Payments System Board Annual Report

2022

RESERVE BANK OF AUSTRALIA

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Contents

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Governor's Foreword

The payments system is evolving rapidly. Much of the work of the Payments System Board over the past year has focused on supporting this evolution and ensuring that the regulatory environment supports innovation as well as the safety and security of the Australian payments system.

Australian consumers and businesses continue to shift to electronic payments, with many people now using digital wallets to make contactless card payments. More account-to-account transfers are also occurring in real time using Australia's fast payment system and further development of this system is underway. In particular, the recently launched PayTo service will open up opportunities for improved payment services, including through new ways for third parties to initiate payments for consumers and businesses.

The Reserve Bank has also been working with Treasury to modernise the regulatory framework for payments in Australia, following the completion of the Treasury Payments System Review in 2021. This review recommended some changes to the Bank's regulatory powers and new legislation to deal with the increasing complexity of Australia's payments system. One important area of focus is the regulation of stablecoins, which have the potential for use as a means of payment. The Bank is working with the other members of the Council of Financial Regulators to develop an appropriate regulatory framework for stablecoins.

During the year, the Board also completed a major public review of the Bank's existing retail payments regulations. This review focused on competition in the debit card market, the ability of merchants to choose the lowest-cost payment channel, and the 'no-surcharge' rules of 'buy now, pay later' (BNPL) providers.

The Reserve Bank continues to support the international effort to improve the efficiency and lower the cost of cross-border payments. This is an area where significant work is still required to deliver better outcomes for consumers. The Bank is working on elements of the G20 roadmap, including adoption of the international ISO 20022 standard for payment messages and the use of fast payments systems to enable faster and safer cross-border payments.

Another continuing focus area is the ongoing transition away from banknotes as a means of payment, with this transition placing pressure on the wholesale cash distribution system. During the year, the Bank conducted a public review into the distribution system and has proposed some changes to improve the efficiency and sustainability of the system. It is important that the community retains ready access to cash deposit and withdrawal services.

There is growing public interest in the possibility of new forms of money, including central bank digital currencies (CBDCs). The Bank's staff are working collaboratively with industry partners and other central banks on the underlying technologies and related governance issues. We are undertaking a major project with the Digital Finance Cooperative Research Centre to explore the use cases for CBDC using a limited-scale

CBDC pilot. It remains to be seen how new forms of money will develop, but there is potential for significant improvements in various wholesale payment processes.

The Board continues to devote significant resources to the supervision of Australia's financial market infrastructures. This infrastructure has coped well with the volatility in financial markets over the past year. An important area of focus is cyber resilience, which is an increasing concern. Another focus area has been the delays to the ASX's planned replacement of the CHESS system for cash equities. The CHESS system is critical for Australia's financial markets. The Board is disappointed with the delays and the Bank staff are in close consultation with the ASX.

The Reserve Bank's staff have continued to support the Board with a high degree of professionalism and dedication. The Payments System Board joins me in thanking the staff for their work and for their ongoing contribution to the efficiency, competitiveness and safety of Australia's payments system.

Philip Lowe
Governor and Chair,
Payments System Board
28 September 2022

1. About the Payments System Board

Our role

The Reserve Bank is responsible for ensuring the stability, efficiency and competitiveness of the payments system through the Payments System Board. As set out in the *Reserve Bank Act 1959*, it is the duty of the Payments System Board to ensure that the Bank's payments system policy is directed to the greatest advantage of the people of Australia, and to ensure that the powers of the Bank under the *Payment Systems (Regulation) Act 1998* and the *Payment Systems and Netting Act 1998* are exercised in a way that, in the Board's opinion, will best contribute to:

- controlling risk in the financial system
- promoting the efficiency of the payments system
- promoting competition in the market for payment services, consistent with the overall stability of the financial system.

Under the Payment Systems (Regulation) Act, the Bank has the power to designate payment systems and to set standards and access regimes for designated systems. The Payment Systems and Netting Act provides the Bank with the power to give legal certainty to certain settlement arrangements in order to minimise the risks of systemic disruptions from payment systems.

In addition, the Payments System Board has a duty to ensure that the powers and functions of the Bank under Part 7.3 of the *Corporations Act 2001* are exercised in a way that, in the Board's opinion, will best contribute to the overall stability of the financial system. These powers and functions relate to the supervision of central counterparties and securities settlement facilities, which are key infrastructure supporting the clearing and settlement of transactions in financial markets. The Bank's Payments Policy Department also acts as overseer of Australia's high-value payments system – the Reserve Bank Information and Transfer System (RITS).

Strategic priorities

The Payments System Board sets priorities to guide the Bank's payments policy work. These were last updated at the August 2021 meeting and were described in the 2021 Payments System Board Annual Report. Work the Bank has undertaken in response to the strategic priorities over the past year is described in the chapters on 'Retail Payments Regulation and Policy Issues' and 'Financial Market Infrastructures'. The Board will review the strategic priorities as the payments landscape evolves.

Payments System Board 2021 • **STRATEGIC PRIORITIES**

- Support the shift towards **digital payments**
- Research **central bank digital currencies and other innovations** in payment systems and FMIs
- Identify and resolve any **competition and efficiency issues associated with new technologies and players** in the payments system
- Promote the **safety and resilience** of FMIs and payment systems
- Work with the government to **implement reforms to the regulation of FMIs**, including crisis management powers over Australian CS facilities

Payments System Board Members (August 2022)

The Board comprises up to eight members: the Governor; a representative of the Reserve Bank (currently, the Deputy Governor); a representative of the Australian Prudential Regulation Authority (currently the Chair); and up to five other non-executive members appointed by the Treasurer. Members of the Board during 2021/22 and details of their qualifications and experience are shown below.

Philip Lowe

BCom (Hons) (UNSW), PhD (MIT)

Governor and Chair

Governor since 18 September 2016

Present term ends 17 September 2023

Philip Lowe's appointment as Governor took effect in September 2016. Prior to that, he was Deputy Governor from February 2012 and held various senior positions at the Reserve Bank, including Deputy Governor, Assistant Governor (Economic) and Assistant Governor (Financial System), where he was responsible for overseeing economic and policy advice to the Governor and Reserve Bank Board. He spent two years at the Bank for International Settlements working on financial stability issues. Mr Lowe has authored numerous papers, including on the linkages between monetary policy and financial stability. He is a signatory to The Banking and Finance Oath.

Other roles

Chair – Reserve Bank Board

Chair – Council of Financial Regulators

Chair – Financial Markets Foundation for Children

Chair – Bank for International Settlements Committee on the Global Financial System

Member – Financial Stability Board

Member – Trans-Tasman Council on Banking

Supervision
Director – The Anika Foundation

Michele Bullock

BEc (Hons) (UNE), MSc (LSE)

Deputy Governor and Deputy Chair

Deputy Chair since 29 October 2016
Present term as Deputy Governor ends 1 April 2027

Michele Bullock was appointed as Deputy Governor on 2 April 2022. She is Deputy Chair of the Reserve Bank Board and Deputy Chair of the Payments System Board. Prior to her current role, Ms Bullock was Assistant Governor (Financial System), responsible for the Bank's work on financial stability and oversight of the payments system. Ms Bullock has also held a variety of senior management positions in the Bank. She was Assistant Governor (Business Services), Assistant Governor (Currency), Adviser for the Currency Group and, prior to that, Head of Payments Policy Department. Ms Bullock is a signatory to The Banking and Finance Oath.

Other roles

Deputy Chair – Reserve Bank Board
Member – Basel Committee on Banking Supervision
Member – Council of Financial Regulators

Wayne Byres

BEc (Hons), MAppFin (Macquarie)

APRA-appointed member

Chair, Australian Prudential Regulation Authority
Member since 9 July 2014
Present term ends 30 October 2022 upon resignation as Chair of APRA

Wayne Byres has brought a wealth of experience and knowledge of prudential supervision and banking practices. He was appointed as a Member and Chair of APRA from 1 July 2014 for a five-year term, and was subsequently reappointed on 1 July 2019 for a further five-year term. His early career was at the Reserve Bank, which he joined in 1984. He transferred to APRA on its establishment in 1998 and held a number of senior executive positions in the policy and supervisory divisions. In 2004, Mr Byres was appointed Executive General Manager, Diversified Institutions Division, with responsibility for the supervision of Australia's largest and most complex financial groups. He held this role until the end of 2011, when he was appointed as Secretary General of the Basel Committee on Banking Supervision, based at the Bank for International Settlements in Basel. Mr Byres is a Senior Fellow of the Financial Services Institute of Australia.

Other roles

Member – Basel Committee on Banking Supervision
Member – Bank for International Settlements Group of Governors and Heads of Supervision
Member – Council of Financial Regulators
Member – Trans-Tasman Council on Banking Supervision

Gina Cass-Gottlieb

BEc (Hons), LLB (Hons) (Sydney), LLM (Berkeley)

Non-executive member
Member from 15 July 2013 to 14 July 2018
Reappointed from 1 August 2018
Present term ends 31 July 2023

Gina Cass-Gottlieb has extensive expertise in all areas of competition law and economic regulatory advice and in the regulation of payments in Australia. Ms Cass-Gottlieb was appointed Chair, Australian Competition and Consumer Commission on 21 March 2022. Prior to this, Ms Cass-Gottlieb was a senior partner in Gilbert + Tobin's competition and regulation practice, advising and representing corporations, industry associations, government and non-government agencies. She has over 25 years' experience, including advising in relation to access arrangements in a range of sectors across the economy. Ms Cass-Gottlieb attended the University of California, Berkeley, as a Fulbright Scholar.

Other roles
Chair – Australian Competition and Consumer Commission
Director – Sydney Children's Hospitals Foundation

Scott Farrell

BEc (Sydney), LLB (Hons) (Sydney), PhD (UNSW)

Non-executive member
Member since 23 March 2022
Present term ends 22 March 2027

Scott Farrell has more than 25 years' experience in financial markets and financial systems law. In 2016, he was appointed to the Australian Government's FinTech Advisory Group at its formation and in 2018 was appointed to be co-Chair. Dr Farrell has led a number of reviews for the Australian Government, including the Review into Open Banking in Australia in 2017, the Inquiry into Future Directions for the Consumer Data Right in 2020 and the Review of the Australian Payments System in 2021.

Other roles
Partner – King & Wood Mallesons
Adjunct Professor – School of Private and Commercial Law, University of New South Wales
Member – Industry, Innovation and Science Australia
Member – Ministerial Advisory Council on Free Trade Agreement Negotiations

Deborah Ralston

BEc, Dip Fin Mgt, MEc (UNE), PhD (Bond)

Non-executive member
Member since 15 December 2016
Present term ends 14 December 2026

Deborah Ralston has more than 25 years of board-level experience in education, banking, superannuation and fintech sectors. Dr Ralston has held senior leadership and research roles in Australian universities, most recently as the Executive Director of the Centre for Financial Studies. Her expertise in public policy is reflected in appointments to the Australian Government's Retirement Income Review Panel, the Comprehensive Income Products for Retirement Framework Advisory Committee and as inaugural Chair of ASIC's Digital Finance Advisory Board. Dr Ralston is currently a Professorial Fellow at Monash University Business School, with research interests in financial regulation and superannuation and is a Fellow of CPA Australia and the Australian Institute of Company Directors.

