Retail Payments Regulation and Policy Issues

The Reserve Bank implements retail payments policy and undertakes research under its remit to maintain a safe, competitive and efficient payments system. Recent policy work included a public consultation on dual-network cards and mobile wallet technology and a review, in consultation with the Australian Payments Network, of possible options for the future regulation of the ATM system. The Bank has also been closely monitoring the payments market as the Bank's recent reforms to the regulatory framework for card payments come into effect.

Dual-network Cards and Mobile Wallet Technology

During 2016/17, the Bank addressed some policy concerns in relation to dual-network debit cards and mobile wallet technology. A public consultation was held in response to concerns about possible restrictions on the ability of card issuers and mobile wallet providers to enable both networks on dual-network debit cards for use on a mobile device. Following discussion with industry participants through the consultation process, the Bank received commitments from relevant participants that addressed these concerns.

Background

The Board had previously noted the potential benefits of mobile wallet technology to consumers in terms of providing greater choice and convenience in payment methods as well as the potential for competition issues to arise as new and existing players compete in this emerging market. Mobile wallets allow cardholders to make payments using an electronic representation of a payment card in a mobile phone or other device, as opposed to using a plastic card. Cardholders benefit from the convenience of having multiple cards available for use without the need to carry multiple plastic cards in a physical wallet. The mobile wallets are 'apps' provided by either the cardholder's financial institution or a third-party mobile wallet provider (e.g. Apple Pay, Android Pay and Samsung Pay). These apps allow cardholders to make mobile payments using the near-field communication (NFC) functionality of mobile devices to interact with payment terminals.

To date, mobile payments in Australia have only been possible via the networks of international schemes (American Express, MasterCard and Visa). In recent months, eftpos, the domestic debit scheme, has been testing mobile payments functionality with some of its financial institution members and mobile wallet providers.

Dual-network debit cards have traditionally provided convenience similar to the potential offered by mobile wallets in that they offer the capability to pay via two different networks on a single card. These cards typically offer the choice between the domestic debit scheme, eftpos, and one of either MasterCard or Visa. The choice of the particular networks offered on a dual-network debit card could be extended to the digital world with the migration of physical dual-network debit cards to mobile wallets.

In 2016, some stakeholders raised concerns about possible restrictions on competition in the mobile wallet market. In particular, stakeholders noted the potential for scheme restrictions or conduct that may prevent or make it more difficult for both networks on a dual-network debit card to be enabled on a mobile device. This could have the effect of reducing choice and convenience for cardholders in making mobile payments and would reduce the ability of merchants to encourage the use of lower-cost payment methods.

Enabling a network in a mobile wallet

In order for a network on a debit or credit card to be enabled on a mobile device, the card has to be 'loaded' onto the mobile app or wallet through a process of provisioning. A cardholder can initiate this process either through the mobile wallet app or through the mobile banking app provided by the cardholder's financial institution. In a third-party mobile wallet, the process typically involves the cardholder providing the primary account number (PAN) on the card and their name, either by manually inputting the card details or by reading the card using the phone's camera and optical character recognition. In a financial institution's own app, the cardholder's details may be available on file, allowing the app to 'push' the card onto the device.

The provisioning of a card also involves a tokenisation process, which secures the card details by anonymising data. Tokenisation replaces a cardholder's PAN with an alternate cryptographically generated number – a 'token'. Tokens are generated by token service providers (TSPs) and stored on the cardholder's device.

A separate token must be generated for each network that is enabled for a particular card in a mobile wallet. This means that, in order to enable both networks on a dual-network debit card, two tokens would have to be generated – one for each network.

In a mobile payment transaction, it is the token that is passed to the merchant's payment terminal rather than the cardholder's PAN. Consequently, fewer parties in the payment process have access to the cardholder's details, which reduces the scope for data theft or fraud. The token then has to be decrypted by the TSP that generated the token in order for the transaction to be authorised. Each of the various payment schemes have set up their own TSPs in recent years.

