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Senate Select Committee on Superannuation

Inquiry into superannuation and standards of living in retirement

Submission by the Commonwealth Treasury

The following article is an abstract taken from a submission made by the Treasury to the Senate Select Committee on Superannuation. The Committee is currently inquiring into superannuation and standards of living in retirement. The terms of reference for the inquiry are broad and cover the adequacy of the tax arrangements for superannuation and related policy to address the retirement income and aged and health care needs of Australians. To date, the Committee has received 89 submissions for consideration and is expected to report by 26 September 2002.

The full version of the submission, including a detailed appendix, can be accessed on the Treasury website at the following address: http://rim.treasury.gov.au.

This submission discusses the key features of Australia's retirement income system, and the policy and institutional context within which it functions. Reflecting Treasury's core portfolio responsibilities, the main focus of the submission is on the implications for retirement incomes of the current superannuation framework and the taxation regime applying to superannuation. The submission discusses the determinants of retirement living standards and issues associated with their measurement, and also presents the results of quantitative analysis of the adequacy of retirement incomes under the combination of the current Superannuation Guarantee and Age Pension arrangements.

Introduction

Treasury's role

In conjunction with the Department of Family and Community Services, the Treasury is responsible for advising the Government on broad retirement incomes policy, with a view to improving the current and future welfare of Australians. Within the context of retirement income policy, the Treasury has

direct portfolio responsibility for providing advice on superannuation and taxation policy, including on appropriate taxation policy for superannuation.

Scope of the submission

The terms of reference for the Committee's inquiry are:

The adequacy of the tax arrangements for superannuation and related policy to address the retirement income and aged and health care needs of Australians.

This submission discusses the key features of Australia's retirement income system, and the policy and institutional context within which it functions. Reflecting Treasury's core portfolio responsibilities, the main focus of the submission is on the implications for retirement incomes of the current superannuation framework and the taxation regime applying to superannuation. The submission discusses the determinants of retirement living standards and issues associated with their measurement, and also presents the results of quantitative analysis of the adequacy of retirement incomes under the combination of the current Superannuation Guarantee and Age Pension arrangements. The submission does not endeavour to address specific issues associated with the aged and health care needs of older Australians, these issues falling more directly within the portfolio responsibilities of the Department of Health and Aged Care.

This submission is divided into four chapters. Chapter 1 contains a discussion of the key determinants of retirement living standards and issues around their measurement. Chapter 2 outlines the main features of the policy and institutional context in which the retirement income system functions, including the three pillars policy, the concessional taxation regime applying to superannuation and the broader economic and fiscal policy context. Chapter 3 presents the results of quantitative modelling of the adequacy of retirement incomes under hypothetical cases involving the Superannuation Guarantee and the Age Pension, as well as aggregate (whole of population) modelling of adequacy. Chapter 4 summarises the results of research undertaken by the Treasury highlighting the concessionality of the taxation arrangements applying to superannuation in Australia.

Summary of main points

- A number of determinants will impact on the level of retirement incomes of Australians. Such determinants include compulsory superannuation arrangements, length of time spent in the workforce, the means-tested Age Pension, the ability to accumulate additional private savings (both inside and outside of superannuation), and other factors such as superannuation fund returns and fees and charges. Government policy can affect, directly or indirectly, most of these determinants.

- In this context, Government initiatives such as the Senior Australians Tax Offset, the extension of eligibility for the Commonwealth Seniors Health Card, and legislating to link the Age Pension to 25 per cent of Male Total Average Weekly Earnings will directly benefit the living standards of Australians in retirement.

- At a broad level, the incomes and living standards of Australians, including retirees, will be enhanced by policies aimed at maximising sustainable economic growth along with economic and social participation. As a result, analyses or proposals in the retirement incomes area that do not have regard to this broader context are of limited use in informing policy.

- The adequacy of overall retirement incomes is commonly assessed using a replacement rate concept — that is, the ratio of an individual's income or spending power after retirement to that before retirement. The Government has not set an explicit replacement rate target for Australia's retirement income system. Research by the Association of Superannuation Funds of Australia (ASFA) has indicated that the average net replacement rate from public income maintenance schemes in nine OECD countries is 53 per cent.[1]

- Analysis undertaken by Treasury's Retirement and Income Modelling (RIM) Unit indicates that current policy will deliver substantially higher replacement rates for senior Australians, as a group, over the longer term. The Superannuation Guarantee (SG) system in conjunction with the Age Pension is projected to provide a spending replacement rate for an individual on median earnings of 72 per cent after 30 years of contributions

1 Achieving an adequate retirement income — how much is enough? Summary of research findings and issues for discussion. Ross Clare, Association of Super Funds of Australia (ASFA) Research Centre, October 1999.

and 77 per cent after 40 years.[2] These replacement rates are conservative in that no allowance is made for superannuation contributions above the SG or for additional private savings outside of superannuation. Replacement rates for women with interrupted careers are also calculated.

- Aggregate projections for the entire Australian population also show average potential replacement rates for all workers rising to 71 per cent by 2050. These projections are based on the full diversity in labour force participation of the population.

- The submission also contains an analysis of the tax concessionality of superannuation which demonstrates that for persons in all tax brackets receiving SG employer contributions only, superannuation is a tax preferred investment over a working lifetime.

2 These replacement rates are based on individuals retiring in 2032. For individuals retiring under a fully mature SG system in 2042, the SG in conjunction with the Age Pension is projected to provide a spending replacement rate of 82 per cent, after 40 years of contributions.

Chapter 1: Determinants and measures of living standards in retirement

The level of income which people have available to them in retirement will be a key determinant of their retirement living standard. Most people's income in retirement will be funded from a combination of superannuation assets, other private savings and a full or part-rate Age Pension. In combination with the taxation system, these income sources will endow retirees with a particular level of spending capacity.

Any assessment of the adequacy of retirement incomes therefore needs to have regard, as far as possible, to all of the various income sources available to retirees. At a minimum, no discussion of adequacy can be considered complete without incorporating the contribution from both superannuation and the Age Pension. However, the living standards and wellbeing of retirees will also be affected by factors outside of the retirement income system. These include tangible factors such as home ownership and the level of public services and government benefits and subsidies, as well as less tangible considerations such as family relationships and social contact.

The ability of Australians to accumulate private retirement savings will be influenced by various factors. These factors include, for example, Government policy in relation to compulsory superannuation, the period of participation in the workforce, the level of remuneration, investment returns on retirement savings (particularly superannuation assets) and the level of fees and charges imposed by superannuation providers.

Labour force experience has a major impact on the ability of individuals to save and hence on their retirement incomes. This experience varies across the community. While some people experience periods of 40 years or more in stable full-time employment, others experience long periods of unemployment or of casual or part-time work. Early retirement has also become increasingly common, although the gradual increase in the superannuation preservation age (applying to people born after 30 June 1960) to age 60 may have an impact on this in the future. Income obviously also varies across the pre-retirement population.

The level of retirement income available will also be affected by earnings achieved on savings balances and by fees and charges incurred in generating these earnings. The costs incurred relate to a wide range of services provided, including fund administration and trustee costs, asset management charges and the provision of financial advice. While different studies report different

levels of fees and charges, it is clear that they are significant and can have a sizeable impact on retirement incomes.[3] Small differences in investment returns, sustained over the accumulation period, can also have a major impact. Government policy is not to regulate the specific investments that can be made by funds, nor the permissible level of fees and charges. In this context, trustees are obliged by law to prudently manage funds in the interests of members, while the efficiency and competitiveness of the superannuation sector is an important element in minimising fees and charges.

One of the key regulatory tools for ensuring that consumers are in a position to make well-informed decisions is the licensing, conduct and disclosure framework that applies to providers of financial product services and advice. The Government has recently undertaken significant legislative reform to ensure the improved disclosure of fees and charges through the *Financial Services Reform (FSR) Act 2001*. The FSR Act provides a harmonised disclosure regime that obliges providers of financial services, products or advice to supply consumers with improved and more readily comparable information on the relevant fees, charges and other costs associated with those services or products.

In conjunction with improved consumer disclosure, the Government considers that choice and portability of superannuation will increase competition and provide benefits to fund members. The Government recently reaffirmed its commitment to its choice of funds policy which is designed to increase competition and efficiency in the superannuation sector, leading to increased returns on superannuation savings for members and placing downward pressure on fund administration fees and charges.

The adequacy of retirement incomes is usually assessed using both poverty alleviation and replacement rate concepts. The level of the Age Pension is assessed against an objective benchmark (currently 25 per cent of Male Total Average Weekly Earnings), while overall retirement income, including superannuation, is most often assessed using a replacement rate concept. The

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3 See for example:

Are administration and investment costs in the Australian superannuation industry too high? Ross Clare, Association of Super Funds of Australia (ASFA) Research Centre, November 2001;

Disclosure of Superannuation Fees and Charges. Hazel Bateman, School of Economics, The University of New South Wales, 2001;

Superannuation Fees and Competition. Phillips Fox Actuaries and Consultants for Investment and Financial Services Association (IFSA), April 2002; and

Expense disclosure for Superannuation Funds. Access Economics for The Industry Funds Forum, August 2001.

replacement rate is defined as the ratio of a person's income or spending power after retirement to before retirement. The basic proposition behind the replacement rate concept is that a person's standard of living in retirement should be a reasonable proportion of their standard of living during their working life.

Treasury's preferred replacement rate measure is based on a comparison of potential net expenditure before and after retirement. The expenditure replacement rate is an after tax measure which takes account of the drawdown of capital during retirement. Replacement rates based on income only do not take account of draw-downs of capital. As a result, these measures understate the contribution of retirement savings to maintaining living standards in retirement.

By taking account of drawdowns of capital, expenditure replacement rates are consistent with the aim of retirement savings policy — that is, to defer some consumption during a person's working life in order to help fund consumption in retirement. In the Australian context, expenditure replacement measures are also able to capture the effects of the income tax concessions (viz the Senior Australians Tax Offset) which apply to people of Age Pension age.

Whether or not a particular expenditure replacement rate is optimal is a matter for judgement. It seems generally accepted, however, that for most persons, a replacement rate of less than 100 per cent will be appropriate. This is because retirees do not face some major expenses, (for example home mortgage costs, the cost of raising children and even the cost of commuting to and from work) which are faced by people of working age. It is also likely that different replacement rates will be optimal for different individuals.

The Government has not set an explicit benchmark replacement rate. Research by Association of Super Funds of Australia (ASFA) has indicated that the average net replacement rate from public income maintenance schemes in nine OECD countries is 53 per cent.[4]

4 Achieving an adequate retirement income — how much is enough? Summary of research findings and issues for discussion. Ross Clare, Association of Super Funds of Australia (ASFA) Research Centre, October 1999.

Any analysis of replacement rates and associated policy should necessarily take account of individuals' needs in both their retirement and pre-retirement years. Proposals designed to increase gross savings in pre-retirement years with the aim of increasing retirement incomes involve trading off higher consumption in retirement for lower consumption while working. This trade off needs to be kept in mind when assessing the merits of such proposals.

Chapter 2: The policy and institutional context

Australia's three-pillared retirement income system is well known. The three pillars comprise the means-tested Age Pension and associated social security arrangements, compulsory employer superannuation contributions through the Superannuation Guarantee (SG), and voluntary private savings including through superannuation. A key policy objective of this system is to enable Australians to achieve a higher standard of living in retirement than would be possible from the publicly funded Age Pension alone. The World Bank has broadly endorsed Australia's general approach to the provision of retirement incomes. The individual elements of the retirement income framework are discussed further below.

The Age Pension

The Age Pension provides a means-tested safety net for individuals who have had limited opportunity or capacity to save for retirement prior to reaching Age Pension age. The Age Pension is available to individuals who have been resident in Australia for at least ten years (at least 5 of these years in one period), and have reached the qualifying age (currently 65 for men and 62 years for women (rising to 65 by 2014)). The maximum fortnightly rate of the Age Pension is currently $421.80 for singles and $352.10 each for couples. The Service Pension provides a similar income support payment to veterans, and is available five years earlier than the Age Pension.

The rate of the Age Pension is adjusted every March and September in line with movements in the Consumer Price Index (CPI). Additionally, payment rates are indexed in line with wages growth, with the maximum single rate of the Age Pension maintained at (at least) 25 per cent of Male Total Average Weekly Earnings (MTAWE). Pensioners are, therefore protected against price increases, and also share in improvements in living standards, as measured by wages.

The value of the Age Pension in real terms has been boosted in recent years through a number of initiatives, including legislating to link the full rate of pension to 25 per cent of MTAWE. This policy has meant that the value of the Age Pension has grown in real terms by 1.19 per cent per year since 1996 (on average) and is expected to grow by 1 to 1½ per cent a year on average into the future. In addition, as part of the introduction of the new tax system in July 2000, the real value of the pension was increased and the pension income test

withdrawal rate reduced (from 50 cents in the dollar to 40 cents in the dollar). The second of these measures, in particular, has made the Age Pension more accessible to partly self-funded retirees, and added to the incentive for individuals to save for their retirement by boosting the returns from such saving at the time of retirement.

Eligibility for the Age Pension also brings with it a number of ancillary benefits. People in receipt of either the Age Pension or Service Pension are entitled to a Pensioner Concession Card (PCC). Those of Age Pension age who do not qualify for either a Service Pension or Age Pension because of assets or income levels may qualify for a Commonwealth Seniors Health Card (CSHC).

The holder of either a PCC or CSHC is entitled to pharmaceutical medication under the Commonwealth's Pharmaceutical Benefits Scheme. This is at the concessional rate of $3.60 per script. State and local governments also use the PCC card as a way of identifying people to whom they offer services at a concessional rate. These concessions are in areas such as transport, utilities, motor vehicle registration, and water and property rates.

The Government has recently widened eligibility for the CSHC. Singles with incomes below $50,000 and couples with incomes below $80,000 are now eligible for the card. Senior Australians who hold the Commonwealth Seniors Health Card have also been extended the same concessions as pensioners on telephone costs. They are entitled to a Telephone Allowance of $18 per quarter. The Commonwealth has also opened negotiations with the States with a view to extending other pensioner concessions to cardholders over time.

Approximately 54 per cent of individuals of Age Pension age currently receive a full rate pension, another 28 per cent receive a part-rate pension, and 18 per cent are not eligible for the Age Pension. By 2050, after the SG system has reached maturity, it is expected that the proportion of people aged 65 and over receiving a full rate pension will fall to around one third, and that the proportion of people not receiving the pension will rise to around 25 per cent. The proportion of people receiving a part-rate pension is expected to increase to around 40 per cent. The Age Pension is therefore likely to remain an important feature of the retirement income framework into the future.

The Budgetary cost of the Age Pension (including the Aged Service Pension) currently accounts for around 2.9 per cent of Gross Domestic Product (GDP) per annum. This cost is expected to increase to 3.6 per cent of GDP by 2021 and 4.6 per cent of GDP by 2041, reflecting the ageing of the Australian population.