Other roles
Professorial Fellow – Monash University
Chair – Advisory Board, Household Capital
Director – SuperEd Pty Ltd
Director – SMSF Association
Member – Advisory Board, Connexus Institute
Member – Future Fund Board of Guardians

Greg Storey

Non-executive member

Member since 1 August 2018

Present term ends 31 July 2023

Greg Storey is an experienced cards and payments industry professional, with specialist knowledge in the evolution and operation of debit cards, credit cards and payment systems. He was Vice-President and Head of Visa Checkout, Asia Pacific from 2012 to 2016. Mr Storey had over 20 years' experience with Visa, spanning the rollout of numerous VisaNet-related solutions and services, product and strategy, micropayments solution (Payclick), as well as Visa Checkout (and V.me) products across the Asia Pacific region. Prior to his roles at Visa, Mr Storey worked at St. George Bank in various cards and payments roles, as CIO of an independent payment solution provider, and has established and overseen merchant point of sale and ATM switching operations.

Catherine Walter AM

LLB (Hons), LLM, MBA (Melbourne)

Non-executive member

Member since 3 September 2007

Present term ends 2 September 2022

Catherine Walter brings substantial experience and expertise in financial services and corporate governance across many industry sectors, including banking, insurance, funds management, health services, medical research, education, telecommunications and resources. Mrs Walter is a solicitor and company director, who practised banking and corporate law for 20 years in major city law firms, culminating in a term as Managing Partner of Clayton Utz, Melbourne. She was a Commissioner of the City of Melbourne and for more than 20 years has been a non-executive director of a range of listed companies, government entities and not-for-profit organisations. Mrs Walter was awarded a Centenary Medal in 2001 for her service to Australian society in business leadership. In the 2003 Australia Day Honours, she was awarded a Member of the Order of Australia for her service to business, particularly as a director of a range of public companies, to the arts, to the law, and to the community through the Melbourne City Council. Mrs Walter is a Fellow of the Australian Institute of Company Directors.

Other roles

Chair – Helen Macpherson Smith Trust
Chair – Melbourne Genomics Health Alliance
Director – Australian Foundation Investment Company
Director – Barristers' Chambers Limited
Non-executive Member – Export Finance Australia

Meetings of the Payments System Board

Since its inception, the Board's practice has been to meet at least four times a year, with the option of meeting more often if needed. Six meetings were held in 2021/22 – two at the Bank's Head Office in Sydney and four were held via videoconference owing to the COVID-19 pandemic and domestic travel restrictions. Additional meetings of the Board were held in September and October 2021 to consider the issues raised in the Review of Retail Payments Regulation ahead of the publication of the Conclusions Paper in October.

Conflict of interest policy

The Bank has a number of distinct areas of responsibility in the Australian payments system: it operates and participates in Australia's real-time gross settlement (RTGS) system, RITS; it provides transactional banking services to the Australian Government and its agencies; and it is principal regulator of the payments system through the Board. This combination of functions is conventional internationally, and the Board has formally adopted a policy on the management of actual or perceived conflicts of interests arising from the Bank's different roles.

The policy is published on the Bank's website and focuses on interactions between the Bank's Payments Policy Department and Banking Department.[1] It was updated during the year to reflect changes to the Bank's involvement with NPP (New Payments Platform) Australia Ltd (NPPA) following the merger of NPPA with eftpos Payments Australia and BPAY. Details of the steps taken to achieve compliance with the policy, including the minutes of informal meetings between departments, are audited every three years by the Bank's Audit Department, with the results presented to the Board. The most recent audit was conducted in March 2022.

In the case of the Bank's oversight of RITS, the Board plays a governance role in managing conflicts of interest. While an internal FMI Review Committee has the formal responsibility to review and approve assessments of other

[1] See RBA, 'Managing Potential Conflicts of Interest Arising from the Bank's Commercial Activities'.

Table 1.1: Board Meetings in 2021/22

Attendance by members

	Attended	Eligible
Philip Lowe (Governor)	6	6
Michele Bullock (RBA)	6	6
Wayne Byres (APRA)	6	6
Gina Cass-Gottlieb	6	6
Scott Farrell[(a)]	1	1
Deborah Ralston	6	6
Greg Storey	6	6
Catherine Walter	6	6

(a) Scott Farrell's term on the Board commenced on 23 March 2022.

financial market infrastructures (FMIs), the Board retains primary responsibility for approving the staff's periodic assessments of RITS.

Accountability and communication

The Payments System Board seeks to ensure a high degree of transparency and accountability around its actions through regular reporting to the Australian Government and through the Bank's communication program.

Accountability

The Bank has a range of reporting obligations that serve to ensure the accountability of the Board. Under the *Reserve Bank Act 1959*, the Payments System Board is required to:

- inform the government, from time to time, of the Bank's payments system policy (section 11(1)(b))
- prepare and give to the Treasurer a report that covers certain matters relating to the standards that the Bank determines under section 827D of the *Corporations Act 2001* and developments in the clearing and settlement industry that are relevant to Australia's financial stability (section 25M(1)).

This annual report addresses these requirements and is the primary accountability vehicle with respect to the Bank's payments system responsibilities. The House of Representatives Economics Committee holds twice-yearly public hearings at which the Bank presents an opening statement on the economy, financial markets and other matters – including payments system matters – pertaining to the Bank's operations, and responds to questions from Committee members. These hearings may include discussion of developments in the payments system and the Bank's payments system policy.

The broader accountability of the Bank includes its obligations under the *Public Governance, Performance and Accountability Act 2013*. The Bank's annual report, including the annual performance statement, covers the Bank's role in the payments system.

Communications

The Bank regularly communicates on payments system issues and its regulatory and oversight work through media releases, speeches, research publications, the Bank's website, and community and industry liaison. The Bank also engages in various international forums relating to payment systems and FMIs.

Media releases around Board decisions

The Bank publishes a media release in the afternoon immediately following each quarterly Board meeting, outlining matters that were discussed by the Board and foreshadowing any forthcoming documents to be released by the Bank. Media releases also accompany any major announcements following decisions taken by the Board.

Speeches

During 2021/22, senior Bank staff gave a number of public speeches and participated in discussion panels on various payments system-related topics, including developments in real-time payments in Australia, the future of payments, and innovations in the payments system such as stablecoins and central bank digital currencies. Audio files and transcripts of speeches are published on the Bank's website.

Submissions and parliamentary appearances

Where appropriate, the Bank makes submissions to parliamentary and federal government committees and inquiries on payments system-related topics. During 2021/22, the Bank made a submission to the Senate Select Committee on Australia as a Technology and Financial Centre and appeared before hearings of the Joint Committee on Corporations and Financial Services inquiry into mobile payment and digital wallet financial services and the Senate Select

Committee on Australia as a Technology and Financial Centre. Copies of the Bank's submissions can be found on the Bank's website.[2]

Research and statistics

To support the Bank's research and policy work, statistics on retail payments are collected by the Bank on a monthly basis from financial institutions, card companies and other payments system participants. Data on debit and credit cards, ATM transactions, merchant fees, bulk electronic transfers, NPP transactions and cheques provide insights on how individuals and businesses make and receive payments. These aggregated data are published as part of the statistical tables on the Bank's website.[3] During 2021/22, the Bank undertook a number of initiatives to expand the data it collects. For example, it began collecting data on 'buy now, pay later' (BNPL) and mobile wallet transactions and the adoption of least-cost routing functionality for debit card transactions. The Bank also started publishing more granular data on merchant-service fees.

The Bank also began preparations for its sixth triennial survey of consumer payments, with the survey to be conducted in October 2022 and results to be published in mid-2023. The survey will provide an updated look at how consumer payment choices have been changing, particularly following the pandemic, including the use of cash and electronic payments.

Liaison activity

The Bank engages with a wide range of stakeholders in Australia and overseas.

Domestic liaison

The Bank engaged with a range of participants in the payments industry to discuss policy issues and market developments. During 2021/22, this stakeholder engagement continued to focus on issues related to the Bank's comprehensive Review of Retail Payments Regulation, which began in late 2019 and concluded in October 2021. There was extensive engagement with stakeholders in response to the consultation paper the Bank published in May 2021, which set out proposed policy actions from the Review. Following the publication of the Conclusions Paper in October, Bank staff have continued to engage widely with stakeholders on the implementation of various policy actions, particularly in relation to the Bank's expectations on issuance of dual-network debit cards and least-cost routing of debit transactions.

Outside of the Review, the Bank's meetings with stakeholders on retail payments issues over the past year have focused on a wide range of issues, including challenges in cross-border payments, the development of the NPP, initiatives to bolster the security and reliability of retail payments, the future of cash, competition in the debit card market and competition in the acquiring market. Bank staff have also continued to engage with stakeholders regarding their obligations under the Bank's card payments regulations. Another focus of the Bank's engagement with payments industry participants has been on technology and innovation, especially in relation to BNPL services, stablecoins, central bank digital currency and the role of new players in the payments ecosystem.

In August 2021, the Board held its final annual meeting with members of the Australian Payments Council (APC).[4] The meeting included discussion of the APC's strategic focus areas relating to improving systemic resilience of the

[2] See RBA, 'Submissions – Payments System'.

[3] See RBA, 'Payments Data'.

[4] The APC was established in 2014 as a strategic coordination body for the payments industry, with members drawn from a range of payments organisations including financial institutions, card schemes, retail acquirers, the Australian Payments Network and the Bank (in its role as provider of banking services to the government).

payments system, combatting financial crime, the decline of cash, and industry plans for the future of the cheques and Direct Entry systems. In February 2022, the APC decided to discontinue its role as the strategic coordination body for the payments industry. This decision followed consultation with the Board, in which it was recognised that new arrangements for strategic oversight of the payments system announced by the government in December 2021 in response to the Treasury Payments System Review would largely supersede the role of the APC. The Board thanked recent and past members of the APC for their commitment to collaboration and cooperation to support the strategic development of Australia's payments system.

Bank staff meet regularly with senior staff of the Australian Payments Network (AusPayNet), the main self-regulatory body for the payments industry, to discuss industry initiatives and developments. These meetings take place consistent with an agreement on liaison arrangements between the two organisations that is published on the Bank's website.[5] The staff also meet periodically with counterparts from a range of government agencies, including the Australian Competition and Consumer Commission (ACCC), Australian Prudential Regulation Authority (APRA), Australian Securities and Investments Commission (ASIC), the Australian Transaction Reports and Analysis Centre (AUSTRAC) and the Treasury. An MOU between the ACCC and the Bank sets out an agreed basis for policy coordination, information sharing and liaison between the two agencies. There has been significant engagement with Treasury during the past year on issues relating to implementation of the payments system reforms announced by the government in December 2021.

The Bank continues to be involved in the NPP, which is operated by NPPA, now a wholly owned subsidiary of Australian Payments Plus. The Bank operates the Fast Settlement Service (FSS), which enables the settlement of NPP payments individually in real time. Further, the Banking Department is a direct participant in the NPP, providing payments services to its government clients via the NPP. Until September 2021, the Head of Payments Settlements Department was a Bank-appointed member of the NPPA Board.[6] Staff from Payments Policy Department hold regular liaison meetings with senior staff from NPPA to discuss developments in relation to the NPP, including on the development of new NPP capabilities and new payment services that utilise the NPP infrastructure.

The Bank meets regularly with each FMI it supervises. These meetings cover a wide range of topics, including developments in financial and operational risk management. As ASIC and the Bank have complementary regulatory responsibilities for the supervision of clearing and settlement (CS) facilities, the two agencies coordinate their liaison with these facilities. ASIC and the Bank also liaise with market participants on a range of topics related to clearing and settlement.

