



RESERVE BANK  
OF AUSTRALIA

Payments  
System Board  
Annual Report

2015

RESERVE BANK OF AUSTRALIA



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*G.R. Stevens*  
GOVERNOR

9 October 2015

The Hon Scott Morrison MP  
Treasurer  
Parliament House  
CANBERRA ACT 2600

Dear Treasurer

**RESERVE BANK OF AUSTRALIA PAYMENTS SYSTEM BOARD  
ANNUAL REPORT 2015**

I am writing to seek your agreement to the tabling in the Parliament of the Payments System Board Annual Report for 2015.

In terms of the *Reserve Bank Act 1959*, the Payments System Board is required to inform the Government, from time to time, of the Reserve Bank's payments system policy. There is no statutory requirement to table an annual report, but tabling has proven a useful way of publicising the work of the Payments System Board.

Yours sincerely



# Payments System Board

## Annual Report 2015

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# Governor's Foreword

The past year has seen significant progress by the payments industry on the New Payments Platform (NPP), which will be a significant upgrade to Australia's payments infrastructure. In December 2014, 12 institutions (including the Reserve Bank) committed to fund a contract with SWIFT to build the key central infrastructure of the NPP. The NPP will link authorised deposit-taking institutions and will enable real-time, data-rich payments on a 24/7 basis for households, businesses and government agencies. SWIFT and the industry are now finalising the 'design and elaborate' phase of the project and will soon shift to the 'build and test' phase. At the same time, the Bank is making good progress towards the new Fast Settlement Service, which will provide real-time settlement of NPP transactions. The NPP is the industry's response to one of the strategic objectives in the 2012 conclusions to the Payments System Board's *Strategic Review of Innovation in the Payments System*. The Board has been taking a keen interest in the NPP. It notes the significant commitment of resources to the program and commends the industry on the excellent collaboration on this project and the progress achieved to date.

The December 2014 Report of the Financial System Inquiry addressed a number of topics relevant to the Board's mandate and supported the reforms undertaken by the Board over the period since its inception. Following the conclusion of the Inquiry, the Bank commenced a review of the framework for the regulation of card payments with the publication of an issues paper. The review has asked for stakeholder views on various topics, including the declining transparency of payment costs to merchants, some issues with the regulation of

interchange fees and surcharging practices that have raised concerns over recent years. The Bank received over 40 submissions in response to the issues paper and has consulted with a wide range of stakeholders. Having received feedback via this process, the Board will consider the possible designation of some payment systems and whether to consult on specific changes to the regulatory framework.

The staff have continued to undertake research into the Australian payments system. In December 2014, the Bank published a comprehensive study of the costs borne by merchants, financial institutions and individuals in the use of different payment methods. This study updated and extended similar work previously undertaken as part of the 2007/08 review of the Bank's payments system reforms. The study used detailed cost data from 16 financial institutions and 17 large merchants and billers and information from a survey of 260 small- and medium-sized merchants. The results suggest that the 'resource costs' of the payments system (the economic costs incurred by participants to 'produce' payments) have fallen as a percentage of GDP since 2006. As with previous studies, the results provide valuable insight for the Board in thinking about various policy issues and will also be useful for participants in benchmarking their costs against other organisations. The Bank is grateful for the cooperation of the respondents to the study.

A significant amount of the Board's work is devoted to its responsibilities to promoting stability in the payments system and the operation of clearing and settlement (CS) facilities. Domestically, the Bank's supervision of the four CS facilities of the

ASX Group over the past year has continued to focus on financial risk management, most notably the ASX central counterparties' (CCPs) stress-testing frameworks, as well as enhancements to the facilities' recovery arrangements that aim to ensure a return to viability in the event of an extreme financial shock. The Board has also taken a keen interest in the ASX's response to the default in mid May of BBY Limited, a broker participant of ASX Clear Pty Limited. It notes that the incident was handled well, but has nevertheless suggested a few matters for further consideration in the spirit of continuous improvement.

There is also an increasingly significant international dimension to the Board's supervision of CS facilities. The largest provider of clearing services in the Australian dollar over-the-counter interest rate derivatives market is an offshore licensee, LCH. Clearnet Limited (LCH.C Ltd), and all four major domestic banks are now direct clearing participants. Given the systemic importance of this market, the Bank has imposed certain requirements on LCH.C Ltd to structure its operational and governance arrangements to promote stability in the Australian financial system, including by opening an Exchange Settlement Account with the Bank, becoming an Austraclear participant, and maintaining holdings of high-quality Australian dollar assets in Australia. A second offshore licence application, from CME Limited, was approved in September 2014.

The Board continues to take a close interest in both domestic and international policy developments relevant to its work on financial market infrastructures (FMIs). Domestically, much of this work continues to be carried out collaboratively with other agencies of the Council of Financial Regulators (CFR). One important element has been the CFR's review of competition in clearing of Australian equities. Another important CFR workstream has been on resolution arrangements for FMIs, which aim to prepare for any event where an FMI suffered a severe shock to its viability and

its own efforts to recover were unsuccessful. The government is currently consulting on a framework that would make the Bank the resolution authority for CS facilities, with an overarching objective to maintain overall stability in the financial system and an additional key objective to maintain the continuity of critical FMI services.

Given that many domestic supervisory and policy priorities relating to FMIs are a reflection of international regulatory developments, the Bank has remained strongly engaged in the international community's post-GFC work agenda. As the role of FMIs within the financial system has expanded, there is an increasing awareness of their growing systemic importance. This has been reflected in the development of an international CCP Workplan, which involves both the international committees with standard-setting responsibility for FMIs (the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions), and the committees with standard-setting responsibility for key participants of CCPs (the Basel Committee on Banking Supervision and standing committees of the Financial Stability Board, an international body that monitors and makes recommendations about the global financial system). The CCP Workplan is focusing on issues in the areas of CCP resilience, recovery and resolution, mirroring some of the matters on which the Board has focused in the domestic context.

Once again the Board joins me in thanking the staff and management of the Bank for their work in helping the Board meet its mandate for efficiency, competition and controlling risk in the Australian payments system.



Glenn Stevens  
Chair, Payments System Board  
5 September 2015

# Functions and Objectives of the Payments System Board

The Payments System Board has a mandate to contribute to promoting efficiency and competition in the payments system and the overall stability of the financial system. The Reserve Bank oversees the payments system as a whole and has the power to designate payments systems and set standards and access regimes for designated systems. It also sets financial stability standards for licensed clearing and settlement facilities.

The responsibilities of the Payments System Board are set out in the *Reserve Bank Act 1959*, under which it is the duty of the Payments System Board to ensure, within the limits of its powers, that:

- the Reserve Bank's payments system policy is directed to the greatest advantage of the people of Australia
- the powers of the Reserve Bank set out in 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 and promoting competition in the market for payment services, consistent with the overall stability of the financial system
- the powers of the Reserve Bank that deal with clearing and settlement facilities set out in 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.

Under the *Payment Systems (Regulation) Act*, the Reserve Bank has the power to designate payment systems and 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 so as to ensure that risks of systemic disruptions from payment systems are minimised.

Under Part 7.3 of the *Corporations Act*, the Reserve Bank has a formal regulatory role to ensure that the infrastructure supporting the clearing and settlement of transactions in financial markets is operated in a way that promotes financial stability. The Bank's powers under that Part include the power to determine financial stability standards for licensed clearing and settlement facilities.

This Report discusses the activities of the Board during 2014/15.





# Governance

The Payments System Board is responsible for the Reserve Bank's payments system policy. Members of the Board comprise representatives from the central bank, the prudential regulator and a number of other non-executive members appointed by the Treasurer.

## Payments System Board

The Payments System Board has responsibility for the Reserve Bank's payments system policy. The Board comprises the Governor, who is the Chair, one representative of the Reserve Bank appointed by the Governor, who is the Deputy Chair, one representative of the Australian Prudential Regulation Authority (APRA) appointed by APRA, and up to five other members appointed by the Treasurer for terms of up to five years. Members of the Board during 2014/15 are shown right and details of the qualifications and experience of members are provided on pages 9 to 13.

## Meetings of the Payments System Board

The *Reserve Bank Act 1959* does not stipulate the frequency of Board meetings. Since its inception, the Board's practice has been to meet at least four times a year and more often as needed. Four meetings were held in 2014/15, all at the Reserve Bank's Head Office in Sydney. Five members form a quorum at a meeting of the Board or are required to pass a written resolution.

## Board Meetings in 2014/15 Attendance by Members

Number of meetings

	Attended	Eligible to attend
Glenn Stevens (Governor)	4	4
Malcolm Edey (RBA)	4	4
Wayne Byres (APRA) <sup>(a)</sup>	4	4
Gina Cass-Gottlieb	3	4
Paul Costello	4	4
Robert McLean	4	4
Catherine Walter	4	4
Brian Wilson	4	4

(a) Wayne Byres' term on the Board commenced on 9 July 2014

## Conduct of Payments System Board Members

On appointment to the Payments System Board, each member is required under the Reserve Bank Act to sign a declaration to maintain confidentiality in relation to the affairs of the Board and the Reserve Bank.

Members of the Board must comply with their statutory obligations in that capacity. The main sources of those obligations are the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and the Reserve Bank Act. Their obligations under the PGPA Act include obligations to exercise their powers and discharge their duties with care and diligence, honestly, in good faith and for a proper purpose. Members must not use their position, or any information obtained by virtue of their position, to benefit themselves or any other person, or to cause detriment to the Reserve Bank or any other person. Members must declare to the other members of the Board any material personal interest they have in a matter relating to the affairs of the Board. Members may give standing notice to other members outlining the nature and extent of a material personal interest.

Over and above these statutory requirements, members recognise their responsibility for maintaining a reputation for integrity and propriety on the part of the Board and the Reserve Bank in all respects. Members have therefore adopted a Code of Conduct that provides a number of general principles as a guide for their conduct in fulfilling their duties and responsibilities as members of the Board; a copy of the Code is on the Bank's website. The Code was updated in August 2015 to reflect legislative changes.

## Remuneration and Allowances

Remuneration and travel allowances for the non-executive members of the Payments System Board are set by the Remuneration Tribunal.

## Induction of Board Members

The induction program assists newly appointed Board members in understanding their role and responsibilities, and provides them with an overview of the Bank's role in the payments system and details of relevant developments in preceding years. Separate briefing sessions are tailored to meet particular needs or interests.

## Indemnities

During 2014/15, members of the Payments System Board continued to be indemnified against liabilities incurred by reason of their appointment to the relevant Board or by virtue of holding and discharging such office. Indemnities given prior to 1 July 2014, the date of repeal of the *Commonwealth Authorities and Companies Act 1997* (CAC Act), were in accordance with section 27M of the CAC Act. New members of the Board whose term of office commenced during 2014/15 were indemnified in substantially similar terms.

## Conflict of Interest Audit

The Reserve Bank has several distinct areas of responsibility in the Australian payments system: it owns, operates and participates in Australia's real-time gross settlement system, the Reserve Bank Information and Transfer System; it is a provider of transactional banking services to the Australian Government and its agencies; and it is the principal regulator of the payments system through the Board. This combination of functions is conventional internationally. The operation of the high-value payment system is a core central banking function in most major economies. In addition, central banks in advanced economies typically have regulatory responsibilities for the payments system (though the breadth of mandates varies) and most also provide banking services to government.

While the various functions are conceptually distinct, their existence may give rise to concerns about actual or perceived conflicts of interest. The Board and the senior management of the Bank take very seriously the possibility of any perception that the Bank's policy and operational roles may be conflicted, especially since this could undermine public confidence in the regulatory and policy process. Accordingly, the Bank has policies in place for avoiding conflicts and dealing with them when they do occur. The Board has formally adopted a policy on the management of conflicts of interests,

which is published on the Bank's website.<sup>1</sup> Details of the steps taken to achieve compliance with these arrangements, including the minutes of informal meetings between departments, are audited annually with the results presented to the Board. The most recent audit was conducted in July 2015 and reviewed by the Board in August 2015.

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<sup>1</sup> Available at <<http://www.rba.gov.au/payments-system/policy-framework/conflict-of-interest.html>>.



# Payments System Board

The Board comprises up to eight members: the Governor (Chair), Assistant Governor Financial System (Deputy Chair), Chairman of the Australian Prudential Regulation Authority and up to five other non-executive members appointed by the Treasurer.

## September 2015



### Glenn Stevens

BSc (Hons) (Sydney), MA (Western)

#### Governor and Chair

Governor since 18 September 2006

Reappointed from 18 September 2013 until 17 September 2016

Glenn Stevens has held various senior positions at the Reserve Bank, including Head of Economic Analysis and International Departments and Assistant Governor (Economic), where he was responsible for overseeing economic and policy advice to the then Governor and Reserve Bank Board. He was Deputy Governor from 2001 to 2006. In June 2014, Mr Stevens was awarded a Doctor of Laws, honoris causa (LLD) by Western University in Ontario, Canada.

#### Other Roles

Chair – Reserve Bank Board

Chair – Council of Financial Regulators

Chair – Financial Stability Board Standing Committee for Assessment of Vulnerabilities

Chair – Financial Markets Foundation for Children

Member – Financial Stability Board

Director – The Anika Foundation



## Malcolm Edey

BEd (Sydney), PhD (London)

### Assistant Governor (Financial System) and Deputy Chair

Deputy Chair since 14 April 2009

Malcolm Edey has held various senior positions at the Reserve Bank, including in the Economic and Financial Markets Groups. Prior to his current role, Dr Edey was Assistant Governor (Economic). In his current position as Assistant Governor (Financial System), he 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

BEd (Hons) (Macquarie), MAppFin (Macquarie)

### Ex Officio Member

Chairman, Australian Prudential Regulation Authority

Member since 9 July 2014

Present term ends 30 June 2019

Wayne Byres was appointed as a Member and Chairman of the Australian Prudential Regulation Authority (APRA) from 1 July 2014 for a 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 – BIS Group of Governors and Heads of Supervision

Member – Council of Financial Regulators

Member – Trans-Tasman Council on Banking Supervision



## Gina Cass-Gottlieb

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

### Non-executive Member

Member since 15 July 2013

Present term ends 14 July 2018

Gina Cass-Gottlieb is a senior partner in Gilbert + Tobin's competition and regulation practice, advising and representing corporations, industry associations, government and 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.

### Directorships

Director – Sydney Children's Hospital Foundation



## Paul Costello

BA (Canterbury), Dip. Bus Admin (Massey)

### Non-executive Member

Member since 15 July 2013

Present term ends 14 July 2018

Paul Costello has held a number of roles in the Australasian financial services sector. Most recently he served as the inaugural general manager at the Australian Government's Future Fund and also as the chief executive of the New Zealand Government's Superannuation Fund. Prior to these roles, he spent 15 years in the Australian wealth management industry. The Australian Government has previously appointed him in advisory roles to assist with the Stronger Super regulatory reforms and the Productivity Commission review of the sector. Mr Costello is a Fellow of the Financial Services Institute of Australia.

### Directorships

Chair – Investment Committee, QIC Global Infrastructure Fund

Director – AIA Australia Limited

Director – Qantas Superannuation Limited

Member – International Advisory Council of the China Investment Corporation





## Robert McLean AM

BEd (Stats) (Hons) (UNE), MBA (Columbia)

### Non-executive Member

Member since 29 November 2006

Present term ends 28 November 2016

Robert McLean is a company director and private equity investor. He had a 25-year career at McKinsey & Company where he remains a Senior Advisor to the firm, and previously served on the boards of CSR Ltd, Pacific Dunlop Ltd and Elders Rural Services. He was Dean and Director of the Australian Graduate School of Management at the University of New South Wales from 2003 to 2006. Mr McLean attended Columbia University in New York as a Fulbright Scholar.

### Directorships

Chair – Australia Program Advisory Board, The Nature Conservancy (Australia)

Council Member – Philanthropy Australia

Director – Remerga Pty Limited

Director – The Centre for Independent Studies



## Catherine Walter AM

LLB (Hons), LL.M, MBA (Melbourne)

### Non-executive Member

Member since 3 September 2007

Present term ends 2 September 2017

Catherine 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 spanning the arts, education, insurance, investment, banking and financial services, consumer goods, resources, telecommunications and scientific and medical research. Mrs Walter is a Fellow of the Australian Institute of Company Directors.

### Directorships

Deputy Chair – Victorian Funds Management Corporation

Director – Australian Foundation Investment Company

Director – Victorian Opera

Director – Walter+Eliza Hall Institute of Medical Research

Trustee – Helen Macpherson Smith Trust



## Brian Wilson

MCom (Hons) (Auckland)

### Non-executive Member

Member since 15 November 2010

Present term ends 14 November 2015

Brian 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. 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.

### Directorships

Chairman – Foreign Investment Review Board

Deputy Chancellor – University of Technology, Sydney

Director – Bell Financial Group Ltd



# Retail Payments Developments

The Payments System Board monitors trends in retail payments. Developments in 2014/15 were consistent with the longer-term shift towards electronic non-cash payment methods. There was a sharp increase in fraud in the card-not-present environment.

