

Glenn Stevens: Public policy and the payments system

Text by Mr Glenn Stevens, Governor of the Reserve Bank of Australia, of the Third Annual Ian Little Memorial Lecture, Melbourne, 25 March 2009.

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Introduction

It is a great pleasure to be here in Melbourne to deliver the Ian Little Memorial Lecture. I worked with Ian when we were both young recruits in the Research Department of the Reserve Bank in the early 1980s. I remember an easygoing young man with a cheerful disposition, and a mop of curly dark hair. Even then, Ian was a clear thinker with a strong commitment to good public policy. So it was not really surprising that, having left the Reserve Bank in the late 1980s and succeeded in the private sector, he returned to public service in the Victorian Department of Treasury. In that role, as many of you here know better than I do, he shone.

I would occasionally run into Ian at conferences and he would always impress on me, a macroeconomist working in the central bank, the need to acknowledge the importance of microeconomic policy reforms in bettering economic performance. It is a simple, but important, point. While macroeconomic policies are to the fore right now around the world, as governments and central banks seek to foster recovery from recession, in the long term our living standards depend more on innovation and productivity, and less on the manipulation of interest rates or aggregate spending decisions by governments, than common discussion often admits. Real prosperity depends critically on the supply side of the economy – the realm of microeconomic policies.

It is in that spirit that I wish to speak today about something that I have not addressed in public before, namely, the payments system. Although the Reserve Bank is best known for its macroeconomic policy responsibilities, it has, in fact, an important microeconomic responsibility, namely, the competitiveness and efficiency of the payments system, including at the retail level. This obligation was given to the Payments System Board of the Reserve Bank, as a result of the Wallis Committee process in the mid 1990s – hence, my topic this evening.

Motivation

We might begin by asking: why is an efficient payments system important?

The answer is that the payments system facilitates all economic and financial activity, whether it be the day-to-day payments that you and I make, payments between businesses or transactions in financial assets. There are around 18 million transactions in Australia every day, with a value of around \$230 billion. With so many payments, even relatively small inefficiencies can potentially have significant implications for the costs of the payments system. Part of the Reserve Bank's job, therefore, is to promote efficient arrangements in the payment system in the interest of the broader economy. Earlier reforms to the high-value payment system improved efficiency and safety, but in the retail payment area, progress has been slower.

In fulfilling its responsibilities over the past 10 years, the Reserve Bank has in some fairly high-profile instances ultimately resorted to regulation. This has not been because we have had a strong predilection for regulatory solutions. On the contrary, the Reserve Bank has usually first sought to achieve improvements in competition and efficiency without direct regulation. In particular, it has sought to encourage the players in the payments space to identify potential improvements and to undertake reforms to achieve these. But such

industry-led reforms have sometimes been difficult to achieve, and so the Reserve Bank has ultimately been required to take a stronger role, including by regulating.

I want to examine why this is the case, both at a general level and by reference to a recent example. These observations are framed by the particular challenges the Reserve Bank has faced in promoting competition and efficiency in the payments system, but the conclusions apply to a number of other areas where regulators are working to spur improvements in efficiency and productivity.

Co-operation and competition in networks

In payment systems, as with other networks, a certain amount of co-operation between participants is needed to ensure that the system provides benefits to users. For example, when you or I purchase something at a retailer, it should not matter with whom the retailer banks, or with whom you or I bank. We expect to be able to rely on the banking system to transfer money from us to the retailer. We expect that, when we pull out our debit or credit card to pay, it just works. That requires a detailed set of co-operative arrangements between financial institutions to accommodate payments between each other's customers.

These same institutions are also competing with each other, however, to attract customers. A common way to compete is to offer products or features not offered by one's competitors. But if the ability to offer that new product relies on competitors making changes to their systems, innovation may be stymied. Why would other banks be willing to incur the costs of developing the relevant systems in order to help customers of their competitors?

The tension between these two separate dynamics – the need for co-operation and the impulse to competition – means that the industry may have difficulty taking decisions in the interests of the system as a whole, and of the community more broadly. In such circumstances, someone – an industry group or a regulator – may need to play a coordinating role, to encourage improvements in the common infrastructure that benefit all, while still allowing competitive forces between the banks to ensure that the new products are priced competitively and packaged to meet customers' needs.

