Payments System Board Annual Report

2021

RESERVE BANK OF AUSTRALIA

Payments System Board Annual Report

2021

Contents

	Governor's Foreword	1
1.	About the Payments System Board	3
2.	The Evolving Payments Landscape	21
3.	Retail Payments Regulation and Policy Issues	26
	Box A: The G20 Roadmap to Enhance Cross-border Payments	41
4.	Financial Market Infrastructures	43
	Box B: Assessing the Cyber Resilience of FMIs	54
	Box C: FMI Regulatory Reforms	56
5.	Abbreviations	57

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Governor's Foreword

The payments landscape is changing rapidly due to new technologies and business models. This is creating opportunities for more efficient payment methods that meet the needs of Australians. Much of the work of the Payments System Board during 2020/21 focused on understanding these new opportunities and ensuring that the regulatory arrangements are appropriate for this fast-moving world.

Over the past year there has been a further shift to electronic payments, including payments made online and using a mobile phone, as well as strong growth in new payment types, such as 'buy now, pay later' (BNPL) services. In addition, large technology companies are becoming increasingly involved in the payments process and there is growing interest in the possibility of new forms of money, including central bank digital currencies (CBDCs) and stablecoins. The Bank's staff have an active research agenda in this area and are involved in research projects on wholesale CBDC in collaboration with other central banks and interested parties. The Board has a keen interest in this work and is devoting considerable time to understanding the changing landscape and the implications for payments regulation. It welcomes the recent Treasury review of the Australian payments system and looks forward to working with the Australian Government on any changes to the regulatory framework it wishes to make.

The Board will shortly complete a major review of the Bank's existing retail payments regulations, which started in late 2019, and thanks the many stakeholders who made submissions. The review focused particularly on competition in the debit card market, the ability of merchants to choose the lowest-cost payment channel, and the 'no-surcharge' rules of BNPL providers.

Another major focus area of the Board over the past year has been the operational resilience of Australia's electronic payments system. It is important that Australians have confidence that they can make electronic payments when they need to do so. The Bank is working with the industry to improve the transparency of information on the operational reliability of retail payment services, with the first reporting by providers under new disclosure arrangements expected in November. The Bank is also working with the other agencies of the Council of Financial Regulators on the management of cyber-security risks in the financial sector, including by operators of critical payments infrastructure.

In other work, the Bank is cooperating with other central banks to improve the efficiency and lower the cost of cross-border payments. The G20 leaders have endorsed a multi-year international roadmap to address the cost, speed, transparency and accessibility challenges in cross-border payments. This an important issue for Australia, and an immediate priority is to work with our South Pacific neighbours on options to address the high cost of remittances to the region.

Notwithstanding the shift to electronic payments, cash remains an important payment method for many people. The Bank places a high priority on the community continuing to have good access to cash withdrawal and deposit services. As part of its work in this area, the Bank will soon commence a public consultation on the arrangements for moving banknotes around Australia and between banks.

The oversight of financial market infrastructures (FMIs) is another important area of the Board's work. Over the past year, a major focus has been the resilience of this infrastructure. In late 2020, together with the Australian Securities and Investments Commission, the Bank reviewed the operational issues affecting ASX's trading, clearing and settlement (CS) systems. This led to a number of recommendations regarding governance issues and the management of technology projects, which are set out in the Bank's annual assessment of the ASX CS facilities. Further, the Board has emphasised the need for the CHESS replacement system to be implemented as soon as can safely be achieved by ASX and users of CHESS.

The Board welcomes the Australian Government's recent announcement that it will implement a package of FMI reforms, which will put in place more comprehensive arrangements for the management of systemic risks and for dealing with financial stress in Australia's key FMIs. Under the new arrangements, the Bank will have an important responsibility for resolution of CS facilities in extreme events.

In what has been a challenging year due to the COVID-19 pandemic, the Bank's staff have continued to support the Board with a high degree of professionalism and carried out their work to a very high standard. The Board joins me in thanking the staff for their contribution to the efficiency and stability of Australia's payments system.

Philip Lowe
Governor and Chair,
Payments System Board
14 October 2021

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 Reserve 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).

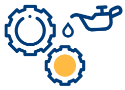
Strategic priorities

The Payments System Board periodically sets priorities to guide the Reserve Bank's payments policy work. When updating these priorities at its August 2021 meeting, the Board took into account the trends in the payments system that could have the most significant implications for competition, efficiency and risk over the next few years. The Board also considered issues affecting financial market infrastructures (FMIs) and their implications for financial stability. The Bank's work agenda is focused on these strategic priorities. The Board will periodically 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

Support the shift towards **digital payments**

As discussed in the chapter on 'The Evolving Payments Landscape', Australia's payments system is evolving rapidly. The use of paper-based payment methods such as cash and cheques has been declining, while the use of electronic payments like cards and account-to-account transfers continues to grow. The COVID-19 pandemic has accelerated these trends, with the use of digital wallets and new payment services such as 'buy now, pay later' growing rapidly in recent years, and a larger share of transactions taking place online. These changes have been driven by ongoing advances in technology and changing expectations of end users for convenient and safe payments. The increased reliance on electronic payments underscores the importance of keeping the costs of electronic payments low while maintaining security, resilience and innovation.

Consistent with its mandate, the Bank has an important role to play in overseeing the transition towards an efficient, secure and reliable payments system, and making sure the needs of all users of the payments system are adequately met. In this context, there are a number of priorities for the Bank's payments policy work:

- The Bank will continue to monitor developments and contribute to debate through the provision of data and research on changes to the payments mix and implications for the efficiency of Australia's payments system. In 2022, for example, the Bank will undertake its sixth triennial survey of consumer payments, with results to be published in the first half of 2023.
- The Bank is currently finalising a major review of the regulatory framework for retail payments, which has focused on measures to promote competition and efficiency in card payments. The Bank will monitor the implementation and impact of the regulatory changes stemming from this review, and will engage with end users and industry stakeholders on any additional policy issues that arise.

- The shift to digital payments means merchants are becoming more reliant on acquirers and other payment service providers for their payment needs. It is therefore important that the market for electronic payment services is competitive, efficient and responsive to the needs of merchants. The Bank will continue to assess developments in this market and will explore options to promote competition and efficiency. For example, the Bank is currently exploring measures that will make it easier for merchants to shop around for, and switch to, a better deal on their payment services.
- Having an efficient, competitive and accessible market for cross-border payment services is also important for the economy and has recently become a major priority of the international regulatory community. The Bank will contribute to international work on the G20-endorsed roadmap for enhancing retail and wholesale cross-border payments, and will also engage with domestic policy and regulatory agencies and industry stakeholders to address specific challenges in the Australian market. A particular focus for the Bank is potential options to address cost and accessibility challenges for remittances to the South Pacific region.
- Even though the use of cash for transactions has been declining, cash remains an important payment instrument and store of value for many people. The Bank will continue to monitor the use and acceptance of cash, as well as access to cash services, and will work to support the ongoing provision of cash services for as long as people want or need to use cash. Later this year, the Bank will commence a consultation on banknote distribution arrangements.
- As the shift to digital payments accelerates, there will be scope for the rationalisation and closure of older systems. The Bank will continue to monitor industry efforts to manage the wind-down of the cheques system, ensuring that the payment needs of different end users are adequately met during the transition. How the industry manages the planned migration away from the Direct Entry system will also be a focus in coming years.

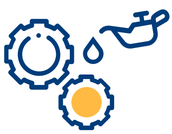
Research **central bank digital currencies and other innovations** in payment systems and FMIs

Due to the ongoing decline in the use of cash for transactions, the emergence of a number of technological developments (such as distributed ledger technology, blockchain and cryptocurrencies) and the broader digitalisation of the economy, there is a growing interest in the possibility of central banks issuing a new digital form of money, known as central bank digital currency (CBDC). Many central banks, including the Reserve Bank, are actively exploring the case for CBDC and the various policy and technical issues it would raise. A CBDC could potentially support a number of policy objectives, including safeguarding public trust in money and promoting efficiency, safety, resilience and innovation in payment systems and infrastructures.

The Bank's work to date has suggested that there is currently not a strong public policy case for developing a retail CBDC in Australia given that cash is still widely available and accepted as a means of payment and that households and businesses are well served by a modern, efficient and resilient payments system. However, the

Bank will continue to investigate the case for a CBDC and to explore technical, operational and policy implications through the development of proofs-of-concept and other forms of technical experimentation. In doing so, the Bank will engage with a wide range of stakeholders, including via collaborative projects, building on the work the Bank has conducted in the past few years. For example, the Bank is currently partnering with the BIS Innovation Hub and a number of other central banks on a project to explore the potential use of multiple wholesale CBDCs for cross-border payments. The Bank will also leverage its participation in the Digital Finance Cooperative Research Centre (CRC) to collaborate with CRC researchers and other industry partners on CBDC as well as related innovations such as asset tokenisation.

There are a range of other technology-driven changes to payment systems and FMIs that could have significant implications for the Bank's regulatory and oversight work, and potentially also for the way the Bank operates. The Bank will undertake work to understand these new technologies and how they are being applied, including the implications for competition, efficiency and financial stability.



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 as a result of new entities becoming involved in various parts of the payments value chain and new technologies being used to facilitate payments. This more complex and dynamic environment is clearly providing benefits to end users of the payments system. However, it can also raise concerns in regards to access, competition and efficiency that the Board may need to address. For example, issues may arise in relation to how 'fintechs' and other non-bank entities access payment systems or infrastructures. The increasing involvement of 'bigtech' players with large customer networks and superior technological capabilities could give rise to concerns related to the potential for technological lock-out or misuse of market power. Further, there will likely be questions about how new players fit within existing regulatory structures and whether any changes to regulation are required to accommodate them.

The Bank will engage with new players in the payments system to better understand how the payments landscape is changing, and to identify and address any concerns relating to access, competition and efficiency. For example, the Bank will undertake a second public consultation on New Payments Platform (NPP) access and functionality with the Australian Competition and Consumer Commission (ACCC), most likely starting in 2021/22, which will examine how new players are accessing and using the platform. In relation to the strong growth in the use of digital wallets and the underlying commercial arrangements, the Bank will closely monitor developments in Australia and overseas to determine whether any regulatory intervention is appropriate. On such access and competition issues in the payments system, the Bank will engage closely with the ACCC, in accordance with long-standing policy coordination and information-sharing arrangements.

The Bank will continue to work with the Australian Government and other domestic regulators to ensure that the regulatory environment remains accommodative of new players in the payments system. This includes the Bank's current work with the other Council of Financial Regulators (CFR) agencies to review the regulatory framework for stablecoins and the ongoing work to implement the changes to the regulatory framework for stored-value facilities that the CFR recommended a few years ago. More broadly, the Bank will respond to any relevant recommendations on the regulatory framework for payments stemming from the recent Treasury Payments System Review.

Promote the **safety and resilience** of FMIs and payment systems

FMIs and payment systems are critical to the stability of the financial system. Accordingly, the Bank will continue to devote significant resources to its role as supervisor of Australian-licensed clearing and settlement (CS) facilities and overseer of high-value payment systems. Given that operational incidents at FMIs in recent years have caused major disruption to financial markets, the Bank will focus on the efforts that FMIs are making to ensure that such incidents do not reoccur.

The Bank will also be devoting significant resources to growing cyber-security threats to FMIs and payment systems. Building cyber resilience requires a system-wide approach, and collaboration between the Bank, the government, other CFR agencies and the finance industry to address these threats. The Bank will continue to monitor how systemically important domestic entities are enhancing their technology security in line with industry best practice. Over the next year, this will include supporting the participation of RITS and ASX in the CFR-sponsored 'red team' exercise for financial institutions. This exercise aims to test and demonstrate the collective cyber maturity and resilience of Australia's financial system. The Bank will also continue to contribute to work by the CFR agencies to coordinate their response to cyber incidents, including through improved information-sharing arrangements.

With the ongoing shift to electronic payments and people carrying less cash, the reliability of retail payment services is becoming increasingly important to economic activity, as well as confidence in payment services and key providers. The Bank is implementing a new reporting and disclosure framework for operational performance in the provision of retail payment services. The first public disclosures on service availability and outages are expected to occur in November this year. The Board will monitor the reliability of retail payment services using the new data and consider whether further policy measures are needed to enhance operational resilience.

Work with the government to **implement reforms to the regulation of FMIs**, including crisis management powers over Australian CS facilities

To maintain the stability of the financial system, regulators of FMIs need to have strong supervisory powers and the tools to manage any problems that might occur at these institutions. Accordingly, a key priority for the Bank is to work with the Australian Government on implementing reforms to the regulation of FMIs, including stronger supervisory powers and a crisis management regime for Australian CS facilities. These reforms were proposed by the CFR and will help to ensure that the Bank and the Australian Securities and Investments Commission (ASIC) have the powers to respond appropriately and quickly to a crisis at CS facilities. In proposing these reforms, the CFR took into account feedback provided by stakeholders during a consultation conducted in 2019/20; stakeholders will have a further opportunity to provide feedback once legislation to implement the reforms has been drafted.

The reforms will provide powers for the Bank as the resolution authority to deal with the potential failure of an FMI, so as to ensure the continuity of services that are critical to the financial system. As part of this, there will be a facility for the Bank to draw up to $5 billion from the government as a last resort measure to ensure the continued operation of CS facilities, with any funding to be recovered once a crisis is resolved. This will be a significant additional responsibility for the Bank, and Payments Policy Department has a small team working on developing the resolution regime. The Bank will provide assistance to the government with the preparation of draft legislation, and will continue to work on arrangements to operationalise the Bank's proposed new powers. This will include the development and testing of crisis management arrangements. The reforms will also give the Bank enforcement powers to underpin its supervision of CS facilities.

