

Australia

Peter McCray

I. Introduction

Australia today enjoys open, dynamic and highly efficient financial markets. International capital flows are largely unrestricted, while domestic interest rates and the exchange rate for the Australian dollar are market-determined. Financial sector regulatory and taxation arrangements have been explicitly designed so as to minimize their impact on investment decisions and on market price signals more generally. A robust prudential framework is complemented by clearing, settlement, and payments systems in line with best international practice.

Australia's modern, highly developed financial system is not a result of accident or good fortune, but the consistent adoption of market-based policies and a concerted program of reform that dates back at least to the late 1970s, with the establishment of the landmark Campbell Committee of Inquiry into the Australian Financial System. The rationale behind this longstanding policy focus on the robustness, diversity, and flexibility of financial markets is not at all difficult to appreciate.

Among the many benefits of Australia's financial markets is their important role as a vehicle of real economy resiliency and macro-economic adjustment. Accordingly, policymakers have a direct interest in the flexibility and capacity for innovation of domestic financial markets, and this has attracted increasing international attention in recent times.

For example, in an analysis presented at the Annual Meetings of the International Monetary Fund last year, the US Federal Reserve Chairman, Dr. Alan Greenspan, noted that those economies which had proved most resilient in the face of the global dislocations of 1997 and 1998 were those which enjoyed broad financial sector diversity, and which had available to them "multiple alternatives to transform an economy's savings into capital investment...should the primary form of intermediation fail."

Dr. Greenspan went on to suggest that Australia served as “an interesting test case in the most recent Asian financial turmoil. Despite its close trade and financial ties to Asia, the Australian economy exhibited few signs of contagion from contiguous economies, arguably because Australia already had well-developed capital markets as well as a sturdy banking system.”

This broader macro-adjustment role of financial markets is a particularly interesting policy issue, and one on which there is doubtless a great deal more to be said on an appropriate occasion. However, the primary purpose of this particular paper is not to discuss Australian financial markets and their broader macroeconomic significance, but rather to address the more specific issue of the growth and development of the Australian government bond market.

Nonetheless, to assist in putting some of the market development issues here into an appropriate analytical context, it is perhaps worth sketching in a little more detail the standing of Australia’s markets generally before turning specifically to a brief description of the current shape of the domestic government bond market. These issues are covered in the following section, Part II, of the paper.

Part III looks briefly backward, mapping the broad institutional terrain in which the Australian government bond market of 15–20 years ago existed, as well as discussing some of the major operational features of the broader financial markets of those days, the better to illustrate the scope and scale of reforms to institutional and market arrangements and structures that have occurred over the intervening period. Part IV looks in more detail at major policy and operational reforms—both in the operational approach to markets and in supporting market infrastructure—that have contributed to the emergence of the current market for Australian government bonds. The paper concludes with a brief summary “checklist” of the major market development issues that authorities might consider in formulating strategies for establishing or building on existing domestic government bond market capacity.

II. Australia’s Financial Markets: The Current Market for Australian Government Bonds

Australian financial markets are complete, in the sense that there are observable, well-developed markets in the money and banking, bonds, equities, foreign exchange, and derivatives sectors. None of these market sectors is extraordinarily large judged against the size of equivalent markets in the leading global players such as the US or Japan. The Australian markets are not insignificant either, with trading activity in

many domestic market sectors well ahead of what might be expected by simple reference to the absolute size of the economy.

Australia has the fourteenth largest GDP in the world, amounting to around 4 percent of global activity and across a range of financial products Australian markets “punch well above their weight.”

As in many other countries, the market for foreign exchange in Australia is the largest market sector, with around half of aggregate daily turnover in the domestic foreign exchange market involving the Australian dollar. The Australian foreign exchange market is the ninth largest in the world, with the Australian dollar the world’s seventh most actively traded currency.

Other domestic markets are markedly smaller, and do not figure quite so prominently on the international scale. Nonetheless, across all sectors, Australian markets remain significant in global terms, as the following table illustrates.

In the fixed interest sector, the outstanding development of the past couple of years has been the reemergence and rapid growth of issuance in the domestic nongovernment bond market—at a time when the impact of fiscal consolidation and the proceeds of privatization has seen a marked reduction in the bond outstandings of both the Australian Government and various state governments. Figures 1 and 2 highlight a couple of interesting trends.

New domestic issues of bonds by private borrowers reached record levels in 1999 and aggregate outstanding is now larger than those for state government paper. Major issuers in this market are asset-backed issuers, financial institutions, corporates, and nonresidents. The rapid growth of this market in recent years reflects a variety of both cyclical and structural factors, and prospects for further growth in this sector seem soundly based.

However, while the reduced call on the markets by the government sector has certainly been a factor in the rapid growth of private issuance, there is also a degree of complementarity between the two market segments—a point might well be reached where further reductions in the supply of government bonds would not necessarily lead to even greater issuance by the private sector. This reflects in large part the critical role that the government (risk-free) yield curve plays in facilitating private issuance.

In light of this and related considerations, the Australian Government has stated its commitment to preserving a liquid government bond market and sovereign curve, even though there is no immediate funding need to do so and fiscal projections imply the scope for early elimination of gross debt outstandings.

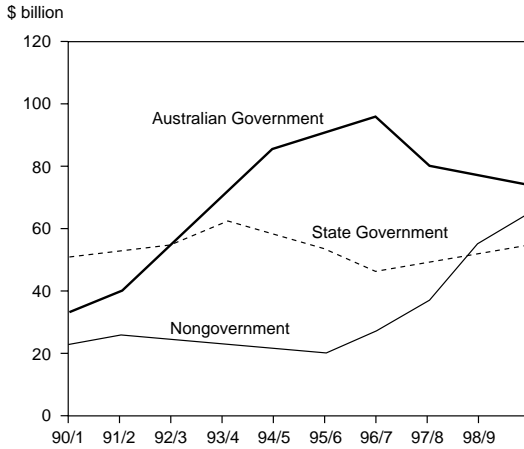
TABLE 1
Comparison of GDP, Foreign Turnover, Equity Market Turnover, and Fixed Interest Turnover in Various Countries