Of course, these issues are neither new nor unique to the payments industry. It is well accepted in the economic literature that in industries that rely on networks of infrastructure (so-called "network industries") there is an incentive to co-operate in order to gain efficiencies, but a socially optimal level of co-operation might not be achieved.

One illustration of this point which has been cited in the network literature is the development of the rail network in the United States in the 19th century.¹

The early US railway system consisted of a large number of individual links between pairs of destinations, often on different track gauges and designs. There was a clear public (and private) benefit in linking these "networks" to allow goods or passengers to cross efficiently from one railway to another. But, nonetheless, railways were often *designed* to be *incompatible*, so as to prevent competitors from siphoning off traffic.

Eventually, the commercial logic for some degree of co-operation was sufficient to ensure that standardisation occurred and this brought with it large productivity gains. For instance, in the space of a decade, the time for shipment of goods by rail from Philadelphia to Chicago was reduced from nine weeks to three days.² Despite these pay offs, standardisation was

¹ Carlton DW and JM Klamer (1983), "The Need for Coordination among Firms, with Special Reference to Network Industries", *The University of Chicago Law Review*, 50(2), pp 446-465.

² See Carlton and Klamer (1983), p 455.

still not complete. In fact, the only way railways could reach an optimal level of standardisation was horizontal integration – merging competing railways.

While all this sounds a million miles away from Australia's payments system in the 21st century, the parallels are quite strong. For example, like the linking of the railways, the realisation that a single, interconnected EFTPOS system was more valuable than a number of individual EFTPOS systems that could not talk to one another drove co operation and standardisation quite early in the development of that system. But despite the benefits that brought, co operation, standardisation and innovation in Australia's EFTPOS system have not progressed as far as is desirable. The EFTPOS system has essentially remained unchanged since its establishment in the 1980s. The fact that the system is built on *bilateral* links between all the major participants means that there is no one standardised communications protocol between the participants. Furthermore, co operative efforts to innovate or upgrade the system are complicated because they require all bilateral relationships to be renegotiated. This is, in fact, a difficulty with many of Australia's payment systems – they are based on bilateral links, with no established mechanism to foster improvements and expansion in the network.

So left to their own devices, networks may stop short of an efficient level of co-operation. Incomplete standardisation may result, and innovation or movement from one standard to a superior one may be difficult because of co-ordination problems, even where the benefits to society outweigh the costs.

The literature points to several reasons for this potential outcome, some of which are evident from the example I have already given.

The first is the classic economic externality. Firms within the network may be concerned that if they agree a common standard with a competitor, that competitor may be able to capture some of the benefits of moving to that standard. Why would I pay all the cost of converting my railway line to a gauge that can connect with another railway, when my competitor will gain as much of my rail traffic as I will of his? The implication is that competitors in a network might not individually make decisions that are optimal for the network as a whole.

The second is the ineffectiveness of voluntary strategies for achieving co-operation in a network industry owned by competing firms. Establishment of industry bodies to agree standards is a common approach, but the success of these bodies has been mixed. Agreement tends to be delayed where there are vested interests and, in some cases, non standardisation is used as a barrier to entry by competitors.³

Third, there is often a tendency towards "excess inertia" in standards.⁴ Problems with co-ordinating the movement from an old standard to a superior standard (such as the movement to new system architecture in a payment system) may mean that the movement does not occur, or occurs very slowly, even where the benefits to society outweigh the costs of switching. These co ordination problems may be caused by an uneven distribution of the costs and benefits of switching standards, or by uncertainty regarding the movement of rival firms to the new standard.⁵

³ For example, see David P and S Greenstein (1990), "The Economics of Compatibility Standards: An Introduction to Recent Research", *Economics of Innovation and New Technology*, 1(1), pp 3-41; Farrel J and P Klemperer (2007), "Co-ordination and Lock-in: Competition with Switching Costs and Network Effects", in M Armstrong and R Porter (eds), *Handbook of Industrial Organization*, Elsevier, Amsterdam, pp 1967-2072; and for the Australian context, Lowe P (2005), "Innovation and Governance of Payment Systems", Address to Banktech.05 Conference, Sydney, 16 September.

⁴ For example, see Farrel and Klemperer (2007).

⁵ There can also be, in some cases, a tendency towards overly rapid changes in standards (so called "excess momentum"), which can lead to the premature adoption of a new standard that is less efficient than the old standard. Further, those who benefit disproportionately from a change to a new standard will fail to consider

A recent Australian example

From first principles, therefore, we might expect that achieving agreement among Australian financial institutions on development of the payments system might not be easy. So it has proved. There are a number of examples of this, but a recent one is the efforts by the industry at reform of the ATM system.