Payments System Board Members (August 2021)

The Board comprises up to eight members: the Governor; the Assistant Governor (Financial System); the Chair of the Australian Prudential Regulation Authority (APRA); and up to five other non-executive members appointed by the Treasurer. Members of the Board during 2020/21 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 was Deputy Governor from February 2012 until his appointment as Governor took effect in September 2016. Prior to that, he 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 with the Bank for International Settlements working on financial stability issues. Dr 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)

Assistant Governor (Financial System) and Deputy Chair

Deputy Chair since 29 October 2016

Michele Bullock has held various senior positions at the Reserve Bank. Most recently, she held the position of Assistant Governor (Business Services). She has also been in the positions of Assistant Governor (Currency), Adviser for the Currency Group and, before that, Head of Payments Policy Department. In her current position as Assistant Governor (Financial System), Ms Bullock is responsible for the Bank's work on financial stability and oversight of the payments system.

Other roles

Member – Basel Committee on Banking Supervision
Member – Council of Financial Regulators

Wayne Byres

BEc (Hons), MAppFin (Macquarie)

Ex officio member

Chair, Australian Prudential Regulation Authority
Member since 9 July 2014

Wayne Byres brings 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 is 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

Director – Sydney Children's Hospitals Foundation

Deborah Ralston

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

Non-executive member

Member since 15 December 2016
Present term ends 14 December 2021

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. She 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

Chair – AdvisoryBoard, Household Capital
Director – SuperEd Pty Ltd
Director – Kaplan Business School and Kaplan Higher Education
Director – SMSF Association
Member – Advisory Board, Allianz Retire+
Member – Advisory Board, Connexus Institute

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 is a Fellow of the Australian Institute of Company Directors.

Other roles

Chair – Creative Partnerships Australia
Chair – Financial Adviser Standards and Ethics Authority
Chair – Helen Macpherson Smith Trust
Chair – Melbourne Genomics Health Alliance
Director – Australian Foundation Investment Company
Director – Barristers' Chambers Limited

Retirement from the Board

Brian Wilson AO retired from the Board on 14 November 2020.

Brian Wilson AO

MCom (Hons) (Auckland)

Non-executive member

Member from 15 November 2010 to 14 November 2020

During his term, Brian Wilson brought extensive financial services experience, including involvement with both the funds management and investment management sectors, specialising in corporate financial advice. Mr Wilson was a Managing Director of the global investment bank Lazard until 2009, after co-founding the firm in Australia in 2004, and was previously a Vice-Chairman of Citigroup Australia and its predecessor companies. He is the former Chairman of Australia's Foreign Investment Review Board and a former Chancellor of the University of Technology Sydney. Mr Wilson was a member of the Commonwealth Government Review of Australia's Superannuation System, the ATO Superannuation Reform Steering Committee and the Specialist Reference Group on the Taxation of Multinational Enterprises in Australia. In May 2017, Mr Wilson was awarded a Doctor of the University, honoris causa (DUniv) by the University of Technology Sydney.

Resolution passed by the Payments System Board – 21 August 2020

In view of the likelihood that this would be the final meeting for Brian Wilson, whose second term on the Board ends prior to the November meeting, the Governor paid tribute to Mr Wilson's very significant contribution to the work of the Board over the preceding 10 years. On behalf of all members, the Governor expressed great appreciation for Mr Wilson's professionalism and dedication, and for his active and probing role in contributing to the formulation of payments policy throughout his term on the Board, drawing on his extensive experience in the finance sector. The Governor acknowledged Mr Wilson's strong support for the work of the Bank in the payments area and also applauded his constructive and collegial style, his clear policy insights and ability to summarise relevant issues succinctly. Members wished him well in the future.

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. Four meetings were held in 2020/21 – one at the Bank's Head Office in Sydney and three via videoconference due to the COVID-19 pandemic.

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 in May 2021 to clarify arrangements for staff from these departments participating together in cross-agency working groups on issues of broader relevance to the Bank and which promote the public interest. The policy also includes governance arrangements relating to the Bank's ongoing engagement with NPP Australia Ltd. Details of the steps taken to achieve compliance with the policy, including the minutes of

[1] See RBA, 'Managing Potential Conflicts of Interest Arising from the Bank's Commercial Activities'. Available at <https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/conflict-of-interest.html>.

Table 1.1: Board Meetings in 2020/21

Attendance by members

	Attended	Eligible
Philip Lowe (Governor)	4	4
Michele Bullock (RBA)	4	4
Wayne Byres (APRA)	4	4
Gina Cass-Gottlieb	4	4
Deborah Ralston	4	4
Greg Storey	4	4
Catherine Walter	4	4
Brian Wilson[(a)]	1	1

(a) Brian Wilson's term on the Board ended on 14 November 2020 informal meetings between departments, are audited biennially, with the results presented to the Board. The most recent audit was conducted in March 2020.

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 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)); and
- 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 has, in its Standing Orders, an obligation to review the annual reports of both the Reserve Bank and the Payments System Board. The 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 financial market infrastructures (FMIs).

Media releases around Board decisions

The Bank publishes a media release in the afternoon immediately following each 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 2020/21, senior Bank staff gave a number of public speeches and participated in discussion panels on various payments system-related topics, including the impact of the COVID-19 pandemic on financial stability, innovations in the payments system such as central bank digital currency (CBDC), and the

Bank's Review of Retail Payments Regulation. Audio files and transcripts of speeches are published on the Bank's website.

Submissions and parliamentary appearances

The Bank made submissions to a number of parliamentary and federal government committees and inquiries on payments system-related topics during 2020/21. These included submissions to (and Bank staff appearances before) the Senate Select Committee on Financial Technology and Regulatory Technology, the Senate Select Committee on Australia as a Technology and Financial Centre, and the Inquiry into Mobile Payment and Digital Wallet Financial Services by the Parliamentary Joint Committee on Corporations and Financial Services. The Bank also made a detailed submission to the Treasury Payments System Review. Copies of the Bank's submissions can be found on the Bank's website.[2] Bank staff also engaged closely with the Department of Home Affairs in connection with the development of the *Security Legislation Amendment (Critical Infrastructure) Bill 2020*.

Research and statistics

The Bank's quarterly *Bulletin* contains articles on a wide range of issues relating to the Bank's mandate, including on the payments system and FMIs. During the year in review, the *Bulletin* included articles on retail CBDC, cash demand during the COVID-19 pandemic, access to cash services, developments in the 'buy now, pay later' (BNPL) market, governance arrangements of FMIs and an historical analysis of the causes of central counterparty failures.

To supplement 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. The aggregated data on debit, credit and charge cards, ATM transactions, merchant fees, bulk electronic transfers, the New Payments Platform (NPP) 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.

Liaison activity

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

Domestic liaison

During 2020/21, the Bank continued to engage extensively with a range of participants in the payments industry. In August 2020 and August 2021, the Board held its annual meetings with members of the Australian Payments Council (APC).[3] The meetings included discussion of the APC's progress with its strategic focus areas relating to improving systemic resilience of the payments system and combatting financial crime, as well as developments in the provision of digital identity services, the decline of cash, and industry plans for the future of the cheques and Direct Entry systems. Engagement between the Board and the APC occurs pursuant to a Memorandum of Understanding (MOU) between the two organisations that was signed in 2015 and is published on the Bank's website.[4]

In the payments area, Bank staff met with a wide range of stakeholders to discuss policy issues and market developments. In 2020/21, this

[2] See RBA, 'Submissions – Payments System'. Available at <https://www.rba.gov.au/publications/submissions/payments-system/>.

[3] The APC was established in 2014 as a strategic coordination body for the payments industry. Its members are senior executives from a range of payments organisations including financial institutions, card schemes, retail acquirers and other payment service providers, as well as the Australian Payments Network and the Bank (in its role as provider of banking services to the government). The Bank has responsibility for appointing a number of the APC members.

[4] See RBA (2015), 'Memorandum of Understanding: The Payments System Board and the Australian Payments Council', August.

stakeholder engagement focused on issues related to the Bank's comprehensive Review of Retail Payments Regulation, which was launched in late 2019. After being temporarily put on hold for a period in 2020 owing to the COVID-19 pandemic, the Review was resumed later that year. In May 2021, the Bank published a consultation paper that set out the preliminary conclusions and proposed policy actions of the Board. Following consultation with stakeholders, the Bank expects to publish the Board's final conclusions and variations to the standards in October.

Outside of formal public consultations, the Bank's meetings with stakeholders on retail payments issues over the past year have focused on a wide range of issues, including the impacts of the COVID-19 pandemic on the payments system, challenges in cross-border payments, 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, CBDC and the role of new players such as bigtechs in the payments ecosystem.

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, including AusPayNet's work to support the APC. 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 Treasury and the Australian Competition and Consumer Commission (ACCC). An MOU between the ACCC and the Bank sets out an agreed basis for policy coordination, information sharing and liaison between the two agencies.

The Bank continues to be involved in the NPP, which is owned and operated by NPP Australia Ltd (NPPA). The Bank operates the Fast Settlement Service, 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. Bank staff participate in some NPPA committees and until recently the Head of Payments Settlements Department was a Bank-appointed member of the NPPA Board. 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 and NPPA have an MOU that formally sets out the arrangements for how different parts of the Bank interact with NPPA, including the sharing of information, consistent with the policy on the management of conflicts of interests.[6]

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

[6] See RBA (2021), 'Memorandum of Understanding between RBA and NPP Australia Limited', April. The ACCC has recently approved an application for authorisation of a merger of NPPA with the companies operating the eftpos and BPAY systems. The Bank abstained from any merger-related discussion by the NPPA Board and did not exercise its right as an NPPA shareholder to be represented on an industry committee to discuss possible consolidation. As it became apparent that there was support for a merger among the industry shareholders and for an application to the ACCC for authorisation, the Bank indicated to NPPA that it would seek to reach agreement on suitable arrangements under which it would remain a full participant in the NPP but redeem its existing shares in NPPA and not become a shareholder in the proposed holding company that would hold the shares in NPPA and the companies that operate BPAY and eftpos. The Bank's appointed director has recently resigned from the NPPA Board and arrangements for the divestment of the Bank's shares in NPPA were being finalised at the time of writing.

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 often 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, including the Australian Government's reforms to the regulatory regime for FMIs (including the introduction of a crisis management regime for CS facilities), competition in clearing and settlement of equities, and cyber security, as well as a review of the regulatory framework for stablecoins. The CFR agencies, along with the Australian Transaction Reports and Analysis Centre, participate in a working group that considers the implications of distributed ledger technology and the emergence of different types of crypto-assets for the financial sector and regulation. During the past year, the Bank was also involved in a working group with other CFR agencies, the ACCC and representatives of the Australian Registrars' National Electronic Conveyancing Council that reviewed and provided recommendations on aspects of the regulatory framework for property e-conveyancing systems.

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 input to the Bank's policy work and in its interactions with the payments industry.

The Payments Consultation Group met twice in 2020/21 and discussed a range of topics, including the decline in cash and cheque use, the involvement of bigtechs in payments and the policy issues 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, which is a regional forum for sharing information and experiences relating to the development, oversight and regulation of retail payment systems and 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	Reserve Bank of New Zealand (rotating)	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	Bank of England	Cooperative oversight of LCH Ltd.	Central banks and securities regulatory authorities from 20 jurisdictions of LCH Ltd operation.
LCH Ltd Crisis Management Group	Bank of England	Cooperative oversight of LCH Ltd.	As above.
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 Payments Landscape

Monitoring trends and developments in retail payments informs the Board's policy work and strategic priorities.

Payments are increasingly made electronically

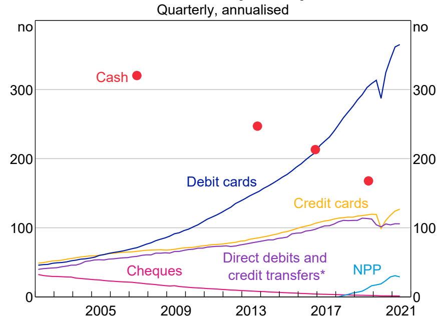
The way in which Australians make their payments has changed significantly in recent decades. An increasing share of payments is now made electronically rather than in cash, and cheques are rarely used (Graph 2.1). Throughout 2020/21, Australians made around 625 electronic transactions per person on average, compared to 275 a decade earlier. Payment cards are the most commonly used retail payment method in Australia, and debit cards are increasingly preferred to credit cards for many transactions. According to the Bank's Retail Payment Statistics, around 75 per cent of card payments in Australia were made with a debit card over 2020/21, compared to around 60 per cent 10 years prior (Graph 2.2).[1]

The COVID-19 pandemic has reinforced the long-run shift to cards and other forms of electronic payment. When the pandemic reached Australia in early 2020, many businesses encouraged consumers to use cards instead of cash for face-to-face payments and many preferred to tap their card or mobile phone to make a payment instead of inserting the card into a payment terminal.[2] According to the

Graph 2.1

Transactions per Capita

Quarterly, annualised



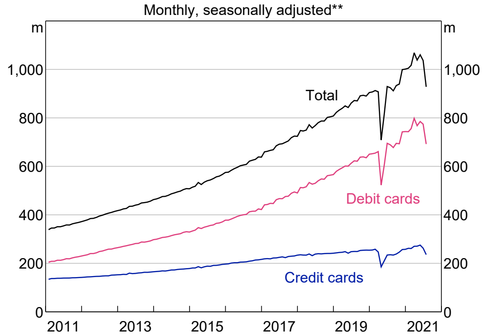
* Includes BPAY

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

Graph 2.2

Number of 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

[1] According to the Bank's 2019 Consumer Payments Survey, debit cards accounted for 44 per cent of the total number of consumer payments in late 2019, compared to 30 per cent in 2016. Credit and charge cards accounted for 19 per cent of consumer payments in 2019 and 22 per cent in 2016. 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 RBA, 'Payments Data'. Available at <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>.