Issues for consultation and outcome

The concerns that stakeholders raised about possible competition issues centred on scheme rules relating to provisioning and tokenisation. These rules could potentially restrict issuers, directly or indirectly, from enabling both networks on a dual-network debit card in mobile wallets. In particular, stakeholders raised concerns about:

- scheme rules or policies of a network that might prevent or hinder issuers from provisioning both networks for mobile payments
- contractual terms for tokenisation services that could penalise issuers for provisioning a competitor network for mobile payments, by increasing the price of tokenisation services for issuers that choose to also enable a second network.

In considering these concerns, the Board was guided by its view that competition and efficiency in the payments system are likely to be enhanced where there is a wide range of payment options for consumers and merchants. Mobile wallets represent a technology that allows greater choice by end users. In particular, the physical constraints applied by the size of a traditional wallet or purse – which made the functionality offered by having multiple networks on a single plastic card desirable – no longer apply in the mobile world, where a single device has the potential to store as many cards as the consumer wishes to hold.

Further, the Board's longstanding position is that the issuance of physical dual-network cards promotes payments system efficiency and competition between payment methods. Dual-network cards are convenient for consumers and enhance the ability of merchants to encourage the use of lower-cost payment methods. In 2013, the Bank had received voluntary undertakings by the three debit card networks that addressed competition issues around dual-network cards that had arisen in 2012. These undertakings included commitments by the networks to work constructively to allow issuers to include applications from two networks on the same card. In light of these commitments, the Board considered it would be concerning if, as a new technology were adopted, rules were put in place that might have the effect of impeding the efficient migration of existing competitive arrangements from the physical card to the mobile wallet environment.

Some stakeholders had suggested that it could be in the public interest for the Board to determine a standard that would preclude rules, policies or conduct of any scheme that prevent or make it more difficult and/or costly for issuers to provision a competing network. The Board considered that it was prudent to consult with the industry before considering the case for such a standard.

Consequently, the Bank conducted a public consultation to investigate the issue further, releasing a consultation paper in December 2016. This paper sought the views of stakeholders and interested parties on the competition issues and raised a number of specific questions for consideration.[10] The Bank received over 20 written submissions in response to the consultation paper and conducted a number of consultation meetings with interested parties. Prior to this, the Bank had already consulted with several stakeholders as part of the process of gathering information on the issues.

Following discussion with industry participants through the consultation process, the Bank received commitments from the relevant participants that they would not take any steps that would prevent the use in mobile wallets of both networks on dual-network debit cards. These commitments, which were shared with industry participants, should facilitate greater choice and convenience in the payment options available to cardholders through mobile devices and improve the ability of merchants to encourage the use of lower-cost payment methods. The Board welcomed the willingness of the industry to arrive at an outcome that was in the public's interest without the need for regulation. While the Board's immediate concerns were addressed, mobile payments are an emerging technology and so the Bank will continue to closely monitor developments in this area.

10 Separately, some card-issuing banks had made an application to the Australian Competition and Consumer Comission (ACCC) (which was subsequently rejected) to negotiate collectively with Apple, one of the third-party mobile wallet providers. The principal issue on which the banks wished to negotiate was access to the NFC technology in Apple mobile devices. The Reserve Bank's Consultation Paper did not cover this dispute, which the Board viewed as a separate matter appropriately to be addressed by the ACCC.

Review of Card Payments Regulation

In May 2016, the Bank concluded a *Review of Card Payments Regulation* (the review) with the release of a conclusions paper and the publication of new surcharging and interchange standards. The review was a comprehensive examination of the regulatory framework for card payments, guided by the Board's mandate to promote competition and efficiency in the payments system. Key elements of the reforms took effect during 2016/17, including surcharging rules for large merchants and obligations on acquirers to provide cost of acceptance information to merchants. New interchange benchmarks took effect on 1 July 2017.

