
- The compliance framework is benchmarked to the AS 3806-2006: Compliance Programs.
- The ASX Fraud Control Policy is benchmarked against AS 8001-2008: Fraud and Corruption Control.

The risk framework defines a variety of control procedures to support the core operational systems. These include audit logs, dual input checks, management sign-off and processing checklists as the primary preventative controls, supported by reconciliations and management reviews of activity. ASX Settlement operates a separate test environment for its core system (CHESS) and has a formal, documented change management process. There are also defined procedures for communicating with participants and vendors details of technology upgrade releases, which include regular notices to participants of upcoming changes.

17.3 A securities settlement facility should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

Availability targets are documented and defined formally for critical services. CHESS is required to meet a minimum availability target of 99.8 per cent; during 2013/14, it was available 100 per cent of the time.

System capacity is monitored on an ongoing basis, with monthly reviews of current and projected capacity requirements. The results are reviewed against established guidance for capacity headroom over peak recorded values for all critical systems; that is, to maintain capacity 50 per cent over peak recorded daily volumes, with the ability to increase to 100 per cent over peak within six months. Capacity data are reported monthly to the CEO. Average capacity utilisation of CHESS during 2013/14 was 14 per cent, while peak utilisation was 20 per cent. ASX Settlement considers that it has sufficient technical and human resources to

operate CHES during peak periods, including in the event of operational incidents or system failure.

17.4 A securities settlement facility should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

ASX Settlement's approach to ensuring scalable capacity adequate to handle increasing stress volumes and to achieve its service level objectives is described under Key Consideration 17.3. As noted above, average capacity utilisation of CHES during 2013/14 was 14 per cent, peak utilisation was 20 per cent, while CHES was available 100 per cent of the time over this period.

17.5 A securities settlement facility should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

Information security policy is implemented using a risk-based decision process, based on ISO 31000, relevant federal and state legislation, and other best-practice standards. The goal of ASX's information strategy is to create a strong and reliable security environment that meets business and functional requirements for customers and employees while balancing risk to the organisation, the cost of controls, and the richness and flexibility of services. ASX's information security policy applies to all employees, consultants, vendors and contractors of ASX. It also applies to all facilities, equipment and services managed by or on behalf of ASX, including off-site data storage, computing and telecommunications equipment. The policy is reviewed annually or when material or organisational changes are made. The last review was in March 2014.

Information security policy is tested at a number of levels. This includes penetration testing against the ASX perimeter and vulnerability testing within the perimeter. ASX Settlement performs CHES security testing on a quarterly basis. ASX operates a suite of controls designed to prevent and detect cyber attacks on its systems, such as denial of service or malware threats. These include steps to monitor suspicious internet traffic, and the maintenance of spare capacity to manage legitimate or malicious surges in internet traffic, as well as steps to regulate access to ASX systems (described below).

Physical access is controlled at both an enterprise and departmental level. The key systems supporting ASX's clearing and settlement processes are operated within a secure building. Settlement operations are separated from general office areas with permitted access determined at a senior manager level and records of access maintained. Physical security arrangements for the primary and backup data centres are broadly equivalent.

User access for the key systems is restricted to prevent inappropriate or unauthorised access to application software, operating systems and underlying data. User activities are uniquely identifiable and can be tracked via audit trail reports. The level of access is authorised by the system owner with users granted the minimum level of access to systems necessary to perform their roles effectively. External access to ASX systems must pass through multiple layers of firewalls and intrusion prevention, and individual networks are segregated.

Application testing is carried out in test environments. Testing reports are documented, with identified problems escalated to management and tracked through to remediation. Similarly, any significant technology-based operational incidents are reported to senior management and issues are tracked through to resolution via regular updates to management.

- 17.6 A securities settlement facility should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the securities settlement facility to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The securities settlement facility should regularly test these arrangements.**

Business continuity arrangements

ASX Settlement maintains extensive contingency plans detailing the appropriate operational response to a CS facility disruption, including coverage of the various lines of authority, means of communication, and failover procedures. These plans are updated periodically. ASX Settlement policy requires that failover to the backup data centre should occur within two hours. Plans for recovery of key systems apply to both physical and cyber threats to business continuity.

ASX Settlement employs a variety of technologies to ensure a high degree of redundancy in its systems – both across sites and within a single site. ASX maintains both a primary and a backup data centre, with broadly equivalent operational requirements. Key plant and equipment at the primary data centre are designed to the Uptime Institute Tier 3 standard of concurrent maintainability.¹⁰ The main computer network is connected via point-to-point optical fibre, which ASX operates with its own technology, thereby reducing the potential for outages due to operational problems with the telecommunications provider. All core systems employ multiple servers with spare capacity. Front-end servers handling communications with participants are configured to provide automatic failover across sites. Failover of the more critical data servers is targeted to take place within two hours, but would generally be expected to occur within an hour, under the control of management.

Disruption to participants in such circumstances would be mitigated by the high degree of redundancy in front-end system components. In most circumstances, these would be expected to maintain communications with participants' systems and queue transactions until the data servers were reactivated. The integrity of transactions would be supported by: queuing messages until they could be processed; storing all transactions in the database with unique identifiers, thereby preventing the loss or duplication of transactions; and synchronising database records between the primary and backup data centres. Furthermore, in the event that a significant part of a system or an operational site failed, ASX Settlement has contingency arrangements to activate an additional tier of 'cold' redundancy arrangements (either by converting test systems into production systems or rebuilding systems from readily available hardware) within 24 hours to meet the contingency of any further service interruption.