Bank's 2019 Consumer Payments Survey (CPS) – which was conducted in late 2019, prior to the onset of COVID-19 – contactless tap-and-go payments accounted for around 55 per cent of in-person transactions by number, following strong growth in preceding years. While most contactless payments were made using a plastic card, the use of mobile wallets had also been increasing. Industry data and anecdotal evidence indicate that the pandemic has accelerated the shift to tap-and-go payments, particularly via cards stored in mobile wallets on smartphones or other devices (e.g. watches).[3] For example, data released by a large card issuer showed that the value of monthly transactions made using mobile wallets more than doubled over the past 18 months.[4]

Another trend that has been reinforced by the pandemic is an increase in the share of retail transactions being made online, where cash is not an option. For example, Australian Bureau of Statistics data indicate that the share of retail sales conducted online increased from 6.6 per cent in the second half of 2019 to 11.1 per cent in April 2020 as the initial COVID-19-related restrictions were introduced. The online share remained elevated even as restrictions were eased in many parts of Australia, suggesting the pandemic may have induced a more permanent shift to online transactions for some consumers. More broadly, the share of card transactions conducted remotely has been trending upwards for the past decade.

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

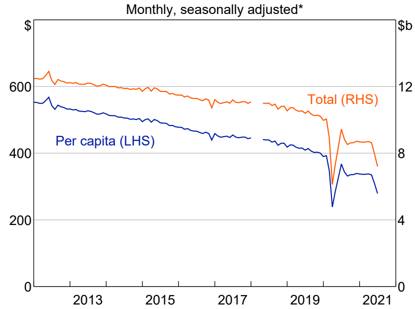
The use of cash for day-to-day payments has been declining steadily for many years. Prior to the pandemic, cash was used for 27 per cent of consumer payments (according to the 2019 CPS), compared to around 70 per cent in 2007. COVID-19 has accelerated this trend, with a range of indicators pointing to weaker demand for cash for transactional purposes since the pandemic began, including lower cash withdrawals from ATMs and subdued demand for low-denomination banknotes.[5] ATM withdrawals fell sharply in April 2020 as restrictions limited face-to-face retail spending and only partly recovered when most restrictions were lifted (Graph 2.3). Over the six months to June this year, the total value of ATM cash withdrawals was around 17 per cent lower than in the second half of 2019.

There are also indications that merchant acceptance of cash is starting to fall, reflecting the effects of the pandemic, the longer-term decline in the use of cash and the costs to merchants of continuing to offer cash as a

Graph 2.3

Value of ATM Withdrawals

Monthly, seasonally adjusted*



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

Source: RBA

[2] For a discussion of changes in payment behaviour in the early stages of the pandemic, see Bullock M (2020), 'Panic, Pandemic and Payment Preferences', Keynote address at the Morgan Stanley Disruption Evolved Webcast, Online, 3 June.

[3] The payments industry supported the shift to contactless transactions by temporarily increasing the no-PIN limit on contactless transactions from $100 to $200; after several extensions, the higher limit was still in place at the time of writing.

[4] See Commonwealth Bank (2021), 'Submission to the Parliamentary Joint Committee on Corporations and Financial Services Inquiry into Mobile Payment and Digital Wallet Financial Services', 21 May. Available at <https://www.aph.gov.au/DocumentStore.ashx?id=e767fe20-d59e-4fd6-acab-e2d6714141db&subId=707317>.

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

payment option. A survey commissioned by the Bank found that 45 per cent of consumers reported they had encountered a business that did not accept cash in the month of September 2020, compared to less than 25 per cent in April 2019.[6] Even so, the vast majority of retail businesses with a physical presence – more than 95 per cent according to the survey – continue to accept cash.

Despite the ongoing decline in the use of cash for payments, a significant minority of face-to-face payments are still made in cash and some members of the community continue to use cash extensively. In the CPS conducted in late 2019, 10 per cent of respondents made all of their weekly payments in cash, and more than half of the payments of Australians aged 65 and older were made in cash.[7] While these shares are likely to have fallen somewhat since 2019 associated with the effects of the pandemic, cash is still likely to be an important payment method for some people.

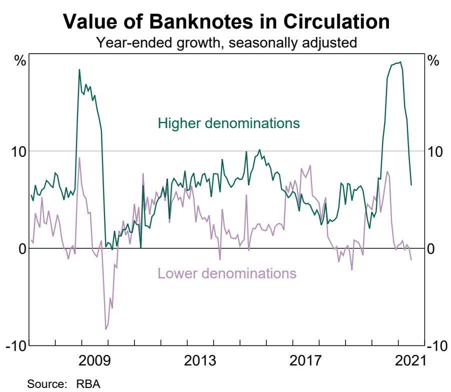
Moreover, while the use of cash for transactions has been declining, the overall demand for cash has remained very strong during the pandemic. The value of banknotes in circulation grew particularly strongly from mid March 2020, around the time that COVID-19-related containment measures were being imposed, with the annual growth rate reaching 18 per cent in January 2021 – triple the average annual growth rate over the previous decade. The year-ended growth rate has since moderated to 6 per cent in the year to June 2021. Measured as a ratio to GDP, the value of banknotes in circulation reached a historic high in the March quarter of 2021 at 4.8 per cent. Much of the recent increase in demand was in high-denomination banknotes ($50s and $100s), which, coupled with the reduced transactional cash use, suggests an increased desire in the community to hold banknotes for precautionary (i.e. emergency) or store-of-wealth purposes (Graph 2.4).

Innovation is shaping the payments landscape

Innovation and new technologies have had a significant impact on the payments landscape in recent years.

In some cases, new infrastructure has been developed – most notably, Australia's fast-payments system, the New Payments Platform (NPP), which was launched in 2018. The NPP enables consumers, businesses and government agencies to make real-time, information-rich payments 24 hours a day, every day of the year. The PayID service also allows NPP payments to be addressed to an account owner's registered mobile phone number, email address or Australian Business Number rather than to a BSB and account number. More than 105 entities, including some non-bank payment service providers, are now offering NPP payment services to their customers, and most bank accounts are now able to send and receive NPP

Graph 2.4



[6] For further details of the survey results, see Box A in Guttmann R, C Pavlik, B Ung and G Wang (2021), 'Cash Demand during COVID-19', RBA *Bulletin*, March.

[7] 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.

payments. Some payments that were previously processed via the Direct Entry (DE) system – particularly some direct credit transfers and certain government payments (including support payments such as COVID-19 relief) – have been migrating to the NPP, contributing to the strong growth in NPP transactions over the past few years (Graph 2.5). The NPP now accounts for over 20 per cent of the total number of account-to-account payments, while the number of DE payments has been declining over the past few years. The number of DE payments fell by around 2 per cent in 2020/21, although DE payments continue to account for the bulk of electronic retail payments by value. The NPP's new 'PayTo' service, scheduled to be launched in mid 2022, will bring direct debit-like functionality, which will likely drive further migration of DE payments.

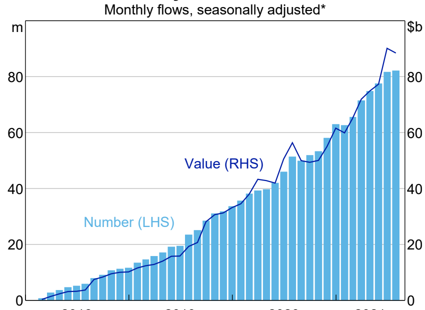
New entrants that leverage existing payment channels (e.g. cards) are also widening the range of payment options available to consumers and businesses. As noted, an increasing share of payments are being made through mobile wallets offered by large technology companies, such as Apple Pay, Samsung Pay and Google Pay. These wallets enable consumers to store a digital representation of their debit and/or credit cards in their smartphone or other devices (such as a smart watch), which can then be used to make contactless payments at the point of sale and in some cases online payments. Apple Pay, Samsung Pay and Google Pay are now supported by almost all card issuers in Australia. The Bank's 2019 CPS showed that consumer use of mobile wallets had been growing strongly, accounting for 8 per cent of in-person card transactions in 2019. As noted above, industry data indicate that growth in the use of mobile wallets has picked up considerably throughout the pandemic period.

The emergence of 'buy now, pay later' (BNPL) services has been another notable development in retail payments in recent years.[8] BNPL services enable consumers to purchase goods and services by paying part of the purchase price at the time of the transaction and the remainder to the BNPL provider in a series of instalments. The customer receives their purchase immediately and the merchant is paid upfront by the BNPL provider. In most cases, customers use a mobile app to access these services and repayments are drawn from a customer's linked debit or credit card. While these services are often free or low-cost for consumers if payments are made on time, BNPL tends to be more expensive for merchants to accept than other electronic payments such as cards. BNPL transactions and customer numbers have grown substantially in the past few years and there has been a significant number of new entrants into the market. According to data collected by the Bank, BNPL providers processed around $11.5 billion of purchases in the year to June 2021 (Graph 2.6). BNPL accounts for a relatively small, though growing, share of payments in the Australian economy. The value of BNPL transactions was equivalent to 1.7 per cent of Australian card purchases in the year to June, although it accounts for a

Graph 2.5

New Payments Platform

Monthly flows, seasonally adjusted*



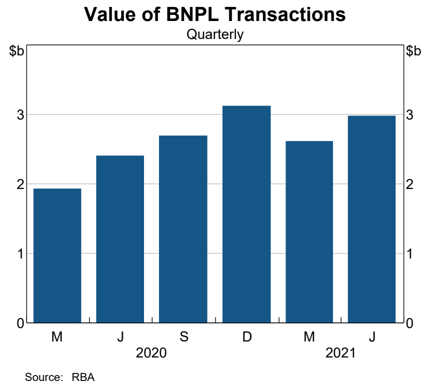
* Excludes transactions between accounts held at the RBA for the purposes of intra-government funding transfers

Source: RBA

[8] For further information on the BNPL market, see Fisher C, C Holland and T West (2021), 'Developments in the Buy Now, Pay Later Market', RBA *Bulletin*, March.

significant share of transactions in certain segments. ✈

Graph 2.6



3. Retail Payments Regulation and Policy Issues

The Reserve Bank determines policy for, and undertakes research into, retail payment systems under its remit to promote a safe, competitive and efficient payments system. Recent policy work has focused on concluding the Bank's comprehensive Review of Retail Payments Regulation, which commenced in late 2019. With the ongoing transition away from cash and towards electronic payments, the Bank has continued to examine whether there are any policy issues regarding access to cash services, as well as the cost, reliability and security of electronic payment services. The importance of this work has been underscored by the changes in payment behaviour stemming from the COVID-19 pandemic. The Bank 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 2020/21.

Review of Retail Payments Regulation

The Bank commenced a comprehensive Review of Retail Payments Regulation with the publication of an Issues Paper in November 2019.[1] The Review was put on hold for much of 2020 to reduce the demands on industry stakeholders during the COVID-19 pandemic.

In May, the Bank published a Consultation Paper, which set out the preliminary conclusions and proposed policy actions of the Board, together with draft variations to the Bank's standards for card payment systems.[2] The Bank received over 30 written submissions in response to the Consultation Paper and consulted with a wide range of interested parties over the course of the Review.

At the time of writing, the Bank was in the late stages of the Review after considering the feedback and was expecting to publish the Board's final conclusions and variations to the standards in a Conclusions Paper in late October. The Review has addressed a range of payments policy issues, including: how to support dual-network debit card (DNDC) issuance and the provision of least-cost routing (LCR); the levels of the interchange fee benchmarks; scheme fee transparency; and the 'no-surcharge' rules of 'buy now, pay later' providers. These issues are discussed at length in the documents produced by the Bank for the Review.

Compliance with the Bank's card regulations

Interchange fees

Interchange fees are wholesale fees set by card schemes that are paid by the merchant's bank

[1] See RBA (2019), 'Review of Retail Payments Regulation: Issues Paper', November.

[2] See RBA (2021), 'Review of Retail Payments Regulation: Consultation Paper', May.

(acquirer) to the cardholder's bank (issuer) on each card transaction. These fees affect the prices faced by cardholders and merchants for making and accepting card payments. The Bank's interchange standards cap the level of interchange fees that designated schemes can set for transactions using Australian-issued cards. Weighted-average interchange fees are required to be at or below a benchmark of 0.50 per cent for credit cards, and 8 cents for debit and prepaid cards. The weighted-average benchmarks provide flexibility to the schemes to set different rates for different card, transaction and merchant types. The benchmarks are supplemented by ceilings on individual interchange rates to limit the disparity between fees applicable to larger 'strategic' merchants and smaller businesses. These ceilings are: 0.80 per cent for credit cards; and 15 cents, or 0.20 per cent if the interchange fee is specified in percentage terms, for debit and prepaid cards.

Compliance with the interchange benchmarks is observed quarterly, based on transactions in the preceding four quarters. In the event that a scheme has exceeded the relevant benchmark, it must reset its interchange fee schedule, such that the benchmark would not have been exceeded if the new fees had applied over the preceding four quarters.

In recent years, the international schemes had typically set their interchange fees on credit cards such that the weighted-average fee was very close to the benchmark, resulting in frequent resets to their schedules. However, in 2020/21, interchange fees for both the Visa and Mastercard credit schemes remained at or below the credit interchange benchmark in each quarterly reporting period, and thus no resets were required. Even so, the schemes made a number of voluntary changes to their credit interchange fee schedules during the year, primarily to raise fees on some premium card categories.

Weighted-average interchange fees for debit and prepaid cards were also below the benchmark for all designated schemes during 2020/21. These fees have generally drifted down over the past few years in response to competitive pressures from LCR, and they declined a little further over the past year. Eftpos made a number of significant changes to its debit interchange schedule during the year, including the introduction of new 'package rate' categories with lower fees for merchants that choose to route DNDC transactions through the eftpos network. Visa and Mastercard introduced additional strategic merchant categories, with Visa also adding new, higher-fee categories for transactions on single-network debit cards, which cannot be routed.

