RESERVE BANK OF AUSTRALIA

Speech

Building Bridges in the Digital Economy: Modernising Australia's Payments System

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Introduction

I'd like to begin by acknowledging the Traditional Custodians of the land on which we meet and pay my respects to Elders past and present.

It is an honour to be here with you today at this year's Bradfield Oration.

Dr John Bradfield's name is etched into Australia's history as a visionary of transformative infrastructure. As the chief engineer behind the Sydney Harbour Bridge, Bradfield didn't merely build a crossing, he built a connection – one that shaped how Sydney functioned, moved and grew. His legacy reminds us that infrastructure doesn't just support a nation – it expands its possibilities.

While physical infrastructure like transport networks continue to shape our cities and economy today, it's increasingly digital infrastructure and growth in the digital economy that underpin how people live, work and transact. Innovations such as mobile phone apps and cloud software are now woven into the fabric of everyday life for most Australians.

Among the most frequently and widely used pieces of digital infrastructure in the country is our payments system. Whether you're buying a coffee, paying the salaries of your employees or receiving a government payment, the payments system is part of the daily experience. It matters not just to central bankers, economists or technologists, but to every Australian.

Given its importance to our lives, it is vital that the payments system provides its users – households, businesses and governments – with a range of valued and trusted payments services.

The RBA, through its Payments System Board, is the primary regulator of the payments system in Australia. The Board and the RBA work with participants in the payments system so that it meets the needs and expectations of the Australian public.

The RBA also performs other crucial roles in the payments system. For example, we operate the infrastructure that transfers money between financial institutions when individuals, businesses and governments make payments. We also issue Australia's banknotes, which are still a very important part of the way people pay in Australia.

Our role in the payments system complements our other responsibilities in the economy and financial system – setting monetary policy, safeguarding financial stability and providing banking services to the Australian government.

In the spirit of Bradfield, my speech today will focus on the importance of continuing to build a modern, innovative and robust payments system in Australia, and the roles that industry and the RBA can play in this process. In doing so I'll cover three aspects of our payments system: digital payments; the RBA's infrastructure underpinning the digital payments system; and cash.

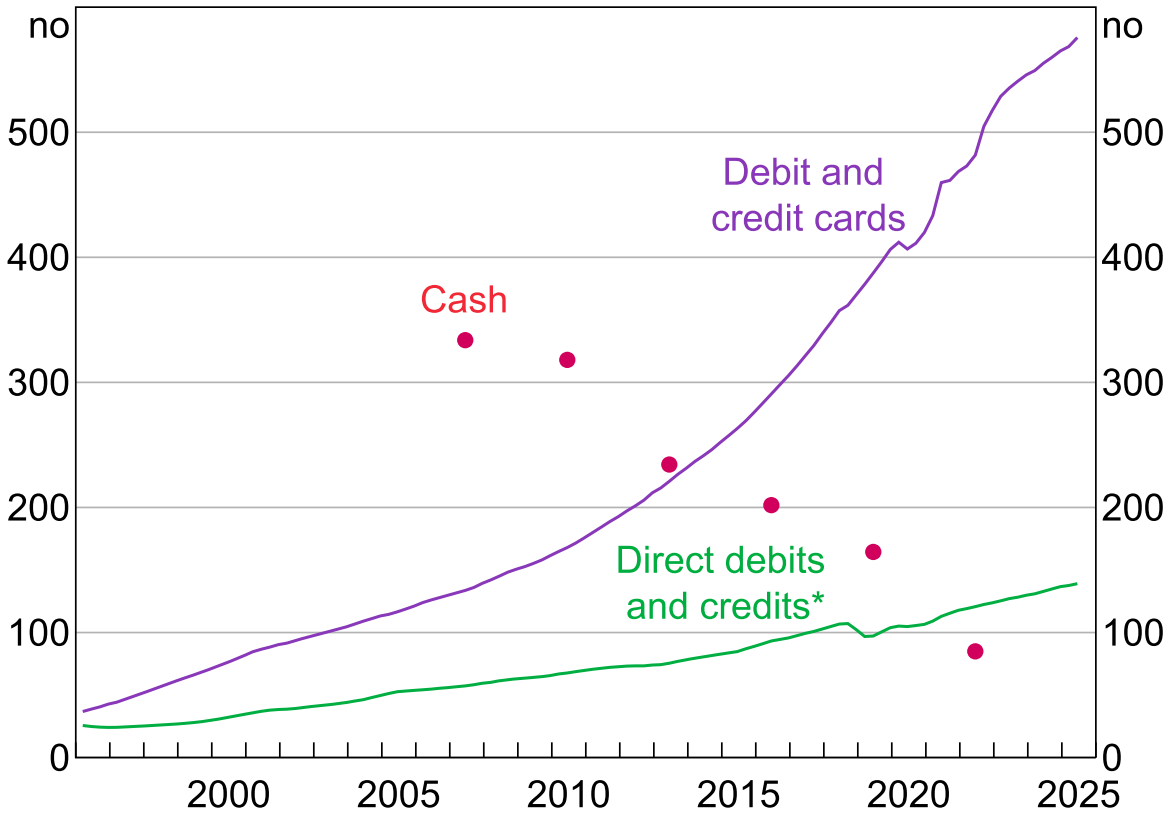
Australia's digital payments system and the role of innovation