ASX Settlement has clearly defined procedures for crisis and event management. These procedures cover incident notification, emergency response (including building evacuation), incident response (including overall incident assessment and monitoring), and incident

¹⁰ The Uptime Institute is an IT consulting organisation that has developed a widely adopted classification system for the level of redundancy arrangements in data centres. 'Tier 3' is the second highest standard of redundancy, indicating that a data centre has redundant components, multiple independent power and cooling systems, and a high degree of availability.

management testing. Since May 2014 these include the use of Twitter to advise stakeholders of market-wide operational or technical incidents. ASX maintains a major incident management team that includes senior representatives of the core business activities, as well as facilities management, business continuity, and media and communications. The procedures identify responsibilities, including for internal communication and external communication to emergency services, the market, industry and media. As part of these procedures, ASX maintains a 'multi-market communication protocol' for communicating information to participants and stakeholders should any disruption to market, clearing or settlement services eventuate, including where this affects market operators accessing ASX Settlement via the Trade Acceptance Service.

ASX Settlement regularly tests its business continuity arrangements. Dual site operational teams across the primary and secondary operations sites effectively test backup operational processes on a continuous basis. Live technology tests, where settlement services are provided in real time from the backup data centre, are conducted on a two-year cycle. Test results are formally documented and reported to ASX senior management and are also made available to internal and external auditors. The use of live tests ensures that participant connectivity to the backup data centre is also tested. ASX's business continuity framework is audited externally every three to five years; the most recent audit, conducted in late 2012, found that ASX's business continuity standards were broadly consistent with widely recognised global standards and did not identify any major areas of concern.

Participant continuity arrangements

Recognising that effective continuity of operations may depend on the capacity of participants to recover from an operational disruption, business continuity requirements for participants are set out in the ASX Settlement Operating Rules and Procedures, supplemented by additional guidance issued by ASX on 1 July 2014. These require participants to maintain adequate business continuity arrangements that are appropriate to the nature and size of their business as a participant. The Operating Rules specify that participants must have arrangements that allow for the recovery of usual operations. It is ASX Settlement's expectation (set out in guidance) that this would be within two hours, and no more than four hours, following a contingency event for large participants. The targeted recovery time for smaller participants is four hours (and no more than six). These arrangements are reviewed as part of the participant admissions process. If a participant fails to maintain business continuity arrangements consistent with these recovery targets, it may become subject to sanctions or restrictions on its activities. Participants are also subject to spot checks of their ongoing compliance with operational requirements. Spot checks may be based on topical themes, in some cases arising from observations of general business developments, and in other cases motivated by a participant that has been experiencing operational problems. These spot checks examine the participant's governance and processes for resilience and business continuity. If a participant fails to implement any recommendations arising from a check, ASX may impose sanctions.

The Operating Rules and Procedures also require more broadly that participants have facilities, procedures and personnel that are adequate to meet technical and performance requirements. ASX's preferred approach to dealing with operational issues is to work collaboratively with the participant to educate them on their obligations. If the matter is serious, ASX may require that the participant address the weakness as a matter of priority.

ASX may also impose conditions on participation or require that the participant appoint an independent expert to assist with the remediation task.

Participants are involved in the contingency testing of ASX Settlement's systems, as this testing is conducted in a live environment. ASX conducts comprehensive business continuity testing of key systems at least every two years, with participants being notified of the start and completion of testing. Participants are also involved in testing of major system changes or in advance of the introduction of a new system. ASX Settlement conducts regular connectivity tests and maintains an external testing environment for system changes.

17.7 A securities settlement facility should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, a securities settlement facility should identify, monitor, and manage the risks its operations might pose to other FMIs.

Interdependencies with participants and other FMIs

ASX identifies and monitors potential dependencies on participants in a number of ways: by holding regular discussions with participants on risk management processes (see Key Consideration 3.1); as part of its assessments of project-related risks (see Key Consideration 15.1); and through its general monitoring of risks under its risk management framework (see Key Consideration 3.1).

For ASX Settlement, ASX has identified risks relating to its operational activities arising from participants' increased usage of third-party vendors for back-office systems, and participants outsourcing their back-office processing offshore.

- If multiple participants use the system of a vendor that experiences difficulties, these participants may have difficulty connecting to ASX's clearing and settlement infrastructure. If a vendor issue requires significant system changes, ASX Settlement's operations may be affected for an extended period. This risk is managed in part through technical and business continuity requirements placed on participants, but there are limitations to this approach. As a result, and notwithstanding that there are no contractual relationships between ASX and vendors, ASX has implemented a program to develop stronger direct relationships with key participant vendors. The program supports vendors' knowledge of ASX technical updates through early engagement before system changes are rolled out, as well as ASX's knowledge of vendor systems and business continuity arrangements.
- Participants' outsourcing of back-office processes and technology to overseas domiciled hubs or third-party vendors may complicate incident management due to differences in time zones and languages, in some cases a lack of familiarity with local market practices and conventions. Such factors, if inadequately mitigated, could increase operational risk. ASX is examining options to mitigate these risks. As part of this, ASX Compliance has carried out a spot review of participants' outsourcing arrangements, benchmarking participants against a number of standards, including APRA's outsourcing prudential standard CPS 231. As a follow-up to the review, ASX is developing new guidance on participant outsourcing and has conducted site visits to selected overseas outsourcing providers.

ASX Settlement has an operational interdependence with ASX Clear, with which it shares the CHES system (Principle 20). Operational risk associated with this interdependence is

managed within the context of the ASX Group's operational risk management framework. ASX Settlement does not have significant operational interdependencies with other FMIs.

Dependencies on service and utility providers

ASX has a formal policy that sets out the process for entering into, maintaining and exiting key outsourcing arrangements. If a key service is to be provided by an external service provider, ASX first conducts a tender process in which proposals from potential vendors are assessed against relevant criteria. Arrangements have been implemented under which ASX would consult with the Bank before entering into new agreements with third parties for critical services. ASX also provides the Bank with a list of critical outsourcing arrangements on an annual basis. Issues relating to outsourcing or service provision are escalated as appropriate to executive management via the ASX Technology Vendor Management Group and the relevant operational support area.

