

## **The Development of a Government Bond Market: The Australian Experience**

JOHN BROADBENT

**T**he gradual evolution of a liquid and efficient government bond market in Australia can be traced largely to the opening up of its financial system in the early 1980s. The evolution has been gradual, with innovations stemming from a recognition that the market needed to operate differently, if the system were to become more efficient. Though deep and liquid, this market remains small compared with those of many other countries, both in absolute terms and as a proportion of GDP (see table 1). In absolute terms, it is around US\$60 billion and represents less than 20% of GDP. Its relatively small size is a reflection of Australia's generally low level of government debt—we have not gone out of the way to promote a government bond market for any perceived advantages that it may provide to the financial system more generally. Yet, our bond market rates quite well internationally in terms of liquidity, as indicated by the quite tight spreads generally seen in the secondary market.

Figure 1 plots the size of 24 major government markets against a typical bid/ask spread for a trade in a liquid line 1 of stock. Each market in the sample deals in over US\$10 billion and has unrestricted access to foreign investors. Australia's typical spread is lower than in markets of comparable size and lower than in many other larger markets.

**Table 1. Government Bond Markets in Selected Countries**

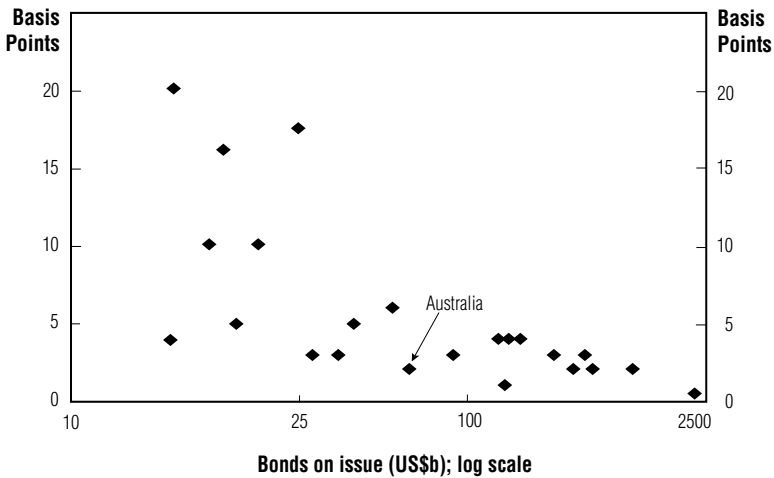
| Country        | Billions of U.S. dollars | Percentage of GDP |
|----------------|--------------------------|-------------------|
| Italy          | 971                      | 85                |
| Belgium        | 191                      | 79                |
| Greece         | 69                       | 57                |
| Denmark        | 90                       | 53                |
| South Africa   | 61                       | 47                |
| Sweden         | 102                      | 45                |
| Japan          | 1,855                    | 44                |
| United Kingdom | 459                      | 41                |
| France         | 484                      | 35                |
| Canada         | 210                      | 34                |
| United States  | 2,741                    | 34                |
| Spain          | 178                      | 33                |
| Finland        | 40                       | 33                |
| Germany        | 653                      | 31                |
| Portugal       | 29                       | 28                |
| Malaysia       | 19                       | 27                |
| New Zealand    | 11                       | 16                |
| Singapore      | 14                       | 16                |
| Australia      | 58                       | 15                |
| Switzerland    | 27                       | 10                |
| Hong Kong      | 13                       | 8                 |
| Korea          | 23                       | 8                 |
| Norway         | 19                       | 8                 |
| China          | 66                       | 7                 |

Source: Salomon Smith Barney, APEC Survey, end 1997.

Looking back over the past few decades, I think that several factors stand out as having fostered liquidity in our market: Australia accepts market prices by tendering government securities, it has consolidated outstanding bonds into benchmark lines of stock, and the central bank has been actively involved in the market.