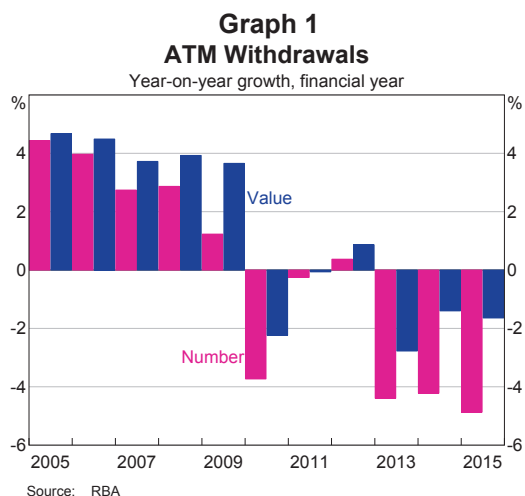
The Payments System Board monitors developments in retail payments relevant to its responsibilities to promote efficiency and competition in the Australian payments system.

## Cash Payments

The number and value of ATM cash withdrawals (the main method individuals use to obtain cash) fell by 5 per cent and 2 per cent respectively in 2014/15, continuing the trend of recent years (Graph 1). The continued decline in ATM withdrawals is likely to reflect a number of factors, including consumers' adoption of new technologies such as contactless card payments that, like cash, provide for relatively quick transaction times. Growth in online commerce is most likely also a factor, with everyday transactions increasingly occurring online rather than in person. Recent trends in withdrawals are consistent with previous snapshots of consumers' use of cash for individual payments, with the results of a 2013 Bank survey showing that the relative use of cash for consumer payments had declined noticeably since earlier studies in 2007 and 2010. Nevertheless, cash remains an extensively used payment method, especially for low-value transactions.

## Non-cash Payments

In contrast to cash, the use of most non-cash payment methods continues to increase – with



the exception of cheque payments. In particular, debit card use continues to grow rapidly (Table 1). Australians on average made around 400 non-cash transactions per person in 2014/15, with card payments accounting for almost two-thirds of these payments (Graph 2).

## Debit and credit card payments

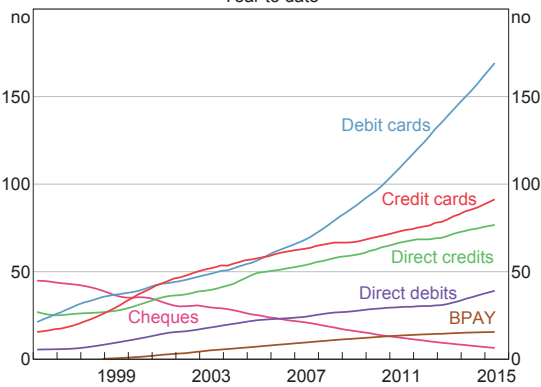
Debit and credit cards are the most frequently used non-cash payment methods. In 2014/15 Australian personal and business cardholders made around 6.2 billion card payments worth \$503 billion, up by 11 per cent and 7 per cent respectively from the previous year – similar to the increase observed in recent years. Growth in debit card use continues

**Table 1: Non-cash Payments**

	2014/15						Average annual growth 2009/10 – 2014/15	
	Per cent of total		Average value	Growth, per cent		Per cent		
	Number	Value	\$	Number	Value	Number	Value	
Debit cards	42.5	1.4	54	12.0	9.8	13.7	11.2	
Credit cards	22.9	1.8	132	8.4	5.2	7.2	5.2	
Cheques	1.6	7.7	7 998	-15.7	-0.9	-13.3	-4.0	
BPAY	3.9	2.1	884	3.5	11.1	5.9	11.0	
Direct debits <sup>(a)</sup>	9.8	35.9	6 137	12.3	5.3	8.0	1.2	
Direct credits <sup>(a)</sup>	19.3	51.1	4 444	5.0	5.7	5.8	4.7	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>1 675</b>	<b>8.9</b>	<b>5.2</b>	<b>8.7</b>	<b>2.7</b>	

(a) In March 2014 reporting changes by two institutions resulted in series breaks for direct credit and direct debit payments; the series have been backcast to account for the break  
Sources: BPAY; RBA

**Graph 2**  
**Non-cash Payments per Capita**  
Year to date

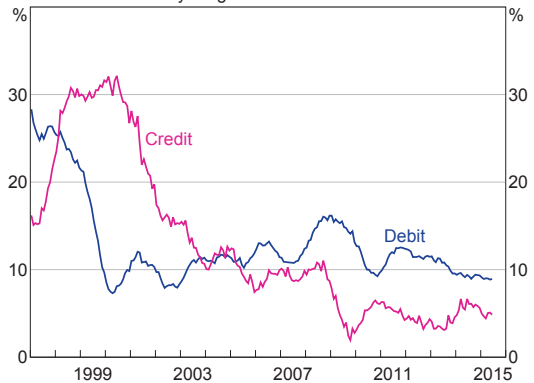


Sources: ABS; APCA; BPAY; RBA

to outpace growth in credit card transactions (Graph 3). The average value of card payments continues to fall, reflecting a greater use of cards for low-value transactions.

Within credit and charge cards, the combined market share of the three-party card schemes (American Express and Diners Club) was largely unchanged in 2014/15 at 19–20 per cent of the value of spending (Graph 4). For debit cards, the MasterCard and Visa debit systems continue to increase their market shares relative to eftpos.

**Graph 3**  
**Payment Card Transactions\***  
Year-on-year growth in transaction value

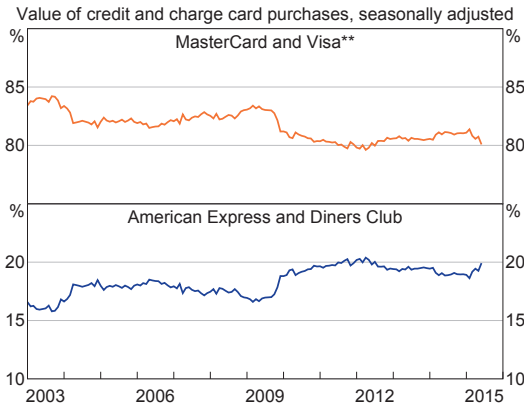


\* Includes debit card cash-outs and credit card advances; RBA credit card data prior to March 2008 adjusted to remove BPAY transactions  
Sources: BPAY; RBA

As discussed later in this chapter, during 2014/15 industry implemented an initiative that phased out signature authorisation for the vast majority of in-person card payments. Until recent years, cardholders primarily authorised international scheme debit and credit card payments by signing for purchases, while the use of a PIN (Personal Identification Number) was required only for transactions over the eftpos network and for ATM cash withdrawals. Under the recent

**Graph 4**

**Market Shares of Card Schemes\***



\* Excludes scheme debit from March 2008; back data adjusted for break  
 \*\* Includes Bankcard before 2007  
 Source: RBA

initiative, domestic transactions on Australian-issued American Express, Diners Club, MasterCard and Visa chip cards now require a PIN to authorise point-of-sale purchases; contactless transactions are the main exception, with no authorisation required for transactions under \$100.

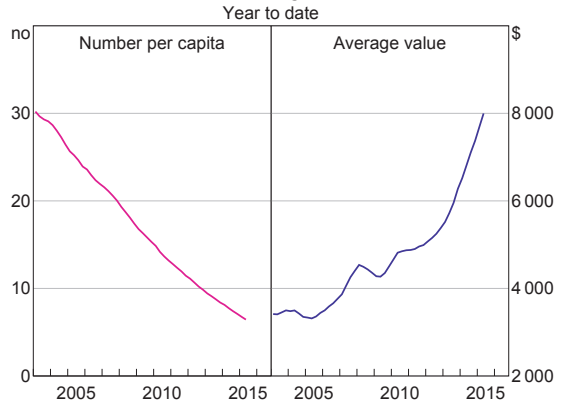
**Cheque, BPAY and Direct Entry payments**

The decline in the use of cheques has accelerated, with the total number of cheque payments falling by 16 per cent in 2014/15, to be 70 per cent lower than in 2004/05 (Graph 5). While the number of all types of cheque transactions – personal, commercial and financial institution cheques – has continued to decline, the average value of a cheque payment continues to rise, with a significant share of remaining cheque use related to commercial payments and financial institution cheques for certain types of transactions such as property settlements. Despite accounting for only a small share of the number of payments, cheques still account for a considerable share of their value (around 8 per cent of non-cash payments, i.e. more than debit cards, credit cards and BPAY combined).

In light of declining cheque use and rising unit costs, the payments industry has been seeking improvements in the efficiency of the cheque system. During the year, the industry implemented

**Graph 5**

**Cheque Payments**



Source: RBA

changes to clearing arrangements, which allow cheque details to be digitally captured and payments cleared between banks without the need for the physical exchange of cheques.

The number of BPAY transactions increased 4 per cent in 2014/15 and the value by 11 per cent. BPAY payments tend to be for relatively large amounts, with an average value of \$884, reflecting its use by consumers for payments such as utilities, education fees and investments, as well as some use by businesses. The value of payments processed through BPAY has slightly exceeded the value of credit/charge card payments for the past three financial years.

Direct Entry payments remain an important part of the payments landscape, used by consumers for internet 'pay-anyone' transactions, and by businesses, corporations and governments for a range of bulk payments, such as salary and welfare payments and bill collections. Reflecting the latter types of transactions, average payment values are significantly higher than the levels typically associated with 'consumer' payments. Accordingly, Direct Entry payments account for the bulk of the value of non-cash payments in the Australian economy. In 2014/15 growth in the value of direct debits and direct credits was slightly above the average for the past few years.

## Online payments

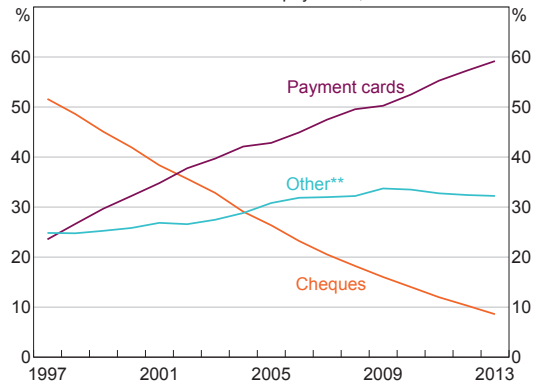
Online payment channels are an increasingly important element of the payments landscape, with users' needs serviced by a mix of well-established payment methods and some newer, more specialised providers. The use of BPAY and internet pay-anyone transactions continues to grow steadily and accounts for the bulk of online payments by value. However, the use of specialised online payments systems has continued to grow very rapidly, while the value of debit and credit card spending in online transactions grew at around twice the pace of card spending in other (largely point-of-sale) environments in 2014/15.

## International Payment Trends

The longstanding trend observed in Australia of a substitution away from paper-based to electronic payment methods has been evident in most other jurisdictions as well, according to data published by the Committee on Payments and Market Infrastructures (CPMI) (Graph 6). Cross-country

data confirm that Australians are among the most frequent users of payment cards (Table 2). As in Australia, cheque use in other countries has fallen significantly; indeed, there are a number of continental European countries where the cheque system is now little used or has been closed down.

**Graph 6**  
**Non-cash Payments – International\***  
Per cent of non-cash payments, number



\* Selected CPMI countries; data prior to 2009 have been adjusted for changes in reporting and membership

\*\* Includes direct credit and direct debit transactions

Sources: ABS; BIS; RBA

**Table 2: Non-cash Retail Payments in Selected CPMI Countries**  
Number per capita, 2013

	Cheques	Direct debits	Direct credits	Debit card	Credit <sup>(a)</sup> card	Total <sup>(b)</sup>
United States	52	43	29	177	89	389
Sweden	<1	33	93	207	43	375
Netherlands	0 <sup>(c)</sup>	81	103	162	7	354
<b>Australia</b>	<b>9</b>	<b>35</b>	<b>75<sup>(d)</sup></b>	<b>146</b>	<b>83</b>	<b>347</b>
Korea	7	34	68	69	160	338
United Kingdom	11	55	60	141	37	304
Canada	20	21	28	129	96	293
France	38	52	47		137 <sup>(e)</sup>	274
Germany	<1	121	76	36	9	242
Brazil	7	25	48	24	26	129

(a) Includes charge cards

(b) Excludes e-money

(c) Cheques have been abolished since 2001

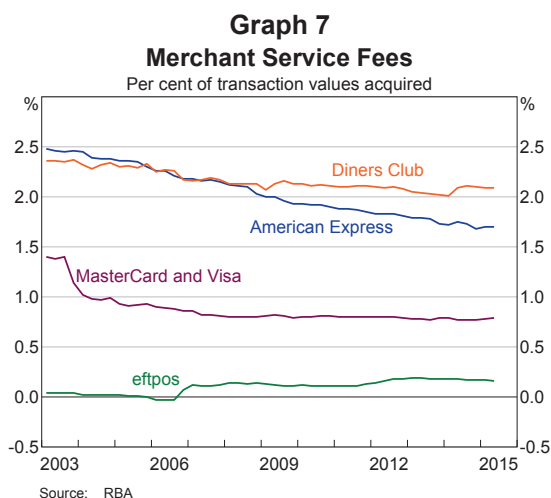
(d) Includes BPAY

(e) Split between debit and credit cards not available

Sources: ABS; BIS; RBA; United States Census Bureau

## Merchant Service Fees

The average fee paid by merchants to their financial institution for transactions on MasterCard and Visa credit and debit cards has been largely unchanged in recent years at around 0.78 per cent of the value of transactions (Graph 7). These fees had previously fallen following the Bank's reforms to the payment cards system in the early 2000s. Fees for American Express and Diners Club cards have also declined since the early 2000s, with the average fee for American Express transactions falling by a further 4 basis points in 2014/15 to 1.70 per cent of the value of transactions. The average merchant service fee for eftpos transactions was unchanged in 2014/15 at around 10 cents per transaction. This corresponds to a rate of 0.17 per cent for the average eftpos transaction.



## Interchange Fees

Interchange fees are wholesale fees paid between a merchant's financial institution and a cardholder's financial institution when a cardholder undertakes a card payment. As discussed in the next chapter, the Reserve Bank is currently undertaking a review of its card payments regulations, including the standards that cap the average level of interchange fees in the MasterCard and Visa credit card systems, the Visa debit card system and the eftpos debit card system.

Under the Bank's standards, the weighted average of multilateral interchange fees in the above systems must not exceed certain benchmarks on specified compliance dates – 1 November of every third year after 2006, and on any date the card scheme makes a change to its schedule of interchange fee rates.

The multilateral interchange fee benchmarks were unchanged in 2014/15, at 0.50 per cent of the value of transactions for the credit card systems and 12 cents per transaction for the debit card systems.<sup>2</sup> The Bank announced in March 2015 that, reflecting the review of card payments regulation (see 'Retail Payments Policy and Research') and the likely compliance costs involved in recalculating the cost-based benchmarks, it was waiving the recalculation ahead of the next scheduled compliance date of 1 November 2015.

Under the Bank's standards, card schemes have the flexibility to set different multilateral interchange fees for different types of transactions, provided that the weighted average of these fees for each system does not exceed the relevant benchmark on the compliance dates. Neither MasterCard nor Visa made changes to credit card interchange fees during 2014/15, after most recently making changes in June 2013. In the debit card systems, MasterCard and Visa made a number of changes to their interchange fee schedules in November 2014. Both schemes also amended their prepaid card interchange fee schedules at that time.<sup>3</sup> eftpos Payments Australia Ltd left interchange fees for eftpos transactions unchanged in 2014/15, after most recently making changes in October 2012.

<sup>2</sup> All interchange fee benchmarks and rates quoted in this section are exclusive of GST.

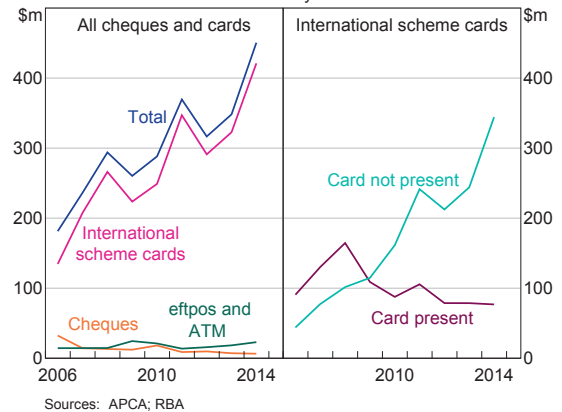
<sup>3</sup> While interchange fees applying to prepaid card transactions are not formally regulated, in September 2006 the Board noted its expectation that interchange fees for transactions on these cards would be published and set broadly in conformity with the Standard on interchange fees in the Visa Debit system.



