RESERVE BANK OF AUSTRALIA

Submission to the Senate Select Committee on Financial Technology and Regulatory Technology

December 2019

Introduction

The Reserve Bank of Australia (the Bank) welcomes the opportunity to make this submission. The Bank strongly supports the Committee's objective of promoting effective and sustainable growth in the fintech and regtech sectors in order to enhance Australia's productivity and economic competitiveness.

This submission is focused on the Bank's role as the principal regulator of the payments system in Australia, where the Bank has the mandate to contribute to promoting efficiency and competition in the payments system and the overall stability of the financial system. In pursuit of this mandate, the Bank has had a longstanding focus on encouraging innovation in the payment system, including from new players such as fintechs and regtechs, as well as by incumbent firms. Most notably, the Bank's Payments System Board (PSB) conducted a Strategic Review of Innovation in the payments system over 2010–12, which led to the design and build by the industry of an important new piece of payments infrastructure, the New Payments Platform (NPP).[1]

The Bank seeks to ensure that new players in the payments industry are able to compete fairly and that there are no unwarranted restrictions on their participation in payment systems. Doing so inevitably involves managing the balance between the competition new participants can bring and any additional risks that arise, particularly where new entrants are not subject to the same form of prudential regulation as incumbents. The Bank also strives to have a regulatory regime that is technology neutral and best able to support competition and innovation in the payment system.

This submission discusses various changes that are occurring in the payments system, some of which have been influenced by fintech activity. It also discusses the Bank's regulatory role in the payment system and a number of aspects of the Bank's recent policy work that relate to fintech and regtech activities, and where the Bank has engaged with fintech entities.

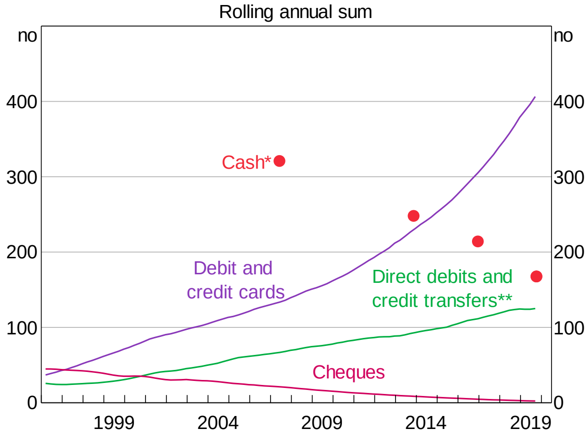
Recent Trends and Innovation in the Australian Payments System

Technological innovation in the supply of payment services has spurred substantial change in the way Australians are making payments. There has been a marked shift away from cash and cheques to electronic payment methods over recent years, as users increasingly opt for newer and more convenient payment solutions (Graph 1).

1 See <https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/past-regulatory-reviews/strategic-review-of-innovation-in-the-payments-system/>.

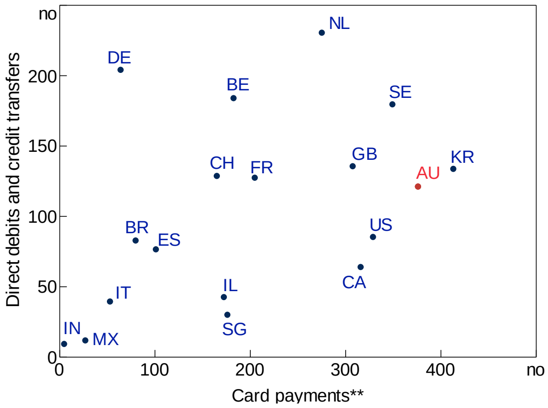
Increasing use of debit and credit cards for lower-value payments has been the most notable aspect of the growth in electronic payments to date. The rollout of new technology by card acquirers has enabled the widespread acceptance of contactless 'tap and go' card payments, which now account for around 80 per cent of consumer card transactions at the point of sale. Growth in e-commerce has also been associated with an increase in online card payments. Overall per person card use is higher in Australia than most other comparable countries (Graph 2).