The new surcharging standard

The Bank's new surcharging standard, which sought to address issues around excessive surcharging, took effect for large merchants in September 2016. The standard preserved the right of merchants to surcharge but ensured that consumers using payment cards from designated systems cannot be surcharged in excess of a merchant's cost of acceptance for that card system. Additionally, from June 2017, acquirers and payment facilitators were required to provide merchants with easy-to-understand information on the cost of acceptance for each designated scheme that will help them in decisions regarding surcharging. These reforms work in conjunction with legislation passed by the government in 2016 that banned excessive surcharges and provided the Australian Competition and Consumer Commission (ACCC) with enforcement powers.

Following discussions with the Bank, several other schemes that were not formally captured by the Bank's new standards modified their surcharging rules consistent with the new standard:

- American Express and Diners Club, which have had voluntary undertakings relating to surcharging in place since 2002, each revised their undertakings to reflect the Bank's new surcharging standard. The revised undertakings took effect in September 2016 for American Express, and in October 2016 for Diners Club.
- UnionPay provided the Bank with an undertaking not to enforce its 'no-surcharge' rules and related restrictions on merchant pricing, with effect from the end of May 2017. UnionPay also committed to subsequently modify its surcharging rules relating to transactions in Australia by the end of 2017.
- PayPal removed its 'no-surcharge' rule in Australia and introduced terms that prevent merchants from surcharging above their costs of acceptance. The changes became effective in October 2016.

As noted, the new surcharging standard took effect for large merchants in September 2016, which saw some changes to surcharging practices in a number of industries. Notably, several major airlines replaced fixed-dollar surcharges with percentage-based surcharges, reducing the surcharges paid on lower-value fares. The new surcharging framework is effective for all remaining merchants from 1 September 2017. The stricter definition of the costs that can be included in a surcharge, combined with the ACCC's enforcement of the ban on excessive surcharging, will ensure that consumers are only subject to surcharges that fairly reflect the cost to merchants of accepting a particular type of card payment. Consumers can avoid surcharges by using payment methods that attract a smaller surcharge, or no surcharge at all.

In light of the new surcharging standards, the Bank revoked an earlier standard that prohibited MasterCard and Visa from enforcing 'honour-all-cards' and 'no-surcharge' rules. While the no-surcharge rules were already addressed under the new surcharging standards, new voluntary undertakings were required to address the honour-all-cards rules. Consequently, MasterCard and Visa each provided the Bank with undertakings not to enforce honour-all-cards rules. Both these undertakings took effect in September 2016. The effect of the undertakings is to continue the arrangements in place since the mid 2000s, where a merchant is able to accept the credit cards of a scheme without being obliged to accept the debit cards of that scheme, and vice-versa.

The new interchange standards

The Bank's new interchange standards came into effect on 1 July 2017. Under these standards, the weighted-average interchange fee benchmark for debit cards was reduced from 12 cents to 8 cents, and applies jointly to debit and prepaid cards in each designated scheme. The weighted-average benchmark for credit cards was maintained at 0.50 per cent. These weighted-average benchmarks are now supplemented by ceilings on individual interchange rates: 0.80 per cent for credit; and 15 cents, or 0.20 per cent if the interchange fee is specified in percentage terms, for debit and prepaid. To prevent interchange fees drifting upwards in the manner that they have previously, compliance with the benchmark will be observed quarterly, based on transactions in the preceding four quarters, rather than being observed every three years.

After the Bank concluded the review in May 2016, eftpos Payments Australia Limited (ePAL) published a new interchange fee schedule that took effect in November 2016 (Table 4). The

Table 4: Selected Debit and Prepaid Card Interchange Fees: eftpos[(a)]
Excluding GST; cents unless otherwise specified