## Cheque and Card Payments Fraud

Total losses relating to fraudulent cheque and debit, credit and charge card transactions (where the card was issued and/or acquired in Australia) increased by 29 per cent to \$450 million in 2014, according to data collected by the Australian Payments Clearing Association (APCA). The fraud rate (the value of fraudulent transactions as a share of overall transactions) on Australian-issued cards increased from \$0.47 per \$1 000 in 2013 to \$0.59 per \$1 000 in 2014, to be above the previous peak of \$0.52 per \$1 000 in 2011. The increase reflected a 30 per cent rise in fraud on debit, credit and charge cards from the international schemes to \$421 million in 2014 (Graph 8, Table 3).<sup>4</sup> Losses relating to fraudulent eftpos and ATM transactions also rose noticeably owing to a pick-up in card counterfeiting, but at \$23 million remain low compared with scheme card fraud. Cheque fraud declined by 14 per cent in 2014, to \$6 million.

**Graph 8**  
**Fraud on Cheque and Card Transactions**  
Calendar year



**Table 3: Fraud Losses by Transaction Type**  
\$ million

	2013	2014
All instruments	348	450
Cheques	7	6
All cards	341	444
eftpos and ATM transactions	18	23
Scheme debit, credit and charge cards	322	421
<i>Australian cards used in Australia</i>	124	132
Card present	38	33
Card not present	86	99
<i>Australian cards used overseas</i>	149	232
Card present	25	31
Card not present	125	201
<i>Foreign cards used in Australia</i>	50	57
Card present	16	13
Card not present	34	45

Source: APCA, RBA

<sup>4</sup> Fraud statistics for 'scheme' debit, credit and charge cards include transactions through the international card schemes – MasterCard, Visa, American Express, Diners Club and JCB.

The increase in scheme card fraud was driven by a 61 per cent increase in losses associated with Australian cards being used to make fraudulent purchases overseas in a card-not-present (CNP) environment (i.e. online, via telephone or via mail). CNP fraud losses on foreign cards used in Australia increased by around a third, while there was a smaller increase in solely domestic CNP fraud. Total CNP fraud losses amounted to \$345 million in 2014, accounting for over 80 per cent of all losses covered by APCA's collection.

In contrast to the large increases in CNP fraud, in 2014 there was a slight fall in losses relating to fraudulent card-present transactions on scheme cards. This reflected a decrease in fraudulent transactions acquired in Australia (on both Australian and international cards), offset by an increase in fraud on transactions acquired overseas.

As discussed above, during 2014/15 the Australian payments industry completed an initiative to phase out signature authorisation for most types of card-present transactions. This is expected to reduce domestic card-present fraud further. The Board observes that good progress has been made on addressing card-present fraud and encourages the industry to now turn its attention to addressing the growth of CNP fraud.

Fraud losses relating to eftpos and ATM transactions increased from \$18 million to \$23 million in 2014, largely reflecting an increase in counterfeit/skimming fraud. The ongoing rollout of the EMV chip standard at ATMs is designed to reduce counterfeiting activity in future.



# Retail Payments Policy and Research

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 has included an ongoing review of the regulatory framework for card payments and changes to access regimes for card systems. Research includes work related to digital currencies and a study into payments costs.

## Review of Card Payments Regulation

In March 2015, the Reserve Bank commenced a review of the regulatory framework for card payments with the release of an issues paper, *Review of Card Payments Regulation*. A number of factors suggested that it was timely for the Board to review the regulatory arrangements for card payment systems, including aspects of the interchange fee system and surcharging practices that had raised concerns over recent years. The Financial System Inquiry (FSI) Final Report, which was released in December 2014, also made recommendations relevant to the Bank and its regulation of card payments.

The Bank indicated that it would be conducting a review nearly a year ahead of the release of the issues paper. In March 2014, its submission to the FSI noted that it would be reviewing aspects of the operation of the credit and debit interchange systems, and that it would also be reviewing the issuance of American Express companion cards by financial institutions and considering whether some change to the regulatory treatment of these cards (or those of any other scheme not currently designated) might be warranted. It also indicated that it would consider issues relating to surcharging.

The issues paper sought the views of stakeholders on a broad range of topics, noting that there were

linkages between the different elements and that it would be important to take a holistic view of issues in the cards payment system. These topics included:

- the decline in transparency for some end users of the card systems, partly due to the increased complexity and the wider range of interchange fee categories
- the possibility for interchange fees to fall further, consistent with falls in overall resource costs and as was contemplated in the conclusions to a previous review of card reforms, conducted over 2007–08
- the possibility of changes to the specification of interchange fee benchmarks, for example: replacing weighted-average interchange caps with hard caps; more frequent observance of benchmarks to reduce the upward drift in interchange rates; and broadening interchange caps to capture a wider range of payments between card schemes and card issuers
- widespread perceptions that card surcharges remain excessive in some industries
- perceptions that the growth of companion card arrangements may indicate that the current regulatory system is not fully competitively neutral
- the potential need to clarify arrangements for cards offering access to more than one payment network (whether presented

physically or virtually via a wallet application) and more broadly for competing payment options in a single device or application.

The Bank received over 40 submissions in response to the issues paper and has consulted with a wide range of interested parties. Having received feedback via this process, the Board will consider the possible designation of some payment systems and whether to consult on specific changes to the regulatory framework.

## Review of Card System Access Regimes

There have recently been two significant changes to the Access Regimes applying to card systems.

The Access Regimes applying to the MasterCard and Visa credit card systems and the Visa Debit system were varied effective from 1 January 2015, along with corresponding changes to the Banking Regulations. The changes are deregulatory in nature, giving the card systems greater flexibility to expand membership beyond existing participants. The Access Regimes were originally put in place to address concerns that the restrictive membership rules in place at the time did not strike the right balance between allowing new participants in those systems and controlling risks. However, following changes to the ownership of the schemes the Board judged that the schemes are likely to be more open to new types of participation, while the emergence of new business models is creating stronger interest in direct membership. Given these developments, the requirements of the Access Regimes might have been constraining new entry. Following changes to the Access Regimes, MasterCard and Visa have published Assessment Criteria on their websites for potential applicants seeking access to their respective systems, as required under the varied regimes. They are also required to report annually to the Bank on applications to participate received, new participants accepted and the reasons for any rejections. Although the revised access regimes

have been operating for only just over half a year, the indications are that the expanded scope for new participants in the schemes appears to be working effectively, with a number of new participants admitted.

In addition, effective 1 September 2015, the Board has revoked the eftpos Access Regime. This was put in place in 2006 to ensure appropriate and effective access under the bilaterally negotiated connection arrangements that existed at the time. In November 2012, the Board had concluded that the eftpos Access Regime could be revoked once eftpos Payments Australia Limited had established suitable centrally determined access arrangements. With the implementation of the eftpos hub, prospective participants in the system will be able to gain access on common terms, via a single connection, avoiding the need to establish a series of bilateral connections. In February 2015, the Board determined that the suitable access arrangements were likely to have been achieved when three out of the four major banks had connected to the eftpos hub. With this condition met in August, the Board took the formal decision to revoke the Access Regime at its August meeting.

## Digital Currencies

The Board and the Reserve Bank monitor developments in payments technology; notable among these in recent years has been the emergence of 'digital currencies' and 'distributed ledger' technology. A 'digital currency' is a digital representation of value that is able to be used as a medium of exchange, designed to replicate some of the features of cash, but in an electronic form. The most prominent of these is Bitcoin, although there are hundreds of other implementations of the concept. Most digital currency transactions occur via changes in a distributed ledger. Rather than there being a central trusted entity to control a single version of an electronic ledger recording ownership of assets, the ledger is decentralised and replicated across all (or a majority of) participants

in the network, with protocols established to determine how changes to the ledger occur and how these are validated. Alongside the development of digital currencies and their associated ledgers has been the growth of digital currency intermediaries that offer various services to end users. These services may include 'digital wallets', enabling access to and storage of digital currency units, as well as exchange facilities to convert sovereign currencies into digital currencies and vice-versa.

In November 2014, the Bank made a submission to the Senate Economic References Committee Inquiry into Digital Currency.<sup>5</sup> The submission outlined the key features of digital currencies and noted that the concept of a decentralised ledger represented an innovation with potentially broad applications for a modern economy. The submission noted that while digital currencies are currently used – to a limited extent – as a means of payment, they tend not to be widely held as a store of value and are almost never used as a unit of account. The submission stated that, while the Bank would continue to monitor digital currencies, currently they did not appear to present any issues for the Bank to address from a payments system, monetary policy or financial stability perspective.

Bank staff have liaised with counterparts in other organisations domestically and internationally on digital currency issues and have also met with a range of entities in the 'fintech' sector. In its submission to the Senate Committee, the Bank observed that the international character of digital currency systems might mean that regulatory action, if required, might need to be suitably coordinated. It noted that from a payments perspective one vehicle for such coordination would be through the Committee on Payments and Market Infrastructure at the Bank for International

Settlements, of which the Bank is a member (see 'Liaison Activity').

## 2014 Payment Costs Study

In 2014, the Reserve Bank conducted a comprehensive study of the costs borne by merchants, financial institutions and individuals in the use of different payment methods.<sup>6</sup> This study updated and extended similar work previously undertaken as part of the 2007/08 review of the Bank's payment system reforms.<sup>7</sup>

The Bank considered it timely to conduct this study given the significant changes in the Australian payments landscape over recent years. These include changes in technology, payments functionality, issuing arrangements and patterns of use and pricing of payment methods. The information collected enables the Bank to better understand how the costs of different payment methods have changed since 2007, thereby enhancing the Bank's analysis of retail payments issues. It also provides benchmarks against which financial institutions and merchants can compare their own cost structures and may help promote public understanding of the costs associated with different payment methods.

To conduct the study, detailed cost data were collected from 16 financial institutions and from 17 large merchants and billers. In addition, the study separately surveyed 260 small- and medium-sized merchants to provide information about how the costs borne by smaller merchants differ from those borne by larger merchants. In aggregate, the study captured data from the vast majority of transaction and credit card accounts in Australia and a significant proportion of retail sales and billing activity during 2013.

5 See RBA (2014), Submission to the Inquiry into Digital Currency, Submission to the Senate Economics References Committee, November. Available at <<http://www.rba.gov.au/publications/submissions/inquiry-digital-currency-2014-11.pdf>>.

6 See Stewart *et al* (2014), 'The Evolution of Payment Costs in Australia', RBA Research Discussion Paper No 2014-14. Available at <<http://www.rba.gov.au/publications/rdp/2014/2014-14.html>>.

7 See Schwartz *et al* (2007), 'Payment Costs in Australia', available at <<http://www.rba.gov.au/payments-system/resources/publications/payments-au/paymts-sys-rev-conf/2007/7-payment-costs.pdf>>.

The results suggest that the 'resource costs' of the payments system (the economic costs incurred by participants to 'produce' payments) have fallen as a percentage of GDP since 2006, from around 0.80 per cent to 0.54 per cent. This primarily reflects a fall in per transaction costs across most payment methods. Financial institutions incur the majority (two-thirds) of resource costs, with the remainder incurred by merchants.

On a per transaction basis, direct debit remains the lowest-cost payment instrument, while cheques remain the most expensive. At the point of sale, payments using cash, eftpos and contactless MasterCard and Visa debit cards have broadly similar costs for transactions under about \$20; above \$20, eftpos is the lowest-cost payment method. The study also revealed that the resource costs associated with card payments have changed with the advent of contactless payments, mainly reflecting shorter tender times. Contactless card payments are estimated to incur 10 to 20 per cent lower resource costs than a comparable contact-based card transaction.

The relationship between resource and 'private costs' (where fees and other transfers between sectors are included) varies significantly across instruments. The greater share of private costs is borne by merchants, who typically pay a net transfer to the financial sector (for example, via a merchant service fee) to use payment services, although these costs are generally passed on to consumers either in the prices of goods and services or via a surcharge. Where a surcharge is not applied, typically only a small proportion of the payment cost is explicit to the consumer. Further, consumers face a similar explicit cost for credit card payments and debit card payments despite the higher cost of credit cards to the economy. Although consumers pay fees to hold credit cards, they also receive significant incentives to use them to make purchases, owing to the provision of rewards points and an interest-free period.

Finally, the study suggests that small businesses incur higher payment costs than large merchants. In part, this is because smaller merchants do not benefit from the economies of scale that can be achieved by large merchants due to their larger payment volumes. In addition, merchant service fees are higher for small businesses.

## Operational Incidents in Retail Payment Systems

In November 2012, the Reserve Bank published a report setting out the Board's conclusions from an informal consultation on operational incidents in retail payment systems. The report concluded that, at least for the time being, the Bank's role should be limited to monitoring retail operational incidents and collecting related data. In support of this role, from February 2012 the Bank has required Exchange Settlement Account holders to report significant retail payment incidents. To supplement this, from late 2013 the Bank commenced collecting quarterly statistics on all retail payment incidents. The Bank has also collected additional information on the system architecture supporting participants' retail payment activities to assist in its review of incident reports.

Over 2014/15, the Board was kept informed of significant incidents and trends both within and between institutions. The data collected to date confirm some of the findings in the November 2012 report. A large proportion of significant incidents over the past year were caused by changes or upgrades to existing systems, with software/application failures also an important root cause of incidents. The channel most affected by significant incidents was online banking. However, emerging payment channels (e.g. mobile banking and payments) were also increasingly impacted by such incidents.

Since reporting began, the Bank has provided aggregate statistics to the Australian Payments Clearing Association (APCA) for review by the APCA

Board. The Bank and APCA are in discussion on how aggregate information could be disclosed to industry participants. Such data could potentially be used for performance benchmarking.

## International Developments

In the past 12 months, a number of jurisdictions have seen initiatives focused on improving efficiency and competition in card payments through card regulation and improved regulatory frameworks. The trend towards speeding up retail payments through the introduction of new 'fast payment systems' also continues to gain momentum.

### Card regulation

Several jurisdictions have sought to impose regulatory constraints on interchange fees, though at quite different levels. In Europe, new interchange fee regulation imposes a hard cap on credit card interchange fees of 30 basis points and a hard cap on debit interchange fees of 20 basis points. The interchange caps are scheduled to take effect from December 2015, although there is some flexibility for member states around the phasing in of the debit card cap. The new regulations also prohibit scheme rules that prevent merchants from steering customers towards a preferred payment method and rules that limit the choice of consumers and merchants in selecting the network they want to process a transaction.

In Canada, Visa and MasterCard agreed to enter into voluntary undertakings to reduce interchange fees for credit card transactions to a weighted average of 1.50 per cent of transaction value for the next five years. Previously the average interchange rates for Visa and MasterCard were 1.61 per cent and 1.74 per cent respectively. Interchange fee regulation was also introduced in Malaysia and South Africa over the past year. The Malaysian regulation caps debit interchange fees at a weighted average of 0.21 per cent of transaction value, and credit interchange at a weighted average of 1.10 per cent of transaction

value. The South African regulation sets interchange fees based on the level of security measures employed by each side of the transaction, with fees ranging from 1.41 to 1.89 per cent of transaction value for credit and 0.36 and 0.53 per cent for debit.

### Regulatory frameworks

The United Kingdom's (UK) new Payment Systems Regulator (PSR) commenced full operation on 1 April 2015. Prior to this, two initial streams of work were undertaken. The PSR conducted a consultation outlining its proposed approach to regulating the UK's payment systems and seeking views from the industry on how to implement that approach. Separately, Her Majesty's Treasury (HM Treasury) conducted a consultation on the systems to be 'designated' to come under PSR oversight, and subsequently designated a range of retail payment systems, including the Faster Payments system, the ATM system and the Visa and MasterCard systems. The PSR has released a number of binding directions to interbank payment system operators on measures to improve governance and access, particularly to improve the representation of end-users' interests at the decision-making levels of payment system operators. It also announced that it will conduct market reviews into the ownership of payments infrastructure, and the current arrangements by which smaller payment providers gain indirect access to payment systems via the large banks. Finally, the PSR anticipates working with industry to establish a 'Payments Strategy Forum'.

In April 2015, the Canadian Government announced updates to the voluntary code of conduct governing credit and debit card payments in Canada. In addition to making the code of conduct applicable to payments made on mobile devices, the updates aim to improve transparency for merchants and consumers. For example, merchants must be informed of any changes to interchange rates and able to terminate a contract without penalty following such a change. Branding requirements will require that premium cards



are more easily identifiable to merchants, while card issuers must inform consumers applying for premium cards that those cards can result in higher fees to merchants.

### Fast payments

The trend towards payment options that allow end users to make real-time payments from any bank account to any other bank account continues to gain momentum. In the past year Denmark's banks launched a fast payment system known as RealTime 24/7 and the Dutch Payments Association announced plans to develop a fast payment system, which is expected to be operational by 2019. Following the release of its report, *Strategies for Improving the U.S. Payment System*, the Federal Reserve convened a taskforce on faster payments in April 2015 with the aim of advancing the industry towards a ubiquitous, safe and fast electronic solution for making a variety of business and consumer payments.

### Digital currencies

Governments and central banks around the world continue to monitor digital currency developments. In the UK, HM Treasury commenced a consultation on digital currencies in September 2014. Among the findings in its March 2015 report, it observed that digital currencies could be useful in facilitating micropayments and cross-border transactions. However, the report noted that there are anti-money laundering (AML) concerns with the technology. The UK Government has since said it will look to conduct a full consultation on how to apply AML legislation to digital currencies.