Graph 1
Transactions per Capita
Rolling annual sum



* 2019 cash transaction data are preliminary
** Includes BPAY
Sources: ABS; AusPayNet; BPAY; Colmar Brunton; Ipsos; RBA; Roy Morgan Research

Graph 2[2]
Electronic Payments per Capita
Selected countries, 2018*



* Card data for the United States and direct debits and credit transfers data for Israel are 2017 figures
** Includes card payments with a debit, delayed debit, or credit function; does not include stored value e-money payments
Sources: Bank of Israel; CPMI; RBA

The introduction of the NPP in early 2018 is another significant change to the way Australians can make payments. The NPP allows users to send and receive electronic account-to-account transfers with funds availability in real-time, on a 24/7 basis. Payments can be addressed more simply using PayIDs (including email addresses and phone numbers). And the ISO 20022 messaging format adopted by the NPP allows more information to be transferred with a payment, which can facilitate straight-through processing and support other business activities. Use of the NPP has been growing steadily since its launch, with the latest data for November 2019 indicating that there are now about 16 NPP transactions per person (on an annualised basis), compared with around 120 transactions per person for the older direct entry system (including BPAY).

Another factor driving innovation in the Australian payments market is the entry of technology-focused firms, including both 'big tech' conglomerates and smaller fintechs. In most cases, these new players still rely on the existing payment system infrastructure and payments system participants to facilitate payments in Australia. Recent innovations include:

- mobile payment platforms, or digital wallets, such as those offered by Apple, Google and Samsung. These are applications on smartphones and other mobile devices that store electronic representations of payment cards that can be used to make contactless payments at the point of sale using the near-field communication (NFC) or quick response (QR) code functionality of the mobile device to communicate with a payment terminal. Mobile payment applications offer convenience and security to cardholders.

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2 Country codes are: AU=Australia, BE=Belgium, BR=Brazil, CA=Canada, CH=Switzerland, DE=Germany, ES=Spain, FR=France, GB=United Kingdom, IL=Israel, IN=India, IT=Italy, KR=Korea, MX=Mexico, NL=Netherlands, SE=Sweden, SG=Singapore, US=United States.

- ‘Buy now, pay later’ (BNPL) services, which enable customers to purchase goods or services but defer payment via low- or zero-interest instalments to the BNPL provider, typically over 1–2 months. These services have become widely accepted by merchants in a number of retail segments, both online and in person.
- in-app payments that embed the payment in a transaction, obtaining customer details once and then removing the need for authorisation of subsequent individual transactions. These payment methods are commonly used for app-based ride-hailing and meal delivery services, for example.
- digital (online-only) providers of international money transfers. These providers typically bypass traditional correspondent banking processes by collecting and dispersing funds across countries using local bank accounts, offering cheaper and faster money transfers than many banks.

The various changes and innovations occurring in the payments system can help boost productivity in the broader economy and support Australia’s transition towards a digital economy. Perhaps the greatest scope for the payments system to generate productivity improvements will be by taking full advantage of the ability to send data with payments – the NPP, for example, should be able to facilitate delivery of documents with payments and support payment messages with data elements specifically tailored to e-invoicing, SuperStream payments, reporting to tax and statistical authorities, etc. These capabilities should all be feasible over the next few years, and the industry is working on some of these innovations already. The shift towards more data-rich payments will create opportunities for fintechs and others to develop innovative services that utilise these data to improve convenience, efficiency and reduce risk in the payment system.

Payments System Regulation in Australia

The Bank is the principal regulator of the Australian payments system. Under the *Reserve Bank Act 1959*, the PSB is responsible for determining the Bank’s payments system policy. The Board is required to do this in a way that will best contribute to controlling risk in the financial system, promoting the efficiency of the payments system and promoting competition in the market for payment services. The Bank has a number of powers to pursue these goals. These include the ability to ‘designate’ a payment system as being subject to its regulation and then to impose standards and/or an access regime on that system, or on participants in that system, if warranted on public interest grounds. However, there is some reliance placed on industry self-regulation (such as the frameworks for payments clearing systems that are managed by Australian Payments Network), and the Bank has imposed regulation only where it has considered it necessary in the public interest and where the industry has been unable or unwilling to address the Bank’s concerns. The result of this approach is that the scope of the Bank’s regulation has been relatively narrow, largely covering interchange fees and scheme rule restrictions relating to merchants in card systems, along with access regimes for several card systems and the ATM system.

The Bank does not impose any licensing or authorisation requirements for payment service providers. Therefore, a fintech or other entity wishing to provide retail payment services is not required to obtain any licence or authorisation from the Reserve Bank to operate, though it may have licensing requirements with other regulators, such as ASIC. A fintech would only become regulated by the

Reserve Bank if it was a participant in a designated payment system for which the Bank had imposed standards and/or an access regime to address a public interest concern related to the Bank's mandate.[3]

The access regimes currently in place for the Visa and Mastercard credit card schemes have helped facilitate increased participation in those schemes by non-bank entities. Among other things, the access regimes require the card schemes to have in place transparent and appropriately risk-based eligibility and assessment criteria for membership and to report information about membership and applications to the Bank. Similarly, the Bank's access regime for the ATM system introduced in 2009 was partly aimed at making it easier for new entrants to become direct participants in the ATM system, thereby promoting competition in that market.