## TENDERING

Since the early 1980s, bonds have been sold through a tender auction system. The Treasury determines the amount of debt to be sold and the market sets the price via competitive bidding. The amount of bonds issued at tender in any financial year depends on the size of

**Figure 1. Bid/Offer Spread in Government Bond Markets**

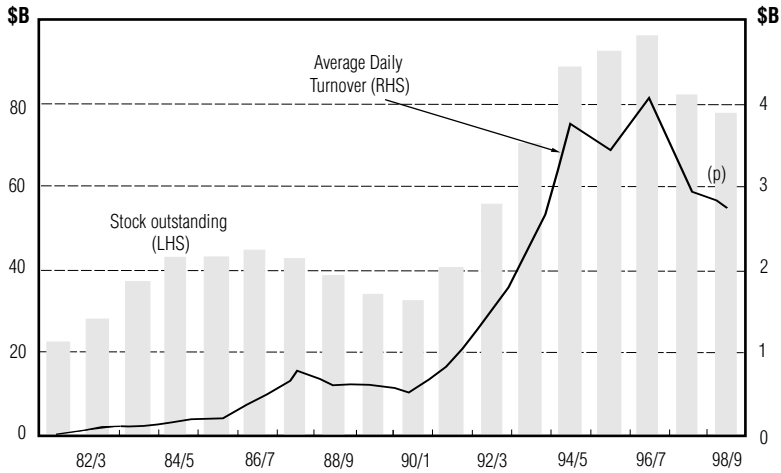
Source: JP Morgan.

the Commonwealth government's budget deficit and the volume of maturing bonds that need to be financed. An estimate of the amount that needs to be issued is provided to the market at the start of the year, and there is a fairly regular issuance calendar that spreads the task throughout the year.

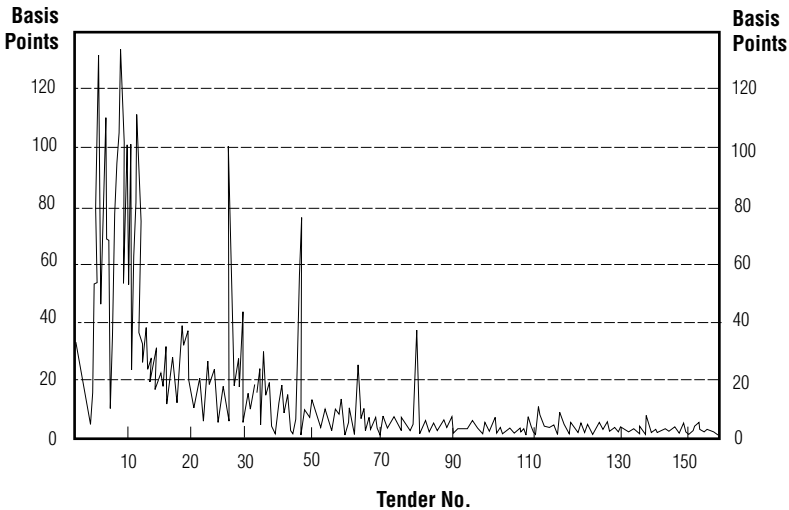
What I have described is, of course, based on the notion that the government fully funds its deficit by borrowing from the public at market prices. It is the bedrock of sound financial management, with the government no longer tempted to cover its revenue shortfall through central bank financing. Prior to the introduction of tenders, however, arrangements for issuing and marketing government securities were not well suited to the large volumes involved. The government set the yields and accepted whatever quantities were offered at those yields. Under those conditions, investors were mainly interested in "captive market" arrangements, which required or encouraged certain financial institutions to hold minimum quantities of government securities. There was very low activity in bond markets at this time (figure 2).

Initially, the tendering process did not provide either the central bank or the Treasury with a particularly easy ride. Figure 3 shows

**Figure 2. Government Bonds**



**Figure 3. Bond Tenders: Spread**



that spreads at tender were very wide: the average spread in the first 10 tenders was about 60 basis points. This partly reflected the nature of the market at the time. There was little demand from investors because they were coming from a captive market environment, market-making intermediaries were unaccustomed to such large

price fluctuations, and there was an issuer that needed to move a large volume of securities. But these pressures settled down fairly quickly as market liquidity improved. In the past decade, the range of bids in tenders has averaged about 4 basis points.