As you may be aware, there have recently been some changes to the way ATM transactions at machines not owned by your bank are priced and paid for. Instead of paying a relatively obscure “foreign ATM fee”, that was charged to your bank account at the end of the month, people are now presented with the cost of the transaction in real time. These changes will, in our view, allow competitive forces to come into play in a way that was previously impossible.

But it is the process of achieving the reforms, more than the likely benefits, on which I want to focus this evening. In particular, it required changes in the bilateral links between all the major players in the system. In this sense, the problems were akin to those of the US railway system – how do we get all the competitors to agree to change their bilateral links in a standardised way?

Work by the industry on the reforms started as long ago as 2001. While some progress was made over the next few years, participants ultimately could not agree and asked the Payments System Board for guidance on the way forward. Finally, after much cajoling by the Reserve Bank, the new arrangements were implemented earlier this month – some eight years after discussions on the issue commenced. Ironically, the package implemented differs very little from the proposal put forward by the industry group itself in 2004, which was subsequently abandoned owing to irreconcilable differences between some of the parties. Moreover, despite a firm desire by the industry to implement the new arrangements without Reserve Bank intervention, the industry ultimately asked the Reserve Bank to use its powers to help finalise the process.

This is not a unique example. Reforms to most of Australia’s payment systems including cheques, direct entry and EFTPOS faced similar challenges. As we have seen, this is not altogether surprising given the network nature of the payments system and the number of players which must co-operate, but also compete.

The bilateral architecture that I have already mentioned is also a difficulty. Every large bank has an agreement with every other large bank about how to handle payments from one another’s customers. The more banks there are, the more agreements are necessary and the more complicated the system becomes. To use the railway line analogy, the more customised tracks are built, the more difficult the task of ultimately converting all tracks to a standard gauge.

This has two implications. First, while these bilateral agreements can be helpful in getting a system started initially, and may subsequently work well for those already in the system, potential new entrants face the prospect of negotiating numerous different connections. This can act as a barrier to entry, inhibiting competition.

Second, because upgrading the network requires participants to agree, since they all must make changes, each participant therefore can effectively veto, or at least delay, any decisions affecting the network. Because different participants have different technology cycles and different strategic interests, there is a high probability that some participants will be unwilling to proceed at any given point in time. If a participant thinks a particular change may provide another participant with a potential competitive advantage, it will probably attempt to delay. Indeed, if one participant sees a potential competitive advantage in a

the loss of network benefits to those who are reluctant or late to change, and these participants may end up remaining on the old standard with a reduced network. See Farrel and Klemperer (2007).

change, it is almost guaranteed that another will see a disadvantage and, therefore, seek to block the change. This results in a significant co-ordination problem for the industry.

The result is that, in the underlying architecture of the Australian payments system, very little has changed over the past 20 or 30 years, even though technology has evolved in the quarter of a century since the technology underlying the ATM and EFTPOS systems was first established. So while the payments system infrastructure has served Australia well, pressures for change are building. The network structure needs to be updated and services to customers are starting to fall behind those available in other countries. In the past, the Reserve Bank has identified real-time internet payments, business-to-business payments and online payment mechanisms as examples where progress has been made overseas but not, to date, in Australia.

The resulting co-ordination challenges were very evident in the process of reform in the ATM system. With each of the parties having different objectives, consensus was hard to achieve. For example, small institutions would only consider a system that allowed them to form fee-free networks among themselves – otherwise they would be at a competitive disadvantage to the big banks with their large ATM networks. But larger institutions saw an opportunity to obtain a competitive advantage if smaller institutions could not form larger fee-free networks. There was also reluctance to liberalise access to the system. While improved access would serve to increase the benefits of the system as a whole and therefore the participants collectively, each bank tended to focus on the costs it would bear individually as well as the competition it would face. In short, there were problems because there was no participant in the system thinking of the benefit to the system as a whole with the power to effect change.

