

DEBT MANAGEMENT IN A LOW-DEBT ENVIRONMENT: AUSTRALIA'S EXPERIENCE

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Introduction

In recent years, debt management in Australia has been conducted within a Government policy of reducing Australian government net debt. Australian Government general government net debt fell from almost 20 per cent of gross domestic product (GDP) to less than 4 per cent of GDP between 1996 and 2003. Over the same period, Treasury bonds on issue have fallen from 15 per cent of GDP to 7 per cent of GDP.

This significant reduction in debt outstanding has led to examination of the Australian Government debt portfolio from two perspectives: its place in the broader financial markets, and the most appropriate approach to managing the debt from the Government's own financing perspective.

As a result of the reduction in net debt, and concerns raised by key financial market stakeholders, the Australian Government undertook a Review of the Commonwealth Government Securities (CGS) market in 2002. This Review set out to determine whether there was a case, on financial market efficiency grounds or other policy objectives, for the Government to continue to issue debt despite the strong fiscal position.

The Review concluded that closing the CGS market would lead to slightly higher interest rates, given the current state of development of Australian financial markets. This would result primarily from the higher costs associated with managing interest rate risk without a Treasury bond futures market. Further, the Australian financial markets may become less diversified and more vulnerable during periods of instability if the CGS market were eliminated. Accordingly, the Government announced in the 2003 Budget that it would maintain sufficient CGS on issue to support the Treasury bond futures market.

The outcome of the Review means that the debt issuance program will now be tightly targeted at maintaining liquid and efficient CGS and Treasury bond futures markets. Issuance of a long dated bond every second year will continue to support the 10 year futures contract. A new mid curve bond will be required in the years that a new long bond is not being issued, in order to provide better coverage of

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the short end of the yield curve. In total around \$5 billion of Treasury bond issuance will occur each year.¹

The outcome of the CGS Review has provided a clear, well defined and transparent framework for issuance of physical debt. This physical issuance is primarily directed to achieving the financial market efficiency objective of debt management. Accordingly, there is limited scope to alter physical bond issuance to achieve desirable cost and risk characteristics for the Government.

In addition to raising issues about the ongoing operation of the CGS market, the reduction in net debt also raised issues relating to the operation of the portfolio benchmark. As the gross debt portfolio has reduced in size, the within year financing flows have become a greater proportion of the total portfolio, causing greater volatility in the duration of the portfolio. In addition, indexed debt has become a proportionally larger part of the portfolio as gross nominal debt has fallen, increasing the importance of examining the way indexed debt is treated in the portfolio. These issues meant that it was becoming increasingly difficult to manage to the portfolio benchmark in a clear and transparent manner without unduly impacting on the financial markets.

As a result of these issues, a review of the interest rate benchmark applying to the Australian Government debt portfolio was undertaken by the Australian Office of Financial Management (AOFM)² and a new benchmark was adopted. In keeping with the approach undertaken in recent years, the new benchmark uses interest rate swaps, rather than the debt issuance program to modify the duration of the portfolio.

The portfolio benchmark represents a trade off between risk and cost minimisation. The benchmark entails lowering the duration of the portfolio below what it would be in the absence of interest rate swaps in order to reduce expected debt servicing costs. This reduced cost is achieved at the risk of slightly higher potential volatility in interest costs. However, reducing portfolio duration also serves to reduce the volatility of the market value of outstanding debt, an important point given that a budget aggregate regularly referred to is Australian Government net debt.

The new benchmark has two major aspects. First, four changes have been made to ensure that more appropriate measures of cost and risk are used to define the benchmark and that the link between these measures and the actual level of management discretion for the AOFM is more clearly stated. Second, having clarified these measurement and governance issues, the new benchmark parameters have been reviewed to ensure that they represent an appropriate balance between cost and risk.

¹ All references in the paper are to Australian dollars.

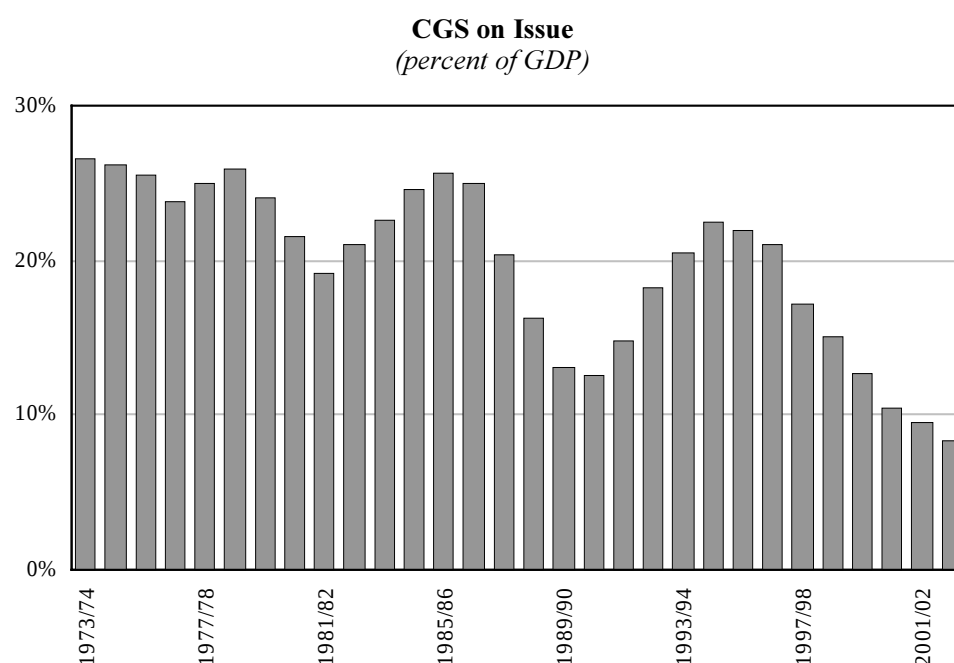
² See Appendix I for a description of the institutional arrangements for government debt management in Australia.

This paper provides the necessary background to understand the current approach to debt issuance and portfolio management. The paper is organized as follows. Section 1 provides background on the evolution of debt levels in Australia and the process of the CGS Review. Section 2 examines in more detail the reasons for the decision to maintain the CGS market. Section 3 discusses the size of the CGS market. Section 4 outlines how the CGS Review outcome will affect the Australian Government's approach to debt issuance, given the prospect of continued fiscal surpluses. Section 5 explains the new benchmark for portfolio management, given the low debt environment, and the constraints imposed by directing debt issuance to meet financial market efficiency objectives. Section 6 provides some concluding remarks.

1. Background

The Australian Government has, in recent history, had relatively low levels of debt by international standards. CGS on issue amounted to about 30 per cent of GDP in the late Sixties and has been below that proportion since. Since then, the peak debt on issue has been just over 25 per cent of GDP (Figure 1).

Figure 1



Source: Reserve Bank of Australia and Australian Bureau of Statistics Cat. No 5206.

Debt management operations in Australia have traditionally been focused on lowering debt servicing costs through establishing the appropriate market infrastructure and maintaining relationships with the market for CGS. In the late Eighties, debt management moved towards a benchmark approach aimed at reducing the cost of the debt portfolio subject to an acceptable degree of risk. This approach involved specifying a duration target for the debt portfolio and included a proportion of foreign currency exposure. When this approach was first adopted the Australian Government used the profile of its physical debt issuance program to meet the duration target. While direct borrowing in foreign currencies was used in the Eighties to achieve a proportion of foreign currency exposure, the use of cross currency swaps became the preferred means to achieve this from 1988.³

It was not until 1997 that the AOFM introduced the use of domestic interest rate swaps to alter the duration of the portfolio. New debt issuance was targeted at the long end of the yield curve in order to maintain an even, liquid CGS yield curve.

Since 1996, net debt has fallen from a peak of 19.1 per cent of GDP, or around \$96 billion in 1995-96, to 3.9 per cent of GDP or around \$30 billion in 2002-03. Net debt is expected to fall to 3.2 per cent of GDP or around \$26 billion in 2003-04.

This reduction in net debt has been achieved by a combination of budget surpluses within the Government's fiscal strategy of maintaining budget balance, on average, over the course of the economic cycle and by applying the proceeds of asset sales to debt reduction.

Reductions in gross debt outstanding have accompanied the decline in net debt. This is reflected principally in declining CGS on issue. In particular, Treasury bonds on issue have fallen from around 15 per cent of GDP in 1995-96 to less than 7 per cent of GDP in 2002-03 (Figure 2).

Up until the 2003-04 Budget, the reduction in net debt was managed in accordance with the general objective of maintaining a viable CGS market. That is, debt issuance had been targeted at the long end of the yield curve and transactions were undertaken to reduce outstandings in non-benchmark lines.

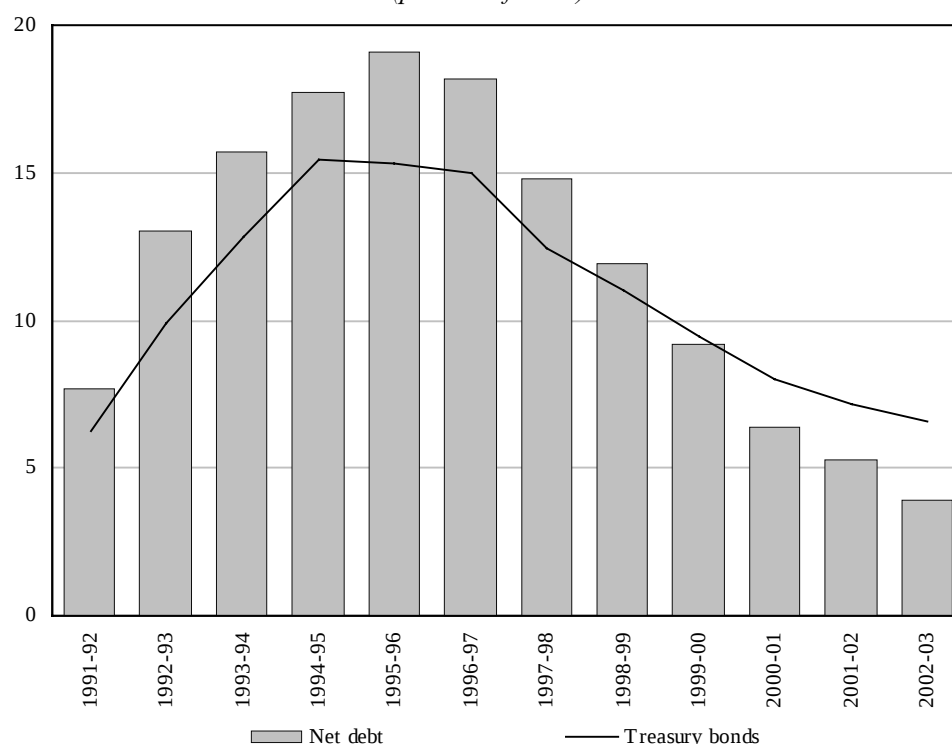
Notwithstanding this general approach, the reduction in CGS on issue raised questions among some market participants about the future viability of the CGS market. The Government acknowledged these concerns in the 2002-03 Budget and undertook to examine the issue in consultation with key stakeholders (Commonwealth of Australia, 2002a).

The Government initiated a public review on the future of the CGS market, releasing a discussion paper in October 2002 (Commonwealth of Australia, 2002b) and inviting written submissions from interested stakeholders. The Review was conducted by the Debt Management Review Team within the Australian Treasury

³ The policy of maintaining a proportion of the debt portfolio in foreign currency was terminated in September 2001 and the foreign currency exposure was eliminated between that time and March 2004.

Figure 2

**Australian Government General Government Net Debt
and Treasury Bonds on Issue^(a)**
(percent of GDP)



(a) Treasury bonds on issue are net of the Commonwealth's own holdings and debt on issue for the States and Territories.