Reserve Bank's Exchange Settlement Account Policy

Exchange Settlement Accounts (ESAs) are settlement accounts held at the Reserve Bank. ESAs are the means by which providers of payments services settle obligations to other financial institutions that have accrued in the clearing process. Many central banks have traditionally restricted access to settlement accounts to banks. However, in 1999 the Bank expanded eligibility for access to ESAs to non-bank providers of third-party payment services with a need to settle clearing obligations with other providers; the Bank was one of the first central banks to liberalise access.

The broader eligibility for ESAs led to an increase in the number of ESA holders, including non-bank third-party payment providers such as Tyro, Adyen, First Data and EFTEX. More recently, the Bank has fielded a greater number of enquiries about ESA applications, including from a variety of fintech firms. This greater interest prompted the Bank to review and update its ESA Policy earlier this year.[4]

The revised ESA Policy, which became effective in July, seeks to ensure that the Bank is able to promote competition in the market for payment services by providing access to ESAs for non-bank entities, while also ensuring that operational, liquidity and other risks associated with ESAs are appropriately managed.

The main changes to the Policy made in July included:

- More granular information about the documentation that applicants are required to provide (e.g. audited financial statements; business continuity plans; reporting lines and corporate governance information). Previously, this information was typically requested by the Bank as part of the application process, but was not explicitly referred to in the ESA Policy.
- The ability for the Bank to commission a report relating to the conduct and standing of one or more of the following in relation to an applicant: the applicant itself, directors, key management personnel, shareholders and other related entities.
- The ability for the Bank to require an applicant to obtain a report from an independent expert approved by the Bank assessing the applicant's policies and procedures related to sanctions and to

3 The current list of designated payment systems and regulations imposed by the Bank can be found here: <https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/regulations.html>.
In addition, the Bank currently has a role in authorising certain types of 'purchased payment facility' under the *Payment Systems (Regulation) Act 1998*. However, to date this authorisation power has not been used, and the Council of Financial Regulators has recently undertaken a review of the regulatory arrangements in this area (see 'Review of Stored-value Facilities Regulation' below).

4 The ESA Policy is available at <https://www.rba.gov.au/payments-and-infrastructure/esa/>.

anti-money laundering and counter terrorism financing (AML/CTF) and the applicant's compliance with sanctions and AML/CTF legislation and other regulatory requirements.

The changes to the Policy are designed to enable the Bank to appropriately manage risks – including AML/CTF risks – relating to potential ESA holders, while continuing to provide ESA access to a wide range of participants that may need to settle obligations arising in payment systems.

Reserve Bank Engagement with Fintechs

The Bank engages extensively with a wide range of stakeholders in the payments system, including payments-focused fintech firms and associated industry bodies. As a general policy, the Bank is open to discussions with any parties that may be affected by the Bank's policy decisions and/or to discuss developments in the payments industry. A recent focus of the Bank's engagement with payments industry participants has been on the application of new technologies and innovation in the payments system, including in relation to the use of distributed ledger technology and payments-related fintech activity more broadly. The Bank's engagement with stakeholders may take the form of informal meetings with interested parties, participation in industry forums, and more-targeted liaison on particular issues. The Bank is an observer on the Digital Finance Advisory Panel, which advises ASIC on fintech- and regtech-related matters, and Bank staff have attended ASIC's regtech forums.

Liaison with fintechs and other stakeholders also occurs as part of formal public consultations on particular policy or regulatory issues. In this regard, recent consultations undertaken by the Bank have included:

- In November 2018, the Bank commenced a consultation on NPP functionality and access, and published its conclusions in June. This consultation was undertaken with input and assistance from the Australian Competition and Consumer Commission (ACCC). Among the motivations for this review were concerns expressed by various stakeholders, including some fintechs, about the slow rollout of NPP services by the major banks, the ability to develop overlay services that leverage the NPP capabilities and potential constraints on the ability of entities to connect to the NPP (see below for further details).
- In April 2019, the Bank commenced a public consultation on ISO 20022 migration for the Australian payments system, which is being undertaken jointly with the Australian Payments Council (APC).[5] The consultation is seeking stakeholder views on the migration of messaging used in parts of the payments system to the ISO 20022 standard. ISO 20022 is an open and flexible financial messaging standard that provides enhanced data content. Its wider adoption across international and domestic payments systems offers a number of potential benefits, including improved efficiency from straight-through processing and automation and improvements to transaction screening and monitoring processes. The enhanced data-carrying capability of ISO 20022 messages can also be an enabler for a wide range of financial institutions, including fintech and regtech firms, to deliver more innovative and competitive services to customers. The consultation is ongoing; the Bank expects to publish a conclusions paper in the first half of 2020, after which a coordinated industry-led program is likely to be needed to deliver the migration.
- The Bank was involved in the Council of Financial Regulators' recent review of the regulatory framework for stored-value facilities (see below).