Net compensation

To prevent circumvention of the interchange fee caps and benchmarks, the Bank's interchange standards contain a requirement that issuers may not receive 'net compensation' from a scheme in relation to card transactions. This requirement is intended to limit the possibility of schemes using payments and other incentives to issuers (funded by higher scheme fees on acquirers) to effectively replicate interchange fee payments. Schemes and issuers certify their compliance with this requirement annually. The certification process for 2020/21 indicated that the net compensation provision was working as intended. However, the reduction in cross-border card transactions associated with the COVID-19 pandemic resulted in a significant decline in scheme fees, and presented compliance challenges for some issuers.

In response to questions that arose during the previous compliance review, the Bank published guidance in February that sets out when the Bank expects new card issuers to first certify compliance with the net compensation provision. The guidance is expected to support new issuers' compliance positions while they are in the early stages of developing and launching a card product.

Surcharging

The Bank's surcharging standard protects the right of merchants to impose a surcharge on card payments from designated schemes, which helps promote competition in the payments system and keeps downward pressure on payment costs for businesses. However, to ensure that consumers are not excessively surcharged, the amount of any surcharge is limited to the merchant's average cost of accepting a card payment for the relevant scheme. Acquirers and payment facilitators are required to give merchants statements that clearly set out the average cost of acceptance for each designated card scheme, to help merchants make informed decisions about surcharging. These requirements are complemented by the Australian Competition and Consumer Commission's (ACCC) powers to monitor and enforce the ban on excessive surcharging. While the surcharging standard only applies to designated card schemes, a number of schemes and other payment providers that are not designated have provided the Bank with formal undertakings to keep their surcharging rules consistent with the standard.

The Bank's monitoring indicates that there has been a high level of compliance with the surcharging framework by schemes and acquirers. Further, the ACCC has indicated that there was a reduction in the number of complaints of excessive surcharging it received over the past year; although, in July a large corporate group paid penalties after the ACCC issued it with 12 infringement notices following an investigation into alleged excessive surcharging. In response to a number of queries prompted by some stores going cashless, the ACCC recently published guidance for businesses on how they should display prices for their goods or services, including the minimum card payment surcharge payable.[3]

Treasury Payments System Review

In October 2020, the Australian Government launched a review of the governance and regulatory arrangements for the Australian payments system, led by Scott Farrell and supported by a secretariat located within Treasury. The primary aim of the review was to ensure that the regulatory architecture and governance structures for the payments system remained capable of achieving their objectives and supporting continued innovation and competition in the market for payment services.

The Bank provided a written submission to the review and Bank staff engaged with Mr Farrell and the Treasury secretariat a number of times during the review. In its submission, the Bank noted that the existing regulatory arrangements for the payments system in Australia have worked well; they have helped shape a payments system that in most regards is providing high-quality services for Australian consumers, businesses and government entities. However, key aspects of the regulatory architecture have been in place for more than two decades and numerous changes have occurred in the payments system over that time or are underway. In this context, the Bank's submission raised a number of issues, including in relation to:

- overcoming the coordination challenges that can hold back system-level innovation in payment networks
- ensuring that the scope of regulation is appropriate to respond to the increasing range of entities that are now involved in the provision of payment services

[3] ACCC, 'Payment Surcharges'. Available at <https://www.accc.gov.au/business/pricing-surcharging/payment-surcharges#applying-a-surcharge-to-all-kinds-of-card-payments>.

- ensuring that industry self-regulatory arrangements support competition and innovation from new players, while appropriately dealing with the risks to other payments system participants and users
- exploring whether a specialised licensing and oversight regime for non-bank payment service providers could help promote access and competition while appropriately controlling risk
- clarifying the Bank's ability to set regulatory requirements to promote the financial and operational resilience of payment systems
- examining whether there are aspects of the regulatory regime and market practices that are currently limiting competition by non-bank participants in the market for cross-border payment services and international money transfers
- ensuring that the decline, and eventual closure, of legacy payment systems (such as cheques) is carefully managed to support the needs of users while promoting payments system efficiency.

The final report of the Payments System Review was released by the Treasurer in August 2021. The report concluded there have been significant changes in the payments ecosystem since the current regulatory architecture was established more than two decades ago. Participants in the payments ecosystem have grown in number and variety, and incumbents are changing the way they operate in response to evolving consumer preferences and technological developments. The report makes several recommendations to ensure that the payments system regulatory architecture and governance arrangements are fit-for-purpose for the years to come. These include:

- a greater role for the government, through the Treasurer, in setting the strategic direction of the payments ecosystem in collaboration with regulators and industry
- the development of a strategic plan for the payments ecosystem, supported by the introduction of a payments industry convenor and an enhanced payments function within Treasury
- greater coordination between payments regulators to ensure alignment with the agreed strategic direction
- expanding the scope of the Bank's designation power in the Payment Systems (Regulation) Act 1998 to ensure that the Bank can regulate new and emerging payment systems and introducing a new designation power for the Treasurer based on national interest concerns
- introducing a single, tiered payments licensing framework that replaces the need for providers to obtain multiple authorisations from different regulators, provides clear protections for consumers and businesses, and facilitates more transparent access to payment systems.

Treasury is currently consulting on the recommendations in the report ahead of the Australian Government finalising a response, which it plans to do before the end of the year. The Bank will continue to engage with Treasury and the Australian Government on this review and will respond to any recommendations on the Bank's regulatory framework supported by the government.

Innovation in payments and the digital economy

The Bank devotes significant resources to understanding the evolving structure of the payments system, in order to promote innovation and foster improvements in services for the benefit of households, businesses and government entities.

During 2020/21, Bank staff held numerous discussions with industry participants on new technologies and other factors that are driving innovation in the payments system and enabling new business models, as well as opportunities and challenges faced by newer entrants. The Bank also made two submissions to the Senate Select Committee on Australia as a Technology and Financial Centre.[4] These submissions focused on the potential role and implications of: central bank digital currency (CBDC), cryptocurrencies and digital assets; de-banking and access to payments infrastructure; and neobanks (see below for further discussion of the Bank's policy work in some of these areas).

Bigtechs such as Google, Apple, Facebook and Amazon are becoming increasingly involved in the global payments industry, including by providing various consumer payment services such as digital wallets. The Board discussed the role of bigtechs in payments during the year, recognising that these firms have the potential to promote a more efficient payments system by delivering new and innovative services. However, these platforms have large user bases and benefit from substantial network effects, which is likely to put them in a strong competitive position relative to other payment system participants. The involvement of large global technology firms in the payments market could give rise to a range of complex issues for the industry and policymakers in the period ahead.

Digital wallets such as Apple Pay, Google Pay and Samsung Pay are the most prominent examples of bigtech payment services that are rapidly gaining traction in Australia (see chapter on 'The Evolving Payments Landscape'). These digital wallets allow consumers to make contactless payments with a smartphone or other payments-enabled device, using near-field communication technology. In early 2021, the Bank made a submission to the Parliamentary Joint Committee on Corporations and Financial Services' inquiry into mobile payment and digital wallet financial services. The Bank's submission discussed the current state of the digital wallet market in Australia, the technologies that enable them and the business models adopted by different providers. It also outlined some of the potential policy issues arising from the increased use of digital wallets and the commercial arrangements of providers that are relevant to the Bank's mandate to promote competition, efficiency and safety in the payments system.

The Bank also welcomed the recent announcement that the Digital Finance Cooperative Research Centre (CRC) was selected to receive funding under the CRC Program administered by the Ministry of Industry, Science and Technology. The Bank is participating in the Digital Finance CRC as part of work on the Bank's strategic focus area of supporting the evolution of payments. Participation in the CRC will provide the Bank with an opportunity to collaborate with industry and academic partners on longer-term research related to innovations in digital finance, including asset tokenisation and CBDC.

Central bank digital currency

Many central banks, including the Reserve Bank, are researching the potential use, benefits and other implications of issuing CBDC as a complement to existing forms of money. A CBDC refers to a new digital form of money that would be issued by (and therefore be a direct liability of) a central bank, and could be used by households and businesses to make payments. 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)

[4] Formerly the Senate Select Committee on Financial Technology and Regulatory Technology.

for use in wholesale payment and settlement systems.

The Bank has been researching CBDC for a number of years, exploring both retail and wholesale use cases. In September 2020, the Bank published an article that outlined some of the possible design considerations, and the case for and potential implications of issuing a retail CBDC.[5] The article highlighted a number of factors that indicated there was not a strong public policy case for issuing a CBDC for retail use in Australia at present. This included the fact that, even though the use of cash for transactions has been declining, cash is still widely available and accepted as a means of payment. There are also questions about whether there would be strong demand for a CBDC, given that Australian households and businesses are already well served by a modern, efficient and resilient payments system that has undergone significant innovation in recent years, including the introduction of the New Payments Platform (NPP). Despite not seeing a need to develop one at present, the Bank is continuing to monitor the case for a retail CBDC in Australia, including how it might be designed, the various policy implications and potential uses. Most recently, for example, the Bank has been engaging with participants in the payments industry on potential use cases for a retail CBDC that may not be adequately met through existing payment methods.

Separate to its work on retail CBDC, the Bank has been exploring the case for a wholesale form of CBDC. The Bank commenced technical experimentation on wholesale CBDC in 2018/19 with the development of a proof-of-concept (POC) of a tokenised form of CBDC using distributed ledger technology (DLT). The Bank extended this work in 2020/21 through a collaborative research project with the Commonwealth Bank, National Australia Bank, Perpetual and ConsenSys Software (a blockchain technology company). This project involved the development of a POC of a wholesale CBDC, but this time it explored how access to the CBDC could be extended beyond banks to a wider range of wholesale market participants. It also integrated a digital asset in the form of a tokenised syndicated loan to explore the implications of 'atomic' delivery-versus-payment settlement, as well as other potential benefits of combining CBDC and tokenised assets on interoperable DLT platforms. A report on the project will be published shortly.

The Bank is continuing to undertake research on CBDC as part of the strategic focus area on 'supporting the evolution of payments' in the Bank's Strategic Plan. This includes the establishment of a cross-disciplinary team focused on researching CBDC and the Bank's participation in the Digital Finance CRC. The Bank is also currently collaborating with the BIS Innovation Hub and a number of other central banks on 'Project Dunbar', which is exploring the governance and connectivity models that could support the use of multiple CBDCs for wholesale cross-border settlements.[6]

Regulation of stablecoins

The Bank has continued to monitor developments related to the emergence of so-called 'stablecoins', which are a type of crypto-asset designed to avoid the price volatility experienced by many other crypto-assets, such as Bitcoin. Stablecoins seek to maintain a stable value through various forms of asset backing or through the use of algorithmic techniques to try and match the supply of coins with demand, with the intention of making the stablecoin more attractive to hold as a store of value and as

[5] Richards T, C Thompson and C Dark (2020), 'Retail Central Bank Digital Currency: Design Considerations, Rationales and Implications', RBA *Bulletin*, September.

[6] See RBA (2021), 'BIS Innovation Hub and Central Banks of Australia, Malaysia, Singapore and South Africa Will Test CBDCs for International Settlements', Media Release No 2021-18, 2 September.

a medium of exchange. Stablecoins that become widely used in multiple countries could potentially make cross-border payments less expensive and overcome some of the challenges associated with financial exclusion. However, without appropriate oversight and regulation, stablecoins have the potential to be used for money laundering or illicit activities and could raise consumer protection and privacy concerns.

To date, most of the issuance of stablecoins globally has been concentrated in a small number of asset-backed arrangements that are pegged to the US dollar. There has been almost no issuance of Australian dollar-denominated stablecoins and their use as a payment method in Australia has been very limited. Even so, the Bank has been closely monitoring developments in this area. There are potential benefits for competition and innovation in the payments system from the development of stablecoins, and new arrangements could emerge that gain rapid adoption. It is therefore important for the Bank and other regulators to consider any policy issues that might arise.

A prominent overseas stablecoin initiative that has been seeking to launch is the Diem project (formerly called Libra), which is backed by a consortium of blockchain, payments and technology companies including a subsidiary of Facebook. When it was first announced in 2019, the intention was to issue a stablecoin for use in cross-border payments that would be fully backed by safe assets denominated in a basket of major currencies. The project was to have been governed and operated in Switzerland and was seeking a payment system licence from the Swiss Financial Market Supervisory Authority (FINMA). Bank staff participated in a global regulatory forum established by FINMA that shared information and views on the evolving Diem project.

The scope of the Diem project has changed significantly since the initial announcement, mostly in response to regulatory concerns. The latest change, announced earlier this year, involved a strategic shift in the project from Switzerland to the United States with a plan to issue only US-dollar stablecoins and to manage the associated asset reserves via a US-regulated bank. These changes would bring the project fully within the US regulatory perimeter and, as a result, the Diem Association has withdrawn its licence application with FINMA. While it is not known when Diem will launch in the United States, it is expected that a number of other companies, including a subsidiary of Facebook, will subsequently launch digital wallets (and eventually other services) through which customers will be able to access and use Diem stablecoins.

Recognising both the potential benefits and the risks related to stablecoins becoming widely used for payments, Bank staff have been participating in several regulatory groups focused on stablecoins. This includes a Financial Stability Board (FSB) working group that developed a set of recommendations published in October 2020 on the appropriate regulatory and oversight arrangements for global stablecoin arrangements. Domestically, the Bank is participating in a Council of Financial Regulators (CFR) working group established earlier this year to consider the domestic regulatory framework that should apply to private stablecoin arrangements. The working group, which also includes the Australian Transaction Reports and Analysis Centre, is currently working to assess how stablecoin arrangements would be treated under existing regulatory frameworks, with a view to identifying risks to consumers and the financial system and developing recommendations to address any regulatory gaps.