Source: ABS Cat No. 5206, Australian Government Mid-Year Economic and Fiscal Outlook 2003-04, Australian Office of Financial Management and Australian Treasury.

and involved an extensive and broad based consultation process. During the Review, a wide range of stakeholders lodged over 40 written submissions and over 120 consultation meetings were held involving more than 90 domestic and international market participants and organisations. In addition, a reference committee, comprising representatives of key industry associations and an academic,⁴ met on a number of occasions to discuss a range of technical issues.

⁴ The Reference Committee comprised representatives of the Australian Financial Markets Association, the Australian Shareholders Association, the Investment and Financial Services Association, the Investment Banks and Securities Association, the Australian Bankers Association, and Professor Ian Harper of the Melbourne Business School. The Committee was chaired by the General Manager of the Debt Management Review Team.

2. Rationale for retaining the CGS market

The discussion paper published as part of the Review (Commonwealth of Australia, 2002b) outlined possible roles that the CGS market plays and sought feedback from stakeholders to determine the importance of each role and the capacity for other markets or instruments to perform similar roles in the absence of a CGS market. The objective was to determine whether any roles alone or collectively were significant enough to warrant a decision to maintain the CGS market.

This task was made more difficult given the lack of empirical evidence of well developed financial markets operating in the absence of a government debt market. Accordingly, the Review, and the discussion paper, attempted to analyse the role that CGS plays in Australian financial markets with a view to understanding whether other products could substitute for CGS and deliver similarly beneficial effects.

The following sections describe some of these roles and the assessments of them that emerged from the Review process. Before proceeding, it is useful to point out a few key features of government debt markets that underpin these roles.

2.1 Key features of government debt markets

Markets in which government debt securities trade have distinctive elements that commentators have argued are important for developing sophisticated and well functioning financial markets.

Government debt securities usually offer minimal credit risk, high levels of liquidity, a broad range of maturities and well developed market infrastructure, including active derivative markets (International Monetary Fund, 2001).

2.1.1 Minimal credit risk

Credit risk refers to the possibility that the issuer of a debt security, the Australian Government in the case of CGS, will default on its obligations to repay borrowed funds.

The credit standing of an issuer and the degree of credit risk associated with its debt securities is reflected in the price and yield of the security. Investors require an additional margin in the yield of the security to compensate them for bearing the risk of default. This margin increases as the perceived riskiness of a borrower rises.

The credit risk of a government of a well developed economy, such as Australia, is generally considered to be small as such countries have the economic and political stability that enables their governments to increase taxation if necessary to meet debt servicing obligations. Therefore, the margin for credit risk is likely to be small. Indeed, government debt is often referred to as a proxy for a “risk free” asset.

2.1.2 High levels of liquidity

Government debt securities usually are issued into a limited number of maturities (or benchmark lines). For example, as at 30 June 2003 the Australian Government had nine benchmark Treasury bonds with an average of around \$5 billion on issue in each line. The concentration of issuance into a limited number of benchmark lines promotes market liquidity.

2.1.3 Broad range of maturities

Benchmark lines of government debt securities are usually spread over a wide range of maturities. The Australian Government's nine benchmark lines are distributed reasonably evenly from less than 1 year to 12 years to maturity.

From the issuer's perspective, this approach reduces refinancing risk and avoids potentially exhausting demand for a particular point on the yield curve.

From the market's perspective, the existence of benchmark lines of government debt securities across a range of maturities provides a source of information on yields at these different maturities (that is, it provides a yield curve).

2.1.4 Well developed market infrastructure

Government debt markets have contributed to developing key elements of financial markets, including mechanisms and processes that also are important for the operation of other sectors of the financial markets.

The types of supporting market infrastructures that the presence of a government debt market may contribute to include:

- skilled workforce in the debt market providing price discovery in securities necessary to promote a liquid market;
- legal and accounting arrangements to govern the issuance, trading and settlement of debt securities that provide certainty in issues such as ownership and payment of debt obligations;
- administrative structures for the clearing, registration of ownership and settlement of debt securities; and
- establishment and development of derivative markets (such as government debt futures markets and repurchase markets) associated with debt securities.

The remaining sections of the Chapter identify several propositions raised in support of the maintenance of a CGS market and the importance of those propositions in the decision to maintain the CGS market.⁵

⁵ The Government's decision was announced in the 2003-04 Budget, Statement 7: Budget Funding (Commonwealth of Australia, 2003).

2.2 *Interest rate risk management*

The CGS market plays an important role in managing interest rate risk (that is, the risks associated with adverse movements in interest rates). This capacity to manage interest rate risk contributes to a lower cost of capital in Australia.

Two examples related to both non-intermediated and intermediated debt illustrate this point in the Australian market. First, for non-intermediated debt, investors may accept a lower yield from a corporate bond if they can hedge the interest rate risk associated with holding this bond. Second, for intermediated debt, the ability of financial institutions to manage interest rate risks associated with their balance sheets also may contribute to lower costs for consumers on a range of products (including retail loans).

In particular, financial institutions may have a mismatch between the term of their borrowing and lending portfolios. For example, banks fund themselves with a mixture of retail deposits (essentially floating rate liabilities) and bond issuance (often fixed rate liabilities). On the other side of the balance sheet some assets are essentially floating rate (for example, the vast majority of home loans in Australia) while some are fixed rate (for example, fixed rate mortgages or corporate loans). Although the magnitude of the mismatch may change over time, in the absence of hedging facilities, any mismatch would lead to the financial institution charging a premium for accepting the interest rate risk.

The intermediated debt channel is perhaps the most important element in the current Australian financial market given the relatively small, but expanding, corporate debt market. Should the corporate bond market continue to grow, then the non-intermediated channel will grow in relative significance.

Changes that increase the difficulty of managing interest rate risk could, therefore, lead to an increase in the cost of capital. The magnitude of any increase would depend on the extent of the increased cost of new hedging arrangements. Therefore, a key question is the likely difference in hedging costs between current arrangements and a market without government securities.

In considering the likely impact of the removal of CGS, it is useful to compare three possible market structures. The first market structure is the current situation. The second structure could be considered the “benign non CGS” structure. The third could be considered the “non-benign non CGS” structure.

2.2.1 *Current situation*

Financial market participants in Australia currently use two main markets to manage their interest rate risk: the Treasury bond futures market (an exchange traded market operated by the Sydney Futures Exchange (SFE)) and the interest rate swap market (an over the counter (OTC) market). The Treasury bond futures market is the primary vehicle for managing outright interest rate risk, reflecting its high liquidity, low transaction costs and accessibility to a wide range of participants. Two

main contracts, the 3 year Treasury bond futures contract and the 10 year Treasury bond futures contract are used by market participants to manage risks of different durations.

The interest rate swap market generally is limited to large financial institutions (particularly banks) and is used to establish customised arrangements for interest rate risk management. Interest rate swaps can be specifically tailored to meet the requirements of the participant, whereas Treasury bond futures contracts have standardised parameters. Interest rate swaps also may be more effective in managing the interest rate risk associated with instruments that incorporate credit risk, as the yield on swaps also includes an element of credit risk.

Interest rate swaps generally are a more expensive hedging instrument than Treasury bond futures. A number of factors currently contribute to the higher cost of interest rate swaps including a lower level of market liquidity, less transparent pricing of the "over the counter" market relative to Treasury bond futures (which are exchange traded), and the concentrated nature of the swap market. The cost of using interest rate swaps often is higher due to administration costs and the need to actively monitor and manage the risks associated with these instruments, including operational risk and counterparty credit risk.

The current situation is best thought of as the simultaneous interaction of at least three markets: the physical Treasury bond market; the Treasury bond futures market; and the interest rate swap market. All three markets are very liquid with the liquidity in each market contributing to liquidity in the other markets. For example, participants in the physical bond market are more prepared to take positions as they are able to hedge their exposure in the futures market. Participants that would have used an outright position in CGS to hedge a position can do so by using the Treasury bond futures market. This potentially makes the CGS market more liquid than is indicated just by the outstandings in the market.

In addition, the fact that participants are able to arbitrage the physical and futures markets reduces the likelihood of pricing irregularities in the physical market. In practice the existence of the highly liquid futures market (based on a basket of bonds) allows liquidity to be achieved in the physical market with a lower volume of bonds in each line than would otherwise be the case. This is because an individual seeking to manipulate the futures price would need to effectively manipulate prices based on a pool of bonds three times larger than that of any single line.

Further, the highly liquid futures market allows the swap market to be more liquid than it otherwise would as swap traders can more readily execute transactions knowing that they can quickly, and at low cost, hedge any outright risk associated with entering into a swap transaction. In practice, in the Australian swap market, individual traders generally hedge individual trades in the futures market, with the financial institution rebalancing their swap portfolio on a regular, though less frequent, basis.

Finally, a liquid swap market can provide an additional arbitrage discipline on the exchange traded futures market (although in practice this channel is less important).

The liquidity in each market constrains the bid/ask spread in each of the other markets. In particular, the highly liquid futures market constrains the bid/ask spread in the physical market. Thus, although the futures market cannot exist without the physical market which sets the underlying price, it is the futures market that contributes significantly to the efficiency of the market determining the underlying price.

A key factor that contributes to the role of the futures market is the very broad participation in the Australian futures market – in particular by foreign organisations. This broad participation by diverse players with differing underlying positions contributes to the liquidity of the market.⁶ In contrast, the interest rate swap market can often be influenced by large one-off deals or events that mean the market can be some what “one-sided”. This is evidenced by relatively large movements in the spread between the CGS market and the swap market. The capacity of interest rate swap dealers to hedge one way flows in the futures market reduces the price of using the swap market for those with an underlying demand to transfer their risk position.

2.2.2 *Benign non CGS outcome*

There are a number of possible benign outcomes (in terms of providing appropriate risk management architecture) that could occur in the absence of CGS. It should be noted that almost no market participants consulted in Australia believed that these outcomes were likely to occur.

There is general agreement that, in the Australian situation, a benign outcome can only be achieved if a viable exchange traded futures market is established. This reflects the fact that few people believe that an over-the-counter swap market alone would be able to transfer risk at an appropriately low cost (for more on this outcome see below).

The most likely benign outcome would require the establishment of an exchange traded interest rate swap futures market. Under this scenario the liquidity of the interest rate swap market would be enhanced by the capacity of swap participants to hedge their OTC positions. If such a market were established, and were to become highly liquid, then the interest rate swap and swap futures market could reinforce each other in the same way as the three current markets.

⁶ The SFE (2002, p. 27) provides evidence of the broad participation in the futures market: “SFE currently estimates, based on a breakdown of participant type and other data sources, that approximately 20 per cent of contract volumes in the 3 year bond futures contract and 10 per cent in the 10 year bond futures contract are dedicated to swap hedging. Other underlying demand drivers include longer term asset hedging, overlay exposure management, portfolio curve smoothing, non expiry speculation (including day trading) and the use of contracts as a capital efficient proxy for physical bonds, among other reasons”.

For the interest rate swap futures market to become highly liquid, it is likely that international market participants would need to be willing and active participants in the market. Increased international participation is likely to increase the diversity of motivations for participation within the market, in turn enhancing the likelihood of a "two way" market.

The SFE launched an interest rate swap futures contract in December 2002. To date the contract is not highly traded. In the first full year of trading (2003), the total volume of 3 year interest rate swap futures contracts traded was 401, compared to 19 million 3 year bond futures contracts. Over the same period, the total volume of 10 year interest rate swap futures contracts traded was 200, compared to 6.7 million 10 year bond futures contracts (Sydney Futures Exchange, 2004). It should be noted that it is difficult to assess the viability of the swap futures contracts in isolation while the established Treasury bond futures contracts are still operating.