5 See RBA (2019a) and RBA (2019b).

Review of Stored-value Facilities Regulation

The Council of Financial Regulators (CFR) initiated a review of the regulatory framework for stored-value facilities (SVFs) in Australia in mid 2018.[6] SVFs encompass a range of facilities in which pre-paid funds can be used to make payments. The use of these types of services has grown strongly in some other jurisdictions in recent years. The domestic regulatory agencies have also seen increasing interest from SVF providers in Australia and the CFR's review has been aimed at creating a regulatory framework that is conducive to competition and innovation, while providing appropriate consumer protections. Currently, three regulatory agencies – the Bank, APRA and ASIC – have shared responsibilities for regulation of SVFs, and so another objective of the review was to simplify and streamline the regulatory arrangements, thereby making it easier for SVF providers to understand and comply with the regulatory requirements.

In conducting the review, the CFR consulted with a wide range of stakeholders including current and prospective providers of SVFs, fintech companies, banks and international regulators. In particular, the CFR released an issues paper in September 2018 on the regulation of SVFs and invited submissions from interested parties. An industry roundtable was also convened to discuss the views of interested stakeholders.

The CFR has recently concluded the review and provided recommendations to the government for consideration. The recommendations are aimed at simplifying and modernising regulatory arrangements in this part of the payments system so that it will be easier to navigate for potential new entrants such as fintech firms. The proposed framework would also introduce more graduated regulatory requiremets that are commensurate with the risks posed by particular entities.

New Payments Platform (NPP)

The NPP, launched in February 2018, is a fast retail payments system developed by a consortium of 13 financial institutions, including the Reserve Bank. The NPP provides the clearing and settlement infrastructure through which financial institutions can provide their household, business and government customers with the ability to make fast, versatile and data-rich payments on a 24/7 basis. The NPP is owned and operated by NPP Australia Limited (NPPA), whose shareholders are the 13 financial institutions, including the Reserve Bank, which funded the development of the NPP. NPPA currently has 12 directors, including the CEO. There are two independent directors, one of which is the Chair (and there will soon be an additional independent director, bringing the total number of directors to 13). Each of the four major banks and the Reserve Bank are able to appoint a director. The other four directors are elected by the remaining small and mid-size shareholders of NPPA. Unlike in some other payment systems where voting is proportional to shareholdings or to transaction shares, each NPPA director has only one vote, except for the CEO who is a non-voting director. So, despite contributing around 75 per cent of the capital of NPPA, the four major banks have only 4 votes out of 11 (or soon 12) on the NPPA Board.

Most end users of payment services, such as households, businesses and government entities, will access NPP functionality (i.e. the ability to send and receive payments) through services provided on a commercial basis by the financial institutions where they maintain their accounts. For entities that

6 The 2014 Financial System Inquiry identified the regulation of purchased payment facilities (PPFs) – a particular type of SVF defined in legislation – as having scope to be improved, and the Productivity Commission's 2018 Inquiry into Competition in the Australian Financial System recommended that the CFR review regulatory arrangements for PPFs.

provide payment services to these end users, there are a number of ways to access the central infrastructure, each of which caters for different business models and objectives. NPPA has established graduated and risk-based eligibility criteria that apply to each access method, which aim to balance the desire to encourage participation against the need to maintain the safety and security of the real-time payments infrastructure. There are four ways that businesses can connect to the NPP:

- **Direct participants** connect to the NPP directly using their own NPP payment gateway.[7] They are required to be licensed as an authorised deposit-taking institution (ADI) or restricted ADI (RADI) by APRA and to meet any associated prudential and operational standards imposed by APRA. They must hold an ESA at the Bank and become a shareholder in NPPA. They must also meet various technical requirements set by NPPA for establishing and operating an NPP payment gateway.
- **Indirect participants** connect to the NPP using a direct participant's NPP payment gateway, but otherwise have the same capabilities as direct participants. Indirect participants are also required to be an ADI (or RADI), hold an ESA at the Bank, and become shareholders in NPPA.
- **Identified institutions** connect to the NPP indirectly via a direct participant's NPP payment gateway. Identified institutions are able to offer their customers NPP payment services, with the payments cleared and settled on behalf of the identified institution by the sponsoring direct participant. Identified institutions are not required to be an ADI (or RADI), be a shareholder in NPPA, or hold an ESA at the Bank.
- **Connected institutions** will connect to the NPP using their own payment gateway and are able to send payment initiation and other non-value messages through the NPP. Because they are not involved in the clearing and settlement of payments, they are not required to be an ADI (or RADI) or hold an ESA at the Bank, but they need to be financially solvent and comply with the same technical requirements for operating a payment gateway as for direct participants. So far there are no connected institutions but NPPA has indicated that it is in discussions with a number of interested parties.

