4. Financial Market Infrastructures

Financial market infrastructures (FMIs) are critical to the smooth functioning of the financial system. The Payments System Board has a role in overseeing and supervising FMIs to promote financial stability. The Bank continuously monitors financial and economic developments and their implications for the evolving risk environment in which Australian and overseas FMIs operate. Over the past year, volatility in commodity and financial markets has increased alongside heightened geopolitical tensions, higher inflation and the withdrawal of policy stimulus. Both in Australia and overseas, regulators have also placed greater focus on what FMIs are doing to strengthen their cyber resilience with geopolitical tensions contributing to a greater cyber threat environment. These developments have highlighted the importance of the Bank's monitoring of the financial and operational risk management practices of FMIs.

Strategic priority: Promote the safety and resilience of financial market infrastructures and payment systems

The role of clearing and settlement facilities in financial markets

Clearing and settlement (CS) facilities support the processing of many transactions in financial markets. There are two types of CS facility – central counterparties (CCPs) and securities settlement facilities (SSFs).

CCPs provide clearing services and play a major role in managing the risks associated with trading in many types of financial instruments. They stand between the counterparties to a financial trade by acting as the buyer to every seller and the seller to every buyer; this activity is known as 'central clearing'. Participants in centrally cleared markets have credit and liquidity exposures only to the CCP rather than other participants in the market. In the event that a participant defaults, the CCP takes over its portfolio. The CCP faces potential losses from changes in the value of a defaulting participant's portfolio until it closes out the positions in that portfolio. CCPs hold financial resources to meet these potential losses.

SSFs offer settlement services, which involves the delivery of a financial security in exchange for payment. An SSF registers the change of ownership of securities and facilitates payments between the investors and issuers of securities. The settlement of two linked obligations brings about principal risk (e.g. the securities are delivered but no cash payment is received). Therefore, a SSF's main responsibility is the mitigation of principal risk by making the final settlement of one obligation conditional upon the final settlement of the other via a delivery-versus-payment (DvP) mechanism.

The Bank's regulatory framework

Under the powers to regulate FMIs assigned to the Bank and the Payments System Board by the *Corporations Act 2001* and the *Reserve Bank Act 1959*, the Board has set policies for the supervision and oversight of CS facilities and systemically important payment systems (SIPS).[1] Day-to-day oversight and supervision of FMIs is undertaken by the Bank's Payments Policy Department. In carrying out these activities in respect of CS facilities, the Bank works closely with the Australian Securities and Investments Commission (ASIC). The two agencies have complementary oversight powers over CS facilities and share the responsibility for ongoing supervision and assessment under the Corporations Act. Where an FMI is based overseas, the Bank seeks to defer to assessments undertaken by the home regulator, where practicable.

The Bank's Financial Stability Standards for CS facilities

Under the Corporations Act, the Bank may determine financial stability standards for CS facility licensees. The Bank is responsible for assessing how well licensees have complied with the standards and their obligation to do all other things necessary to reduce systemic risk.

The Bank has determined two sets of Financial Stability Standards (Standards) – one for CCPs and one for SSFs.[2] Each licensed CS facility is obliged to meet the relevant set of Standards. The objectives of the Standards are to ensure that CS facility licensees identify and properly control risks associated with the operation of their facility, and conduct their affairs in a way that is consistent with the overall stability of the Australian financial system. The Standards set principles-based requirements and regulatory expectations rather than prescribing detailed rules and obligations.

The Bank's Standards are based on the *Principles for Financial Market Infrastructure* (PFMI), which are internationally agreed standards for FMIs set by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO). The Bank also applies guidance developed from time to time by CPMI and IOSCO when interpreting its Standards.[3] There were no changes to the Standards or associated guidance during 2021/22.

The Bank's determination of systemically important payment systems

A payment system is systemically important if it has the potential to trigger or transmit systemic disruption – for example, because it processes a large share of the value of payments in the financial system, it is used for payments that are high value or time critical, or facilitates payments that are critical for other FMIs. A problem affecting a SIPS has the potential to threaten financial system stability because financial institutions and their customers may be unable to make payments necessary to meet critical obligations.

The Bank has set out criteria to determine which payment systems are systemically important, and carries out an annual review against these criteria. Currently, the Bank has determined that the following systems are SIPS:

- Reserve Bank Information and Transfer System (RITS) – RITS is Australia's high-value payment system. It is used by banks and other financial institutions to settle payment obligations. It is owned and operated by the Bank. The Bank's Payments Policy

[1] RBA (2021), 'The Reserve Bank's Approach to Supervising and Assessing Clearing and Settlement Facility Licensees', 25 February. See also RBA (2019), 'Policy Statement on the Supervision and Oversight of Systemically Important Payment Systems', 21 June.