Australians rely on digital payment services such as cards and bank account transfers to support their day-to-day economic activities. These services have become more important over time: today, Australians make, on average, about 700 digital payments per year, up from around 100 per year at the turn of the century (Graph 1).

Graph 1

Transactions per Capita

Rolling annual sum



* Adjusted for a reporting change in May 2018, which decreased the number of direct credit and direct debit payments.

Sources: ABS; Ipsos; RBA.

As users of the digital payments system, we expect the services for sending and receiving payments to have certain attributes (Figure 1).

Figure 1: Desirable Attributes of Payments Services

Safe
Money and data are protected

Reliable
Always works when you need it

Low-cost
Fair and affordable pricing

Easy to use
Simple and convenient

Typically, we want these services to be:

- Safe – we want to feel confident that our money and information won't be lost or stolen.
- Reliable – we want to know that these services will work when we need them to, with payments successfully going through to the intended recipients.
- Low-cost – we want prices for these services to be fair and affordable.
- Easy to use – we want our payments services to be simple and convenient, so we don't have to spend a lot of time and effort using them.

In my view, Australia's digital payments system already does well in delivering these attributes and meeting users' expectations. Indeed, I often hear from people that come to Australia that they are impressed with the quality of our payments system.

Of course, this does not mean there is no scope for improvement. Later in this speech, I will outline several areas where we think there could be further progress in the digital payments system.

The RBA helps to achieve these key attributes through the Payments System Board's mandate to promote a safe, efficient and competitive payment system in the public interest. Sometimes that means working with industry to balance these attributes against each other to reach the best outcome for the Australian people overall. The RBA's current Review of Merchant Card Payment Costs and Surcharging is a good example of attempting to balance not only the desired attributes of the payments system but also the multiple views of providers and users. We are currently consulting on our preliminary views on potential regulatory changes that could be in the public interest, so I won't discuss these issues further in this speech except to say we are going to take the time to get these changes right.

There are a range of factors that can help deliver the desirable attributes of Australia's digital payments system. Today I want to focus on the key role of innovation.

Ongoing innovation by providers of digital payments services – banks, fintechs and payments infrastructure operators – is needed to keep the digital payments system fit for purpose. Because the external environment and people's needs and expectations evolve over time, the payments system must adapt to remain safe, reliable, low-cost and easy to use.

This is no different to other forms of infrastructure, which also require periodic investment. For example, transport infrastructure like buses and trains need upgrading from time to time to integrate new technologies, and make them safer and easier to use.