It is useful to make one final point about an outcome based on an interest rate swap futures market. The swap market is essentially a bank market (the floating rate for interest rate swaps is the Bank Bill Swap Reference Rate) with rates providing a proxy for bank risk. Without CGS, the concentration of financial market activity in the banking sector is likely to increase. Given the soundness of the Australian banking system, this may be of little consequence. However, in times of major economic and financial instability, it could add to the risk in the financial system. Although major shocks are rare, experience suggests the consequences can be more severe in less diversified financial systems.

A second possible benign scenario would see the establishment of a futures contract based on a basket of Australian semi-government bonds. Establishing such a contract faces some technical difficulties given the heterogeneous nature of semi-government issuance. That said, there have been some discussions between the semi-government issuers about bringing greater uniformity to their issuance programme. Again, if the futures market was established it would enhance the liquidity of the underlying physical markets. The SFE unsuccessfully attempted to launch such a contract in the early Nineties.

A final possibility is that a futures market could be established based on a corporate bond index. This possibility would rely on a sufficiently sized and liquid corporate bond market. Such an index would mirror equity indexes that are currently in widespread use, including in Australia.

2.2.3 *Non-benign outcome*

The non-benign outcome is that no exchange traded market comes into existence. Some market participants claimed that the swap market would cease to function. A more likely outcome is that the swap market would continue to function, but with wider bid/ask spreads as traders would be unable to hedge their risk in an efficient manner. Participants in the swap market would be required to assume both outright and basis risk when entering into a swap contract. Unless international

participants were prepared to extensively trade in the swap market there may be considerable difficulty in establishing prices.

The implications of this outcome are that the cost of managing interest rate risk would be higher. For investors, this means potentially requiring higher yields to compensate for the increased risk retention. For issuers, this means potentially having to pay higher yields to meet their financing requirements (or potentially move to offshore markets where risk can be hedged more cheaply). For banks, the increased cost of managing their balance sheets would be likely to be passed on to consumers in terms on retail and commercial lending. Thus, interest rates throughout the economy would rise.

2.2.4 Transition between market structures

The current market situation appears to represent a stable equilibrium. It is also possible that the other two potential structures may be stable if they are actually reached. In particular the benign outcome could be stable if sufficient liquidity were established in the relevant exchange traded futures market. However, it is not clear that the benign equilibrium would be reached. The key issue is the likely transition path given the fact that liquidity requires market participants to have confidence in the market (National Australia Bank, 2002). This can be thought of as a self-reinforcing cycle – liquidity breeds confidence, confidence breeds liquidity.

In the Australian case the most likely market to form would be the interest rate swap futures market. For the market to form at least two conditions must be met. First, market participants must have confidence that the underlying price (some basket of OTC swap contracts) cannot be manipulated in a way that places them at risk of significant loss. Second, sufficient liquidity needs to be established so that participants own actions do not unduly affect the futures price.

Two factors related to the role of the major Australian banks may inhibit the establishment of an interest rate futures contract. First, the interest rate swap futures contract is only likely to become liquid if the major Australian banks were to participate actively in the market given their overall size and their underlying demand for risk management arising from the composition of their large balance sheets. Many market participants pointed out that the major banks had a weak incentive to participate as the exchange traded futures would act as direct competition for OTC interest rate swaps, a market in which the major banks have a very large share. For example, the SFE (2002, p. 27) stated that "... it is not in the narrow interests of bank shareholders to see swap price discovery migrate from the OTC derivatives market to the exchange traded derivatives market." Second, for the market to become liquid, other players must have confidence in the robustness of the underlying price. The major banks have a substantial share of the interest rate swap market and as such other participants may be concerned that they could manipulate the price, particularly in the early stages of the market when turnover is likely to be lower. Concern about manipulation may keep volumes low, in turn increasing concern about the ease of manipulation.

2.2.5 Conclusion

The Review concluded that the costs associated with interest rate swaps could increase if the CGS market were closed. The interest rate swap market heavily depends on the Treasury bond futures market, as participants in the swap market extensively use Treasury bond futures to hedge interest rate exposures associated with providing swaps. Without Treasury bond futures, swap market participants would likely require a higher premium as compensation for taking significant additional risk on their balance sheet.

2.3 Providing a safe haven in times of financial instability

During periods of financial instability, investors often sell out of risky assets and seek safe assets to avoid the potential of a capital loss on their investment. Traditionally, investors have sought out government bonds in times of financial instability, but they do also seek other safe financial assets. An example of flight to quality was the change in relative yields on low risk corporate, high risk corporate and government bonds following 11 September 2001. The spreads between corporate bond yields and equivalent maturity Treasury bonds rose immediately after the terrorist attacks. However, the spread widened most for lower credit rated corporate bonds and least for the highest rated bonds as investors sold relatively risky assets and purchased relatively safe assets.

In Australia, events such as the 1997-98 Asian financial crisis, have had a greater impact on the Australian corporate bond spread.

While a government debt market exists, it is likely to be used as a domestic safe haven. If no alternative safe haven assets exist, then financial instability may lead to capital flight. This may push down the exchange rate and further disturb unsettled financial markets. The International Monetary Fund has identified this safe haven role as a key uncertainty in assessing the need for a government debt market (International Monetary Fund, 2001).

The importance of government bonds as a safe investment during periods of financial instability may vary depending on the circumstances of the shock.

At one extreme, a small shock resulting from the collapse of a single large corporation, might lead some investors to seek safe havens in government bonds or other highly rated issuers. In this case, any highly rated bonds could provide the safe haven, and some large, low risk equities also may suffice. At the other extreme, a severe financial crisis, such as a systemic banking crisis, the presence of a government bond market may not make a substantive difference.

A range of cases occur between these extremes. In the intermediate case of a relatively large, financial system wide disturbance, the presence of very low risk government securities may be beneficial.

There may be alternatives to government bonds as a safe haven during periods of financial instability. Investors can hold alternative investments such as AAA/Aaa rated corporate bonds, mortgage backed securities, or cash at commercial banks during financial distress. However, the key problem with relying on private credit instruments is the potential for rapid changes in credit worthiness affecting the security of the asset. For example, investors may hold highly rated corporate bonds as a safe investment, only to learn that their investments are downgraded due to the effects of financial instability on the company's operations.

Cash could involve lower returns than alternative investments, but depending on the rate of inflation, could provide a suitable low risk substitute for CGS. Australia's sound prudential regulation of the banking sector ensures investors are likely to view bank assets as relatively low risk.

Of course, sound financial system regulation and supervision can also assist with identifying and preventing instability. A key issue in an episode of financial instability is liquidity – that is, the ability to convert assets to cash or another safe asset when required. The Reserve Bank of Australia (RBA) can provide emergency liquidity to the financial system by making funds available to the market as a whole through its open market operations. The RBA also can lend directly to an institution (governed under the *Corporations Act 2001*) in cases of liquidity difficulties, if the failure of the institution to make its payments could seriously affect the financial system. This would help calm unsettled markets, and therefore reduce the need for investors to seek safer assets.

In an example of this, central banks around the world acted after the September 11 terrorist attacks to boost liquidity in their financial systems to ensure markets did not experience systemic failures resulting from disruptions in payment and settlement systems or the increased risk aversion (Reserve Bank of Australia, 2001).

Overall, the CGS market is likely to be used as a safe haven during periods of instability whenever it exists, despite the proposition that the benefits of this role may vary according to the scale of the event.

2.4 *Investment vehicles*

An argument presented in the Review of the CGS market is that the Government should continue to supply CGS in order to provide investors who require a low risk, low return fixed interest investment option. Investors such as superannuation funds find CGS provide a long dated financial asset that can assist portfolio management by closely matching long dated liabilities. Low risk long dated securities also provide investors with greater diversification options.

Historically, the CGS market has been the principal source of long dated financial assets in Australia. The absence of CGS may limit long dated investment options and complicate portfolio management. Several submissions to the Review supported this argument by drawing on analysis (Bomfin, 2001) using portfolio

theory to determine the potential welfare impact on investors from the reduction in investment options if government bonds were to be eliminated from the market.

The extent of this potential problem depends on the importance of CGS as a long term investment for investors, such as superannuation funds. The estimates suggest that pension (superannuation) funds holdings of CGS have averaged around 18 per cent of total CGS outstanding and life insurance corporations holdings have averaged around 11 per cent of total CGS outstanding (Australian Bureau of Statistics, 2003).

The superannuation sector's holdings of CGS need to be considered in the context of the total assets the sector manages. At the end of the June quarter 2003, superannuation funds reported total assets of around \$530 billion (Australian Prudential Regulation Authority, 2003), with CGS accounting for less than 5 per cent of these assets. The very small contribution of CGS to total assets suggests CGS may not be a crucial instrument in the investment strategy of the superannuation sector at present.

The Australian Government's decision to maintain the CGS market was not specifically targeted at meeting investor demand for risk free financial assets. The argument that there is a market failure in investment opportunities to justify a role for government was not considered particularly convincing. However, maintaining the CGS market obviously maintains opportunities for superannuation funds and other investors to hold government bonds.

Alternative low risk investment options are available in domestic debt markets, including State government debt and highly rated supranationals. The continued development of markets for securities backed by assets such as residential and commercial mortgages (asset backed markets) also may provide alternative investment options.

2.5 *Pricing other financial products*

One of the key developments in finance theory in past decades has been increased focus on pricing of risk. Common practice among financial practitioners, as well as in commonly used asset pricing models, is to break risk into component parts. Usually, this process begins with specifying a proxy for a risk free rate (that is, in state preference terminology a security that pays a given return regardless of the state of nature that eventuates). Models such as the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) take the risk free rate as a base and then add components reflecting the individual characteristics of the asset. In the CAPM, the additional characteristic considered is the covariance of the asset with a portfolio of securities comprising each security weighted by its proportion of the market.

It should be noted that the risk free asset considered in these models is an asset for which there is zero variance in returns. Clearly, this is not the case with CGS or most other government bonds. When stakeholders refer to CGS as being a

proxy for “risk free” assets, they are generally referring the general lack of default or credit risk. CGS and other government bonds are still affected by interest rate risk, which is the risk that is absent from the “risk free” asset used in CAPM and APT. On this basis, it should theoretically be possible to find another asset with low return variance that could be used as a proxy for a risk free asset. There have been studies that demonstrate that fundamental asset pricing models such as the CAPM can still function without a risk free asset under certain circumstances. A well known case (Black, 1972) involves replacing the risk free asset with a portfolio constructed to be uncorrelated with the market portfolio. While the CAPM holds using this approach, it relies heavily on the assumption that there are no short sales constraints (Ross, 1977).

In more practical terms, approaches to pricing risk that break it into its component parts contribute to a better allocation of resources throughout the economy. If risk can be accurately priced investors are better able to allocate their savings to the types of assets that most closely match their risk preferences and funds managers can allocate capital to its most efficient uses.

Financial market participants pricing private debt securities in the primary market may use the CGS yield as a starting point, and add margins for credit, liquidity and other risks. The CGS curve, in addition to being the closest domestic proxy for a “risk free” security, is a homogenous curve facilitating price discovery across the maturity spectrum. Several problems could arise if the pricing of debt securities is less efficient.

If the yield on new issues of debt securities is inappropriate there may be income transfers between investors and issuers as the yield adjusts in subsequent market trading.

Some market participants may withdraw from the segments of the market where problems with pricing debt securities are ongoing. For example, a corporate may restrict issuance to short dated bonds if longer dated bonds have ongoing pricing difficulties. This may mean the corporate foregoes lower cost alternatives, potentially increasing the domestic cost of capital.

A systematic reduction in pricing efficiency may lead to misallocation of capital in the economy as some sectors face either too high or too low a cost of capital. For example, if corporate bond yields of a particular industry were systematically too low because of pricing inefficiencies, then they would borrow and invest more than would be appropriate, potentially reducing funds available for more productive investment elsewhere in the economy.