[2] RBA (2013), 'Clearing and Settlement Facilities – Financial Stability Standards'.

[3] For the full list of guidance the Bank has adopted, see notes to the Financial Stability Standards at RBA (2013), 'Clearing and Settlement Facilities – Financial Stability Standards'.

Department undertakes assessments of RITS against the PFMI.

- CLS Bank International (CLS) – CLS operates a payment-versus-payment settlement system for foreign exchange transactions in a range of currencies, including the Australian dollar. Globally, it processes payments for over half of all foreign exchange transactions.[4]

Table 4.1 presents an overview of FMIs most relevant to the Australian market, the products they clear or settle, and their home regulator.

Financial market developments affecting FMIs

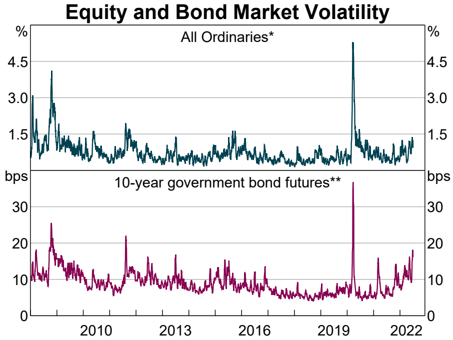
There were large movements in financial asset and derivative values over the year to 30 June. Interest rates and some commodity prices rose significantly, particularly in response to Russia's invasion of Ukraine, and equity prices fell sharply. These trends were accompanied by greater volatility in other asset prices (Graph 4.1).

Globally, growth in trading activity was particularly pronounced for shorter-dated interest rate derivatives as central banks withdrew the extraordinary monetary support that had been put in place at the onset of the COVID-19 pandemic (Graph 4.2). The increase in activity in shorter-dated Australian dollar instruments such as bank bill futures, overnight index swaps and repurchase agreements was more subdued than in some overseas markets, and trading activity remains below levels experienced in the period before the pandemic. Growth in trading activity in debt and equity securities markets and foreign exchange transactions resulted in a rebound in high-value payments processed through RITS (Graph 4.3). However, activity in these markets remains below levels recorded at the onset of the pandemic.

At the ASX, an increase in financial market volatility has been associated with a decline in

Graph 4.1

Equity and Bond Market Volatility



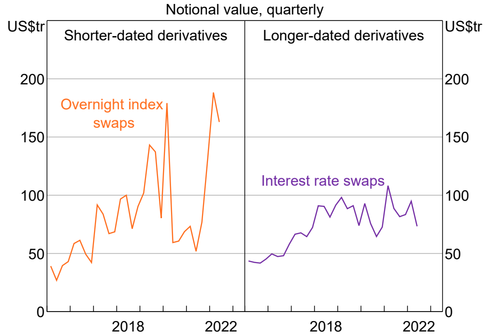
* 10-day moving average of absolute per cent change.
** 10-day moving average of intraday range.
Source: Bloomberg

[4] See BIS (2019), 'Triennial Central Bank Survey: Global Foreign Exchange Market Turnover in 2019', Monetary and Economic Department, 8 December.

Graph 4.2

SwapClear – Trades Registered by Product*

Notional value, quarterly

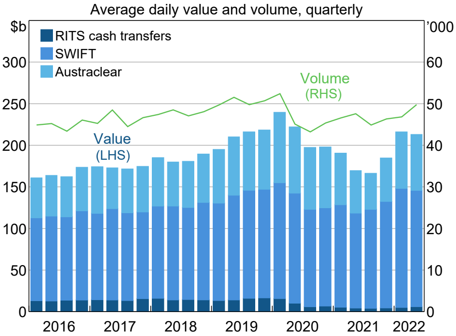


* Data count two sides of each trade.
Source: LCH Ltd

Graph 4.3

RITS RTGS Transactions

Average daily value and volume, quarterly



Source: RBA

Table 4.1: Financial Market Infrastructures Most Relevant to the Australian Market