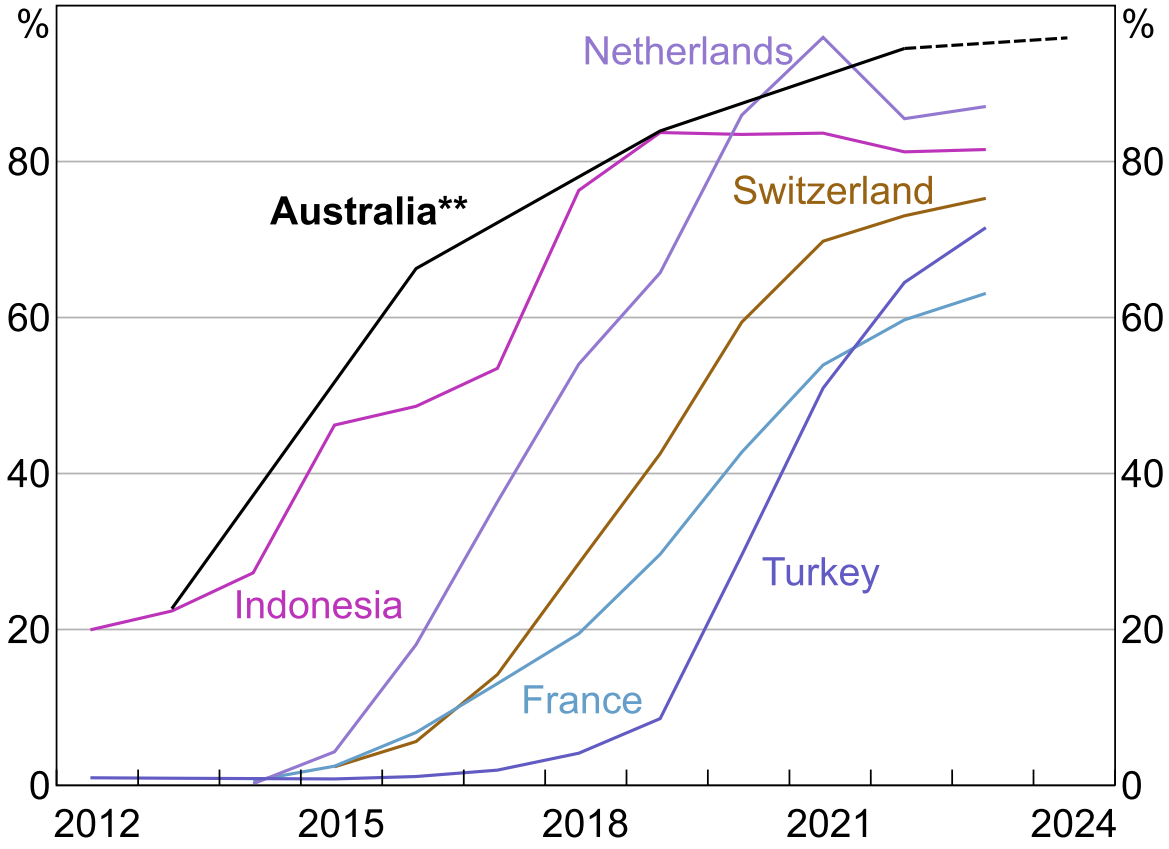
A key focus of innovation by the payments industry over the past decade has been the introduction of easier ways for Australians to make and receive payments. The development and adoption of new payment options in Australia has been, in some respects, world leading.

A good illustration of this is the widespread adoption of contactless card payments – often referred to as 'tap-and-go'. This happened much earlier in Australia than in many other countries (Graph 2).

Graph 2

Contactless Card Payments*

Share of in-person card payments



* Observations are not directly comparable due to differing survey methods and inclusions across economies.

** 2024 Australian data estimated using partial data from the Retail Payments Statistics.

Sources: BIS; RBA calculations based on data from Colmar Brunton, Ipsos and Roy Morgan Research.

The introduction of contactless card payments was made possible because of innovation and investment across card issuers, terminal providers and businesses. This didn't happen overnight though – we needed a critical mass of cards issued with chips and terminals accepting tap-and-go for it to get momentum. I recall Commonwealth Bank running a small-scale trial in the Sutherland Shire, but it didn't really seem to take off. Only once the supermarkets picked it up did it gain the

momentum needed to effect a broad change in payment behaviour. This demonstrates that the benefits of innovation sometimes only become evident when it reaches a minimum scale.