Regulation of stored-value facilities

The Bank has remained involved in work on the regulatory framework for stored-value facilities

(SVFs). These products encompass a wide range of facilities that enable customers to store funds electronically for the purpose of making payments. The Bank currently shares regulatory responsibilities for SVFs, also known as purchased payment facilities, with the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC).

The CFR recognised the potential for SVFs to become a more prominent part of the Australian payments system and initiated a review of regulatory arrangements in mid 2018. The outcome of the review was a set of recommendations for a revised regulatory framework for SVFs aimed at modernising and simplifying regulation in a way that would be conducive to innovation, while providing appropriate consumer protections. The recommendations were delivered to the Australian Government in October 2019 and the government announced in October 2020 that it would implement the CFR's recommended reforms. Under the new framework, ASIC and APRA will continue to regulate individual providers of SVFs depending on the size and other characteristics of the facility. The Bank will no longer have a role in regulating individual SVF providers. Details of the new framework, which will require changes to legislation to implement, have not yet been finalised. Until the new framework is in place, the Bank, APRA and ASIC will continue to administer the current regulatory requirements for SVFs.

Regulation of electronic conveyancing platforms

Electronic conveyancing (e-conveyancing) refers to the digital completion of property conveyancing transactions. This includes the lodgement of property dealings with land registries, the exchange and disbursement of settlement funds, and the payment of associated duties and taxes. There are currently two e-conveyancing platform providers – Property Exchange Australia Ltd (PEXA) and Sympli Australia Pty Ltd – which operate in most states and territories. E-conveyancing offers a number of benefits over traditional paper-based arrangements, including improved efficiency and reduced costs. Recognising these benefits, a number of states and territories have mandated the use of e-conveyancing for all or most real property transactions.

The regulatory framework for e-conveyancing is administered by the Australian Registrars' National Electronic Conveyancing Council (ARNECC), which comprises the state and territory Registrars. While the Bank does not have a supervisory mandate in relation to e-conveyancing, it chaired a CFR working group that was established in March 2020 with representatives from the ACCC and ARNECC to review elements of the regulatory framework for e-conveyancing. The purpose was to identify whether enhancements to the regulatory framework in relation to payments and financial settlement aspects of e-conveyancing could promote consumer protection, resilience and competition in the e-conveyancing market.

At its June 2021 meeting, the CFR and ACCC supported the recommendation of the working group to strengthen the regulatory arrangements for e-conveyancing through the development of a self-regulatory regime. It has been agreed that an industry code will be jointly developed by the e-conveyancing platform providers and financial institutions under the governance of an industry steering committee facilitated by Australian Payments Network (AusPayNet). Development of the code is expected to be completed by September 2022, subject to any necessary authorisations by the ACCC.

Promoting operational resilience in retail payments

With the growth in electronic payments and the reduced use of cash, the operational resilience in the electronic retail payment system is attracting greater focus. Major disruptions or data breaches in these systems could have a material negative impact on end users and economic activity, and significantly reduce public confidence in payment services and key providers. At the same time, operational challenges facing providers of retail payments are rising in association with greater complexity in payments infrastructure and services, and growing cyber threats.

Data collected from banks and other financial institutions show a substantial rise in the number and total duration of operational outages to retail payment services in recent years. The Board considers it vital that entities in the retail payments industry invest in resilient systems and maintain reliable services to customers. Accordingly, the Bank has been working with retail payments providers on an initiative to improve the quality and transparency of information about the reliability of their services. This initiative involves enhancing the Bank's existing data collection for retail payments incidents, and developing a set of quarterly operational reliability statistics for retail payment services that individual providers will publicly disclose on their websites. The new quarterly data collection has recently commenced, and the Bank expects the first public disclosures on service availability and significant outages to be made by institutions in November. Better and more transparent information about the reliability of retail payment services is intended to raise the profile of this issue among financial institutions and their customers, and to enable improved benchmarking of operational performance. The Board will monitor the reliability of retail payment services using the new data and will consider whether any further policy measures are needed to enhance operational resilience.

The Bank has also been assisting the Department of Home Affairs to apply the government's reforms to critical infrastructure legislation to the retail payments system. In April, the Department released a consultation paper specifying several real-time retail payment systems as critical from a security and reliability perspective: the Mastercard debit and credit card systems; the Visa debit and credit card systems; the eftpos card system; and the NPP.[7] The intention is that the entities responsible for the operation of central infrastructure assets in these systems will be subject to obligations with respect to their management of cyber risks and other hazards (such as the maintenance of a risk management program and incident reporting). Providers of payment services that are authorised deposit-taking institutions (ADIs) will not be captured in the reforms for the payments sector, since they are regulated by APRA and subject to its existing prudential standards.

Payments security initiatives

Payments security is an increasingly important feature of the retail payments system given the ongoing rise in online and other electronic payments. Payments-related fraud imposes significant costs on consumers, businesses and financial institutions, and can undermine public confidence in electronic payments. The Board has for many years been monitoring developments in retail payment fraud and supporting industry initiatives to bolster payments security.

A major focus for the payments industry in recent years has been on implementing measures to address rising fraud related to card-not-present (CNP) transactions (i.e. online,

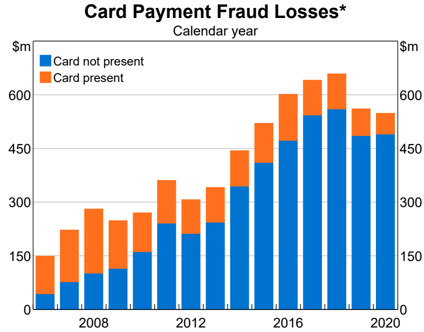
[7] See Department of Home Affairs (2021), 'Protecting Critical Infrastructure and Systems of National Significance: Draft Critical Infrastructure Asset Definition Rules', April. Available at <https://www.homeaffairs.gov.au/reports-and-pubs/files/critical-infrastructure-asset-definition-rules-paper.pdf>.

phone and mail-order card purchases). These measures include standards aimed at safeguarding the card data held by merchants, the increased tokenisation of card details and improved fraud detection systems. The industry, led by AusPayNet, also introduced the CNP Fraud Mitigation Framework, which came into effect in July 2019. This framework requires card issuers and merchants to put in place 'strong customer authentication' (multi-factor authentication) for online transactions if specified fraud thresholds are consistently breached.[8] These various measures have contributed to a recent modest decline in CNP fraud losses, following the upward trend seen over the past decade or so (Graph 3.1).

While losses from unauthorised use of cards have fallen recently, losses associated with customer data theft and scams have become more significant. 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 fake bill from a legitimate business seeking payment. According to data published by the ACCC, financial losses from scams have grown substantially in recent years (despite the fact that many scams go unreported by victims). In 2020, there was an increase in scam activity associated with the pandemic as people were interacting more with businesses and governments online, creating more opportunities for scammers.

Graph 3.1

Card Payment Fraud Losses*



* Includes card fraud losses for international card schemes, Visa and Mastercard, and the domestic card scheme, eftpos, that are issued and/or acquired in Australia

Source: AusPayNet

To help combat growing payment scam losses, banks have been investing more in measures to detect and respond to scam activity, as well as to educate their customers on the risks and the precautions they can take. The industry is also working to better understand scam activity by improving the classification and reporting of scam data, and by sharing information about scams. Further industry efforts to raise awareness of scam risks and to strengthen fraud detection and prevention will be important as account-to-account transactions grow. The Board notes that the wider use of the NPP PayID addressing system – which allows the payer to check that the payee name matches their expectation – is one possible way to help reduce the incidence of certain types of scam payments.

Another development that could help prevent fraud and scams is the rollout and adoption of digital identity services. These are services that enable individuals to establish a digital identity to prove who they are when interacting online with businesses and government, which can significantly improve the security and convenience of online transactions. The payments industry is continuing to work on developing governance arrangements for the TrustID digital identity framework, which was developed by the Australian Payments Council (APC) in 2019 to facilitate the emergence of a network of interoperable digital identity services. There has been some progress over the past few years, with digital identity services such as

[8] 'Strong customer authentication' involves verifying that the person making the transaction is the actual cardholder using two or more independent authentication factors drawn from: something that only the customer should possess (e.g. a card or mobile device); something that only they should know (e.g. a PIN or password); and something the customer is (e.g. a biometric feature such as a fingerprint or facial profile).

Australia Post's Digital iD and eftpos' ConnectID having launched, and other pilots underway. However, the number and reach of services remains relatively limited at present. The Board has been disappointed by the slow rollout of private-sector digital ID services in Australia given the rapid shift to online transactions associated with the COVID-19 pandemic and the fact that other jurisdictions have made significantly more progress in making these services available.

There has been more success with the rollout of digital ID in the government sector, with the myGovID service now being used by over 4 million Australians and 1.2 million Australian businesses to securely and conveniently access 80 government online services. The Digital Transformation Agency has recently been consulting on planned legislation aimed at expanding the Australian Government's digital ID system into a whole-of-economy solution, offering access to state, territory, local government and private sector services, and allowing entities in other digital ID systems to apply for accreditation under the Trusted Digital Identity Framework. Improved interoperability between the private- and public-sector digital ID schemes should support the increased adoption and use of digital ID services in Australia.

Enhancing cross-border retail payments

Having access to efficient, competitive and safe cross-border payment services in Australia is becoming more important as households and businesses increasingly look to send or receive payments across borders. Yet bank-intermediated cross-border payments have typically been far more expensive, slower and more opaque than domestic payments, even considering the additional risks and complexities involved in processing these payments. These challenges are most evident for low-value international money transfers – in part, because of longstanding frictions in the correspondent banking arrangements used to process these transfers – although users of most types of cross-border payment services face at least some of the challenges.

Accordingly, enhancing the efficiency of cross-border retail payments remains a priority for the Bank's payments policy work. Bank staff are contributing to a number of international working groups that are implementing aspects of the G20 Roadmap for Enhancing Cross-border Payments (see Box A). The Bank has also been engaging with domestic industry stakeholders about Australia's contribution to the Roadmap work.

The Bank continues also to monitor competition and access issues associated with the entry of new technology-enabled providers of cross-border retail payment services into the Australian market. Gains in market share for these providers over recent years has been a factor spurring incumbents to lower prices and improve the convenience of their offerings. However, many non-bank providers have found it difficult to obtain or retain reasonable access to the core domestic banking services and payment infrastructures that they need to provide cross-border payment services to Australian customers.

The Bank is concerned that this type of 'de-banking' could impede competition and innovation in the market for cross-border retail payment services (as well as other types of financial services where fintechs and other non-bank providers have been de-banked). Accordingly, the Bank is working with other Australian regulatory agencies to explore the underlying causes and possible policy responses to de-banking. The Final Report of the Treasury Payments System Review has recommended the introduction of a single tailored licensing framework for (non-bank) payment service providers, to facilitate access by these entities to payment systems and possibly help alleviate de-banking risks.

Improving the cost and accessibility of low-value transfers (or remittances) to the South Pacific countries is another important focus of the Bank's cross-border payments work. Given the relatively small size of these remittance flows, it has tended to be more costly to transfer funds to South Pacific countries than other countries, and non-bank providers servicing these corridors from Australia have faced significant de-banking risks. This is a particular problem because many people in South Pacific countries rely heavily on remittances from family and friends in Australia (as well as New Zealand). The Bank (together with the Reserve Bank of New Zealand, other South Pacific central banks and multilateral organisations) is working on a possible regional Know-Your-Customer (KYC) utility that may help support the flow, and potentially also reduce the cost, of remittances to the South Pacific. This initiative involves consulting with commercial banks, money transfer operators and other key stakeholders in the remittance sector. The facility would have inbuilt KYC compliance workflows that ensure entities using the facility can perform KYC compliance checks to a high standard, and can demonstrate this to banks and regulators. If feasible, it is expected the facility would take several years to build and implement.

Migration to ISO 20022 messaging standard

The Board is monitoring the progress of a major industry-led program to update the messages used in the Australian High Value Clearing System (HVCS) to a new format based on the ISO 20022 standard. The HVCS is used by financial institutions to clear high-value customer payments, correspondent banking flows and the Australian dollar leg of foreign exchange transactions, with settlement occurring in the Reserve Bank Information and Transfer System (RITS). Currently, HVCS payments, like other payments processed over the Society for Worldwide Interbank Financial Telecommunication (SWIFT) network, use a proprietary message format. SWIFT plans to migrate cross-border payments sent across its network to the ISO 20022 format, commencing in November 2022, with a goal to eventually migrate all cross-border payments and reporting traffic to the new format by November 2025. A number of jurisdictions have already adopted, or are working towards adopting, ISO 20022 for domestic payments ahead of SWIFT's cross-border payments migration deadline.

In 2019, the Bank undertook a consultation on the migration of key parts of the payments system on behalf of the Board and the APC. The payments industry has now completed the design and planning of the HVCS migration, and the program is currently in the build stage. A co-existence phase – where both ISO 20022 and the existing message formats will be supported for certain payment types – will begin in November 2022. During this phase, ISO 20022 messages with enhanced data content must be used for domestic payments relating to correspondent banking and cross-border flows where the original payment instruction is in the ISO 20022 format, but other HVCS transactions can continue to use the existing message formats. Full transition to ISO 20022 is planned for completion by November 2024.