Category	eftpos Debit and Prepaid	
	May 2016	July 2017
Consumer electronic	4.5	–
Proprietary debit & Digital	–	13.6
Dual-network debit	–	4.5
Strategic merchant[(b)]	0.0 to 4.5	–
Proprietary/Dual-network – Tier 1	–	0.0
Proprietary/Dual-network – Tier 2	–	1.8
Proprietary/Dual-network – Tier 3	–	3.6
Digital – Tier 1	–	1.8
Digital – Tier 2	–	3.6
Digital – Tier 3	–	5.5
Charity	0.0	0.0
Micropayment[(c)]	0.0	–
Medicare Easyclaim Refund	0.0	0.0
Benchmark	**12.0**	**8.0**
Ceiling	**–**	**15.0 or 0.2%**

(a) Fees are paid by the acquirer to the issuer, except for transactions involving a cash-out component
(b) As of July 2017, eftpos has three tiers of strategic merchant rates for each of the proprietary, dual-network and digital categories; prior to this, strategic rates were represented by a range under a single category
(c) Transactions equal to or less than $15
Source: ePAL website

new schedule represented ePAL's first reset since October 2012. It included the introduction of a higher interchange rate of 13.6 cents per transaction for proprietary (eftpos-only) debit cards, while the rate for dual-network debit cards was maintained at 4.5 cents.[11] Previously, both these transaction types attracted a fee of 4.5 cents per transaction.

MasterCard and Visa published new interchange fee schedules effective July 2017, when the new standards came into force. These new schedules saw several rates reduced to comply with the new ceilings on interchange fees for debit and prepaid cards (Table 5) and credit cards (Table 6). These changes are expected to benefit small and medium-sized merchants that do not qualify for strategic interchange rates.

Table 5: Selected Debit and Prepaid Card Interchange Fees: MasterCard and Visa[(a)(b)]

Excluding GST; cents unless otherwise specified

Category	Debit Schemes: MasterCard May 2016	Debit Schemes: MasterCard July 2017	Debit Schemes: Visa May 2016	Debit Schemes: Visa July 2017	Prepaid Schemes: MasterCard May 2016	Prepaid Schemes: MasterCard July 2017	Prepaid Schemes: Visa May 2016	Prepaid Schemes: Visa July 2017
Consumer electronic	12.7	–	8.0	8.0	12.0	–	8.0	8.0
Consumer standard	0.27%	12.5	0.42%	0.20%	12.0	0.20%	0.42%	0.20%
Consumer premium	0.91%	0.20%	1.05%	0.20%	0.50%	0.20%	0.50%	0.20%
Business/ commercial	0.91%	0.20%	1.05%	0.20%	0.91%	0.20%	1.05%	0.20%
Strategic merchant	–	–	2.0 to 8.0	–	–	–	2.0 to 8.0	–
Tier 1	2.82	2.82	–	2.0	2.82	2.82	–	2.0
Tier 2	3.6	0.15%	–	5.0	3.6	0.15%	–	5.0
Tier 3	–	–	–	8.0	–	–	–	8.0
Charity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Micropayment[(c)]	0.36	0.36	–	–	–	–	–	–
Contactless or MasterPass[(d)]	5.9	6.0	–	–	–	–	–	–
Mobile Contactless	–	–	–	15.0	–	–	–	–
Benchmark	**12.0**	**8.0**	**12.0**	**8.0**	**–**	**8.0**	**–**	**8.0**
Ceiling	**–**	**15.0 or 0.2%**	**–**	**15.0 or 0.2%**	**–**	**15.0 or 0.2%**	**–**	**15.0 or 0.2%**

(a) Fees are paid by the acquirer to the issuer, except for transactions involving a cash-out component
(b) Only select interchange categories have been listed. For example, each scheme has a number of industry-specific rates
(c) Transactions equal to or less than $15
(d) Contactless and MasterPass transactions equal to or less than $60, excluding some commercial cards
Sources: MasterCard website; Visa website