Gross Domestic Product ^a	Foreign Exchange Turnover		Equity Market Turnover		Fixed Interest Market Turnover	
	By Market	By Currency	Physical Market	Futures Market ^b	Physical Market ^c	Futures Market ^d
US	UK	US dollar	US	US	US	US
Japan	US	Euro	Taipei, China	Germany	Japan	UK
Germany	Japan	Yen	Germany	Japan	Germany	Germany
France	Singapore	Pound	UK	France	Italy	Japan
UK	Germany	Swiss franc	Japan	Italy	France	Singapore
Italy	Switzerland	Can dollar	Switzerland	UK	UK	Australia
China, Peoples' Rep. of	Hong Kong, China	Aust dollar	Hong Kong, China	Korea, Rep. of	Canada	
Brazil	France		Spain	Spain	Netherlands	
Canada	Australia		France	Hong Kong, China	Belgium	
Spain			Canada	Singapore	Denmark	
Mexico			Netherlands	Switzerland	Spain	
Netherlands			Italy	Australia	Switzerland	
India			Australia		Sweden	
Australia					Australia	

^a 1998 nominal GDP; ^b Sharemarket index figures; ^c Bond market outstandings (total publicly listed); ^d Includes money market futures contracts.

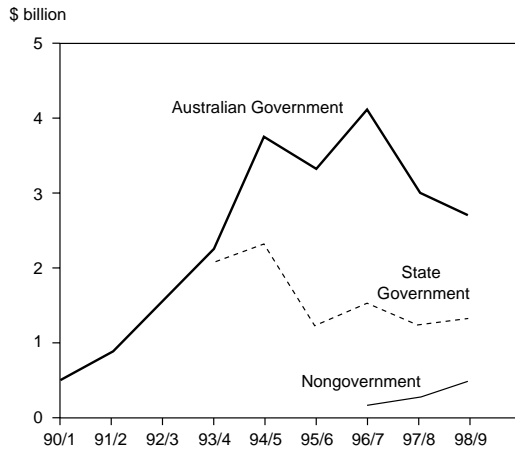
Sources: "World Financial Markets," JP Morgan, January 2000; Central Bank Survey of Foreign Exchange and Derivatives Market Activity, 1998, BIS; Various Exchanges, Futures and OTC World magazine; and "How Big is the World Bond Market," Salomon Smith Barney, July 1999.

FIGURE 1
Domestic Bonds Outstanding



Source: Reserve Bank of Australia. Note: Turnover excludes repurchase agreements.

FIGURE 2
Bond Market Turnover (daily average)



Note: Turnover excludes repurchase agreements.

Source: Australian Financial Markets Association and Reserve Bank of Australia.

Although private sector bond outstandings are now approaching the level of aggregate Australian government bond outstandings, as Figure 2 above indicates, secondary market turnover of privately issued paper continues to be dwarfed by secondary market activity in the government sector.

The reduction in Australian government bond outstanding has clearly seen some reduction in turnover in recent years, however, and some consolidation in the number of market makers dealing in government paper. However, this segment of the domestic bond market remains, by a very substantial margin, the most liquid. A couple of relevant considerations are:

First, Australia's derivative markets in fixed interest products are deep and very liquid—the Sydney Futures Exchange, for instance, is one of the Asia-Pacific region's largest financial futures and options exchanges. Trading in the 3- and 10-year government bond futures contracts is particularly active.

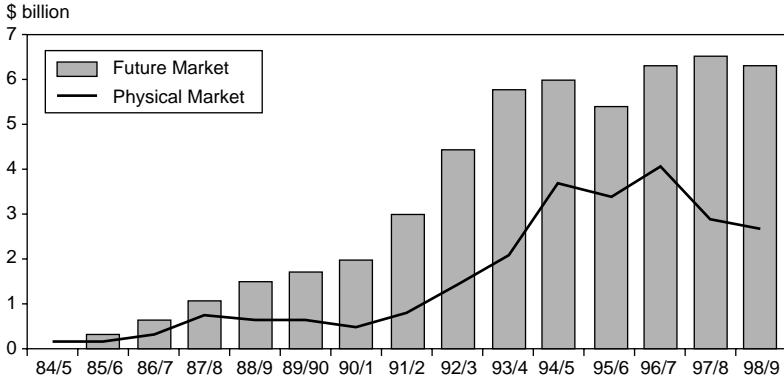
Futures trading is the main vehicle for trading and price discovery in the government bond market, and greatly facilitates the market-making operations of dealers in the secondary market for such bonds. Bond futures turnover, which has held up well in the face of declining aggregate bond outstandings, is now substantially larger than turnover in the physical market for government paper (Figure 3).

Second, consolidation of government debt into a relatively small number of benchmark lines has also served to enhance liquidity. The Australian government yield curve currently comprises 15 benchmark lines across a yield curve of 12–13 years maturity. The US investment bank, JP Morgan, calculates a liquidity ratio by looking at the proportion of a government's bonds on issue which qualify for inclusion in its government Bond Index (as illustrated in Figure 4). The percentage of highly liquid lines to aggregate bond outstandings in Australia remains one of the highest in the world.

The liquidity of the market and the depth of its supporting derivative markets is reflected in the fact that market makers are prepared to quote spreads—between buy and sell quotes on the secondary market—of around 2 bps on parcels of up to A\$50 million of stock. This spread is relatively narrow compared with government bond markets elsewhere of similar size to that in Australia.

In summary, despite some reduction in outstandings and turnover in recent years, the Australian government bond market remains highly liquid and efficient, characterized by a concentrated volume of liquid lines, a broad spread of maturities across the yield curve extending to 12–13 years, a robust secondary market and supporting derivatives framework, and a broad and diversified range of investors.

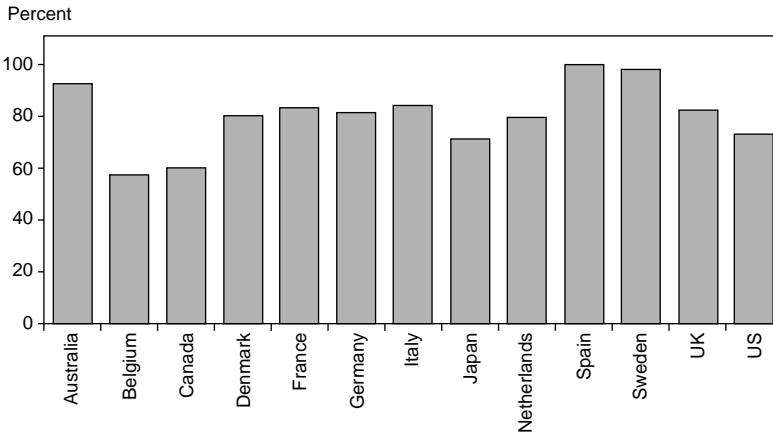
FIGURE 3
Daily Average Turnover in Physical and Futures Markets



Note: Turnover excludes repurchase agreements.