Markets quickly adapt to new opportunities when they present themselves. But the central bank made a few changes to the tendering process so as to reduce uncertainty in the market and to encourage further development. First, it cut back significantly the period between bidding and announcing the results. At the first tender, bids closed at noon on Thursday, and the results were not announced until 5 P.M. on Friday, after the market closed. Participants could not adjust positions until markets opened on the Monday. By the eighth tender, this gap had been cut significantly, so that results were available when markets opened the following day. With the introduction of electronic tendering, results are now announced just an hour and a quarter after the tender closes. The speedier response to tenders has helped narrow the range of bids by significantly reducing market risk between the time that a bid is entered until the results are known.

Second, the bank tried to improve trading in the secondary market by encouraging more participants to make a market. It did so by altering the counterparties it would be willing to deal with in the government securities markets. Typically, a central bank is a fairly large player in its own market by virtue of the size of its balance sheet. In the mid-1980s, for instance, Australia's central bank increased the number of counterparties that it would be willing to undertake transactions with in government securities, on the basis of the level of activity that each of these dealers undertook in the markets. Dealers with relatively high levels of turnover (more than 1% of total market turnover) were accorded the status of 'reporting bond dealer,' which gave them the opportunity to undertake transactions in longer-dated government securities with the central bank.

## CONSOLIDATION OF SECURITIES ON ISSUE

Australia has also sought to improve liquidity in the market by building up benchmark lines of stock. This has not only limited the number

of individual securities on issue, but has allowed outstandings of each stock to rise to a critical mass that promotes liquidity in that issue. Investors feel confident that they can undertake reasonably large transactions without moving the price too far against themselves. Market-makers can quote two-way prices knowing that an adequate level of stock is likely to be available in the market to fill orders. The issuer, the Commonwealth, shares in the benefits by being able to finance its spending more cheaply than would otherwise be the case.

In the past financial year, Australia has built up several lines of stock at tender (figure 4). There were seven tenders during the year with a total gross issuance program of around \$4 billion to cover maturing Commonwealth Government Securities (CGS). (Because the government is running a fiscal surplus, net issuance was actually negative.) The June 2011 bond issue<sup>2</sup> was a new line of stock with an initial tender of \$600 million sold to the public. Being a new line, an additional \$200 million was also taken up by the Reserve Bank for its portfolio. (This is shown by the lightly shaded area of figure 4.) Over the remainder of the year, further tenders added another \$2½ billion of stock to the market, bringing the total amount issued to over \$3 billion. Successive tenders will probably endeavor to build

**Figure 4. Bond Issues in 1998–99**

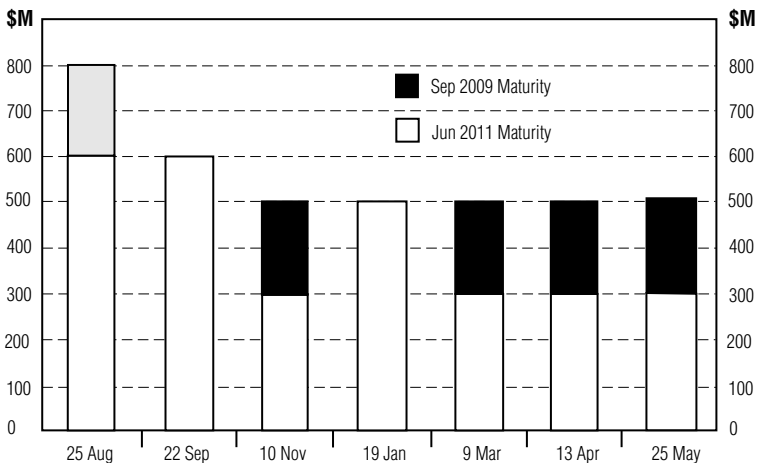
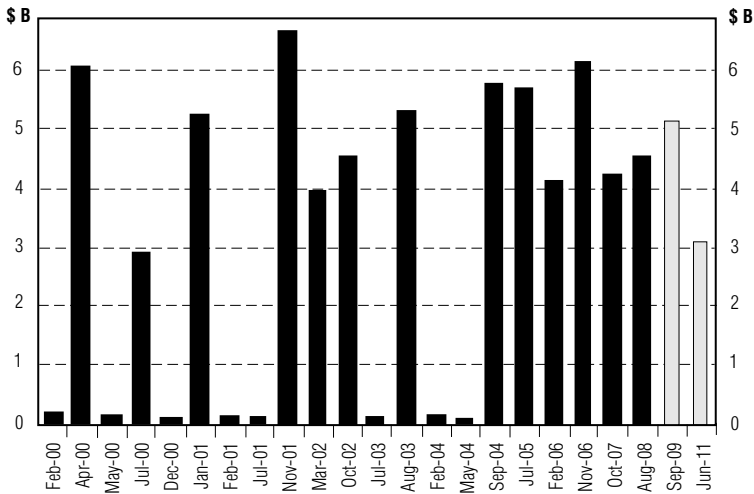