The Bank continues to work closely with other agencies of the Council of Financial Regulators (CFR) (and, where relevant, the ACCC) on a number of policy issues. These include the Australian Government's reforms to the regulatory regime for FMIs and the introduction of a crisis management regime for CS facilities, competition in clearing and settlement of equities, cybersecurity and de-banking. The CFR agencies, along with AUSTRAC, ACCC and a number of other government departments, participate in a working group that is considering the implications of stablecoins and

[5] See RBA (2021), 'Memorandum of Understanding for Liaison Procedures between the RBA and AusPayNet', February.

[6] The Bank divested its shareholding in NPPA when NPPA merged with eftpos and BPAY Group to form Australian Payments Plus in February 2022.

other types of crypto-assets for the financial sector and regulation.

Staff also attend various conferences and seminars on issues related to payments and FMIs, in some cases as speakers or panellists.

Payments Consultation Group

In addition to bilateral liaison with stakeholders representing end users, the Bank convenes a Payments Consultation Group with the aim of providing a more structured mechanism for users of the payments system (consumers, merchants, businesses and government agencies) to express their views on payments system issues as an input to the policy formulation process. The Payments Consultation Group helps to keep the staff and Board well informed of the payments system needs and challenges of end users as an input to the Bank's policy work.

The Payments Consultation Group met twice in 2021/22 and discussed a range of topics, including payment scams, retail payment service reliability, the development of the NPP, trends in merchant payment costs and policy actions coming out of the Bank's Review of Retail Payments Regulation. The Board appreciates the valuable feedback provided by the participants and their willingness to engage in this process.

International engagement

The Bank is a member of the Bank for International Settlements' (BIS) Committee on Payments and Market Infrastructures (CPMI), which serves as a forum for central banks to monitor and analyse developments in payment, clearing and settlement infrastructures, and sets international standards. It has members from 28 central banks. Joint working groups of the CPMI and the International Organization of Securities Commissions (IOSCO) bring together members of these two bodies to coordinate policy work on the regulation of FMIs. Bank staff are members of a number of CPMI working groups, including some that are contributing to elements of the international roadmap for enhancing cross-border payments. The Bank also participates in a Financial Stability Board (FSB) working group examining the regulation of global stablecoin arrangements.

The Bank is a member of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) Working Group on Payments and Market Infrastructures. This is a regional forum for sharing information and experiences relating to the development, oversight and regulation of retail payment systems and FMIs. Over the past year, the Bank participated in a joint initiative of CPMI, IOSCO and the Basel Committee on Banking Supervision conducting analysis of the changes that were made to margin requirements during the March 2020 market volatility. This group released a consultative report proposing further work on a range of margin-related issues in late 2021. The Bank also contributed to reports on client clearing and non-default losses in FMIs.

In addition to these more policy-focused forums, the Bank also participates in several multilateral and bilateral arrangements to support its oversight of overseas-based FMIs. Table 1.2 presents a breakdown of the Bank's participation in the international forums relevant to the mandate of the Board.

Table 1.2: RBA's Participation in International Forums Dealing with Payments System and FMI Issues

Name of the forum	Organiser/ secretariat	Mandate	Membership
Policy-focused forums			
CPMI	BIS	Monitoring and analysing developments in payment, clearing and settlement infrastructures, standard setting.	28 central banks – CPMI members.
CPMI–IOSCO Steering Group	BIS/IOSCO	Providing operational guidance on joint CPMI–IOSCO work.	CPMI and IOSCO members.
CPMI–IOSCO Policy Standing Group	BIS/IOSCO	Developing supervisory policies and guidance.	CPMI and IOSCO members.
CPMI–IOSCO Implementation Monitoring Standing Group	BIS/IOSCO	Monitoring of Principles for Financial Market Infrastructures implementation in 28 CPMI–IOSCO jurisdictions.	CPMI and IOSCO members.
FMI Cross Border Crisis Management Group	FSB	Development of resolution strategies and operational resolution plans for CCPs.	Representatives from 24 jurisdictions, major international financial institutions (including the International Monetary Fund and BIS), standard-setting bodies (such as the Basel Committee on Banking Supervision).
FSB Regulatory Issues in Stablecoins Working Group	FSB	Development and monitoring of approaches to the regulation, supervision and oversight of global stablecoin arrangements.	Representatives from FSB member jurisdictions, international organisations and international standard-setting bodies.
EMEAP Working Group on Payments and Market Infrastructures	Rotating Reserve Bank of New Zealand (until August 2022) RBA (from August 2022)	Information and experience sharing on the regulation and oversight of payment systems and FMIs.	RBA, The People's Bank of China, Hong Kong Monetary Authority, Bank Indonesia, Bank of Japan, Bank of Korea, Bank Negara Malaysia, Reserve Bank of New Zealand, Bangko Sentral Ng Pilipinas, Monetary Authority of Singapore, Bank of Thailand.
Cooperative oversight forums			
CLS Oversight Committee	Federal Reserve Bank of New York	Cooperative oversight of the CLS.	23 central banks representing 18 CLS settlement-eligible currencies plus five additional Eurosystem central banks.
SWIFT Oversight Forum	National Bank of Belgium	Providing input to cooperative oversight of SWIFT exercised by SWIFT Oversight Group (OG).	G10 central banks (OG) and 10 additional central banks
LCH Ltd Supervisory College and Crisis Management Group	Bank of England	Cooperative oversight of LCH Ltd.	Central banks and securities regulatory authorities from 20 jurisdictions of LCH Ltd operation.
Multilateral Oversight Group for the Euroclear Bank	National Bank of Belgium	Cooperative oversight of Euroclear Bank.	RBA, Federal Reserve, Bank of England, Bank of Japan, European Central Bank.

2. The Evolving Retail Payments Landscape

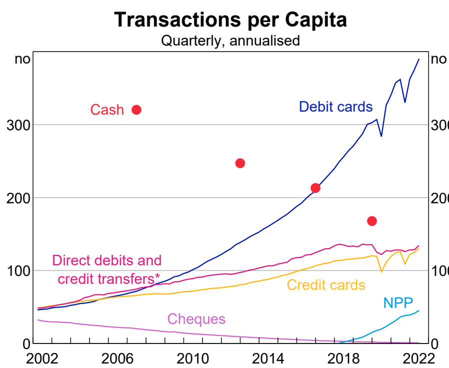
Over the past year, the share of transactions made electronically has continued to rise as cash and cheques are used less frequently. New technologies and new participants in the payments ecosystem are also widening the payment options available to consumers and businesses. These trends have been reinforced by changes in payment behaviour through the COVID-19 pandemic.

Australians increasingly prefer to make payments electronically

The way Australians make payments has changed significantly over recent decades. The majority of transactions are now made using electronic payment methods rather than cash, and cheques are rarely used anymore (Graph 2.1). In 2021/22, Australians made around 650 electronic transactions per person on average, compared to about 300 a decade earlier. Around 75 per cent of these transactions by number used debit and credit cards, which are the most commonly used retail payment methods in Australia. When measured by the value of transactions, direct debits and credit transfers processed through the direct entry system account for the bulk of non-cash retail payments (Table 2.1). The long-run trend to electronic payments reflects innovation in the payments ecosystem and changing payment preferences in the economy. This trend has been reinforced by changes in payment behaviour through the COVID-19 pandemic.

Strong growth in card payments over the past decade or so has been driven by the rising popularity of debit cards. According to data from the BIS, the number of debit card transactions per person in Australia is among the highest in the world.[1] Around 75 per cent of card payments in Australia were made with a debit card during 2021/22, compared to 62 per cent 10 years ago (Graph 2.2). Growth in debit card use accelerated during the pandemic, with spending on debit cards (by value) around 40 per cent higher in the first half of 2022 than in the second half of 2019. By contrast, the value of credit card spending was only 6 per cent higher over the same period.

Graph 2.1



* Includes BPAY.
Sources: ABS; AusPayNet; BPAY; Colmar Brunton; Ipsos; RBA; Roy Morgan Research

[1] Compared to the 27 jurisdictions reporting data to the Bank for International Settlements Red Book Statistics for 2020. See BIS (2020), 'CT6C: Use of Payment Services/Instruments: Volume of Cashless Payments Per Inhabitant'. Available at <https://stats.bis.org/statx/srs/table/CT6c>.

Table 2.1: Non-cash Retail Payments

	2021/22					Average annual growth 2011/12 to 2021/22	
	Per cent of total		Average value	Growth, per cent		Per cent	
	Number	Value	$	Number	Value	Number	Value
Cards[a]	74.1	4.3	64	4.8	10.5	10.8	7.1
– Debit cards	55.7	2.5	50	5.9	12.1	13.0	11.3
– Credit cards	18.4	1.8	108	1.8	8.4	6.2	3.2
Direct Entry[b]	17.1	77.8	4,994	1.1	12.8	4.8	4.4
– Direct credits	11.1	55.0	5,445	–1.6	12.7	3.2	4.9
– Direct debits	6.0	22.7	4,159	6.6	13.1	8.9	3.1
BPAY	2.3	3.0	1,424	–0.3	15.1	2.2	9.0
Cheques	0.2	1.8	11,832	–22.0	–9.7	–19.1	–12.1
PEXA[c]	0.0	6.8	376,372	21.5	52.6	–	–
New Payments Platform[d]	6.2	6.3	1,104	39.8	53.9	–	–
Total	**100.0**	**100.0**	**1,100**	**5.6**	**16.2**	**9.5**	**5.1**

(a) Card purchases using Australian-issued cards; debit card series includes prepaid cards prior to 2018.

(b) Data prior to a reporting change in May 2018 have been adjusted downwards to be more consistent with the current definitions of the direct debit and credit series.

(c) PEXA is an e-conveyancing platform used for property transactions.

(d) The NPP was launched to the public in February 2018.

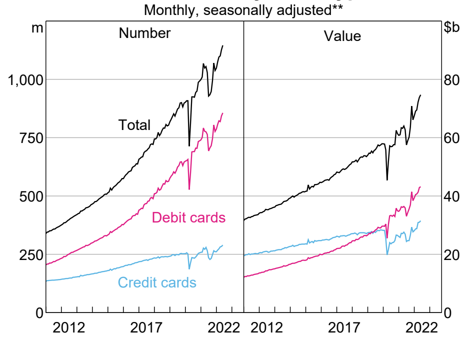
Source: RBA

Another long-run trend that has been reinforced by the pandemic is an increase in the share of retail purchases being made online. The share of retail sales conducted online increased sharply during periods of pandemic-related lockdowns, and remains higher than it was prior to the pandemic (Graph 2.3). Data from the Australian Bureau of Statistics show that just over 10 per cent of retail sales were conducted online in the June quarter of 2022, compared to around 7 per cent at the end of 2019. This suggests that the pandemic may have induced a permanent change in shopping preferences for some consumers, which reinforces the trend increase in the use of electronic payment methods.

Graph 2.2

Transactions by Card Type*

Monthly, seasonally adjusted**



* Includes all transactions made using Australian-issued cards; excludes transactions made by foreign-issued cards.

** Series break due to changes in reporting methods in May 2018.

Source: RBA

More Australians are using mobile wallets

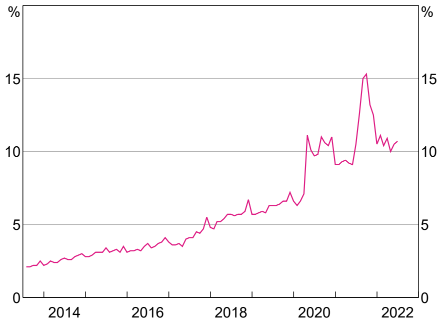
Over the past few years, there has also been a marked shift to card payments being made with mobile wallets offered by large technology companies, such as Apple Pay, Google Pay and Samsung Pay. These wallets enable consumers to store digital representations of their debit and/or credit cards in their smartphone or other mobile devices (such as a smart watch). These can then be used to make contactless payments at the point of sale and, in some cases, online payments.