Source: Reserve Bank of Australia and Australian Financial Markets Association.

FIGURE 4
JP Morgan Liquidity Ratio (as at 31 December 1999)



Source: J.P. Morgan.

The market provides the Government with a ready capacity for raising cost-effective on-demand financing should a future fiscal position require it. In addition, the market serves as the benchmark for other interest rates in the economy and provides a premium investment product for a wide range of wholesale and institutional investors—banks, funds managers and intermediaries, domestically and offshore. (Around 40 percent of Australian government bond outstanding is held offshore.)

Today's highly developed market for government bonds differs in many fundamental ways from the market environment of 15–20 years ago. Before turning in detail to some of the policy choices and operational decisions that have contributed to the development of the current market environment, the next section of the paper seeks to establish some context for those reforms by briefly mapping the defining characteristics of government bond funding arrangements in the financial sector prederegulation days of the late 1970s and early 1980s.

It is important to appreciate that the substantial changes to government bond market and funding arrangements that occurred through the 1980s took place, not in a vacuum, but very much as part of, and consistent with, much broader-based reform of the Australian financial system generally.

III. The Australian Financial Markets of 20 years ago

Up until the early 1980s, Australia's financial system was heavily regulated. International capital flows were constrained by an extensive system of exchange controls designed to support a fixed exchange rate regime, and the domestic banking system was subject to wide-ranging quantity controls on lending and regulated interest rates, designed to limit the cost of finance for certain policy-preferred purposes. There were pervasive barriers to the entry of new participants into the banking sector.

The market and institutional arrangements supporting the operation of the government bond market were very much consistent with the philosophy underpinning this prescriptive, regulated framework.

The market was heavily oriented towards a domestic investor base, with explicit prohibitions on most forms of nonresident entities investing in Australian government securities.

The market was also essentially "buy and hold" in its orientation, and distinguished by a variety of "captive market" arrangements, which obliged financial institutions to hold specified proportions of their assets in the form of government securities. Similarly, life insurance offices and pension funds were provided with significant tax concessions in return for holding 30 percent of their assets in public securities.

One consequence of these captive market arrangements was that there was only a very limited secondary market in government securities. Derivatives markets as they are known today did not exist.

For many years up until the early 1980s, the Australian Government relied on a number of variants of the so-called tap method for issuing securities. The defining characteristic of the tap issuance mechanism was that the authorities determined the interest rate to apply to the security, and investors took up the amount they wanted at that rate, thereby determining the volume of securities that were issued.

Reflecting the practical difficulties of setting and maintaining the interest rate on securities in alignment with market rates of interest, the tap issuance mechanism gave rise to regular difficulties in controlling the volume of securities issued. On occasion, it saw shortfalls in funding, when the desired amount of securities were not taken up by the market.

In such situations, the authorities used short-term borrowing from the Central Bank to fund the shortfalls, breaching what is today regarded as a central tenet of government financing—that the Government fully fund itself in the market. It then became the Central Bank's task to operate in the market to offset the obvious inflationary consequences of this form of financing, muddying the waters between monetary policy and debt management operations.

Finally, the policy of the day was to issue a new line of stock at each new tap, resulting in a large number of small volume lines—almost 100 separate issues in 1980. This was a far cry from today's market whereby virtually all government bond outstanding is concentrated in 15 highly liquid lines.

Forces for Change

The wide-ranging and complex structure of regulation that applied right across the financial system came under increasing stress as Australia entered the 1980s. International pressures created by deregulation, globalization, and technological change in offshore markets provided a clear impetus for reform.

As international financial markets became more open, and international capital flows less restricted, the system of exchange controls was proving increasingly ineffectual. This exposed the Australian dollar exchange rate to increasingly powerful speculative attacks and made domestic liquidity conditions and interest rates more volatile in response to flows of funds across the exchange.

Domestically, it was increasingly clear that many of the direct controls on the financial system were both ineffectual and counterproductive.

The heavily regulated banking sector was shrinking relative to the uncontrolled nonbank financial sector, which flourished, and the authorities' ability to control the growth of money and credit was undermined.

Moreover, interest rate controls on the cost of funds to "policy-preferred" sectors, such as housing and small business, were simply serving to limit the availability of funds for these purposes, forcing borrowers to seek funding from higher cost alternative sources.

Financial system reform gathered pace rapidly through the course of the early 1980s, as successive Australian governments responded to the challenges of managing a more open economy in a more volatile world. The dismantling of Australia's regime of exchange controls, and the associated floating of the Australian dollar in December 1983, was a critical step and a major catalyst for further change.

Reforms to the banking sector were reflected in two main elements: (i) the lifting of banking controls and guidelines on deposit and loan rates, deposit maturities, asset allocations and lending volumes; and (ii) the relaxation of entry restrictions via the provision of banking licenses to foreign-owned banks.

Broader-based taxation and prudential framework reforms through the course of the 1980s contributed further to this ongoing overhaul of the Australian financial system. Adjustment to the new market-based environment was not without some challenges, and the late 1980s saw some periods of turbulence as institutions adjusted to the disciplines of the new environment, and came to terms with altered risk management requirements as they sought to build market share within the new framework.

There is no question though, from a perspective that now encompasses nearly 20 years of evolution and reform in the Australian financial system, that the exercise—which remains ongoing—has paid handsome dividends; significantly enhancing financial sector competition, consumer choice and operational efficiency.

Against this backdrop and, indeed, as an important part of the wider reform exercise, a number of major changes to the conduct of government financing and the operation of the government bond market were introduced through the early and mid-1980s.

The following section of the paper discusses these various changes to government bond markets, covering the detail of the changes themselves, some of the considerations that led to the particular policy choices and operational decisions that were made, and how these reforms contributed to the development of today's market for government securities.

The objective of the following section is to map the major operational and market infrastructure factors that governments may need to

consider in assessing policy options for developing an efficient domestic government bond market.