ASX assesses the operational performance of its service providers on an ongoing basis against its own operational policies, to ensure that service providers meet the resilience, security and operational performance requirements of the FSS (which align with the Principles). ASX maintains current information on its service providers' operations and processes through ongoing liaison, and in turn provides relevant updates to service providers regarding ASX operations. Service providers are also assessed through software regression testing when there is a major system upgrade.¹¹ Contractual arrangements with critical service providers require the approval of ASX Settlement before the service provider can itself outsource material elements of its service.

All core ASX Settlement operational functions are performed within ASX. However, external suppliers are used for utilities, hardware maintenance, operating system and product maintenance, and certain security-related specialist independent services.

ASX has put in place a number of mitigants to address the risks associated with dependencies on utilities and service providers.

- Primary and backup data centres are connected to different electricity grids and telecommunication exchanges.
- Each data centre has backup power generators with capacity to run the site at full load for 72 hours.
- All external communications links to data centres are via dual geographically separated links.
- ASX conducts regular testing of backup arrangements. Major systems are tested on a two year cycle. Participants are notified of business continuity tests in advance through ASX notices.
- ASX also performs a periodic assessment of suppliers, including consideration of contingency arrangements should externally provided services not be available (such as the use of alternative suppliers) as well as incident escalation procedures and contacts.

¹¹ When a component of software is updated, 'regression testing' aims to perform checks on the full software to verify that the operation of other software components has not been inadvertently affected by the update.

ASX has developed a set of standard clauses for inclusion in contracts with third-party service providers of critical services to ASX Settlement. Similar clauses are also included in the Support Agreement between ASX Settlement and ASX Operations Pty Ltd, which provides all internal operational services for the facilities. The clauses seek to ensure that the agreements meet the resilience, security and operational performance requirements of the FSS (which align with the Principles). ASX applies these clauses to all new agreements with service providers, and has incorporated them into all of its key existing service agreements.

ASX's standard clauses for service providers require the provider to grant reasonable access to the Bank in respect of information relating to its operation of a critical function provided to ASX Settlement. In the event that the Bank concluded that the terms of the service provider agreement did not meet FSS requirements, the clauses also require the service provider to negotiate acceptable new terms with ASX in good faith. The clauses require that providers give the Bank notice of any intention to terminate the agreement as a consequence of ASX Settlement's failure to pay fees, or in the event of the insolvency of ASX Settlement or any other ASX entity. This is intended to give the Bank an opportunity to take action to remedy the breach or otherwise ensure continued service provision.

ASX Settlement's arrangements to ensure continuity of operations in the event of a crisis will be shaped by the proposed introduction into Australian law of a special resolution regime for FMIs. This was foreshadowed in consultations undertaken by the Council of Financial Regulators and Treasury in 2011 and 2012. ASX Settlement will need to ensure that its arrangements to support continuity of operations in a crisis are appropriately adapted to the proposed FMI resolution regime once finalised.

CPSS and IOSCO have developed a draft Assessment Methodology for the oversight expectations applicable to critical service providers.¹² Once finalised, this Assessment Methodology will provide a framework for considering how to apply the oversight expectations for critical service providers set out in Annex F of the PFMI.

Disclosure

The nature and scope of ASX Settlement's dependencies on critical service providers are disclosed to participants through: Operating Rules; Guidance Notes; Notices and Bulletins; technical documentation available on the ASX participant website; more general information available on the ASX public website; and in one-on-one meetings with participants, both during the induction process for new participants and on an ongoing basis.

Operational Support

ASX Settlement provides telephone and email support to participants via a helpdesk, which operates from 8 am to 6 pm.

Principle 18: Access and participation requirements

A securities settlement facility should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

¹² The draft Assessment Methodology is available at <<http://www.bis.org/publ/cpss115.htm>>.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 18. ASX Settlement's access and participation requirements are described in further detail under the following Key Considerations.

18.1 A securities settlement facility should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

ASX Settlement has objective and transparent participation requirements, which are detailed in a number of policies and standards under the Settlement Risk Policy Framework. The participation requirements are publicly available and form part of ASX Settlement's Operating Rules and Procedures. The Operating Rules and Procedures provide for an appeals process should an application for participation be rejected or a participant's access be terminated.

At the end of June 2014 ASX Settlement had 78 participants. A further nine participants were active as temporary specialist settlement participants set up to effect corporate actions.

18.2 A securities settlement facility's participation requirements should be justified in terms of the safety and efficiency of the securities settlement facility and the markets it serves, be tailored to and commensurate with the securities settlement facility's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, a securities settlement facility should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

ASX Settlement's participation requirements are designed to promote the safety and integrity of the SSF. They cover financial obligations, business and managerial requirements, operational resources and capabilities, and business continuity arrangements. ASX Settlement's participation requirements promote the efficient operation of the facility and do not impose discriminatory or restrictive access constraints such as minimum turnover levels.

A settlement participant must post a settlement bond of \$500 000, unless: it is subject to prudential supervision as an ADI; is an approved clearing facility or an AMO under ASX Settlement Operating Rules and Procedures; is a CS facility that complies with the FSS; or only acts as a Participant Bidder in a takeover. In addition, a sponsoring participant (i.e. a participant that also acts in ASX Settlement on behalf of non-participants) that is not covered by the National Guarantee Fund compensation arrangements (under the Corporations Act) must post a sponsorship bond of \$500 000.

Performance and sponsorship bonds must be issued by an Australian bank or appropriately regulated insurance company. Funds held under a performance bond would be drawn upon by ASX Settlement in the event that the participant breached ASX Settlement rules. In a similar vein, funds held under a sponsorship bond would be drawn upon to meet any losses suffered by ASX Settlement, an issuer, or a holder sponsored by an ASX Settlement participant arising from a breach of the Operating Rules or other offence committed by the participant.