Compulsory superannuation – the Superannuation Guarantee

An important part of Australia's superannuation system is the provision of compulsory employer contributions through the Superannuation Guarantee (SG). The SG arrangements were introduced in 1992 to ensure that employees are provided with adequate levels of superannuation support from their employer. Under the SG arrangements, employers are required, with very few exceptions[5], to provide a prescribed minimum level of superannuation support each financial year for their employees. SG contributions are tax deductible to employers.

The phasing in of the compulsory SG arrangements was over a ten-year period completed on 1 July 2002. For 2002-03 and subsequent years, the prescribed minimum contribution rate is 9 per cent of the employee's 'notional earnings base'.

Employer contributions made under the SG must be fully vested in the employee and are fully preserved (except in limited circumstances such as death and disability) until retirement on or after preservation age (currently 55 but gradually rising to 60 between 2015 and 2025).

From 1 July 2003, employers will be required to make SG contributions on behalf of their employees at least quarterly. This measure is designed to better safeguard employees' superannuation entitlements in the event of their employer becoming bankrupt or insolvent. As approximately 85 per cent of businesses currently make superannuation contributions quarterly or more often, this measure will ensure greater fairness between employees in relation to the security of their superannuation entitlements.

The coverage of superannuation in Australia has grown significantly as a result of the introduction of the SG and the fact that the legislation provides for very few exemptions. In 1986, only around 40 per cent of Australian employees had superannuation coverage. The ABS Survey of Employment Arrangements and Superannuation indicates that superannuation coverage now extends to some 98 per cent of traditional employees with leave entitlements and 72 per cent of casuals. Table 1 shows the historical changes in the coverage of employees.

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5 Those exempt include employees earning less than $450 per month, part-time employees under 18 years of age and employees aged 70 and over.

Table 1: Historical changes in employee superannuation coverage

Year	Employees: % covered		
	Full time	Part time	Total
1986	46.5%	7.0%	39.4%
1989	55.1%	17.8%	48.1%
1992	88.0%	54.1%	80.3%
1995	94.4%	71.6%	89.4%
1999	96.9%	76.3%	91.0%

Source: ABS Employment Benefits Surveys 6334.0,6310.0.

Self-employed persons are excluded from the requirement to make mandatory superannuation contributions through the SG. This group is encouraged to save for their retirement through the availability of tax deductions for personal superannuation contributions and tax concessions for saving through a small business. Around two thirds of the self-employed have some superannuation coverage.

Voluntary private savings

In addition to compulsory employer contributions, some employers make above SG contributions for their employees. Individuals can also save voluntarily for their retirement through superannuation and/or other savings vehicles outside of superannuation such as property investment, (including owner-occupied housing) shares and financial securities. Voluntary retirement savings are primarily encouraged through the provision of taxation incentives for superannuation.

Employees can make voluntary member contributions to superannuation from post-tax income. While such contributions do not benefit from the concessional tax rate applying to superannuation contributions, they still benefit from the concessional tax rate applying to the earnings on benefits inside the fund (details below). Salary sacrifice arrangements enable many employees to exchange part of their gross (pre-tax) salary in return for their employer contributing money into superannuation on their behalf. Salary sacrifice arrangements enable employees to effectively substitute the concessional tax rate applying to employer superannuation contributions for their own marginal tax rate. Special taxation arrangements apply to self-employed people for their superannuation contributions.

The superannuation changes contained in the 2002-03 Budget are designed to enhance retirement incomes and further increase the incentive to contribute to superannuation. These measures include a Government superannuation

co-contribution of up to $1,000 a year for low income earners, an increase in the fully deductible threshold for superannuation contributions made by self-employed persons, a phased reduction in the superannuation surcharge and a measure allowing couples to split their superannuation contributions.

Voluntary member superannuation contributions, other employer contributions above the SG, and other non-superannuation savings are important determinants of the adequacy of retirement incomes. More than half of all employed people aged over 40 with taxable incomes above $30,000 have made some additional provision for their retirement.

Saving through home ownership also has a direct bearing on the adequacy of retirement incomes by significantly reducing the cost of accommodation in retirement. In this context, the majority of older people in Australia are homeowners. The Australian Housing Survey 1999 showed that 80 per cent of households in which the reference person was aged over 65 owned their home outright and a further 4 per cent were purchasing. Where the reference person was aged 55 to 64, 66 per cent of households owned their home outright and 17 per cent were purchasing.

Preliminary estimates suggest that households headed by persons over 65 have 45 per cent of their private wealth in housing and land, 40 per cent in financial assets such as deposits, shares, securities, and insurance reserves and 15 per cent of assets in funded and unfunded private pension funds.

While the SG system has facilitated wide superannuation coverage of the Australian population, a number of new measures are designed to broaden access to superannuation by extending the circumstances in which voluntary contributions to superannuation can be made.

- Consistent with the need to promote superannuation as a lifetime savings strategy, from 1 July 2002, parents, grandparents, other relations and friends will be able to contribute to superannuation on behalf of children. Under this measure, contributions of up to $3,000 per child per 3-year period can be made on behalf of a child under the age of 18. Superannuation for life will help create a culture that gives priority to planning ahead and achieving financial self-reliance in retirement.

- In addition, the accessibility of superannuation will be widened by allowing working people aged over 70 but less than 75 years of age to make personal contributions to superannuation. To be eligible individuals must be working at least 10 hours per week. This measure recognises the choice made by some people to continue working past the age of 70.

- Another measure will also allow recipients of the Baby Bonus to contribute the Baby Bonus and any other amount to superannuation, even if they have never worked before. This initiative provides a new mechanism for parents at home caring for children to continue to save for their retirement.

The Government has restrictions on contributions past age 65, and compulsory cashing at age 65 if the member is no longer working part-time, to reduce the risk that concessionally taxed benefits are used for estate planning and not genuine retirement income purposes.

Taxation arrangements for superannuation

The taxation arrangements applying to superannuation are designed to encourage the accumulation of superannuation savings during an individual's working life for the purpose of drawing on those savings as a source of income in retirement. The main elements of the taxation regime applying to superannuation are outlined below.

Contributions

The taxation incentives available for superannuation include a concessional tax rate on employer and deductible member superannuation contributions of 15 per cent for low to middle income earners, and 15 per cent plus the surcharge of up to 15 per cent for high income earners. These tax rates compare favourably with the marginal tax rates, which apply to equivalent amounts of earnings subject to income tax.

In relation to the superannuation surcharge, the Government has introduced legislation into the Parliament to reduce the maximum surcharge rate by 1.5 per cent in each of the next three years. Under this measure, the maximum surcharge rate will fall to 10.5 per cent in 2004-05. The Government has also committed to review the surcharge arrangements at that time to determine whether any further changes are required.

The Government has announced the introduction of a superannuation co-contribution for low income earners to replace the current taxation rebate for superannuation contributions by low income earners. The maximum co-contribution of $1,000 a year will be payable in respect of personal contributions made by people on incomes up to $20,000. A reduced co-contribution will be payable to those on incomes up to $32,500. The co-contribution is designed to enhance the retirement savings of low income earners and to increase the incentive for this group to contribute to

superannuation. In this context, the maximum co-contribution of $1,000 is significantly more generous than the maximum $100 rebate it is replacing.

As noted earlier, tax deductions are made available to self-employed persons to encourage this group to contribute to superannuation. The fully deductible amount for superannuation contributions made by self-employed persons is $5,000. Contributions above this amount are 75 per cent deductible, with a maximum deduction equal to the taxpayer's age-based deduction limit. Tax deductibility for the self-employed is designed to enhance the superannuation savings of self-employed persons by providing them with an increased incentive to contribute to superannuation.

Many self-employed persons who own a small business choose to save for their retirement by building up the value of their business in addition to or instead of contributing to superannuation. In recognition of this, the Government has implemented a number of initiatives to allow small businesses meeting the eligibility criteria to significantly reduce, or eliminate, their capital gains tax (CGT) liability when selling a small business or part of a business. For example, a small business can disregard a capital gain when an active asset that has been held continuously for 15 years is sold. Furthermore, a small business can disregard a capital gain where the proceeds of the sale of an asset are used for retirement (up to a lifetime limit of $500,000).

Tax deductions are available for employer and deductible member (self-employed) contributions to superannuation. Age-based limits apply to the amount of deductible contributions that can be made to superannuation and are indexed annually to movements in Average Weekly Ordinary Time Earnings (AWOTE). The age based limit system, together with the Reasonable Benefit Limit (RBL) arrangements, is designed to impose limits on the amount of superannuation which can receive concessional taxation treatment. The policy intention behind these limits is to ensure that superannuation is used for its intended purpose of providing for genuine retirement income, and not as a wealth creation or estate planning vehicle.

Earnings

A 15 per cent tax rate applies to the investment income of superannuation funds. This rate compares favourably with the rate of tax applying to earnings obtained from most other savings vehicles. Only two-thirds of qualifying capital gains are taxable, reducing the maximum effective capital gains tax rate for superannuation funds to 10 per cent. Superannuation funds are also entitled to imputation credits, which can be refunded.

Benefits

Retirees have the choice of taking their superannuation benefit either as a lump sum or as an income stream.

Tax and social security incentives are provided to encourage retirees to purchase income stream products, which meet the Government's broad retirement income policy objectives. In particular, incentives are afforded to income stream products that provide for an orderly, regular draw down of the capital underlying the product over the expected duration of retirement. Where individuals take at least 50 per cent of their total benefits in the form of a pension or annuity which satisfies the pension and annuity standards (commonly referred to as 'complying' pensions and annuities), they qualify to be assessed against the higher pension RBL. The pension RBL of $1,124,384 for 2002-03 compares with the lump sum RBL of $562,195. In contrast, lump sum benefits and pensions and annuities not meeting these standards are assessed against the lump sum RBL.

'Complying' lifetime and life expectancy pensions and annuities are also exempt under the social security assets test. All other income stream products, including allocated pensions and annuities, are asset tested. One of the Government's election commitments was to examine whether 'complying' status should be afforded to a new class of market-linked pension known as a growth pension. Unlike existing complying income streams, the annual level of income from growth pensions would be dependent on the performance of the underlying portfolio of assets.

Superannuation pensions up to the value of the taxpayer's RBL which are paid from a taxed source are also eligible for a 15 per cent tax rebate (the pension and annuity rebate). The rebate was introduced to compensate for the introduction in 1988 of the 15 per cent tax rate on complying superannuation funds.

For lump sum benefits taken on or after age 55, the first $112,405 (indexed annually to AWOTE) of the post-June 1983 component is tax free if paid from a taxed fund, or taxed at a maximum rate of 15 per cent if paid from an untaxed fund. Any remaining post-June 1983 component (up to the individual's lump sum RBL) is taxed at a maximum rate of 15 per cent if paid from a taxed fund or 30 per cent if paid from an untaxed fund. (The Medicare levy applies in addition to these tax rates.) The part of a lump sum benefit which represents the return of an individual's own after tax contributions is not subject to further tax.

In addition to the concessions available through superannuation, the Government has implemented a number of other initiatives which directly benefit people's living standards in retirement. These initiatives include the various concessions available to people of Age Pension age, as well as the Senior Australians Tax Offset (SATO). The SATO ensures that single senior Australians can have income up to $20,000 without paying income tax or the Medicare levy. While the rebates phase out over the income range $20,000 to $37,840 (for singles), taxpayers in this range still pay less tax than previously. Similarly, senior couples can have combined incomes of up to $32,612 without paying tax (depending on their income split). For couples, the rebates phase out at combined incomes up to $58,244.

Adequacy and the taxation of superannuation

Notwithstanding Australia's approach of taxing superannuation at all three stages (ie contributions, earnings and benefits), research undertaken by Treasury's Retirement and Income Modelling (RIM) Unit indicates that superannuation is a tax preferred investment over a working lifetime for persons in all marginal tax brackets. (This research is summarised in Chapter 4 of this submission.) The aggregate size of the tax expenditure associated with superannuation is projected at approximately $10.3 billion in 2002-03.[6]

The taxation of superannuation can affect the adequacy of retirement incomes in a number of ways. In a direct sense, the concessional taxation treatment of superannuation increases the amount of a contribution which is available to be invested (after tax) compared with alternative forms of saving — for example, shares or property acquired out of after tax income. This advantage continues during the accumulation phase of superannuation reflecting the concessional tax rate applying to investment earnings on superannuation account balances. The concessionality of superannuation also has an indirect impact on the adequacy of retirement incomes to the extent that it encourages individuals to undertake retirement savings.

Some commentators have suggested that the complexity of the superannuation taxation arrangements detracts from the adequacy of retirement incomes by imposing costs on superannuation funds, which are passed on in higher fees and charges to members' accounts. The impact of the complexity of the taxation arrangements applying to superannuation funds is clearly an

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6 *Budget Strategy and Outlook 2002-03,* Budget Paper No. 1, 14 May 2002. For methodology and other related issues see: Appendix B: Superannuation Benefits, *Tax Expenditures Statement 2001*.

important issue. However, it also needs to be recognised that these arrangements are designed to meet specific public policy objectives, and some level of cost is inevitable as a trade-off for meeting these policy objectives.

It has also been suggested that complexity can impact indirectly on adequacy by reducing the incentive to contribute to superannuation. However, it is arguable that much of the complexity of superannuation is hidden from members, and that for most employees the actual process of making superannuation contributions is not complex. For example, for employees whose only interaction with the superannuation system is through the SG in a defined contribution scheme, superannuation is relatively straightforward with contributions made on their behalf by their employer. Employees who wish to make additional voluntary contributions can either choose to have these deducted regularly from their after tax pay, or arrange with their employer to have regular contributions made from their pre-tax salary. Moreover, in contrast with non-superannuation investments, superannuation requires little or no involvement from fund members once the contributions have been paid into the system. Unlike other investments, the earnings on superannuation investments do not have to be included in a person's annual tax return but are subject to a concessional taxation regime inside the fund.

Trends in superannuation

Superannuation assets totalled $527.7 billion in December 2001, over double their level of 6 years ago, making superannuation by far the largest component of household financial assets.

APRA statistics[7] show strong growth in superannuation contributions, with the flow of member contributions increasing by around 30 per cent over 3 years and employer contributions by about 25 per cent over the same period. After some years of very strong growth member contributions appear to have reached a plateau with no growth over the past year, while employer contributions have continued their steady growth growing about 7 per cent over the year.

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7 APRA statistics are relatively up to date and are well established as the authoritative figures for asset levels. However, the levels of inflows and outflows as measured by APRA are consistently higher than those determined from ATO data (some time later) and other ABS survey data. Rothman (1996) discusses possible reasons for the differences, which have continued.

Modelling by Treasury's RIM Unit projects that superannuation account balances will increase substantially in the future as the SG system matures. Currently, the average superannuation balance per person is about $62,000, with a wide variation about this average depending on years of membership and levels of contributions. By June 2005 this average balance is projected to increase to $70,000, by June 2010 to $84,000 and to $113,000 by June 2020, all in today's dollar values. These estimates are based on conservative assumptions about fund earning rates.

Average superannuation payouts at age retirement are also estimated to increase. These payouts are currently around $72,000 per person rising to $83,000 in June 2005, $100,000 in June 2010 and $136,000 in June 2020 (all in today's dollar values). There will be wide variations around all these averages, but the strong improvement in benefits as the system matures is clear.