IV. The Development of Australia's Government Bond Market

Though it may seem an obvious point, it is worth noting that a stable and efficient financial system is an essential precondition for efficient debt management and the efficient operation of bond markets generally. Stability and competitiveness both lower the cost of debt finance by reducing margins and risk premia. They also facilitate the innovation of new products and financing techniques, both of which increase the efficiency of debt management. Development objectives in regard to domestic government bond markets must relate closely to the standing of the domestic financial system.

Many factors have contributed to the development of Australia's financial system over the past 20 years. The fact that the critical markets in Australia are based on financing the local economy in the domestic currency is a relevant consideration, but the adoption of market-based policies—such as deregulation, the floating of the exchange rate, and the abolition of exchange controls—has been particularly important. Likewise, the implementation of a market based monetary policy in Australia has provided a sound underlying monetary framework; an essential element in the healthy development of financial markets in any jurisdiction.

There is no question that this shift from a highly managed and regulated, price-setting approach to funding and debt management, to an approach fully reliant on the efficient workings of the market mechanism has undoubtedly been the prime factor in the development of the Australian government bond market over the past 20 years.

The very clear separation of institutional responsibility for debt management and monetary policy functions—has also been a major consideration in bringing enhanced clarity, transparency and efficiency to the operation of debt management, and minimizing the potential for markets to interpret debt management actions as carrying monetary policy implications. Another factor has been the shift to the Government's budget funding requirements being fully funded from the market, rather than using Central Bank financing as a fallback.

Within this overarching market-oriented framework it is possible to identify a wide range of policy and operational reforms introduced by the authorities over many years, in both the operational approach to markets and in the supporting market infrastructure, that have contributed to the development of the current highly-developed market for government bonds. Though any attempt at categorizing these various

reforms will necessarily be somewhat arbitrary, one approach is to classify the various initiatives as being operational or infrastructure-based.

A. Operational Issues

Issuer Behavior. The main requirement of the government debt manager in this respect is one of responsibility. Fundamentally, government debt management is about managing risk. In issuing debt, governments take on large exposures to market prices, creditworthiness and operational failure. The government debt manager's approach to managing these risks can send signals to the market about acceptable standards of behavior.

The government debt manager's behavior as a market participant is also important to perceptions about market integrity. Investor, intermediary, and other issuer confidence can quickly be dissipated when markets are easily manipulated and codes of conduct lax. The typical dominance of the Government as an issuer in the domestic bond market, and its broad regulatory responsibilities, mean that government debt management must be conducted with the highest possible level of in-house ethics.

Responsibility also requires the Government's debt management activities to be transparent and reasonably predictable. However, this is not the same as saying the Government should be completely mechanical in its debt management operations. Locking debt management into a mechanical formula may increase transparency, but may also increase risk and cost, thereby damaging the authorities' reputation as a debt manager. Risk to reputation and credibility will be lowest where the government debt manager is perceived to perform both competently and responsibly.

In comparing the operational focus of Australian government debt management today with that of the early to mid-1980s, two features stand out.

First, in common with most other entities with large financial exposures in their balance sheet these days, there is a very specific focus on the management of financial risk in aggregate, not just on successful execution of primary issuance. For instance, the management of the cost and risk of the accumulated debt portfolio is just as much a priority as funding itself.

Second, the authorities these days are much more active participants in the securities market, particularly in the area of currency and interest rate swaps.

These features significantly increase the onus on the authorities to maintain regular communication with markets.

With this significantly greater direct involvement in markets, it is critical that markets are regularly notified of, and fully comprehend, debt management objectives and strategies, and can have complete confidence as to the motives and rationale for the authorities' market operation. Clearly, any taint of insider trading, or even opportunism, would have serious implications not just for funding costs and risk premia, but also for market integrity and stability, not to mention the Government's reputation.

Accordingly, considerable resources are devoted to keeping financial market participants fully informed of relevant information and developments. For a number of years now, the practice has been to make regular public presentations to financial market participants, setting out details of debt management objectives, short- and longer-term strategies to achieve those objectives, and projected borrowing programs and derivatives markets activities for the period ahead. This information has been augmented in more recent years by the production of a regular publication—the Commonwealth Debt Management Report—which reports on and reviews all operations. Regular meetings between government debt management officials and individual investors/intermediaries provide a further channel for communication.

On this issue, an interesting point of departure in Australia from increasingly standard practice in many jurisdictions, is that the authorities do not produce an auction calendar, locking the issuer into a commitment to issuing particular stocks on particular dates in the period ahead. Instead, the practice in Australia is only to commit to conduct bond auctions within a broadly defined issuance window, currently every four to six weeks. This greater flexibility still provides some measure of certainty to the market as to the timing of prospective supply, but without exposing the issuer to excessive event risk should a particular auction date prove unattractive in light of market developments. In addition, the detail of the stocks to be issued is announced only on the day before the auction.

This is a useful practical illustration of the need for the authorities, in managing relations with market participants, to strike an appropriate balance between a desirable and mutually beneficial level of transparency as to issuance intentions on the one hand and, on the other, using an excessively mechanical and formula-driven approach to the point of financial detriment.

The very rigid approach to auction schedules favored by government issuers in some of the larger sovereign bond markets is not felt to be appropriate to Australia, where greater flexibility in determining the precise timing and make-up of auctions is preferred. There is no evidence

at all that any sort of risk premium attaches to bond yields in Australia as a result of this practice.

This is a good illustration of the important point that sovereign debt management, and more particularly the development of sovereign bond markets, is not merely a matter of mimicking the strategies and conventions applied in the largest and most liquid bond markets.

Relevant considerations that need to be carefully assessed in formulating development strategies are the standing of the market in global terms, the quality of the existing market infrastructure, the characteristics of the investor base, the fiscal impact of debt-service costs, and market perceptions regarding the sustainability of the debt burden.

Many market development issues are essentially practical ones, and it is simply not sensible to believe that a “one size fits all” blueprint can successfully be applied to all sovereign debt managers, in all circumstances. There will always be a need for sound judgment in determining precise operational strategies and conventions and, where necessary, the balance to be struck between competing considerations to best meet the requirements of individual markets.

What is certain, however, is that an ethical, responsible approach to sovereign debt management, and a culture of transparency and communication with markets, is an essential prerequisite to market development.