Figure 5. Bonds Issued



the outstanding amount of this bond line to around \$5 billion to \$6 billion.

The other line of bonds offered were maturing in September 2009. In 1999, \$800 million was offered, bringing the total on issue to over \$5 billion, a level that we see as being large enough to ensure that there is good liquidity in the market. The stock on issue has been consolidated over a number of years. Currently, there are 15 benchmark lines; they total about \$70 billion and make up over 95% of the bonds outstanding (figure 5). In marked contrast, in 1985 when the bond market was still in its infancy, there were 128 separate series of Treasury bonds on issue, with an aggregate face value of about \$36 billion. This represented an average of just over \$280 million per line of stock.

Australia has been consolidating the lines over a number of years, though adjustment has speeded up since it began retiring some lines, so that liquidity might be further enhanced in the benchmark lines. Most often, this has been undertaken by the Reserve Bank in the normal course of managing its own portfolio. In turn, the bank sells the stock to the Commonwealth for retirement. Less frequently, the Commonwealth has also undertaken reverse tenders in an attempt to draw in selected lines from the market.

## ACTIVE CENTRAL BANK INVOLVEMENT IN MARKETS

The central bank has always sought to promote efficient bond trading, thereby adding to market depth and improving liquidity in the government securities market. It has done this by improving market infrastructure, seeking an appropriate form of dealer arrangement, providing timely data on the market, and maintaining a relatively high profile in the repo market.

### **Improving Market Infrastructure**

During the 1990s, we set out to strengthen settlement arrangements for government securities to ensure they continued to meet international best practices. Securities are now settled on a delivery-versus-payment (DVP) basis in real time and in electronic form.

### **Seeking an Appropriate Form of Dealer Arrangement**

Initially, the Bank offered special arrangements to a select group of financial institutions, the so-called authorized money market dealers. These dealers were obliged to make markets in short-term Commonwealth government securities and in repurchase agreements based on Commonwealth government securities. In return for these and other repository facilities for the banking system, they were granted access to liquidity support at the central bank and the right to be a counterparty to the Reserve Bank's domestic open market operations. The central bank encouraged market-making for longer-dated securities with only with a limited range of counterparties that were active in these securities. These arrangements served the market well in the early stages of its development. Over time, however, changes in the institutional arrangements, growth of the market, and concerns about perceptions of the status accorded to these dealer networks suggested that it was no longer necessary to give these groups special recognition. As a result, the bank decided to deal with any counterparty that was a member of the settlement system for Commonwealth Government Securities. (At the time, the Reserve Bank would only accept Commonwealth Government Securities as collateral in its repo transactions with the market.) This greatly ex-

panded the range of counterparties that the Bank was willing to deal with. It encompassed about 150 institutions, including the banks, those who were previously authorized dealers or reporting bond dealers, and other significant holders of Commonwealth securities, such as insurance companies and nominee companies.

### Providing Timely Data to the Market

The Reserve Bank publishes data on activity in the bond market on a daily basis (table 2). These include a survey-based average of bid/offer yields, turnover, and the amount on issue for each of the benchmark stocks. The data provide an objective measure of the yield curve as well as an indication of the relative levels of activity in selected stocks.