The economic and fiscal context

The Intergenerational Report which was presented with the 2002-03 Budget highlighted the need for sound and sustainable economic policies, including retirement income policies, in the face of the budgetary pressures associated with an ageing population. At a broad level, policies which maximise sustainable economic growth, as well as overall economic and social participation directly benefit living standards in the community, including among retirees. In the retirement incomes context, increasing longevity has direct implications for the level of savings people need to accumulate prior to retirement in order to fund income in retirement. As most people's capacity to accumulate retirement savings is dependent on their participation in the workforce, this in turn has implications for policy in areas such as labour force participation (including among mature age people) and the related issue of the preservation age for superannuation.

Any analysis of the appropriateness of the retirement income system needs to have regard to the broader economic and fiscal framework within which it operates. Any analyses or proposals in this area which do not have regard to this broader context are of limited use in informing the policy debate. For example, proposals to increase the adequacy of retirement incomes by significantly reducing, or eliminating the taxation of superannuation during the contribution and accumulation stage must be assessed against the fiscal implications of such proposals, and the associated trade-offs.

Superannuation is taxed concessionally in Australia with the aggregate size of the tax expenditure associated with superannuation projected at $10.3 billion

in 2002-03. Nevertheless, Commonwealth taxation revenue from superannuation contributions and earnings is significant — in 2002-03 this revenue is estimated to comprise:

- $3.8 billion from the taxation of superannuation funds;
- $0.8 billion from the superannuation surcharge; and
- an amount from the taxation of statutory funds of life insurance companies under the company tax head of revenue, which is currently not estimated separately.

Viewed in this context, proposals to defer the taxation of superannuation entirely to the benefit stage (that is, when people retire and receive their accumulated superannuation benefits) involve trading off a significant deterioration in the budgetary position over the medium term, and resultant higher Government debt and public debt interest costs, for increased taxation revenue in future years when the current working generation moves into retirement. The alternative to such a trade-off would be the introduction of significant offsetting fiscal measures to leave the Government's overall budgetary position no worse off.

Chapter 3: Quantitative modelling of expenditure replacement rates

This submission uses two modelling approaches to the measurement of replacement rates:

a) modelling of the lifecycles of hypothetical individuals and couples; and

b) modelling for the whole Australian population using actual and projected comprehensive labour force experience, superannuation diversity and retirement diversity.

The models used were updated to take account of recently announced taxation and other policy changes, lengthening life expectancies, revised interest rate and other economic parameters and revised annuity factors.

Hypothetical modelling of the adequacy of retirement incomes under the Superannuation Guarantee and the Age Pension

Treasury's Retirement and Income Modelling (RIM) Unit has modelled **current** Superannuation Guarantee and Age Pension policy for a variety of hypothetical scenarios corresponding to a request received from the Secretary of the Senate Select Committee on Superannuation on 30 April 2002. A comprehensive set of results is presented in Appendix A. Analysis of the Government's proposed co-contribution policy is also included in this submission.

Choosing parameters for a hypothetical analysis of retirement incomes

In considering what sort of life experience should be considered for hypothetical cases the following issues arise:

- the level of earnings over a career;
- the length and extent of interruption of that career and the related choice of the income unit type;
- the nature of the replacement rate measure;

- the approach to indexation of income and expenditure amounts which are presented; and

- the choice of economic and fund parameters.

The most commonly used measure of earnings in superannuation is the Average Weekly Ordinary Time Earnings (AWOTE) of persons working full time. AWOTE has the advantage of giving a full-time base covering males and females which excludes overtime. Such a base corresponds to the earnings base of most superannuation plans. AWOTE is also the basis for indexing most dollar value thresholds in superannuation. Most employees (70 per cent) earn less than AWOTE with median earnings being 75 per cent of AWOTE and mean earnings being 83 per cent of AWOTE.[8]

The Superannuation Guarantee when it was introduced extended coverage mostly to blue collar and casual employees in the lower half of the earnings distribution. For the purposes of this submission three illustrative incomes are covered for full-time workers — 75 per cent, 100 per cent and 150 per cent of AWOTE. Part-time workers are taken as proportions of this based on hours.

AWOTE in March 2002 was $860.50 or the equivalent of $44,746 per year. So 75 per cent of AWOTE is around $33,560 and 150 per cent is around $67,119. In general people earning above $50,000 have savings in addition to the Superannuation Guarantee which could be used to produce retirement income. From taxation data Treasury's RIM unit has estimated that:

- 69 per cent of employed people aged 40 or more with incomes over $50,000 have superannuation higher than the SG or significant non-superannuation savings;

- 63 per cent of women under 65 with taxable incomes over $50,000 have superannuation higher than the SG or significant non-superannuation savings; and

- 60 per cent of men under 65 with taxable incomes over $50,000 have superannuation higher than the SG or significant non-superannuation savings.

8 ABS Cat. No. 6306.0 Employee Earnings and Hours, May 2000.

For these reasons, SG only cases for people whose incomes are in excess of 150 per cent of AWOTE appear atypical and are not presented in this submission.

Fully representative data on the completed lengths of careers for individuals are not available. For the purposes of this submission, career lengths of 25, 30 and 40 years are used. For convenience, all hypothetical cases presented in the body of this submission retire at age 65 in 2032. Age 65 was chosen because it corresponds to Age Pension age — some cases beginning retirement on Newstart Allowance or Mature Age Allowance are shown in Appendix A. The common retirement year of 2032 was chosen so that all dollar values for retirement are comparable. If this had not been done, cases retiring later would have higher real wages and higher real Age Pension payments.

Many women have careers which are interrupted by childbirth, so this submission presents results for interrupted female careers and for couples in which the female partner has an interrupted career.

Some groups have based their replacement rates on measures of gross income. This is not considered the best approach because of substantial differences in taxation before and after retirement. Expenditure is used in this submission as the best guide to private standards of living. This submission proposes that the optimal replacement rate measure is the ratio of average expenditure in retirement to the expenditure in the last year of full-time working life. Other measures presented involve either too great a time period between average working life and retirement income or the unrepresentative nature of the first year retirement income.

The best deflator for expenditure is the consumer price index. Deflating by wages (as in the results of other groups) does not reflect what people are able to buy, and does not capture growth in real wages and the real value of the Age Pension over time.

The current hypothetical analysis, done using the RIMHYPO Model, uses long-term annual growth parameters of 2.5 per cent for the consumer price index, 4 per cent for wages and 7 per cent for fund earnings.

Case 1: Single males retiring in 2032

Table 2 presents the results of RIMHYPO runs for six hypothetical males retiring in 2032, with an average life expectancy of 83, taking their superannuation as a lump sum benefit and drawing down on it in an annuity pattern so that it lasts until life expectancy.

Table 2: Scenarios for single males retiring in 2032

Scenario: Single Male

Retirement Year = 2032 **Benefit taken as LUMP SUM**

CPI = 2.5%, Wage Inflation = 4% **Fund Earning Rate = 7%**

Tax Indexation = CPI **Pension Indexation = AWE**

Life Expectancy = 83

Retirement Age	**65**	**65**	**65**	**65**	**65**	**65**
Career Length	**25**	**30**	**40**	**25**	**30**	**40**
Multiple of AWOTE:	**0.75**	**0.75**	**0.75**	**1**	**1**	**1**
PARAMETER in $2001-02 (CPI deflated)						
Final salary	50,711	50,711	50,711	67,615	67,615	67,615
Tax on Final salary	12,404	12,404	12,404	20,127	20,127	20,127
Expenditure last year at work	38,307	38,307	38,307	47,488	47,488	47,488
Average salary	42,832	41,420	38,808	57,109	55,227	51,745
Average tax on salary	9,855	9,411	8,640	15,273	14,527	13,391
Expenditure average working life	32,977	32,010	30,168	41,837	40,700	38,353
Government Pension 1st year	16,010	15,343	11,638	14,807	11,674	6,625
Government Pension average	19,014	18,726	17,782	18,642	17,794	15,761
Full Rate Pension 1st year	16,923	16,923	16,923	16,923	16,923	16,923
Full Rate Pension average over retirement	19,266	19,266	19,266	19,266	19,266	19,266
Private Retirement Income including drawdowns (pa)	9,455	12,087	15,581	12,563	15,550	20,351
1st year retirement expenditure	23,668	24,969	25,166	24,997	25,167	25,432
Average retirement expenditure $2001-2002 (CPI deflated)	27,543	29,531	31,811	29,862	31,793	34,499
1st year retirement income tax	1,797	2,428	2,053	2,374	2,058	1,544
Average income tax in retirement	926	1,282	1,552	1,343	1,551	1,613
LUMP SUM						
$2001-2002 (CPI deflated)	130,596	167,256	225,596	175,671	225,079	304,495
Average Pension as percentage of maximum	99%	97%	92%	97%	92%	82%

REPLACEMENT RATIOS							
Retirement Concept	**Working Life Concept**						
Average Retirement Expenditure	Final Working Life Expenditure	72%	77%	83%	63%	67%	73%
Average Retirement Expenditure	Average Working Life Expenditure	84%	92%	105%	71%	78%	90%
First Retirement Year Expenditure	Final Working Life Expenditure	62%	65%	66%	53%	53%	54%

For the three cases with career earnings of 75 per cent of AWOTE, expenditure in the last year of working life is $38,307 in 2001-02 dollars. The average expenditure over retirement ranges from $27,543 for the 25-year career to $31,811 for the 40-year career, giving replacement rates ranging from 72 per cent to 83 per cent. The contribution of the Age Pension to retirement expenditure falls as private retirement income (and assets) rises.

For the 30-year accumulation case at 75 per cent of AWOTE, the lump sum benefit of $167,256 yields an annual drawdown of $12,087 which is complemented by an Age Pension which averages $18,726 (or 97 per cent of a full rate pension). An average of $1,282 of tax is paid in retirement.[9] The replacement rate of average retirement expenditure to final year of full-time work expenditure is 77 per cent.

For the three cases with career earnings of 100 per cent of AWOTE expenditure in the last year of working life is $47,488 in 2001-02 dollars. The average expenditure over retirement ranges from $29,862 for the 25-year career to $34,499 for the 40-year career, giving replacement rates ranging from 63 per cent to 73 per cent. The contribution of the Age Pension to retirement expenditure falls as private retirement income (and assets) rises.

For the 30-year accumulation case at 100 per cent of AWOTE, the lump sum benefit of $225,079 yields an annual drawdown of $15,550 which is complemented by an Age Pension which averages $17,794 (or 92 per cent of a full rate pension). An average of $1,551 of tax is paid in retirement.[10] The replacement rate of average retirement expenditure to final year of full-time work expenditure is 67 per cent. This is lower than the 75 per cent of AWOTE case mainly because the contribution from the Age Pension is a lower proportion of final working expenditure.

Case 2: Single females with interrupted careers

Table 3 presents two scenarios for females with interrupted careers who are not married when they enter retirement and who rely on their own superannuation for private retirement income.

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9 The tax scales are indexed by the CPI. The Senior Australians Tax Offset is not indexed but the Age Pension rebate is indexed to the pension and the pension free area and people are entitled to the higher of the two.

10 The tax scales are indexed by the CPI. The Senior Australians Tax Offset is not indexed but the Age Pension rebate is indexed to the pension and the pension free area and people are entitled to the higher of the two.

In Scenario 1, the woman works from 35 to 64 years and takes her benefit in the form of a life expectancy pension. Cases are presented for career earnings at 75 per cent of AWOTE and 100 per cent of AWOTE.

In Scenario 2, the woman works full time from 25 to 29 and 45 to 64, does not work from 30-34 and works 17 hours per week from ages 35 to 44. Cases are presented for career earnings at 75 per cent of AWOTE and 100 per cent of AWOTE.

For Scenario 1, the expenditures in the final years of working life are $38,307 and $47,488 for the 75 per cent and 100 per cent of AWOTE cases respectively. The average expenditures in retirement are $27,470 and $29,502 giving replacement rates of 72 per cent and 62 per cent respectively.

For Scenario 2, the expenditures in the final years of working life are $38,307 and $47,488 for the 75 per cent and 100 per cent of AWOTE cases respectively. The average expenditures in retirement are $27,993 and $29,914 giving replacement rates of 73 per cent and 63 per cent respectively.

Table 3: Scenarios for single females

Scenario 1: Female works from 35 to 64 - 30 years, life expectancy pension

Scenario 2: Female with interrupted career starting 1992 - full-time work from 25-29 and 45-64, not working 30-34, 17 hours per week from 35-44, turns all of benefit into ETP

Retirement Year = 2032

CPI = 2.5%, Wage Inflation = 4%, **Fund Earning Rate = 7%**

Tax Indexation = CPI **Pension Indexation = AWE**

Life Expectancy = 87 (female)

Scenario		**1**	**1**	**2**	**2**
Multiple of AWOTE:		**0.75**	**1**	**0.75**	**1**
PARAMETER in $2001-02 (CPI deflated)					
Final salary		50,711	67,615	50,711	67,615
Tax on Final salary		12,404	20,127	12,404	20,127
Expenditure last year at work		38,307	47,488	38,307	47,488
Average salary		41,420	55,227	30,179	40,238
Average tax on salary		9,411	14,527	6,401	11,038
Expenditure average working life		32,010	40,700	24,953	30,100
Average DSS payment in working life				1,175	1,175
Government Pension 1st year		16,923	16,565	15,597	12,701
Government Pension average		19,262	18,654	19,401	18,682
Full Rate Pension 1st year		16,923	16,923	16,923	16,923
Full Rate Pension average over retirement		19,847	19,847	19,847	19,847
Private Retirement Income including drawdowns (pa)		9,666	13,008	9,782	12,771
1st year retirement expenditure		24,951	27,123	23,157	23,311
Average retirement expenditure	$2001-2002 (CPI deflated)	27,470	29,502	27,993	29,914
1st year retirement income tax		1,639	2,450	2,222	2,160
Average income tax in retirement		1,458	2,160	1,190	1,540
LUMP SUM	$2001-2002 (CPI deflated)			154,124	208,859
Average Pension as percentage of maximum pension		97%	94%	98%	94%

REPLACEMENT RATIOS					
Retirement Concept	**Working Life Concept**				
Average Retirement Expenditure	Final Working Life Expenditure	72%	62%	73%	63%
Average Retirement Expenditure	Average Working Life Expenditure	86%	72%	112%	99%
First Retirement Year Expenditure	Final Working Life Expenditure	65%	57%	60%	49%

Case 3: A married couple

Table 4 presents two income levels for a scenario for a couple where the male has 40 years in the workforce, and the female has 6 years out of workforce (30-35) and ten years working part time (36-45). The partners have the same income when working full-time and both take their benefits as life expectancy pension.