The adoption of ISO 20022 for the HVCS is expected to provide a number of benefits. ISO 20022 messages are able to carry enhanced data content, which can assist financial institutions in meeting their financial crimes obligations and combatting payments fraud, as well as supporting innovation. The standard also offers a range of potential processing efficiency enhancements, such as improved straight-through processing, and has been designed to adapt to new requirements and technologies as they emerge. As the NPP already uses ISO 20022, adopting the standard for the HVCS is one step towards potentially enabling messages to be redirected between the two systems in a contingency, which would enhance the resilience of the payments system. The global adoption of ISO 20022 is one of the initiatives in the G20 Roadmap for Enhancing Cross-border Payments (see Box A).

New Payments Platform

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. For the past few years, NPP Australia (NPPA) has been publishing semi-annual updates to its capability development roadmap with its schedule of plans to extend and enhance the platform's native capabilities. One element of the roadmap implemented earlier this year was the introduction of new data-rich message standards for superannuation, tax, payroll and e-invoicing payments. These standards define the specific data elements that should be carried with these payment messages, which will allow for more business automation, improved reconciliation and straight-through processing of these types of payments. From April, all NPP participants were required to be able to receive these messages, and it is expected that institutions will compete to develop capabilities that allow their customers to send these types of payments through the NPP. The adoption of these message standards should also support the industry in migrating bulk payments such as payroll, which are currently made through the Direct Entry system, to the NPP.

A key element on the current NPP roadmap is the development of the 'PayTo' service, which will enable customers to authorise third parties to initiate payments from their bank accounts using the NPP. This service will provide an alternative to direct debits where customers will have greater transparency and control over their payment arrangements, and will also support the use of bank accounts for in-app and other types of recurring payments. The PayTo service could also be one of the ways in which financial institutions meet any potential obligations to deliver payment initiation under the Consumer Data Right. Implementation of the PayTo service is a significant project for the industry. Notwithstanding some recent delays associated with the degree of internal work required by participants and the impact of COVID-19, the service is scheduled to launch in mid 2022.

By the end of 2022, all NPP participants will also be required to join the NPP international payments business service, which will allow banks and other international payment service providers to use the NPP for the final leg of international payments coming into Australia. This business service will use the data richness of NPP payment messages to incorporate additional data elements that will allow a receiving bank to perform the necessary due diligence and financial crimes screening of payments to meet its regulatory obligations. The adoption of this service by NPP participants will support safer and faster cross-border payments.

Besides encouraging the development of new NPP functionality, the Board has also been monitoring access to the NPP, with a focus on ensuring that there are competitive and safe access options for payment service providers wishing to utilise the NPP. As of the end of August 2021, there were 106 entities using the NPP to provide payment services to their customers; this includes 93 entities (eight of which are non-ADIs) that are indirectly connected to the NPP via one of the direct participants. The Bank made a number of recommendations on NPP access as part of a joint consultation with the ACCC in 2019. A follow-up review of NPP access and functionality was planned to commence this year, but was postponed while the ACCC considered NPPA's merger with BPAY and eftpos, and also pending the outcome of the Treasury Review of the

Payments System. The Bank is currently expecting to commence this review in 2021/22.

Policy issues associated with declining cash use and the supply of cash services

There has been a structural decline in the use of cash for transactions in Australia as consumers increasingly prefer to use electronic payment methods (such as cards), with the COVID-19 pandemic contributing to a further step down in cash use. This trend has been seen in a significant decline in cash withdrawals; although, the value of banknotes in circulation has continued to increase in recent years, reflecting ongoing demand for cash for precautionary and store-of-wealth purposes.

The Board has been monitoring these trends in cash use closely and is keen to ensure that any associated changes in the availability or acceptance of cash do not cause undue hardship for people. The decline in the transactional use of cash is impacting the economics of providing cash services, which could prompt providers to reduce the supply of cash services. This could become a policy concern given that cash is still heavily used by some segments of the population; cash also serves as an important backup payment option during outages in electronic payment services. Given these issues, the Bank has committed to working with the payments industry to support the ongoing provision of cash services.

There has been a significant reduction in the number of cash access points in recent years, with the number of bank branches continuing to fall and a decline of around 20 per cent (6,500 machines) in the number of active ATMs since its peak in late 2016. However, research by Bank staff published in June 2021 found that the majority of Australians continue to have good access to cash deposit and withdrawal services through bank branches, ATMs and Australia Post 'Bank@Post' services.[9] Regional and remote areas, however, have poorer access with fewer alternative cash access points, making these areas more vulnerable to any further removal of services. The continued presence of Bank@Post services is increasingly important in many regional and remote areas.

The Bank has also conducted surveys to investigate cash acceptance by retail merchants. The last survey, conducted in September 2020, found that the vast majority of businesses continued to accept cash as a means of payment, although the share accepting cash had declined marginally since the onset of the COVID-19 pandemic.[10] However, as cash use declines further, it is possible that more merchants may decide to stop accepting cash, for example, if they judge that the benefits of not accepting cash (e.g. in lower cash handling costs and faster checkout times) outweigh the costs (e.g. from lost sales from cash-only customers or during outages to electronic payments). Bank staff are currently participating in an APC working group that is examining trends and drivers of cash acceptance among merchants with a view to informing any policy concerns that might arise.

The Bank has also been engaging with banks and cash-in-transit operators on the challenges of supplying cash distribution services as cash use declines. These discussions have highlighted a range of actions that have been taken, or could be considered, to improve efficiency and reduce the costs of providing cash services. Several banks have recently sold parts (or all) of their off-branch ATM fleets to third-party operators, which are looking to operate these ATM fleets on a utility basis where banks can pay for their customers to access the machines fee free. In an environment of declining ATM use and where the costs of ATM deployment have been rising, such arrangements could be a more

[9] See Caddy J and Z Zhang (2021), 'How Far Do Australians Need to Travel to Access Cash?', RBA *Bulletin*, June.

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

efficient way to sustain a broad coverage of ATMs, which may be particularly important for regional and remote areas that often have fewer options for accessing cash services.

The pressures posed by the trend decline in cash use are also having implications for the economics of wholesale banknote distribution, which is the process by which banknotes are obtained from the Reserve Bank by financial institutions and moved around the country via cash-in-transit companies. This system is critical to facilitating the flow of cash in the Australian economy. The Bank has announced it will shortly be commencing a consultation on banknote distribution arrangements to investigate if any policy action is warranted.

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 regular Consumer Payment Surveys. The Board will also consider whether any policy actions by the Bank might be required to support the continued provision of cash services during the transition away from cash.

The future of the cheques system

The use of cheques in Australia has continued to decline at a rapid rate in recent years, and the COVID-19 pandemic is likely to have accelerated this trend as more people adopt digital alternatives. The total number of cheque payments declined by 25 per cent in 2020/21, compared to an average annual rate of decline of 20 per cent over the previous five years. There were less than 1.5 cheque transactions per person in 2020/21 and cheque payments accounted for less than 0.3 per cent of all non-cash payments. The rapid decline in the value of cheques in recent years has been driven by a sharp fall in the use of financial institution (bank) cheques for property settlements associated with the increased adoption of e-conveyancing platforms; personal and business cheque use has also been declining as more payers transition to electronic payment methods.

As cheque use continues to decline, the per-transaction cost of supporting cheque payments, 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 at some point given the high cost of maintaining it and the increased availability of payment methods that can meet similar payment needs. However, it is also important that the payment needs of different users are identified and addressed to ensure that no one is left behind.

The Board has been monitoring the industry's efforts in managing this transition, including the strategy currently being overseen by AusPayNet to support a customer-led migration away from cheques. The strategy has various elements, including: helping to identify and communicate viable payment alternatives to remaining cheque users through community outreach and education; reviewing the Australian Paper Clearing System rules to ensure they provide a path for financial institutions to withdraw from providing cheque services if they wish; and advocating for payments neutrality in any government legislation and regulations that currently require or promote cheque use. Financial institutions also have an important role to play in assisting their customers to transition to viable alternative payment methods and giving reasonable notice of any plans they may have to transition away from providing cheque services.

The Board has been broadly comfortable with the approach the industry has been taking on this issue, and the Bank will continue to engage with the industry on the orderly wind-down of the cheques system in a way that enables the payment needs of remaining cheque users to be adequately met.

Box A

The G20 Roadmap to Enhance Cross-border Payments

Globally, cross-border payments lag significantly behind domestic payments in meeting user expectations for services that are cheap, fast, accessible and transparent. In October 2020, the G20 endorsed an ambitious 'Roadmap' to enhance cross-border payments around the world.[1] The Roadmap was developed by the FSB in coordination with the Committee on Payments and Market Infrastructures (CPMI) and other international bodies. It sets out a five-year program to address various frictions in retail and wholesale cross-border payment arrangements that contribute to the challenges of high cost, low speed, limited access and insufficient transparency (Figure A.1).

The Roadmap aims to address these inter-related problems through 19 'building blocks' (i.e. work streams) run in parallel over the course of the plan by the relevant international organisation. The building blocks fall into five focus areas:

1. committing to a joint public- and private-sector vision to drive change
2. coordinating regulatory, supervisory and oversight frameworks to identify gaps or areas for further alignment, where appropriate
3. improving existing payment infrastructures and arrangements, with a focus on widening availability, strengthening links between payment systems and reducing settlement risks
4. increasing data quality and straight-through processing by enhancing data and market practices
5. exploring the potential role of new payment infrastructures and arrangements.

The G20 has requested the FSB monitor progress and report annually, with the first progress report expected to be published in October 2021. In addition, individual jurisdictions or operators of payment systems and arrangements are encouraged by the FSB to set out publicly the actions they intend to take to contribute to meeting the overall Roadmap goals. The FSB also highlights the need for the private sector to be involved in the Roadmap work through sharing insights and expertise, and implementing change.

The first major action in the Roadmap has been the release of the FSB's global quantitative targets for cost, speed, transparency and access.[2] The targets are intended to act as a foundation for the work on the subsequent building blocks, and generate momentum and accountability for overall outcomes. Performance indicators will

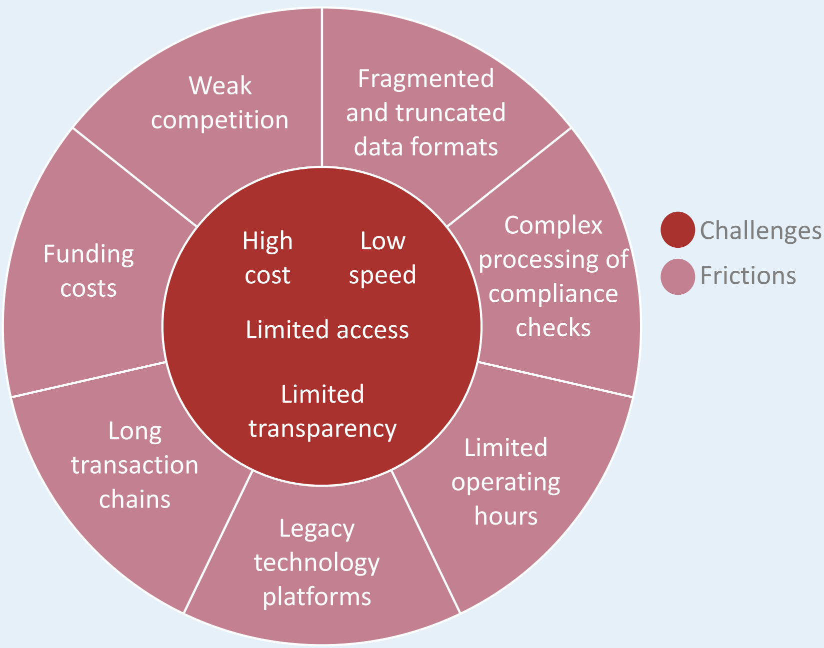
[1] See Financial Stability Board (2020), 'Enhancing Cross-border Payments: Stage 3 Roadmap', 13 October. Available at <https://www.fsb.org/wp-content/uploads/P131020-1.pdf>.

[2] For the proposed targets, see Financial Stability Board (2021), 'Targets for Addressing the Four Challenges of Cross-Border Payments: Consultative Document', 31 May. Available at <https://www.fsb.org/wp-content/uploads/P310521.pdf>. The final targets are expected to be published by the FSB in October 2021.

be developed and data collected to measure progress.

The Bank is actively involved in the international work on the Roadmap. The staff are contributing to a number of international working groups, including those focused on improving access to payment systems for new cross-border payment service providers, standardising payment messaging practices, and exploring issues presented by possible new infrastructure for cross-border payments (e.g. global stablecoins and CBDCs). The Bank has also been coordinating with other Australian policy and regulatory agencies, and discussing the work with industry stakeholders, in order to progress Australia's contribution to the Roadmap.

Figure A.1: Challenges and Frictions in Cross-border Payments



Source: CPMI (2020), 'Stage 2 Report to the G20 – Technical Background Report', July

4. Financial Market Infrastructures

Financial market infrastructures (FMIs) are critical to the smooth functioning of the financial system. The Reserve Bank has a role in overseeing and supervising FMIs to contribute to financial stability. The COVID-19 pandemic generated significant strains in financial markets, highlighting the importance of the Bank's continuous monitoring of FMIs' financial risk management practices. The Bank has also focused on FMI's governance and their operational resilience to market pressures and external threats, such as cyber attacks. Serious operational incidents have occurred at some FMIs over the past year, preventing them from meeting their availability targets. The Bank is monitoring their efforts to ensure that such incidents do not reoccur.

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) – which carry out clearing and settlement, respectively.

CCPs 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, 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 their 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.

Securities settlement involves the delivery of a financial security in exchange for payment, typically through an SSF. An SSF typically 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, an SSF's main responsibility is the mitigation of principal risk by conditioning the final settlement of one obligation 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 determined policies for the supervision and oversight of CS facilities and systemically important payment systems (SIPS).[1] In accordance with these policies, 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 draw 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 Technical Committee of 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] Cyber risk management has been an increasingly important area of such guidance, as outlined in Box B. There were no changes to the Standards or associated guidance during 2020/21.