Now in many countries, this role is handled by a single private sector entity that manages a system or systems. For example, the credit card schemes have a central body responsible for governance, innovation and promotion. Their incentive is to do things that expand the network, making its use easier and more attractive and increasing the number of participants. They have, in effect, internalised some of the externalities inherent in the network. While the credit card systems have had other elements that unduly limited competition in some respects, the centralised approach is arguably superior for network innovation and growth. That central body can determine standards and co-ordinate change. These arrangements are also more access-friendly in that a new entrant need only establish one, standardised connection to the system. Some private payment systems in other countries have such an entity – for example, LINK which manages the ATM system in the United Kingdom, Interac which manages the equivalent of the EFTPOS and ATM systems in Canada, and Paymark which manages New Zealand's EFTPOS network. But that entity is missing in Australian payment systems.

What role for public policy?

These considerations all suggest that there is an important potential role for public policy in promoting change in the payments system. While the academic literature is divided generally on the role of regulation in network industries, there seems to be support for careful regulatory intervention in industries with competing network components where sufficient standardisation or a move between standards cannot be achieved in a timely manner. There also seems to be considerable sense in having an entity with responsibility to consider the interests of the system (and society) as a whole and the power to achieve reform to that end. Indeed, the need to have a body responsible for promoting the public interest through competition and efficiency in the payments system was recognised by the Wallis Committee over a decade ago. It led directly to the establishment of the Payments System Board at the Reserve Bank and the granting of its current statutory goals and powers.

The fact that the central bank fulfils this oversight role in Australia is unusual internationally – in many countries, issues of competition in, and efficiency of, payment systems fall to competition authorities. But it is nevertheless common to find structures in place in network

industries to assist in promoting access and the efficient setting of standards – whether this is a body that merely assists with co-ordination or one that has powers to enforce or perhaps set standards. We see this in network industries in Australia, such as telecommunications, electricity and ports, where there is frequently some sort of public body with oversight of the network, perhaps operating in conjunction with an industry body or bodies.

Of course, such bodies should not take a decision to regulate hastily. In most cases, a graduated approach to regulation in these areas is pursued, reflecting a reluctance to assume that a regulatory solution is necessarily superior, or that the government would necessarily be able to choose the best standard, particularly in a highly technical or rapidly changing field. The typical approach of network regulators is to prefer a co-operative industry approach to standard setting, to provide some suasion where this process is unsuccessful, but ultimately to set standards if necessary. Where intervention is required, the academic literature suggests that we might look first of all to ensure compatibility between competing standards – for instance, by rules governing access and interconnection between competing networks – before setting detailed standards themselves.

So there is not a presumption that a black-letter regulatory solution will be adopted. In fact, at the time that the current regulatory arrangements for Australia's payment systems were established, there was an expectation that a co-regulatory model would be followed. In this view, industry would progress reform for the most part and the Reserve Bank's powers would be used only occasionally, as a last resort, where reform could not otherwise be achieved.

As it has turned out, however, the Reserve Bank's powers have had to be used more often than I suspect was initially imagined. The Reserve Bank always explores ways that its statutory goals of competition and efficiency in the payments system can be achieved without resorting to its direct regulatory powers. But the history of the ATM reforms demonstrates how difficult it is for pure industry-based reform to move ahead without at least some push from a public policy body.

Possible approaches

Reflecting on that experience then, and looking to the future, the question is how best to strike the balance and to facilitate reform most effectively. There are a few possible approaches – each one more interventionist than the previous one.

First, the Reserve Bank could agree targets and timelines with the industry, but without any explicit regulation or penalty for failure to meet those targets. This approach is similar to the approach that the existing industry payments body, the Australian Payments Clearing Association (APCA), takes with many of its projects. Provided agreement on the need for change can be reached (no small achievement), APCA plays a co-ordinating role in organising a project plan, providing some resources and setting timelines and targets, though in the past these projects have tended to focus on technical issues rather than strategic directions.

In the absence of agreement on the need for change, however, industry-based projects – which, after all, rely on mutual agreement – tend not to proceed sufficiently quickly.

That observation leads to the second option – the *possibility* of the Reserve Bank using overt regulation may be enough to forge agreement among industry participants. This is the path that was predominantly followed in progressing reform of the ATM system, and in a number of other reforms to the payments system. Where industry agreement on an issue was not forthcoming, the Reserve Bank has engaged the various sides to seek a solution with the clear possibility that it might regulate if agreement could not be reached. This approach was essentially behind the establishment of the Payments Council in the United Kingdom, and the

development of the UK's "Faster Payments"⁶ – both of these initiatives were undertaken with the knowledge that, were something not done, there would be official intervention.