Table 4: Scenarios for a couple

Scenario 3: Couple where male has 40 years in the workforce, and female has 6 years out of workforce (at age 30-35) and ten years working part time (at age 36-45), partners have same income when working full-time, benefits as life expectancy pension

Retirement Year = 2032

CPI = 2.5%, Wage Inflation = 4%, Fund Earning Rate = 7%

Tax Indexation = CPI Pension Indexation = AWE

Life Expectancy = 83 (male), 87 (female)

Multiple of AWOTE:	0.75	1
PARAMETER in $2001-02 (CPI deflated)		
Final salary	101,422	135,230
Tax on Final salary	24,808	40,254
Expenditure last year at work	76,614	94,976
Average salary	68,084	90,779
Average tax on salary	14,626	23,022
Expenditure average working life	53,459	67,757
Government Pension 1st year	28,095	27,336
Government Pension average	28,987	27,799
Full Rate Pension 1st year	28,180	28,180
Full Rate Pension average over retirement	30,446	30,446
Full rate Pension - age 84 for women	22,125	22,125
1st year of retirement Private Income (pa)	20,190	27,299
Private Income after spouse death (pa)	18,346	24,810
Average Retirement Private Income (pa)	19,869	26,866
1st year retirement expenditure	45,356	49,917
Average retirement expenditure	45,856	50,153
1st year retirement income tax	2,929	4,718
Average income tax in retirement	3,001	4,512

REPLACEMENT RATIOS			
Retirement Concept	**Working Life Concept**		
Average Retirement Expenditure	Final Working Life Expenditure	60%	53%
Average Retirement Expenditure	Average Working Life Expenditure	86%	74%
First Retirement Year Expenditure	Final Working Life Expenditure	59%	53%

The final working year expenditure for the couples achieved are $76,614 for the 75 per cent of AWOTE case and $94,976 for the 100 per cent of AWOTE case. The average retirement incomes are $45,856 and $50,153 respectively. The replacement rates achieved are 60 per cent for the 75 per cent of AWOTE case and 53 per cent for the 100 per cent of AWOTE case. These are lower than for the single cases because the married rate pension replaces less of individual income when both members of a couple have previously been working. If only one member of a couple has been working, the married rate payment offers a very high replacement rate.

Case 4: The potential effects of the Government's proposed co-contribution policy

Table 5 compares three contribution scenarios for a single male earning 44 per cent of AWOTE ($20,000 in 2003-04), working for 30 years and retiring at age 65. The contributions are employer SG contributions only, SG plus member contributions in a pattern which would maximise co-contribution receipts but without co-contributions, and the SG plus member plus co-contribution scenario. Because the co-contribution thresholds are not indexed, as real wages are assumed to rise the employee loses their co-contribution entitlement after 12 years.

The lump sums generated by these patterns are $97,013, $115,510, and $131,182 respectively. The Age Pension provides a considerable replacement of this employee's final year of work expenditure, and the average to final replacement rate is raised from 106 per cent for SG only to 114 per cent for SG plus member plus co-contributions. Across the 19 years of retirement, the 12 years of member contributions and the co-contributions raise retirement income by almost $2,000 per year in real terms, or by around 8 per cent.

Conclusions on hypothetical scenarios

The SG in combination with the Age Pension can produce replacement rates in excess of 60 per cent for male careers of 25, 30 and 40 years duration and for interrupted female careers. If both members of a couple are working at retirement, the married rate Age Pension provides a lower base replacement rate than in the single case, but if one member of a couple is working it provides a higher base replacement rate. Member contributions combined with co-contributions (whose income test threshold is not indexed) can improve retirement incomes by 8 per cent for workers earning around $20,000.

Table 5: Example of the effect of the Government's co-contribution policy on final benefits

	Contribution pattern:	SG Only	SG & Member	SG & Member & Co-Cont
Retirement Age		65	65	65
Career Length		30	30	30
Multiple of AWOTE:		0.4463	0.4463	0.4463
PARAMETER in $2001-02 (CPI deflated)				
Final salary		30,176	30,176	30,176
Tax on Final salary		5,872	5,872	5,872
Expenditure last year at work		24,304	24,304	24,304
Average salary		24,648	24,648	24,648
Average tax on salary		4,113	4,113	4,113
Expenditure average working life		20,535	20,308	20,308
Government Pension 1st year		16,600	16,275	16,000
Government Pension average		19,217	19,116	19,009
Full Rate Pension 1st year		16,923	16,923	16,923
Full Rate Pension average over retirement		19,266	19,266	19,266
Private Retirement Income including drawdowns (pa)		7,024	8,363	9,499
1st year retirement expenditure		22,541	23,222	23,798
Average retirement expenditure	$2001-2002 (CPI deflated)	25,689	26,760	27,641
1st year retirement income tax		1,083	1,417	1,699
Average income tax in retirement		552	719	867
LUMP SUM	$2001-2002 (CPI deflated)	97,013	115,510	131,182
Average Pension as percentage of maximum pension		100%	99%	99%
REPLACEMENT RATIOS				
Retirement Concept	**Working Life Concept**			
Average Retirement Expenditure	Final Working Life Expenditure	106%	110%	114%
Average Retirement Expenditure	Average Working Life Expenditure	125%	132%	136%
First Retirement Year Expenditure	Final Working Life Expenditure	93%	96%	98%

Whole of population analysis of replacement rates

As with the hypothetical analysis, the main adequacy concept used is a replacement rate based on post-retirement consumption expenditure compared with pre-retirement expenditure. As before, this includes income from all investments, all pension payments including social security payments, and drawdowns from capital less any taxation payable. Aggregate analysis done using the RIMGROUP model assumes current legislated policy parameters. However in this aggregate analysis the comparison drawn is

between the expenditure of retirees for the 5 years after pension eligibility age with income for the 5 years before Age Pension eligibility age. Given the structure of RIMGROUP in which new retirees are pooled with existing retirees, this definition makes it easier to do aggregate analysis, while distinguishing between cohorts which may have retired a decade or more earlier. The distinction is relevant because, in general, retirees do not maintain a living standard in retirement that is fully linked to average wages, while the age pension is linked to total male average wages. The mix of investments of retirees means that their non-pension income, which is mainly sourced from interest bearing investments and may have capital drawdowns, will generally not grow in real terms.

What differentiates the aggregate from the hypothetical analysis?

The prime difference between aggregate and hypothetical analysis is the coverage in the aggregate analysis of the entire Australian population. Aggregate analysis covers the range of labour force experiences including unemployment and other breaks from the labour force, the range of retirement ages, and the varying superannuation coverage across the population including some schemes with better than SG rates of contribution, salary sacrifice arrangements, and member contributions. Additionally RIMGROUP estimates other financial savings at retirement and adds these to the pool of monies to be allocated and invested at retirement. RIMGROUP also allocates retirement investments patterns in a realistic way and allows for dissipation at retirement and drawdowns during retirement. These patterns are a function of gender and decile, although the data base is not comprehensive in all of these respects.

Also important in the aggregate analysis is the time dimension, whereby the experiences of those retiring now can be compared with those retiring in thirty or forty years - time is an important and automatic dimension of the analysis. The hypothetical analysis presented in this submission only looks at those retiring in 30 years time.

The aggregate modelled results for the present time with its low nominal investment returns are higher than Johnson's (1998) finding of 33 per cent replacement rate from the Age Pension alone, reflecting modest income from additional investments (Johnson found that for the middle quintile currently 88 per cent of total income comes from a government pension). The value added in the analysis presented below is the capacity to project changing replacement ratios up to 50 years into the future with realistic superannuation

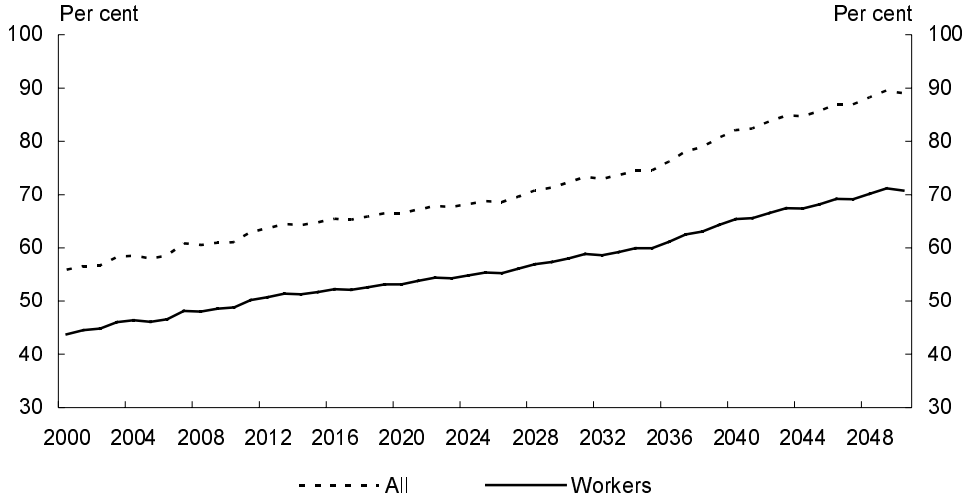
and other savings and assuming high draw-down of assets in retirement. As the SG system matures the modelled replacement rates rise sharply.

Potential aggregate replacement rates

For an analysis of potential replacement rates it seems appropriate to assume that assets are largely drawn down in an annuity pattern over the person's or couple's retirement. This reflects the approach taken in the hypothetical analysis and gives a measure of the potential afforded by the retirement income framework. In practice, given uncertainty as to their longevity, most prudent people won't quite achieve this and as an operational compromise we have assumed annuity drawdown of all fixed interest deposits but only moderate drawdown of shares and allocated pensions. This assumed pattern together with a broad continuation of labour force and retirement trends and tendencies and continuation of recent investment patterns in retirement is the basis of all the aggregate results which follow.

Ratios of retirement expenditure over recent pre retirement expenditure are calculated for two groups: those who have had long term superannuation coverage, and the full population, adding in those who have had little or no superannuation coverage, including the self employed who have chosen not to contribute. For convenience these groups are referred to as 'workers' and 'all' respectively. The time analysis of aggregate replacement ratios for these two groups is shown in the chart below.

Chart 1: Potential aggregate replacement ratios — annuity drawdown all workers and full population



Conclusions

The aggregate analysis incorporates the experiences of the whole population, accounts for savings above the base SG level, and adds a valuable time dimension whereby the experiences of those retiring now can be compared with those retiring in thirty or forty years. For an analysis of potential replacement rates it seems appropriate to assume that assets are largely drawn down in an annuity pattern over the period of the person or couple's retirement. The aggregate analysis on this basis shows replacement ratios for workers rising significantly from 45 per cent currently to 71 per cent by 2050. For the ‘all’ group the replacement ratios are about 57 per cent now, rising to 75 per cent by 2035 and almost 90 per cent by 2050.

Chapter 4: Concessional tax treatment of superannuation

Superannuation in Australia is a tax preferred investment where tax concessions are provided to encourage (and increase the level of) saving for retirement and provide an offset to 'locking up' superannuation until preservation age.[11]

This section assesses the extent of the tax advantage of superannuation taking account of both current tax levels and the changes announced in the 2002-03 Budget, which importantly included the government co-contribution for low income earners. The framework used is that of Rothman (2000) updated for tax changes.

The assessment is from the individual's viewpoint, particularly in two broad areas:

- For those contributing at Superannuation Guarantee (SG) level over a working lifetime; and
- For one off investments, mostly by persons with assets over their Eligible Termination Payment tax-free threshold (currently $112,405 and indexed annually to AWOTE).

Limits to superannuation tax concessions

There are a number of limits in the overall taxation of superannuation, which are intended to limit the tax concessions available to an individual over a working lifetime. The age based contribution limits are one such limit and arguably, the contributions surcharge is another. The other key limit is the Reasonable Benefit Limit or RBL. All the analyses in this Section assume that contributions are within the age limits and that the relevant RBL is not exceeded over a person's working life. This covers an overwhelming majority of cases.

11 The Treasury's estimate of the level of concessions uses a personal income tax benchmark. The estimate is published regularly in the Tax Expenditure Statements and the Budget papers; for 2002-03 it is projected at $10.3 billion.

The limits constitute integral safeguards for the system and need to be respected; some analyses show very high tax rates if these limits are exceeded (eg Smith, 2000). A number of recent government policy actions and decisions are aimed at making individuals no worse off within superannuation than outside it, even where the limits are exceeded.

Analysis framework

The framework is as developed in Rothman (2000). In brief, this uses Excel spreadsheets to compare the amounts accumulated at retirement after all taxes in two situations: the first where the person invests in the superannuation system with its rules and taxes and the second where the same person invests the equivalent monies as available post income tax outside of the superannuation system, using the same investment portfolio as used for the superannuation investment. Care is taken to distinguish pre tax monies from post tax and to compare like with like.

A conservative, simplified framework is used which assumes taking all benefits as a post preservation age ETP and applying the full 16.5 per cent tax rate above the ETP tax-free threshold (where the threshold applies). This framework somewhat understates the relative advantage of superannuation. Those who choose retirement income stream products will not pay ETP tax on these benefits and may also gain a 15 per cent tax rebate; generally this will result in a higher standard of living in retirement than taking all benefits as an ETP (see Tinnion and Rothman, 1999).

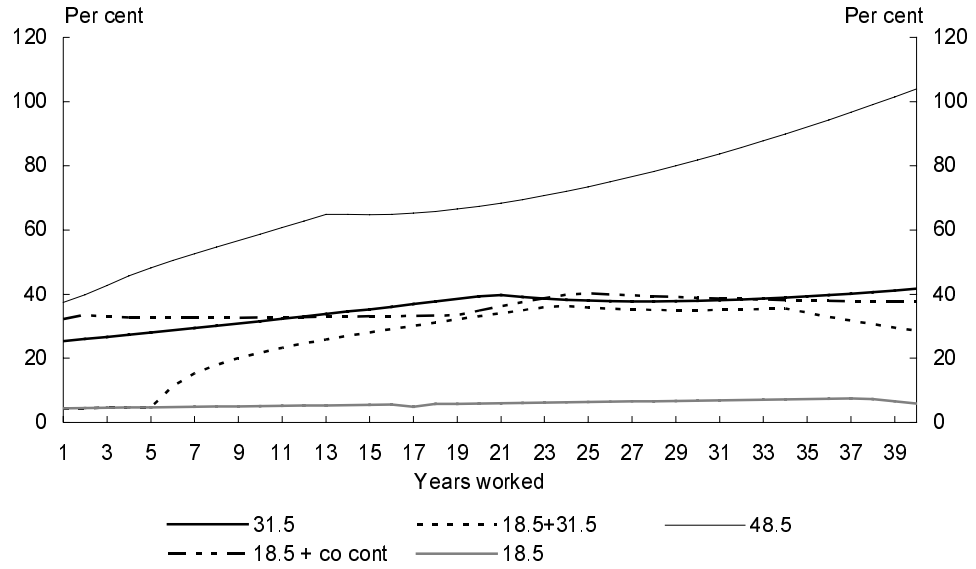
Results

Compulsory superannuation — The Superannuation Guarantee

The analysis framework has been used to assess the extent of tax advantage given to SG contributions over a working lifetime made up of any number of years up to 40. It is assumed that the fully implemented SG rates apply throughout. The analysis is done for people based on their marginal tax bracket.

The results in the following chart set out the percentage advantage of the ‘all taxes paid’ outcome for superannuation compared with the ‘all taxes paid’ outcome for money invested outside of superannuation, using a similar balanced investment portfolio.