Name	Products relevant to the Australian market[(a)]	Home jurisdiction (regulator)
Central counterparties		
ASX Clear[(b)]	Cash equities, debt products, warrants and equity-related derivatives traded on Australian exchanges or over-the-counter (OTC).	Australia (RBA/ASIC)
ASX Clear (Futures)[(b)]	Futures and options on interest rate, equity, energy and commodity products traded on the ASX 24 market, as well as AUD and New Zealand dollar-denominated OTC interest rate derivatives (IRD).	Australia (RBA/ASIC)
LCH Ltd	SwapClear service: OTC IRDs and inflation rate derivatives.	UK (Bank of England)
Chicago Mercantile Exchange Inc. (CME)	IRS service: OTC IRD, and non-AUD IRD traded on the CME market or the Chicago Board of Trade. FEX service: Commodity, energy and environmental derivatives traded on the financial market operated by FEX Global Pty Ltd (FEX).	USA (Commodity Futures Trading Commission)
Securities settlement facilities		
Austraclear[(b)]	Debt securities, including government bonds, and repurchase agreements.	Australia (RBA/ASIC)
ASX Settlement[(b)]	Cash equities, debt products and warrants traded on Australian exchanges.	Australia (RBA/ASIC)
Euroclear Bank[(c)]	Debt and equity securities, including government bonds, and repurchase agreements.	Belgium (National Bank of Belgium)
Clearstream Banking S.A.[(c)]	Debt and equity securities, including government bonds, and repurchase agreements.	Luxembourg (Banque Centrale du Luxembourg and Commission de Surveillance du Secteur Financier)
Systemically important payment systems		
RITS	Wholesale and other SWIFT payments, settlement of interbank obligations arising from other payment systems (cheques, Direct Entry, cards, CLS, property settlements) and other types of FMIs (CCPs and securities settlement systems).	Australia (RBA)
CLS	Foreign exchange transactions involving the AUD.	USA (Federal Reserve)

(a) Including service name if applicable (e.g. for overseas facilities that only provide some services relevant to the Australian market).

(b) ASX Group entities.

(c) Not licensed nor exempted in Australia as at 30 June.

outstanding positions in longer-dated interest rate futures (Graph 4.4). There has been an increase in trading volumes and outstanding positions for Australian equity derivatives over the year (Graph 4.5). Nonetheless, outstanding positions in these instruments remain well below the levels recorded before the onset of the pandemic.

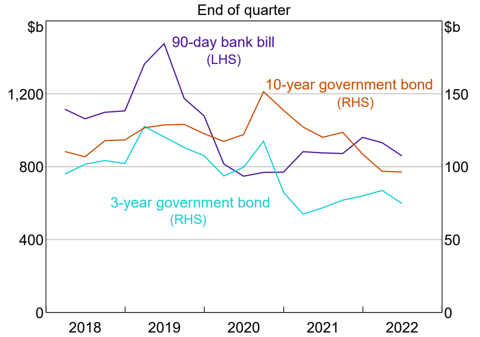
FMIs' financial risk management

The financial resources held by CCPs operating in Australia have declined a little over the past year, which largely reflected a decline in positions outstanding (Graph 4.6). The main source of financial resources for CCPs is initial margin, which is an indicator of the level of risk the CCP manages. It is collected from every participant to cover potential losses on their portfolio in the event they default. The decline in initial margin held at ASX Clear (Futures) over the year reflects the decline in the value of positions held by participants in 10-year bond futures. This has been partly offset by higher margin balances held for electricity futures. The higher margin collected for electricity futures was the result of higher volatility in that market as well as an increase in positions outstanding (see Box A) .

Graph 4.4

ASX Clear (Futures) Notional Value of Interest Rate Futures Outstanding

End of quarter

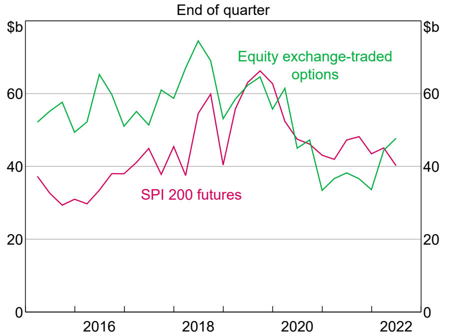


Sources: ASX; Bloomberg

Graph 4.5

ASX Notional Value of Equity Derivatives Outstanding

End of quarter



Sources: ASX; Bloomberg

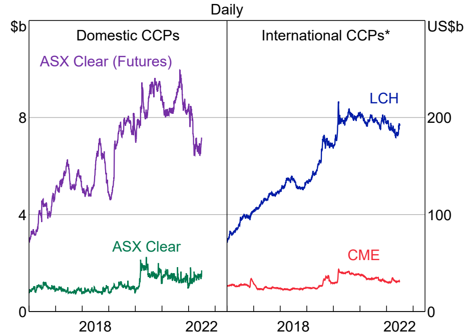
CCPs are required to regularly test the adequacy of initial margin by ensuring that it covers historical price movements with a high degree of confidence. Higher market volatility over the past year has resulted in a reduction in the performance of initial margin models under these coverage tests, with the frequency of breaches increasing. These breaches are an indicator for CCPs to review their margin models including analysis of their responsiveness to changes in market conditions.