Possible alternatives for pricing debt securities in the Australian market could be based on the price of existing debt securities of organisations with similar risk characteristics or the interest rate swap curve.

Pricing could rely on a yield curve constructed from corporate bonds and debt issued by “supranationals” (multinational public institutions such as the World Bank and the Asian Development Bank) with the same credit ratings. However, at this

point, these markets do not appear to be liquid enough across the yield curve to play this role permanently.

Another alternative is to price debt securities against the price of interest rate swaps. The interest rate swap market is liquid and the interest rate swap curve currently extends to a similar maturity as the CGS yield curve. This should allow pricing at the same range of maturities.

The price investors paid for some recent issues of corporate debt securities was based on the rate for an interest rate swap at that maturity, plus an additional margin for risks such as credit risk. While some of these issuances also note the price as a margin over the CGS yield, increasingly the interest rate swap curve is used as the primary pricing benchmark.

The International Monetary Fund (International Monetary Fund, 2001), the Bank for International Settlements (Bank for International Settlements, 2001) and the Organisation for Economic Cooperation and Development (Organisation for Economic Cooperation and Development, 2002a) report these benchmarks are commonly used overseas for pricing new issues of debt securities implying that, internationally, government securities also are becoming less important for pricing.

Overall it seems unlikely that prices would continue for long periods of time at the “wrong” level. For example, if an investor has paid “too much” for a corporate bond, then this will become apparent over time. In essence the pricing argument reduces to the fact that in the absence of a clear pricing benchmark the market may find the “wrong” price for a, possibly short, period of time. Concern by market participants that they may pay the “wrong” price may lead to them requiring a risk premium. It seems unlikely that this risk premium would be significant.

2.6 Implementing monetary policy

As in many countries, Australian government debt has played an important role in implementing monetary policy. In Australia, the RBA announces the desired stance of monetary policy in terms of a target for the interest rate on overnight cash funds borrowed and lent between banks. This interest rate forms the base of the structure of interest rates in the economy.

The RBA's open market operations involve purchases and sales of securities to inject funds or withdraw funds from the banking system. These transactions once were carried out exclusively through outright purchases and sales of government securities, but now are conducted almost entirely through repurchase agreements. Repurchase agreements involve the sale of a security with an agreement to repurchase it on an agreed future date at an agreed price. They expose the RBA to little market risk and are efficient because the RBA can set the maturity dates to meet expected future flows of funds.

The RBA has responded to the decline in the amount of CGS on issue by broadening the range of securities that it will accept as collateral on repurchase agreements in open market operations. The RBA will now accept:

- CGS,
- Australian dollar securities issued in Australia by central borrowing authorities of State and Territory governments (since June 1997),
- Australian dollar securities issued offshore by central borrowing authorities of State and Territory governments but traded in the Australian Austraclear System as euroentitlements (since June 2001),
- Australian dollar securities issued by a range of AAA/Aaa rated, supranational organisations (since October 2000/June 2001), foreign sovereigns and government agencies (since March 2004), and
- bills of exchange and negotiable certificates of deposit (CDs) accepted or issued by eligible banks (since March 2004). Bank bills and CDs will be eligible where the issuer has a short term rating of P 1 or equivalent, and a long term rating equivalent to A3 or above, by all major credit rating agencies that rate it, and in any event by at least two major credit rating agencies. Banks will not be able to offer their own bank bills or CDs to the Reserve Bank.

In addition, the RBA has increased its use of foreign exchange swaps to supplement its operations in domestic securities. Foreign exchange swaps work like repurchase agreements. Australian dollars are exchanged for foreign currency rather than domestic securities. Moreover, the foreign currency can be invested in foreign debt securities. As the swap involves agreement to unwind the transaction at a future date at an agreed exchange rate, neither party to the swap is exposed to exchange rate risk. In 2002 03, foreign exchange swaps undertaken for liquidity purposes amounted to about \$90 billion (Reserve Bank of Australia, 2003).

Given these developments, the effective operation of monetary policy would likely continue without CGS on issue.

2.7 *Attracting foreign capital inflow*

Some commentators argue that the CGS market is necessary to attract foreign capital inflow. However, the level of capital inflow is not a policy goal in itself. A more desirable policy goal is to keep the cost of capital in Australia as low as possible.

The Government's fiscal strategy is to maintain budget balance, on average, over the course of the economic cycle. Since the Government is not investing more than it is saving (and therefore not borrowing by issuing CGS), it does not directly require additional foreign capital inflow for its own purposes. Instead, private sector savings and investment decisions will determine whether additional foreign capital inflow is required.

Accordingly, the key question is whether the existence of CGS lowers the cost of other borrowing in Australia. As discussed previously, the decision to maintain the CGS market was aimed at ensuring the cost of capital remained as low as possible by facilitating efficient interest rate risk management.

However, it could be argued that foreign investors may only be prepared to invest in a country if it has a liquid sovereign debt market. That is, investors may not be prepared to invest in private financial markets if they are not underpinned by an efficient government debt market. The existence of a liquid sovereign debt market ensures the “visibility” of the country, for example, through inclusion in international bond indices (Australian Stock Exchange, 2002). Consultations with international investors indicated that very few investors fit into this category. Many investors only invest in sovereign debt. Other investors indicated that they would reconsider their investment in other Australian markets only if the removal of the CGS market had significant undesirable consequences for the financial markets generally.

This line of thinking also contributed to calls from some market commentators to maintain the CGS market to assist with the Government's policy objective of promoting Australia as a global financial centre. Clearly, the more developed Australia's financial markets are, the more attractive it will be as a centre for financial service provision. However, Australia also boasts many other attributes that contribute to this objective – a strong, dynamic economy; world class information and communications technology; highly skilled and flexible workforce; and time zone advantages.

3. Size of the CGS market

The Review discussion paper sought stakeholders views on the optimum size of the CGS market. Relatively few submissions were specific about an optimum size in terms of volumes outstanding, but estimates ranged from around \$30 billion (Catholic Superannuation Fund, 2002) to \$80 billion (ICAP, 2002) or more. In determining the optimal size, most stakeholders that commented linked the required size of the market to either the efficient operation of the Treasury bond futures market or the needs of investors for long term investment vehicles.

As previously mentioned, the Government did not decide to maintain the CGS market primarily to maintain a long term investment vehicle. As the decision to maintain the market was based on interest rate risk management, the Review concluded that the CGS market should be maintained at a sufficient size to facilitate continued efficient trading in the Treasury bond futures market.

The Treasury bond futures contracts specifications require at least three bonds in each contract basket to ensure that the price of the futures contract is not unduly affected by unusual factors affecting a single bond. In order to support both the 3 year and 10 year Treasury bond futures contracts, this required a minimum of six bonds on issue.

Bonds with less than 18 months to maturity were deemed to not be useful for the purposes of the 3 year futures contract as they are largely subsumed by money market dealing.

As will be discussed more fully in the next section, the Review concluded that at the long end of the yield curve, spacing of up to 2 years between each bond would be consistent with efficient futures contract operation. Market participants indicated that the average maturity of the bonds underlying the 10 year bond futures contract could range from 9 to 11 years. However, it was more important that the average of the bonds underlying the 3 year bond futures contract varied in a more narrow range: preferably around 2.5 to 3.5 years.

In order to keep the overall market size as small as possible (due to the Government's concerns about accumulating significant financial assets – see Section 4.2), the Review concluded that an issuance pattern involving a new 13 year bond every second year would be consistent with efficient operation of the 10 year futures contract. This should be supplemented by issuance of an additional bond with a term to maturity of around 5 years in the year that a new 13 year bond was not being issued. This issuance pattern would result in a market of around eight to nine lines, with 2 year spacings at the long end and 1 year spacing at the short end.

Most stakeholders were of the view that each bond line should contain around \$5 billion on issue. Combined with the requirement for three bonds per futures contract basket, this would ensure that there was limited scope of manipulation of the futures contract price. Given the issuance arrangement outlined above, this would result in a overall Treasury bond market of around \$40 to \$45 billion.

At the beginning of the Review process, many stakeholders argued that the market would need to grow over time to maintain efficiency. Estimates of the required growth rate varied from the expected growth rate of nominal GDP (to maintain the market constant as a proportion of economic activity) to the growth rate in financial assets (to maintain the market a constant proportion of financial assets). However, over the course of the Review, a general consensus emerged that mechanical growth rules were not appropriate given the uncertainty surrounding the minimum required size and the ongoing process of financial market evolution. Accordingly, the approach adopted has not been to set a mechanical growth rule, but rather to monitor the market to see whether inefficiencies are arising that may justify additional issuance.

4. Implications for Australian Government debt issuance and portfolio management

4.1 Implications for debt issuance

In the several years immediately preceding the Review of the CGS market, the Government issued new debt in excess of funding requirements with the general objective of maintaining a liquid and efficient CGS market. As a result of the

Review, debt issuance will now be more specifically targeted to meet the objective of maintaining an efficient CGS market. Both approaches targeted a financial market efficiency objective. The new approach is more clear, well defined and transparent given the explicit link to the key role of the Treasury bond futures market.

CGS issuance will be structured to underpin the 3 year and 10 year Treasury bond futures contracts. The Treasury bond futures contracts are supported by an underlying basket of Treasury bonds. This basket provides a price against which the futures contracts can be settled. Each basket usually is comprised of three Treasury bonds determined on the basis of their liquidity, amount outstanding and term to maturity. The 3 year futures contract requires the basket of bonds underpinning the contract to have an average remaining period to maturity of around 3 years. Similarly, for the 10 year futures contract, the underlying basket of bonds should provide an average remaining period to maturity of around 10 years.

Figure 3 illustrates the profile of benchmark Treasury bonds outstanding as at 30 June 2003 and highlights those bonds included in each of the futures contracts at that time.

At 30 June 2003, the basket of Treasury bonds underpinning the 10 year futures contract comprised bonds maturing in June 2011, May 2013 and April 2015, providing an average term to maturity of around 10 years. This profile of around 2 years between maturity dates of bonds in the basket effectively supports the 10 year futures contract. The 2 year spacing of bonds may result in some fluctuations in the average term to maturity of the basket around the notional target of 10 years. However, given the long dated nature of the contract, these divergences are relatively minor and should not impact on the contract's efficient operation.

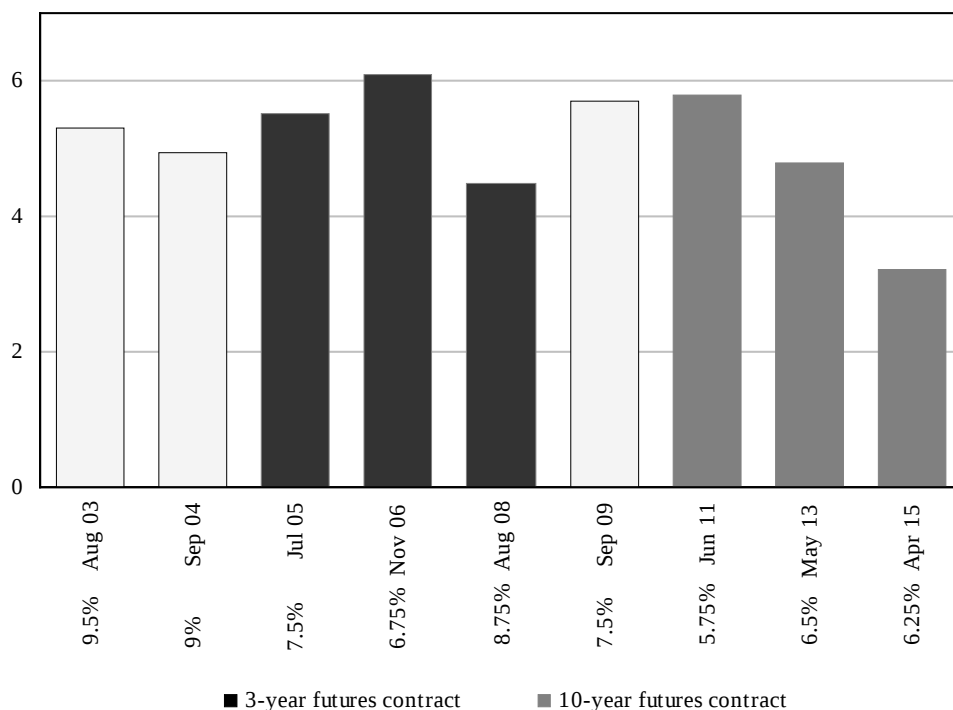
Maintaining this profile of outstandings will require issuance of a new long dated Treasury bond every 2 years with a term to maturity of around 13 years. The Australian Government announced that around \$5 billion will be issued into each new line of Treasury bonds over the 2 year period (Commonwealth of Australia, 2003).