Chart 2: Proportional advantage of SG superannuation contributions



The various lines refer to the marginal personal income tax rate of the person. For the 18.5 and 31.5 lines, the marginal tax rate applies throughout the person's working life. The '18.5+31.5' case has the person on the 18.5 per cent marginal personal tax rate for the first 5 years of their working life, followed by 30 years of work at 31.5 per cent, and the rest of working life at 18.5 per cent. Arguably, patterns such as this, combining periods of work at 18.5 per cent with longer periods at 31.5 per cent, are fairly typical cases. The 48.5 line assumes the person pays this marginal tax rate and the full surcharge throughout their working life. The surcharge rate is assumed to reduce in line with the Government's intentions as announced in the 2002-03 Budget.

The (constant) 18.5 case, in effect, excludes any period of adult full time work.[12] Further, given the potential importance of the newly announced co-contribution policy, a line is included which is not a pure SG line but has the (constant) 18.5 per cent person making a member contribution of 3 per cent. This is then fully matched by a government co-contribution. All the cases shown except this one are solely SG contribution cases.

12 Minimum award wages for full time adult work now exceed $20000 pa, which is the upper bound of the 18.5 per cent range.

The chart shows, for example, that the SG superannuation accumulation after all taxes for a person consistently on a 31.5 per cent marginal personal income tax rate is 40 per cent more after 21 years and 42 per cent more after 40 years than the accumulation of the equivalent post tax contributions outside of the superannuation system. For the '18.5+31.5' case the advantage of superannuation is 36 per cent after 24 years and 29 per cent after 40 years. For the '18.5 + co-cont' case, the advantage of superannuation is 39 per cent after 30 years and 38 per cent after 40 years.

The slight dips in the purely SG curves[13] indicate when the ETP tax-free threshold is exceeded. For example, this occurs after 21 years for the person consistently in the 31.5 per cent marginal tax bracket, and 13 years for the person paying 48.5 per cent.

The case of a person consistently on an 18.5 per cent tax rate shows that such a person would not exceed their ETP tax-free threshold until around 37 years of work receiving the full SG. Given the SG has only now reached the full 9 per cent rate, and given the history of superannuation coverage described earlier, most of those currently on the 18.5 per cent rate will be substantially under the ETP tax-free threshold[14] and this is the framework adopted for the next part of the analysis.

As the proportional advantage of superannuation is always positive in the chart, it is clear that given SG employer contributions only, superannuation is a tax-preferred investment over a working lifetime for persons in all tax brackets.

One off investments

The second major area of analysis is to consider the relative advantage of superannuation for one off investments, mostly by persons over the ETP tax-free threshold. The comparisons assume like portfolios for the within and outside superannuation investments.

As explained in the previous section, we assume that for the 18.5 per cent tax bracket the additional investment does not cause the ETP tax-free threshold to be breached. For all higher tax brackets, however, we assume that the person will exceed the ETP tax-free threshold over his/her working life and

13 For the '18.5+31.5' case there is also a dip after 35 years related to the change in marginal tax rate.

14 Some limited number of persons previously earning higher annual salaries and now reverting, say to part time work, may have reached the ETP tax-free limit.

accordingly that the one off investment being considered will not benefit from the ETP tax-free threshold.

For periods of investment from 1 year up to 20 years, the charts below show the comparative advantage of employer and member superannuation, using a balanced portfolio for both the within and outside superannuation investments.

The analysis allows for a small differential in entry fees between the within and outside superannuation investments.[15]

In all tax brackets there is a clear advantage for employer superannuation building up over time. Comparing directly corresponding cases by tax bracket, the advantage of member superannuation is consistently lower than the corresponding advantage for employer superannuation. Generally the advantage for member superannuation is small for short periods for other than the top tax bracket, but builds up over time; the exception is the '18.5 + full co-cont' case as explained below.

15 The differential in entry fees used is 1 per cent of the amount invested for the balanced portfolio, with the investment outside superannuation paying the higher fee. For the fixed term portfolio, the differential used is zero, as many fixed term investments are readily available without entry fees; for the all shares portfolio, including overseas shares, the differential used is 2 per cent.

Chart 3: Proportional advantage of employer superannuation — one off investment, balanced portfolio

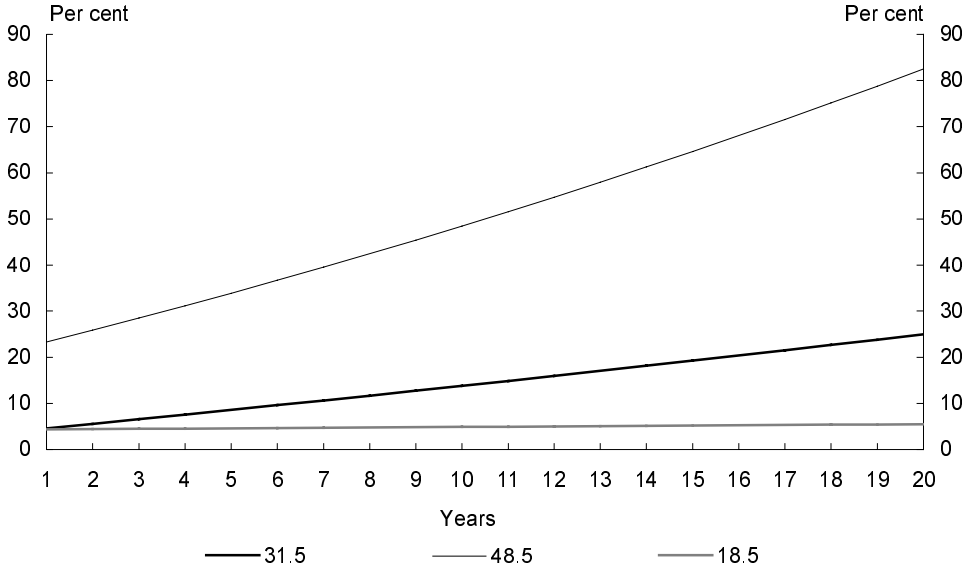
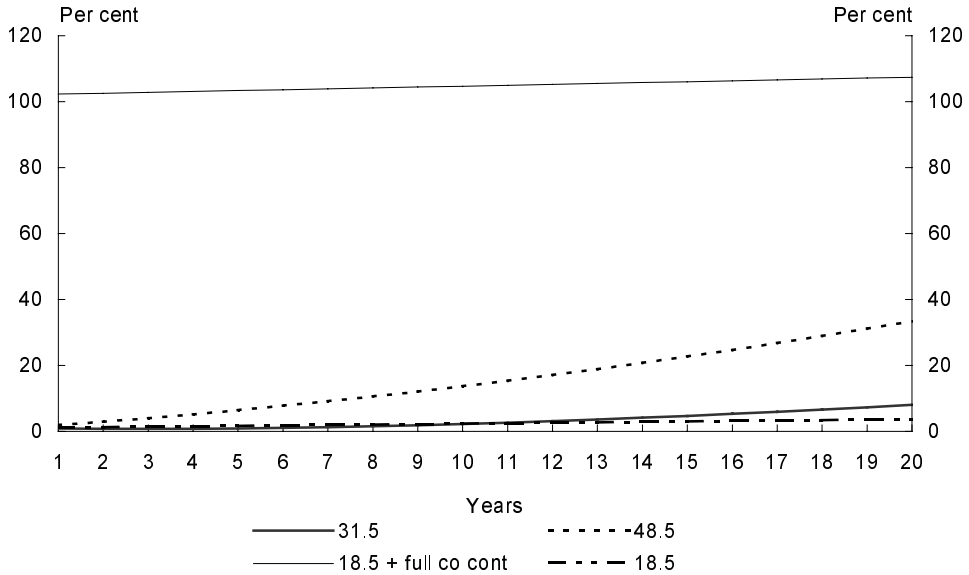


Chart 4: Proportional advantage of member superannuation — one off investment, balanced portfolio



For the case of a person with an 18.5 per cent marginal personal tax rate, two situations in relation to member investments are modelled: in one case titled '18.5 + full co-cont' the dollar for dollar matching government co-contribution for member contributions up to $1000 is assumed to be available. The other 18.5 situation shown above occurs much less frequently. In the 18.5 line the co-contribution is zero as the maximum available co-contribution limit is assumed to have been reached prior to this investment. Clearly, many examples between the two extremes are possible. This co-contribution will also be available, at a reduced rate, for some persons in the 31.5 per cent bracket, considerably increasing the relative advantage of member superannuation for such persons, but given the wide range of possibilities, this has not been modelled explicitly.

Table 6 below sets out the relative advantage of superannuation after 10 years for various portfolios for both employer and member contributions. The same general relative pattern can be seen to apply independently of the portfolio chosen, with superannuation shown to be tax advantaged for all member and employer investments.

Table 6: Relative advantage of superannuation after 10 years, by nominal marginal tax bracket. One off investments using various investment portfolios.

	Fixed term	Shares	Balanced
Employer			
18.5	7.1%	5.8%	4.9%
31.5	17.3%	14.6%	13.8%
48.5	55.7%	52.0%	48.5%
Member			
18.5	2.7%	3.5%	2.4%
18.5 + co-cont	107.4%	104.9%	104.7%
31.5	4.2%	2.8%	2.3%
48.5	18.7%	14.7%	13.7%

Negative gearing

All the analysis above assumes that the comparison is between situations using the same investment portfolios for the within and outside superannuation investments. However, the use of 'gearing' is an option available to those investors outside superannuation who are prepared to tolerate higher levels of risk. To make a geared investment, an individual increases the size of the total amount invested by adding a borrowed amount to their own investment, with the interest payable on the borrowing usually tax deductible to the investor.

The term 'negative' in relation to gearing applies when, as is usually the case, the nominal yield of the investment is less than the level of interest charged on the borrowing and therefore the attractiveness of the investment relies significantly upon the tax system. When drawing comparisons in the case of negative gearing, we use the same investment portfolios for the within and outside superannuation investments but here only the investment outside superannuation is geared, as the regulations prohibit the gearing of superannuation investments.

As well as normal assumptions on investment returns, for the 'negative gearing' scenarios it is also necessary to specify the extent of gearing and an interest rate for the loan. For all cases it is assumed that the gearing arrangement borrows a sum equal to twice the original after tax amount available for investment - which is a 'middle of the road' geared investment. The interest rate charged on the loan is assumed to vary from 0.75 per cent to 2 percentage points higher than the notional (pre tax) return of the investment. The examples shown in Table 7 below assume employer contributions are used for the superannuation investment and a balanced portfolio is utilised.

Table 7: Relative advantage of employer superannuation after 10 years, negative gearing, balanced portfolio

	Borrowing margin		
	0.75%	1.25%	2.00%
Marginal tax rate %			
18.5	1.4%	7.3%	17.4%
31.5	7.0%	12.2%	21.0%
48.5	33.4%	38.3%	46.4%

The results are not strongly dependent on the investment portfolio used but, not surprisingly, the extent of superannuation's relative advantage does vary significantly with the margin paid for the borrowing compared with the nominal return on the investment portfolio.

The continuing advantage of superannuation, even where a negatively geared strategy is used outside superannuation, is a strong result, given that any negative gearing strategy based on growth investments necessarily involves higher risk than the corresponding superannuation investment and will have very adverse results if the investments turn sour.

Sensitivity analysis

The exact figures in the Charts and Tables above depend on the precise details of the cases considered, including the make-up of the investment portfolio and in some cases the salary of the person.

The spreadsheets have been used to consider how the results vary by the fees and charges relating to the investment, portfolio composition, rates of return on investments, and the frequency of realisation of capital gains made. While the results for returns on individual investments do vary in response to the changes, the comparative patterns and the broad differences are quite robust to reasonable changes in these parameters.

Discussion

While the above analysis has been fully updated to reflect recent and announced government policy changes, other parties have drawn broadly similar conclusions to those above, usually with less comprehensive coverage. However a subset of authors and commentators have published quite different and apparently contradictory conclusions. Treasury suggests that the apparent contradictions arise because of one or more of the following traps.

- The first and perhaps most obvious error is to simply add taxation percentages together — for example some people add the 30 per cent contributions tax (including surcharge) plus 16.5 per cent ETP tax (and perhaps 15 per cent earnings tax) and then compare this sum with 48.5 per cent, the top rate of personal income tax. Clearly this is wrong because the taxes apply to different quantities and need to be calculated correctly.[16]

- A related mistake is to ignore the ETP tax-free threshold, which is shown by the above analysis to be an integral and important part of the system.

- Another potential mistake is the failure to compare like with like and in so doing, confuse the tax status of monies available for investment.

16 Assuming 30 per cent contributions tax (including surcharge) plus 16.5 per cent ETP tax, the correct maximum effective tax rate, ignoring earnings, is 41.6 per cent (compared with the 48.5 per cent personal income tax marginal rate).

- More a distortion than a mistake, is to focus on contributions outside the age based limits and cases where the relevant RBL is exceeded over a person's working life. The overwhelming majority of actual cases do not fall into these categories.

Conclusions

Assuming that contributions are made within age based limits and within RBLs, which cover the overwhelming majority of cases, the analysis demonstrates that for persons in all tax brackets receiving SG employer contributions only, superannuation is a tax preferred investment over a working lifetime of up to 40 years duration.

For persons in the 31.5 per cent and higher tax brackets, one off investments through superannuation are relatively advantaged for all ungeared investment portfolios.

Generally, making one off investments through employer contributions gives a higher level of advantage than using member contributions to make the investment. However the availability of the co-contribution dramatically changes the relativity for the 18.5 cases and the lower income ranges within the 31.5 bracket, where the maximum co-contribution has not been reached. Specifically, a one off investment by a person in the 18.5 per cent tax bracket remaining below their ETP tax-free threshold, is tax advantaged by 4 to 7 per cent for employer contributions, and by up to 107 per cent for member contributions under the low income co-contribution limit.

Further, for reasonably constructed comparisons using employer contributions and negative gearing for the outside of superannuation investment, superannuation remains the preferred investment vehicle in all tax brackets, with the strong advantage of involving much lower risk than negative gearing.

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The effectiveness of fiscal policy in Australia — selected issues

Blair Comley, Stephen Anthony and Ben Ferguson*

This article is devoted to examining the appropriate use of fiscal policy in the presence of private savings and interest rate offsets. The authors measure these effects in the Australian context and consider the implications of their empirical findings for the conduct of macroeconomic policy for a small open economy. This is an abridged version of a paper presented to the Bank of Italy Fiscal Policy Workshop in Perugia, Italy on 21 March 2002.

Background

Australian fiscal policy is based on a medium-term framework designed to ensure budget balance over the cycle. This medium-term framework ensures that the Government balance sheet remains in good order. The formulation of the fiscal strategy, with an 'over the cycle' emphasis, also allows the use of fiscal policy as a demand management tool.

The fact that the strategy allows the use of discretionary fiscal policy raises the question of the desirability and effectiveness of discretionary fiscal policy. Australia is a relatively small, open, financially developed economy with a floating exchange rate. Standard economic theory suggests that monetary policy is a relatively more potent demand management tool for such economies. For example, it predicts that fiscal expansion will produce higher interest rates that will reduce investment expenditure. However, it also predicts that the instantaneous inflow of capital will to some extent circumvent any change in interest rates, and produce an appreciation of the currency and a smaller contribution of net exports to growth. In contrast, expansionary

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monetary policy leads to lower interest rates, capital outflow and a depreciated currency, which increases the net export contribution to growth. Symmetrically, with the first policy case, the capital outflow will mitigate the actual change in domestic interest rates.