The Bank has recently begun collecting data on mobile wallet use in Australia from major card issuers. The share of debit and credit card transactions made via mobile wallets more than doubled between the March quarter of 2020 and the March quarter of 2022, from 10 to 25 per cent (Graph 2.4). A higher proportion of debit card than credit card payments are made using mobile wallets. For example, 27 per cent of debit card transactions (by number) were made via a mobile wallet in the March quarter of 2022, compared to 21 per cent of credit card transactions.

Graph 2.3

Online Retail Sales

Share of total retail sales

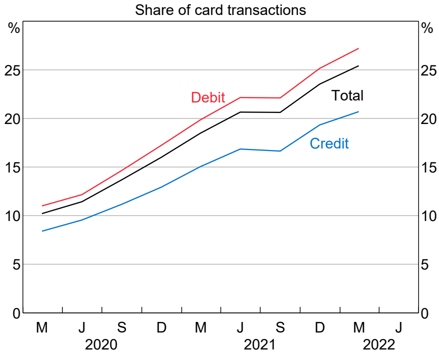


Source: ABS

Graph 2.4

Mobile Wallet Transactions

Share of card transactions



Source: RBA

'Buy now, pay later' transactions grew strongly through the pandemic

Another prominent development in consumer payments in recent years has been the strong growth in purchases made using 'buy now, pay later' (BNPL) services. BNPL transactions involve customers paying part of the purchase price at the time of the transaction and the remainder to the BNPL provider in a series of low- or zero-interest instalments. The merchant receives the full amount of the purchase price upfront from the BNPL provider, as is the case for other forms of payment such as credit cards. These services are a form of borrowing that enable consumers to purchase items without paying the full amount upfront.

Based on data collected by the Bank from a sample of BNPL providers, BNPL transactions have continued to grow strongly through the COVID-19 pandemic. The value of BNPL transactions increased by around 37 per cent in 2021/22 to $16 billion (Graph 2.5), equivalent to around 2 per cent of Australian card purchases.[2] The number of active Australian BNPL customer accounts also increased, from 5 million to around 7 million accounts over the year to June (though some consumers hold accounts with multiple providers). Over the past year, a number of new providers entered the Australian BNPL market, and some larger existing payment providers have introduced BNPL options to their existing payment services. The range of merchants accepting BNPL transactions has also increased, including as a result of some BNPL providers leveraging existing card acceptance arrangements to enable BNPL purchases at almost any merchant that accepts card payments.

[2] By comparison, the value of overall debit and credit card payments grew by 9 per cent over the same period to $710 billion.

Cash is used less often for payments but is still important for some people

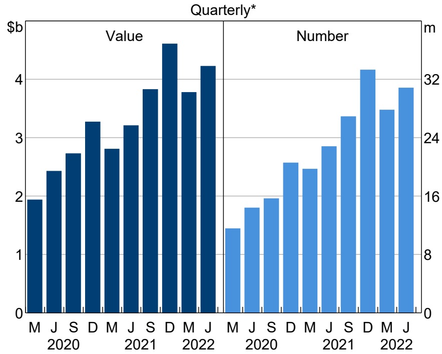
The use of cash for day-to-day payments has been declining for many years. This trend accelerated during the pandemic as consumers and businesses preferred to use electronic payment methods for in-person transactions – particularly contactless cards and mobile wallets – and more transactions were conducted online, where cash is not an option. For some consumers, this shift is likely to be enduring. For example, in a recent survey commissioned by the Bank, around a quarter of respondents reported that their reduction in transactional use of cash over the pandemic was likely to be permanent.

Nonetheless, as pandemic-related restrictions have eased, some indicators point to a partial recovery in the use of cash for transactions. For example, the Bank's survey found that cash was used in 27 per cent of in-person transactions in 2021, compared to 23 per cent in 2020. Similarly, ATM cash withdrawals and banknote lodgements in cash depots (which indicate how much cash is moving between retailers and financial institutions) have increased from their lows during the pandemic-related lockdowns (Graph 2.6).

Graph 2.5

BNPL Transactions

Quarterly*



* Includes transactions at partner and non-partner merchants.

Source: RBA

There are indications that merchant acceptance of cash also declined through the pandemic, although it remains high overall. Surveys conducted by the Bank indicate that cash acceptance by retailers with a physical presence fell to 94 per cent in June 2022, from 99 per cent in February 2020.

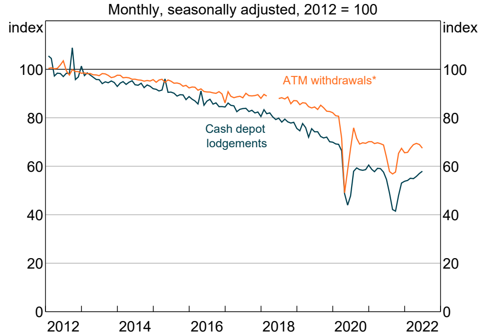
Despite the ongoing decline in the use of cash for transactions, a significant minority of face-to-face payments are still made in cash and some members of the community prefer to use cash for their everyday payments. Older Australians, for example, tend to use cash more frequently on average than people in other age groups.[3] One of the main sources of information on cash use in the economy is the Bank's Consumer Payments Survey, which provides detailed data on cash use and holdings across the Australian population. The next survey will be conducted in late 2022.

While Australians are using cash less frequently for transactions, overall demand for cash remains strong. The value of banknotes in circulation grew particularly strongly during the

Graph 2.6

Indicators of Cash System Activity

Monthly, seasonally adjusted, 2012 = 100



* Series break between February 2018 and May 2018 due to changes in collection and reporting methodology.

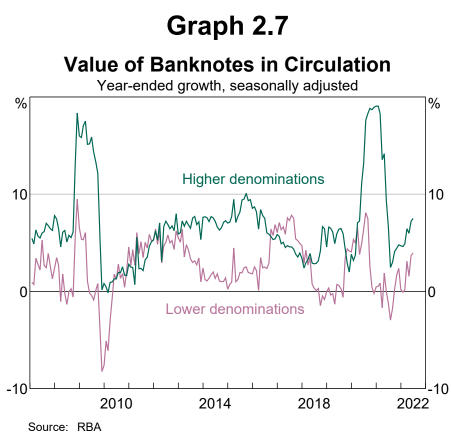
Source: RBA

[3] See Caddy J, L Delaney and C Fisher (2020), 'Consumer Payment Behaviour in Australia: Evidence from the 2019 Consumer Payments Survey', RBA Research Discussion Paper No 2020-06. See also Delaney L, N McClure and R Finlay (2020), 'Cash Use in Australia: Results from the 2019 Consumer Payments Survey', RBA *Bulletin*, June.

pandemic, with circulation growing by 23 per cent from December 2019 to December 2021. Much of the increase in demand was for high-denomination banknotes ($50s and $100s), suggesting that many people in the community continue to view holding banknotes as desirable for precautionary (i.e. emergency) or store-of-wealth purposes, especially in times of economic uncertainty (Graph 2.7). This experience is not unique to Australia; most advanced economies experienced strong precautionary demand for cash coupled with weaker transactional cash use during the pandemic.[4]

More account-to-account transfers are happening in real time

Use of Australia's fast account-to-account payments system, the NPP, has continued to grow since its launch in 2018. The NPP enables consumers, businesses and government agencies to make real-time, data-rich payments 24 hours a day, every day of the year. Over 100 payment providers, including some non-bank payment service providers, now offer NPP services to almost 90 million customer accounts. Over the past year, the NPP processed more than a billion transactions worth more than $1 trillion (Graph 2.8). The NPP now processes more than 25 per cent of the total number of account-to-account payments, up from around 22 per cent a year earlier.

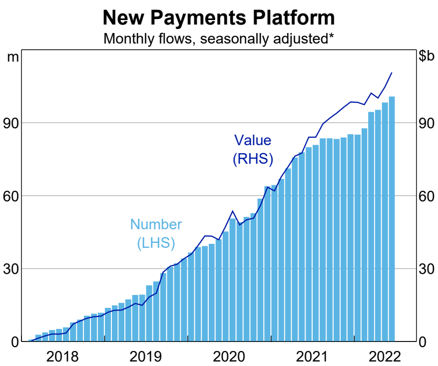


[4] See Guttmann R, C Pavlik, B Ung and G Wang (2021), 'Cash Demand during COVID-19', RBA *Bulletin*, March.

At the same time, there has been increased uptake of the NPP's PayID service. This service allows NPP payments to be addressed to a payee's registered mobile phone number, email address or Australian Business Number rather than to a BSB and account number. By addressing a payment to a PayID, the payer can check the account name of the payee prior to completing the transaction, which can help in avoiding mistaken payments and some types of scams. In mid-2022 there were around 11 million registered PayIDs in Australia, up from around 8 million a year earlier. While the share of payments made using PayIDs has been increasing, the majority of NPP payments are still addressed to BSB and account numbers.

In the past year, some payments previously processed via the direct entry system have migrated to the NPP. This has included some types of government payments, with the NPP utilised to provide disaster relief and COVID-19-related support payments to affected households in near real time, including on weekends. The number of direct entry payments has been broadly flat, increasing by around 4 per cent over the year to July. The NPP's new PayTo service is expected to accelerate this migration of direct entry payments. PayTo provides direct debit-like functionality, allowing consumers to pre-authorise standing arrangements for businesses to initiate fast payments from their bank accounts. The service will act as a modern alternative to the current direct debit system, providing customers with greater visibility and control over their PayTo agreements. PayTo could also be used as an alternative payment method for in-person or online transactions, and to streamline certain business payments such as payroll. While the service went live in July 2022, consumer uptake will take time as many banks are yet to enable the service for their customer accounts. ✠

Graph 2.8



* Excludes transactions between accounts held at the RBA for the purposes of intra-government funding transfers.

Source: RBA

3. Payments System Regulation and Policy Issues

This chapter summarises the main regulatory and policy work the Bank has undertaken over the past year on retail payment systems in pursuit of the strategic priorities determined by the Board in August 2021. A key area of focus was completing the Review of Retail Payments Regulation that began in late 2019, and implementing a number of the policy actions stemming from that Review. With the ongoing transition away from cash towards electronic payments, the Bank has continued to examine whether there are any policy issues regarding access to cash services, as well as issues related to the cost, reliability and security of electronic payment services. The Bank also continues to monitor the rapid pace of innovation in the payments system and changes in market structure, and has considered a number of policy and regulatory issues associated with new players and innovations in the payments system throughout the year. Research on a CBDC has also been a key focus area.

Strategic priority: Support the shift towards digital payments

Australia's payments system is evolving rapidly, with the use of electronic payments continuing to grow. This has been driven by ongoing advances in technology and changing expectations of end users for convenient and safe payments. The Bank has an important role to play in ensuring that payment services remain efficient and meet the needs of users of the payments system.