In Europe, the European Central Bank has highlighted similar potential for digital currencies in payments, but added that they were 'inherently unstable'. The European Banking Authority (EBA) released a report in July 2014 suggesting that the benefits stemming from digital currencies were small given the existing and pending European Union initiatives aimed at improving transaction speeds and costs. The report also noted a range of risks associated with the use of digital currencies, including AML and financial security concerns. More recently, EBA released another report highlighting four possible scenarios for use of digital currencies: foreign exchange and remittance; real-time payments; documentary trade; and asset servicing.

Developments in North America have been more directly focused on regulation. In the United States, the New York Department of Financial Services released its 'BitLicense' regulations in June. Under the regulation, digital currency businesses had 45 days to apply for a licence if they wished to offer digital currency services in New York. The regulation is aimed at protecting consumers as well as guarding against money laundering. Licensees will have to keep track of the identities of the parties to all the digital currency transactions they handle.

A Canadian senate committee released its digital currency inquiry report in June. It suggests that the government adopt a 'light touch' regulatory framework around AML and counter-terrorism financing concerns to create an environment in which digital currency technologies can grow.

# Strategic Review of Innovation

The Payments System Board has taken an active interest in innovation in the payments system and industry governance. The past year has seen the signing of the contract for development of the New Payments Platform as well as the formation of the Australian Payments Council and Payments Consultation Group.

The past year has seen considerable further progress following up on the Board's June 2012 *Conclusions to the Strategic Review of Innovation in the Payments System*. The Review concluded that removing some of the barriers to cooperative innovation had the potential to deliver significant public benefits over time. To enhance cooperative outcomes, the Board outlined two broad initiatives: it would periodically set out strategic objectives for the payments system and it would look to establish a more direct dialogue with industry.

## New Payments Platform

The Board's conclusions provided an initial set of strategic objectives and invited the industry to respond. The objectives included the ability: to make and receive real-time retail payments; to make and receive payments outside normal banking hours; to send more explanatory information with a payment; and to send payments without having to use full Bank State Branch (BSB) and account number details. The industry-coordinated response proposed that these objectives should be addressed via a purpose-built payments infrastructure, the New Payments Platform (NPP).

In December 2014, a consortium of 12 Australian financial institutions announced that they had committed to funding the building and operation

of the NPP. Development of the NPP is progressing well and remains on track to move from the design to the build phase of development in the second half of 2015. To support the new infrastructure, the Reserve Bank is building a Fast Settlement Service (FSS) to settle NPP payments individually in real time; development of the FSS is also progressing to timetable. The NPP is scheduled to be operational in 2017.

The NPP is a major undertaking for the industry and is attracting significant interest from other jurisdictions that are also looking to upgrade their payments infrastructure to bring about real-time payments. Progress in the NPP has been assisted by a willingness on the part of participants to allocate resources to the program and by high levels of collaboration from all parties. The Board welcomes the significant progress to date and looks forward to the industry's continued collaboration in delivering this new payments infrastructure.

## Industry and End-user Dialogue

### Australian Payments Council

The formation of a new payments industry coordination body, the Australian Payments Council, was announced in August 2014. The Council was established to foster the ongoing

development of the Australian payments system. The work of the Council is intended to complement the oversight of the payments system by the Board and to facilitate dialogue between the Board and industry.

The Council, which held its first meeting in October 2014, is comprised of an independent chair and senior executives drawn from a broad community of payments organisations, including financial institutions, card schemes, retail acquirers and other payment service providers, as well as the Australian Payments Clearing Association and the Reserve Bank (in its role as provider of banking services to the government). In conjunction with the establishment of the Council, a new Payments Community was established to ensure the free flow of information between the Council and the broader industry. Membership of the Payments Community is open to any organisation with a significant interest in the Australian payments system. The Board looks forward to a productive relationship with the Council in the years to come.

## Payments Consultation Group

Because its focus is on industry coordination, the Council does not include end-users as members. With this in mind, the Reserve Bank established the Payments Consultation Group in December 2014, 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 payments policy formulation process. The Payments Consultation Group will help to ensure that the Board is well informed of end-user needs and views in its interactions with the Council and in its other policy work. The group met twice in 2014/15. The Board appreciates the willingness of participants to engage in this process.

# Oversight of High-value Payment Systems

The Payments System Board oversees Australia's systemically important payment systems, most notably Australia's real-time gross settlement system, the Reserve Bank Information and Transfer System.

An important part of the Payments System Board's responsibility for the safety and stability of payment systems in Australia is the oversight of systemically important payment systems.<sup>8</sup>

To date, two payment systems have been identified by the Bank as systemically important: the Reserve Bank Information and Transfer System (RITS) and CLS Bank International (CLS). Together, these

systems account for the majority of payments settled by value (Table 4).

The Bank has also identified SWIFT as a provider of critical services to both RITS and CLS, since both systems depend on SWIFT's communications platform and other services to process payments and exchange information with their participants.

**Table 4: Australian-dollar Payments**  
Gross daily averages, \$ billion<sup>(a)</sup>

	2011/12	2012/13	2013/14	2014/15
<b>Domestic</b>				
RITS	168.0	157.8	162.7	167.8
<i>SWIFT payments (HVCS)</i>	<i>106.0</i>	<i>97.1</i>	<i>100.5</i>	<i>103.8</i>
<i>Debt settlements (Austraclear)<sup>(b)</sup></i>	<i>50.0</i>	<i>48.5</i>	<i>50.3</i>	<i>52.0</i>
<i>RITS cash transfers</i>	<i>12.0</i>	<i>12.3</i>	<i>11.9</i>	<i>12.0</i>
Retail payment systems	59.1	59.7	61.9	62.5
Equity settlements <sup>(c)</sup>	4.7	4.2	4.0	4.4
Property settlements (PEXA)				0.03 <sup>(d)</sup>
<b>International</b>				
CLS	241.3	251.7	246.2	260.6

(a) Business days; includes payments between customers of the same financial institution

(b) Excludes intraday and open RBA repurchase agreements, and multilaterally netted interbank settlements arising from the retail payment systems and the equity market

(c) Gross value of equity trades

(d) Net double-sided value; includes data from 10 November 2014 to 30 June 2015; currently, only a small amount of property settlements by value occur in PEXA

Sources: ASX; CLS; RBA

<sup>8</sup> This role is described in detail in RBA (2013) *Self-assessment of the Reserve Bank of Australia – Systemically Important Payment Systems*, available at <<http://www.rba.gov.au/payments-system/policy-framework/principles-fmi/assessments/systemically-important/2013/pdf/2013-self-assess-sys-imp-pay-sys.pdf>>.

SWIFT also provides critical services to other financial market infrastructures (FMIs) and many other entities in the financial system.

## Reserve Bank Information and Transfer System

RITS is primarily a real-time gross settlement system, which settles transactions on an individual basis in real time across Exchange Settlement Accounts (ESAs) held at the Reserve Bank.<sup>9</sup> RITS is owned and operated by the Bank.

### Assessment against international standards

Day-to-day operations, liaison with participants, and the ongoing development of RITS are the responsibility of the Reserve Bank's Payments Settlements Department. Since it is not operated as a separate legal entity, the management and operation of RITS fall under the governance structure of the Bank and are therefore subject to its normal oversight, decision-making and audit processes. RITS is also subject to oversight by the Bank's Payments Policy Department, within the policy framework for which the Payments System Board has responsibility. A key part of the Board's oversight of RITS is the annual assessment of RITS against the *Principles for Financial Market Infrastructures* (PFMIs). The PFMIs were developed by the Committee on Payment and Settlement Systems (CPSS; now called the Committee on Payments and Market Infrastructures (CPMI)) and the International Organization of Securities Commissions (IOSCO) and published in 2012.

In its *2014 Assessment of RITS against the PFMIs* (2014 Assessment), published in December 2014, the Bank concluded that RITS observed all of the relevant principles.<sup>10</sup> The assessment noted a

number of changes that had occurred, consistent with commitments in the previous assessment to ensure that RITS operations continued to meet international best practice. These developments included the implementation of recommendations to improve the Bank's ability to identify and respond to system problems and a renewal of core elements of the technological infrastructure that supports RITS. Together, these changes have enhanced the performance and resilience of RITS and reduced the complexity of system maintenance. It was also noted that the Bank had finalised enhancements to its organisation-wide project and change-management practices.

The 2014 Assessment also made a number of recommendations consistent with the Bank's ongoing effort to ensure that the operation of RITS will continue to meet international best practice in the future. Two of these recommendations reiterate commitments to a comprehensive review of the RITS Regulations and continued monitoring of RITS participants' compliance with the new Business Continuity Standards. These commitments were previously made in the 2013 Assessment and work was ongoing as of the 2014 Assessment.

The 2014 Assessment also made two new recommendations in the area of operational risk:

- Recognising that cyber-related issues are emerging as a growing systemic threat, it was recommended that the Bank keep under continued review its approach to cyber security, and in particular its mechanisms for prevention and detection, and its plans to recover from a cyber-related incident.
- Furthermore, given recent international developments in the technology that supports business continuity arrangements, it was also recommended that the Bank examine the benefits, challenges and costs of implementing a range of measures that could further enhance the resilience of RITS and facilitate timely recovery.

<sup>9</sup> The Board has responsibility for the Bank's policy on access to ESAs. This policy is available at <<http://www.rba.gov.au/payments-system/esa/>>.

<sup>10</sup> The *2014 Assessment of the Reserve Bank Information and Transfer System* is available at <<http://www.rba.gov.au/payments-system/rits/self-assessments/2014/index.html>>.

## Fast Settlement Service

The Board maintains a close interest in material changes to the operational arrangements for RITS. As discussed in the chapter on 'Strategic Review of Innovation', the Fast Settlement Service (FSS) is being developed by the Reserve Bank to facilitate the final and irrevocable settlement of each individual payment arising in the New Payments Platform, 24 hours a day, 7 days a week.

The FSS will be a RITS service, owned and operated by the Bank. Accordingly, it is expected that direct users of the FSS will be RITS participants and as a result bound by the RITS Regulations. Although it is planned that the FSS will rely on part of the existing RITS infrastructure, the systems are expected to operate on separate technological platforms. This will allow the RITS core settlement service and the FSS to process and settle payments independently of one another.

Recognising the expected importance of the FSS in the payments system, the 2014 Assessment noted that it was being designed to meet standards in relation to availability, capacity and security that are equivalent to those of the core RITS service. Consequently, once the FSS is launched it is the Bank's intention that, to the extent that the FSS provided critical services, these would be assessed against the PFMI as part of the annual assessment of RITS.

## Property settlements

An important operational development in 2014/15 was the successful implementation of functionality in RITS to receive and settle payment instructions originating from a new national electronic conveyancing platform. This platform, which is owned and operated by Property Exchange Australia Ltd (PEXA), allows land registries, financial institutions, solicitors and conveyancers, and other industry participants to process and settle transactions in an efficient manner. Since property settlements tend to involve a number of linked transactions, these transactions are submitted by

PEXA to RITS as a batch for simultaneous settlement on a multilateral net basis. To minimise the interdependence between batches, the settlement of each batch is independent of other property settlement batches. Nonetheless, where there is interdependence between batches (e.g. if there is a chain of property settlements), PEXA manages the order and timing of these property settlements accordingly.

PEXA is available to use in New South Wales, Victoria and Western Australia and (for certain types of transactions) Queensland. The dates that PEXA will be released in the remaining states and territories are yet to be confirmed. The use of PEXA has grown gradually since its launch in November 2014, with the daily net value of transactions settled in RITS increasing to around \$62 million in June 2015.

## CLS Bank International

CLS is an international payment system that links the settlement of the two legs of a foreign exchange transaction. By operating such a payment-versus-payment settlement mechanism, CLS allows participants to mitigate foreign exchange settlement risk – the risk that one counterparty to a transaction settles its obligation in one currency, but the other counterparty does not settle its obligation in the other currency – in the 17 currencies that it settles.

CLS is regulated, supervised and overseen by the US Federal Reserve, in cooperation with an Oversight Committee that includes the Reserve Bank and the other central banks that issue CLS-settled currencies. Through this forum, the Bank contributes to the assessment of the ongoing adequacy and robustness of CLS's risk controls. The Bank also uses this forum to oversee how well CLS meets relevant international principles.

The Oversight Committee has monitored closely a number of developments in CLS during 2014/15. In December, CLS published a PFMI Disclosure Framework, which describes CLS's approach

to observing relevant Principles. CLS has also continued to make progress in expanding its service offerings. In particular, CLS has continued to make progress on plans to settle payments related to the initial and final leg of cross currency swaps, develop a settlement solution for centrally cleared foreign exchange products, and expand the range of currencies it settles. Regarding the latter, over the past 12 months CLS's primary focus has been on the Hungarian forint, which it intends to begin settling in November, subject to the relevant regulatory approvals. CLS has also announced it will collaborate with a third-party partner – TriOptima – to develop a compression service for FX forwards. It has also continued to develop enhancements to its framework for the management of liquidity risk.

## SWIFT

While SWIFT is not a payment system, it provides critical communications services to both RITS and CLS, as well as other FMIs and market participants in Australia and overseas. Consequently, the Reserve Bank participates in international cooperative arrangements that facilitate oversight of SWIFT.

SWIFT is primarily overseen by the SWIFT Oversight Group (OG), of which the G10 central banks are members. Since SWIFT is incorporated in Belgium, the OG is chaired by the National Bank of Belgium. The Reserve Bank is a member of the SWIFT Oversight Forum, a separate group which facilitates information-sharing and dialogue on oversight matters among a broader set of central banks and offers these central banks an opportunity to provide input into the setting of the OG's oversight priorities. 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 2014/15, the OG closely monitored developments in SWIFT. As in the previous year, one of the OG's main focuses was SWIFT's project to renew its core messaging application, FIN. This project is expected to extend into 2016. The OG also monitored closely SWIFT's framework to mitigate cyber attacks.

# Supervision of Clearing and Settlement Facilities

The Reserve Bank holds powers related to the supervision and oversight of clearing and settlement facilities and sets regulatory priorities for each facility. Currently, four domestic clearing and settlement facility licensees and two offshore licensees are required to meet Financial Stability Standards set by the Bank.

## Overview

The *Corporations Act 2001* assigns to the Reserve Bank a number of powers and functions related to the supervision and oversight of clearing and settlement (CS) facilities. Under the *Reserve Bank Act 1959*, the Payments System Board is responsible for ensuring that these powers and functions are exercised in a way that ‘will best contribute to the overall stability of the financial system’.

Under the Corporations Act, CS facility licensees that operate in Australia are required to comply with the Financial Stability Standards (the Standards) set by the Bank and to do all other things necessary to reduce systemic risk.

Four domestic CS facility licensees, all part of ASX Group, and two offshore licensees are currently required to meet the Standards:<sup>11</sup>

- ASX Clear Pty Limited (ASX Clear) provides central counterparty (CCP) services for ASX-quoted cash equities, debt products and warrants traded on the Australian Securities Exchange (ASX) and Chi-X Australia markets, and equity-related derivatives traded on the ASX market.
- ASX Clear (Futures) Pty Limited (ASX Clear (Futures)) provides CCP services for futures

and options on interest rate, equity, energy and commodity products, as well as Australian dollar-denominated over-the-counter (OTC) interest rate derivatives (IRD).

- ASX Settlement Pty Limited (ASX Settlement) provides securities settlement facility (SSF) services for ASX-quoted cash equities, debt products and warrants traded on the ASX and Chi-X markets; ASX Settlement also provides SSF services for non-ASX listed securities quoted on the National Stock Exchange of Australia and Asia Pacific Stock Exchange.
- Austraclear Limited (Austraclear) provides SSF services for trades in debt securities, including government bonds and repurchase agreements.
- LCH.Clearnet Limited (LCH.C Ltd) provides CCP services for OTC IRD and is licensed to clear trades executed on the Financial and Energy Exchange derivatives market when this becomes operational. LCH.C Ltd was granted a variation to its Australian CS facility licence to permit it to offer clearing services for inflation rate derivatives to its Australian clearing participants through the SwapClear service in July 2015.
- Chicago Mercantile Exchange Inc. (CME) is licensed to provide CCP services for OTC IRD, and non-Australian dollar-denominated IRD traded on the CME market or the Chicago Board of Trade market for which CME permits portfolio margining with OTC IRD.

<sup>11</sup> In addition, IMB Limited, a building society, operates a market for trading in its own shares by its members, and an associated securities settlement facility (SSF) to settle these trades. IMB Limited's SSF is currently exempt from the the Standards owing to its small size.



While supervision and oversight is ongoing throughout the year, the Bank also carries out and publishes formal assessments of CS facility licensees' compliance with the Standards. Under the Bank's policy on the *Frequency of Regulatory Assessments of Licensed Clearing and Settlement Facilities*, the frequency of assessments is determined with reference to the systemic importance of a CS facility to the Australian financial system and the strength of a CS facility's domestic connection. In accordance with this policy, the Bank has committed to conducting annual assessments of the ASX CS facilities and LCH.C Ltd's SwapClear service, while, based on its current activity, assessments of CME will be carried out less frequently. These assessments establish recommendations and regulatory priorities for each CS facility. During the year, Bank staff have monitored each CS facility's progress towards meeting these priorities, reporting quarterly to the Bank's Financial Market Infrastructures (FMIs) Oversight Committee and, as appropriate, the Board.