From a policy maker's perspective it is important to have some understanding of the effectiveness of fiscal policy to inform the desirability and magnitude of any fiscal package. The paper does not attempt to ascertain the total effectiveness of fiscal policy. This paper focuses on two factors — private sector saving offsets and interest rate effects — that may reduce the effectiveness of fiscal policy as an aggregate demand management tool in Australia.

The paper is organised as follows. Section II considers evidence of private sector saving offsets in Australia. Section III considers the potential link between fiscal policy and interest margins. Section IV considers the policy implications of the paper's findings.

Fiscal policy and savings offsets

The following is a stylised description of the conventional view of the effects of a fiscal expansion where, for example, the government reduces taxes, with no planned reduction in current or future expenditures.

In the short run the effect of the government reducing taxes is to stimulate consumption which increases aggregate demand and in turn aggregate supply. This boost to consumption is partly offset in the short run by a range of crowding out effects — notably by higher interest rates reducing the level of investment and/or an appreciation of the exchange rate reducing net exports. In the long run the higher interest rate reduces capital accumulation and adversely affects growth. Notwithstanding these offsets and the long run effect on growth, fiscal policy does stimulate activity in the short-term. As such fiscal policy can be an effective tool for demand management.

However, another strand of literature that deals with Ricardian equivalence challenges this conventional wisdom (see Barro (1974)). Ricardian equivalence suggests that fiscal policy will not alter consumption, savings or growth.

Ricardian equivalence is based on the insight that lower taxes and a budget deficit today require, in the absence of any change in government spending, higher taxes in the future. If individuals are sufficiently forward-looking they will understand that their total expected tax burden is unchanged. As a result they will not increase consumption, but save the entire tax cut to meet their

expected future tax liability. The decrease in government saving will thus be offset by an increase in private saving.

Perfect (or full) Ricardian equivalence relies on a very strict set of assumptions including: individuals' consumption choices fit a life cycle model of consumption; they are forward looking; and effectively 'infinitely lived' through a bequest motive inspired by each generation's concern about the welfare of the next generation.[1]

The set of assumptions required for full Ricardian equivalence to hold is clearly unrealistic. However, the key issue for the effectiveness of fiscal policy is not necessarily whether all these assumptions hold, but rather whether there is some offsetting savings behaviour that may reduce the demand impact of fiscal policy. Furthermore, there are a range of other possible reasons that may illicit savings offsets at the appropriate level. For example, individuals may smooth their consumption or suffer from consumption inertia. This is essentially an empirical question. Our investigation of this empirical question is motivated by consideration of all these potential savings offsets.

International evidence suggests that an increase in public saving tends to lower private saving with an offset coefficient of around one half (Masson, Bayoumi and Samiei (1995); Callen and Thimann (1997); and Loyoza, Schmidt-Hebbel and Serven (2000)).

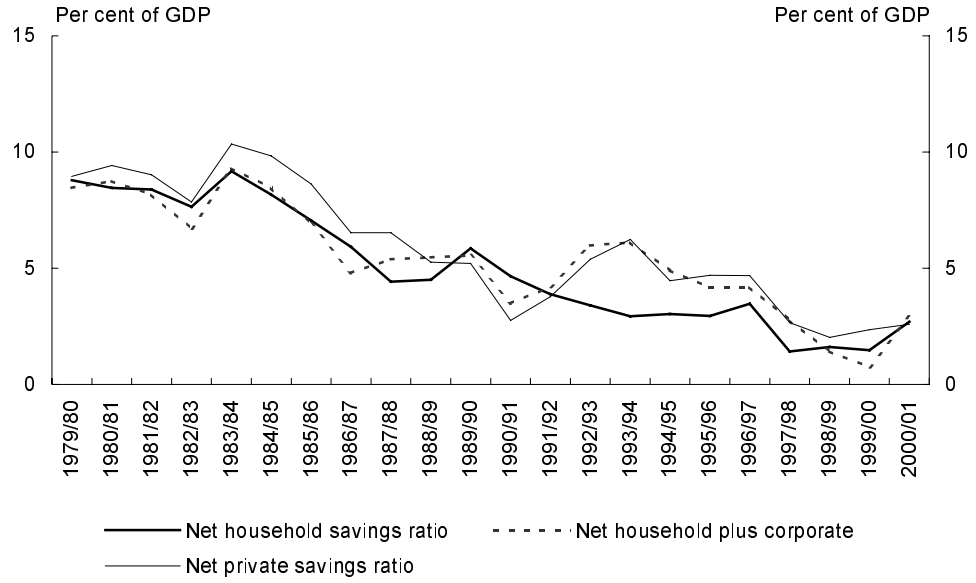
In contrast to these international studies, previous work with Australian data (Edey and Britten Jones (1990); Blundell-Wignall and Stevens (1992); and Lee (1999)) has found little evidence of Ricardian effects. But there are some issues with these studies which may have affected their findings. Blundell-Wignall and Stevens (1992) used annual data and regressed the change of the private saving ratio on the change of the public savings ratio. This approach, however, excluded other potential explanatory variables that may affect private savings (unemployment; income; inflation; and, real interest rate) potentially resulting in omitted variable bias and other specification problems. Lee (1999), used quarterly data and found no significant offset between household savings and changes in aggregate general government savings. Because there is no quarterly series available which directly measures private saving in Australia, a proxy must be used. However, it may have been preferable to use a broader

1 For a full set of assumptions underpinning Ricardian equivalence see Elmendorf and Mankiw (1998).

measure of saving such as the household and corporate savings ratio as the relevant proxy.[2]

Chart 1 compares the annualised series for the quarterly household savings ratio and the household and corporate savings ratio to an annual measure of the private sector savings ratio. Chart 1 indicates that the household savings ratio in Australia is not the best proxy for overall private savings behaviour. The correlation coefficient between the private savings ratio and the household savings ratio over the period 1979-80 to 2000-01 is 0.83. In contrast, the household plus corporate savings ratio tracks the private sector savings ratio more closely, suggesting it is a better proxy for private savings. The correlation coefficient between the private savings ratio and the household plus corporate savings ratio over the period 1979-80 to 2000-01 is 0.91.

Chart 1: Comparison of net household, net household plus corporate and private sector savings ratios



Source: ABS 56206-61; 5206-64; 5206-56; Treasury Estimates as per methodology outlined in Spring 1999 Economic Roundup, 'The Measurement of Saving in Australia', pp. 48-50.

2 One reason for this may be the long-term trend in Australia towards the incorporation of non-incorporated businesses.

We have investigated the potential link between the private savings ratio (net household plus corporate saving ratio) represented in Chart 1 and government savings over the period 1981:1 to 2001:2 (that is, March quarter 1981 to June quarter 2001). Our approach involved regressing the private saving ratio on a set of explanatory variables representing long-term fundamentals and short-term factors which tend to move the economy away from so called 'equilibrium'.[3]

We hypothesise the **long-term** 'equilibrium' level of private saving is a function of general government saving, controlling for the influence of the inflation rate, the unemployment rate, the real interest rate, per capita household disposable income, direct taxes, social assistance paid to households, household wealth, and household debt (a proxy for financial deregulation). In the **short-term**, changes in private saving are hypothesised to be a function of changes in general government saving, controlling for changes in the same set of 'state' variables.

Private savings are anticipated to be negatively related to general government savings. This supposes that a fall in government saving would lead households to expect increased future tax liabilities and therefore to increase their saving rate in order to offset those expected future tax liabilities. Direct taxes and private wealth should be negatively related, while household disposable income should be positively related to private savings, both in levels and changes. *A priori* theory provides no unambiguous guide to the sign of the remaining variables.[4]

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3 We employed the Johansen-Julieus ECM approach for modelling with non-stationary variables. We recognise that while there may exist a long run equilibrium relationship between the variables under examination, there may be disequilibrium in the short-term. The framework, therefore, models the change in the dependant variable as a function of changes in the explanatory variables and the error correction mechanism, in which a proportion of the disequilibrium in one period is corrected in the next.

4 *Unemployment*: Increasing unemployment lowers disposable income and, through a greater incidence of liquidity constraints, lowers savings. On the other hand, increases in unemployment may increase the need for precautionary saving.

Inflation: Inflation tends to undermine the value of financial assets and stimulate saving. On the other hand, it may also reduce the return from saving in financial rather than non-financial assets, which tends to lower saving.

Real interest rates: The sign of the effect depends on whether the substitution or income effect dominates.

Deregulation: Financial deregulation may increase the opportunities for, and return to, financial savings, but may also enhance access to credit and thus lower private savings.

The model was initially run and insignificant variables systematically eliminated to produce the following model results reported in Table l.[5]

Table 1: Results from basic private savings model

Dependent variable: D private saving: 1981:1 - 2001:2		
	Coefficient (t statistic)	**L.T. Coefficient** [(a)] (t statistic)
Explanatory variables: Short run		
Constant	6.43	
	(4.82)	
D Unemployment$_t$	-1.19	
	(-3.83)	
D Deregulation$_t$	-0.03	
	(-4.84)	
D Government saving$_t$	-0.34	
	(-3.36)	
Explanatory variables: Long run		
Private saving$_{t-1}$	-0.5	
	(-5.30)	
Deregulation$_{t-1}$	-0.003	-0.006
	(-4.14)	
Government saving$_{t-1}$	-0.08	-0.16
	(-1.08)[(b)]	
Major diagnostics	R-Bar-Squared	0.59
	DW Stat	2.35

(a) The long-term coefficients in the table above are calculated by dividing the coefficients for the relevant variables by the coefficient on the error correction term (lagged value of the dependent variable).
(b) Redundant variable test for the inclusion of GS_{t-1}: F statistic = 1.18 Prob = 0.281, Log Likelihood Ratio = 1.279 Prob = 0.258.

The above model suggests a significant private savings offset of around 1/3 to short-term changes in general government savings. In contrast to the short-term relationship, a long-term statistically significant relationship could not be established between the two variables at the 5 per cent confidence interval.

5 For unit root tests, tests for joint significance and full model results please refer to the conference edition of this article. All estimation and diagnostic procedures undertaken for the purposes of this paper were performed in *EVIEWS 3.1*.

The model also suggests, that in the short run, the private savings ratio decreases by 1.2 per cent in response to a 1 percentage point increase in the unemployment rate, and falls by 0.03 per cent in response to a 1 per cent increase in household debt to disposable income ratio (the long run proxy for financial deregulation). The model suggests also that in the long run, a 1 per cent increase in the household debt to disposable income ratio elicits a 0.006 per cent decrease in the private savings ratio, so that there is evidence of a long term relationship between private savings and financial deregulation.[6]

Chart 2: Impulse response of private saving to a 1 per cent of GDP permanent increase in government saving

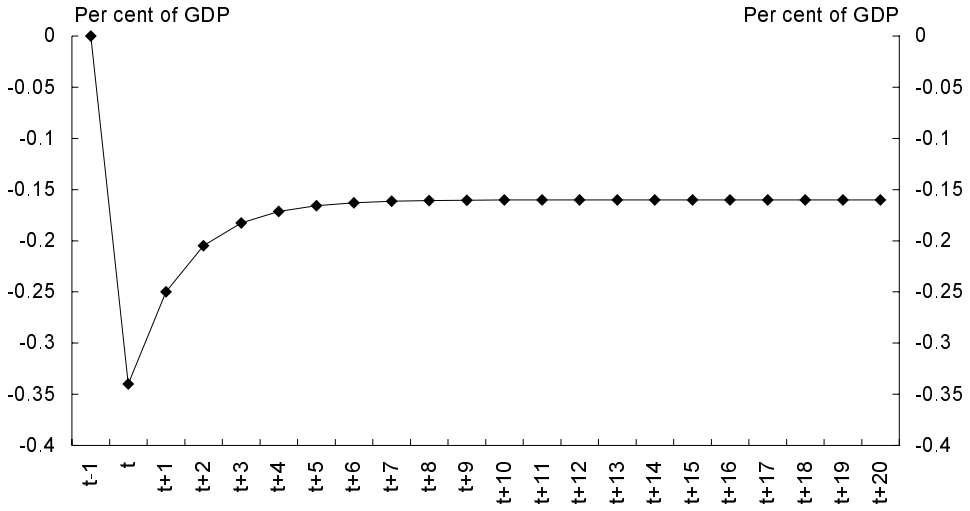

Chart 2 illustrates the impulse response for the level of private saving in response to a permanent 1 per cent of GDP increase in government saving. The chart demonstrates that it takes approximately 5 periods before the full effect of the shock is unwound and the system returns to it's long run equilibrium value of -0.16.

A complete summary of diagnostic tests are reported in Appendix 2. Based on these tests the model seems for the most part to have reliable characteristics. However, there is some evidence of autocorrelation and heteroscedasticity. Also, it is likely that the coefficient estimates are unstable over time and as such represent a major caveat on our results.

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6 While the coefficients on the financial deregulation terms are low, financial deregulation does seem to have a significant effect on private savings as the household debt to disposable income ratio is a very high value.

Another issue is whether private sector savings offsets are more pronounced in the face of 'structural' rather than cyclical changes in government saving. Studies such as Cebula, Hung and Manage (1996) explore this proposition.

Cebula *et. al.* break the US federal budget into its structural and cyclical components. The former is hypothesised to be the 'planned deficit', whereas the latter is viewed as the 'unplanned'. They claim that the cyclical deficit can at best be crudely estimated, its determinants are sufficiently varied and unknown that predicting it is extremely difficult and beyond the capacities of most so called 'rational' individuals. They argue that in a Ricardian world it is reasonable to expect that household saving will depend upon structural deficits, but cyclical deficits are likely to exercise little impact, if any, on household saving.[7] They find for the US there is a private saving offset of around $^{1}/_{3}$ on structural deficits, while cyclical deficits do not affect personal saving rates.

We have extended the model developed above by disaggregating general government saving into National general government structural and cyclical savings and State and Local general government savings.[8]

The model was initially run and insignificant variables systematically eliminated to produce the following model results reported in Table 2.[9]

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7 This point was also made by Barro, (Edey and Britten-Jones, 1990, pp. 120-121), who noted that both public and private savings tend to move cyclically, and in order to determine the effect of public sector deficits on private saving, the exogenous component of the public sector position must first be extracted. An alternative explanation is that cyclical deficits do not require a future increase in the tax rate, as higher tax revenue is automatically generated, so there is no need for anyone to increase their savings rate.

8 We note that determination of the structural and cyclical components of savings involves a range of complex issues (see Banca D'Italia, 1999). However, while the level of structural savings is particularly difficult to identify it is more straightforward to determine changes in structural savings. The changes in structural savings are of primary importance in generating the results contained in this paper.