Another example of innovation by the payments industry was the introduction of Australia's fast payments system – the New Payments Platform (NPP) – in 2018. It allows people to transfer money to another person's bank account in a matter of seconds, 24 hours a day, every day of the year. The use of PayIDs, which allow NPP payments to be addressed to someone's phone number or an email address, has made initiating payments between accounts easier and safer.

For payments innovations like tap-and-go and the NPP to be a success they require widespread adoption. This is commonly referred to by economists as a 'network effect', whereby the value of a service increases the more people use it.

We see network effects play out in other forms of infrastructure too – take electric vehicles (EVs) for example. For EVs to be a viable choice for most people, there needs to be a widespread and reliable network of charging stations. But it's not just about quantity, it's about standardisation. When charging points use common connectors, an EV can charge anywhere. As more charging stations are built, EVs become more attractive to consumers. And as more people adopt EVs, the incentive to invest in charging infrastructure grows. It's a virtuous cycle, and each new connection strengthens the network and increases its value for everyone.

It can sometimes be challenging to achieve a network effect in private card or account-based payments systems without wide payment industry and public sector support to facilitate a level of coordination.

While banks and other payment firms have strong commercial incentives to innovate in their own branded payments services, they're often less motivated to enhance the shared infrastructure those services rely on. At times, this has led to coordination and standardisation challenges that prevent progress on innovations that would benefit the broader public. It is in these situations that the RBA can step in and encourage the industry to collaborate to upgrade infrastructure or develop industry standards.

A clear example of this was the Strategic Review of Innovation in the Payments System that we undertook more than a decade ago, which identified key gaps in the system that needed to be addressed through cooperation. These included the lack of real-time payments, 24/7 availability, the ability to carry more information with a payment and simple addressing. This laid the groundwork for the development of the NPP that I noted earlier.

To be clear, developing the NPP wasn't a top-down directive – it came from identifying the problem, presenting the evidence and working with industry to find a solution. In my view, this was an example where the industry 'took the bit between its teeth and ran with it'. That spirit of collaboration – building consensus, rather than imposing regulation – is the way we've achieved many of the major enhancements in Australia's payments system.

Of course, progress hasn't always been smooth. After the successful launch of the NPP, adoption was slower than expected because of delays in the rolling out of key services by some providers. In response, the RBA wrote to the relevant major banks requesting that they deliver key NPP services by a certain date. We then monitored their progress in doing so. Use of the NPP has since picked up and it now processes an average of about 5 million transactions every day.

The RBA's involvement in the development of the NPP illustrates how we can be a catalyst for industry innovation in Australia's payments system. I'm confident that, without our actions, the fast payment capabilities that Australians now benefit from would have been much harder to achieve.

Focus areas for further progress in the digital payments system

Despite the progress made to date, there are aspects of the digital payments system where further innovation is required, whether to build the capabilities needed to unlock future opportunities or strengthen the system against emerging threats. As Brad Jones, the RBA's Financial System Assistant Governor, noted in his recent speech, innovation and resilience are not opposing forces – they can, and should, reinforce one another.[1]

In each of these areas the RBA and other regulators are cooperating with industry and the Government to achieve outcomes that benefit the broader public.

Modernising the account-to-account payment system

The first area of focus is modernising the account-to-account (A2A) payment system.

An important conversation is currently underway about the future of Australia's Bulk Electronic Clearing System (BECS) – the infrastructure that processes batches of individual payments like payroll and government support payments. While BECS continues to provide reliable and low-cost bulk payments, it is ageing and lacks features that are expected in a modern payments system and that

support innovation. These include real-time, 24/7 processing and the ability to include detailed payments data, both of which are available via the NPP.

In late 2023, the payments industry decided to work towards winding down BECS by the end of this decade. The RBA's review of this decision concluded that there are a number of challenges that industry must address to ensure an effective and orderly transition of payments from BECS to alternative payment systems.[2] The most fundamental of these is the need to develop a vision for the future of the A2A payments system that benefits the Australian public. In essence, this means considering how to achieve safe, reliable, low-cost and easy to use payments between bank accounts into the future.