At 30 June 2003, the basket of Treasury bonds underpinning the 3 year futures contract comprised bonds maturing in July 2005, November 2006 and August 2008, providing an average term to maturity of around 3 years. This profile of around 1 to 2 years between maturity dates of bonds in the basket effectively supports the 3 year futures contract.

The efficiency of the 3 year futures contract may be undermined if the bonds in the underlying basket had intervals of 2 years or more. This profile would at times result in the average term to maturity of the basket being significantly higher than the target of 3 years. Departures from the notional maturity target are more likely to significantly impact on efficiency of the 3 year futures contract (compared to the 10 year futures contract). Therefore, given the expected issuance pattern of long dated benchmark lines, additional issuance of Treasury bonds needs to be undertaken in the mid section of the yield curve. This issuance will reduce the interval between the benchmark lines to around 12 months and will mean that the

Figure 3

Profile of Benchmark Treasury Bonds Outstanding (June 2003)^(a)
(billions of Australian dollars)



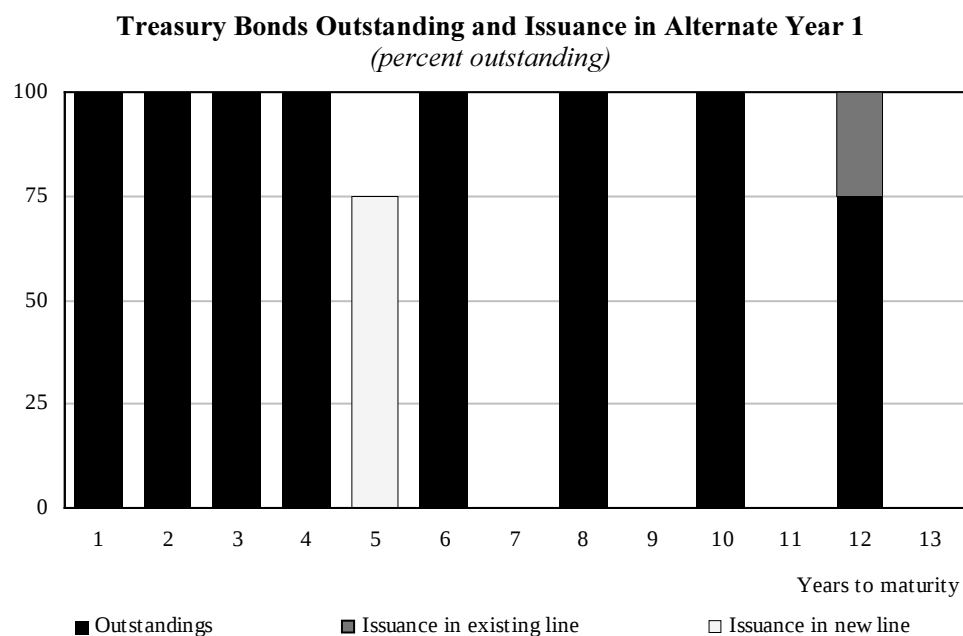
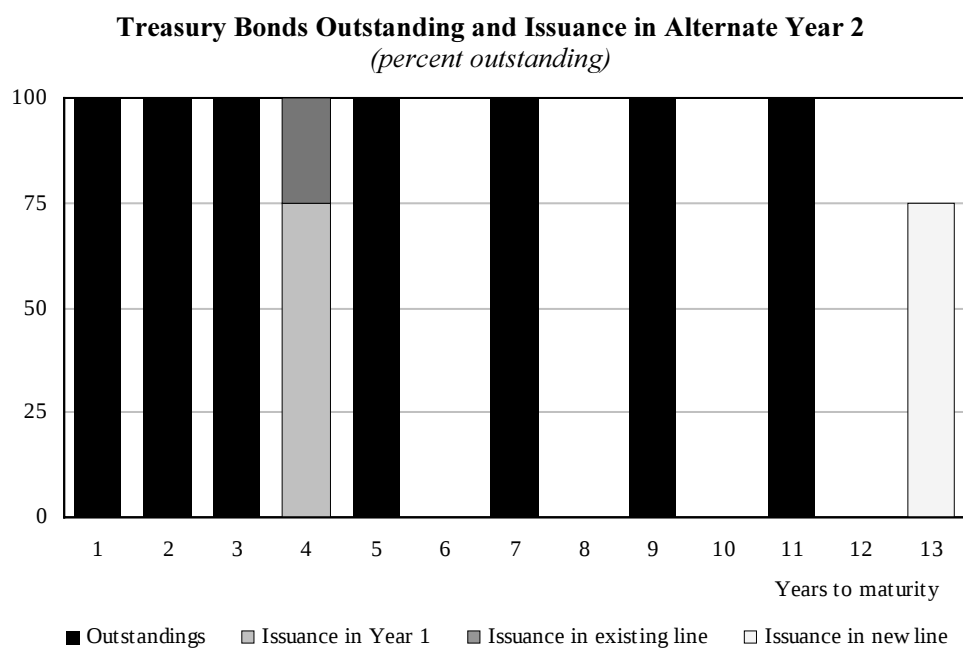
(a) Treasury bonds on issue are net of Australian Government holdings. Several smaller Treasury bond lines currently on issue, including the February 2006 and October 2007 Treasury bonds, are excluded from the chart as they are not considered benchmark bond lines.

Source: Australian Office of Financial Management.

yield curve is more closely spaced at the short end than the long end. To achieve this, a new Treasury bond line with a term to maturity of around 5 years will need to be issued every 2 years. Issuance of around \$5 billion will be undertaken over the course of the 2 year period.

Figures 4 and 5 provide a stylistic illustration of the broad pattern of issuance and debt profile outstanding that will likely be required over time to support the Treasury bond futures market. The issuance pattern of commencing new benchmark lines of Treasury bonds every 2 years will be phased in as current benchmark lines of Treasury bonds progress down the yield curve.

Maintaining the CGS market to support the Treasury bond futures market will require issuance to be concentrated in Treasury bonds. The Government will also

Figure 4**Figure 5**

seek to minimise the level of financial assets it accumulates in supporting the CGS market. On this basis, the issuance of Treasury Indexed Bonds, the only other type of long dated debt used by the Australian government in recent years, has been suspended.

4.2 Management of financial assets

Given the Government's fiscal strategy of maintaining budget balance, on average, over the course of the economic cycle, the Government's decision to maintain the CGS market will result in surplus funds that will need to be managed.

The Review considered concerns about the potential impact of government ownership of private financial assets. Key concerns were: the potential for government activities to distort financial asset prices; the impact of government ownership on the operations of the firm the government was investing in; the potential for asset to be liquidated for use in general government expenditures; and the commitment of government resources to monitoring and oversight of governance structures for investment. These considerations were taken into account in determining how assets resulting from debt issuance should be managed.

The Australian Government has held some financial assets in the form of term deposits with the RBA since December 1998. These assets resulted from the policy of maintaining liquidity in the CGS market and have been used to assist with the Australian Government's short term funding requirement.

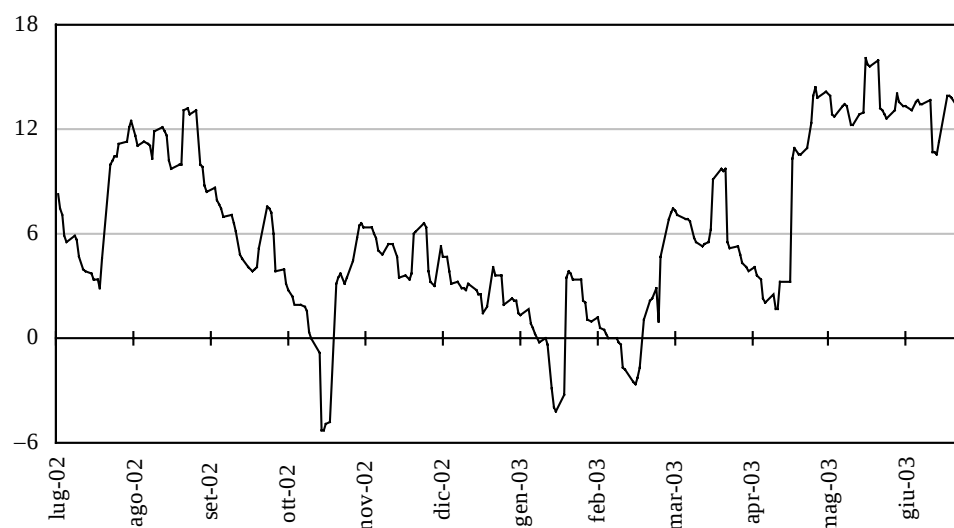
Short term funding is required when the timing of the Australian Government's cash receipts do not match the pattern of its expenditures and debt repayments. Short term funding requirements are met by a combination of running down RBA term deposits and issuing Treasury Notes (a discount instrument with less than twelve months to maturity). The latter usually have been issued where RBA term deposits were not available to meet short term funding requirements.

The size and volatility of the short term funding requirement is illustrated by changes in Australian Government financial asset holdings at the RBA (overnight cash and term deposits). Figure 6 shows the Australian Government's short term funding requirement for 2002-03. In this period the net short term asset position was initially \$8.3 billion (1 July 2002). It improved to around \$13 billion (late August 2002) followed by a short term funding requirement of around \$5 billion (mid October 2002) before rising to a peak of \$16 billion (late May 2003), producing a fluctuation of around \$21 billion over the year (Australian Office of Financial Management, 2003a).

The Australian Government intends to continue to hold surplus funds in the form of term deposits to meet short term funding requirements. Historical fluctuations of the funding requirement suggest that the Australian Government may require around \$25 billion of term deposits to meet funding needs. However, given

Figure 6

Australian Government General Government Financial Asset Holdings at the Reserve Bank of Australia Less Treasury Notes on Issue
(billions of Australian dollars)



Source: Australian Office of Financial Management.

the volatility of the funding requirement, the average term deposit balance over the year would be considerably lower.

Using the Reserve Bank term deposit facility provides the Australian Government considerable flexibility in managing its financing requirements. As the facility uses the infrastructure in place for managing the Reserve Bank's reserves, the Australian Government has been able to utilise an established institutional framework for investment.

The expanded term deposit facility at the Reserve Bank is expected to accommodate the management of financial assets resulting from supporting the CGS market over the next several years. In the event financial assets exceed \$25 billion on an ongoing basis, the Australian Government will consider allocating some funds to other liabilities. This may include allocating some funds to meet currently unfunded liabilities relating to public servant pension entitlements.

4.3 Implications for portfolio management

The nature of the new issuance program and the associated financial asset holdings raises new issues for portfolio management. Debt issuance was previously

targeted at the long end of the yield curve to assist with maintaining the length and efficiency of the CGS market. Now, issuance will be targeted at both the long end and the middle of the yield curve. This change on its own would lead to a shortening of the average duration of the portfolio. Holding an increased amount of short term deposits at the RBA would contribute to lengthening portfolio duration, by defeasing short dated liabilities.