Review of Retail Payments Regulation

A key element of the Bank's work to support the shift towards digital payments over the past year has been the completion and implementation of a major review of the regulatory framework for retail payments. The Bank conducts these reviews every five years or so, to ensure that regulatory settings remain appropriate in light of changes to the payments landscape. This latest review was completed in October 2021, with the publication of a Conclusions Paper setting out the policy decisions of the Board.[1]

A particular focus of this Review was on measures to support and promote the ongoing availability of least-cost routing (LCR), or merchant-choice routing, which is the ability of merchants to choose which debit network processes certain debit card transactions. This functionality helps merchants reduce their payment costs and increases competitive pressure between the debit networks, and so is important for competition and efficiency in the

[1] See RBA (2021), 'Review of Retail Payments Regulation: Conclusions Paper', October

debit card market. The main new policy measures in this area included:

- An expectation that larger debit card issuers will continue to issue dual-network debit cards (DNDCs). These facilitate LCR by allowing domestic debit payments to be processed via either the domestic scheme (eftpos) or one of the international debit networks (Debit Mastercard or Visa Debit). For these issuers, the Bank also set an expectation that both card schemes on DNDCs will be provisioned in all form factors, including mobile wallets (where the functionality is supported by the relevant schemes and mobile-wallet providers).
- An expectation that acquirers and payment facilitators providing card acceptance services to merchants offer and promote LCR functionality to merchants in the device-present (in-person) environment. Similarly, in the device-not-present (online) environment, acquirers, payment facilitators and gateways are expected to offer and promote LCR functionality to merchants by the end of 2022. The Bank also expects the industry to follow a set of principles regarding the implementation of LCR in the online environment.
- The introduction of a 'sub-benchmark' for interchange on single-network debit cards (SNDCs), such that the weighted-average interchange fee on SNDCs from a given scheme, must be no more than 8 cents. This limits the ability of schemes to use interchange rates to incentivise issuers to shift away from issuing DNDCs.

Other new policy measures included:

- a reduction in the cap on debit (and prepaid) interchange fees that are set in cents terms, from 15 cents to 10 cents, to lower the cost of some low-value transactions for smaller merchants
- measures to improve the transparency of scheme fees, including the collection of annual scheme fee data from the card schemes
- new initiatives to further improve the transparency of payment costs for merchants, to help reduce some impediments to competition in the acquiring market for smaller merchants.

The Board also concluded that it would be in the public interest for BNPL providers to remove their no-surcharge rules. However, the Bank's ability to impose standards to achieve this outcome is complicated by the current drafting of the relevant legislation, the *Payment Systems (Regulation) Act 1998* (PSRA). Following the government's response to the 2021 Treasury Review of the Australian Payments System, the Bank is supporting work by Treasury on possible amendments to the PSRA to clarify the Bank's ability to regulate all entities that play a material role in facilitating payments, including in relation to no-surcharge rules.

Following the conclusion of its Review, the Bank has been working with industry to implement and monitor the various initiatives. In particular:

- The Bank's revised standards for card payments systems, which implemented the changes to the debit (and prepaid) interchange framework noted above, took effect on 1 January 2022.
- Larger issuers have made good progress in meeting the Bank's expectation regarding DNDC issuance and the provisioning of both networks on DNDCs in mobile wallets.
- Acquirers, payment facilitators and gateways have more work to do to meet the Bank's expectations, and the expectations of users of the payments system more generally, regarding the provision of LCR.[2] In August 2022, the Board also announced that it expects the payments industry to develop LCR functionality for mobile wallet

transactions. The Bank continues to explore LCR-related issues with a range of industry stakeholders.

In the year ahead, the Bank will continue to monitor the implementation and impact of the various regulatory changes stemming from the Review, and will engage with end users and industry stakeholders on any additional policy issues that arise.

Data and research on payment trends

The Bank has continued to provide data on changes to the payments mix and conduct research on the implications for the efficiency of Australia's payments system. The Bank has undertaken a number of initiatives during the past year to expand the data it collects and publishes. For example, the Bank began publishing more granular data on the fees that merchants pay for accepting card payments. It also began collecting data on BNPL and mobile wallet transactions, and on the provision and use of LCR functionality. The Bank has begun preparatory work on its sixth triennial Consumer Payments Survey, with the survey to be conducted in late 2022 and the results to be published in mid-2023. The survey provides a comprehensive source of information on consumers' use of, and attitudes towards, different payment methods. Through the survey, the Bank is looking to understand how consumers' payments choices have evolved following the pandemic and the ongoing move to electronic payment methods.

NPP use and development

The Board continues to have a close interest in the adoption of the real-time payments capability of the NPP and especially the development of new functionality to meet the evolving needs of end users. As noted in the chapter on 'The Evolving Retail Payments Landscape', use of the NPP has continued to grow since its launch in 2018, and there has been an increase in the number and range of payment providers offering NPP services. NPPA and its participants have committed to a roadmap to extend the platform's capabilities.

A major roadmap initiative has been the launch of the NPP's PayTo service. PayTo provides a convenient and secure way for households and businesses to authorise third parties to initiate NPP payments from their bank accounts. This service can be used as a modern alternative to the direct debit system, giving payers greater control and transparency over their recurring payments. Payee businesses can also benefit from the increased speed, information and transparency associated with these payments. PayTo could be used in a range of other payment scenarios, including for in-app and e-commerce transactions, funding digital wallets and paying e-invoices. This will provide consumers and merchants with greater payment options and increase competitive pressure in the payment market.

While the PayTo service did go live in June 2022 as scheduled, it was disappointing that many NPP participants, including several of the major banks, were not ready to begin offering PayTo services to their customers by this date. These delays will limit the adoption of the service and the realisation of benefits for end users. Accordingly, the Bank has obtained assurances from the relevant banks that they will be ready to enable customer accounts to authorise PayTo agreements and respond to payment initiation requests as mandated in the NPP roadmap, by April 2023. The Board will be closely monitoring progress in the rollout and adoption of PayTo services.

The other major initiative on the NPP roadmap is the development of the international payments business service. This service will allow banks

[2] This is discussed in more detail in Gill T, C Holland and G Wiley (2022), 'The Cost of Card Payments for Merchants', RBA *Bulletin*, September.

and other payment service providers to use the NPP for the final Australian dollar leg of customer payments coming into Australia. Additional data about the sender will be carried with these payments, making it easier for payment service providers to meet their compliance obligations related to financial crime, resulting in safer and faster cross-border payments. NPP participants are currently scheduled to begin supporting this service during 2023 and the Board expects the industry to meet this commitment.

In addition to supporting these new NPP capabilities, the Board expects banks to take additional steps to increase the adoption and use of NPP PayIDs by their customers, including businesses. PayIDs, such as phone numbers and email addresses, are a convenient way of addressing payments. They are also safer, as the payer is shown the name of the person or business being paid before they confirm the payment. This can reduce mistaken payments, and also help prevent some types of scams (see discussion below).

As use of the NPP grows, it is important that the NPP services provided by financial institutions are reliable. Data disclosed as part of the Bank's retail payments service reliability statistics indicate that during the past year many providers of NPP payment services had multiple unplanned outages and elevated total outage time (see below). The Bank will continue to closely monitor these statistics and expects the industry to work on improving the reliability of their NPP services.

Enhancing cross-border payments

Having efficient and competitive cross-border payment services has become more important as international payments activity has grown. Yet the end-user experience for cross-border payment services often falls well short of that for domestic payments. This is particularly the case for retail international money transfers (IMTs), which tend to be relatively expensive, slow and opaque for end users.

Recognising these challenges, the G20 has endorsed an ambitious roadmap to enhance cross-border payments. The roadmap is a multi-year program of targets, milestones and responsibilities to address various frictions in wholesale and retail cross-border payment arrangements.[3] A foundational aspect of the program is a set of quantitative global targets for cost, speed, transparency and access in the cross-border payments market. The Bank is supporting this international effort, including through participation in a number of international working groups responsible for various aspects of the roadmap.

A key element of the international effort to enhance cross-border payments is the global adoption of the ISO 20022 standard for payment messages. ISO 20022 payment messages support enhanced data content, which can assist payment providers to implement automated straight-through processing of payments. The NPP already uses a version of ISO 20022. The Bank is participating in an industry-led project to update Australia's High Value Clearing System (HVCS) to this messaging standard. The HVCS is used by financial institutions to process high-value payments, correspondent banking flows and the Australian dollar leg of foreign exchange transactions. HVCS payments will begin transitioning to the ISO 20022 format from November 2022, with full migration expected by November 2024.

The Bank has also been discussing other initiatives related to cross-border payments with Australian regulatory agencies and industry participants. One area of ongoing focus has been monitoring prices and competitive dynamics in the Australian market for IMTs.

[3] For further information, see RBA (2021), 'Box A: The G20 Roadmap to Enhance Cross-border Payments', Payment System Board *Annual Report*.

Another priority is for the industry to begin making use of the NPP to enable faster and safer cross-border payments via the NPP international payments business service. The Bank also plans to explore with industry the feasibility of various initiatives in the roadmap that could increase the NPP's interoperability with fast payment systems in other countries.

Addressing accessibility and cost challenges faced by South Pacific countries in relation to low-value IMTs (i.e. remittances) and banking services is also an important focus of the Bank's cross-border payments work. The Bank, together with the Reserve Bank of New Zealand, other South Pacific central banks and multilateral organisations, recently concluded a review of the case for a regional electronic Know-Your-Customer (eKYC) utility to help support the flow, and potentially reduce the cost, of remittances to the South Pacific. Based on this review, the South Pacific central bank governors decided to prioritise countries developing strategies for delivering their own eKYC capability, as part of their respective national digitalisation, digital identity and AML/CFT compliance work programs.[4] The Bank remains committed to supporting South Pacific central banks in relation to the development of their eKYC capabilities, as well as other opportunities to improve the region's access to financial services and cost-effective remittances.

Access to cash services and the Review of Banknote Distribution Arrangements

As discussed in the chapter on 'The Evolving Retail Payments Landscape', there has been a long-term structural decline in the use of cash for transactions in Australia, a trend that has accelerated during the COVID-19 pandemic as people have made more electronic and online payments. Nonetheless, cash is expected to remain an important means of payment for the foreseeable future, particularly as some parts of the community continue to rely heavily on cash in their daily lives.

The Board has been continuing to monitor trends in cash use, and has been keen to see that the community retains good access to cash withdrawal and deposit services. While access to cash services overall remains reasonable, the declining use of cash for retail payments has been placing pressure on the wholesale cash distribution system. This is the process through which banknotes are obtained from the Reserve Bank and moved around the country by cash-in-transit companies, which is critical to facilitating the flow of cash in the Australia economy and ensuring people have access to cash when they need it.

In light of these challenges, the Bank launched a public review to determine what changes to Australia's banknote distribution system might be required to ensure that banknote distribution remains effective, efficient, sustainable and resilient in the face of declining cash use. Stakeholders were invited to make submissions in response to an Issues Paper published in November 2021 and Bank staff met with stakeholders during the first half of 2022 to discuss their submissions. The Board has been briefed on the issues raised in the Review and the options for bolstering the cash distribution system. A paper setting out stakeholder feedback and the Bank's conclusions to the Review was published in August 2022.

More broadly, the Board will continue to monitor access to cash services and trends in the use and acceptance of cash, including through the Bank's upcoming Consumer Payments Survey. The Board will also consider whether any additional policy actions by the Bank might be required to support the continued provision of cash services during the transition away from cash.

[4] For further details, see RBA (2022), 'Central Banks Committed to Economic Prosperity and Wellbeing in South Pacific', Joint Media Release, 29 June.

The future of the cheques system

Another trend the Board has been closely monitoring is the sustained decline in the use of cheques. There were less than 1.2 cheque transactions per person in 2021/22 and cheque payments accounted for less than 2 per cent of all non-cash retail payments. As cheque use declines, the per-transaction cost of supporting the cheque system, which is already high relative to other payment methods, will continue to rise. From an efficiency perspective, there will be benefits in winding up the cheque system soon given the high cost of maintaining it and the increased availability of electronic payment methods that can meet similar payment needs. Facing similar circumstances, a number of comparable jurisdictions, including New Zealand, have recently moved to close down their cheque systems.