11 Rates quoted are for transactions at non-preferred merchants.

Table 6: Selected Credit Card Interchange Fees[(a)(b)]
Excluding GST; per cent

Category	MasterCard		Visa	
	May 2016	July 2017	May 2016	July 2017
Consumer electronic	–	–	0.25	0.25
Consumer standard	0.29	0.24	0.25	0.25
Consumer elite/high net worth	1.82	0.80	2.00	0.80
Business elite/super premium	1.80	0.80	1.80	0.80
Strategic merchants	–	–	0.20 to 0.30	–
Tier 1	0.23	0.18	–	0.21
Tier 2	0.29	0.23	–	0.25
Tier 3	–	–	–	0.30
Charity	0.00	0.00	0.00	0.00
Benchmark	**0.50**	**0.50**	**0.50**	**0.50**
Ceiling	**–**	**0.80**	**–**	**0.80**

(a) Fees are paid by the acquirer to the issuer
(b) Only select interchange categories have been listed. For example, each scheme has a number of industry-specific rates
Sources: MasterCard website; Visa website

Under the new interchange standards, interchange-like payments from the scheme to issuers under the American Express companion card system are now subject to equivalent regulation to that applying to the MasterCard and Visa credit card systems. The Board's decision to apply the interchange standards to American Express companion card arrangements reflected concerns that the regulatory arrangements were not competitively neutral and may have been affecting market developments. Over 2016/17 several issuers announced changes to their credit card programs for both American Express companion cards as well as MasterCard and Visa cards. One major bank announced that it would cease issuing American Express companion cards to new customers, effective March 2017. The other three major banks have reduced the generosity of the rewards programs for their companion card products, effective July 2017. A range of issuers have also reduced the generosity of the rewards programs for their MasterCard and Visa credit cards since the review concluded.

Issues in the ATM System

The Bank has recently been engaging with ATM industry participants on the future of the ATM access reforms that were introduced in 2009. These reforms, which were achieved through a combination of an ATM Access Regime imposed by the Bank and an industry administered ATM Access Code, were designed to increase competition in the ATM market by making it easier for new deployers to become direct participants in the ATM system. They also removed the opaque and highly inflexible interchange fee arrangements that had applied when a cardholder made a transaction at an ATM not owned by their financial institution. These were replaced by a more transparent 'direct charging' regime whereby ATM owners could set their own fees and compete directly with one another for transactions.

One of the concerns that motivated the original reforms was the bilateral access model that existed in the ATM network, which was inefficient and imposed unnecessary cost on new and existing participants. The Bank had hoped that the access framework would only be a temporary measure while the industry moved to a more access-friendly architecture characterised by a single point of access, standardised message formats and the use of international standards where possible.

Various technological and structural changes have occurred in the ATM industry in recent years, which have moved the industry in the direction that the Bank envisaged and may allow a greater role for industry self-regulation in the future. The development of switches and other hub-based infrastructures, for example, has made it easier and cheaper for new entrants to join the ATM system without necessarily having to establish bilateral direct connections with all other participants. Other developments, such as the adoption of EMV standards, have improved the security of the ATM system, but have also rendered elements of the Access Code and Access Regime obsolete. As discussed in the chapter on 'Trends in Payments, Clearing and Settlement Systems', ATM use has been falling in recent years alongside the declining use of cash for transactions, which may also have implications for future ATM access arrangements.

Against this background, the Board had an initial discussion on ATM access issues at its February meeting, where it reiterated its preference for the ATM industry to self-regulate and deal with any access issues on its own if possible. To this end, the Board proposed a number of high-level objectives which, if the industry was able to meet, might provide scope for the Bank to step away from regulation at some point. These include that there are no unnecessary barriers to access for any potential new entrants and that the transparent direct charging model should remain in place for any ATM fees charged to cardholders. The Bank continues to engage with the industry on these issues and hopes to reach agreement on a roadmap for the transition to industry self-regulation at some point in the near future.

Open Data

In the past year, the Board has discussed developments pertaining to data sharing in the banking sector. In the 2017/18 Commonwealth Budget, the government announced its intention to introduce an open banking regime in Australia and has commissioned an independent review to recommend the best approach to implement the regime. The review is due to report by the end of 2017. The Board also noted the final report by the Productivity Commission on Data Availability and Use, which observed that data sharing had significant potential benefits in a range of areas.