In response, the relevant industry bodies recently launched a public consultation on the future of A2A payments. Industry has also established an A2A Payments Roundtable involving the RBA and Treasury.

The Roundtable is using the feedback from the consultation to develop a shared vision by the end of this year, and a plan for achieving that vision by mid-2026. This work will involve considering potential trade-offs, such as those between payment cost and reliability, between innovative and legacy systems, and between customer needs and payment provider priorities. As with all payments systems, the interests of the various parties are not necessarily aligned.

Nonetheless, I would encourage all industry participants and the public sector to take this opportunity to work collaboratively to develop a system that delivers the attributes the public expect, and that supports innovation and resilience in our economy, well beyond 2030. Achieving this is in all of our interests.

Enhancing cross-border payments

The second area where progress is required is enhancing cross-border payments.

Innovation matters not just for domestic payments, but also cross-border payments. Cross-border transactions, such as when people send money overseas, can be relatively costly and slow. In an increasingly interconnected world, it is crucial that cross-border payments benefit from the types of modern technologies that are underpinning improvements in domestic payments. This is a central theme of the international policy agenda to enhance cross-border payments.

Australian regulators and financial institutions are playing their part in this international effort. A priority for the RBA has been engaging with industry over the adoption of richer data and new

capabilities in Australia's cross-border payments infrastructure. A good example of this is the recent introduction of the International Payments Service (IPS) on the NPP. The IPS allows incoming cross-border payments to be processed on a real-time, 24/7 basis, so that Australians can receive funds in their accounts faster. It is pleasing to see substantial growth in the number of IPS payments processed over the past year, including outside standard business hours.

A major challenge in cross-border payments is managing financial crime risk. Compliance processes at financial institutions are extensive and complex, which slows transactions down and increases their cost. To help address this challenge, the RBA has collaborated with central bank partners and the Bank for International Settlements Innovation Hub on Project Mandala. This project explored the use of digital technologies to automate compliance processes, reducing risk and the potential for failed transactions. The adoption of this kind of solution could ultimately make cross-border payments faster and cheaper for customers.

Combatting fraud and scams

The third focus area is combatting fraud and scams in payments.

As anyone who has experienced a fraud or scam event would know, they can have a serious and lasting impact on people and organisations. Implementing effective measures to combat fraud and scams is therefore vital for ensuring our payments system is safe – protecting users and supporting confidence in digital payments. This is imperative for the government, regulators and the payments industry.

Innovation by payments providers can play a crucial role here. For instance, the new 'Confirmation of Payee' service that is being rolled out on the NPP represents an important industry collaboration to help to reduce certain types of scams. It enables people transferring funds to someone else to verify whether the account details, including the name, exactly or closely match what they expect before proceeding with the payment. This complements similar functionality already available through the PayID service. Individual banks are also implementing their own innovative measures, such as using artificial intelligence (AI) to detect high-risk transactions.

The fight against fraud and scams will no doubt require further innovation, adaptation and cooperation by the payments industry – we can be certain that fraudsters won't stand still in their efforts to steal people's data and money. One important example is the need to protect card users against advances in quantum computing, which is expected to result in current encryption standards

being broken sometime in the future. This requires migrating card payments to the Advanced Encryption Standard (AES), a quantum-safe solution. [3]

Strengthening operational resilience

The final area of focus is strengthening operational resilience in the payments system.

This objective is about ensuring our payments system is secure and reliable and will remain so in the future. Payments infrastructure is often compared with plumbing – people tend not to notice it until something goes wrong. And when it does, it must be fixed quickly.

Today's operating environment is increasingly complex, with many risks:

- Cybersecurity threats are more frequent and sophisticated, complicated by growing geopolitical tensions.
- Technology systems are growing in complexity, with some operators still reliant on legacy systems.
- Third-party technology providers are increasingly performing critical functions – a failure in one could have ripple effects across the system.

To manage these risks, financial institutions, their technology providers and operators of critical payments infrastructure must strengthen their resilience across three fronts:

1. Prevention – strong cybersecurity, backup systems (like multiple data centres), and staff and user awareness to avoid things like clicking on malicious links or inadvertently sharing information.
2. Detection – having tools in place to monitor, identify and scan for threats and vulnerabilities.
3. Mitigation – having the capability to respond quickly when issues arise, minimise disruption and restore services promptly.