This chapter summarises the Bank's 2014/15 regulatory priorities for each facility. The chapter also summarises activity since mid 2014 for all six CS facilities, as well as other material developments, including each facility's progress towards meeting the stated regulatory priorities.<sup>12</sup>

## Domestic Clearing and Settlement Facilities

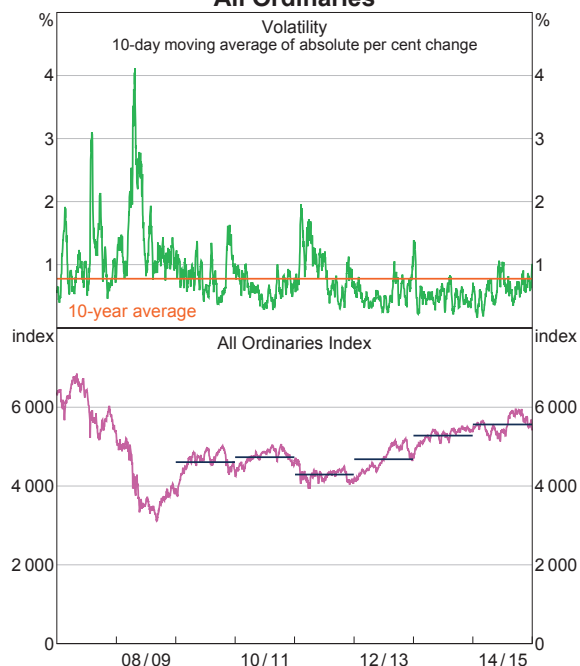
### Activity in the domestic CS facilities

In 2014/15, average price volatility in the markets cleared and settled by the ASX CS facilities was generally below the 10-year average (which includes spikes in volatility associated with the global financial crisis). There were increases in the volume of trading of cash equities cleared by ASX Clear and in the main futures contracts cleared by ASX Clear (Futures), and a significant increase in the notional value of OTC IRD cleared by ASX Clear (Futures). In

contrast, the volume of trades in equity options continued to decline. The daily average value of debt securities settled in Austraclear also declined compared with the previous year.

The average volatility in equity prices, as measured by the average of absolute daily percentage changes in the S&P ASX All Ordinaries Index, was 0.6 per cent in 2014/15 (Graph 9). Although volatility picked up modestly from the previous year, it remained below the 10-year average for much of 2014/15. These developments are broadly in line with trends in major international equity markets (Graph 10).

**Graph 9**  
**All Ordinaries**

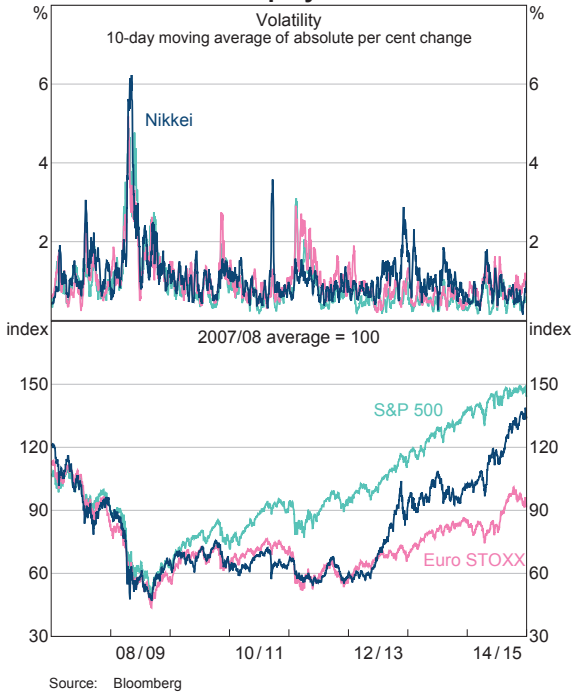


Source: Bloomberg

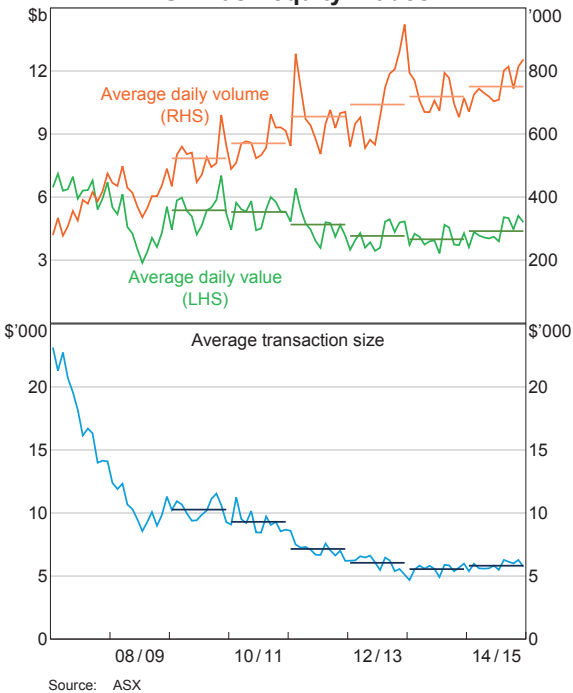
The daily average value and volume of cash equity trades increased by 10 per cent and 4 per cent, respectively, in 2014/15 (Graph 11). Following a run of years in which the average transaction size has fallen (a trend associated with the growth in algorithmic trading), average size rose by 5 per cent in 2014/15.

<sup>12</sup> Further detail can be found in the Bank's published Assessments of the ASX facilities, the LCH.C Ltd SwapClear facility and CME, available at <<http://www.rba.gov.au/payments-system/index.html>>.

**Graph 10**  
**Global Equity Markets**



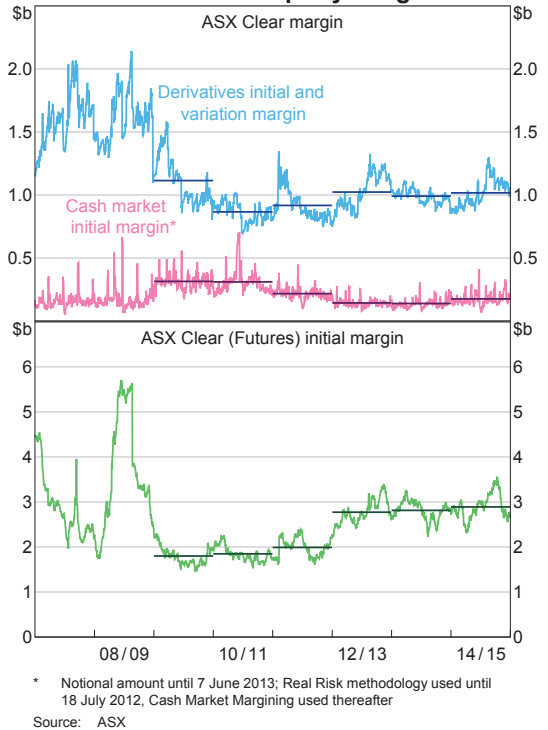
**Graph 11**  
**ASX Cash-equity Trades**



In line with the increase in trading activity, average daily initial margin held by ASX Clear against unsettled cash equity transactions increased by 27 per cent during 2014/15 (Graph 12, top panel).

The daily average value of cash equity settlements in ASX Settlement increased by 3 per cent in 2014/15 to \$8.5 billion; trends in net settlement values can deviate from trends in gross trading values, since the latter do not include non-market transactions and netting efficiency can change over time. The average daily value of debt securities settled in Austraclear decreased by around 1 per cent, to \$40 billion. This includes the value of securities under repurchase agreements (other than intraday repurchase agreements with the Bank).

**Graph 12**  
**Central Counterparty Margins**

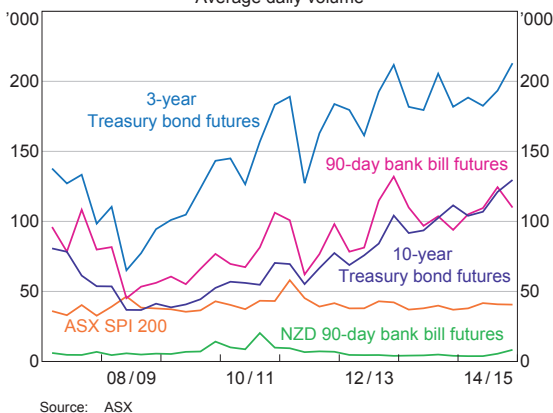


The average daily number of equity options contracts traded on the ASX market continued to decline in 2014/15, falling by 4 per cent. In response to these declining volumes, ASX has continued to implement changes in the exchange-traded

options market, in consultation with an advisory panel comprising participants and end users. These changes are aimed at tailoring the scope of ASX's equity options to market demand by consolidating inactive listings and providing more flexible alternatives, for example by broadening the range of exchange-traded option products and offering central clearing of OTC equity options. Average daily margin held by ASX Clear against equity derivatives was 3 per cent higher in 2014/15, with lower open interest at least partly offset by an increase in volatility (Graph 12, top panel).

The average daily trading volume on the ASX 24 market, by contrast, increased by 7 per cent in 2014/15, to around 490 000 trades per day (Graph 13). This was driven by increases in the average turnover of 10-year Treasury bond futures (up 16 per cent) and 90-day bank bill futures (up 11 per cent). Daily average volumes for SPI 200 equity index futures increased by around 6 per cent, while trading of 3-year Treasury bond futures increased by around 4 per cent compared with 2013/14. Traded volumes in the most actively traded New Zealand dollar contract (90-day bank bill futures) increased by around 20 per cent compared with 2013/14. Overall positions in New Zealand dollar futures, together with agricultural and energy contracts, remained small relative to positions in the four major contracts.

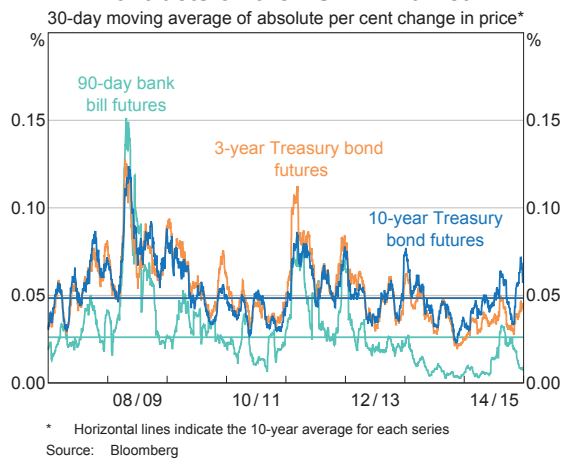
**Graph 13**  
**ASX 24 Derivatives Trades**  
Average daily volume



Source: ASX

Average daily initial margin held by ASX Clear (Futures) rose by 3 per cent in 2014/15 (Graph 12, bottom panel). This is consistent with increases in the margin rate for the SPI 200 contract, associated with increased volatility in equity prices, as well as an increase in participants' open positions. Volatility in interest rate futures prices on the ASX 24 market also picked up slightly over 2014/15, albeit from a relatively low base (Graph 14).

**Graph 14**  
**Volatility of Interest Rate**  
**Contracts on the ASX 24 Market**



\* Horizontal lines indicate the 10-year average for each series  
Source: Bloomberg

There was also a significant increase in initial margin held against OTC IRD positions, although this remains small relative to overall margin held by ASX Clear (Futures). The notional value outstanding of OTC IRD positions increased to \$441 billion during 2014/15, from \$124 billion at the end of June 2014. ASX Clear (Futures) currently has eight OTC derivatives clearing participants, although some of these have only recently begun actively clearing OTC derivatives trades via ASX Clear (Futures).

### 2014/15 Assessment of ASX CS Facilities

In August 2014, the Board approved the publication of the Reserve Bank's 2013/14 Assessment of the four licensed ASX CS facilities.<sup>13</sup> This Assessment,

<sup>13</sup> The Bank's 2013/14 Assessment of the ASX CS Facilities is available at <<http://www.rba.gov.au/payments-system/clearing-settlement/assessments/2013-2014/index.html>>.

published in September 2014, concluded that all four ASX facilities either observed or broadly observed the relevant standards in the Assessment period. The Assessment identified a number of recommended actions and noted other matters that the Bank would follow up with ASX. Together, these formed the Bank's regulatory priorities for the 2014/15 assessment period. The key priorities and steps taken by ASX to address these are set out below, together with other material developments discussed in the Bank's 2014/15 Assessment of the ASX CS facilities, which was published in September 2015.<sup>14</sup>

### Model validation and stress testing

In its 2013/14 Assessment, the Bank noted a number of enhancements made by ASX to its model validation framework, including enhancements to the backtesting and sensitivity analysis of its margin models, as well as the introduction of reverse stress testing.<sup>15</sup> The Bank recommended that ASX further refine and integrate model validation into its risk management framework. This included the engagement of an external expert to undertake a comprehensive validation of all key risk models. The external validations of credit and liquidity stress-testing models, as well as margin models for exchange-traded and OTC derivatives, were completed during the 2014/15 assessment period. ASX's response to the credit stress-testing validation formed a key focus for the Bank's 2014/15 Assessment. ASX implemented a series of enhancements to its stress-testing models in July 2015, while a second phase of enhancements will be implemented over time. The Bank will continue to work with ASX on the implementation of this second phase during the 2015/16 assessment period; this will be partly informed by the outcomes

of work on stress testing by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) (see 'Liaison Activity').

### Recovery planning

In order to meet emerging international standards, the Bank's 2013/14 Assessment recommended that ASX take steps to enhance the recovery plans of its CS facilities; that is, their arrangements to return to viability in the event of an extreme financial shock. The recommendation noted that ASX should develop its recovery arrangements with regard to forthcoming CPMI-IOSCO guidance, which was ultimately published in October 2014.<sup>16</sup> In response, in late 2014 and early 2015, ASX consulted on changes to its CCPs' Operating Rules to enhance their ability to address fully any uncovered credit losses, restore a matched book and replenish financial resources following a participant default, as well as meet any liquidity shortfall and address non-default related losses.<sup>17</sup> The Bank has worked closely with ASX in the development of its enhanced recovery arrangements, which are due to come into effect in October 2015. The Bank has recommended further enhancements to ASX's replenishment arrangements and will continue to discuss these with ASX over the 2015/16 assessment period.

### Investment risks

The Reserve Bank has engaged with ASX over the past year on changes to its policy governing the treasury investments of its CCPs, to address the concern that the ASX CCPs' treasury investment policy allowed relatively large and concentrated unsecured exposures to a small number of

14 The Bank's 2014/15 Assessment of the ASX CS Facilities is available at <<http://www.rba.gov.au/payments-system/clearing-settlement/assessments/2014-2015/index.html>>.

15 ASX's reverse stress tests build on the standard stress-testing approach of the CCPs to examine scenarios under which prefunded financial resources would be exhausted. In particular, in its reverse stress tests, ASX considers more extreme market price assumptions, and allows the number of defaulting participants and the size of participant positions to vary.

16 See CPMI-IOSCO (2014) *Recovery of Financial Market Infrastructures*, available at <<http://www.bis.org/cpmi/publ/d121.htm>>.

17 A CCP generally operates with a matched book – any long trades that it clears correspond to offsetting short trades, ensuring that it is not exposed to market risk. The default of a participant alters this balance, exposing the CCP to potential loss until the CCP can successfully close out the defaulted participant's trades. If normal closeout processes fail, a CCP may need alternative tools to restore a matched book, such as the ability to terminate contracts with non-defaulting participants.

domestic banks. While ASX had already taken initial steps to address this issue prior to 2014/15, ASX has now endorsed further staged revisions to its treasury investment policy designed to meet the Bank's expectations for the credit and liquidity risk profile of ASX treasury investments by end 2016/17. Individual unsecured exposures to non-government related issuers or counterparties would be limited to the level of business risk capital held across the two CCPs (currently \$75 million), meaning that ASX could absorb losses arising from the default of any single investment counterparty or issuer. In the unlikely event that further losses arose (for example, due to the default of more than one investment counterparty), ASX's enhanced recovery arrangements provide for the allocation of these losses to participants (see above).

### Cyber resilience

The Bank noted in its 2013/14 Assessment the increasing focus, both internationally and domestically, on the cyber resilience practices of FMIs and other key participants in the financial system. Given the highly disruptive impact that could result from an interruption to critical clearing and settlement services or a degradation of data integrity at an FMI, the Bank has continued a dialogue with ASX on cyber resilience matters during the 2014/15 assessment period, in collaboration with Australian Securities and Investments Commission (ASIC). As part of this, the Bank requested that ASX carry out a self-assessment against the United States National Institute of Standards and Technology (NIST) Cybersecurity Framework.<sup>18</sup> This high-level self-assessment concluded that ASX's cyber security practices generally aligned with the upper tier of maturity levels described under the framework. CPMI and IOSCO are in the process of developing guidance on cyber resilience practices for FMIs, which will inform the Bank's future engagement with ASX on this issue.