In Australia, the Board has been monitoring the industry's efforts over the past few years to manage the transition away from cheques. There are a number of initiatives that still need to be progressed to prepare for the closure of the cheque system, including modifications to some legislation that requires or promotes cheque use in specific scenarios. Financial institutions also have an important role to play in assisting the few remaining cheque users to transition to alternative payment methods and giving reasonable notice of any plans they may have to transition away from providing cheque services. The Board is broadly comfortable with the approach the industry has been taking on this issue and would support an orderly wind-down of the cheques system at some point in the near future.

The future of the Direct Entry system

Another significant industry initiative the Board is monitoring is the development of plans to wind down and eventually retire the Direct Entry (DE) system. This system, also known as the Bulk Electronic Clearing System (BECS), is administered by AusPayNet. The system facilitates the clearing and settlement of bulk electronic transactions between financial institutions, such as payroll, recurring payments to merchants and one-off account-to-account transfers. DE is a safe, reliable and low-cost workhorse of the Australian payments system, which is heavily relied on by businesses and governments. The system processed more than 75 per cent of the value of non-cash payments during the past year. However, DE has various technical limitations that reflect the time when it was created, including a delayed settlement model and a restricted messaging format that is incompatible with ISO 20022. The industry has since invested in newer payment systems such as the NPP that offer faster, more flexible and data-rich payment options.

Given the potential cost of upgrading the DE system, it is appropriate that the industry is discussing how the DE system could be wound down and eventually retired. There are a number of challenges that will need to be overcome for this to occur, including ensuring there are viable alternatives for all of the transaction use cases currently serviced by the DE system. There will also be a lot of work required to support end users of the DE system during the transition. Many businesses and government agencies have DE heavily embedded in their payments processing systems, and so they will require adequate time and support to transition to more modern payments processes. Significant consultation with all key stakeholders will be required to develop a viable plan to retire the DE system. Given the opportunities and challenges associated with the migration of the DE system to more modern payment systems, the Board will be closely monitoring the industry's plans in this area.

Strategic priority: Promote the resilience and safety of payment systems

The retail payment system needs to be operationally resilient, safe and secure. Reliability and security problems can impose significant costs on end users, and can undermine public confidence in electronic payments. The Board considers it vital that participants in the retail payments industry invest in resilient and secure infrastructure, systems and customer services, and that efforts are made to minimise fraud and scams.

Reliability statistics for retail payment services

The reliability of electronic retail payment services has become crucial for day-to-day economic activity. Yet data collected by the Bank indicate that the frequency and duration of operational outages in retail payment services provided to households and businesses has increased in recent years. In response, the Bank recently implemented a new data initiative to improve the quality and transparency of information about retail payment service reliability. This initiative aims to raise the profile of this issue among payment service providers and their customers, and will enable improved benchmarking of operational performance. The initiative involved enhancing the Bank's existing quarterly data collection for retail payments incidents, and introducing a new requirement for individual payment service providers to publish quarterly statistics on the reliability of their services on their own websites.[5] The first disclosures for the September quarter of 2021 were published in November 2021.

The new data show that online banking and NPP fast payment services were the least reliable retail payment services provided to households and businesses during the year to June 2022. Many providers reported multiple unplanned outages to these services during the year. The average cumulative downtime per provider during the year was around 18 hours for online banking services and 13 hours for fast payments, but a few providers reported total outages of over 50 hours (Graph 3.1). Some providers also reported elevated downtime for their card payment services. The Board will continue to monitor information on retail payment service outages and will consider whether any further policy actions are needed to enhance the reliability of retail payment services provided to end users.

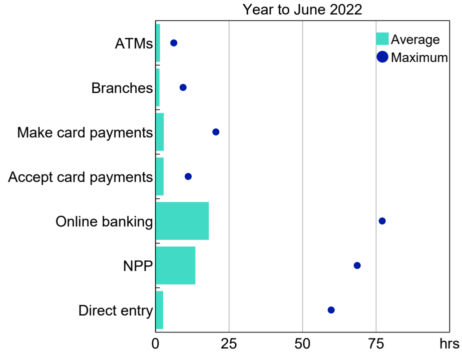
Application of the government's critical infrastructure framework to payments systems

Operational resilience in retail payments also depends on the underlying infrastructure and payment systems that facilitate payments. Operational problems at shared payments infrastructure could have a major impact on the electronic retail payment system, since all payment providers offering these services to customers would be disrupted at the same time. Accordingly, the Bank has been assisting the

Graph 3.1

Downtime per Service Provider

Year to June 2022



Source: RBA

[5] The disclosures are being made by a range of service providers, including large and smaller banks and more specialised payments providers. See RBA, 'Disclosures on Retail Payments Service Reliability'.

Department of Home Affairs to apply the government's new critical infrastructure legislative framework to the operators of critical Australian retail payments systems. The systems that have been specified as critical are the Mastercard debit and credit card systems, the Visa debit and credit card systems, the eftpos card system and the NPP. The framework imposes several new obligations on the operators of these systems, including a requirement to maintain a risk management program for the purpose of mitigating significant threats to the reliability and security of their critical infrastructure assets.

Payment scams

Fraudulent activity associated with scams and customer data theft has grown considerably in recent years. Payment scams occur when people are deceived or manipulated into sending funds or personal information to criminals – for example, when scammers offer an attractive investment scheme that is fake, or send a falsified invoice from a legitimate business seeking payment. According to data collated and published by the ACCC, financial losses from all types of scams surged in 2021, to $1.8 billion (Graph 3.2). True losses are likely to be significantly higher because many scams go unreported by victims.

Payment scams commonly involve the transfer of funds to a scammer from a customer's bank account (although other payment mechanisms – such as crypto-assets and gift cards – are also commonly used). Banks have been investing more in measures to understand, detect and respond to possible scam activity conducted through bank accounts. The banking industry has also been working to raise customer awareness of scam risks and the ways people can protect themselves, such as by explaining the benefits of addressing account-to-account transfers using a PayID.[6] This method of addressing NPP payments allows the payer to check that the recipient's name matches their expectation before confirming the payment. This can help the payer avoid being deceived into sending a payment to a scammer's account rather than that of the intended recipient. The Board welcomes the recent efforts of the industry to help combat rising scam activity. Nevertheless, given the growing scale of the problem and the major impact that scams can have on people's lives, further measures may be needed. The Bank will continue to engage with the industry and other regulators about the work that is underway to tackle payment scams.

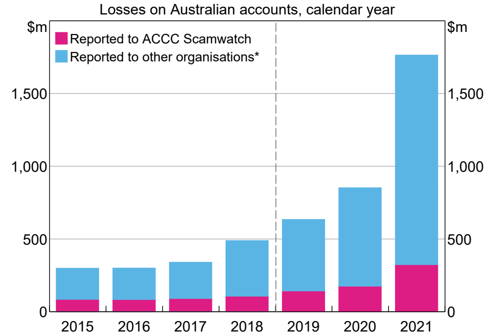
Strategic priority: Research central bank digital currencies and other innovations in payment systems

There is significant innovation occurring in the payments system, related to the emergence of new technologies and the broader digitalisation of the economy. The Bank has been seeking to

Graph 3.2

Total Scam Losses

Losses on Australian accounts, calendar year



* Includes ReportCyber, ASIC, ACMA, ATO and banks when available. Collection of individual bank data began in 2019 and expanded in 2020 and 2021; adjusted to take account of duplicate scam reports where possible.

Sources: ACCC; AusPayNet; RBA

[6] See Australian Banking Association (2022), 'Australian Banks Encourage Customers to Use PayID to Combat Scams', Press Release, 18 July.

understand these new technologies and innovations and any implications for the competition, efficiency and stability of the payments system. As we look to how the payment system could evolve in the future, a particular area of focus for the Bank has been on researching CBDC.

Central bank digital currencies

Many central banks, including the Reserve Bank, are investigating the potential use, benefits and other implications of issuing CBDC. A CBDC refers to a digital form of money that would be issued by a central bank and could be used by households and businesses as a medium of exchange, and function as a complement to existing forms of money (such as cash and balances in commercial bank deposit accounts). Consideration of CBDC has generally distinguished between two broad use cases: a CBDC for retail (or general purpose) use, which would be like a digital version of cash that is essentially universally accessible; or a CBDC for wholesale use, which would be accessible only to a more limited range of wholesale market participants (such as banks and large corporates) for use in wholesale payment and settlement systems.

To extend its research capabilities on CBDC, the Bank has established a cross-disciplinary team within the Payments Policy Department that is focused on researching the case for CBDC in Australia as well as technological, design and policy considerations. A number of research projects were completed during the past year. In December the Bank published a report on Project Atom, in which the Bank collaborated with a number of industry partners to develop a proof-of-concept for a wholesale CBDC using distributed ledger technology that could be used for the settlement and repayment of tokenised syndicated loans.[7] The Bank was also involved in a collaborative project with a few other central banks and the BIS Innovation Hub that developed a proof-of-concept for a common international platform that could be used to settle transactions in wholesale CBDCs across different jurisdictions and currencies (Project Dunbar).[8]

A question that has received less attention to date, particularly in countries like Australia with relatively modern and well-functioning electronic payment systems, is the rationale for CBDC and its potential economic benefits. To help address this, the Bank recently initiated a collaborative research project with the Digital Finance Cooperative Research Centre (DFCRC) that is focused on exploring use cases and business models that could be supported by the issuance of a CBDC, retail or wholesale.[9] The project, which is expected to take about a year to complete, will involve the development of a limited-scale CBDC pilot that will operate in a ring-fenced environment for a period of time. Interested industry participants will be invited to develop specific-use cases that demonstrate how a CBDC could be used to provide innovative and value-added payment and settlement services to households and businesses. The Bank and the DFCRC will select a range of different use cases to participate in the pilot, based on their potential to provide insights into the possible benefits of a CBDC. A report on the findings from the project, including an assessment of the various use cases developed, will be published at the conclusion. The findings

[7] See RBA *et al* (2021), 'Project Atom: Exploring a Wholesale CBDC for Syndicated Lending', December.

[8] See RBA *et al* (2022), 'Project Dunbar: International Settlements Using Multi-CBDCs', March.

[9] See RBA (2022), 'Reserve Bank and Digital Finance Cooperative Research Centre to Explore Use Cases for CBDC', Joint Media Release, 9 August. The DFCRC is an industry and government funded research consortium that has been established to undertaken industry-led research aimed at exploring the opportunities arising from the digitisation of assets and the real-time trading and exchange of those assets on digital platforms. The Bank is participating in the DFCRC as part of its strategic focus on supporting the evolution of payments, including research on CBDC.

will contribute to ongoing research into the desirability and feasibility of a CBDC in Australia.

Taking into account international research and developments in relation to CBDC and the Bank's research to date, the Bank's view is that there is not a strong public policy case for issuing a retail or wholesale CBDC in Australia at the moment. A key consideration in this assessment for retail CBDC is that, while cash use for transactions has been declining, the amount of cash in circulation remains at a historically high level in Australia and the community still has good access to cash services. The work the Bank has been doing to review the wholesale cash distribution system is also aimed at helping preserve access to cash services (see discussion above). Nonetheless, given the increasing digitalisation of the economy, the Bank maintains an open mind to the possibility that a case for CBDC in Australia could emerge in the future. The Bank will continue to pursue an active research agenda, including seeking input from end users and collaborating with industry participants and other central banks. The Board continues to be regularly briefed and is very supportive of the Bank's CBDC research program.