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, or because it is used for high-value or time critical payments or for payments in other FMIs. A problem affecting a SIPS has the potential to cause significant damage to the stability of the financial system 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 considers the following systems to be SIPS:

- Reserve Bank Information and Transfer System (RITS) – RITS is Australia's high-value

[1] RBA (2021), 'The Reserve Bank's Approach to Supervising and Assessing Clearing and Settlement Facility Licensees', 25 February. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/standards/approach-to-supervising-and-assessing-csf-licensees.html#the-banks-supervisory-and-assessment-approach>. See also RBA (2019), 'Policy Statement on the Supervision and Oversight of Systemically Important Payment Systems', 21 June. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/high-value-payments/policy-statement-on-supervision-and-oversight-of-systemically-important-ps.html>.

[2] RBA (2013), 'Clearing and Settlement Facilities – Financial Stability Standards'. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/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'. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/standards/>.

payment system used by banks and other financial institutions to settle payment obligations. It is owned and operated by the Bank. The Bank's Payments Policy Department undertakes annual 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

Trading activity in financial markets

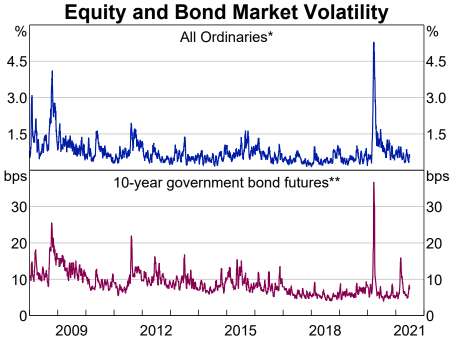
Trading activity in financial markets in 2020/21 was generally lower than the peaks seen around March 2020, when volatility spiked across financial markets (Graph 4.1). For equities, there was a more pronounced decline in trading activity in derivatives than for securities (Graph 4.2). Equity market volatility has, however, remained higher than before the COVID-19 shock. With short-term interest rates at very low levels reflecting highly accommodative global monetary policy, trading activity in shorter-dated interest rate derivatives has been well below earlier levels (Graph 4.3). There has also been a decline in repurchase agreements activity in debt securities markets, which weighed on overall debt securities settlement activity in Austraclear (Graph 4.4). In contrast, the spike in bond market volatility around February 2021 amid an increase in global inflation expectations saw increased trading activity in 10-year Treasury bond futures cleared by ASX Clear (Futures) and in IRS, which are cleared predominantly by LCH Ltd SwapClear (Graph 4.3; Graph 4.5).

High-value payments activity

High-value payments settled in RITS declined in 2020/21 (Graph 4.6). The volatile conditions in financial markets in March 2020 resulted in settlement activity rising sharply, with activity then declining over the months that followed.

Graph 4.1

Equity and Bond Market Volatility

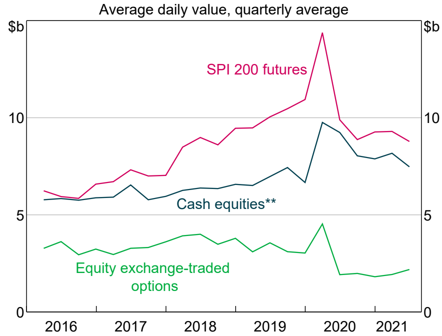


* 10-day moving average of absolute per cent change
** 10-day moving average of intraday range
Source: Bloomberg

Graph 4.2

ASX Equities – Trading Activity*

Average daily value, quarterly average



* This graph has been updated with the latest available figures; Q2 2021 data for cash equities is expected to be received by PSB
** ASX Trade and Chi-X
Sources: AFMA; ASIC; ASX; Bloomberg; RBA

[4] See Bank for International Settlements (2019), 'Triennial Central Bank Survey: Global Foreign Exchange Market Turnover in 2019', Monetary and Economic Department, 8 December. Available at <https://www.bis.org/statistics/rpfx19_fx_annex.pdf>.

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	Debt securities, including government bonds, and repurchase agreements.	Belgium (National Bank of Belgium)
Clearstream Banking S.A.	Debt securities, including government bonds, and repurchase agreements.	Luxembourg (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

FMIs' financial risk management

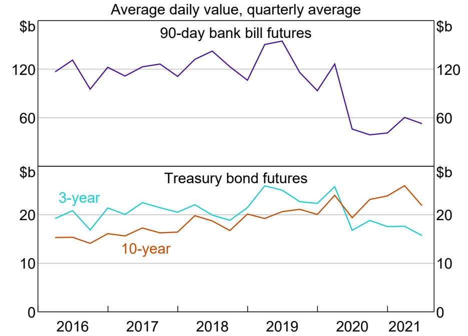
The decline in activity in various segments of Australia's financial markets in 2020/21 translated into lower levels of financial resources collected by many CCPs. The main source of these resources is initial margin. It is collected from every participant to cover potential losses on their portfolio in the event they default. While the amount of margin collected by most of the licensed CCPs in Australia has declined, it still remains above levels seen before the onset of COVID-19 in early 2020 (Graph 4.7). This partly reflects a choice by some CCPs to maintain higher margin levels brought about by the increased volatility associated with the pandemic. More broadly, market participants have focused on the increases in margin requirements in this period of market stress and international regulators have been reviewing whether margin requirements could be made less procyclical.

In addition to initial margin, CCPs also hold default funds that can be used in the event of a participant default. Default funds typically consist of mutualised resources and various categories of additional margin. They are used to cover the losses that would arise from a participant default that exceeded the initial margin provided by the defaulting participant. Overall, with many CCPs holding higher levels of initial margin since the onset of COVID-19, the loss coverage provided by their default funds has remained robust (Graph 4.8).

Graph 4.3

ASX Interest Rate Futures – Trading Activity

Average daily value, quarterly average

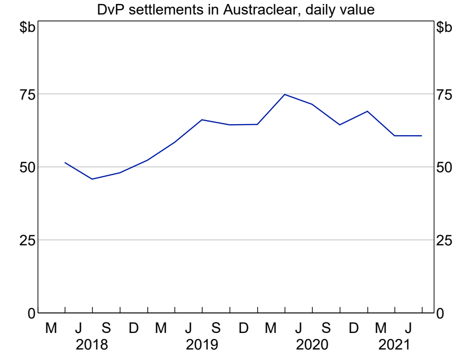


Sources: ASX; Bloomberg; RBA

Graph 4.4

Debt Securities Activity

DvP settlements in Austraclear, daily value

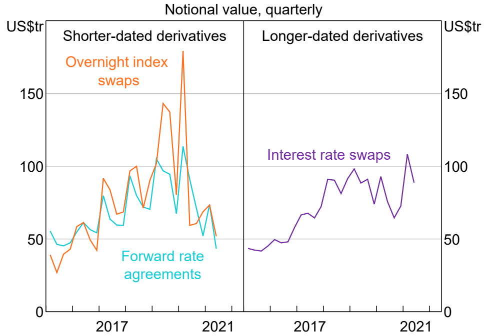


Source: ASX

Graph 4.5

SwapClear – Trades Registered by Product*

Notional value, quarterly



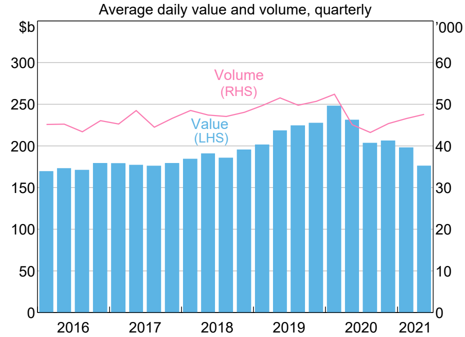
* Data count two sides of each trade

Source: LCH Ltd

Graph 4.6

RITS RTGS Transactions

Average daily value and volume, quarterly

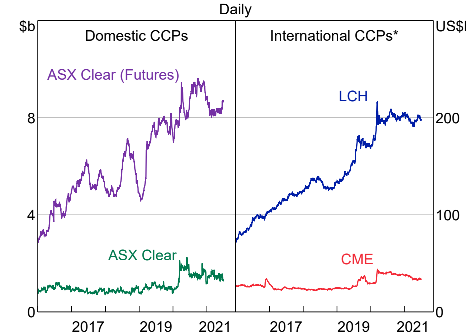


Source: RBA

Graph 4.7

Initial Margin – Australian-licensed CCPs

Daily



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

Sources: ASX; CME Inc.; LCH Ltd

The Bank's supervision and oversight of financial market infrastructures

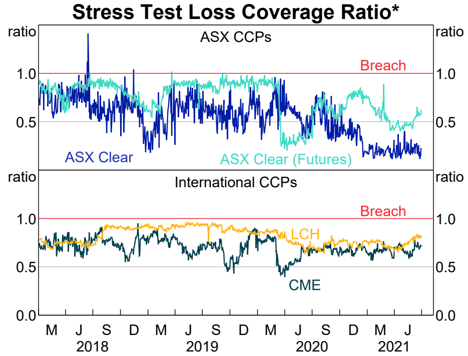
The Bank undertakes assessments of licensed CS facilities based on their degree of systemic importance in the Australian financial system.[5] The four CS facilities in the ASX Group are systemically important domestic CS facilities, and LCH Ltd's SwapClear service is a systemically important overseas CS facility. CME's CCP services have not been classified as systemically important and are therefore subject to less-intensive supervision.

ASX

The Bank has recently published its 2021 Assessment of the ASX CS facilities.[6] This assessment concluded that the CS facilities have conducted their affairs in a way that promotes overall stability in the Australian financial system. However, ASX will need to place a high priority on addressing recommendations related to margin at ASX Clear (Futures) and operational risk across the ASX CS facilities. The steps taken by ASX to address the Bank's regulatory priorities and other material developments are set out below. Further detail is provided in the 2021 Assessment report.

Graph 4.8

Stress Test Loss Coverage Ratio*



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

Source: ASX; CME Inc.; LCH Ltd

Governance

The special topic for the 2021 Assessment was governance. Good governance is essential to an entity's resilience and compliance with regulatory requirements. Failures in risk management or compliance generally involve a weakness of governance. The Bank's review of the governance of the ASX CS facilities involved interviews with directors and executives of the ASX Group, as well as a review of ASX Board and other documents. The ASX CS facilities have no staff or assets of their own – these are provided by other ASX Group entities – and the operation of the ASX Group is governed on a group-wide basis. Accordingly, the Bank's review considered whether the CS facilities' business and their regulatory and stakeholder obligations received appropriate attention and focus within the ASX Group. The Bank concluded that this was not always the case and made recommendations to increase the attention given to the CS facilities within the ASX Group structure.

The Bank also concluded that the lines of responsibility and accountability for the operation of the CS facilities were insufficiently clear and inadequately documented, and made a series of recommendations in this regard.

Additional issues addressed in the assessment included the skills and experience required by the ASX Board to supervise the ASX's ambitious program of technology projects and the organisation's increased focus on stakeholder management.

CHESS replacement and uplift

ASX implemented significant improvements to the capacity of the CHESS clearing and

[5] RBA (2021), 'The Reserve Bank's Approach to Supervising and Assessing Clearing and Settlement Facility Licensees', 25 February. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/standards/approach-to-supervising-and-assessing-csf-licensees.html#the-banks-supervisory-and-assessment-approach>.

[6] See RBA (2021), 'Assessments'. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/>.

settlement system for cash equities during 2020/21. This followed a recommendation in the Bank's 2020 Assessment that ASX improve the capacity of CHESS to mitigate the risk of processing delays such as those experienced in March 2020. The system can now accommodate 10 million trades per day across consecutive days, well above the peak single-day trade volume to date of 7 million trades. Further work is underway to ensure that the system connecting CHESS to ASX's trading platform can also accommodate this volume of trades.

ASX is also continuing work to replace the CHESS system with more modern technology, which will support much higher trading volumes over time. In October 2020, ASX announced that the target launch date for the CHESS replacement system had been delayed by two years to April 2023. This delay allows ASX to make changes to improve the replacement system's ability to respond to future growth in trading volumes; it also provides more time for ASX and the industry to prepare for and test the new system.

Operational incidents

During the week of 16 November 2020, ASX experienced a number of serious operational incidents, involving trading as well as clearing and settlement. This included an outage affecting the ASX market for nearly the whole day on 16 November, and ASX's Centre Point order matching service was closed for several days. There was also a delay in the completion of the CHESS settlement batch on 17 November by around 3½ hours. ASX has subsequently developed a procedure that will allow it to resolve such a CHESS issue more quickly if it were to reoccur. It has also provided greater clarity to participants and payment providers on the actions it may take if an operational incident affects the CHESS batch. The Bank has engaged with ASIC and ASX to understand whether there are any underlying systematic issues that contributed to the incidents that may have implications for ASX's clearing and settlement operations.

An independent expert review of the ASX Trade upgrade project that preceded the trading system problems found that, while the project met or exceeded leading industry practices in a majority of cases, there were a number of key shortcomings that should be addressed. ASIC and the Bank are engaging with ASX on its response to the review, including to understand how lessons learned will be incorporated into the CHESS replacement program.

Financial risk management

During 2020/21, ASX progressed work on a number of regulatory priorities identified in the Bank's 2020 Assessment arising from the ASX CCPs' response to the pandemic-related volatility in financial markets in March 2020. These included:

- *Stress-test scenarios* – ASX reviewed its CCP stress test scenarios to consider any adjustments it should make to the boundary of the 'extreme but plausible' stress events that the scenarios cover in light of the extreme market moves in March 2020. The review led to the introduction of a number of new and strengthened stress test scenarios.
- *Anti-procyclicality measures* – ASX Clear (Futures) implemented a new methodology for setting floors on the margin that participants need to provide, designed to reduce the risk of destabilising 'procyclical' increases in margin in times of stress. The Bank has recommended that ASX broaden this approach into a systematic procyclicality framework covering its full range of risk models across both ASX Clear and ASX Clear (Futures).
- *Late-in-day and overnight price movements* – The ASX CCPs' margin processes do not

- enable them to collect variation margin to cover large late-in-day price movements, such as those experienced in March 2020, until the following morning. ASX Clear (Futures) is developing an initial process for collecting overnight variation margin and is exploring ways to improve this process over the longer term. Both CCPs must undertake further work to address risks arising from price movements in the late afternoon.