Higher volatility has also resulted in increases in variation margin calls, which is collected by CCPs from participants whose positions have decreased in value and paid out to participants whose positions have increased in value (Graph 4.7). This timely transfer of funds prevents an increase in exposures between the CCP and its participants as prices move. It is also an important warning system because a late or missed margin payment could indicate that a participant is having difficulty funding its obligations and thus approaching potential default. In order to prevent the default of one participant from affecting others, CCPs can liquidate the defaulting participant's positions. Ahead of doing this, the CCP may take actions that include, among others, requiring the participant to reduce their exposures by increasing initial margin requirements for the

Graph 4.6

Initial Margin – Australian-licensed CCPs

Daily



* OTC interest rate derivatives services only (covering all currencies).

Sources: ASX; CME Inc.; LCH Ltd.

participant, which would encourage the participant to liquidate some of its positions. CCP participants must be prepared to meet margin calls, although they may face liquidity pressures by doing so. In general, banks and other large clearing participants have ample access to liquidity to meet increased margin calls, although this may be more difficult for some of their clients.

CCPs also maintain a pool of mutualised financial resources, known as a default fund. This can be used to cover losses that arise from a participant default that exceeds the initial margin provided by the defaulting participant. Despite an increase in volatility over the past financial year, the default funds of CCPs licensed in Australia have remained sufficiently large to cover the potential losses stemming from the default of the two participants with the largest estimated losses in excess of their initial margin (Graph 4.8).

Operational risk

Operational risk arises when deficiencies in information systems, internal processes and resourcing, or disruptions from external events, could result in the deterioration in the quality of services provided by an FMI. Operational failures can damage an FMI's reputation and result in significant financial losses.

In previous years, CS facilities licensed in Australia have experienced operational incidents where trade registration was affected and manual intervention was required to recover critical systems. Since then, CS facilities have taken steps to prevent similar incidents from occurring. The ASX's futures market (ASX24) experienced an incident on 17 March 2022, which resulted in a four-hour trading halt. The incident was caused by a hardware fault. This outage did not affect the functioning of clearing or settlement services for the futures market. However, further work is required to address other sources of operational risk, such as the implementation of technology and system changes. This has been a particular area of focus for ASX, which has experienced delays to its replacement of the CHESS clearing and settlement system for cash equities.

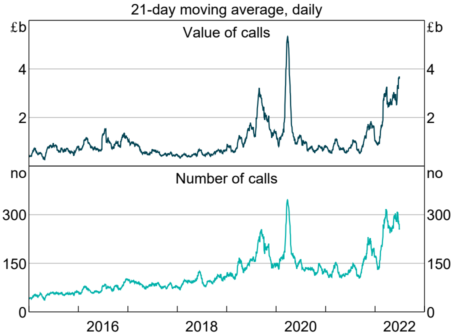
Sanctions

NATO countries introduced a range of sanctions against Russia after it invaded Ukraine on 24 February 2022. These sanctions included freezing the assets of the Central Bank of Russia and other entities and excluding Russian firms from participating in a number of countries' financial systems. FMIs have taken actions to reduce their exposures to Russian firms and products and comply with sanctions. These

Graph 4.7

Intraday Margin Calls – LCH SwapClear

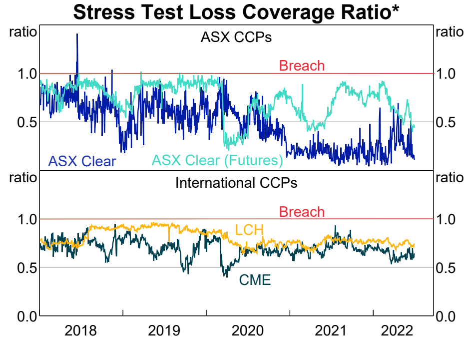
21-day moving average, daily



Source: LCH Ltd.

Graph 4.8

Stress Test Loss Coverage Ratio*



* Ratio of Cover 2 stress test losses to default fund including additional default fund margin.

Sources: ASX; CME Inc.; LCH Ltd.

include ceasing to provide clearing or settlement services for Russian rouble derivatives and Russian securities, and the removal of Russian entities as participants. Some FMIs faced operational risks from third party vendors linked to Russia and have reduced their dependency on such firms by moving to other vendors.

FMIs have moved to a heightened state of alert for cyber risks. All FMIs licensed in Australia have implemented a range of controls to bolster cyber defences including having increased cybersecurity testing and scanning as well as independent reviews and liaison with security agencies.

Some FMIs face ongoing operational and financial risks associated with managing the assets and cash balances of sanctioned entities. This includes the Australian dollar-denominated assets and cash of sanctioned entities. FMIs holding assets on behalf of entities that have been sanctioned are typically investing these funds at central banks or in high-quality liquid assets.