B. Primary Issuance Mechanism

For many years up until the early 1980s, the authorities in Australia used a tap mechanism as the primary vehicle for issuing debt securities. They determined the price (interest rate) at which the securities would be offered to the market, and the market took up as much of the stock as it wished at that price.

The tap system operated reasonably successfully through the 1950s and 1960s when financial markets were regulated. There was little competition from private sector borrowers and good support from captive investors. The system proved increasingly unsatisfactory through the 1970s, however, with uncertainty surrounding fund-raising the major drawback.

By the early 1980s, it was clear that an alternative mechanism was required. In principle at least, there were two broad choices open to the authorities.

The first was an outright move to issuing bonds by auction, under which the market clearing price for the volume of bonds made available for issue would be determined by the bids of market participants.

The second option was the use of a “dealer panel” mechanism, whereby appointed members of a panel would be obliged to take up

new stock at an agreed price (and, typically, to make markets-quote continuous two-way prices—in the secondary market as well).

In practice, there are many possible forms of dealer support that fall under this broad heading, ranging from fully underwritten arrangements to less formal “bought deal” arrangements, whereby each member of the panel agrees to buy a certain quantity of stock at a certain price before seeking to place it in the market on a best endeavors basis.

These dealer panel arrangements can offer some advantage in certain circumstances, for instance where there is a concern that low initial liquidity might act as a disincentive to bid in an auction. However, cost (i.e., fees) can be considerable, particularly for a fully underwritten issue, making the mechanism largely impractical for an ongoing issuance program.

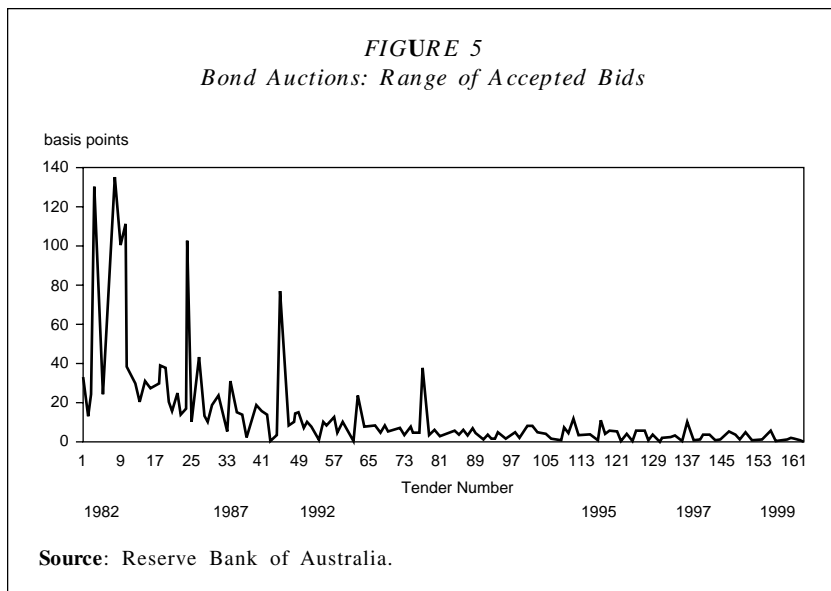
In 1982, the Australian authorities moved to issuing bonds by auction. This was, and remains, the technique favored by many OECD governments for issuing large volumes of securities into reasonably well-established markets. The judgment in Australia by the early 1980s was that the government bond market was sufficiently liquid, and the market-making community and secondary market sufficiently well-established, for the auction method to be successful.

Initial experience with the move to the auction issuance mechanism was certainly a little mixed, with a wide range of bids accepted in a number of the earliest tenders, as Figure 5 illustrates.

Such results were not unexpected, however. The feeling was that these early mixed results were a “price worth paying” for the broader benefits to come in time from a move to a fully market-based auction mechanism. The judgment proved well-founded, with auction results improving steadily as the market deepened. The use of auctions became widespread internationally during the 1980s, as financial markets became less regulated and more sophisticated, and more dominated by large professional institutional investors.

The move to bond auctions in Australia removed the uncertainty surrounding fund raising, and was effective in enabling the authorities to sell large quantities of stock with minimal disruption to interest rates. Secondary market activity in bonds increased further, encouraged by the adoption of the auction mechanism and by the growing volume of stock on issue. With the removal of restrictions on nonresident investment in Australian government bonds, offshore interest in the market increased significantly. The adoption of an issuance mechanism in line with major OECD bond market norms was no doubt an encouraging factor.

The use of auctions for Australian government bonds is now, of course, very well-established, and there are no plans to consider alternative issuance approaches.



However, it is not true to say that the auction method is to be preferred in all circumstances. The most effective primary issuance method depends on a wide range of considerations, such as the predominant type of investor (for example large institutional or “retail” individual) and the stage of development of the bond market.

Certainly, the dealer panel mechanism is not without merit in certain circumstances, and may be particularly useful when issuing a new line of securities, where investor demand may initially be low, as it ensures the success of the issue. It can also help to introduce new debt instruments where lack of investor familiarity with the product and/or concerns regarding the lack of an established secondary market again leave the authorities open to the risk of weak bidding in auctions.

The Australian authorities used a form of dealer panel mechanism for a couple of years in the early 1990s when launching an indexed bond issue program, and this approach was successful in the early building of an investor base and a number of market makers in this form of instrument.

However, a move to an auction mechanism for primary issuance of indexed securities followed once it was felt that the market had developed sufficiently in liquidity and depth to successfully support such an approach.

Basically, the selection of primary issuance mechanisms must take into account the stage of development of the market. Open auction approaches are particularly appropriate in reasonably well-established, liquid markets with established secondary markets and market makers. Smaller or nascent, less liquid markets may benefit from closed dealer panel arrangements, at least initially and while issue volumes are not so large as to make the cost of such panel arrangements prohibitive. It will likely be appropriate to move to auction arrangements as the market develops and matures, however.

C. Captive Investor Arrangements

As noted earlier, captive investor arrangements were a pervasive feature of the Australian government bond market up until the early to mid-1980s.

The aim of these arrangements was not only to create demand for government bonds. Captive investor arrangements were also motivated, at least partly, by prudential concerns. There is clearly a prudential benefit in forcing institutions to hold minimum levels of the highest-credit securities. However, these arrangements also ensured a continued demand from growing financial institutions for government securities, and doubtless led to the authorities issuing government bonds at lower interest rates than would otherwise have been the case.