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<sup>18</sup> The NIST Cybersecurity Framework is used widely by critical infrastructure providers and other organisations in a number of jurisdictions internationally.

### Other material developments

In addition to matters arising from recommendations and priorities arising in the Bank's 2013/14 Assessment, there were a number of additional material developments during the period. Perhaps the most significant of these was ASX Clear's management of the default of the broker, BBY Limited (BBY).

#### Default management

In May 2015, ASX Clear employed its default management procedures to address the appointment of an external administrator to a participant, BBY. Earlier in the month, BBY had been unable to meet a margin call triggered by a downward restatement of its capital position.<sup>19</sup> ASX did not declare an immediate default, instead taking steps to limit ASX Clear's immediate exposure to BBY and engaging with the participant on a plan to achieve an orderly exit from its derivatives clearing business. BBY was placed into voluntary administration a little under two weeks later, activating ASX Clear's default management process. ASX managed BBY's default through a combination of client transfers and the close out of remaining positions. Overall, the close out proceeded without any evident market impact and all losses arising from the close-out process were sufficiently covered by margin held by ASX. The default management process nevertheless highlighted several matters relevant to ASX's risk management and default management arrangements that are worthy of further consideration. The Bank has encouraged ASX to complete its review of experiences gained from the BBY default, and to update its default management arrangements and risk management approach as appropriate.

#### International recognition

In April 2015, ASX was advised by the European Securities and Markets Authority (ESMA) that both ASX Clear and ASX Clear (Futures) had been recognised as third-country CCPs under the European

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<sup>19</sup> ASX calls additional initial margin from participants if the positions that they clear are large relative to their capital position.

Market Infrastructure Regulation. Consistent with the Bank's supplementary interpretation of the Financial Stability Standards issued in the context of ESMA's regulatory equivalence assessment (see 'Regulatory Developments in Financial Market Infrastructures'), ASX Clear has now transitioned to testing the adequacy of its credit and liquidity resources to cover the default of the two participants that generate the greatest joint exposure for the CCP ('Cover 2').<sup>20</sup> While ASX Clear's pre-funded financial resources were already sufficient to meet the new Cover 2 requirement for credit exposures, ASX sourced an additional \$100 million in committed liquidity. Also in accordance with the supplementary interpretation, ASX Clear established a participant risk consultative committee, which held its first meeting in March 2015.

On 18 August 2015, ASX Clear (Futures) was granted an exemption from the requirement to register as a derivatives clearing organisation (DCO) in the US by the US Commodity Futures Trading Commission (CFTC). The exemption allows ASX Clear (Futures) to continue to provide OTC IRD clearing services to US-based participants without the need to submit to the full range of regulatory requirements applicable to a DCO under US law.

### Code of Practice

In response to the recommendations made by the Council of Financial Regulators (CFR) in its 2012 review of competition in clearing cash equities, ASX released its *Code of Practice for Clearing and Settlement of Cash Equities in Australia* (the Code of Practice) in August 2013. The Code of Practice commits ASX to engage with users via an advisory Forum and a supporting Business Committee, and to maintain transparent and non-discriminatory pricing of, and terms of access to, its cash equity clearing and settlement services.

The Forum and Business Committee continued to provide input on the development of ASX's clearing and settlement services and infrastructure

during 2014/15. One of the key strategic initiatives progressed by the Forum and Business Committee during the past year was a move to a two-day settlement cycle for cash equities from the current three-day cycle; this is scheduled to be implemented in March 2016. ASX also continued to publish management accounts for its cash market clearing and settlement businesses, and made enhancements to its arrangements for handling confidential information received from unaffiliated market operators. In addition to its commitments under the Code of Practice, ASX has also been working with Chi-X Australia to extend the existing clearing and settlement access arrangements to certain non-ASX listed securities.

In December 2014, ASX consulted on a number of operational improvements to the Code of Practice, including to give greater prominence to the Business Committee. ASX has advised that consultation feedback was supportive of the proposed amendments, but the changes will be reviewed in light of the government's response to the CFR's 2015 review of competition in the clearing of cash equities (see 'Competition in Clearing Australian Cash Equities' in the chapter on 'Regulatory Developments in Financial Market Infrastructures'). As part of this review, the CFR evaluated the performance of the Code of Practice.

### Technology transformation

In February 2015, ASX announced a technology transformation project to upgrade all of its major trading and post-trading systems over the next three to four years. The project is intended to rationalise ASX's core technology onto a single services platform, removing interdependencies that currently exist between unrelated systems. The first stage of the project will upgrade ASX's trading, risk management and market monitoring systems. The new risk management system is expected to deliver the ability for ASX to calculate exposures and margin requirements in real time; an initial release was used to support ASX's OTC derivatives default management 'fire drill' in July.

<sup>20</sup> ASX Clear (Futures) has sized its financial resources on a Cover 2 basis since 2013.

A subsequent phase of the technology transformation project will focus on ASX's clearing and settlement platforms. This includes the consolidation of derivatives clearing onto a common platform and the replacement of the CHES clearing and settlement system for cash equities. The Bank is examining prioritisation decisions, resourcing challenges, interdependencies with day-to-day business-as-usual processes, and potential change-management issues associated with ASX's technology transformation project. This includes ensuring that investment in the replacement of CHES is appropriately prioritised.

### Business strategy and financials

The continued profitability of the ASX Group provides an important mitigant against general business risk for the ASX CS facilities. ASX Limited's statutory profit after tax for 2014/15 financial year was \$397.8 million, up 3.8 per cent from 2013/14. This was largely due to higher operating revenue, driven by an increase in listings, as well as income from cash market trading, clearing and settlement services. Operating expenses were up 4.2 per cent over the period, due to an increase in staff costs.

During 2014, ASX implemented fee reductions for both its electricity and interest rate futures products. The impact of these changes over the year to June 2015 was \$17.8 million, which was partly offset by the removal of other rebates. Growth in derivatives and OTC trading also offset some of this loss in revenue. ASX has also invested heavily in upgrading its trading platforms and post-trade services; capital expenditure was \$44.4 million in 2014/15, and is expected to be \$45–50 million in the following year (see 'Technology transformation' above).

## Overseas Licensed Clearing and Settlement Facilities

### LCH.Clearnet Limited

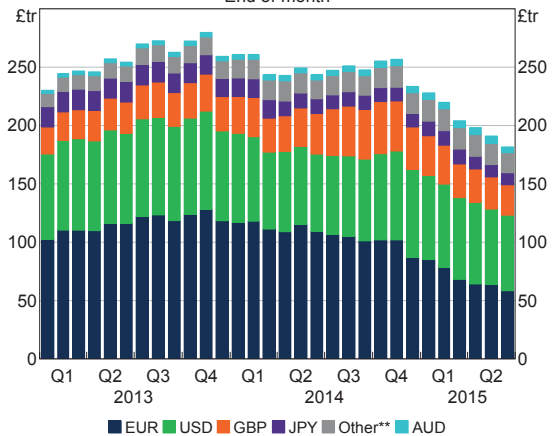
#### Activity in LCH.Clearnet Limited

SwapClear clears six types of IRD products: interest rate swaps, zero-coupon swaps, basis swaps, forward

rate agreements, overnight index swaps and variable notional swaps. In addition, SwapClear started clearing inflation rate derivatives in March 2015 and LCH.C Ltd was granted a variation to its Australian CS facility licence to permit it to offer clearing services for inflation rate derivatives to its Australian clearing participants through the SwapClear service in July 2015.

SwapClear clears products denominated in 17 currencies and has clearing participants from the United Kingdom (UK), many other Western European countries, the United States (US), Canada, Australia and Hong Kong. A few major currencies comprise the vast majority of activity in SwapClear (Graph 15). Of the notional value outstanding in SwapClear at end June 2015, around 32 per cent was denominated in euro, 36 per cent in US dollars, 14 per cent in pound sterling and 18 per cent in other currencies. Around 3 per cent was in Australian dollars.

**Graph 15**  
**SwapClear: Notional Value Outstanding, by Currency (Stock)\***  
End of month



\* Data counts two sides of each trade  
 \*\* Includes CAD, CHF, CZK, DKK, HKD, HUF, NOK, NZD, PLN, SEK, SGD, ZAR  
 Source: LCH.C Ltd

The recent decline in notional value outstanding, visible in Graph 15, largely reflects trade compression activity. Compression is the practice of identifying offsetting trades in



participants' portfolios and terminating them, while leaving those participants' market-facing exposures unchanged (within a stated tolerance). Compression reduces the operational overhead and operational risk of managing a large volume of redundant trades. It also simplifies default management processes, reducing the volume of trades that would need to be priced and auctioned in the event of a participant default. During 2014/15, £183 trillion of notional value outstanding was compressed in the SwapClear service.

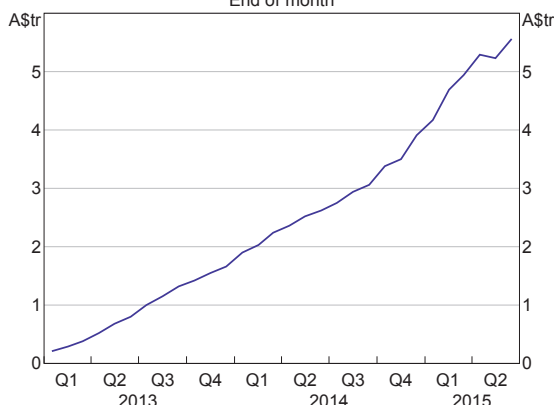
Since early 2012, the major Australian banks have centrally cleared a significant proportion of their OTC IRD trades indirectly, as clients of other clearing participants. In July 2013, the Minister varied LCH.C Ltd's CS facility licence to allow SwapClear to admit Australian entities as direct clearing participants. All four major Australian banks are now direct clearing participants of SwapClear.

An estimated 91 per cent of the notional value outstanding of all centrally cleared Australian dollar-denominated OTC IRD trades is cleared via SwapClear. The total notional value outstanding of Australian dollar-denominated OTC IRD cleared via SwapClear has grown from A\$7.8 trillion at end June 2014 to A\$10.0 trillion at end June 2015.<sup>21</sup> The total notional value outstanding of Australian banks, initially clearing as clients of other clearing participants, has increased strongly since late 2012 (Graph 16). Nonetheless, while all of the Australian banks' eligible new trades are now centrally cleared, not all of the stock of outstanding trades has yet been submitted for central clearing.

### Regulatory priorities

In assessing LCH.C Ltd's application to vary its CS facility licence to offer its SwapClear service in 2013, the Reserve Bank took the view that the service could rapidly become systemically important in Australia. Accordingly, the Bank determined a set of regulatory priorities for LCH.C Ltd to ensure that its operational and governance arrangements promoted stability in the Australian

**Graph 16**  
**SwapClear: Notional Value**  
**Outstanding of Australian Banks (Stock)\***  
 End of month



\* Data is aggregate of Australian banks' trade sides; trades between two Australian banks will be counted twice  
 Source: LCH.C Ltd

financial system. These priorities reflected expectations set out by the CFR in July 2012 in its policy *Ensuring Appropriate Influence for Australian Regulators over Cross-border Clearing and Settlement Facilities* (the Regulatory Influence Policy) and implemented in the Standards.

The Bank's regulatory priorities for LCH.C Ltd for 2014/15 were published in the Bank's 2013/14 Assessment of LCH.C Ltd's SwapClear Service. LCH.C Ltd's progress towards meeting these priorities will be discussed more fully in the Bank's 2014/15 Assessment of LCH.C Ltd's SwapClear Service, which will be published in late 2015.

### Provision of services to the Australian market

A number of the Bank's regulatory priorities for LCH.C Ltd relate specifically to the provision of its services to the Australian market.

- LCH.C Ltd was encouraged to continue its work to extend the operating hours of SwapClear and the provision of operational support to the Australian time zone. The operating hours of the SwapClear service (currently 06:00 to 00:00 UK time) are such that trades executed during the Australian business day when the SwapClear service is closed are not novated to LCH.C Ltd until the Australian evening when the

<sup>21</sup> These values count two sides of each trade.



SwapClear service reopens. Similarly, the Bank stated that it expected LCH.C Ltd to provide appropriate operational support to participants in the Australian time zone.

- The Bank requested that LCH.C Ltd finalise its application for an Exchange Settlement Account (ESA) with the Bank, and develop and implement arrangements for the settlement of Australian dollar obligations through its ESA. LCH.C Ltd's ESA went live in March 2015. LCH.C Ltd was also encouraged to develop and implement arrangements to manage its Australian dollar liquidity risk, utilising its ESA. LCH.C Ltd now holds securities eligible for repurchase with the Reserve Bank in an account in Austraclear to support the management of its Australian dollar liquidity risk.
- The Bank recommended that LCH.C Ltd consider accepting Australian dollar cash as initial margin.

#### Default management

Consistent with the Standards, the Reserve Bank set an expectation that LCH.C Ltd's crisis management arrangements take appropriate account of Australian stability interests. The Bank's particular focus has been to better understand how LCH.C Ltd would manage the default of an Australian-based clearing participant, or any participant with a large Australian dollar-denominated portfolio. LCH.C Ltd conducts regular 'fire drills' for its SwapClear service, which are exercises conducted to simulate a clearing participant default and to test whether the CCP and its clearing participants have the operational capacity to deal with such a default. During 2014/15, LCH.C Ltd ran a default 'fire drill' that for the first time included an Australian dollar-denominated portfolio.

#### Liquidity stress testing

During 2013/14, LCH.C Ltd implemented a reverse stress-testing framework, which seeks to identify the range of market conditions in which its access to liquid resources would be insufficient to meet its obligations. The Bank stated that it expected

LCH.C Ltd to continue to enhance this framework and set a priority that LCH.C Ltd should, with reference to reverse stress-testing outcomes, demonstrate that its liquidity stress-testing framework captured a sufficient range of extreme but plausible scenarios.

#### Appropriate representation of Australian membership in governance

The Bank set an expectation in 2013 for LCH.C Ltd to establish appropriate governance mechanisms to reflect the views of Australian clearing participants. As noted in the Bank's 2013/14 Assessment of the SwapClear Service, LCH.C Ltd met this priority by forming the Australian Member User Group (AMUG) in March 2014. The AMUG provides a means for LCH.C Ltd to seek input from Australian participants on proposed changes to policy and risk management procedures and to provide timely updates on material changes. It also provides an opportunity for Australian participants to propose to LCH.C Ltd policy changes that should be developed or prioritised. The Bank committed in its 2013/14 assessment to monitor the effectiveness of LCH.C Ltd's arrangements. LCH.C Ltd's four Australian clearing participants have reported to the Bank that they are happy with the current arrangements and find the AMUG a useful forum in which to exchange views.

#### Chicago Mercantile Exchange Inc.

In September 2014, the Minister granted a CS facility licence to CME. CME is a Chicago-based CCP that provides clearing services for exchange-traded futures and options on futures, as well as for OTC derivatives transactions. CME's CS facility licence permits it to offer clearing services to Australian-based institutions as direct clearing participants, to clear OTC IRD and certain exchange-traded futures.

CME made its licence application under section 824B(2) of the Corporations Act. Under this section, an overseas-based CS facility may be licensed in Australia if the operation of the facility in its home country is subject to requirements and supervision

that are sufficiently equivalent to those in the Australian regime. When deciding whether to grant a CS facility licence, the Corporations Act requires the Minister to have regard to advice from the Bank and ASIC.

The Bank's advice to the Minister included an assessment of the sufficient equivalence of the US regime for systemically important CCPs in relation to protection from systemic risk; ASIC's advice on the sufficient equivalence of the US regime also considered the effectiveness and fairness of services that the regime achieves. CME is primarily regulated in the US by the CFTC. Consistent with its stated approach, the Bank's sufficient equivalence assessment considered:<sup>22</sup>

- the clarity and coverage of stability-related principles applied by the CFTC relative to the Standards
- the nature and intensity of the CFTC's oversight process, including direct comparison with the Bank's regime
- observed outcomes relative to those in Australia, as reflected in an initial assessment of the facility against the Standards.

The Corporations Act also requires the Minister to consider whether adequate arrangements exist for cooperation between ASIC, the Bank and the authorities that are responsible for the supervision of the facility in its primary place of business. To this end, a joint Memorandum of Understanding between ASIC, the Bank and the CFTC was concluded in June 2014.<sup>23</sup>

Finally, prior to granting a licence, the Minister must be satisfied that the applicant has undertaken to cooperate with the Bank (and ASIC) by sharing information and in other ways. To meet this requirement, the Bank has negotiated a cooperation letter with CME, which forms a binding commitment.

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22 Available at <<http://www.rba.gov.au/payments-system/clearing-settlement/standards/overseas-equivalence.html>>.