There are currently more than 80 financial institutions offering NPP payment services to end users, up from about 60 at launch (Table 1). This includes both institutions that participate directly in the NPP, as well as a large number of smaller financial institutions and a small number of non-bank payment providers that access the platform indirectly as identified institutions using the services of a wholesale aggregator or other sponsoring direct participant.

Table 1: Number of Active NPP Participants and Identified Institutions

Date	Participants*	Identified Institutions	Total
February 2018	10	51	61
August 2018	10	62	72
February 2019	11	66	77
May 2019	11	69	80
August 2019	11	70	81
November 2019	12	72	84

* Of the 13 participants that funded the development of the NPP, 1 is yet to connect
Source: NPPA

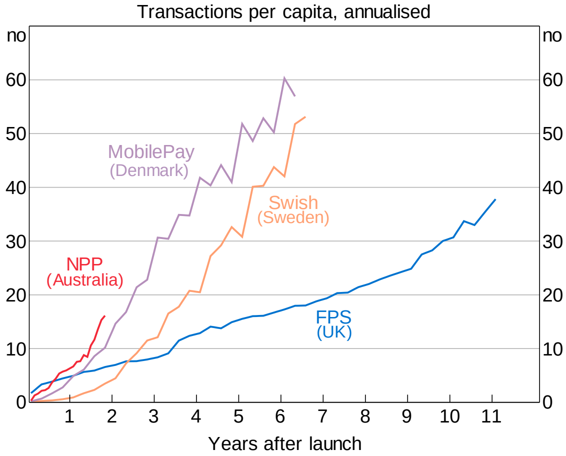
7 A 'payment gateway' is the infrastructure that routes messages across the NPP network. Payment gateways are located within participants' data centres and each participant is directly responsible for the speed and capacity of their infrastructure. For more information on the design of the NPP, see Rush and Louw (2018).

As at the end of November, there were more than 65 million Australian bank accounts accessible via the NPP (estimated at about 90 per cent of all accounts that will eventually be reachable) and around 3.8 million PayIDs had been registered. In 2018/19, the platform processed around 150 million payments worth $130 billion. While NPP transaction amounts are still very low compared with other retail payment systems in Australia, the adoption of the NPP is proceeding at least as quickly as occurred for some comparable fast payment systems that were launched in other countries (Graph 3).

Graph 3

Use of Fast Payments Systems

Transactions per capita, annualised



Sources: FPSL; Getswish; MobilePay; National statistics agencies; NPPA

In 2018/19, the Bank, with input and assistance from the ACCC, consulted on the functionality of, and access to, the NPP.[8] The consultation was partly in response to recommendations in the Productivity Commission's 2018 Inquiry into Competition in the Australian Financial System and concerns raised by some stakeholders, including some fintechs, relating to services offered through the NPP and the ways of accessing the platform.

The conclusions and recommendations from the consultation were published in a report in June. The report's overall conclusion was that the NPP was enabling payments functionality that largely addressed the gaps identified in the Reserve Bank's 2010–2012 Strategic Review of Innovation, which had prompted the development of the NPP. However, the report also noted that there had been a slow and uneven rollout of NPP services by the major banks, which had likely slowed the development of new NPP functionality and contributed to stakeholder concerns about access to the NPP. The report therefore included a number of recommendations aimed at promoting the timely rollout of NPP services and development of new functionality.

The report also addressed concerns raised by some stakeholders, including some fintechs, about a number of access issues that could present potential barriers to entry for new participants. In response, the report included a number of recommendations relating to NPP access:

- **ADI requirement for participants.** It was recommended that NPPA conduct an assessment of options for revised participation requirements for non-ADI participants.
- **Shareholding requirement for participants.** It was recommended that NPPA: (i) introduce more gradation into the shareholding requirement by creating at least one additional lower band, (ii) allow participants to acquire shares in instalments, and (iii) consider allowing applicants that did

8 For the conclusions of the NPP Functionality and Access Consultation, see: RBA (2019c).

not exist at the time the NPP was being developed to subscribe to a lower amount of shares than usual.