Under the Operating Rules and Procedures, the ASX Settlement Board must be satisfied that a potential participant has (or will have) the relevant managerial, operational and financial capacity and appropriate complementary business continuity arrangements in place to enable it to meet its ongoing obligations.

18.3 A securities settlement facility should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

ASX Settlement has wideranging powers to sanction its participants. ASX Settlement may suspend or terminate a participant from the facility in the event of a failure to comply with the Operating Rules and Procedures, or where a Payment Provider fails to authorise a participant's payment for interbank settlement. The action taken in the event of a breach will depend on a number of factors, including the participant's history of compliance and whether the breach implies negligence, incompetence or dishonesty. Where a breach has been identified and the participant has taken appropriate steps to rectify it, ASX Settlement will typically continue to monitor the participant closely for a period of time. Breaches are also referred to ASIC and, in most cases, are investigated by ASX Compliance for formal disciplinary action.

ASX Settlement levies fees on participants that fail to meet securities delivery obligations on the scheduled settlement date (see Key Consideration 12.1). The fee is 0.1 per cent of the value of the settlement obligation, but with a minimum and maximum fee of \$100 and \$5 000, respectively. Participants are also required to close out any positions remaining unsettled on the fifth day after the trade date (i.e. two days after the scheduled settlement date). ASX Settlement also routinely benchmarks participants' settlement performance. Under this regime, a participant receives a ranking of its settlement performance (based on the value of its trades that have failed to settle) against its market group peers. In addition, under its Operating Rules, ASX Settlement is able to impose monetary penalties of up to \$1 million on participants that it deems to be in violation of the Operating Rules.

Principle 19: Tiered participation arrangements

A securities settlement facility should identify, monitor, and manage the material risks to the securities settlement facility arising from tiered participation arrangements.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 19. ASX Settlement's approach to tiered participation arrangements is described in further detail under the following Key Considerations.

19.1 A securities settlement facility should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the securities settlement facility arising from such tiered participation arrangements.

Since ASX Settlement does not assume credit or liquidity risk as principal, the primary risks that could arise from indirect participation are operational. In particular, indirect participation arrangements that concentrated settlement activity within a few direct participants could concentrate operational risk to the facility. ASX Settlement is able to access basic information on indirect participation via the separate participant identifiers (known as PIDs) assigned to trading or clearing participants (in ASX Trade or ASX Clear, respectively) that do not settle directly. ASX Settlement currently considers the risks from concentration of indirect participants to be low.

19.2 A securities settlement facility should identify material dependencies between direct and indirect participants that might affect the securities settlement facility.

ASX Settlement monitors dependencies arising from tiered participation indirectly via a variety of means. These include regular discussions with participants on developments in their business and risk management activities, participants' own risk assessments, and discussions with new participants as part of the induction process. Based on this information, ASX Settlement has not identified any material dependencies between direct and indirect participants that might affect its operations.

19.3 A securities settlement facility should identify indirect participants responsible for a significant proportion of transactions processed by the securities settlement facility and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the securities settlement facility in order to manage the risks arising from these transactions.

In general, participation in ASX Settlement is broader and more direct than that in ASX Clear. At end June 2014, there were 78 direct ASX Settlement participants (excluding temporary special-purpose participants), compared with 36 (active) direct participants in ASX Clear. Due to this, and given the vertical integration of the ASX Group, monitoring of tiered participation risks in ASX Clear would also be expected to highlight any such risks that may require further investigation in ASX Settlement (see Appendix A1.1, Principle 19).

ASX encourages participants to develop appropriate risk control measures in managing their relationships with clients, including any substantial indirect participants. ASX does not set thresholds, either formal or informal, at which it would encourage direct participation by an indirect participant. ASX's general approach to managing risks associated with participants' business activities is based on a framework that can flexibly detect and react to new risks as they arise, rather than setting firm *ex ante* activity limits.

19.4 A securities settlement facility should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

ASX Settlement is not directly exposed to financial risks from indirect participation. Significant operational risks associated with indirect participation at ASX Settlement would be identified and mitigated through the application of ASX's concentration risk monitoring policy, which focuses on participation in ASX Clear (see Key Consideration 17.3).

Principle 20: FMI links

A securities settlement facility that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement has observed the requirements of Principle 20. ASX Settlement's management of link-related risks is described in further detail under the following Key Considerations.

20.1 Before entering into a link arrangement and on an ongoing basis once the link is established, a securities settlement facility should identify, monitor, and manage all

potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

Identifying link-related risks

ASX Settlement maintains one link to another FMI: ASX Clear. A link for the purposes of this principle is any connection that is made to another FMI according to a set of contractual and operational arrangements, irrespective of the complexity or otherwise of the link and whether it is directly with the FMI or through an intermediary. ASX Settlement maintains a link with ASX Clear for the settlement of securities transactions, including DvP settlement of novated securities trades and the lodgement of non-cash collateral. Instructions relating to these transactions are entered into CHES, which operates across both ASX Clear and ASX Settlement.

Managing operational risk

The link to ASX Clear is subject to the same operational risk management framework that applies for all the ASX CS facilities. This addresses operational risks associated with software, infrastructure or network failures and manual processing errors. An incident report is required for any significant technical or operational incident, including an assessment of mitigating actions to reduce the risk of reoccurrence. In addition, six-monthly risk profile assessments are prepared and presented to the Audit and Risk Committee, and an independent system-controls audit is conducted annually.

Managing financial risk

ASX Settlement does not assume any direct financial risks by virtue of its link to ASX Clear.

20.2 A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

ASX Settlement's link to ASX Clear has its legal basis in the Operating Rules and Procedures of both facilities. The finality of settlements made via these links is supported by the approval of ASX Settlement under Part 3 of the PSNA (see Key Consideration 1.4).