London Metal Exchange

The Russian invasion of Ukraine contributed to increased volatility in many commodity markets. Nickel traded on the London Metal Exchange (LME), however, experienced particularly extreme price movements after a broad range of sanctions were imposed on Russia, the world's third largest nickel producer. The disorderly conditions triggered LME to suspend trading and clearing services for nickel and to cancel nickel trades that occurred earlier in the day prior to the suspension of trade. These actions allowed for an orderly unwinding of short positions and limited any stresses that might have resulted from very large margin calls. The LME nickel market was suspended for over a week and when trading resumed, the LME implemented limits on price movements. UK regulators are undertaking a review of the event alongside a requirement for LME to undertake an external review.[5] The reviews will cover decisions made by LME as well as lessons that may be learned from its governance and risk management practices. The Bank is interested in the outcome of these reviews to consider any lessons that could be applicable for Australian CS facilities.

The Bank's supervision and oversight of FMIs

The Bank undertakes assessments of licensed CS facilities that are proportionate to their degree of systemic importance in the Australian financial system.[6] The four CS facilities in the ASX Group are systemically important domestic CS facilities, and LCH Ltd's SwapClear service is a systemically important overseas CS facility. CME's CCP services have not been classified as systemically important and are therefore subject to less-intensive supervision.

Summary of Assessment of the ASX CS facilities

The Bank's 2022 Assessment of the ASX CS facilities concluded that, on balance, the facilities have conducted their affairs in a way that promotes overall stability in the Australian financial system as at 30 June.[7] However, ASX will need to place a high priority on addressing recommendations related to operational risk. The Bank also views recommendations on governance and the framework for the management of risks as important in ensuring that ASX continues to promote overall financial stability in the longer term, and expects ASX to take a more proactive role in ensuring that its regulatory obligations are being met.

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[5] See Bank of England and Financial Conduct Authority (2022), 'Joint Statement from UK Financial Regulation Authorities on London Metal Exchange and LME Clear', News Release, 4 April.

[6] RBA (2021), 'The Reserve Bank's Approach to Supervising and Assessing Clearing and Settlement Facility Licensees', 25 February.

[7] RBA (2022), Assessment of ASX Clearing and Settlement Facilities, September.

The main areas of focus in the assessment are:

- *CHESS replacement*. The Bank conducted a detailed review of ASX's planned replacement of the CHESS clearing and settlement system for cash equities. While the review found that the target state for the replacement system is broadly consistent with relevant FSS standards, further work is required to provide assurance that the system is being built to meet the required specifications. The review also discusses the Bank's concerns with further delays to the go-live date for CHESS replacement, which highlight the need for ASX to demonstrate that appropriate arrangements are in place to manage vendor-related risks.
- *Risk management framework*. An independent external review highlighted weaknesses in ASX's implementation of its risk management framework. In particular, there are opportunities to improve the effectiveness of ASX's first and second lines of risk management.
- *Governance*. While ASX has made progress in addressing governance-related recommendations from the 2021 Assessment, there are several key outstanding items including the implementation of a self-assessment of compliance with the FSS, and further work to clarify lines of executive accountability.
- *Margin*. The Bank conducted a detailed review of ASX's margining arrangements, concluding that risk exposures had been reduced by the implementation of overnight variation margining at ASX Clear (Futures).
- *Regulatory reporting*. While some improvements have been made to ASX's processes for notifying the Bank of information in a timely and transparent manner, there were significant delays in the notification of some important developments.

Further detail is provided in the 2022 Assessment report.

Assessment of LCH Ltd's SwapClear Service

LCH Ltd is a UK-based CCP licensed to operate its SwapClear service in Australia to clear over-the-counter (OTC) interest rate derivatives (IRDs) and inflation rate derivatives. In Australia, SwapClear is considered to be systemically important. It clears around 85 per cent of the cleared Australian dollar OTC IRDs market (Graph 4.9). SwapClear has six Australian direct participants, including the four major banks.

The Bank has assessed LCH Ltd's SwapClear service as being conducted in a way that promotes overall stability in the Australian financial system as at 30 June 2022. This assessment is based on the Bank's bilateral engagement with LCH Ltd, information from LCH's home regulator, and LCH Ltd's progress towards meeting the Bank's regulatory priorities. A summary of regulatory priorities and areas of supervisory focus can be found in Table 4.2, with further detail provided below.