23 Available at <<http://www.rba.gov.au/payments-system/legal-framework/pdf/memorandum-20140606.pdf>>.

The Bank's initial assessment and its regulatory priorities for CME have been published on the Bank's website.<sup>24</sup>

#### Activity in CME Inc.

CME clears five types of OTC IRD products: interest rate swaps, zero-coupon swaps, basis swaps, forward rate agreements and overnight index swaps. The notional value of OTC IRD transactions outstanding with CME has increased substantially since 2013, and was estimated to be about US\$50 trillion at end June 2015.<sup>25</sup> CME clears OTC IRD denominated in 18 currencies, including Australian dollars. US dollar-denominated OTC IRD account for around 70 per cent of transactions cleared by CME. Australian dollar-denominated IRD account for less than 1 per cent of the total notional value of OTC IRD outstanding with CME.

CME offers three clearing services: an OTC IRD clearing service; a 'Base' clearing service; and an OTC credit default swaps clearing service. Each service is covered by a separate default waterfall. In addition to OTC IRD, CME is licensed to clear non-AUD-denominated IRD traded on the CME market or the Chicago Board of Trade market, which fall within the Base clearing service. The Base service accounts for the majority of CME's total clearing activity; as well as exchange-traded IRD, the Base service also covers foreign exchange, equity, soft commodity, energy and metal futures.

At end September 2015, CME did not have any direct Australian-based clearing participants. However, a number of Australian-based banks, superannuation funds and other institutional investors clear products through CME indirectly as customers of direct clearing participants.

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24 Available at <<http://www.rba.gov.au/payments-system/clearing-settlement/assessments/chicago-mercantile-exchange/2014/cme-assess-2014-09.html>>.

25 This estimate counts both sides of each trade and was calculated by doubling the value on CME's website.

## Regulatory priorities

At the time of CME's licensing, the Bank determined a set of initial regulatory priorities for CME to ensure that, once it has material direct Australian-based participation, its operational and governance arrangements promote stability in the Australian financial system. These priorities reflect expectations set out by the CFR in its Regulatory Influence Policy and implemented in the Standards. Since CME does not currently have any direct Australian-based clearing participants, the Bank has not expected CME to make substantial progress on regulatory priorities related to the provision of its CCP services in Australia. The Bank also set additional expectations relating to CME's observance of the Standards more broadly.

The Bank's initial regulatory priorities for CME were:

- *To ensure appropriate representation of Australian participants in governance:* CME has in place governance arrangements to take account of the interests of clearing participants. The Bank will engage with CME to assess whether these arrangements appropriately reflect the scale and nature of Australian participation.
- *To ensure that local market practices are accommodated, including considering accepting Australian government bonds as initial margin:* CME began accepting Australian government bonds as initial margin in late July 2015.
- *Appropriate representation of Australian membership and regulators in default management:* The Bank will engage with CME and the CFTC on how it is envisaged that the default of an Australian-based participant, or any participant with a large AUD-denominated portfolio, would be managed.
- *To provide adequate operational support to Australian participants:* The Bank expects CME to provide adequate operational support to Australian participants, particularly during Australian market hours.
- *To implement an appropriate recovery and wind-down plan:* CME is currently finalising its recovery and wind-down plan.
- *Credit risk model testing and validation:* The Bank expects CME to finalise and implement model testing and validation for its margin, haircut and stress-testing models.
- *Acceptance of letters of credit as collateral:* Prior to licensing, CME implemented changes to its collateral policy to reduce the scope of its acceptance of letters of credit as collateral. The Bank continues to monitor these arrangements.
- *Liquidity risk:* The Bank expects CME to continue to enhance its liquidity risk framework, and will continue to engage with CME as it develops its formal framework.
- *Management of counterparty concentration risk in CME's investment portfolio:* At the time of licensing, CME informed the Bank that it was working to diversify the number of counterparties for its investment of cash collateral and to make such investments on a secured basis. The Bank will continue to monitor CME's planned diversification program.
- *FMI links:* The Bank will monitor CME's risk management of links, including its acceptance of letters of credit to cover exposures across its link with Singapore Exchange Limited, with a view to re-visiting this issue if there is a material increase in exposures. The Bank expects that CME will not permit letters of credit as acceptable collateral for any future links.

The Bank expects to publish a report of CME's progress towards these priorities during the first half of 2016.

# Regulatory Developments in Financial Market Infrastructures

The Reserve Bank works with other regulators (both domestically and abroad) on issues relevant to the regulation and oversight of Financial Market Infrastructures. In Australia, much of this work has been coordinated by the Council of Financial Regulators and internationally, the Reserve Bank engages closely with regulators of Financial Market Infrastructures.

The Reserve Bank continues to work with other regulators on issues relevant to the regulation of Financial Market Infrastructures (FMIs).

Domestically, much of this work has been coordinated through the Council of Financial Regulators (CFR), which over the last year has consulted on four FMI-related issues:

- competition in clearing Australian cash equities
- a resolution regime for FMIs
- a proposed new approach to assessing whether an overseas clearing and settlement (CS) facility is 'operating in Australia'
- consideration of a repo central counterparty (CCP) in Australia.

The CFR agencies have also progressed their implementation of the G20's over-the-counter (OTC) derivatives reforms, with the government and the Australian Securities and Investments Commission (ASIC) consulting on the details of mandatory CCP clearing of interest rate derivatives (IRDs) denominated in Australian dollars and the major currencies.

Internationally, the Bank has remained closely engaged with overseas regulators of FMIs, including in relation to regulatory equivalence assessments and cooperative arrangements for the supervision and oversight of cross-border FMIs.

Since these issues are relevant to the Board's responsibilities in respect of CS facilities, Board members' input has been sought throughout the respective processes.

## Competition in Clearing Australian Cash Equities

In 2012, the CFR and the Australian Competition and Consumer Commission (ACCC) – together, the Agencies – carried out a review of competition in clearing Australian cash equities. In light of stakeholder feedback, the CFR recommended that a decision on any licence application from a competing cash equity CCP be deferred for two years. The government endorsed this recommendation in February 2013.

With the two-year deferral period ending in early 2015, the government announced on 11 February that the Agencies would commence a review of the policy position on competition in clearing Australian cash equities. Following the announcement, the Agencies released a consultation paper seeking stakeholder feedback on a range of issues and policy options:

- *Competition.* Lift the moratorium on competition in the clearing of Australian cash equities, either immediately or after a further defined period to allow a transition to full competition.
- *Monopoly.* Establish an effective monopoly by recommending that competition in clearing be deferred indefinitely, implementing one of

three approaches to regulate the activities of the Australian Securities Exchange's (ASX) cash equity CS facilities:

- *Self-regulation.* Consistent with the current arrangements, retain ASX's existing *Code of Practice for the Clearing and Settlement of Cash Equities in Australia* as a formal commitment to the industry.
- *Partial regulation.* Retain a Code and strengthen some specific aspects through regulatory action.
- *Full regulation.* Regulate all functions of ASX's cash equity CS facilities as monopoly services.

Stakeholders were asked to provide feedback on whether any ancillary policy or legislative measures would be necessary under each policy approach to ensure the continued safe and effective functioning of clearing and settlement in the equity market. It was also noted that these policy approaches could be pursued either independently or in combination.

The Agencies received 20 submissions, of which eight were non-confidential and published.<sup>26</sup>

## A Resolution Regime for FMIs in Australia

In February, the Government, on the advice of the CFR, released a consultation paper seeking stakeholder views on proposals to establish a special resolution regime for FMIs. The CFR had recommended in 2012 that such a regime be established, but the work was ultimately delayed by the launch of the FSI. However, it is now proceeding in light of a recommendation in the FSI that the process recommence.

The key proposals set out in the consultation paper were that:

- the regime would extend to all domestically incorporated and licensed CS facilities
- the Bank would be the resolution authority for CS facilities, with an overarching objective to

maintain overall stability in the financial system and an additional key objective to maintain the continuity of critical FMI services

- the powers of the resolution authority and safeguards under the regime would be aligned with the Financial Stability Board's (FSBs) *Key Attributes of Effective Resolution Regimes for Financial Institutions* (Key Attributes).

The consultation paper also proposed that licensing arrangements be amended to underpin the requirement that all systemically important and strongly domestically connected CS facilities incorporate domestically and become domestically licensed, so as to fall within the scope of the proposed special resolution regime.

The government received eight written submissions from stakeholders (two of which were confidential), including from currently licensed FMIs and relevant industry associations.<sup>27</sup> Feedback from consultation revealed strong support for the establishment of a special resolution regime for FMIs. Stakeholders agreed that it was essential that authorities had sufficient powers, supported by legislation, to prevent the disorderly failure of an FMI, particularly in the case of CS facilities. This was seen as a complement to existing work by FMIs themselves to develop plans to recover from any threat to their continued viability. A number of respondents explicitly agreed that the resolution framework should be consistent with the Key Attributes and align with emerging international practice in this area where possible. The FSB is currently reviewing member jurisdictions' current or planned approaches to FMI resolution, which should provide additional insights into the direction of international implementation.

The government will consider its response to the FMI resolution consultation as part of its broader response to the FSI recommendations. In parallel, it is expected that the CFR will develop a high-level proposed response to consultation.

<sup>26</sup> The public submissions are available at <<http://www.treasury.gov.au/ConsultationsandReviews/Consultations/2015/Review-of-competition-in-clearing-Australian-cash-equities/Submissions>>.

<sup>27</sup> Public submissions are available at <<http://www.treasury.gov.au/ConsultationsandReviews/Consultations/2015/Resolution-regime-for-financial-market-infrastructures/Submissions>>.

## ‘Operating in Australia’

The CFR released a consultation paper on 27 March proposing amendments to the *Corporations Act 2001* that would implement a new approach to assessing whether an overseas CS facility should be subject to regulation in Australia. The proposal rests on a test of the materiality of a CS facility’s connection to the Australian financial system.

The implementation of this approach would not be expected to change the current scope of Australia’s CS facility licensing regime. Rather, the proposal is intended simply to provide clarity to all stakeholders on the scope of the existing regime.

The proposed framework in the consultation paper builds on concepts introduced in the CFR’s policy *Ensuring Appropriate Influence for Australian Regulators over Cross-border Clearing and Settlement Facilities*. The ultimate objective of the proposal is that an overseas CS facility must be licensed (or exempted from licensing) if, and only if, it has a material domestic connection. This is to ensure appropriate regulation of CS facilities that could have an effect on the functioning of the Australian financial system, while at the same time ensuring that the scope of regulation does not over-reach.

The proposal comprises two components and clarifies the relevant matters for consideration under each component.

- *First component: domestic connection.* The first component would be a test to establish objectively whether there was any connection at all to the Australian financial system – for instance, due to the location of some operations in Australia, the provision of CS services for financial products connected with Australia, the provision of CS services to one or more Australian direct participants, or vertical links to a domestic market operator or CS facility. This would provide a high degree of legal certainty as to when a CS facility was out of the scope of the regime.
- *Second component: materiality of the connection.* Where it was established that a particular overseas CS facility had some connection

to Australia, the second component would assess the materiality of that connection from a public policy perspective. This would ensure that there was appropriate regulation of facilities that might be used by Australians or that might otherwise be relevant to the functioning of the Australian financial system. A CS facility’s domestic connection would be considered to be material if its current or expected activities were likely to have implications for the safe, efficient and effective functioning of the Australian financial system or the confident, fair and effective dealings in financial products by Australian investors. To capture reliance on the facility by Australian investors, the tests under the second component would look beyond direct participation to a broader definition of ‘user’.

Given the narrow scope of this consultation, there were relatively few submissions. Most agreed that, relative to the current approach, the proposed framework provided greater clarity on whether a CS facility should be licensed in Australia or exempt from licensing. Respondents also generally agreed with the CFR’s proposal to define the high-level test in the Corporations Act and to supplement revisions to the Corporations Act with more specific regulatory guidance. This was seen as striking an appropriate balance between legal certainty and the need for flexibility in any revised framework. Some respondents nevertheless stressed the importance of retaining flexibility within the framework.

Bank staff will continue to work closely with ASIC and the Australian Treasury to respond to the feedback from this consultation, with a view to developing formal proposals on amendments to the Corporations Act and to consequently update ASIC’s *Regulatory Guide 211 – Clearing and Settlement Facilities: Australian and Overseas Operators*.

## Central Clearing of Repos in Australia

In 2013, as part of a broader set of recommendations on securities lending and repo markets, the FSB recommended that member jurisdictions evaluate

the costs and benefits of CCP clearing in their respective inter-dealer repo markets. In response to this recommendation, the Bank issued a consultation paper seeking feedback on the costs and benefits of central clearing of repos in Australia. The paper provided an overview of the Australian repo market and discussed possible implications of CCP clearing for the market. In particular, stakeholder views were sought on how the design and operation of a repo CCP might affect the functioning of the Australian repo market and the management of risk, in both normal and stressed market conditions.

The paper noted that since the Bank was counterparty to around a third of the value of repos outstanding, its decision regarding participation would affect other market participants' evaluation of the private costs and benefits of using a repo clearing service. Accordingly, the Bank undertook to consider its position in light of stakeholder feedback from the consultation.

Six submissions were received, two of which were confidential.<sup>28</sup> The most detailed submission was from the Australian Financial Markets Association (AFMA), which reflected a survey of 12 of its members. The majority of AFMA's membership were supportive of central clearing of repos. In particular, AFMA members believed that central clearing would improve the management of operational risk, particularly if central clearing was introduced as part of an integrated chain of infrastructure to trade, clear, collateralise and settle repos. AFMA also saw the potential for enhanced infrastructure to encourage broader participation and saw some benefit from standardised margining practices and coordinated default management. However, there were some caveats. First, the netting benefits could be limited, given the participation structure of the market and particularly the significant share of repo transactions with the Bank as cash lender. Second,

stakeholders questioned the cost and commercial viability of a domestic repo CCP.

On the basis of the feedback from the consultation, the Bank will now develop its conclusions, working towards a report for publication in October.

## OTC Derivatives

Since the global financial crisis, international policymakers have also sought to strengthen practices in OTC derivatives markets. To this end, in 2009, the G20 leaders committed that all OTC derivatives transactions would be reported to trade repositories, that all standardised OTC derivatives would be executed on electronic trading platforms, as appropriate, and cleared through CCPs, and that higher capital requirements would apply to non-centrally cleared OTC derivatives. In November 2011, G20 leaders added to these commitments, agreeing that international standards on margining of non-centrally cleared OTC derivatives should be developed. While contributing to the CFR's development of OTC derivatives market policy is a broader responsibility of the Bank, the Board's views have been sought. This has particularly been the case with respect to mandatory clearing, given the potential implications for the Bank's role in CCP oversight and supervision.

### Mandatory clearing requirements

Further to recommendations by the Australian Prudential Regulation Authority (APRA), ASIC and the Bank, and a government consultation in December 2014, the government is proceeding with the implementation of a central clearing mandate for trades between internationally active dealers in Australian dollar-, US dollar-, euro-, British pound- and Japanese yen-denominated IRDs. A Ministerial determination and of a set of amendments to the *Corporations Regulations 2001* implementing the proposed mandate were published in September.<sup>29</sup>

<sup>28</sup> Public submissions are available at <<http://www.rba.gov.au/payments-system/reforms/submissions/central-clearing-of-repos-in-australia/index.html>>.

<sup>29</sup> The Ministerial determination is available at <<https://www.comlaw.gov.au/Details/F2015L01392>> and the Corporations Regulations are available at <<https://www.comlaw.gov.au/Details/F2015L01411>>.



Under the Corporations Act, a mandatory clearing obligation can only be fulfilled by clearing through a CCP that is licensed in Australia, or in certain circumstances, a 'prescribed' CCP.<sup>30</sup> Accordingly, the Corporations Regulations identify a proposed list of prescribed CCPs and set out the criteria ASIC must use when prescribing additional CCPs.

In anticipation of the Ministerial determination, ASIC consulted on Derivative Transaction Rules (DTRs) that set out the details of the mandatory clearing requirement. The proposed DTRs provide more detail on the institutional and product scope of the requirement, and how those subject to the requirement can demonstrate compliance. Consistent with obligations under the Corporations Act, ASIC consulted with APRA and the Bank.

### Mandatory trade reporting

The Corporations Regulations also provide relief from trade reporting for entities with less than \$5 billion gross notional OTC derivatives positions outstanding, where the counterparty to the trade is already required to report. The rules for reporting by these smaller OTC derivatives market participants constitute the last phase of implementation of trade reporting in Australia, with all other financial entities having been subject to reporting obligations since 1 April – or earlier, for larger institutions.

All trades subject to a reporting requirement under ASIC rules must be reported to a licensed or prescribed trade repository. The only trade repository currently licensed is DTCC Data Repository (Singapore) Pte Ltd (DDRS), which was licensed by ASIC in September 2014. All Australian

entities are currently required to report to DDRS. There are currently no trade repositories located in Australia. Overseas entities that are subject to ASIC's reporting requirements may report to prescribed trade repositories. Currently, the prescribed trade repositories are those in the DTCC group as well as UnaVista (which is located in the European Union (EU)) and the Hong Kong Monetary Authority.

The Bank is entitled to access trade repository data relevant to its mandates. To facilitate this access, the Bank signed, in February and April respectively, memoranda of understanding (MoUs) with the European Securities and Markets Authority (ESMA) and the Monetary Authority of Singapore (MAS). Under the MoUs, ESMA and MAS, respectively, commit to giving the Bank access to data held in the trade repositories locating in their jurisdictions where relevant to support the Bank's mandate.