### Maintaining a Relatively High Profile in the Repo Market

The repo market is essential in promoting liquidity in the government securities market. As well as encouraging participants to fol-

**Table 2. Daily Information on Government Bonds Released by the Reserve Bank of Australia**

| Day maturity | Indicative yield mid rates |        | Turnover (millions of dollars) |        | Total on issue (millions of dollars) |
|--------------|----------------------------|--------|--------------------------------|--------|--------------------------------------|
|              | 28-Sep                     | 27-Sep | 27-Sep                         | 24-Sep | 28-Sep                               |
| Apr-00       | 4.73                       | 4.70   | 220                            | 55     | 5,995                                |
| Jul-00       | 4.70                       | 4.66   | 117                            | 174    | 2882                                 |
| Jan-01       | 5.10                       | 5.04   | 134                            | 73     | 5,199                                |
| Nov-01       | 5.28                       | 5.21   | 114                            | 358    | 2638                                 |
| Mar-02       | 5.36                       | 5.29   | 595                            | 668    | 3,904                                |
| Oct-02       | 5.50                       | 5.44   | 54                             | 191    | 4,497                                |
| Aug-03       | 5.63                       | 5.57   | 496                            | 417    | 5,290                                |
| Sep-04       | 5.75                       | 5.69   | 388                            | 72     | 5,712                                |
| Jul-05       | 5.88                       | 5.82   | 394                            | 276    | 5,502                                |
| Feb-06       | 5.97                       | 5.91   | 345                            | 244    | 4,102                                |
| Nov-06       | 6.02                       | 5.96   | 280                            | 315    | 6,103                                |
| Oct-07       | 6.12                       | 6.06   | 229                            | 344    | 4,207                                |
| Aug-08       | 6.16                       | 6.11   | 444                            | 508    | 4,494                                |
| Sep-09       | 6.18                       | 6.12   | 953                            | 1074   | 5,309                                |
| Jun-11       | 6.25                       | 6.20   | 256                            | 264    | 3,395                                |

Source: Reserve Bank of Australia Daily Press Release.

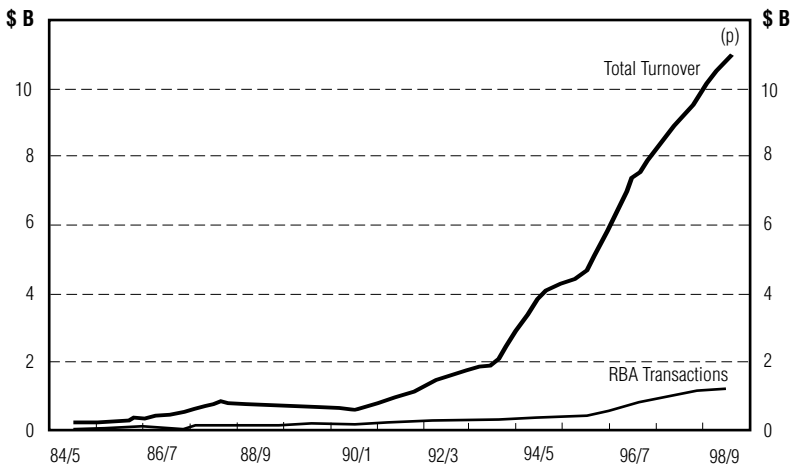
low best market practices (such as using the Public Securities Association/International Securities Markets Association Master Agreement for transactions), the Reserve Bank is an active participant in this market (figure 6). The bank carries out most of its market operations in the repurchase market. This provides it with the flexibility needed to manage cash conditions and to implement monetary policy effectively.

We are also reasonably active in the securities lending market using repurchases. Being a fairly large player in the domestic market (the bank holds more than 10% of total Commonwealth securities on issue), our portfolio can provide a source of specific lines of stock in times of market squeezes. We are not “on the frontline” of the securities lending market, but rather we are an active participant if we think that a squeeze in a specific line of stock may not be in the best interests of the market in general.

**CONCLUSION**

A deep and liquid government bond market is a worthwhile addition to a nation’s financial infrastructure. While there are no golden

**Figure 6. Turnover in Repurchase Agreements on Government Bonds**



rules that ensure a deep and liquid market, some basic elements need to be present if a market is to flourish. At a minimum, systems must have clear and unambiguous rules and procedures, must be legally robust, and be subject to effective regulation. Once these conditions are met, some factors that I have alluded to can further encourage market development.

In Australia, we are faced with a declining market in government securities as the government continues to run fiscal surpluses. In line with the reduction in bonds outstanding, turnover has also declined. One of our challenges over the next few years, therefore, is to continue on the present course and to maintain a deep and liquid market for government securities.