- **NPPA governance.** It was recommended that NPPA: (i) appoint a third independent director, (ii) review its arrangements for dealing with applications for access and for assessing potential overlay service providers, (iii) publish a report, at least once a year, on the number of applications for access it has received during the preceding year, and (iv) notify the Bank's PSB within one week whenever an application for access was not supported by NPPA's Board.

The report also recommended that NPPA provide greater transparency of the NPP's wholesale transaction fee to help potential identified institutions evaluate the pricing offered by sponsoring participants and to help end users better understand the underlying costs that influence the prices financial institutions charge their customers for NPP services.

NPPA published an initial response to the Bank's recommendations in July, in which it indicated that it supported all of the recommendations. An updated response, published in October, outlined the actions it had taken to address each recommendation.[9] NPPA's assessment of options for revised participation requirements for non-ADI participants concluded that the ADI requirement remained prudent and appropriate for full or clearing participants given the 'pronounced operational and security risks associated with clearing activities', but that it could be removed for settlement participants.[10] NPPA argued that the NPP rules framework had been developed on the basis that NPP participants are prudentially supervised by APRA, which reduces counterparty risks to other participants and relieves NPPA of the responsibility to oversee participants. It argued that a variation to this approach would constitute a 'fundamental change to the operating model of the NPP' that 'would require wholesale revision of the NPP operating rules, participation requirements and risk-management controls' which are not justified given the indirect participation options available.

The Bank is satisfied that NPPA's decision to retain the ADI requirement for full and clearing participants appropriately balances risk and open access considerations, particularly given the indirect participation options. The Bank is not aware of many non-ADI entities that are looking to become full or clearing participants. There are a few non-ADIs (including Assembly Payments and Monoova) that have joined the NPP as identified institutions. The number of NPP participants providing agency services has also grown over the past few months. These developments indicate that the market for indirect access is working well and that retaining the ADI requirement for full or clearing participation may not be a material competitive barrier.[11] That said, the Bank has committed, along with the ACCC, to commence another review of NPP functionality and access issues starting no later than mid 2021. This review will be an opportunity to re-assess whether NPPA's access arrangements are warranted in light of developments in the market. This review could commence earlier if the Bank becomes aware of significant issues or concerns regarding NPP access or functionality.

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9 For NPPA's response to the NPP Functionality and Access Consultation, see: NPPA (2019).

10 NPPA noted that settlement participants do not present the same operational or legal risks as a full or clearing participant as they do not connect directly to the NPP infrastructure.

11 Following the Bank's consultation, NPPA has published a guide for entities on the various NPP access pathways. This guide provides entities with an overview of the functionality provided by, and the requirements of, each access pathway. For more information, see: <https://nppa.com.au/accessing-the-platform/>.

Review of Retail Payments Regulation

The Bank undertakes comprehensive reviews of its regulatory framework for card payments around every five years, guided by the PSB's mandate to promote competition and efficiency in the payments system. Since the most recent review in 2015–16, developments in technology, new entrants and innovation in payments have significantly altered the retail payments landscape (as noted above). Two recent inquiries – one by the Productivity Commission, another by the Black Economy Taskforce – also made some recommendations relevant to the Bank's retail payments regulations.

In response to these developments, the Bank has commenced a holistic review of its retail payments regulation with the release of an Issues Paper in November 2019.[12] The Issues Paper summarises developments in the Australian payments system since 2015–16 and outlines potential issues for the review. While some of the issues identified relate specifically to the Bank's card payments regulation, this review is intended to be broader-ranging and to consider whether there are any gaps in the payments system that should be addressed outside of the narrower topic of card payments.[13] Among other matters, stakeholders are encouraged to provide feedback on:

- whether existing regulation should be modified in the light of new technology, new players or new business models, and whether there is a case for further policy action by the Bank to encourage innovation, new entrants and developments in technology in the payments sector
- the implications of the growing importance of mobile devices and digital platforms for the retail payments system and the Bank's regulatory framework
- any potential policy issues associated with the growth of BNPL services (for example, whether these services should be subject to the same surcharging rules as traditional card payment systems)
- whether there are opportunities for the use of regtech in the Bank's regulatory regime (for example, to make compliance obligations more streamlined and efficient).

The Issues Paper is the first stage in the review process. Stakeholders are invited to provide submissions in response to the matters discussed in the Paper, as well as to raise any other payments issues that they think the Bank should consider as part of the review. Written submissions are due by 31 January. The Bank will review written submissions received and will endeavour to meet with stakeholders to discuss their submissions in more detail in early 2020. The Bank expects to conclude the review by the end of 2020.