The RBA has a key role to play here as it oversees the governance and operation of payments and settlement systems. A key priority is ensuring these systems have a strong operational risk management culture and capabilities to manage risks effectively, including those faced when maintaining critical legacy systems or upgrading systems.

Beyond these oversight activities, the RBA is also researching system-wide risks as well as approaches that would help boost the overall resilience of the payments system. A current area of focus is understanding how interconnections between systems can amplify the impact of outages.

This work aims to help industry better prepare for potential operational problems across various parts of the system.

Australia's infrastructure for settling payments

Alongside its policy role through the Payments System Board, the RBA operates Australia's interbank settlement system – the Reserve Bank Information and Transfer System (RITS). RITS enables banks and other approved institutions to settle interbank obligations using their accounts at the RBA. When you make a digital payment in Australia, the movement of those funds between financial institutions takes place using RITS.

RITS is critical to Australia's financial stability, ensuring payments are settled safely and efficiently without the build-up of payment obligations and settlement risk between financial institutions. RITS currently settles around $300 billion a day – which is equivalent to turning over Australia's annual GDP about every nine days.

When a critical system like RITS experiences a disruption, the impact can be widespread. Unfortunately, this was evident during a major outage to our systems in October 2022. Following that incident, the RBA commissioned an external review and has since launched initiatives to strengthen RITS's operating model, IT controls and governance. These initiatives are intended to ensure that RITS operates at the extremely high standard of availability and resilience required for such an important national system.

Over its 30-year history, RITS has evolved in line with payment innovations and the needs of the public. One of the most important milestones was the launch of real-time gross settlement in 1998. This change allowed banks to settle high-value payments in real-time, payment by payment, alleviating the risk involved with waiting until the following business day to settle these obligations.

Another notable change occurred in 2018, with the public launch of the Fast Settlement Service (FSS). The FSS enables real-time, 24/7 settlement of payments made via the NPP. While the FSS handles much smaller values than RITS (around $5 billion daily), it processes high volumes – about 4 million transactions per day – most in under a second.[4]

While RITS continues to work well and remains secure and efficient, we recognise that because it is the critical central settlement infrastructure for Australia, it needs to remain fit-for-purpose not just now but into the future. In 2026, we'll begin exploring options to modernise RITS, including assessing whether:

- using modern data exchange methods can improve user experience
- operating hours could be extended or made more flexible
- settlement using central bank money could be made available for a wider range of transactions.

In parallel, we've been researching how new forms of digital money, such as central bank digital currencies and privately issued tokens, may be used to support wholesale payments and settlements.[5] This is providing valuable insights into how the RBA's settlement infrastructure may need to evolve in the future.

With payments and financial market transactions innovating rapidly, modernising RITS is essential to ensure Australia's payments infrastructure remains fit for purpose, supporting innovation, resilience and economic growth well into the future.

The RBA's role in Australia's cash system

While most payments are now made using digital means, cash remains an essential part of our payments system.

Cash contributes to the resilience of the payments system because it is an important back-up payment method when digital payments are not available. This includes during system outages and natural disasters, such as the floods in Queensland earlier this year.

Cash also supports an inclusive payments system – 1.5 million Australians still rely on cash to make their everyday payments, including some older Australians and vulnerable members of society who may have fewer available payment options than others.

And cash is a store of value for people, including in times of uncertainty. During the COVID-19 pandemic period between 2020 and 2022, for example, we issued over $30 billion of banknotes, mostly $50 and $100 notes, which tend to be held for precautionary purposes rather than for day-to-day transactions.

For these reasons, the RBA and the Government are committed to ensuring that cash continues to be a viable payment method for as long as Australians need or want to use it. To this end, the infrastructure underlying the cash system needs to be as efficient, sustainable and resilient as possible.