In principle, therefore, captive investor arrangements might be considered to have some value in building government bond market capacity. Where bond markets are not highly developed and/or there is no high demand for government paper, such arrangements might be considered as acting as an effective, if crude, discipline on markets. However, captive arrangements can also be very costly and inefficient, from a number of perspectives.

Such arrangements provide governments with the scope to raise funds comparatively cheaply, removing an important fiscal discipline, and encouraging governments to be less careful in their spending decisions.

Captive investor arrangements serve to distort the flow of investment funds in the economy and act as a tax on the captives, by reducing their capacity to earn higher returns on alternative investments. Perhaps most importantly, such arrangements inhibit the development of secondary markets in the relevant securities. In a deep and liquid secondary market, investors and/or traders must be able to take both short and long positions in securities.

Clearly, under captive holder arrangements, the captives are unable to take short positions, and the fact that these arrangements tend to hold

the yields on relevant securities artificially low means that the holding costs of taking long positions can be high. Captive investor arrangements therefore discourage the taking of positions in the market and act to inhibit liquidity and secondary market development.

In common with the experience of all major OECD jurisdictions, there are no longer any captive investor arrangements applying to the holdings of government bonds in the Australian market. Experience makes it fairly clear that there are likely to be substantial net costs in employing captive investor arrangements as part of a government bond market development strategy.

D. Promotion of Secondary Market and Derivative Markets

A vibrant secondary market for government bonds offers a number of well-known advantages. The effectiveness of a deep and liquid secondary market in increasing demand for government securities and, thus, reducing a government's cost of funds, provides ample incentive for the authorities to take an active interest in building secondary market capacity.

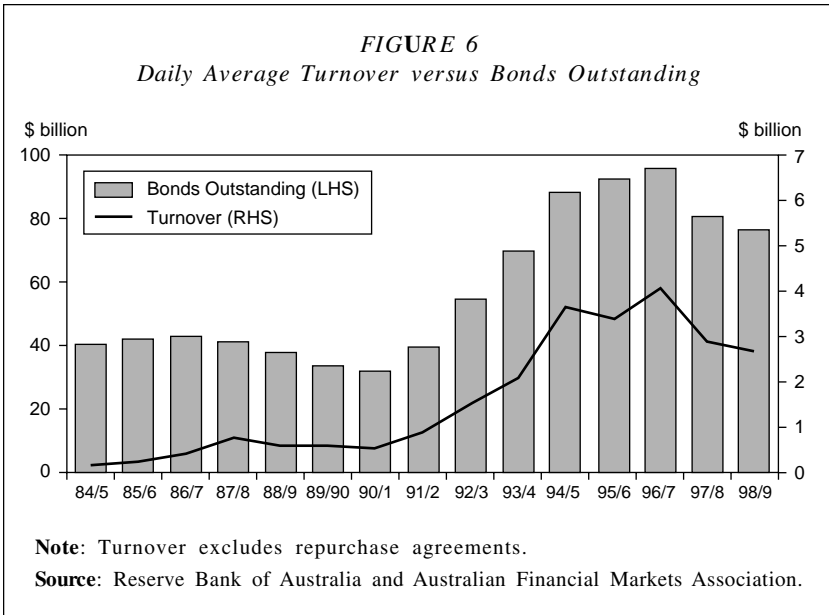
The secondary market for Australian government bonds is large and very active, and has expanded substantially since the prederegulation days of the early 1980s. Government bond turnover data provide a good indication of trends in secondary market activity over this period.

The graph highlights the point that the single most potent influence on the level of activity in secondary markets is the volume of new issuance and bond outstandings. The past few years have been the only period since the early 1980s where Australian government bond market turnover has declined substantially—a period in which the Government has run sustained fiscal surpluses and the stock of bonds outstanding has consequently declined.

Bond market turnover currently remains somewhat higher than the levels of the mid-1990s, however, even though the stock of gross bond outstandings currently has hardly changed.

The implication is that, beyond simply issuing large volumes of debt into the market—ultimately, a development tool beyond the control of the debt management authorities—there is much else that the authorities can do to stimulate the development of a secondary market.

The quality of overall market infrastructure—for example, the efficiency of clearing and settlement arrangements, and the robustness of the prudential/regulatory regime—is clearly critical. A number of factors already touched on also have a bearing on secondary market development, including market perceptions as to the credibility and reliability



of the issuer and issuance programs, the form of primary issuance arrangements adopted, and the prevalence of captive investor arrangements.

Beyond these generic factors, there are a number of additional specific considerations discussed below that may also be of relevance to building secondary market capacity in government bonds.

Certainly, it is most important to issue securities with the broad characteristics that the market demands. Close contact between investors and market makers is required, to monitor the popularity of the various stocks on issue and, if necessary, consider buying back lines of stock that are no longer in demand and replacing them with more popular securities.

The liquidity of individual lines is a critical consideration for investors. In Australia, a large-scale bond consolidation program in the late 1980s saw the number of individual bond maturities reduced from almost 100 comparatively illiquid lines, to the point where today almost all bond outstandings are concentrated in 15 highly liquid benchmarks.

Outright liquidity is not the only consideration, however. Careful selection of the maturity of lines to be issued along the sovereign curve and, generally speaking, the maintenance of bond coupons reasonably close to prevailing market yields, are other important considerations for many investors.

The encouragement of specialist market makers in government bonds provides a further vehicle for promoting secondary market activity. There need not be an excessively formal arrangement with the authorities, though arrangements in many sovereign jurisdictions do tend to be quite structured, with primary dealers (PDs) obliged to bid in auctions as well as make continuous two-way prices in the securities of the relevant authority. In many instances, the authorities dictate the spread between bid and offer prices that market makers are to quote. Fees, or some form of “preferred access,” can often be required for the provision of such services.

Although the Australian practice will not necessarily be applicable in other government bond markets, the experience here is that highly-structured, fee-based arrangements are not essential in establishing a successful government bond market-making infrastructure. Be that as it may, the present arrangements in Australia do reflect the outcome of a deliberate strategy instigated in the early 1980s to build secondary market capacity in government bonds. An integral element of that strategy was the formation of a specialist Reporting Bond Dealers group, with a select market membership, which met regularly with the authorities to exchange market information and discuss current developments.

Eligibility for membership of the group was determined solely on the basis of the volume of trading in government bonds undertaken, and was reviewed annually. Aside from this annual review process, there were no prudential or other requirements placed on members of the group.