Digital Identity

Digital identity services allow people to securely prove who they are in the digital environment. Such services are increasingly important to support the development of Australia's digital economy. They can help build trust in a range of online interactions and facilitate new areas of digital commerce. For

12 See RBA (2019d).

13 During 2010–12, the Board conducted a Strategic Review of Innovation in the Payments System. The Review sought to identify areas in which innovation in the Australian payments system might be improved through more effective cooperation between stakeholders and regulators and to identify possible gaps in the Australian payments system that might need to be filled over the medium term. While the gaps identified in the Strategic Review have since largely been addressed, the Bank considered that it would be useful for the current review to provide an opportunity for stakeholders to identify whether there are further functionality gaps in the retail payments system or broader strategic issues that should be addressed.

example, in the finance sector, digital identity services could reduce the scope for identity fraud and provide convenient and secure methods for authenticating individuals, including as part of the rollout of 'open banking' – an area where fintechs may be well placed to offer new services utilising customer data.

Digital identity services could also promote competition, including the emergence of new entrants such as fintechs, in the financial sector more generally – for instance by reducing costs related to identifying new customers, such as those associated with know-your-customer requirements. Likewise, from a customer perspective, easier and faster online account application processes facilitated by digital identity may reduce some of the frictions involved in switching providers.

The Bank has strongly supported work by the payments industry, led by the APC, to facilitate the development of digital identity services in Australia. The APC completed the first version of a 'TrustID' digital identity framework in June. The framework sets out various requirements to facilitate the emergence of an interoperable network of competing digital identity solutions in Australia. The framework is designed to allow individuals to establish their digital identity online with a preferred service provider and then to use those credentials to prove who they are when interacting online with other businesses.[14]

The Bank is keen to see market participants leverage these frameworks to launch digital identity services in the Australian market that can start to address some of the challenges of identity verification in a digital economy. The hope is that a widely-adopted digital identity ecosystem will develop in Australia, with competing but interoperable digital identity services. There is potential for fintech firms to participate in such an ecosystem as well as to benefit from services that enable people to be more efficiently and securely identified.

Cryptocurrencies

A number of Australian fintech entities are providing services relating to cryptocurrencies, both as a means of payment and as a speculative asset. The Bank has closely monitored developments in cryptocurrencies, such as Bitcoin, over a number of years. These developments have the potential to affect the Bank's mandates as the issuer of Australia's banknotes, operator of Australia's real-time gross settlement system, and its responsibilities for the stability of the financial system and the stability and efficiency of the payments system. The Bank's current assessment is that the cryptocurrencies seen to date do not provide the usual functions of money, which explains why they have not become widely used in Australia as a means of payment (Dark *et al* 2019). However, newer cryptocurrencies are emerging or have been proposed, which seek to address some of the shortcomings of earlier generations, and could become more widely used in the future.

The economic definition of money typically requires an instrument to function as a store of value, unit of account, and means of payment. First generation cryptocurrencies such as Bitcoin, the largest and most well-known cryptocurrency, exhibit significant price volatility, meaning that they are a poor store of value. Cryptocurrencies are rarely used as a unit of account as goods and services are typically priced in the relevant national currency. While cryptocurrencies can be used as a means of payment, they are currently not widely used or accepted.

14 The government's Digital Transformation Agency has also been working on a complementary 'Trusted Digital Identity Framework' which specifies the requirements for digital identity services used by individuals and businesses to access online government services.

The Libra Association – whose members include Facebook subsidiary Calibra, Uber, and Spotify – has recently announced plans to launch a 'global cryptocurrency' or 'stablecoin' known as 'Libra'. This has the potential to become widely used given the involvement of various companies such as Facebook that may be able to leverage their large existing user bases and technological capabilities. Based on what is known publicly about Libra, it will be distinguishable from existing cryptocurrencies as it will be fully backed by an asset reserve comprised of a basket of bank deposits and short-term government securities denominated in a range of national currencies. This is designed to instil confidence in the cryptocurrency and reduce price volatility, though the value of Libra units will still fluctuate with respect to any given currency. The announcement of Libra has prompted regulators globally to closely consider the potential risks and benefits of cryptocurrencies, with a particular focus on stablecoins with the potential to operate on a global scale.