A key aim of open banking is to improve the ability of consumers to access their personal banking data and, if they wish, securely share it with other service providers. This has the potential to promote innovation, competition and efficiency in the payments system. For example, if consumers could easily provide their personal banking information to a comparison service, product comparisons could be tailored to individual circumstances. Outcomes could include stronger competition, more effective price signals and better-informed financial decision-making. While there are potentially material benefits from sharing data, there are also a number of challenges that will need to be addressed, particularly in relation to data security and privacy. In this regard, developing a framework for trusted digital identity could be a way of mitigating the scope for identity fraud, while also providing convenient authentication.

Technology and Innovation

The Bank monitors developments in technology and innovation relevant to the payments system (also see the chapter on 'Strategic Priorities for the Reserve Bank's Payments Work'). Staff periodically brief the Board on these developments and on implications for the safety and efficiency of the payments system and potential competition issues.

Much of the focus in payments technology in recent years has been on digital currencies and distributed ledger technology (DLT).[12] The emergence of Bitcoin and its underlying 'blockchain' technology as a means of maintaining a distributed database of ownership of a digital asset has generated considerable interest and investment, particularly in payments and other parts of the financial services industry. The Bank has been actively following these developments, conducting internal research and engaging with a wide range of stakeholders. The application of DLT has the potential to improve the efficiency of various payments, clearing and settlement activities, though the technology at this point is still relatively immature and any implementations will need to meet customer and regulatory expectations in relation to safety and security.

The Bank regularly liaises with a number of participants in the fintech sector. These include companies focusing on Bitcoin and other alternative digital assets, as well as financial institutions that have been experimenting with DLT, and representatives of the various fintech hubs that provide support for small start-up companies.

The Bank also engages with other domestic regulators in relation to payments technology and innovation, both informally and through formal channels. For example, the Bank is an observer on the Australian Securities and Investments Commission's (ASIC) Digital Finance Advisory Committee. The Bank, ASIC, the Australian Prudential Regulation Authority, Treasury and the Australian Transaction Reports and Analysis Centre (AUSTRAC) participated in a Council of Financial Regulators (CFR) working group on blockchain, preparing advice for the CFR and AUSTRAC on the implications of DLT for the financial system and regulation and sharing relevant information among the agencies; the Bank also contributed to a workshop and research conducted by the CSIRO's Data61 on DLT. The Bank has participated in international work on the topic, including the Committee on Payments and Market Infrastructures' (CPMI) Working Group on Digital Innovations, which published a report in February 2017 setting out an analytical framework for central banks and other authorities to review and analyse the use of DLT in payments, clearing and settlement activities. In addition, the Bank regularly communicates with other central banks about their work in the payments technology space.

Operational Incidents in Retail Payment Systems

As electronic payment instrument use increases, the resilience of retail payment systems becomes more important. The Bank collects information from Exchange Settlement Account holders on significant operational retail payment systems incidents as well as other incidents resulting in less severe disruptions to participants' retail payment systems. This supports the Bank's role of monitoring retail operational incidents and disseminating related data, in line with the November 2012 conclusions from an informal

12 Distributed ledger technology and its potential application in the Australian market is also discussed in the section on 'The Bank's FMI Oversight and Supervision Activities'.

consultation on operational incidents in retail payment systems.

Over 2016/17, the Board was kept informed of trends in the occurrence of retail payments incidents, both within and between institutions. There were fewer significant incidents in 2016/17 compared with 2015/16 and the total duration of significant incidents also fell. Similar to previous years, a large share of significant incidents over the past year were caused by software/application failures or were due to changes and upgrades to existing systems. As was the case in 2015/16, online banking and mobile banking were the payment channels most frequently disrupted by operational incidents in 2016/17.