20.3 Linked central securities depositories should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between central securities depositories should be covered fully with high-quality collateral and be subject to limits.

ASX Settlement does not operate any links to other central securities depositories.

20.4 Provisional transfers of securities between linked central securities depositories should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

ASX Settlement does not operate any links to other central securities depositories.

20.5 An investor central securities depository should only establish a link with an issuer central securities depository if the arrangement provides a high level of protection for the rights of the investor central securities depository's participants.

ASX Settlement does not operate any links to other central securities depositories.

20.6 An investor central securities depository that uses an intermediary to operate a link with an issuer central securities depository should measure, monitor, and manage the additional

risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

ASX Settlement does not operate any links to other central securities depositories.

- 20.7 Before entering into a link with another central counterparty, a central counterparty should identify and manage the potential spill-over effects from the default of the linked central counterparty. If a link has three or more central counterparties, each central counterparty should identify, assess, and manage the risks of the collective link arrangement.**

Key Consideration 20.7 is not relevant to securities settlement facilities.

- 20.8 Each central counterparty in a central counterparty link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked central counterparty and its participants, if any, fully with a high degree of confidence without reducing the central counterparty's ability to fulfil its obligations to its own participants at any time.**

Key Consideration 20.8 is not relevant to securities settlement facilities.

- 20.9 A trade repository should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.**

Key Consideration 20.9 is not relevant to securities settlement facilities.

Principle 21: Efficiency and effectiveness

A securities settlement facility should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Rating: Observed

ASIC's assessment is that ASX Settlement observes the requirements of Principle 21. ASX Settlement's arrangements for ensuring its efficiency and effectiveness are described in further detail under the following Key Considerations.

- 21.1 A securities settlement facility should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.**

ASX Settlement offers a range of participation options designed to suit market demand, and tailors its participation application process and governance framework to the products, client structure and markets being settled (see Principle 18).

- *General Settlement Participants* can hold, transfer and settle approved financial products in DvP batch settlements, including as settlement agents on behalf of ASX Clear participants, and can establish and maintain participant-sponsored holdings on behalf of clients.
- *Account Participants* can participate in certain aspects of the holding and transfer of approved financial products and establish and maintain participant-sponsored holdings on behalf of clients, but cannot perform DvP batch settlements.

- *Product Issuer Settlement Participants* can settle certain transactions relating to unlisted managed funds, but cannot establish and maintain participant-sponsored holdings.
- *Specialist Settlement Participants* can participate in limited aspects of the holding and transfer of approved financial products, including as an offeror in relation to a takeover scheme or for processing an allocation in DvP batch settlement.

ASX's Code of Practice for cash equities clearing and settlement is intended to address transparency and accessibility in the provision of these services and to formalise avenues for user engagement (Key Consideration 2.7). The Forum established under the Code is also intended to ensure that the ongoing development of ASX Settlement's cash market settlement infrastructure and services meets the needs of users and is consistent with global standards.

ASX has also established a Business Committee and a Technical Committee to support the Forum. The Business Committee is comprised of representatives from ASX, clearing and settlement participants and market platform operators. These representatives have a deep understanding of the clearing and settlement business; for example, at the Chief Operating Officer level. The Business Committee has provided business and operational input on the forward work program of the Forum and has progressed issues of interest to the industry, such as the design of technology solutions (via the Technical Committee) and more flexible participant structures.

The Technical Committee is comprised of relevant technical experts from organisations represented on the Business Committee and back-office system vendors. These key groups help determine the needs of ASX Settlement stakeholders and the technical requirements of service providers and software vendors. This information is then provided to the ASX Settlement Board to inform possible service enhancements.

ASX Settlement undertakes regular customer engagement to supplement its formal user governance arrangements via the Forum. Participant feedback provides an important input for ASX Settlement to assess its performance against efficiency and effectiveness standards, particularly in relation to proposed new services and products, and changes to Operating Rules and Procedures (see Key Consideration 21.2).

ASX Settlement maintains a comprehensive governance and reporting framework that includes:

- transparent processes to operate ASX Settlement, with well-defined controls, underpinned by written policies and procedures
- the maintenance of sufficient resources (financial, technological and human resources) to operate the facility properly and to meet its obligations under its CS facility licence. ASIC concluded that these resources were adequate when preparing its 2013 ASX Group Assessment Report for the Minister¹³
- conflict handling arrangements that are reviewed and adapted to changing circumstances

¹³ ASIC's 2013 *Market Assessment Report: ASX Group*, released 28 July 2014, is available at <<https://www.asic.gov.au/asic/asic.nsf/byheadline/Reports?openDocument>>.

- processes to monitor and enforce participants' compliance with the Operating Rules (see Key Consideration 18.3)
- liaison processes with ASIC and the Bank
- a continuous improvement program.

ASX Settlement allows transactions executed on other licensed markets to be settled on the same basis as transactions executed on ASX. ASX Settlement's support for other market operators falls into two broad areas, namely:

- the TAS, which provides a mechanism for AMOs, such as Chi-X Australia Pty Ltd, to submit trades to ASX Clear and ASX Settlement for clearing and settlement via CHES in respect of ASX quoted securities
- the Settlement Facilitation Service, which supports securities not quoted on ASX that are listed and traded on other markets.

Under the Settlement Facilitation Service, ASX Settlement provides settlement arrangements for ALMOs in respect of CHES-eligible financial products listed on those markets, but which are not listed on ASX. There are two options for these settlement arrangements:

- a Transfer Facilitation Service via which CHES-eligible, ALMO-listed financial products can be transferred in real-time by ASX Settlement participants using CHES. Payment is handled bilaterally by participants outside of CHES
- a DvP Facilitation Service which allows CHES-eligible, ALMO-listed financial products to be settled on a DvP basis by ASX Settlement participants within the CHES settlement batch.