Innovation in retail payments and industry engagement

Innovation has been playing a significant role in shaping other aspects of the retail payments landscape in recent years. The Bank has devoted significant resources to understanding these innovations in the payments system. As part of this, the Bank has been seeking to enhance its engagement with innovative firms in the payments sector, such as fintechs, through a more structured outreach program.

One area of focus has been the BNPL sector. As discussed in the chapter on 'The Evolving Retail Payments Landscape', payments made using BNPL services have grown very rapidly over the past few years and there has been a significant expansion in the market for BNPL services. To better understand these developments, the Bank initiated a new data collection from large BNPL providers last year. Policy issues raised by the rapid growth in BNPL were also considered by the Bank in its recent Review of Retail Payments Regulation (see discussion above).

Another recent focus has been on the growing adoption of 'digital wallets' (e.g. Apple Pay and Google Pay). These are applications that enable consumers to make contactless (and in some cases online) purchases on their smart phones and other mobile devices using digital representations of their payment cards stored within the digital wallet. The emergence of digital wallets is a prominent example of the increasing involvement of multinational technology companies in the Australian payments industry. As part of its ongoing monitoring efforts, the Bank initiated a data collection on mobile wallet transactions during the past year. These data show that the share of consumer payments made via digital wallets has increased significantly in the past couple of years, to around one quarter of all card-based transactions (see chapter on 'The Evolving Retail Payments Landscape'). The strong growth in the use of digital wallets indicates that consumers increasingly value the convenience and security of making payments from their mobile devices. However, digital wallet services can also introduce new costs into the payments chain and raise other policy issues. The ACCC, for example, is currently investigating whether the restrictions Apple places on direct access to the near-field communication (NFC) chip in Apple mobile devices for third-party digital wallets raises any competition concerns. The Bank has provided assistance to the ACCC as part of this investigation.

Strategic priority: Identify and resolve any competition and efficiency issues associated with new technologies and players in the payments system

The structure of the payments system is evolving rapidly, with new entities becoming involved in the payments value chain and new technologies being used to facilitate payments. This is clearly providing benefits to end users of the payments system. However, it can also raise concerns in regards to access, competition and efficiency. Questions can also arise about how new players and technologies fit within existing regulatory structures and whether any changes to regulation are required to accommodate them.

The Bank has been assisting the Treasury and other regulatory bodies on a number of reforms to the regulatory framework for payments which are designed to accommodate changes to the payments ecosystem.

Reform of the payments regulatory framework

In December 2021, the government announced its response to a number of government reviews and inquiries into the regulatory framework for payments in Australia, including the Treasury Payments System Review that concluded in mid-2021.[10] In its response, the government committed to a comprehensive set of reforms to the regulatory framework for payments. The Bank has since been supporting Treasury in the process of implementing these reforms, some of which have implications for the Bank's regulatory powers and responsibilities in the retail payments system.

[10] See Treasury (2021), 'Transforming Australia's Payments System', Government Response, 8 December.

Revising the Reserve Bank's regulatory responsibilities

The government endorsed the Treasury Review's recommendation to modernise definitions in the *Payment Systems (Regulation) Act 1998* (PSRA) to enable the Bank to regulate in the public interest a wider range of systems and entities that participate in the payments ecosystem. Significant changes have occurred in the payments landscape since the PSRA was introduced over 20 years ago. Updating the definitions in the PSRA will help the Bank continue to fulfil its mandate to promote competition, efficiency and safety in an evolving payments ecosystem. The Bank is continuing to support the Treasury in implementing this part of the reform agenda.

Access to payment systems

The Bank has a strong interest in ensuring that payment service providers have reasonable and competitive options to access payment systems when providing services to their customers. Many payment providers connect to payment systems indirectly through a sponsoring institution. In the case of the NPP, payment service providers can also join the system as a 'connected institution', which allows them to initiate payments with other participants, but not be involved in the clearing and settlement of those payments. While indirect access options suit many providers, some payment providers may prefer to participate directly in clearing and settling payments on behalf of their customers without reliance on another financial institution. Currently, some payment systems have access criteria that make it difficult for non-banks to gain direct access. Payment system operators often rely on the risk management requirements imposed on banks and their supervision by APRA to mitigate risks to the payment system and its participants.

The Bank has started work to develop a set of common access requirements to help support access to payment systems, including access to clear and settle payments directly via the NPP. The intention is for these requirements to be incorporated into a new licensing framework for non-bank payment service providers. The Bank supports the development of the new licensing framework and common access requirements as a way to reduce barriers to entry and promote competition and innovation in the payments system. It will continue to engage with payment system operators, payments providers and other regulators as this work progresses.

The Bank had expected to consider issues around access to the NPP as part of a second review of NPP access and functionality that the Bank had planned to undertake with the ACCC.[11] The Bank and ACCC have decided not to proceed with a second review on NPP access and functionality at this stage, given the ongoing work with Treasury on developing the new payments licensing framework and common access requirements, and the need for industry to focus on implementing the functionality set out in the NPP roadmap.

Industry standard setting

The Bank is developing a new authorisation framework for industry standard-setting bodies as part of the payments regulatory reform agenda. Under this proposal, holders of the new payments licence would need to comply with certain 'core' standards set by an authorised industry standard-setting body. Given that compliance would be compulsory, the Bank would be provided with the power to authorise and oversee the industry bodies setting these standards. In fulfilling this new responsibility, the Bank would have regard to a body's governance and capabilities, and ensure that it performs its functions in a way that is consistent with broader payments policy objectives.

The Bank is working with Treasury on the design of the proposed new regulatory regime for industry standard setting, and consulting with industry stakeholders, including the Australian Payments Network (which currently sets various technical standards for its members).

Addressing de-banking of fintechs and non-bank payments providers

In recent years, numerous fintechs and non-bank providers of payment services have faced significant difficulties accessing banking services, including the ability to access payments infrastructure. Banks declining to offer or withdrawing their services is commonly referred to as 'de-banking'. This can have a significant impact on the affected firms and individuals relying on them for services. De-banking is often a consequence of how banks manage their financial crime risks. The issue highlights the challenge of balancing the objectives of controlling financial crime and promoting competition and innovation in financial services.

In early 2022, the Treasurer requested advice from the CFR on key trends in de-banking, its underlying causes and potential policy responses in relation to fintechs, digital currency exchanges and remittance providers. A working group consisting of representatives from the CFR agencies, ACCC, AUSTRAC and the Department of Home Affairs has been examining the issue. This process involved consulting with the industry on possible policy options, including measures to deal with banks' risk aversion around certain sectors and to improve transparency around banks' decision processes. The introduction of new licensing frameworks for payments service providers and crypto-asset secondary service providers could

[11] The Bank completed an initial review of NPP access and functionality with the ACCC in 2019: RBA (2019), 'New Payments Platform Functionality and Access: Conclusions Paper', June. At the time, the Bank indicated that it would conduct another review, but this was deferred in mid-2021 in light of the ACCC's consideration at the time of NPPA's proposed merger with BPAY and eftpos and also pending the outcome of the Treasury Payments System Review.

help alleviate de-banking pressures by providing banks with greater assurance of a licensed entity's risk management capabilities. Advice was provided to the government in late August.

Crypto-assets and stablecoins

The Bank has continued to monitor developments in crypto-asset markets and assess potential implications for the payments system and financial stability. During the year, a number of developments in crypto-asset markets, including significant price volatility and the failure of a number of players in the sector, highlighted the need for a robust regulatory framework for certain types of crypto-assets. Regulation in this area should support innovation while also providing appropriate consumer protection and guarding against potential financial stability risks.

A focus for the Bank has been stablecoins, a type of crypto-asset that aims to avoid the price volatility associated with 'unbacked' crypto-assets such as Bitcoin. Stablecoin arrangements are designed to maintain a stable value against one or more fiat currencies or assets (e.g. the US dollar or gold). Some stablecoins aim to achieve this by investing the funds received from buyers in a pool of high-quality liquid assets to back the coins on issue. However, some of these so-called 'asset-backed' stablecoins may only be partially backed, or may not hold high-quality assets or provide sufficient transparency about their assets. Other types of stablecoins, known as 'algorithmic' stablecoins, seek to maintain a stable value using complex algorithms that attempt to control the supply of the coins on issue to balance changes in demand. Depending on how their stabilisation mechanism is structured, stablecoins can be vulnerable to a loss of investor confidence, resulting in a 'run' on the coin and potential failure of the arrangement. This vulnerability was demonstrated in May with the collapse of TerraUSD, the largest US-dollar algorithmic stablecoin at the time.

Notwithstanding the recent market disruptions, demand for stablecoins has been growing over the past few years, mostly to facilitate trading in unbacked crypto-assets. There has been increasing interest in the potential for stablecoins to enhance a range of payment and financial services, and many companies, including banks, have been exploring issuing or supporting stablecoin arrangements. In Australia, one of the major banks recently conducted a number of pilots of an Australian dollar-denominated stablecoin, and other established participants in the global payments industry have announced plans to explore use cases for stablecoins.

Given the increasing interest in stablecoins and the risks they can pose, regulators globally have been considering how to appropriately regulate stablecoin arrangements. Regulators are particularly focusing on stablecoins that could become widely used for payments, as the failure of these arrangements could cause significant disruption to the financial sector and economy. Payment stablecoins will typically have features that make them attractive to hold as a means of payment or store of value, such as being fully asset backed and promising full redeemability at par and on demand in a national currency. At the international level, Bank staff have been involved in a FSB working group that has been reviewing a set of high-level recommendations on the regulation, supervision and oversight of global stablecoin arrangements in light of recent market and national regulatory developments. The Bank is also involved in the CPMI Future of Payments Working Group, which has been examining how well-designed and risk-managed stablecoin arrangements could improve cross-border payments.

Consistent with the international regulatory work in this area, the Bank has been working with other CFR agencies to develop an

Australian regulatory framework for payment stablecoins. These stablecoin arrangements bear similarities with stored-value facilities (SVFs) and so the CFR has been exploring options for incorporating them into the proposed regulatory framework for SVFs. The SVF framework was developed by the CFR a few years ago and is being implemented as part of reforms to the payments licensing framework. ✠

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.

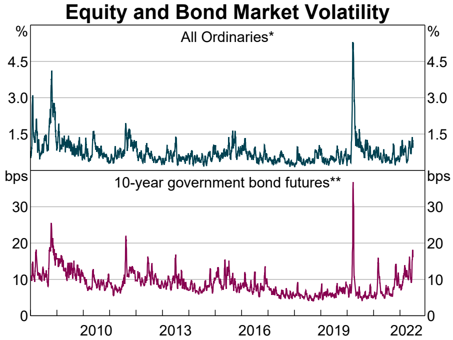
Financial market developments affecting FMIs

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

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.

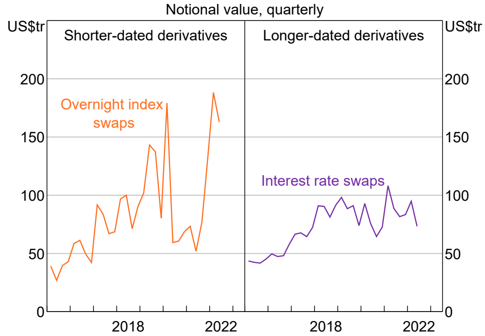
COVID-19 pandemic (Graph 4.2). The increase in activity in shorter-dated Australian dollar instruments such as bank bill futures, overnight index swaps and repurchase agreements was more subdued than in some overseas markets, and trading activity remains below levels experienced in the period before 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 4.2

SwapClear – Trades Registered by Product*

Notional value, quarterly

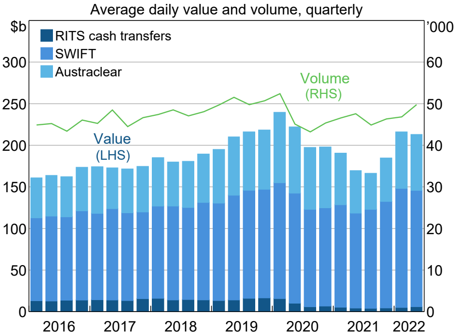


* Data count two sides of each trade.
Source: LCH Ltd

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.