While these issues are clearly important for portfolio management, there have been a number of other pressures in recent years driving adjustments in the approach to portfolio management. These issues and the outcomes of the review of the portfolio benchmark are discussed below.

5. Portfolio management

Australian debt management can be thought of as having two policy objectives: to contribute to promoting financial market efficiency; and to manage the portfolio at least cost to the government subject to an acceptable degree of risk.⁷ To achieve these two objectives the AOFM primarily has two instruments: physical issuance and the use of derivatives instruments.

The outcome of the CGS Review means that the general size and tenor of bond issuance will be determined by the requirement to maintain a liquid bond futures market. As in the past, this means that the physical bond issuance program cannot be substantially modified in order to meet a particular portfolio duration benchmark. In other words, the physical bond instrument is primarily aligned to meet the objective of contributing to financial market efficiency.

Given the assignment of physical issuance to the financial market efficiency objective, the AOFM uses another instrument to manage the cost of the debt portfolio – interest rate swaps. Use of interest rate swaps allows the AOFM to manage the cost independently of the physical debt issuance program.⁸ However, managing the cost of the portfolio involves making judgments about an acceptable degree of risk in debt servicing costs.

There are a number of potential approaches to the concept of risk for a sovereign debt manager. In the Australian context, primary consideration was given

⁷ These two objectives are explicitly stated in the mission statement of the Australian Office of Financial Management (AOFM): “The AOFM aims both to manage Commonwealth net debt at least cost over the medium-term and contribute to supporting financial market efficiency, subject to the government’s general policies and risk preferences”.

⁸ Conceptually the two instruments – physical issuance and interest rate swaps – are completely independent. However, in practice there is some interdependency. For example, the Government needs to take account of the depth and liquidity of the interest rate swap market. In Australia the interest rate swap market is not highly liquid beyond 12 years. Accordingly, the Government may not be able to issue, for example, 30 year bonds, and expect to be able to independently manage the duration of the portfolio. More generally, where possible the Government undertakes a physical issuance program that, subject to the constraint of supporting the futures baskets, minimises the required interest rate swap program.

to the risk associated with variations in the annual debt servicing costs involved in managing the portfolio.

The shorter the average term to maturity of the portfolio, the greater the risk borne by the Government in instances where there is a parallel shift in the yield curve⁹ because there is no particular interest rate locked in beyond the maturity date. The Government is exposed to the risk that it will have to pay higher interest rates at the point of refinancing. At the same time, because the yield curve is generally upward sloping, a short average term to maturity will generally reduce the expected cost of the debt portfolio. The yield curve is generally upward sloping because investors demand a “term premium” over and above the expected path of future short term rates for locking up their funds for an extended period. However, the term premium is not directly observable as the observed slope of the yield curve is a composite of the term premium and expectations regarding changes in interest rates.

Overall, choosing the right average term to maturity involves a balance between the lower expected costs associated with a lower average term to maturity and the higher risk associated with not having a particular interest rate locked in for a long period of time.

An added consideration is that the volatility of net debt, valued at market prices, will be reduced when modified duration is reduced.

5.1 *The previous benchmark*

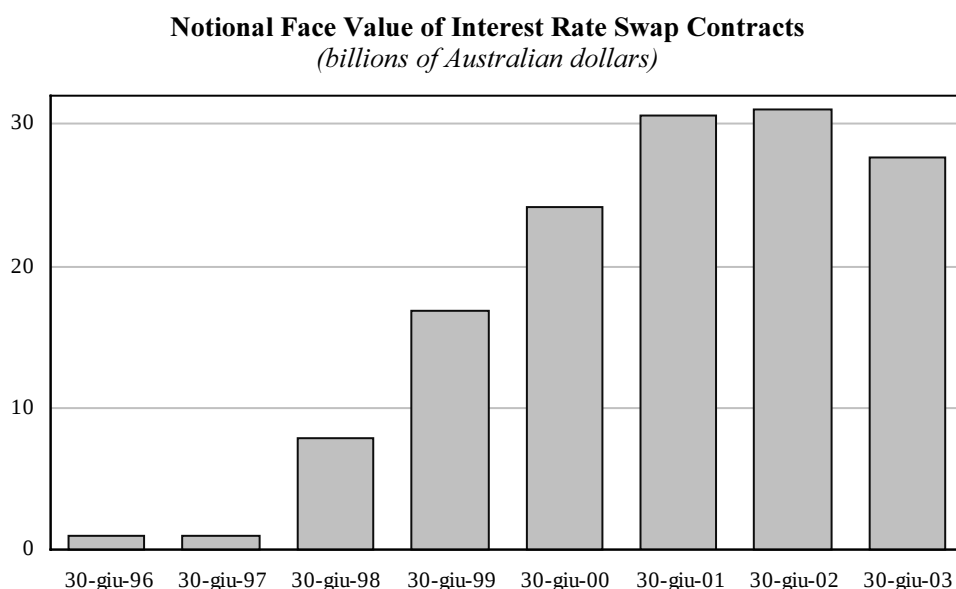
From 1996 to 2003, the interest rate risk of the Australian dollar share of the net debt portfolio was controlled through managing the portfolio to a benchmark modified duration target range of 3 to 3.5. As described above, this benchmark was aimed at balancing the competing considerations of reducing the expected debt servicing cost and reducing the risk to the expected debt servicing cost in a dynamic interest rate environment.

The Treasury bond portfolio, without interest rate swaps, typically has a relatively high modified duration of between four and five. The net debt portfolio modified duration is lower due to the transaction of interest rate swap contracts that effectively exchange some of the Treasury bond portfolio's fixed interest rate obligations for floating interest rate obligations with a modified duration of less than 0.5.

As at 30 June 2003, the notional face value of interest rate swap contracts outstanding stood at \$27.6 billion (Figure 7).

⁹ Average term to maturity, often proxied by modified duration, is a good measure of interest rate risk when considering parallel shocks to the yield curve. However, the precise detail of the maturity profile will affect debt servicing cost outcomes in the presence of non-parallel yield curve shocks. An example of a non-parallel shock may be a short term monetary policy tightening with well anchored long-run inflationary expectations.

Figure 7



Source: Australian Office of Financial Management.

As at 30 June 2003, the interest rate swaps had realised a gain of \$1440 million (\$1630 million in current dollar terms) since the AOFM first entered into interest rate swap transactions for duration management in 1997.

5.2 Reasons for reviewing the benchmark

While periodic review of significant debt management policies is normal practice, there were several considerations that lead to increased pressure to review the portfolio benchmark outlined above. Two major considerations resulted from the impact of a lower net debt environment.

First, at the same time as net debt was falling, the within year financing task was increasing in scale. That is, the range between peak and trough within year financing requirement has grown in recent years. The level of short term borrowing had a greater impact on the overall portfolio duration target. This meant that the portfolio duration target was increasingly difficult to meet for periods within the financial year. As these fluctuations were known to be temporary, it made little sense to undertake further interest rate swaps to bring the portfolio within the benchmark range.

Second, as the volume of nominal debt on issue fell, the proportion of the portfolio in indexed debt rose. As will be discussed below, the portfolio benchmark

did not specifically address the differences between nominal and indexed debt in terms of their response to interest rate changes. As indexed debt became a greater proportion of the portfolio these difference were becoming more important.

5.3 New interest rate benchmark

In 2002-03, the Australian Government completed a review of the portfolio benchmark. This review was undertaken partly because of changes in the net debt portfolio's composition that have been driven by the reduction in net debt achieved since 1996. The findings of the review were subsequently verified by an independent consulting firm (Deloitte Touche Tohmatsu).

The new benchmark is based on the same philosophy as the old benchmark – to use interest rate swaps to shorten the duration of the net debt portfolio in order to achieve a lower average cost outcome. However, the new benchmark enhances the former approach by, among other things, taking better account of the low debt environment.

The new benchmark has two major aspects. First, four changes have been made to ensure that more appropriate measures of cost and risk are used to define the benchmark and to clearly state the link between these measures and the actual level of management discretion for the AOFM. Second, having clarified these measurement and governance issues, the new benchmark parameters were reviewed to ensure that they represent an appropriate balance between cost and risk.

5.4 Enhanced measurement and governance

The four key changes to improve measurement and governance are set out below.

First, for management purposes, the net debt portfolio was decomposed into a Long Term Debt Portfolio and a Cash Management Portfolio. The Long Term Debt Portfolio holds the debt required for the Australian Government's ongoing borrowing program and is quarantined from the effects of large swings driven by within year financing needs. The impact on the overall duration of the net debt portfolio of these swings has become more pronounced as net debt has fallen.

The Australian dollar Long Term Debt Portfolio holds all domestic currency financial assets, liabilities and derivatives under the AOFM's management and control, except those required for cash management purposes. The new benchmark applies to this portfolio.

Long Term Debt Portfolio should reflect the trend level of net debt. Transfers to ensure this will be made between the Long Term Debt Portfolio and the Cash Management Portfolio, based on Budget and mid-year budget review information. All transfers will be fully transparent, ensuring that the AOFM is not able to inappropriately use transfers to artificially meet risk targets.

On average, the Cash Management Portfolio should therefore have neither a net asset balance, nor a net liability balance.¹⁰

Second, the benchmark has been defined in terms of modified duration and also short dated exposure (a measure of the proportion of the portfolio subject to immediate repricing). A portfolio with higher short dated exposure will generate changes in debt servicing costs sooner when interest rates change than a portfolio with lower short dated exposure and the same modified duration. The inclusion of a target for short dated exposure provides more information on the extent to which interest rate changes may flow through to debt servicing costs. It also ensures that the duration target is not met by generating an unacceptably large exposure to floating interest rates.

Third, the new benchmark distinguishes between nominal interest rate debt and inflation indexed debt. This is important, as the interest rate risk for inflation indexed debt is not the same for real rate and inflation shocks.

Inflation indexed debt behaves similarly to nominal fixed interest rate debt with regard to real interest rate movements.

Inflation indexed debt behaves similarly to floating interest rate debt with regard to inflation rate movements.

Distinguishing between the two types of debt became more important as the stock of nominal debt fell while the volume of indexed debt remained stable (thus increasing the proportion of the portfolio in indexed debt).

The new benchmark applies to the nominal component of the Long Term Debt Portfolio but was selected by taking into account the level of indexed debt. This is because the nominal component will be the key driver of debt servicing costs going forward, partly because issuance of Treasury Indexed Bonds has been suspended. There is no intention to repurchase current Treasury Indexed Bonds the latest of which matures in 2020. While the compliance regime is based on the nominal component of the portfolio, the modified duration and short dated exposure of the Long Term Debt Portfolio will also be reported under both treatments of inflation indexed debt.

Fourth, the governance framework applying to the benchmark has been enhanced by clarifying the nature of the benchmark limits. Two types of limits around the benchmark parameters set out the level of discretion that can be exercised by the AOFM and by the Secretary to the Treasury. The Treasurer has approved Policy Interest Rate Limits around the benchmark parameters. The AOFM would need to seek approval from the Treasurer to breach these limits. The AOFM will operate within narrower Operational Interest Rate Limits. The AOFM would need to seek approval from the Secretary to the Treasury if it wished to breach or vary these Operational Interest Rate Limits.

¹⁰ Appendix II outlines the rules for transfers between the Long-term Debt Portfolio and the Cash Management Portfolio (Australian Office of Financial Management, 2003b).

5.5 New benchmark parameters

The modified duration and short dated exposure levels for the nominal component of the Australian dollar Long Term Debt Portfolio are key risk parameters. The new benchmark parameters and associated limits approved by the Treasurer are outlined in Table 1. These will be reviewed periodically.