ASX Settlement has also put in place arrangements for ALMO-listed issuers to access the following services:

- the ASX Primary Market Facility, which enables issuers to use DvP settlement for certain capital raisings
- a Corporate Actions Service, allowing ASX Settlement to process corporate actions through its settlement facility for CHES-eligible, ALMO-listed financial products.

21.2 A securities settlement facility should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

The ASX Limited Board sets group-level strategic direction and business priorities, including via a three-year strategic plan, which is reviewed on a continuous basis. The ASX Settlement Board sets goals and objectives specific to its settlement service, and governs and reviews ASX Settlement's risk management processes, internal controls and compliance systems. The ASX Settlement Board is also responsible for overseeing the production of the management accounts of ASX Settlement, which are prepared on a quarterly and half-yearly basis, as well as audited full year financial reports and statements. The ASX Settlement Board is also responsible for the management of settlement risks (see Principles 2, 3).

Under the Code, ASX has committed to publishing audited management accounts for the clearing and settlement of cash equities at least annually. ASX published the first such set of

accounts for the 2012/13 financial year in August 2013, along with its internal cost allocation and transfer pricing policy. Unaudited half-yearly ASX Settlement management accounts are also released publicly.

In 2013, the ASX Settlement and Austraclear Boards approved ASX's Settlement Risk Policy Framework, which was established to ensure that ASX's settlement facilities continue to meet the FSS, as well as to provide a formal framework for review and development of settlement policy and standards (see Key Consideration 3.1).

ASX Settlement measures its progress against goals and objectives in a number of ways.

- ASX Settlement measures the effectiveness of its services via participant and user feedback. ASX Settlement uses customer engagement and consultative processes described under Key Consideration 21.1 to ensure that it achieves its goals in relation to meeting the requirements of participants.
- ASX Settlement has set availability targets for critical systems such as CHES (including the Settlement Facilitation Service) and the TAS, which are monitored and reported to relevant governance committees, including the ASX Audit and Risk Committee and the ASX Settlement Board, on a regular basis (see Key Consideration 17.3).
- Senior management report to each meeting of the ASX Settlement Board, and periodically to the Enterprise Risk Management Committee and the Audit and Risk Committee, on the status of ASX Settlement's risk management goals and objectives. Reporting and measurement mechanisms include international benchmarking, risk profiling and analysis, internal audit reviews, regulatory assurance reviews, and periodic analysis and reporting of key system service availability and capacity utilisation metrics (see Principles 3, 15, 17).
- Operating Rules and Procedures, together with other participant communications such as market notices, provide transparency to participants and other stakeholders regarding the operation of the ASX Settlement facility (see Principle 23).

The Audit and Risk Committee has responsibility for considering management reports regarding the effectiveness of ASX Settlement's risk management framework and processes. The Committee is assisted in this area by Internal Audit, Enterprise Risk, and Regulatory Assurance. The Audit and Risk Committee considers reports from these departments on the appropriateness and effectiveness of internal controls, and action taken or proposed in response to assessments conducted by ASIC or the Bank.

21.3 A securities settlement facility should have established mechanisms for the regular review of its efficiency and effectiveness.

In addition to periodic reporting to the CS Boards and relevant committees under ASX Group's corporate governance framework (see Principle 2 and Key Consideration 21.2), relevant Group Executives also report to the CEO on a monthly basis. Metrics contained within these reports include key measures of system availability and capacity utilisation, key settlement statistics such as netting efficiency and settlement efficiency, technical incident reporting, and new issues/admissions/listings. Other issues recorded and measured include the cause and resolution of settlement failures, operational incidents and participant complaints.

The business service availability target for both CHES and the TAS is 99.80 per cent. Capacity utilisation is continually monitored to maintain capacity headroom of 50 per cent above peak utilisation. The average monthly availability of the TAS between November 2011 and June 2014 was 99.99 per cent; average availability of the TAS was also 99.99 per cent over 2013/14. CHES has had 100 per cent availability since June 2012. The availability and capacity utilisation performance of CHES is discussed under Key Consideration 17.3.

In June 2014, ASX released the results of a study comparing the cost of ASX Settlement's cash equities settlement services against an international peer group. The study, undertaken by an independent consultant under the Code, concluded that the fees charged by ASX Settlement for post-trading services were within the range charged by comparable SSFs.

Responsibility for the regular review of ASX Settlement's efficiency and effectiveness is shared between a number of committees and departments within the ASX Group.

- SROCC oversees matters relating to ASX Settlement's fair and effective obligations under its Australian CS facilities licence. Section 821E of the Corporations Act requires ASX Settlement to provide a report to ASIC within three months of the end of its financial year on the extent to which the licensee has complied with the conditions of its licence.
- CALCO oversees the structural integrity and efficient use of liquidity, on-and-off-balance sheet assets, liabilities and the capital resources of the ASX Group, including ASX Settlement.
- As part of its commitment to continuous improvement, the ASX Operations and Risk divisions have adopted a comprehensive suite of policies and procedures to support the governance and internal review of ASX Settlement. These policies and procedures are reviewed on a regular basis (see Principles 2, 3).
- ASX Compliance monitors and enforces participants' compliance with the ASX Settlement Operating Rules. Other departments within ASX Group assist ASX Compliance in monitoring ASX Settlement's performance of its licence obligations.

Principle 22: Communication procedures and standards

A securities settlement facility should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Rating: Observed

ASIC's assessment is that ASX Settlement observes the requirements of Principle 22. ASX Settlement's approach to communication procedures and standards is described in further detail under the following Key Consideration.

22.1 A securities settlement facility should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

ASX Settlement has procedures in place to determine the impact of and actions required to accommodate changes in internationally accepted communications protocols. ASX Settlement also has processes and procedures for the notification of changes to users and other relevant stakeholders, including system vendors. Notification may take the form of consultation papers, software vendor workshops, notices to clearing participants and

settlement participants and bilateral contact with software developers. Each new business requirement is analysed in order to identify the most appropriate means of integrating changes to communication protocols, with a particular focus on standardisation and open connectivity.