Although the Reporting Bond Dealers enjoyed no particular privileges or special relationship with the Government beyond the functions noted, the prestige and status associated with membership of the group served to add a useful further element of competition to the market. The Reporting Bond Dealer arrangements were dissolved in 1992, by which time the infrastructure for market-making Australian government bonds had been long and successfully established in the market. Under current arrangements, by convention, a pool of self-selected market intermediaries (currently numbering around 10) agree among themselves to make continuous two-way prices in government bonds to each other—and, by and large, to clients—at a 2 bp spread between bid and offer yields.

The authorities themselves can, where appropriate, play a more direct role in encouraging secondary market development through the provision of stock lending or repurchase agreement (repo) facilities in government bonds. Of course, market manipulation motivated by opportunism, or the pursuit of short-term profit-making, is completely unacceptable in these circumstances.

And even where some form of intervention is fully warranted by prevailing circumstances, considerable care will be required on the part

of the authorities in directly involving themselves in the secondary market for their own securities. As discussed already, clear communication with the markets as to objectives, strategies and motives is essential. Finally, where an efficient and vibrant intermediary market-making community is well-established and the Government is a steady issuer into the primary issue market, official sector involvement will likely be relatively marginal in terms of bond market activity overall.

However, the provision by the authorities in the appropriate circumstances of stock lending and/or repo facilities to the market can encourage both more efficient market making by intermediaries and greater market participation by investors, who will draw comfort from the capacity of the authorities to manage occasional liquidity squeezes or other periodic market imperfections.

Further, the Australian experience is that allowing the short selling of government bonds (in appropriately prescribed circumstances) can also contribute substantially to building trading activity and market liquidity. (Short-selling occurs when an entity sells securities to a purchaser without, at the time of the sale, having the right to transfer ownership of the securities to the purchaser.) If short-selling is not permitted, market makers can make two-way prices only in securities which they own, which clearly reduces competition and liquidity.

The scope for short-selling, and thus building market activity and liquidity, is greatly enhanced where there are established markets for stock lending and repo transactions. In particular, repo agreements increase the effective amount of securities available for trading by enabling securities to be traded without longer-term holders having to give up ownership beyond the period of the deal.

It is worth emphasizing that a framework which allows for short selling of government bonds must be backed by a rigorous prudential/regulatory regime that comprehends the scope for abuse of such arrangements, and makes very clear the precise circumstances, and under what conditions, such short-selling is permitted.

Finally, the presence of liquid and efficient repo and derivatives markets—markets in bond repo agreements and bond futures, in forwards, in swaps and other forms of derivative of the underlying government bond product—can contribute significantly to building secondary market activity in the physical government bond.

Repo markets both underpin market making by intermediaries through, for instance, facilitating short-selling of securities, and also increase the attractiveness of the underlying physical bond in the hands of investors by providing them with the scope to “gross up” their holding return while retaining ownership of the security longer term.

Efficient derivatives markets provide a vehicle for investors in government bonds to manage their interest rate risk—the risk that interest rates in the future will be different from today's. Derivatives markets allow market participants to fix today the prices at which trades will be made in the future to hedge their underlying exposure to future price movements. Accordingly, the availability of these markets for risk hedging promotes increased market turnover. Intermediaries and investors are more willing to buy, sell and trade, and bid/offer spreads are tighter in the market for the underlying physical bond.

In Australia, there are highly-developed and active markets in both repos and a wide range of derivatives products. The general philosophical approach to developing these markets has been one of facilitation—of providing the kind of legislative and regulatory environment that gives market participants the confidence to put capital at risk, and the kind of market-based framework that encourages markets to develop at a pace and in a direction fully consistent with commercial considerations.

Facilitation can, however, take more immediate forms as well. The development of the 3- and 10-year bond futures contracts on the Sydney Futures Exchange has been supported by the authorities through careful consideration of futures basket requirements when determining primary bond issuance and repurchase strategies. For example, before issuing a new benchmark line, careful consideration is given to the underlying bond basket requirements of the relevant futures contract.

E. Infrastructure Issues

Clear Separation of Debt Management and Monetary Policy Responsibilities. As already mentioned, the separation between these two functions in Australia is now complete. Not only does the Government fully meet its debt financing requirements from the market, and at market determined rates, but there is a clear institutional separation as well, with monetary policy and liquidity management the responsibility of the Reserve Bank and debt management the responsibility of the Australian Office of Financial Management.

This has not always been the case, however. Indeed, the combination of a managed exchange rate regime and the tap mechanism for the issuance of government bonds that existed in Australia up until the early 1980s resulted in a very tight link between monetary policy and debt management.

Under the fixed exchange rate regime, the need for the Reserve Bank to stand in the market for foreign exchange, ready to buy or sell foreign currency at a fixed price against Australian dollars, meant that

foreign currency debt and Australian currency debt were regarded as very close substitutes by the market. Thus, attempts by the Reserve Bank to tighten monetary conditions by selling holdings of government debt from its own portfolio into the market were readily offset by reduced holdings of foreign debt, with little net impact on base money.

Likewise, under the tap issuance mechanism the yields set by the Government to apply to new debt issuance became critical for monetary management. If tap yields on new bond issue were held constant, but the Reserve Bank wished to tighten monetary policy, the objective of the policy adjustment would soon be thwarted.

While the tightening of policy would lead to a rise in short-term private interest rates, this would serve only to make holding government bonds a less attractive proposition. The Government's budget funding shortfall would therefore widen until the Bank was called upon to meet the funding shortfall. This financing of the government funding need would increase the supply of liquidity in the market, making the entire process self-defeating.

The need to offset the domestic monetary effects of foreign exchange inflows or outflows provided yet a further complication. On occasion, where these flows were particularly large, the authorities would be obliged to use primary issues of government bonds not only to finance the budget (debt management), but also to try and control the volume of liquidity in the domestic money market (liquidity management).

The effect of this untidy framework was that bond issuance under a fixed exchange rate regime and the tap issuance mechanism became as much an arm of monetary policy as of debt management. Indeed, it was not uncommon for announcements of an increase in interest rates on new debt issues to be interpreted as adjustments in the stance of monetary policy.