Table 1

Australian Dollar Long Term Debt Portfolio Benchmark Parameters and Limits

	Nominal portfolio
Modified Duration	2.00
Operational Interest Rate Limit	1.75-2.25
Policy Interest Rate Limit	1.50-2.50
Short-Dated Exposure	35%
Operational Interest Rate Limit	30%-40%
Policy Interest Rate Limit	27%-43%

The previous benchmark's modified duration target range of 3.0 to 3.5 was inclusive of the impact of Treasury Indexed Bonds, where these were treated as being equivalent to Treasury bonds. Based upon the current mix of inflation linked and nominal debt within the net debt portfolio, the new benchmark's modified duration target of 2.0 for the nominal component equates to a modified duration target of 2.9 when Treasury Indexed Bonds are included in the traditional manner. Therefore, the reduction in the modified duration target has been relatively minor.

At the time the new benchmark was introduced, Australian dollar Long Term Debt Portfolio had a higher modified duration and also a higher short dated exposure than the new benchmark levels. A lower modified duration would reduce the expected debt servicing cost. A lower short dated exposure would reduce short term risk to debt servicing cost in the event of higher interest rates, but at the expense of an increase in expected debt servicing cost. Overall, compared with the previous net debt portfolio, the new benchmark should result in broadly the same expected debt servicing cost but reduced exposure to short term interest rate increases (Section 5.8 outlines the types of transactions that will be required to move towards the new benchmark).

The benchmark parameters were determined by modelling a range of potential portfolios and comparing them to a “standard” portfolio (which consisted of an equal proportion of debt issued from one to eleven years). A series of shocks (including non-parallel yield curve shocks) were applied to these and the expected cost outcomes compared to the standard portfolio under the same shocks. This analysis considered both the impact of these shocks on short term accounting results as well as the long term cost of the portfolio. The parameters set out above were chosen on the basis that they provided an acceptable trade off between short term volatility in debt servicing costs and potential long term cost savings.

An additional consideration in the determination of the benchmark parameters was to minimise the expected size of the swap portfolio required to meet the benchmark. This consideration was driven by concerns over an adverse market movement that compressed bond/swap spreads in the long end of the yield curve. In addition, a lower stock of swaps would reduce governance concerns over counterparty credit risk and operational risk management.

5.6 Term premium assumption

The key assumption underlying the benchmark is that there is a positive term premium in market interest rates. Analysis was undertaken on the implications of a range of different term premia. A positive term premium implies it will generally be more cost effective for the Government to have a debt portfolio that has a shorter average term to maturity. A benchmark based on this assumption will reduce the cost of debt when averaged over a period of years. The higher the assumed term premium, the stronger is this conclusion.

However, in the event of a general increase in interest rates, the debt servicing cost of a portfolio with a shorter average maturity will increase more quickly than those of a portfolio with longer average maturity. This should be set against the savings expected to be achieved over the longer term from the term premium effect.

Clearly, from time to time, there may be circumstances where short term rates equal or exceed long term rates (that is, the yield curve becomes flat or inverted). The key issue is whether this circumstance is expected to continue for an extended period. Experience suggests that a flat or inverted yield curve usually indicates that increased short term rates are not expected to be sustained. In these circumstances, adhering to the benchmark portfolio may be expected to continue to provide net benefits over the longer term. However, it would be appropriate to reconsider the term premium assumption and the benchmark portfolio if there is evidence that the term premium has changed significantly over time. For this reason, the benchmark is subject to ongoing review and monitoring including a formal annual review.

5.7 *Benchmark reporting*

Reporting will primarily focus upon the modified duration and short dated exposure of the Australian dollar Long Term Debt Portfolio and compliance with the associated limits. Benchmark cost outcomes will also be compared against outcomes associated with default portfolios that do not include interest rate swaps. Additionally, the AOFM will report on the interest rate risk associated with the Cash Management Portfolio.

5.8 *Portfolio transition*

In order to achieve the new benchmark targets, the AOFM will be undertaking two different types of interest rate swaps. First, as in the past, the AOFM will enter contracts agreeing to receive fixed rate interest flows at terms around 10 to 13 years and pay floating rate interest flows. This will shorten the portfolio duration towards the target. Second, the AOFM will enter into contracts to receive floating rate interest flows and pay fixed rate interest flows with terms of up to 4 years. This will reduce the floating rate exposure of the portfolio and assist with meeting the short dated exposure targets.

It is expected that the transition to the new benchmark parameters will take up to three years. Transitional interest rate limits will guide the management of the portfolio during this period. However, these limits will not be made public as publication may prejudice the Australian Government's financial interests.

5.9 *Total cost of the debt portfolio*

As mentioned above, the physical debt portfolio normally has a duration of around 4 to 5 years, reflecting the dominance of long dated bonds. The assets held at the RBA generally have a very short term to maturity and as such earn a lower return than the market yield on outstanding physical debt.

However, this comparison ignores the impact of the interest rate swaps on debt servicing costs. Any increase in the level of term deposits would increase the net debt portfolio duration by defeasing short dated liabilities. This would have the effect of moving the portfolio away from the benchmark target. As such, additional interest rate swaps would be transacted to reduce the portfolio duration.

Very broadly, the short term interest rate received on the term deposit matches the payment of a short term interest rate on the interest rate swap. The Australian Government receives a long term interest rate on the swap, which is broadly consistent with the market yield it is paying on the longer term physical debt securities in the portfolio.

With this defeasance arrangement in place, the net cost of the debt portfolio is then determined by the application of the portfolio benchmark to the Long Term Debt Portfolio.

6. Summary and conclusion

Over recent years, the Australian debt management framework has been driven by the need to adjust to declining levels of net debt.

The reduction in net debt lead to concerns within the financial community that further declines in CGS would result in lower financial market efficiency. These concerns lead to a thorough consideration of the issues through a public review of the CGS market.

The Review concluded that given the current state of financial market development in Australia, the cost of managing interest rate risk was likely to rise in the absence of CGS due to the decline of the Treasury bond futures market, which is currently the key market for interest rate risk management. An increase in the cost of managing interest rate risk would lead to increases in interest rates throughout the economy. The next most efficient alternative risk management market, the interest rate swap market, is less cost effective due to lower liquidity and higher transaction costs. In addition, the absence of a CGS and bond futures market would increase the costs of executing interest rate swaps. There is also a risk that the Australian financial system may be more affected by a significant shock if it were to rely on the interest rate swap market, as this market is dependent on the banking system.

The outcome of the Review of the CGS market has implications for debt issuance and portfolio management. CGS issuance will now be directed to supporting the 3 year and 10 year Treasury bond futures contracts. Put another way, physical debt issuance will primarily be assigned to promoting financial market efficiency. This will involve issuing a new Treasury bond of around 13 years to maturity and a new Treasury bond of around 5 years in alternate years. Each new bond line will be built up to around \$5 billion outstanding over a two year period.

Debt issuance proceeds and budget surpluses will be placed on term deposit with the RBA. This strategy takes advantage of a well established governance arrangement and allows the asset portfolio to be used to assist with financing with year budget fluctuations. Should term deposits at the RBA exceed \$25 billion on a sustained basis, the Government will consider allocating some assets to offset other liabilities.

The reduction in net debt also raises implications for the management of the remaining debt. A new portfolio benchmark represents an evolution of the previous approach which takes account of the low debt environment. The net debt portfolio has been split in to a long term debt portfolio and a cash management portfolio in order to handle the growing significance of short term financing fluctuations. The new benchmark target applies to the long term debt portfolio and is expressed in terms of both modified duration and the proportion of the portfolio subject to immediate repricing. The new benchmark distinguishes between inflation linked bonds and fixed coupon bonds to take account of the differences in the impact of changes in interest rates on the two types of bonds. The opportunity has also been taken to clarify the governance arrangements around the transactions used to move

the portfolio towards the benchmark. Finally, the portfolio targets have been reviewed and adjusted to ensure an appropriate balance between cost and risk. These portfolio targets are achieved through the use of interest rate swaps.

In conclusion, the decline in the level of Government net debt in Australia has led to a fundamental review of debt management operations. This process of review has led to a clearer, better defined and more transparent debt management framework. Debt management in Australia now explicitly has two objectives – contributing to financial market efficiency and achieving an appropriate balance between cost and risk for the Government. Two instruments are used to achieve these two objectives. Physical bond issuance is primarily assigned to promoting financial market efficiency and interest rate swaps are primarily assigned to achieving an appropriate balance between cost and risk.

APPENDIX I

INSTITUTIONAL ARRANGEMENTS FOR GOVERNMENT DEBT MANAGEMENT IN AUSTRALIA

The Treasurer is accountable to Parliament for administering legislation associated with debt management. Acting on advice from the Australian Treasury and the Australian Office of Financial Management (AOFM), the Treasurer determines the scope and terms of the debt management mandate. The Secretary to the Treasury is accountable for implementation of this mandate.

The Secretary uses the resources of both the AOFM and the Treasury to deliver the mandate, and to provide advice to the Treasurer on debt policy and debt management issues more generally. In discharging his accountability, the Secretary also draws on advice from an advisory board which is comprised of representatives from within the government and from the private sector.

Role of Treasurer

The Treasurer is accountable to Parliament for administering legislation associated with debt management.

The debt management framework is defined by the broad settings of fiscal policy and related strategic directives, such as net debt objectives. These policy parameters and directives include:

- the Australian Government Budget;
- net debt objectives;
- broad financial market and Commonwealth Government Securities (CGS) market considerations;
- investment strategies;
- risk philosophies, priorities and tolerances for the Commonwealth's net debt portfolio; and
- debt management operational objectives.

Acting on advice from the Treasury and the AOFM, the Treasurer takes decisions on strategic debt management issues, approves debt management risk benchmarks and debt management risk policies, and considers any possible breaches of risk exposure limits brought to the attention of the Treasurer in accordance with the approved risk policies. In addition, the Treasurer approves an Annual Remit for debt management which includes approval for interest rate swaps programs for the coming financial year.

Role of Secretary to the Treasury

The Secretary to the Treasury is responsible for advising the Treasurer on debt management issues, drawing on the resources of both the AOFM and the Treasury. The specific split of responsibilities between these two organisations is detailed in a Memorandum of Understanding.

Subject to overarching risk policy and benchmark frameworks approved by the Treasurer, the Secretary is responsible for approving annual debt management risk strategy documents and associated exposure limits documents, and for addressing any possible breaches of risk exposure limits brought to the Secretary's attention in accordance with the approved risk policies.

The Secretary is also the Chair of the AOFM Advisory Board. The Treasury is responsible for advising the Treasurer on strategic debt policy issues and wider policy issues as they relate to debt management.

Role of AOFM Advisory Board

The accountability of the AOFM Advisory Board is to the Secretary to the Treasury, the Chair of the Board. The Board performs an advisory role to the Secretary and does not possess executive powers or decision making authority in its own right. The Board advises the Secretary on issues of debt management, including benchmark design, and matters relating to corporate governance and business planning of the AOFM, and is responsible for monitoring the performance of the debt management function generally. The Board comprises both senior public policy executives and private sector participants with experience of debt management issues.

Accountabilities of Chief Executive Officer of the AOFM

Day to day management of the AOFM is the responsibility of the Chief Executive Officer (CEO) who is appointed by the Secretary to the Treasury. The CEO of the AOFM reports, and is accountable to, the Treasurer through the Secretary to the Treasury.

The CEO of the AOFM is responsible for debt management operational issues and for the operation of the AOFM and, in this regard, is required to:

- ensure compliance with the relevant legislation governing the operation of public sector bodies;
- oversee the efficient and effective management of the AOFM including its day to day operations and fulfilment of the Annual Remit and approved annual strategic plans;
- maintain appropriate risk management policies;

- maintain an appropriate governance framework;
- develop organisational performance targets and budgets;
- maintain and develop appropriate personnel resources to provide professional management of the AOFM's functions and accountabilities; and
- report fully and promptly to the Treasurer, where appropriate, the Secretary to the Treasury and the AOFM Advisory Board on all matters related to the operation of the AOFM.