ASX Settlement supports the CHESSE messaging standard which is an ASX proprietary communication protocol. The use of ASX proprietary messaging for CHESSE reflects the primarily domestic orientation of the cash equities settlement service supported by CHESSE.

CHESSE operates as a computer-to-computer system which relies on an electronic message exchange over publicly available communications networks using proprietary encryption software. CHESSE's proprietary software is utilised both at ASX Settlement and within the back-office systems of participants, payment providers and registries.

Although the CHESSE messaging format is proprietary and does not follow any particular standard, it was originally developed following a review of communications standards in the finance industry. Elements of those standards were used in the design of the CHESSE messaging format (for example, the use of a bitmap structure). Relevant communication standards have evolved significantly since CHESSE was first introduced over fifteen years ago; for example, one of the standards on which the original CHESSE messaging format was based, ISO 7775, has since been replaced (by ISO 15022 which in turn was recently replaced by ISO 20022).¹⁴ Nevertheless, ASX considers that the CHESSE messaging format has continued to achieve its key objectives in the areas of system/messaging capacity, ease of validation, adaptability and functionality.

CHESSE is able to accommodate the use of relevant, internationally accepted communications standards via third-party software 'adapters/translators'. These have been developed to convert CHESSE proprietary messages into internationally accepted SWIFT message protocols and vice versa. However, this approach is expensive for participants and other market stakeholders and involves contracting third-party software vendors to develop the required translators. Irrespective of preferred messaging standards, many participants also rely on third-party vendors for the back-office systems used to connect to CHESSE (see Key Consideration 17.7).

At its August 2013 meeting, the Business Committee expressed support for the introduction of a global messaging standard on the basis that it reduces costs for participants that operate in multiple markets, and which are currently required to either operate a separate back-office system in Australia or use a translator. The Business Committee recommended a move to the ISO 20022 SWIFT messaging protocol, particularly as this would align with the standard used for ASX's ReferencePoint product.¹⁵

In February 2014, the Business Committee recommended that a move to the new ISO 20022 SWIFT communications protocol be linked to a proposed CHESSE replacement initiative. The Technical Committee has provided ASX Settlement with initial feedback on a transition to an

¹⁴ ISO 20022 is the International Organization for Standardization's standard for financial services messaging. It defines a methodology for the development of financial message standards for financial business processes and transactions. Further information on ISO 20022 can be found at: <http://www.iso20022.org/about_iso20022.page>.

¹⁵ ReferencePoint is an ASX data service providing subscribers with information on a broad range of corporate actions, prices and reference data across the ASX market. Further details are available at: <https://www.asxonline.com/marketinfo/Doco/referencepoint_brochure.pdf>.

ISO 20022-based CHES replacement with an indicative project timeline of up to three years. The Committee set out a range of options for the replacement of CHES, options for the deployment of ISO 20022 standard messaging (either independently or in conjunction with the replacement of CHES) and a potential go-live strategy.

Although ASX Settlement meets the minimum requirements of Principle 22 as they apply to a domestically oriented CCP, a move to ISO 20022 SWIFT standard messaging has the potential to reduce operating costs and increase efficiency for participants once the initial cost of changing standards has been absorbed. Globally active participants could potentially save costs from straight through processing benefits and the removal of redundant local back-office systems. In addition, potential cost savings may also arise from greater competition among back-office system vendors able to utilise standardised connectivity. In the spirit of continuous improvement, ASX Settlement is therefore encouraged to migrate to the ISO 20022 SWIFT messaging standard over the medium term (approximately within the next three years).

Principle 23: Disclosure of rules, key procedures, and market data

A securities settlement facility should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the securities settlement facility. All relevant rules and key procedures should be publicly disclosed.

Rating: Observed

ASIC's and the Bank's assessment is that ASX Settlement observes the requirements of Principle 23. ASX Settlement's disclosure of rules, key policies and procedures, and market data is described in further detail under the following Key Considerations.

23.1 A securities settlement facility should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

ASX Settlement's Operating Rules and Procedures form the basis of all material aspects of the SSF's service to participants. The Operating Rules are disclosed on ASX's public website.¹⁶ The Rules are also posted on the ASX participant website, along with procedures relevant to participants.

To assist participants in their understanding of the risks of participating in ASX Settlement, and for the information of other interested stakeholders, ASX publishes a range of additional material on its public website. Information specific to ASX Settlement includes information about participant requirements, trade and settlement monitoring systems, known software release issues and change requests, and business continuity arrangements. More general information includes: the ASX Group's regulatory framework; requirements of the FSS; requirements of the Corporations Act for provision of services in a 'fair and effective' way; the ASX Group's other obligations under the Corporations Act; and ASX Group's compliance with the Principles. ASX also operates a dedicated website that discloses information relevant to the clearing and settlement of cash equities, to support its disclosure responsibilities under

¹⁶ Available at <<http://www.asx.com.au/regulation/rules/asx-settlement-operating-rules.htm>>.

the Code of Practice. During 2013/14, ASX redesigned its website, one element of which included centralising links to information required to be disclosed under the Principles.

Specific disclosure requirements are dealt with under Key Considerations 1.3, 2.2, 13.3, 14.4, 16.4, 18.2 and 18.3.

23.2 A securities settlement facility should disclose clear descriptions of the system’s design and operations, as well as the securities settlement facility’s and participants’ rights and obligations, so that participants can assess the risks they would incur by participating in the securities settlement facility.