LCH Ltd

The Bank's most recent assessment of LCH Ltd's SwapClear service was published in December 2020.[7] The key developments from the assessment were:

- LCH Ltd had provided the Bank with a plan to move its SwapClear service to a 24 hours, five days a week clearing model, while ensuring the resilience of its operations. When implemented, this change will mitigate the build-up of bilateral credit risk exposures arising from trading activity that currently occurs while the service is closed during most of the Australian trading day.
- LCH Ltd had made enhancements to improve the efficiency of its contingency arrangements for making and receiving timely cash payments from participants (such as variation margin) in the event of an outage or failure at a bank involved in processing those payments.
- The Bank identified three areas of supervisory focus for its 2020/21 supervision. The first related to the management of operational and cyber risks. The second focused on ensuring LCH Ltd is benchmarking its margin models against industry practice and documenting these procedures. The third included a periodic review of LCH Ltd against the Legal Basis Standard, focusing on the enforceability of LCH Ltd's rules and related contracts in relation to its operations in Australia.

An operational incident at LCH Ltd's SwapClear service in February 2021 resulted in a temporary disruption of service. Trade registration was halted for the entire Australian trading day and the production of end-of-day reports was delayed. The Bank is satisfied with the steps being undertaken by LCH Ltd to prevent similar incidents from occurring in the future.

CME

Since the Bank's most recent assessment of CME, published in March 2019, the Bank has closed two areas of supervisory focus related to how CME's practices align with international guidance on financial and cyber resilience. The Bank's next assessment of CME is planned to take place during 2022/23. It will include a review of CME's compliance with the Bank's requirements placed on its clearing service for products traded on the FEX commodity, energy and environmental derivatives market, which launched in March 2021.

Euroclear Bank

Euroclear Bank is 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 securities such as Australian Government Securities and semi-government securities.[8] Investors' assets held within the Euroclear Group, which includes Euroclear Bank, are valued at over $50 trillion. Overseas investors use Euroclear Bank's services to access Australian securities markets. The Bank is a member of the Euroclear Bank Multilateral Oversight Group,

[7] RBA (2020), 'Assessment of LCH Limited's SwapClear Service', December. Available at <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/lch/2020/lch-assess-2020-12.html>.

[8] In its home jurisdiction of Belgium, it is classified as an International Central Securities Depository.

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.

Clearstream Banking S.A.

Clearstream Banking S.A. is a financial institution based in Luxembourg that provides securities settlement and custodial services in a wide range of currencies, including for Australian dollar securities. Clearstream Banking S.A. is supervised under the Central Securities Depositories Regulation, as well as the European Union banking supervision framework in its home jurisdiction (Luxembourg) by the Commission de Surveillance du Secteur Financier. The Securities Settlement System it operates falls under the oversight of the Central Bank of Luxembourg.

Reserve Bank Information and Transfer System

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.[9] The assessment concluded that RITS 'observed' all relevant principles as at 31 March, except for the principles on Participant-Default Rules and Procedures, and Operational Risk, which were rated as 'broadly observed'.

The assessment included a number of recommendations for the Bank to implement to achieve full observance with the principles. To observe the principle on Participant-Default Rules and Procedures, the assessment recommended the Bank formally document its decision-making and crisis-management arrangements in the event of a RITS member default. To observe the Operational Risk principle, the assessment recommended that the Bank complete implementation of: all initiatives related to the Bank's Technology Stability Improvement Program that are material to the continued operational stability of RITS;[10] and proposals to improve oversight of maintenance activities conducted by external contractors on the Bank's critical infrastructure (this recommendation was made in response to events that contributed to a RITS operational outage that occurred in July 2020).[11]

The assessment also noted that, over the next assessment period, Payments Policy Department will focus on two particular areas: enhancements to cyber risk defences; and the impact of planned upgrades to the Bank's physical infrastructure on the operational stability and resilience of RITS.

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.

In June, CLS migrated CLS Settlement from its legacy technology platform to CLS's Unified Services Platform. The new arrangements give CLS more control over its operations and the delivery of changes to its services. The migration lays the foundation for achieving a single platform for all CLS settlement services.

[9] RBA (2021), 'Assessment of the Reserve Bank Information and Transfer System', May. Available at <https://www.rba.gov.au/payments-and-infrastructure/rits/self-assessments/2021/>.

[10] Further information on the Bank's Technology Stability Improvement Program can be found in section 3.3.1 of the 2021 RITS assessment.

[11] Further information on the July 2020 outage can be found in section 3.1.2 of the 2021 RITS assessment.

SWIFT

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 – the High-level Expectations – which are consistent with standards for critical service providers in the PFMI.

During 2020/21, the SOF focused 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. All SWIFT members, including the major banks and other large financial institutions in Australia, are required to submit an independent assessment of their compliance with the Customer Security Programme by the second half of this year. The migration to ISO 20022 messages for cross-border payments is on track to restart in 2022 after being delayed due to the COVID-19 pandemic. This work is still expected to be completed in November 2025 (see chapter on 'Retail Payments Regulation and Policy Issues').

FMI policy issues

The Bank works with other regulators internationally and domestically on policy issues relevant to the supervision and oversight of FMIs.

International policy issues

In 2020/21, the Bank continued to contribute to the CPMI–IOSCO work on policy development and implementation for FMIs. This included contributing to peer review exercises that assess the extent to which a jurisdiction's implementation measures are complete and consistent with the PFMI, and the consistency of outcomes in the implementation of the PFMI by FMIs. Further, the Bank contributed to reports on stablecoins, client clearing and non-default losses in FMIs.

The Bank is also represented on a group carrying out analysis of the changes that were seen in margin requirements during the March 2020 market turmoil. The group is a joint initiative of CPMI, IOSCO and the Basel Committee on Banking Supervision and is feeding into the Financial Stability Board's broader work on lessons learned from the pandemic, which will be reported to the G20 later in the year.

The Bank has also been involved in international policy work on CCP resolution issues. This has included considering the adequacy of financial resources for CCP resolution and the treatment of CCP equity in resolution. Guidance on these issues was released in November 2020.[12]

Regulators globally have determined that the London interbank offered rate (LIBOR) benchmark cannot be relied on beyond 2021 given its notable deficiencies. Markets need to transition to more robust and reliable market-determined interest rate benchmarks, known as alternative risk-free rates (RFRs). The transition to RFRs is expected to accelerate as some existing reference rates are discontinued at the end of 2021. LCH Ltd's SwapClear service and CME's IRS service are scheduled to convert affected LIBOR contracts to corresponding RFR contracts in the final quarter of this year.[13] As

[12] Financial Stability Board (2020), 'FSB Releases Guidance on CCP Financial Resources for Resolution and Announces Further Work', Press Release, 16 November. Available at <https://www.fsb.org/2020/11/fsb-releases-guidance-on-ccp-financial-resources-for-resolution-and-announces-further-work/>.

[13] CME USD LIBOR-referenced contracts that are not affected will be converted/transitioned at a later stage when relevant USD LIBOR settings will no longer be published (i.e. around 2023).

Australia's bank bill swap rate (BBSW) credit-based benchmark remains unaffected, Australian dollar denominated swaps linked to BBSW will not require conversion.

Domestic policy issues

The Bank has worked with other regulators through the CFR, the coordinating body for Australia's main financial regulatory agencies, to develop reforms to the regulation of CS facilities, markets, trade repositories and benchmark administrators. The proposed reforms aim to 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 CFR's proposed reforms were provided in Advice to Government in July 2020, with the Treasurer announcing in June 2021 that the government will introduce the reforms package. The Advice and the CFR's Response to Consultation, which addressed submissions on the 2019 consultation paper on the proposed reforms, were published on the CFR's website.[14]

Importantly, the reforms provide for the introduction of a crisis management regime for licensed CS facilities. The Bank has commenced preliminary planning for such a regime (see Box C).

[14] Council of Financial Regulators (2021), 'Financial Market Infrastructure Regulatory Reforms: Response to Consultation and Advice to Government', Media Release No 2021-02, 8 June. Available at <https://www.cfr.gov.au/news/2021/mr-21-02.html>.

Box B
Assessing the Cyber Resilience of FMIs

Cyber security threats are currently ranked by the Council of Financial Regulators (CFR) as one of the top five risks to the Australian financial system. Consistent with this, cyber resilience has been a focus area over recent years for all FMIs (see below for entity-specific information). The Bank has assessed the FMIs' practices and procedures to be broadly aligned with the relevant regulatory requirements, but as cyber threats are continuing to evolve, the Bank is closely monitoring developments.

The approach of regulators to assessing an FMI's compliance with cyber risk management standards has evolved significantly in recent years. Cyber risk was previously considered to be a subcategory of operational risk and therefore covered by regulatory standards for operational risk. Furthermore, given the limited access points to FMIs' core systems, it was considered that there was limited risk of them being compromised via the internet. Accordingly, regulatory requirements were focused more on preventing and recovering from operational disruptions such as software or hardware malfunctions. However, as the sophistication of cyber attackers and awareness of cyber risks in the financial sector started to grow – particularly in the years following publication of the PFMI in 2012 – the international regulatory community turned its attention to the identification of cyber risks for FMIs and to developing measures to specifically address these.[1] This work gained greater urgency in 2016 when sophisticated cyber attackers targeting the central bank of Bangladesh managed to steal US$81 million. In the same year, CPMI and IOSCO issued guidance to the PFMI for FMIs to increase their cyber resilience.[2] This guidance was adopted by the Reserve Bank, and all Australian-licensed FMIs have since been assessed against it.

In the case of RITS, the Bank has an interest in cyber resilience both as operator and overseer. The Bank has an ongoing program of work to maintain high levels of cyber resilience, which includes complying with the requirements under the ISO 27001 standard for Information Security Management and the SWIFT Customer Security Controls Framework. In addition, the Bank's operational staff have participated in various working groups promoting industry coordination in managing cyber risks and related contingency measures.

One of the most sophisticated tools to measure cyber resilience of FMIs is red-team testing. Also known as 'ethical hacking', it mimics the tactics, techniques and procedures of real-life cyber adversaries. A red-team framework has been released by the CFR and is being used (in a pilot exercise) to test the resilience of the live production systems of FMIs and financial institutions in a controlled environment and under the scrutiny of supervisors.[3] The CFR is also

[1] See Committee on Payments and Market Infrastructures (2014), 'Cyber Resilience in Financial Market Infrastructures', BIS, November. Available at <https://www.bis.org/cpmi/publ/d122.pdf>.

[2] Committee on Payments and Market Infrastructures, and Board of the International Organization of Securities Commissions (2016), 'Guidance on Cyber Resilience for Financial Market Infrastructures', BIS and IOSCO, June. Available at <https://www.bis.org/cpmi/publ/d146.pdf>.

continuing to enhance the coordination of cyber-related work programs among its agencies and is supporting Australia's Cyber Security Strategy 2020, an Australian Government initiative to further improve cyber security across the economy.[4]

[3] Council of Financial Regulators (2020), 'CORIE Framework Launched to Test Cyber Resilience of Australia's Financial Services Industry', Media Release No 2020-06, 8 December. Available at <https://www.cfr.gov.au/news/2020/mr-20-06.html>.

[4] Australian Government (2020), 'Australia's Cyber Security Strategy 2020'. Available at <https://www.cyber.gov.au/acsc/view-all-content/news/australias-cyber-security-strategy-2020>.

Box C
FMI Regulatory Reforms

The FMI regulatory reforms include measures to better equip the Bank to address risks to financial stability, and to support ASIC in the fulfilment of its mandate. The reforms will include a crisis management regime for CS facilities, updated FMI licensing arrangements and enhanced supervisory powers for the regulators.

The Bank will have a key role as the resolution authority for CS facilities under the crisis management regime. It will have the power to intervene in a distressed domestic CS facility in order to ensure that the facility's critical functions continue to operate. The objectives of the regime will be to maintain the overall stability of the financial system and to provide for the continuity of critical CS services. There will be clear triggers for the use of the resolution powers.

The regime will include powers and obligations to allow the resolution authority to prepare for resolution and require providers of critical CS services to operate in a way that is consistent with effective resolution. Key resolution powers will include: giving a direction to a CS facility to take a specified action; appointing a statutory manager; and transferring a facility to new ownership. If necessary for resolution to be effective, these powers may also be used over companies related to the CS facility licensee. The resolution regime will include a $5 billion standing appropriation that may be used, with Ministerial approval, to provide temporary funding to support resolution as a last resort; the amount would be recovered afterwards.

The reforms also include changes to licensing arrangements to provide clarity on the factors to be considered by the regulators when deciding whether an overseas operator needs to be licensed, and the grounds under which a licence may be suspended or cancelled. They include reforms to restrict domestic CS facility licences to Australian corporations and to allow limits to be placed on the scope and level of activity of an overseas licensee. ASIC will be given responsibility for licensing decisions, acting in consultation with the Bank in relation to CS facilities.

The reforms will strengthen the supervisory powers of ASIC and the Bank, including information-gathering powers, and will broaden the range of enforcement tools available. This includes streamlining and reallocating existing directions powers in line with each agency's mandate. These reforms will give ASIC and the Bank significantly more capacity to monitor the ongoing conduct of FMIs, identify risks as they emerge, and take appropriate action to prevent those risks escalating.

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