While this can work, and emphasises the co-ordination role that the Reserve Bank can play in the industry, the experience with the ATM system suggests that it still may be a drawn-out process. Individual participants with a preference for the *status quo* have no incentive to push the plan along and so it relies on the Reserve Bank setting a timetable for agreement and implementation – a timetable that is invariably argued to be "challenging".

A third, more intrusive, option is for the Reserve Bank to set explicit standards – what may be viewed as more traditional regulation. This is the approach that was taken when dealing with the credit card schemes, where the Reserve Bank set a number of standards dealing with the level of interchange fees and the imposition of surcharges. This approach could, however, also be used to achieve industry co-ordination around technical issues. For example, the Reserve Bank could set technical standards where the industry has been unable to agree on a common standard itself.

Such an approach may yet become relevant in Australia's electronic payments system, especially where co-ordination problems are inhibiting innovation. As an example, some have suggested that the Reserve Bank could play a role in the further development of the EFTPOS system. The system was designed originally to transfer money from consumer accounts to merchant accounts. These transfers are initiated when an EFTPOS card is swiped through a merchant's terminal and the impact on the customer's account is immediate. In recent years, however, there has been demand to use the system in a different way, to send payments into consumers' accounts in real time. These demands flowed initially from the government looking to ensure benefit payments reach recipients as quickly as possible – for example, when providing emergency funds after a natural disaster. The EFTPOS system at present can accommodate these sorts of payments only in a limited way.

While some participants in the industry have seen benefit in expanding the EFTPOS message format to enable such transactions, there has been limited progress. A requirement by the Reserve Bank that all participants in the industry be able to accept instructions conforming to a common message standard would facilitate access by new entrants, and thus competition. If the Reserve Bank chose to require use of an international standard, that could also facilitate more competition from overseas providers of payment related services. A mandate from the Reserve Bank that EFTPOS message formats must be able to support credit transactions might likewise lay the foundation for innovation in the EFTPOS system based on these transactions more quickly than the industry might be able to achieve by itself.

Notwithstanding its regulations with respect to card payment systems, the Reserve Bank has in the past preferred the first two of the above options. This is particularly the case with respect to issues relating to technical standards and system architecture, where the Reserve Bank has on occasion raised the issues but left the industry to drive reforms. We remain conscious of the risks that public intervention itself may be an impediment to innovation. As we have said a number of times, our hope is that the industry will deal with these issues itself. But we also know that if the industry fails to push ahead with improvements to the system, Australians will be denied the full benefits of a modern retail payments system.

To a large extent, the future approach of the Payments System Board depends on the behaviour of industry participants. If industry agreement on further reforms can be reached relatively quickly, then the need for the Reserve Bank's co-ordinating role to be interventionist is limited. On the other hand, if, as on some past occasions, the industry is unable to carry forward reform and innovation by itself, the Reserve Bank would consider making more extensive use of the tools at its disposal.

⁶ "Faster Payments" is a system to allow internet banking payments to be made in close to real time.

Conclusion

The economics of networks are complex, and the role of public policy is a delicate one. The aim is to ensure, as far as we can, that the correct balance is struck between the need for co-operation and the benefits of competition. Co-operation is required in order to ensure that the benefits of an extensive, and reasonably standardised, network can be enjoyed by the public, raising economic welfare. Competition is vital in the long run to make sure that costs are minimised and the incentive to respond to changing consumer preferences maximised. Policy has to recognise and fulfil its role in dealing with the externalities inherent in the set of decisions made by private market participants, while also respecting and maintaining the competitive dynamic.

We recognise that the roles of the industry participants and the regulator are mutually interdependent. We trust that the industry does too. The Payments System Board is content to confine itself to encouraging industry solutions and being the occasional catalyst for agreement among the parties, where that achieves the goals the Board has been given. But it is and must be also prepared, if needed, to use regulatory powers more forcefully. In judging which approach is preferred, we will respond to the industry's behaviour, just as they respond to ours.

The approach we adopt in any instance has to be tailored to the circumstances and we will ourselves on occasion need to innovate. What will be constant is the set of statutory goals given to the Payments System Board – controlling risk, and promoting competition and efficiency in the payments system. The Payments System Board is committed to those objectives and will be pragmatic, but determined, in pursuing them. We look forward to effective engagement with the industry in the process.