The RBA plays an important role in the wholesale cash distribution system as the sole issuer of Australian banknotes. We issue bulk quantities of banknotes to the major banks, mostly from our main distribution, processing and storage site in Victoria. The banks then distribute these to the broader community. And we support the availability of high-quality banknotes around the country through various incentive arrangements.

Just as innovation has shaped digital payments, it has been important for meeting our objective to provide banknotes that are secure and trusted by the community. The RBA pioneered the use of polymer (or plastic) for banknotes in the late 1980s, introducing several groundbreaking security features, including a clear window with a hologram. The greater security and durability of the polymer banknotes introduced in the early to mid-1990s contributed to a sustained period of low levels of counterfeiting and longer circulation life, leading to over $1 billion in savings.

As technology evolved in the 2000s and 2010s, we saw counterfeiting again begin to rise and so in response the RBA further upgraded the security features of our banknotes between 2016 and 2020. A combination of these new banknotes, and effective law enforcement, helped to reduce counterfeiting once more to low levels – in 2025 you would have to handle, on average, over 165,000 banknotes before you received a counterfeit, compared with approximately 32,000 banknotes in 2015.

While the RBA plays a key role as the issuer of banknotes, the movement of cash around the country and into the hands of consumers and businesses relies on the banks, cash-in-transit companies and the broader cash industry.

The decline in the use of cash for transactions has put the cash distribution system under pressure. We are participating in discussions with the major banks, the broader industry and Government about how to evolve the operating model to support the future viability of cash. In July, the financial regulators issued a consultation paper on potential regulation to better manage risks in the cash distribution system.[6] In addition, the RBA has worked closely with government agencies and key participants in the cash distribution industry on business continuity arrangements, in the event of a disruption to the supply of cash services.

Work to support a more efficient, sustainable and resilient cash distribution system is ongoing, and will require cooperation and a shared commitment to meeting community expectations for continued access to cash services.

Conclusion

Bradfield gave us the Sydney Harbour Bridge – a connection built to serve generations of people he would never meet. But he also dreamed of a different connection: a comprehensive underground rail system in Sydney that didn't come to life until decades after his death. His story is a reminder that visionary infrastructure often takes time to realise, but its impact can last for generations.

Like Bradfield we must think beyond the present. Our payments system must remain safe, reliable, low-cost and easy to use – but also innovative and future-ready. Any less would fall short of what Australians have come to expect and limit our economic potential.

Maintaining and evolving our payments system is therefore not optional. It is an economic imperative. Just as John Bradfield envisioned a nation connected through steel and stone, we must now envision a nation connected through trust, technology and innovation.

Endnotes

[*] I would like to thank David Emery, Sorcha Ingram, Kasia Kopec and Grant Turner for excellent assistance in preparing this speech, as well as Duke Cole, Greg Dicinoski, Samuel Evangelinos, Chay Fisher, Kate Green, Andrew Hauser, Brad Jones, Kathryn Miegel, Chris Schwartz, Kylie Stewart, Chris Thompson and Faye Wang for their valuable input and comments.

[1] Jones B (2025), 'Anti-fragility and the Financial System', Opening remarks to FINSIA: The Regulators, Sydney, 12 September.

[2] See RBA (2025), 'Decommissioning of the Bulk Electronic Clearing System: RBA Risk Assessment PDF', March.

[3] For further discussion, see Jones, n 1.

[4] Readers might note the difference between the 5 million in daily average NPP transactions and 4 million in daily average FSS settlements. This difference arises because there is no need for settlement via the FSS when the payer and recipient use the same financial institution.

[5] In Project Acacia – a joint experimental research project the RBA is undertaking with the Digital Finance Cooperative Research Centre – we have been exploring with industry partners the role that central bank and privately issued forms of digital money could play in the development of wholesale tokenised asset markets. For further details of this project, see RBA (2025), 'Project Acacia: RBA and DFCRC Announce Chosen Industry Participants and ASIC Provides Regulatory Relief for Tokenised Asset Settlement Research Project', Media Release No 2025-18, 10 July.

[6] Council of Financial Regulators and the Australian Competition and Consumer Commission (2025), 'Regulating Cash Distribution in Australia PDF', Consultation Paper, July.