### International Equivalence, Recognition and Cooperation

International consistency benefits were an important consideration in the regulators' advice to government on the introduction of mandatory clearing obligations for interest rate derivatives. Since new OTC derivatives- and CCP-related regulations in both the EU and the United States (US) have cross-border application, regulators in both jurisdictions have been considering the extent to which they are prepared to defer to Australian regulators in respect of EU and US entities' OTC derivatives activity in Australia, and whether they are prepared to admit Australian CCPs under their respective regimes.

The Board has continued to be updated throughout the period on the staff's dialogue with regulators in these, and other, jurisdictions on matters related to regulatory equivalence, recognition and cross-border cooperation, particularly in relation to CCP regulation.

In the case of the EU, ESMA had advised the European Commission in late 2013 that it considered Australia's regulation of CCPs to be

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<sup>30</sup> By including within the framework the flexibility to prescribe certain CCPs, the government recognises that some CCPs may not meet the criteria to be 'operating in Australia' for the purposes of the Corporations Act, and therefore would not be required to be licensed in Australia; they may nevertheless clear trades in products that are subject to the Australian clearing obligation. A dealer that was subject to the Australian clearing obligation might then be permitted to meet this by clearing through a prescribed CCP. The key proposed requirements for prescription are that the offshore CCP's home jurisdiction has substantially implemented international standards and that there are adequate arrangements for ASIC and the Bank to monitor clearing by Australian participants through that CCP.



equivalent to that in the EU under the European Market Infrastructure Regulation (EMIR). While both EMIR and the Bank's Financial Stability Standards are based on common international standards, the Principles for Financial Market Infrastructures (PFMIs), the EU requirements are drafted at a more detailed level. Accordingly, the Bank issued supplementary interpretation of a subset of standards to provide additional clarity in some areas. Initially, the supplementary interpretation was issued to apply only to derivatives CCPs operating in Australia, since only ASX Clear (Futures) Pty Limited (ASX Clear (Futures)) was seeking recognition in Europe. In October 2014, however, the supplementary interpretation was amended to apply more broadly to all domestically licensed CCPs that provide services to clearing members that are either established in the EU or subject to EU bank capital regulation.<sup>31</sup> This broader application of the supplementary interpretation was a prerequisite for ASX Clear Pty Limited (ASX Clear) also to seek recognition under EMIR.

In October, the European Commission adopted an Implementing Act to give effect to the positive regulatory equivalence decision reached by ESMA in 2013. This was followed, in late November, by the conclusion of an MoU between the Bank, ASIC and ESMA to govern information sharing and cooperation between the signatory authorities in respect of any Australian CCPs recognised under EMIR. With these pre-conditions having been met, and ESMA having considered detailed applications by both ASX Clear (Futures) and ASX Clear, ESMA announced on 29 April that both CCPs had been recognised as third-country CCPs under EMIR. ESMA announced that CCPs in Japan, Hong Kong and Singapore had also been recognised as part of a first group of third-country CCPs to be granted recognition under EMIR.

Separately, on 18 August 2015 ASX Clear (Futures) was granted an exemption from registration as a Derivatives Clearing Organisation (DCO) in the US. The Commodity Futures Trading Commission's (CFTC) decision to grant an exemption to ASX Clear (Futures) follows its previous extension of time-limited no-action relief from the requirement to register as a DCO, initially until the end of 2014. This was ultimately extended to end 2015, subject to ASX undertaking to submit a petition for permanent exemption from registration as a DCO by June 2015. As part of this process, ASX was asked to demonstrate that it was subject to comparable and comprehensive supervision and regulation by its home country regulators (the Bank and ASIC), and that it observed in all material respects the PFMIs. ASX duly submitted its petition on 1 June 2015, and was granted an exemption by the CFTC following a period of public consultation.

In conjunction with ASX's petition, ASIC and the Bank were each asked to provide the CFTC with a letter of regulatory good standing. These letters were provided in February and the petition process is ongoing. Similar letters had been provided to ESMA to support its recognition process. The Bank and ASIC had also concluded an MoU with the CFTC in June 2014, to support cooperation and the exchange of information in the supervision and oversight of CCPs operating on a cross-border basis in both the US and Australia. This MoU was intended to support both the petition for permanent exemption from registration as a DCO in the US by ASX Clear (Futures) and Chicago Mercantile Exchange Inc.'s licence application in Australia, which was ultimately granted in September (see 'Supervision of Clearing and Settlement Facilities').

In addition to these new cooperation arrangements, Payments Policy Department retains a number of other cooperative arrangements for oversight and supervision of cross-border FMI's that operate in Australia (see 'Liaison Activity').

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31 The Bank's supplementary interpretation of the Financial Stability Standards is available at <<http://www.rba.gov.au/payments-system/clearing-settlement/pdf/supplementary-guidance-domestic-derivatives-ccps.pdf>>.

# Liaison Activity

The Reserve Bank engages with a wide range of stakeholders in Australia and overseas. Domestically, in 2014/15, this included liaison on retail payments issues, involvement in the New Payments Platform and close interaction with the Council of Financial Regulators. Internationally, the Reserve Bank was represented on a number of forums, including the Committee on Payments and Market Infrastructures.

## Liaison with Industry

The Reserve Bank engaged extensively with industry in 2014/15. On the retail payments front, Bank staff met with a wide range of stakeholders following submissions to the Issues Paper released as part of the Review of Card Payments Regulation. The Bank also hosted an industry roundtable to discuss aspects of the Issues Paper, moderated by the Board's Deputy Chair. The Bank also met with representatives of card schemes, banks and other financial institutions, payments technology companies, industry and consumer organisations and academics.

Bank staff meet regularly with senior staff of the Australian Payments Clearing Association and have established liaison arrangements for these meetings – a new liaison agreement was finalised during 2014/15 and is published on the Bank's website. The staff also meet periodically with counterparts from the Australian Competition and Consumer Commission and the Australian Treasury.

The Bank has continued to be extensively involved with the development of the New Payments Platform (NPP). Bank staff have been participating on the numerous design authorities and working groups, along with other participants in the NPP

program. The Heads of Payment Settlements and Payments Policy Departments attend the meetings of the NPP Australia Board – one as a voting member and the other as an observer.

As described in 'Regulatory Developments in Financial Market Infrastructures', the Bank continued to work closely with other agencies of the Council of Financial Regulators on a number of financial market infrastructure (FMI)-related policy workstreams. These involved considerable liaison with industry participants, particularly in relation to consultation processes on competition in cash equities clearing and settlement, FMI resolution, the licensing regime for overseas clearing and settlement facilities (see 'Operating in Australia'), and central clearing of repos.

Staff also attended, in some cases as speakers or panellists, various conferences and seminars on payments and market infrastructure-related issues.

## International Engagement

Payments Policy Department represents the Reserve Bank on the 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 set standards for them. The Bank is also a member of the CPMI-IOSCO Steering Group, which brings together members of both the CPMI and the International Organization of Securities Commissions (IOSCO) to advance policy work on the regulation and oversight of FMIs, as well as the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) Working Group on Payment and Settlement Systems.

Given the growing use of central counterparties (CCPs), CPMI and IOSCO, in consultation with the Basel Committee on Banking Supervision, the Financial Stability Board's (FSB) Resolution Steering Group (ReSG) and the FSBs Standing Committee on Supervisory and Regulatory Cooperation has developed a work plan to promote CCP resilience, recovery and resolution.<sup>32</sup> CPMI-IOSCO is leading the work on CCP resilience and recovery planning, with its Policy Standing Group (PSG) conducting a stocktake of existing CCP practices. The goal of this stocktake is to understand CCPs' approaches and inform analysis of whether additional guidance to the standards in these areas is needed. A senior officer in Payments Policy Department is a member of the PSG. An officer in Payments Policy Department is also contributing to the work on resolution of CCPs, which is being led by the ReSG. This work follows on from the FSB's October 2014 re-issue of the Key Attributes of Effective Resolution Regime for Financial Institutes with annexes that provide sector-specific guidance on resolution, including one for FMIs.

Payments Policy Department staff participate in a number of other workstreams governed by the CPMI and the CPMI-IOSCO Steering Group. A senior officer in Payments Policy Department co-chairs the CPMI-IOSCO Implementation Monitoring Standing Group (IMSG), which is monitoring the international implementation of the Principles for Financial Market Infrastructures (PFMIs). The third update to

the self-assessments on progress towards adopting the PFMIs was published in June. In February, the IMSG's assessments of the regulatory or oversight framework applied to systemically important CCPs and trade repositories in the European Union, Japan and the United States were published. A similar assessment of Australia is currently in progress. A peer review assessing the extent to which relevant authorities, including the Bank, are observing the Responsibilities associated with the PFMIs in their regulation, supervision and oversight of FMIs is also under way. This is expected to be published by the end of 2015. Future work will assess the consistency in outcomes achieved by FMIs' implementation of the PFMIs, beginning with an assessment of CCPs' implementation measures in the area of financial risk management.<sup>33</sup>

Another prominent focus for CPMI and IOSCO is cyber security. In 2014 a Payments Policy Department officer contributed to a CPMI report, published in November, on the current cyber risks faced by FMIs and their level of readiness to deal effectively with worst-case scenarios. Following on from this, a CPMI-IOSCO group has been established to develop guidance to assist FMIs and their overseers in enhancing the cyber resilience of FMIs.

Payments Policy Department staff have also contributed to a number of reports published by CPMI and IOSCO during the year in review. One such report is the guidance on how FMIs should develop plans to enable them to recover from extreme circumstances that threaten their viability, which was finalised in October 2014. Another is a set of public quantitative disclosure standards for CCPs, which were published in February 2015 and are intended to assist participants and other stakeholders in understanding and assessing the risk characteristics of CCPs. Payments Policy Department staff also contributed to two other analytical reports published by CPMI in late 2014 on

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<sup>32</sup> The work plan, including an update on implementation as of September 2015 are available at <<http://www.bis.org/cpmi/publ/d134.htm>>.

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<sup>33</sup> The launch of this first assessment was announced in a press release by CPMI-IOSCO on 9 July 2015 available at <<http://www.bis.org/press/p150709.htm>>.

developments in collateral management services and non-banks in retail payments. The latter is the latest output from a working group that conducts research on current issues in retail payment systems.

Finally, in addition to new cooperation arrangements established with both the European Securities and Markets Authority and the Commodity Futures Trading Commission (see 'Regulatory Developments in Financial Market Infrastructures'), the Reserve Bank continues to be engaged in a number of other international cooperative arrangements for oversight and supervision of FMIs.

- The Bank has for some time participated in an arrangement led by the Federal Reserve Bank of New York to oversee CLS Bank International, which provides a settlement service for foreign exchange transactions. The Bank also

participates in the SWIFT Oversight Forum, chaired by the National Bank of Belgium.

- The Bank is also a member of a global college arrangement for LCH.Clearnet Limited's SwapClear service, chaired by the Bank of England. This is supplemented by bilateral engagement with the Bank of England, which is governed by a recently refreshed memorandum of understanding (MoU).
- Finally, further to the conclusion of an MoU in August 2014, the Bank has established cooperation arrangements with the Reserve Bank of New Zealand covering cooperation and information sharing in relation to cross-border CCPs in which the central banks have a joint interest. The focus of this cooperation is currently ASX Clear (Futures) Pty Limited, which provides a clearing service for New Zealand dollar interest rate futures contracts.



# The Board's Announcements and Reserve Bank Reports

This section lists developments since mid 2014. The Payments System Board's 2006 Annual Report contained a list of the Board's announcements and related Reserve Bank reports up to that time. Subsequent annual reports have contained an annual update.

## 2014

'Collateral and Liquidity: Striking the Right Balance', Mark Manning, Global Investor/ISF Australia Conference, 9 July 2014

Media Release 2014-14, 'Formation of the Australian Payments Council', 25 August 2014

'Supplementary Submission to the Financial System Inquiry', Submission to the Financial System Inquiry as part of the Bank's overall submission, August 2014

'The Path to Innovation in Payments Infrastructure in Australia', Tony Richards, Chicago Payments Symposium, 26 September 2014

'The Effective Supply of Collateral in Australia', RBA *Bulletin*, September 2014

'Issues in Payments Systems', Glenn Stevens, Remarks prior to the Annual General Meeting of the Australian Payments Clearing Association, 23 October 2014

'Submission to the Inquiry into Digital Currency', Submission to the Senate Economics References Committee, November 2014

Media Release 2014-22, 'Payment Card Access Regimes', 18 December 2014

'Fast Retail Payment Systems', RBA *Bulletin*, December 2014

'The Evolution of Payment Costs in Australia', RBA Research Discussion Paper No 2014-14, December 2014

## 2015

*Resolution Regime for Financial Market Infrastructures*, Treasury, Canberra, February 2015

*Review of Competition in Clearing Australian Cash Equities*, Council of Financial Regulators, Canberra, February 2015

Media Release 2015-04, 'Review of Card Payments Regulation', 4 March 2015

Media Release 2015-04, 'Waiver of Interchange Benchmark Recalculation', 4 March 2015

*Overseas Clearing and Settlement Facilities: The Australian Licensing Regime*, Council of Financial Regulators, Canberra, March 2015

*Central Clearing of Repos in Australia: A Consultation Paper*, Reserve Bank of Australia, Sydney, March 2015

'Central Counterparty Loss Allocation and Transmission of Financial Stress', RBA Research Discussion Paper No 2015-02, March 2015

'The Value of Payment Instruments: Estimating Willingness to Pay and Consumer Surplus', RBA Research Discussion Paper No 2015-03, March 2015

*Opening Statement to the Senate Economics References Committee Inquiry into Digital Currency*, 7 April 2015

'Card Payments Regulation: From Wallis to Murray', Malcolm Edey, Cards & Payments Conference, 21 May 2015

Media Release 2015-10, 'Payment Systems and Netting Act 1998: Approval of Netting Arrangement', 16 June 2015

'Skin in the Game – Central Counterparty Risk Controls and Incentives', RBA *Bulletin*, June 2015



# Abbreviations

ABS	Australian Bureau of Statistics	CNP	Card-not-present
ACCC	Australian Competition and Consumer Commission	CPMI	Committee on Payments and Market Infrastructures (formerly CPSS)
ADI	Authorised Deposit-taking Institution	CPSS	Committee on Payment and Settlement Systems (recently renamed CPMI)
AFMA	Australian Financial Markets Association	CS	Clearing and Settlement
AML	Anti-Money Laundering	DCO	Derivatives Clearing Organisation
AMUG	Australian Member User Group	DDRS	DTCC Data Repository (Singapore) Pte Ltd
APCA	Australian Payments Clearing Association	DTR	Derivative Transaction Rules
APRA	Australian Prudential Regulation Authority	EBA	European Banking Authority
ASIC	Australian Securities and Investments Commission	eftpos	electronic funds transfer at point of sale
ASX	Australian Securities Exchange	EMEAP	Executives' Meeting of East Asia-Pacific Central Banks
ASX Clear	ASX Clear Pty Limited	EMIR	European Market Infrastructure Regulation
ASX Clear (Futures)	ASX Clear (Futures) Pty Limited	EMV	Europay, MasterCard & Visa chip card standard
ASX Settlement	ASX Settlement Pty Limited	ESA	Exchange Settlement Account
ATM	Automated Teller Machine	ESMA	European Securities and Markets Authority
Austraclear	Austraclear Limited	EU	European Union
BBY	BBY Limited	FMI	Financial Market Infrastructures
BIS	Bank for International Settlements	FSB	Financial Stability Board
BSB	Bank State Branch	FSI	Financial System Inquiry
CAC Act	Commonwealth Authorities and Companies Act 1997	FSS	Fast Settlement Service
CCP	Central Counterparty	HM Treasury	Her Majesty's Treasury
CFR	Council of Financial Regulators	HVCS	High Value Clearing Stream
CFTC	Commodity Futures Trading Commission	IMSG	Implementation Monitoring Standing Group
CLS	CLS Bank International		
CME	Chicago Mercantile Exchange Inc.		



IOSCO	International Organization of Securities Commissions	PFMI	Principles for Financial Market Infrastructures
IRD	Interest Rate Derivatives	PIN	Personal Identification Number
LCH.C Ltd	LCH.Clearnet Limited	PSG	Policy Standing Group
MAS	Monetary Authority of Singapore	PSR	Payments System Regulator
MoU	Memorandum of Understanding	RBA	Reserve Bank of Australia
NBB	National Bank of Belgium	ReSG	Resolution Steering Group
NIST	National Institute of Standards and Technology	RITS	Reserve Bank Information and Transfer System
NPP	New Payments Platform	SSF	Securities Settlement Facility
OG	SWIFT Oversight Group	SWIFT	Society for Worldwide Interbank Financial Telecommunication
OTC	Over-the-counter	UK	United Kingdom
PEXA	Property Exchange Australia Ltd	US	United States



RESERVE BANK OF AUSTRALIA