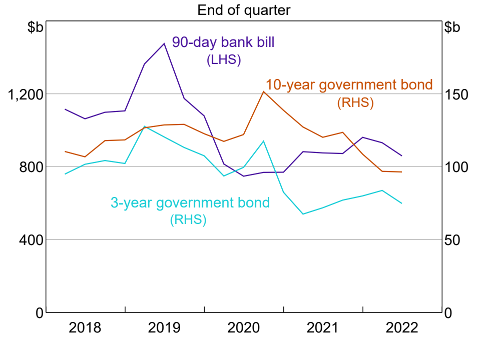
FMIs' financial risk management

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

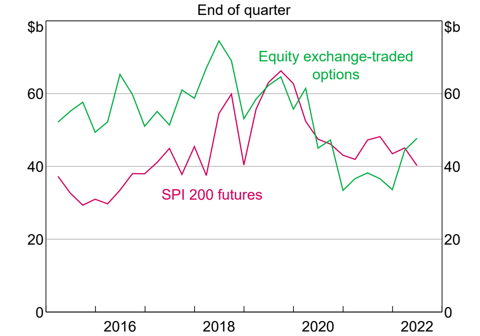


Sources: ASX; Bloomberg

Graph 4.5

ASX Notional Value of Equity Derivatives Outstanding

End of quarter



Sources: ASX; Bloomberg

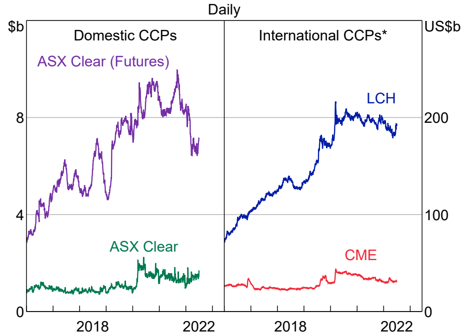
CCPs are required to regularly test the adequacy of initial margin by ensuring that it covers historical price movements with a high degree of confidence. Higher market volatility over the past year has resulted in a reduction in the performance of initial margin models under these coverage tests, with 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.

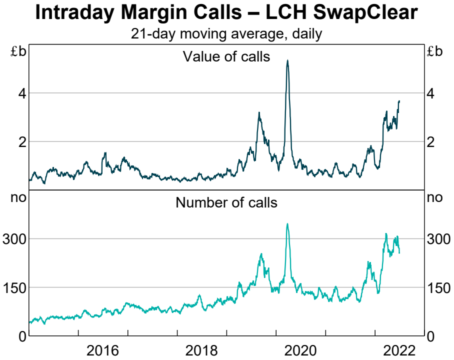
In previous years, CS facilities licensed in Australia have experienced operational incidents where trade registration was affected and manual intervention was required to recover critical systems. Since then, CS facilities have taken steps to prevent similar incidents from occurring. The ASX's futures 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

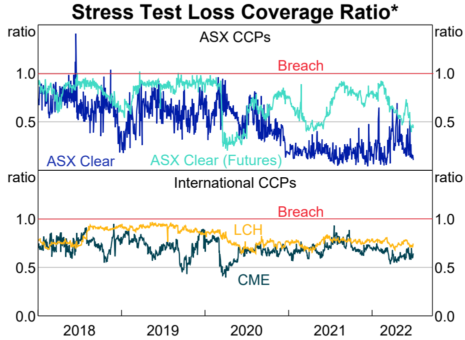
Intraday Margin Calls – LCH SwapClear



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.

[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.

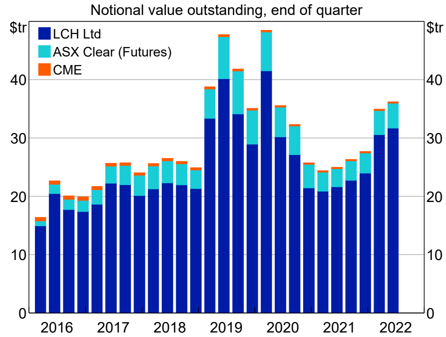
The Bank has assessed LCH Ltd's SwapClear service as being conducted in a way that promotes overall stability in the Australian financial system as at 30 June 2022. This assessment is based on the Bank's bilateral engagement with LCH Ltd, information from LCH's home regulator, and LCH Ltd's progress 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



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.

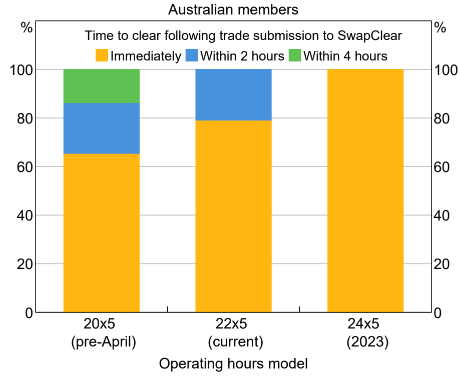
Back-up payment arrangements

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

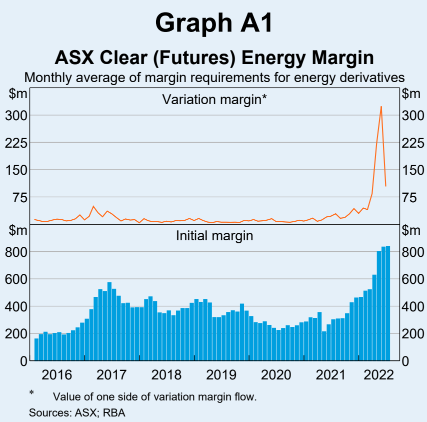
The Bank, in close cooperation with ASIC and the other CFR agencies, continues to work towards implementation of a package of reforms to the regulation of FMIs. The reforms will support the effective regulation of the systems, services and facilities that underpin Australia's financial system by strengthening 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.

Box A

Developments in the Electricity Derivatives Market

Between 15 and 24 June, the Australian Energy Market Operator (AEMO) suspended spot trading in the National Electricity Market (NEM). ASX Clear (Futures) does not clear the spot market but does clear electricity derivatives (futures and options) that reference spot market prices. Developments in the demand for and supply of electricity in the NEM earlier in the year had led to large increases in spot prices and large changes in the value of derivative contracts. This volatility drove an increase in initial margin collected by ASX Clear (Futures) from its participants and their clients, as well as large variation margin calls (Graph A1).

The spot market suspension did not directly affect electricity derivatives clearing at ASX Clear (Futures), but coincided with a decline in trading volumes, which have since recovered. Activity in the derivatives market is dominated by end users (generators and retailers) who hedge price risks associated with their operations. Generators typically hold short positions to hedge the risk that prices fall in the spot market, so large and rapid price increases can result in margin calls that put pressure on their liquidity buffers. Over recent months, some end users moved to the over-the-counter (OTC) electricity derivatives market to avoid the burden of daily margin calls at the CCP, although such transactions do not receive the risk and default management benefits of central clearing.



Generators and retailers access the derivatives market as clients of the participants of ASX Clear (Futures). Since their main assets are typically less liquid than those of the financial institutions that participate in CCPs, they can be more vulnerable than clearing participants to liquidity risks from large margin calls. ASX Clear (Futures) requires its participants to establish robust procedures to monitor, warehouse and manage risks deriving from the potential default of one of their clients.

Margin requirements are designed to respond to stressed market conditions in order to minimise the effect a potential default might have on other participants, the CCP and the financial system. The FSS requires CCPs to have an effective margin system that is risk based and regularly reviewed. ASX Clear (Futures) reviews initial margin parameters monthly. As part of this process, ASX Clear (Futures) increased initial margin for some electricity derivative contracts in recent months. In July 2022, ASX also introduced a range of new stress test scenarios intended to capture recent price volatility for energy derivatives. In some circumstances these could require participants to contribute additional initial margin, but this type of margin call is not typically passed on by participants to their clients.

Abbreviations

ABN	Australian Business Number
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ADI	Authorised deposit-taking institution
APC	Australian Payments Council
APRA	Australian Prudential Regulation Authority
ARNECC	Australian Registrars' National Electronic Conveyancing Council
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
ASXFS	ASX Financial Settlements Pty Limited
ASX Clear	ASX Clear Pty Limited
ASX Clear (Futures)	ASX Clear (Futures) Pty Limited
ASX Settlement	ASX Settlement Pty Limited
ATM	Automated teller machine
AUD	Australian Dollar
AusPayNet	Australian Payments Network
AUSTRAC	Australian Transaction Reports and Analysis Centre
Austraclear	Austraclear Limited
BBSW	Bank bill swap rate
BCBS	Basel Committee on Banking Supervision
BETF	Black Economy Taskforce
BNPL	Buy now, pay later
CAC Act	Commonwealth Authorities and Companies Act 1997
CBDC	Central bank digital currency
CCP	Central counterparty
CDR	Consumer Data Right
CFR	Council of Financial Regulators
Chi-X	Chi-X Australia Pty Ltd
CME	Chicago Mercantile Exchange Inc.
CNP	Card-not-present
CLS	CLS Bank International

CPMI	Committee on Payments and Market Infrastructures
CPS	Consumer Payments Survey
CRC	Digital Finance Cooperative Research Centre
CS	Clearing and settlement
DE	Direct Entry system
DLT	Distributed ledger technology
DNDC	Dual-network debit card
EMEAP	Executives' Meeting of East Asia-Pacific Central Banks
ETO	Exchange-traded option
EUR	Euro
FEX	FEX Global Pty Ltd
FINMA	Swiss Financial Market Supervisory Authority
Fintech	Financial technology
FMI	Financial market infrastructure
fmiCBCM	FMI Cross Border Crisis Management Group
FRA	Forward rate agreements
FSB	Financial Stability Board
FSS	Fast Settlement Service
HVCS	High Value Clearing System
IBOR	Interbank offered rate
ISO	International Organization for Standardization
IOSCO	International Organisation of Securities Commissions
IRD	Interest rate derivatives
IRS	Interest Rate Swaps
LCH Ltd	LCH Limited
LCR	Least-cost routing
LIBOR	London interbank offered rate
MOG	Multilateral Oversight Group for Euroclear Bank
MOU	Memorandum of Understanding
MTO	Money transfer operator
NPP	New Payments Platform
NPPA	NPP Australia Limited
OG	Oversight Group
OIS	Overnight index swaps
OTC	Over-the-counter
PEXA	Property Exchange Australia Limited
PFMI	Principles for Financial Market Infrastructure
POC	Proof-of-concept
POS	Point of sale

PSB	Payments System Board
RBA	Reserve Bank of Australia
RFR	Risk-free rate
RITS	Reserve Bank Information and Transfer System
RTGS	Real-time Gross Settlement
SCA	Strong customer authentication
SIPS	Systemically important payment system
SSF	Securities settlement facility
SVF	Stored-value facility
SWIFT	Society for Worldwide Interbank Financial Telecommunication
WGDI	Working Group on Digital Innovations
WGPMI	Working Group on Payments and Market Infrastructures