The Bank has continued to provide aggregate statistics on operational incidents to Australian Payments Network (AusPayNet) for review by its board. The Bank has also developed a set of retail operational incident statistics which are intended as a tool to assist industry participants to benchmark their performance. AusPayNet distributed the first set of these statistics to industry participants in June.

International Developments

The Bank regularly monitors payments system regulatory and policy developments in other jurisdictions as they can be relevant in the Australian context given the globalised nature of some payments systems and the scope for similar policy and regulatory issues to emerge. Over 2016/17, a number of jurisdictions implemented regulations focused on improving the efficiency, competitiveness and security of their payments systems. The introduction of faster payments systems continued to gain momentum, while the European Union (EU) worked towards implementation of the revised Second Payment Services Directive (PSD2) and the Interchange Fee Regulation (IFR). A range of jurisdictions have conducted digital currency trials.

Fast payments

The development of fast payment systems in countries around the world continues to gain momentum.

In Singapore, the Fast and Secure Transfers (FAST) service, which has been operational since 2014, has been enhanced by the introduction of a central addressing scheme enabling payments to be made using recipients' mobile numbers. PayNow FAST transfers using the new central addressing scheme were launched in July by seven Singaporean banks.

In Europe, the European Payments Council finalised the rules for the Single Euro Payments Area (SEPA) Instant Credit Transfer scheme, scheduled to launch in November 2017. SEPA real-time payments will be underpinned by European Banking Authority (EBA) Clearing's new RT1 instant payments infrastructure. The system will facilitate euro transactions in less than 10 seconds at any time of the day. In addition, the European Central Bank has decided to develop a new service for instant payments settlement, called TARGET Instant Payment Settlement (TIPS). It will be SEPA Instant compliant and will offer payment service providers an alternative to RT1 for instant settlement. TIPS is scheduled to launch in November 2018.

In the US, some fast payment initiatives have been launched by groups of financial institutions, although the scale and diversity of the US payments system means that broad coverage of end-users is yet to be achieved. In this context, the work of the national taskforce on faster payments has continued. In 2016, the taskforce solicited proposals for faster payments solutions from financial institutions, consumer groups, businesses, payment service providers and financial technology firms. In July 2017, the taskforce released its final report setting out plans for payment service providers to offer competing and interoperable payment solutions utilising a new fast settlement service. The taskforce recommended this service be developed and operated by the Federal Reserve. It is proposed that the settlement service would operate 24/7 and would provide real-time funds availability. To facilitate interoperability and richer remittance capabilities, participating payment service providers would need to adopt ISO 20022 standards or a comparable messaging functionality. The taskforce envisages that fast payment solutions utilising the new settlement capability will be developed by 2020.

In December, Payments Canada began a consultation process on the design of a new core clearing and settlement system and a real-time payment system. The latter is anticipated to include a simplified addressing scheme enabling payments to be directed using the recipient's email address, telephone number or social media alias, similar to the PayID addressing service being built for the New Payments Platform (NPP). Like the NPP, it will also adopt the ISO 20022 global messaging standard, allowing more information to be sent with payments.

The trend towards fast retail payments systems has been analysed by a working group of the CPMI, to which the Bank contributed. The group published a report in November 2016 setting out key characteristics of fast retail payment systems, taking stock of different initiatives in CPMI jurisdictions, and examining the benefits and risks and the potential implications for different stakeholders, particularly central banks.

Payment Services Directive and interchange fee regulation implementation

EU member states have until January 2018 to implement the PSD2 requirements. Under PSD2, member states must ensure that third-party payment service providers are given access to information from a customer's bank account, such as the availability of funds, if the customer provides consent. One of the primary aims of PSD2 is to improve access to customer data held by banks as a way to encourage innovation and promote competition in payment services. The revised directive also extends information and transparency obligations under the original directive to payments that are made between member states and countries outside the EU; it introduces new security requirements to protect consumers against fraud; and it bans card surcharging on transactions where IFR interchange fee caps apply.