9 We have not broken the State and Local Government savings numbers down into structural and cyclical components due to the lack of quarterly data available to conduct the analysis. It is likely that variations in State and Local Government savings positions are primarily structural in nature due to the heavy revenue reliance on the Commonwealth and the fact that State and Local Government outlays are less cyclically sensitive than Commonwealth outlays reflecting the Commonwealth's primary responsibility for income support arrangements. Furthermore, separately identifying the State and Local Government sector is useful as it allows us to focus on the savings behaviour of the Commonwealth Government which in practice is responsible for demand management policy.

Table 2: Results from disaggregated government model

Dependent variable: D private saving: 1981:1 - 2001:2	Coefficient (t statistic)	L.T. Coefficient[(a)] (t statistic)
Explanatory variables: Short run		
Constant	7.8	
	(5.21)	
D Unemployment$_t$	-0.82	
	(-2.10)	
D Deregulation$_t$	-0.03	
	(-4.37)	
D National government stuctural saving$_t$	-0.35	
	(-3.29)	
D National government cyclical saving$_t$	0.92 [(b)]	
	(1.33)	
D State & local government saving$_t$	-0.33	
	(-2.07)	
Explanatory variables: Long run		
Private saving$_{t-1}$	-0.68	
	(-6.18)	
Deregulation$_{t-1}$	-0.004	-0.01
	(-4.48)	
National government structural saving$_{t-1}$	-0.27	-0.40
	(-2.44)	
National government cyclical saving$_{t-1}$	0.73	1.07
	(-2.06)	
State & local government saving$_{t-1}$	-0.19[(b)]	-0.28
	(-1.01)	
Major diagnostics	R-Bar-Squared	0.59
	DW Stat	2.14

(a) The long-term coefficients in the table above are calculated by dividing the coefficients for the relevant variables by the coefficient on the error correction term (lagged value of the dependent variable).

(b) Redundant variable test for the inclusion of GS_{t-1}: F statistic = 1.18 Prob = 0.281, Log Likelihood Ratio = 1.279 Prob = 0.258.

The above model suggests that short-term increases in the National general government structural savings ratio of 1 per cent are partly offset by decreases in private sector savings of 0.35 per cent. Furthermore, the coefficient on the short-term changes in National general government cyclical savings term is not significant, suggesting that changes in this term do not elicit private sector savings responses. These results are consistent with the results reported above for the model incorporating an aggregate government saving measure.

However, in contrast to the earlier model, the disaggregated model also suggests a negative long-run relationship between National general government structural savings and private sector savings. A one per cent increase in the government structural savings ratio is associated with a 0.4 per cent decrease in the private savings ratio in the long-term.

While the model suggests a positive long-term relationship between cyclical government savings and private sector savings, we suspect that this relationship is largely due to cyclical factors affecting both terms rather than cyclical government savings provoking private sector responses. The long-term coefficient of 1.07 suggests that this is the case as both government cyclical savings and private savings seem to be affected one-for-one by cyclical factors. That said, we have estimated the equation with a range of cyclically sensitive variables, none of which appear to be statistically significant. We would also note that cyclical government savings in the long-term are equal to zero. Therefore, any long-term effect between the two variables must be negated.

The model also suggests that changes in the unemployment rate and financial deregulation remain significant explanatory factors of private sector savings.

Chart 3: Impulse response of private saving to a 1 per cent of GDP permanent increase in national government structural saving

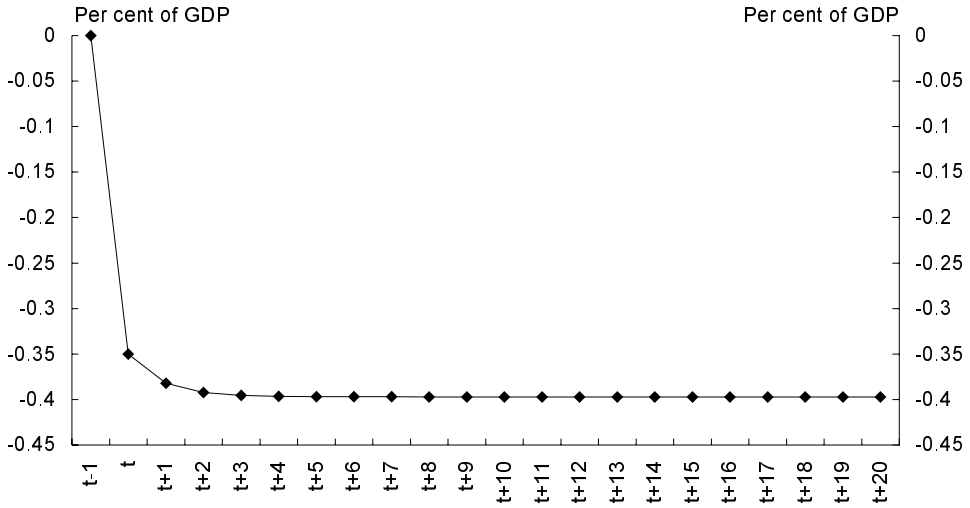

Chart 3 illustrates the impulse response for the level of private saving in response to a permanent 1 per cent of GDP increase in national government structural saving. The chart demonstrates that it takes approximately 3 periods

before the full effect of the shock is realised as the system reaches it's long-run equilibrium value of –0.40.

A summary of standard diagnostic test statistics is reported in Appendix 2. Based on these the model passes the usual tests at standard significance levels, adjusted for heteroscedasticity. Once again, there is evidence that the coefficient estimates are unstable over time. However, given the relatively small sample we did not proceed with sub sample estimation.

These results suggest that the structural/cyclical decomposition is significant in terms of explaining private savings offsets. The previous model did not identify a statistically significant long-term equilibrium relationship between fiscal policy and private sector savings due to its focus on aggregate fiscal variables.[10]

The results of this model have interesting policy implications for the usefulness of fiscal policy as a demand management tool. Discretionary fiscal policy changes are (almost by definition) structural changes in government savings. Therefore, the results suggest that discretionary policy changes aimed at influencing aggregate demand are likely to be offset somewhat by private sector savings responses. This implies that any fiscal package needs to be larger than it otherwise would be in the absence of private sector savings offsets to have an effect on output.

However, in contrast to this, the operation of automatic stabilisers is unlikely to provoke private savings offsets as they represent cyclical changes in government savings. As a result automatic stabilisers may be seen as a more reliable option for managing demand than discretionary policy changes. That said, this needs to be qualified by the fact that there is scope to make the magnitude of discretionary policy changes substantially larger than the magnitude of automatic stabilisers. Furthermore, the results reported here necessarily refer to aggregate changes in savings behaviour. In principle certain individual fiscal measures may have much larger demand effects (for example, those that seek to change the timing of capital expenditure).

While the results from the above models have important implications for the effectiveness of fiscal policy, there is an important caveat.

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10 This factor may also help to explain the results of Lee (1999), where, in addition to using the household savings ratio as the dependant variable, the study used cointegration analysis on the levels of the household savings and actual general government savings ratios.

It is possible that private saving is determined simultaneously with some explanatory variables in the regression equation. Explanatory variables that are likely to be endogenous with private savings include, government savings, and income growth. If such an endogeneity problem exists, the coefficient estimates of the model will be biased and inconsistent. While instrumental variables may be used to address this potential problem, finding persuasive instruments is difficult.

Fiscal policy and interest rates in Australia

The impact of fiscal policy on interest rates is important as the level of interest rates in Australia has significant short-term and long-term consequences. In general, higher interest rates will have adverse consequences for growth.

- If expansionary fiscal policy results in higher real interest rates, then this would operate to undermine short-term demand management by crowding-out to some extent the initial stimulus.

- Higher real interest rates can also lead to a lower long-term capital stock and a lower output level due to reduced investment levels. A lower capital stock and output level on average lowers living standards, real wages and employment levels (Elmendorf and Mankiw 1998, 28 and 29).

- Higher real interest rates also raise the long-term cost of servicing the stock of net foreign debt and thereby increase the level of transfers to foreign lenders (both public and private). It is possible that higher interest rates on debt also increase the cost of servicing foreign equity holdings. This is a particularly important issue for Australia given our relatively high level of net external liabilities (most of which have been incurred by the private sector).

There is little international evidence of a short-term link between fiscal policy and interest rates Ford and Laxton (1999, 80). Elmendorf (1996, 1) states that this may be due to the fact that the true relationship is between interest rates and the **expected** values of fiscal policy variables. Studies that have considered the link between interest differentials and expected fiscal policy, or 'risk premia' and expected fiscal policy, have found some evidence of a link to fiscal policy.[11]

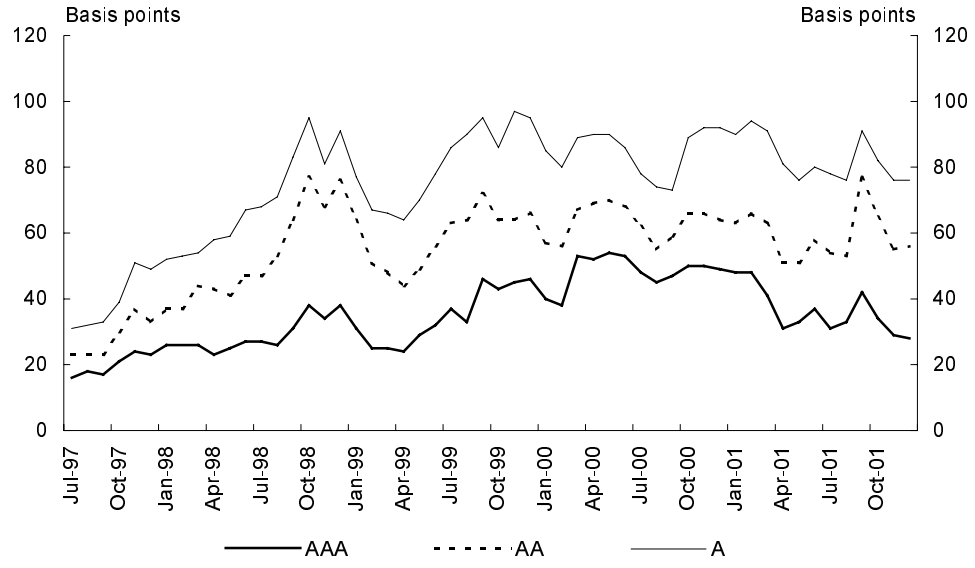
11 For example Elmendorf (1993), Elmendorf (1996) and Giorgianni (1997).

More promising, pooled time series studies have suggested a link between interest differentials and **actual** fiscal policy. Orr, Edey and Kennedy (1995) show for seventeen developed countries between 1981:2 and 1992:2 that a 1 per cent of GDP fiscal stimulus increases the real interest rate differential on 10-year bonds by 15 basis points. Lane and Ferreti (2001) examined the OECD countries for the period 1970-98. Over this period they found a statistically significant relationship between public debt and the real interest differential (at the 10 per cent significance level).

For higher real interest rates to have significant economic effects they must operate at the long end of the yield curve by influencing society's preference (discount rate) for consumption over saving. Therefore, when considering the effect of interest rates on the economy it is important to focus on long-term bond rates which may be closer to the key determinants of long-term saving and investment decisions. This is not to say that short-term rates have no effect on saving and investment decisions. For example, home mortgage rates in Australia are closely tied to short-term interest rates.

In addressing the issue of the level of interest rates in Australia we focus on the return on Australian Commonwealth Government bonds. Of course Australian Government bonds may not be a perfect measure of the interest rate facing economic decision makers. However, we would expect that over reasonable periods of time arbitrage arrangements will result in the Government bond rate being a reasonable proxy for the level of interest rates facing economic agents. Chart 4 shows a relatively stable spread relationship between Australian Government and corporate bonds over the time period for which data is available. Analysing the government bond market also has the advantage that the market is highly liquid, reducing the risk of price discovery. Data are also readily available and collected on a consistent basis.

Chart 4: Spread between Australian government and corporate bonds



Source: RBA Bulletin, Table F.03m: Capital Market Yields and Spreads: Corporate Bonds: Monthly.

The interest rate on Australian Government bonds can be thought of as comprising of a number of components.

- First, if Australia is considered to be a small open economy there will be an infinitely elastic demand for Australian Government bonds. The interest coupon on these instruments can then be thought of as the base level of Australian interest rates given by the supply and demand for funds on the world market.

- Second, if we relax the assumption of an infinitely elastic demand then the interest rate may need to rise in order to attract additional investors. This effect can be thought of as the impact of the additional supply of bonds on the world market. This effect can be expected to be very small in the Australian context. Of course, if the same question were analysed for a country such as the United States, then this effect could be quite significant.

- Third, the above two possible determinants of Australian interest rates implicitly assume that all bonds are homogeneous. However, Australian bonds are likely to be viewed by investors as imperfect substitutes for other bonds. Investors may not be indifferent to the currency in which the bonds are denominated. Given that investors prefer to hold a balanced portfolio,

they may require a higher return to increase the proportion of a particular country's assets in their portfolio, i.e. a portfolio risk premium (Frankel, 1979, 381).

- Fourth, investors may also demand a default premium to compensate for the probability that a country may default on its foreign debt obligations (Lonning, 2000, 262).[12]

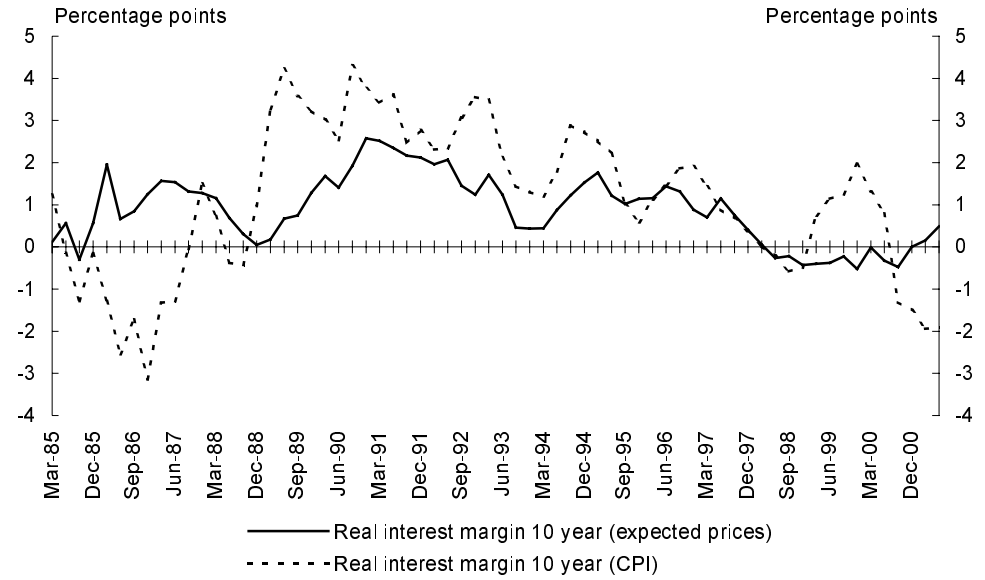
- Fifth, if a country increases borrowing for purposes that do not increase the future supply of traded goods then a future depreciation will be expected to service the debt, which may lead to an interest differential now.