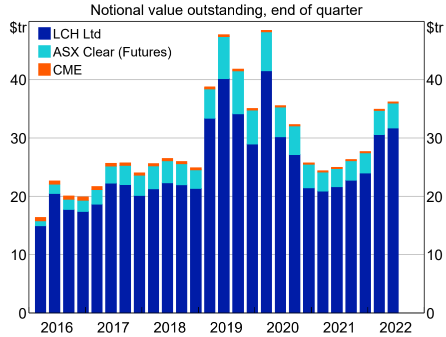
Extension of operating hours

Since it was licensed in 2014, LCH Ltd has been gradually extending SwapClear's operating hours to cover the Australian business day. This program of work has been encouraged by the

Graph 4.9

Cleared AUD OTC Interest Rate Derivatives

Notional value outstanding, end of quarter



Sources: ASX; CME Inc.; LCH Ltd

Table 4.2: Regulatory Priorities and Areas of Supervisory Focus for LCH Ltd's SwapClear Service

Name	Description	Status	Relevant Financial Stability Standard(s)
Regulatory Priorities			
Extension of operating hours	LCH Ltd should continue its work to extend the operating hours of the SwapClear service over the next couple of years, while maintaining the resilience of its operations; it should keep the Bank informed of its progress. LCH Ltd's future business developments should not negatively affect operating hours.	ongoing	CCP Standard 6 (Margin) CCP Standard 16 (Operational Risk)
Protected Payment System (PPS) contingencies	LCH Ltd should continue to implement its plans to enhance the effectiveness of its PPS contingencies, enabling the expected service level to be achieved in the event of a PPS bank outage or failure.	closed	CCP Standard 9 (Money settlements)
Area of supervisory focus			
Cyber risk management	The Bank will continue to monitor LCH Ltd's ongoing work to enhance its cyber risk management.	ongoing	CCP Standard 16 (Operational Risk)
Australian legal opinion	LCH Ltd should seek a new legal opinion from external advisers to address Australian law issues arising through its operations in Australia, including the extent to which LCH Ltd's rules and related contracts are enforceable under Australian law.	ongoing	CCP Standard 1 (Legal basis)

Bank and is now nearing completion. In April, SwapClear extended its operating hours by two hours per day and now operates 22 hours per day, five days per week (22x5). LCH Ltd is planning to extend its operating hours further to 24 hours per day, five days per week (24x5) in 2023, which will include opening from 9am Sydney time on Monday morning all year round.

This will be a good outcome for participants based in Australia and the Asia-Pacific as it will allow SwapClear to centrally clear trades in a timely fashion throughout the day (Graph 4.10). This is a material development because while the SwapClear service is closed, participants are required to manage bilateral credit risk exposures until the service reopens. This closure has had the greatest effect on Australian and Asia-Pacific based participants. For Australian participants, the extension of operating hours to 22 hours resulted in a 14 percentage point increase in the proportion of trades able to be cleared immediately upon submission to the SwapClear service. This final extension will allow the remaining 21 per cent of Australian trades to be cleared immediately upon submission to the SwapClear service. There will be similar benefits for participants from other countries in the Asia-Pacific.

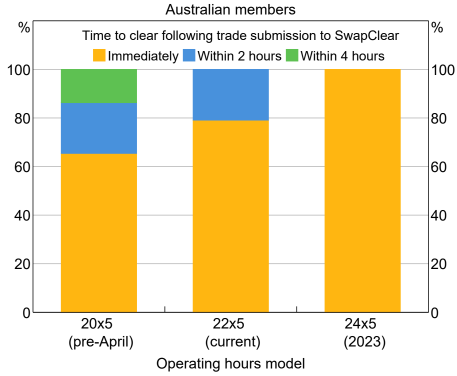
Back-up payment arrangements

The Protected Payment System (PPS) is operated by LCH Ltd to settle all cash payments to and from participants. Funds are settled across the

Graph 4.10

Trade Clearing Rates

Australian members



Source: LCH Ltd.

books of commercial settlement banks, called PPS banks. PPS banks then make payments to LCH Ltd's account at the bank where LCH Ltd conducts most of its transactions.

In the event of a PPS bank outage, LCH Ltd expects participants to have back-up arrangements in place so that they can continue to meet their cash obligations. The primary contingency method is 'direct funding', whereby participants make payments directly to LCH Ltd's bank instead of paying via a PPS bank.

Over recent years, LCH Ltd has been working on improvements to several aspects of the direct funding contingency arrangements to ensure the process is timely, robust and effective. This has included setting clear objectives around the performance of these arrangements to enable the processing of all end-of-day and intra-day margin calls for the largest PPS bank within a business day, and testing these arrangements.