Principal accountabilities of the AOFM

The AOFM is accountable for all aspects of operational debt management. The AOFM conducts its activities within a prudent risk management framework consistent with the government's risk tolerance and the responsibilities of a sovereign debt manager.

AOFM debt management operations are governed by a number of accountabilities and principles:

- to meet all legislative, administrative and accountability requirements for debt issue, repurchase, and redemption;
- to provide recommendations to the Treasurer, via the Secretary to the Treasury and the Advisory Board, regarding appropriate benchmarks for financial and operational risk management consistent with the Government's debt management objectives;
- to ensure a sound financial and operational risk policy framework is in place through the identification and measurement of key risks, the development of appropriate risk benchmarks and through the development of risk policy documents and related strategy and limits documents;
- to provide recommendations to the Treasurer, via the Secretary to the Treasury and the Advisory Board, on the Annual Remit to meet the Government's debt management objectives;
- to meet the Annual Remit approved by the Treasurer for the issue, redemption and management of Commonwealth debt instruments and management of any assets held as part of the net debt portfolio, consistent with benchmark requirements, maintenance of risk exposures within approved delegations, broader public policy objectives of the government, and with attention to benchmark out performance where mandated to do so;
- to develop and promote advances in sovereign debt management policy and practice that may help to enhance the efficiency of debt management;
- to conduct market operations in a transparent and efficient manner, consistent with promoting and accruing the benefits of an efficient and liquid market for Commonwealth Government Securities;

- to enhance the transparency of debt management activities by making information publicly available on a timely basis on CGS outstandings and on AOFM operations;
- to contribute to the Treasury's consideration of strategic debt policy matters, and to related wider public policy issues as defined through the MOU;
- to provide advice and expertise to other Government agencies and to other sovereign debt managers as required; and
- to develop and manage organisational systems, capabilities and resources in order to deliver objectives effectively and efficiently, consistent with a vision of excellence in sovereign debt management.

Central bank involvement in debt management

The Reserve Bank of Australia (RBA) is responsible for implementing monetary policy independently from the Government, as set out in the Second Statement on the Conduct of Monetary Policy, July 2003, issued jointly by the Treasurer and the Governor of the RBA.

The Australian Government does not borrow from the RBA. However, the RBA does act as agent for the Australian Government in conducting tenders of CGS and provides registry services. The RBA also facilitates some transactional banking services for the Australian Government.

The RBA provides banking services to the AOFM, including the operation of the Australian Government's official public account and the provision of overdraft facilities and term deposits. These arrangements are conducted on commercial bases.

The RBA usually holds a stock of CGS on its balance sheet for use in assist with the conduct of open market operations. This includes providing repo facilities on CGS held by the RBA.

APPENDIX II

RULES FOR GOVERNING TRANSFERS BETWEEN THE LONG-TERM DEBT PORTFOLIO AND CASH MANAGEMENT PORTFOLIO

Portfolio framework

The AOFM's portfolio framework allocates the Australian Government net CGS debt portfolio between a Long Term Debt Portfolio and a Cash Management Portfolio. The objectives underpinning the allocation methodology are that:

- the Long Term Debt Portfolio represents the trend volume of the net CGS debt portfolio on a year to year basis; and
- the Cash Management Portfolio is to accommodate within year variability in the volume of net debt around this trend level.

Initially, longer term instruments such as bonds reside in the Long Term Debt Portfolio, while shorter term instruments such as Treasury Notes and term deposits reside in the Cash Management Portfolio. Debt volumes are subsequently allocated between the two portfolios using transfers of assets and liabilities from one portfolio to the other, as governed by a set of objective rules.

Transfer rules

The principles behind the transfer rules are that the trend level of net CGS debt should reside in the Long Term Debt Portfolio and that the Cash Management Portfolio should accommodate any within year variation from this path. On average, the Cash Management Portfolio should therefore have neither a net asset balance, nor a net liability balance.

There are two types of transfer rules. The first are defined in terms of the steps necessary to offset the impact of one off events such as bond issuance and maturities. This process is mechanical and triggered by externally observable events.

For example, consider the impact of the maturity of \$5 billion worth of bonds. Initially, these bonds would have resided as liabilities within the Long Term Debt Portfolio. If no transfer were made on the day of maturity, the Long Term Debt Portfolio would fall by \$5 billion. Consequently, a transfer is undertaken to reverse the impact of the maturity. This transfer of assets from the Long Term Debt Portfolio to the Cash Management Portfolio removes the discontinuity in the volume of net debt within the Long Term Debt Portfolio. From the perspective of the Cash Management Portfolio, the transfer of assets serves to offset the impact of the cash repayment of the maturing bonds.

The second set of transfer rules forces the value of the Long Term Debt Portfolio to trace out the estimated path of net CGS debt.

For example, in the event of a forecast budget surplus giving rise to an estimated reduction in the level of net CGS debt through the course of a financial year, a steady reduction in the level of the Long Term Debt Portfolio is to occur. This is achieved through the transfer of assets from the Cash Management Portfolio evenly through the course of the year. These assets serve to partially defease the liabilities within the Long Term Debt Portfolio, thereby reducing its net volume.

Estimating the path of net debt

The AOFM bases its estimate of the path on financing information embedded within Budget projections, released in May each year. This data is used to generate the estimated path of net debt for the following financial year, under the assumption that any change in net debt will occur evenly over the course of the financial year.

Approximately halfway through the financial year, Mid-Year Economic and Fiscal Outlook (MYEFO) forecasts are released. Any change in the estimated financing requirement from the previous Budget projection is reflected in a revision of the path of net debt for the remainder of the financial year, effective 1 January. It is worth noting that there is no one off adjustment to the stock of net debt, but rather the path is adjusted to reflect any changes in that year's expected financing requirement.

At the end of the financial year, the AOFM is in a position to determine the actual trend level of net debt through the course of that year. By determining the average daily balance of the Cash Management Portfolio throughout the year, a one off adjustment is made to reduce this balance to zero, effective 1 July.

For example, in the event that the Cash Management Portfolio had an average asset balance of \$1 billion throughout the course of the year, a one off transfer of \$1 billion worth of short term assets would be made from the Cash Management Portfolio to the Long Term Debt Portfolio, effective 1 July.

This revision process ensures that the Long Term Debt Portfolio converges upon the trend level of net debt. It is important to note that the path estimation process is rule based and therefore not subject to any discretion on the part of the AOFM.

Information principles

It is important that the AOFM provide confidence that the Long Term Debt Portfolio truly reflects the best estimate of the trend level of net CGS debt. If it were not to do so, it is likely that the Portfolio Framework would be criticised as a vehicle through which the AOFM could artificially achieve compliance with its benchmark risk limits.

For this reason, estimates of the path of net CGS debt are based upon information contained within Budget and MYEFO projections of annual financing requirements. The one off adjustment to the stock of net debt within the Long Term Debt Portfolio made on 1 July is based upon information that, while not publicly available at that time, will subsequently be made available at the time that the AOFM Annual Report is released. Therefore, the net debt adjustment path and one off adjustments can be independently verified.

The table on the following page summarises the various triggers that can give rise to a transfer of assets between the Long Term Debt Portfolio and the Cash Management Portfolio.

Transfer trigger-event	Why a transfer is required	How will the transfer be achieved?	What are the consequences of not doing the transfer?
Level of Long Term Debt Portfolio (LTDP) changes each day under target LTDP Path to reflect estimated path of net CGS debt.	To ensure volume of debt in LTDP moves in line with estimated trend for net CGS debt. (Note the trend is revised on 1 July and 1 January).	Internal transfer of cash-like assets between Cash Management Portfolio (CMP) and LTDP.	Volume of net debt within LTDP will differ from trend level of net CGS debt.
Revision to LTDP Path	On 1st July the previous year's actual level of net debt is known. (Conversely, any persistent asset/liability balance within CMP can be quantified.)	A one-off internal transfer of cash-like assets between CMP and LTDP is required to unwind the persistent asset/liability balance within the CMP and to get the LTDP back to a level consistent with net CGS debt.	LTDP will not be representing the current forecast of trend path for net CGS debt portfolio. A persistent net asset/liability balance will be residing in the CMP.
Bond maturity / repurchase	This event causes LTDP to fall below the target path. An internal transfer is required to offset the effect.	Internal transfer of cash-like assets from LTDP to CMP.	LTDP will fall despite no corresponding change in the level of net CGS debt.
Bond issuance	This event causes LTDP to rise above the target path. An internal transfer is required to offset the effect.	Internal transfer of cash-like assets from CMP to LTDP.	LTDP will rise despite no corresponding change in the level of net CGS debt.

REFERENCES

- Australian Bureau of Statistics (2003), *Australian National Accounts: Financial Accounts*, catalogue number 5232, September quarter, Canberra.
- Australian Office of Financial Management (2003a), *Annual Report*, Commonwealth of Australia, Canberra.
- (2003b), “Operational Notice No: 13/2003 – Rules Governing Transfers between Long Term Debt Portfolio and Cash Management Portfolio”, September, viewed on 1 March 2004 on the Internet at: http://www.aofm.gov.au/content/notices/13_2003.asp
- Australian Prudential Regulation Authority (2003), *Superannuation Trends*, September quarter, viewed on 6 February 2004 on the Internet at: <http://www.apra.gov.au/Statistics/Superannuation-Institutions-Statistics.cfm>
- Australian Stock Exchange (2002), *ASX Submission on the Commonwealth Government Securities Market*, November, viewed on 19 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/025.pdf>
- Bank for International Settlements (2001) “The Changing Shape of Fixed Income Markets”, BIS, Working Paper, No. 104, September.
- Black, F. (1972), “Capital Market Equilibrium with Restricted Borrowing”, *The Journal of Business*, Vol. 45, No. 3, pp. 444-55, Chicago.
- Bomfin, A. (2001), “Optimal Portfolio Allocation in a World without Treasury Securities”, Federal Reserve Board Finance and Economic Discussion Series, No. 2001-11, February.
- Catholic Superannuation Fund (2002), *Review of the Commonwealth Government Securities Market*, December, viewed on 26 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/037.pdf>
- CGS Market Industry Working Group (2002), *Submission on the Review of the Commonwealth Government Securities Market*, December, viewed on 17 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/040.pdf>
- Commonwealth of Australia (2002a), *Budget Strategy and Outlook 2002 03, Budget Paper No. 1*, May, Canberra.
- (2002b), “Review of the Commonwealth Government Securities Market: Discussion Paper”, October, Canberra.
- (2003), “Budget Strategy and Outlook 2003 04, Budget Paper No. 1”, May, Canberra.
- ICAP (2002), *Submission to the Review of the Commonwealth Government Securities Market*, December, Sydney, viewed on 26 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/013.pdf>

- International Monetary Fund (2001), *International Capital Markets – Developments, Prospects and Key Policy Issues*, August.
- National Australia Bank (2002), *Submission to Review of the Commonwealth Government Securities Market*, December, viewed on 24 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/038.pdf>.
- Organisation of Economic Cooperation and Development (2002a), *Debt Management and Government Securities Markets in the 21st Century*, OECD, Paris.
- Reserve Bank of Australia (2001), “Statement on Monetary Policy”, *Reserve Bank of Australia Bulletin*, November.
- (2003), *Annual Report*.
- Ross, S.A. (1977), “The Capital Asset Pricing Model (CAPM), Short Sale Restrictions and Related Issues”, *The Journal of Finance*, Vol. 32, No. 1, pp. 177-83.
- Sydney Futures Exchange (2002), *SFE Submission to the Review of the Commonwealth Government Securities Market*, viewed on 17 February 2004 on the Internet at: <http://debtreview.treasury.gov.au/content/subs/001.pdf>
- (2004) *Monthly Trading Statistics for December 2003*, viewed on 20 February 2004 on the Internet at:
<http://www.sfe.com.au/index.html?content/sfe/intro.htm>