Of course, in Australia, the longstanding move to a strict operational and institutional separation of responsibility for debt management has long since addressed these gross operational inefficiencies. But such inefficiencies—serious though they are—account for only part of the rationale for a segregation of policy responsibility.

Other cogent reasons include the reduced fiscal discipline associated with a government's capacity to raise cheap funds from the Central Bank, the likely inflationary consequences of this form of "official sector" funding, the adverse implications for the development of a viable private secondary market in government bonds, and the overall loss of clarity and predictability in debt management operations. It is with good reason that sound financial management is now widely accepted to require the two activities to be kept separate.

F. Clearing and Settlement Systems

Reliable and timely clearing, transfer of ownership, and settlement arrangements are clearly essential to the efficient and effective operation of securities markets. A rigorous and reliable clearing and settlement infrastructure allows market participants to undertake bond market transactions without undue risk—whether that be default risk, market risk or, indeed, systemic or other broader risks. Accordingly, the effectiveness of such systems can be a significant influence on the development of secondary market activity.

In Australia, a gradual move from the mid-1980s towards an electronic infrastructure for clearing and settlement arrangements, building on an already robust base, has contributed in no small way to the development of the government bond market.

The Reserve Bank has operated an electronic transfer and settlement system for Australian government securities—known as the Reserve Bank Information and Transfer System (RITS)—since 1991. RITS, which among other considerations introduced the delivery versus payment (DvP) framework for the settlement of government bond transactions, represented a considerable advance on previous manual systems. It represents both greater efficiency and enhanced risk management for all market participants.

The RITS platform enables the full range of transactions in Australian government securities, including delivery of bond auction proceeds and secondary market trades in government bonds, to be settled remotely via terminals in members' back offices. Virtually all significant market participants are members of RITS, and current membership stands at about 240. Remote settlement can, in turn, lead to significant cost saving practices, such as “straight through processing.”

More recently, RITS and other market electronic settlement systems have been interlinked under the aegis of the introduction of the Real Time Gross Settlement (RTGS) system into the Australian markets, yielding further efficiencies and risk management enhancements. Australia's RTGS system is among the most advanced in the world because of the way it closely links to a variety of securities settlements systems, giving it a very high coverage.

Very broadly, the essential features of a robust clearing and settlement infrastructure can be summed up as follows: (i) clear and unambiguous regulations of systems setting out, for example, eligible instruments, detailed operational procedures and when a transaction is final; (ii) sound legal underpinning of regulations—providing legal certainty in all relevant jurisdictions, for example in regard to the enforceability of default

procedures; (iii) sound risk management procedures in the system to limit the risks of loss of cash or securities paid to a defaulting counterparty prior to the detection of the default, for example by introducing DvP; (iv) well-established and understood contingency arrangements and fallback procedures to deal with circumstances of operational or technical failure; and (v) explicit identification of the government institution responsible for regulatory oversight (for example, in relevant legislation), which should be appropriately empowered to obtain relevant information and give enforceable directions.

G. Regulatory Framework

A well-functioning bond market requires a regulatory system which provides a level playing field, clearly defined property rights, a transparent information flow, and a capable regulatory authority. In Australia, the Corporations Law includes provisions relating to the trading of government and corporate debt. The majority of provisions relating to obligations of market participants apply equally to the government and corporate bond markets. For example, prohibitions against engaging in misleading and deceptive conduct, stock market manipulation, false or misleading statements, and a requirement for dealers to be licensed are imposed equally on participants in both markets.

The Corporations Law also governs the fund-raising of corporate issuers. This ensures, through the imposition of disclosure and prospectus requirements, that market participants purchasing such securities are able to make informed investment decisions. Although not formally covered under Corporations Law provisions in these areas, the Commonwealth has adopted “best practice,” so that its prospectuses clearly inform potential investors of the terms and conditions of issuance and the Commonwealth’s obligations to the investor for the payment of interest and the repayment of principal.

The legislative framework is, in turn, superimposed on a framework of self-regulation, coordinated by bodies such as the Australian Financial Markets Association, and representing the OTC financial markets on matters such as market codes of conduct and participant standards and accreditation.

The regulatory regime cannot of course remain static, but must keep pace with changes in the financial service industry—in customer needs, competition and product development and distribution. In this regard, the Government is developing legislation to establish an integrated regulatory framework for Australia’s financial products markets, clearing and settlement facilities, and financial service providers.

V. Conclusion

This Paper has addressed a range of issues surrounding the development of the Australian government bond market over the past 20 years. A particular focus has been to identify the major reforms—both in the operational approach to markets and in supporting market infrastructure—that have contributed to the emergence of the current highly-developed market for Australian government bonds.

This review of Australia's experience suggests a number of conclusions of possible relevance to other jurisdictions seeking to formulate strategies for establishing or building on existing domestic government bond market capacity.

Issuers must act responsibly at all times, and with the highest possible level of in-house ethics. Regular and substantive communication and dialogue with markets as to debt management objectives and operational strategies is paramount. The rationale for debt management operations should be transparent and the operations themselves reasonably predictable, but not so completely mechanical that the Government is exposed to unacceptable risks in debt management performance.

Selection of primary issue arrangements should take into account the stage of development of the market. Generally, the open auction mechanism is preferable, though smaller, less liquid markets may benefit from some form of dealer panel arrangement in some circumstances, at least until the market develops and matures—and so long as issuance volumes are not so large as to make cost prohibitive.

Captive investor arrangements are not recommended. There are likely to be substantial net costs in employing such arrangements as part of a government bond market development strategy.

Markets require a steady supply of new securities to sustain liquidity. Secondary market liquidity can be encouraged by active management and support by the authorities. This support might include provision of stock lending facilities, the consolidation of bonds into highly liquid lines, management of market-making arrangements and the establishment of a market environment conducive to the successful operation of repo and derivatives markets.

A clear separation of debt management and monetary policy responsibilities, and full funding of government budgets from the market—at market determined prices—is essential, as are reliable and timely clearing and settlement arrangements.

A well-functioning government bond market requires a prudential/regulatory regime that provides both legal certainty and a level playing field, and remains alive to the changing requirements of a dynamic market environment.

Finally, the ultimate threshold issue in seeking to make participation in the government bond market an attractive proposition for investors and intermediaries is creating an attractive economic case for doing so. No matter how robust a market infrastructure, or how efficient its operational features might be, these considerations will not of themselves generate market development momentum if the product itself is unattractive in economic terms.