As part of the implementation process for PSD2 and the IFR, the EBA drafted several sets of technical standards. The EBA's draft technical standards on customer authentication and secure communication require strong customer authentication (SCA) for online payments of more than €30.[13] The standards also ban data collection and payment initiation services using screen-scraping technology and instead favour development of an EU-wide data sharing standard, for instance, using application programming interfaces (APIs).[14] A second set

13 Defined under PSD2 as an authentication process 'based on the use of two or more elements categorised as knowledge (something only the user knows, e.g. a PIN), possession (something only the user possesses, e.g. a credit card) and inherence (something the user is) that are independent'.

14 Screen-scraping involves the use of software to automatically collect information from websites and systems. Payment initiation service providers can use screen-scraping to obtain customer data by accessing the customer's online account with the customer's login details; this may raise security concerns even if the customer provides consent.

of draft standards relates to the separation of payment card schemes and processing entities under the IFR. The aim of this requirement is to enhance competition by ensuring card schemes that also offer processing (acquiring) services do not give their own card processing entity beneficial treatment to the detriment of competing processors. The EBA's draft included requirements that card schemes and processing entities maintain separate financial accounts, separate workspaces, and ensure the independence of management and staff. Due to industry and regulatory concerns, amendments to both sets of standards have been contemplated by the European Commission (EC). The proposed amendments aim to reduce the impact of SCA requirements on e-commerce, allow screen-scraping in certain circumstances and further separate card schemes and processing entities. The EC is yet to make a final decision on the text of the standards.

As a first step to implementing PSD2 in the United Kingdom, Her Majesty's Treasury transposed PSD2 into the UK Payment Service Regulations. The Regulations give responsibility for supervising payment service providers to the Financial Conduct Authority, with some assistance from the Payment Systems Regulator. Relatedly, the UK's Competition and Markets Authority issued an order requiring the UK's largest banks to develop open APIs to facilitate data sharing with third-party providers. Product information data (such as prices and charges) were required to be made available by the APIs in March; certain transaction data must be made available by mid January 2018.

PSD2 also requires that EU member states ban surcharging on four-party schemes (such as Visa and MasterCard) that are regulated by the IFR; the IFR sets interchange caps of 20 basis points for debit and 30 basis points for credit. In July, the UK government announced it will go beyond the requirements of PSD2 by implementing a ban on all payment card surcharges from January 2018. Excessive surcharges have, in principle, been outlawed in the UK since 2012; however, the government has stated that some businesses have continued to surcharge at rates of up to 20 per cent, leading to the decision to completely ban the practice.

Digital currencies and distributed ledger technology

A number of central banks are devoting resources to research digital currencies, including assessing if there is demand for central banks to issue a digital version of their currencies and if current technologies are sufficiently reliable, scalable and resilient to meet the standards required of a national currency.

In the past year, the Bank of England published a working paper on the macroeconomic implications of a central bank-issued digital currency, while the Bank of Canada published a working paper looking at factors a central bank might consider in assessing the case for issuing a digital currency. In response to a marked decline in the use of physical cash in Sweden since 2009, the Riksbank has indicated that it will decide by late 2018 whether to issue a digital version of the krona which would circulate alongside its existing physical currency. Some other central banks have been conducting research into the uses of blockchain technology for wider applications, such as their payments and securities settlement systems.

Governments and regulators have been continuing to monitor and assess the regulatory framework for privately issued digital currencies, such as Bitcoin, and the distributed ledger technology that often underpins them. In the US, the Securities and Exchange Commission (SEC) denied the listing of a bitcoin-tied exchange traded fund (ETF) based on concerns about the potential for fraud and manipulation in the unregulated bitcoin market. The SEC indicated that a digital currency tied ETF could be considered in the future, should the market become more mature. In Japan, the parliament approved a law that recognises bitcoin as a legal method of payment. The law categorised bitcoin as a type of prepaid payment instrument and also brought bitcoin exchanges under anti-money laundering and know-your-customer regulations.