General descriptions of ASX Settlement’s system design and operations are available on the ASX public website, including as part of ASX’s response to the CPSS-IOSCO Disclosure Framework (see Key Consideration 23.5).¹⁷ The Disclosure Framework document describes the ASX group structure, provides a general description of the CS facilities and their roles, system design and operations, outlines the legal and regulatory framework for clearing and settlement, and provides a description of steps taken by ASX to ensure compliance with the Principles and the corresponding FSS. The ASX public website provides additional information on system design and operations, including a description of the cash market settlement process.

23.3 A securities settlement facility should provide all necessary and appropriate documentation and training to facilitate participants’ understanding of the securities settlement facility’s rules and procedures and the risks they face from participating in the securities settlement facility.

All applicants for participation in ASX Settlement are provided with a comprehensive application pack, which includes information regarding key requirements of the facilities. Applicants are provided with access to the Operating Rules, Procedures and Guidance Notes via the ASX website, as well as publicly available information about the facilities, services and participation requirements. When ASX Settlement has completed an initial assessment of an application, the applicant is also invited to attend formal ‘on boarding’ meetings with the Compliance and Operations departments to discuss key areas of importance for participants.

As part of the formal admission process, the applicant must provide supporting evidence of its capacity to comply with the Operating Rules. This is reviewed and discussed with the applicant prior to approving admission. For example, ASX Clear and ASX Settlement participants are required to have a management plan which outlines the governance, risk and compliance arrangements of the participant. When reviewing the submissions, ASX will make enquiries of participants about their risk assessments, the design of the controls to mitigate those risks, and details of participants’ arrangements to ensure compliance with the Operating Rules and Procedures.

ASX Settlement requires that participants ‘tag’ settlement instructions submitted to CHES that are related to securities lending, and participants must disclose outstanding positions, both borrowed and lent. ASX publishes aggregate securities lending data on its website daily, enabling participants to better understand the risks associated with these activities.

¹⁷ Available at <http://www.asx.com.au/documents/regulation/pfmi_disclosure_framework.pdf>.

Where ASX becomes aware or suspects that a participant lacks a satisfactory understanding of the Operating Rules and Procedures, or the risks of participation, ASX will generally work collaboratively with the participant to educate them on their obligations. ASX may become aware of issues through its routine risk monitoring activities or through its regular discussions with participants (see Key Consideration 17.7). Examples of matters that might raise concerns are if a participant had increased settlement fail rates or had a high frequency of technical connectivity issues. If the matter is serious, ASX may require that the participant remediate the weakness. Alternatively ASX may impose conditions on participation, require that the participant appoint an independent expert to assist with the remediation task.

23.4 A securities settlement facility should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The securities settlement facility should provide clear descriptions of priced services for comparability purposes.

A full breakdown of the various fees ASX Settlement charges for the individual services it offers, including available discount and incentive schemes, is published on the ASX website. Fee schedules are available for each CS facility ASX operates.¹⁸ Separate fees are charged for clearing, settlement and ancillary services related to cash market products (e.g. equities, warrants and structured products).

ASX Settlement publishes a description of its priced services and how its fee structure has been calculated in a variety of ways, including on the ASX website, via participant notices, via Guidance Notes and in information brochures.

As a general rule, ASX Settlement publically notifies changes to its fee structure in a timely manner, sometimes with as much as three months' notice. However, the ASX Settlement Operating Rules allow ASX Settlement to make changes to its fee structure at any time, provided the changes are notified in advance to participants.

The Code (see Key Consideration 2.7) requires ASX Settlement to publish fee schedules, in a clear and accessible form, for all clearing and settlement services covered under the Code. The published schedules include a brief description of each service and the applicable terms, conditions and eligibility criteria, of any rebates, revenue-sharing arrangements and discounts applicable to each service.

ASX Settlement also makes available worked examples, tools and other information as appropriate to assist users to anticipate:

- the expected cost impacts of any pricing changes
- the expected cost impacts associated with new products and initiatives
- the impact of discounts, rebates and revenue-sharing arrangements for different user groups and different activity profiles.

In accordance with the Code, ASX Settlement publishes its audited management accounts on an annual basis, together with ASX's full year financial results (see Key Consideration 21.2).

¹⁸ The ASX Settlement fee schedules are available at:
<https://www.asxonline.com/intradoc-cgi/groups/participant_services/documents/information/asx_015359.pdf>
and
<http://www.asx.com.au/documents/settlement/transfer_service_fee_schedule.pdf>.

ASX Settlement has also committed under the Code to provide non-discriminatory pricing to all customers and potential users. ASX Settlement's fees, including rebates, revenue-sharing arrangements and discounts applicable to the use of these services, do not discriminate between ASX-affiliated and other customers or potential third-party users of its settlement services.

ASX Settlement has distributed a report containing the results of the independent cost benchmarking exercise carried out under the Code (see Key Consideration 21.2) to its customers, stakeholders and the Council of Financial Regulators, and has published the report on the ASX website.

23.5 A securities settlement facility should complete regularly and disclose publicly responses to the CPSS-IOSCO *Disclosure framework for financial market infrastructures*. A securities settlement facility also should, at a minimum, disclose basic data on transaction volumes and values.

ASX has published its response to the CPSS-IOSCO Disclosure Framework, including information describing how its CS facilities observe the applicable Principles. This document was revised during 2013/14, expanding on a previous version that summarised ASX's approach to observance of the Principles with greater detail as to how the CS facilities meet the Principles and corresponding FSS. ASX plans to update this document quarterly and further enhance its disclosure as necessary from time to time.

ASX currently reports basic risk and activity data for the CS facilities via a monthly activity report, as well as through additional data published on both its main website and dedicated website on clearing and settlement of cash equities. The Bank will continue to monitor steps by ASX Settlement to refine and enhance its disclosure.

Principle 24: Disclosure of market data by trade repositories

A trade repository should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Rating: Not applicable

Principle 24 is not relevant to securities settlement facilities.