During 2021/22, LCH Ltd demonstrated that it has the necessary policies and procedures in place to enable it to manage credit and/or liquidity risks that may arise during the course of a PPS outage, including late payments by participants. LCH Ltd continues to work with participants to improve their readiness for a contingency event and has strengthened the language in its Rulebook around expectations of participation in contingency tests. These actions have led to an improvement in test results, with participants consistently meeting calls in an acceptable timeframe. As LCH Ltd has demonstrated that its direct funding contingency is scalable and able to meet its PPS contingency requirements, this regulatory priority has been closed.

Other material developments

Other key developments and areas of supervisory focus the Bank took into consideration included:

- *Cyber risk management:* LCH Ltd continued to enhance its cyber control framework and capabilities. In response to the Russian invasion of Ukraine, LCH Ltd moved to a heightened state of alert and has taken appropriate actions to increase defences against attacks, but it has not experienced any material incidents. LCH Ltd regularly assesses its cyber controls through independent reviews and keeps the Bank informed of developments. The Bank of England (LCH Ltd's home regulator) maintains a focus on cyber resilience and the Bank will continue to work with LCH Ltd and the Bank of England as the cyber threat landscape continues to evolve.
- *Review of Australian legal risk:* LCH Ltd and the Bank have commenced a targeted review of certain aspects of LCH Ltd's legal basis, including the extent to which LCH Ltd's rules and related contracts are enforceable under Australian law. Work on this area of supervisory focus will continue into 2022/23.
- *Benchmark reform:* A key strategic focus for LCH Ltd has been to support ongoing global interest rate benchmark reform initiatives. In October 2021, LCH Ltd undertook the conversion of Euro Overnight Index Average (EONIA) contracts to the euro short-term rate (€STR) while London Interbank Offered Rate (LIBOR) contracts for Swiss franc, euro, British pound and Japanese yen were converted to their risk-free rate equivalents in December ahead of the cessation of these LIBOR rates. In April, LCH Ltd began consulting with participants and clients regarding the conversion of outstanding US dollar LIBOR contracts to the secured overnight financing rate (SOFR). These conversions are expected to take place in the June quarter 2023. The share of new trading activity in products referencing risk-free rates continued to increase over 2021/22.

Table 4.3: Regulatory Priorities for CME

Name	Description	Status	Relevant Financial Stability Standard(s)
Margin arrangements and close-out period	CME must test the closing-out of a hypothetical defaulted portfolio of FEX positions in a default management drill within the first 12 months following the commencement of trading on the FEX market. Thereafter, positions in FEX products will be included in default management drills at a minimum once every two years.CME must also test porting and/or closing-out of client positions on a regular basis as part of its default management drills.The Bank will review the results of these drills.	closed	CCP Standard 6 (Margin) CCP Standard 12 (Participant default rules and procedures) CCP Standard 13 (Segregation and Portability)
Australian dollar liquidity arrangements	CME must establish adequate liquidity arrangements for Australian dollar collateral during Australian hours before introducing any type of eligible collateral for Australian dollar-settled FEX products other than Australian dollar cash.	ongoing	CCP Standard 5 (Collateral) CCP Standard 7 (Liquidity)
Australian dollar settlement bank arrangements	Should the FEX service grow, CME must ensure the settlement arrangements in place to support money settlements for the FEX clearing service remain appropriate, including adequate back-up arrangements. CME must share its assessments of these arrangements with the Bank for review.	ongoing	CCP Standard 8 (Settlement finality) CCP Standard 9 (Money settlements)

Assessment of CME

CME is a Chicago-based CCP that is licensed to provide a number of services from its US operations. It does not currently have any direct Australian-based participants, although Australian firms access CME's clearing services indirectly as clients of direct participants. Consistent with the Bank's supervisory approach for overseas licensees, the Bank monitors CME's progress in addressing regulatory priorities and other material developments on an ongoing basis. The Bank is able to largely rely on reports and information from CME's home regulators in its supervision of CME.

Overall, the Bank has concluded that CME conducted its operations in such a way that promotes overall stability in the Australian financial system as at 30 June. A summary of regulatory priorities can be found in Table 4.3, with further detail provided below.

The focus of the Bank's supervisory work with CME this year was on risk management activities associated with the FEX Global Ltd (FEX) commodity, energy and environmental derivatives market, which launched in March 2021:

- *Fire drill:* Following the first trade cleared for the FEX service in September, CME was required to conduct a fire drill demonstrating its ability to manage a participant default that included these products. In April, CME demonstrated it could successfully liquidate a hypothetical portfolio of FEX electricity contracts as part of its default management process, and this regulatory priority has been closed. The Bank expects FEX products will continue to be incorporated in these drills at least every two years.
- *Margining arrangements:* The Bank has recently reviewed CME's margining arrangements ahead of the intended launch of clearing services for four additional gas contracts on FEX, and concluded that the margining arrangements are appropriate.