In October, the G7 released a report on global stablecoins in which it recognised that they have the potential to be more efficient and inclusive than existing payment methods, particularly for cross-border payments. However, the G7 also noted that such proposals raise significant legal and regulatory risks, including to consumer/investor protection, data privacy, monetary policy, and financial stability. Accordingly, it cautioned that private sector global stablecoin initiatives should not be permitted to launch until all risks and regulatory requirements have been addressed. The Bank is supportive of this view. Regulators have also been examining the adequacy of existing regulatory and supervisory frameworks in addressing the risks raised by global stablecoins. A key consideration for regulators is to ensure that private sector stablecoin initiatives operate under a comparable regulatory regime to existing payment systems, and in particular, that they do not fall outside the existing regulatory framework. The Bank is working closely with relevant agencies domestically and internationally to understand recent proposals to ensure they will be adequately regulated and supervised.

In Australia, it is unclear that there will be strong demand for global stablecoins even if they do meet all regulatory requirements, particularly for domestic payments. Australia is already well served by a range of low-cost and efficient real-time payment methods, such as the NPP, that utilise funds held in accounts at prudentially supervised financial institutions. Moreover, while Australians may not have been well served by banks providing cross-border payment services in the past, a number of new non-bank digital players have entered the market in recent years offering significantly cheaper and faster money transfer services.

Central Bank Digital Currency

Over the past few years, interest in privately issued cryptocurrencies has stimulated a parallel discussion about whether central banks should issue a new form of electronic money in the form of a central bank digital currency (CBDC). A CBDC, possibly issued on a blockchain platform, would be a digital version of money which is a liability of the central bank rather than a commercial bank. Similar to cash and commercial bank deposits, a CBDC would be denominated in the sovereign currency and convertible at par with other forms of money.

The Bank's assessment – like those of most other central banks – is that the case for issuing a CBDC for use by households has not been established (Lowe 2017). One possibility is that there would be little demand by households for such an asset, given that they already have good access to digital money in the form of commercial bank deposits that provide payment services, are interest-bearing and are protected (up to $250,000 per account) by the Financial Claims Scheme. However, it may be that greater demand could emerge in times of uncertainty, and if it was easy to switch from commercial bank deposits it is possible that a CBDC could facilitate bank runs at such times; accordingly the implications of CBDC for financial stability would need to be carefully considered. Alternatively, in the event that there was significant ongoing demand by households for CBDC, the implication would be that there would be a fall in commercial bank deposits and a reduction in the availability of funds for lending to households and businesses; accordingly, the implications of CBDC for the structure of the financial system would need to be carefully considered.

Another possibility is for a central bank to issue a CBDC that could be used by wholesale market participants in specialised payment and settlement systems. While the case for the use of a CBDC in these types of systems remains an open question, there are a number of potential benefits that could arise, such as:

- **Speed, cost and robustness of payments.** A CBDC fully integrated into a blockchain platform could enable payments to be made between participants in real-time and 24/7 without relying on external payment systems.
- **Atomic transactions.** A CBDC integrated within a blockchain platform could more easily allow for 'atomic' transactions. An atomic transaction is 'all or nothing', meaning that either all parts of the transaction are executed or none at all. When applied to delivery-versus-payment, this can reduce settlement risk as a payment and corresponding asset can be exchanged simultaneously.
- **Programmable money.** A CBDC in combination with smart contracts on a blockchain may enable new kinds of 'programmable money'. This refers to the ability to attach conditions to how money can be spent or transferred, which could be automatically executed, without the need for a trusted third party.

The Bank is not currently considering a CBDC for retail use, but notes the availability of a wholesale settlement token based on distributed ledger technology could allow payment and settlement processes to become more integrated with other business processes. It is not yet clear if there would be demand for a CBDC for wholesale settlement – it is worth noting, for example, that 'a government-supported digital sovereign currency' was recently ranked as the least effective of 14 possible policy initiatives for promoting growth in the Australian fintech industry (EY and FinTech Australia 2019).

In late 2018, the Bank established a small in-house Innovation Lab as a way to strengthen engagement with, and understanding of, new and emerging technologies that are relevant to its policy and operational responsibilities. The Innovation Lab is being used to explore whether there is a role for a digital Australian dollar (that is, an Australian CBDC) in the context of the Bank's responsibilities for issuing the currency and overseeing the payments system. One example of work in this area undertaken in the Bank's Innovation Lab was the development of a proof-of-concept of a wholesale settlement system running on a private, permissioned Ethereum network. The proof-of-concept simulated the issuance of central bank-backed tokens to commercial banks in exchange for exchange settlement account balances, the exchange of these tokens among the commercial banks, and their eventual redemption with the central bank. The Bank intends to extend this research over the coming year, potentially through collaboration with one or more external partners.

Reserve Bank of Australia
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