The Bank does not envisage conducting work on the additional FEX-related regulatory priorities until either the service grows or developments within CME's business trigger the associated requirements. These priorities are designed to provide clarity on the regulatory expectations should the FEX service expand.

Engagement with Clearstream Bank

Clearstream Bank S.A. (CBL) is an internationally focused SSF based in Luxembourg. It acts as an International Central Securities Depository and provides securities settlement and custodial services for securities denominated in 44 different currencies, including the Australian dollar, across 59 markets. CBL has customers in over 110 countries and facilitates access for foreign investors to Australian securities markets as well as enabling Australian firms to invest and raise funds offshore. The Bank regards CBL as an important securities settlement facility on the basis that it has a 5–10 per cent market share in the custody and settlement of Australian dollar-denominated securities. A disruption in the operation of CBL could have implications for the functioning of the Australian bond market.

CBL is regulated in Europe as a credit institution and as a central securities depository operating securities settlement systems. CBL has applied for a licence to operate a securities settlement facility in Australia. As part of the licencing process, the Bank is undertaking an initial assessment of CBL's settlement facility, which will be published separately. In addition to determining how CBL meets the FSS, the initial assessment will include a determination with ASIC of whether the home regulatory regime is equivalent to that in Australia.

Engagement with Euroclear Bank

Euroclear Bank operates an internationally focused SSF based in Belgium that provides settlement and custodial services for securities denominated in a wide range of currencies, including Australian dollar-denominated securities. Although Euroclear Bank has not applied for a license to operate in Australia, Euroclear Bank is encouraged to do so given it has a material share of Australian dollar-denominated securities settlement activity. The Bank is a member of the Euroclear Bank Multilateral Oversight Group (MOG), which is chaired by the National Bank of Belgium (Euroclear Bank's home supervisor). It serves as a cooperative oversight forum between the central banks of the major currencies settled in Euroclear Bank.

Summary of Assessment of RITS

RITS is Australia's high-value payments system, which is used by banks and other approved institutions to settle their payment obligations on a real-time gross settlement basis. The most recent assessment of RITS against the PFMI, prepared by the Bank's Payments Policy Department and endorsed by the Payments System Board, was published in June 2022.[8] The assessment concluded that RITS 'observed' all relevant principles as at 31 March, except for the principle on operational risk, which was rated as 'broadly observed'. To observe this principle, the assessment recommended that the Bank complete work currently underway to improve and refine the metrics used to measure the operational resilience and stability of IT systems supporting RITS.

The assessment also noted that Payments Policy Department will focus on three particular areas: developments designed to ensure that RITS remains resilient in the face of evolving cybersecurity threats; the impact of staff resourcing challenges on management of RITS operational risk; and the impact of planned upgrades to the Bank's physical infrastructure on the operational stability and resilience of RITS.

[8] RBA (2022), 'Assessment of the Reserve Bank Information and Transfer System', May.

Oversight of CLS Bank International

CLS operates a payment-versus-payment settlement system (CLS Settlement) for foreign exchange transactions in 18 currencies, including the Australian dollar. CLS is chartered in the United States and is regulated and supervised by the Federal Reserve. The Bank participates in a cooperative oversight arrangement for CLS, facilitated by the Federal Reserve.

Oversight of SWIFT

The Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides critical messaging and connectivity services to both RITS and CLS, as well as other FMIs and market participants in Australia and overseas. The G10 central banks oversee SWIFT through the SWIFT Cooperative Oversight Group (OG). The Bank is a member of the SWIFT Oversight Forum (SOF), which affords a broader set of central banks the opportunity to discuss oversight matters and provide input into the OG's priorities and policies. Oversight of SWIFT is supported by a set of standards that align with standards for critical service providers in the PFMI.

During 2021/22, the SOF maintained a focus on cyber resilience, including SWIFT's ongoing program to ensure SWIFT members' defences against cyber-attacks are up to date and effective to protect the integrity of the wider financial network. In addition, the SOF have been monitoring SWIFT's transition to ISO 20022 to be used for messages for cross-border payments, which is expected to be completed in November 2025 (see chapter on 'Retail Payments Regulation and Policy Issues').

Strategic Priority: Work with the government to implement reforms to the regulation of FMIs

The Bank, in close cooperation with ASIC and the other CFR agencies, continues to work towards implementation of a package of reforms to the regulation of FMIs. The reforms will support the effective regulation of the systems, services and facilities that underpin Australia's financial system by strengthening the supervision and enforcement powers of ASIC and the Bank. The Bank is engaging with the Australian Government on the prospective timeline for legislating the reforms.