In this paper we focus on the margin on 10-year Treasury Bonds between Australia and the United States adjusted for expected inflation (see Data Appendix). The United States is used here as a proxy for the world market because it has historically been a major provider of capital to Australia and due to its role as a global safe haven. In terms of the taxonomy presented above, this methodology seeks to identify the combined effect of portfolio risk and default risk. The effect of Australian Government bond issuance on world interest rates (proxied here by the United States) will not be identified. Of course, other factors may affect the margin and so the estimates presented below need to be treated with caution.

This measured real interest margin calculated with expected prices is outlined for the period 1985:1 to 2001:2 in Chart 5. For purposes of comparison we have included a real interest margin measure constructed using actual prices as well.

12 Conceptually the default risk premium is a subset of portfolio risk. It is one of the reasons why investors do not view all government bonds as perfect substitutes. That said, we believe that it is useful to identify it separately as the risk of default is a common focus when sovereign debt issues are considered. Separately identifying default risk highlights the fact that investors may believe that there is a zero default risk, but still demand higher returns to hold a higher proportion of a particular countries' bonds. This is important for a country like Australia where default risk is likely to be perceived by investors as close to zero.

Chart 5: The 10-year bond real interest margin between Australia and the United States



Source: Nominal interest rates and indexed bonds data obtained from RBA Bulletin and calculated as outlined in Appendix 1.

The high point of the 'expected' margin was 257 basis points in December 1990 and the low point was -47 basis points in September 2000. In general, low values of the margin correspond to periods of fiscal consolidation in Australia (late 1980s and late 1990s) and high values during periods of fiscal expansion (early to mid 1990s).[13] The following analysis seeks to explore this 'observed' relationship more rigorously.

We have investigated the potential link between the real interest margin outlined in Chart 6 and actual fiscal policy over the period 1985:1 to 2001:2. Our approach is to attempt to explain movements in the interest margin over time by regressing it on a set of explanatory variables representing long-term fundamentals and short-term influences which tend to move the economy away from so called 'equilibrium.[14]

13 Of course there is an issue of observational equivalence here because in times of high growth a government has more capacity to eliminate debt which will assist in driving down yields, and *vice versa* in periods of recession.

14 Details of all data sources used for this study are contained in Appendix 1.

We hypothesise a **long-term** 'equilibrium' relationship where the level of the interest margin is a function of the levels of both the flow and stock of fiscal policy, controlling for 'state' variables such as the inflation rate, real GDP growth rate, as well as the flow and stock of net foreign debt. Second, we hypothesise that **short-term** changes in the interest margin are a function of changes in the budget balance and stock of public debt, controlling for changes in the same set of 'state' variables.

The interest margin is expected to rise in response to a deterioration in the budget balance or a rise in the stock of public debt. The interest margin is also hypothesised to be positively related to levels and changes in the inflation rate, and the stock of net foreign debt and negatively related to levels and changes in GDP growth and the current account.

The model was initially run and insignificant variables systematically eliminated to produce the following model results reported in Table 3, using the headline budget balance or structural budget balance, alternatively, as the fiscal flow variable.

Table 3: Interest margin model

Dependent variable: D 10-year bond real interest margin 1985: 1 - 2001:2	Simple model (HB) Coefficient *(t statistic)*	Simple model (SB) Coefficient *(t statistic)*
Explanatory variables:		
Short run		
Constant	-0.265	-0.279
	(1.09)	(1.17)
D Interest margin$_{t-1}$	-0.327	0.296
	(2.35)	(2.16)
D Structural balance$_t$		-0.319
		(2.96)
D Headline balance$_t$	-0.200	
	(2.64)	
Explanatory variables:		
Long run		
Interest margin$_{t-1}$	-0.407	-0.395
	(3.68)	(3.63)
Public debt$_{t-1}$	0.059	0.060
	(2.83)	(2.92)
	0.145	0.152
Inflation$_{t-1}$	0.041[(b)]	0.042[(c)]
	(1.81)	(1.85)
	0.101	0.106
Real GDP growth$_{t-1}$	-0.125	-0.116
	(2.74)	(2.55)
	-0.307	-0.294
Current account$_{t-1}$	-0.071[(b)]	-0.062[(c)]
	(1.67)	(1.48)
	-0.174	-0.157
R-bar-squared	0.22	0.24
DW stat	1.91	2.21

(a) The long-term coefficients for each equation are shaded grey and calculated by dividing the estimated coefficients for the relevant variables by the coefficient on the error correction term (lagged value of the dependent variable).

(b) Redundant variable test for the inclusion of Inflation$_{t-1}$ and Current Account$_{t-1}$: F statistic = 3.83 Prob = 0.028 Log Likelihood Ratio = 8.31 Prob = 0.016.

(b) Redundant variable test for the inclusion of Inflation$_{t-1}$ and Current Account$_{t-1}$: F statistic = 3.57 Prob = 0.036 Log Likelihood Ratio = 7.77 Prob = 0.020.

The model results reveal:

For the long-term levels component the fiscal stock variable (for example, stock of public debt) and real GDP growth were significant. The *t* statistic on the current account and inflation variable were not large enough to indicate a significant statistical relationship at the 5 per cent confidence interval. However, they are large enough to suggest there may exist a 'meaningful' relationship between these variables and the interest margin.

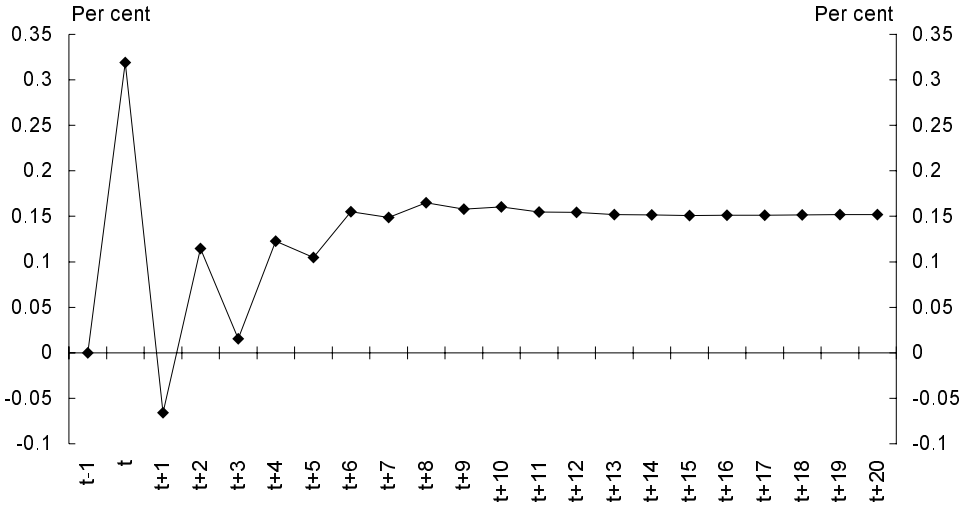
For the short-term changes component, only the fiscal flow variables (for example headline balance or structural balance) were statistically significant.

The economic interpretation of the fiscal variables results in Table 3 is as follows. The interest margin increases by approximately 20 basis points in response to a one per cent of GDP deterioration in the headline budget balance. This is approximately the same magnitude of increase in the margin caused by a one percent of GDP increase in the stock of public debt at around 15 basis points. In contrast, a one percent of GDP deterioration in the structural budget increases the margin by approximately 32 basis points.

The economic interpretation of the 'state' economic variables results in Table 3 is as follows. A one per cent of GDP increase in the current account deficit increases the margin by approximately 17 basis points in the long-term. A similar increase in the inflation rate increases the margin by approximately 10 basis points in the long-term. Importantly, a one-percentage point increase in the real GDP growth rate decreases the margin by approximately 31 basis points in the long-term.

Table 3 reveals that the error correction term coefficient is around 0.40 for either version of the simple model and is statistically significant. The economic interpretation of this number is that the system reverts back to its long-term mean by 40 per cent in each quarter. Therefore it takes upwards of five quarters for short-term deviations from the long-term relationship to be unwound. This point is illustrated by examining the impulse response in Chart 6 which illustrates the adjustment path for the level of the interest margin after a temporary 1 per cent of GDP structural deterioration in the Commonwealth budget. The systems reverts to it's long-term value implying an increase in the interest margin of around 0.15 percentage points after approximately five quarters.

Chart 6: Impulse response of the interest margin to a 1 per cent of GDP temporary deterioration in the Commonwealth structural budget



The model passes all the usual diagnostic tests at the standard significance levels as outlined in Appendix 2.

The implications for the conduct of fiscal policy stemming from these results are quite straightforward. Increases in the interest margin arising from public policy, for example default/portfolio risk, may reduce the effectiveness of fiscal policy to influence aggregate demand, and may have significant impacts on long-term growth and employment prospects.

Moreover, it seems likely from these results that changes in the structural budget (for example, discretionary spending) drive short-term changes in the interest margin. This implies that significant discretionary fiscal policy movements may have large associated costs.

Finally, we would note that the magnitudes of the fiscal coefficients estimated previously are quite large given that Australia is a small open economy, although they are consistent with the international literature examined previously. As such we would not want to over-play the significance of the magnitudes presented here.

For completeness we note that there are some important provisos that must be placed on the numbers described previously.

The results may suffer from endogeneity problems given budget deficits, income and interest rates may be determined simultaneously.

There is no role of information and expectations in the simple model which is unorthodox given that we are attempting to explain the interest margin between two financial assets.

Conclusion

The paper considers the effectiveness of fiscal policy with respect to two key issues: potential private sector savings offsets; and the link between fiscal policy and interest rates in Australia. These two issues are important when considering the role of fiscal policy in Australia. Evidence of significant private sector savings offsets would indicate that fiscal policy is less effective as a demand management tool than it otherwise would be. Evidence of increasing interest rates in response to higher budget deficits would indicate that fiscal policy is less effective as a demand management tool and that there may be adverse consequences for long-term living standards.

Previous Australian studies have found little evidence of substantial private savings offsets. In contrast, our results indicate the existence of a substantial private savings offset. We investigate the relationship between private and public savings in two ways. First, we estimate a model that focuses on aggregate government savings. The results of this model suggest that there is a private savings offset of around one third in the short run. The results from this model do not support the existence of a long run relationship between private and government savings. Second, we estimate a model that disaggregates government savings into structural and cyclical components. The disaggregated model suggests a similar short-term private savings offset of around one third. However, the disaggregated model provides two additional insights. First, the disaggregated model suggests that the short run private savings offset is associated with changes in structural government savings, but that there is no statistically significant relationship between private savings and cyclical government savings. Second, the disaggregated model suggests that there is a long run private savings offset of around a third to changes in structural government saving.

There are two key implications of these results. First, the magnitude of any fiscal stimulus will need to be larger than it would otherwise need to be in the absence of savings offsets to have the same effect on aggregate demand. Second, the operation of automatic stabilisers (which are inherently changes in cyclical government saving) are likely to be relatively more effective than discretionary changes in policy (which are inherently changes in structural government saving). This last point needs to be qualified by the observation

that our results are based on aggregate data and therefore may not capture the demand effects of specific policies that may in practice have more potent demand effects.

The paper also considers the link between fiscal policy and interest rates in Australia. We estimate a model that seeks to explain variations in the 10-year bond real interest margin with the United States with reference to variables including the headline budget balance, and the level of net public debt. The results suggest that a deterioration of the headline balance of one per cent of GDP is associated with an increase in the margin of around 20 basis points in the short run and that an increase in public debt of one per cent of GDP is associated with an increase in the margin of around 15 basis points in the long run. Furthermore, when we re-estimate the model using the structural balance instead of the headline balance, we find that the effect of changes in the structural balance on the margin is even higher at around 30 basis points.

These results suggest that higher budget deficits (or lower surpluses) can have a significant effect on interest rates in Australia. The associated costs of higher interest rates should be borne in mind when setting fiscal policy. That said, the size of the interest rate changes suggested by these results appear very high for a small economy with access to international financial markets such as Australia. Accordingly, we believe that these results should be treated with some caution. These coefficients belong to an era of higher debt. We would be surprised if further debt reduction had as large an incremental effect in this era of low debt.

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Appendix 1: Data

Savings offsets

Ratio of net household plus corporate saving to GDP. Net household savings (ABS 5206-61); Net corporate savings calculated as the residual of net national savings minus net household savings and net general government savings; GDP (ABS 5206-56).

Household disposable income per capita. Nominal Household Disposable Income (ABS 5206-61); CPI (RBA Bulletin Table G.01); Population (ABS 3101-04).

Unemployment rate (ABS 6202-04).

Inflation rate (RBA Bulletin Table G.01).

Real interest rate. Interest Rate (10 year Treasury bond yield (RBA Bulletin Table F.02)); Inflation (RBA Bulletin Table G.01).

Net General Government Savings to GDP ratio (ABS 5206-64)

Net Commonwealth General Government Structural Savings to GDP ratio.

Net Commonwealth General Government Cyclical Saving to GDP ratio.

Net State and Local General Government Savings to GDP ratio (ABS 5206-66).

Share of Commonwealth indirect taxes to total Commonwealth General Government taxation revenue (RBA Bulletin Table E.01m).

Social assistance benefits to household disposable income ratio (ABS 5206-61).

Household debt to household disposable income ratio (RBA Bulletin Table D.02).

Private wealth to household disposable income ratio (ABS TRYM Database Table 33).

All components were seasonally adjusted using X11 in EVIEWS.

Interest margin

10-Year Bond (RBA Bulletin Table F.02d).

Expected Inflation — nominal 10-year bond yields and inflation indexed bond yields — (RBA Bulletin Table F.02d)

Federal General Government Headline Balance (RBA Bulletin Table E.01m) seasonally adjusted using the X11 divided by annualised level of GDP, (OECD Main Economic Indicators Table Aus.01).

Federal General Government Structural Balance obtained from Fiscal Policy Unit of the Australian Treasury — divided by annualised level of GDP, (OECD Main Economic Indicators Table Aus.01).

Net Public Sector Debt (ABS Table 5302.35) divided by annualised level of GDP, (OECD Main Economic Indicators Table Aus.01).

Inflation ABS (Table 6401.011). The CPI measure includes all groups excluding housing.

Real GDP Growth (OECD Main Economic Indicators Table Aus.01)

Current Account (Table 5302-04) and GDP (Table 5206-22) data were obtained from the ABS. Both series were seasonally adjusted.

Net Foreign Debt ABS (Table 5302.35), not seasonally adjusted, in current prices. Divided by annualised level of GDP, (OECD Main Economic Indicators Table Aus.01).

Appendix 2: Diagnostics

Savings offsets parsimonious models

		Simple model results Table 1		Simple model results Table 2	
			Probability		Probability
Normality:					
Jarque-Bera statistic	X^2-statistic	1.23	0.539	0.37	0.820
Serial correlation:					
Breusch-Godfrey serial (4 lags)	F-statistic	2.28	0.060	0.94	0.443
Correlation LM Test	X^2-statistic	9.35	0.053	4.39	0.355
AR Cond. heteroscedasticity:					
ARCH LM Test	F-statistic	1.47	0.229	1.91	0.117
	X^2-statistic	5.82	0.213	7.40	0.116
Heteroscedasticity:					
White heteroscedasticity test (cross terms)	F-statistic	3.65	0.000	2.61	0.024
	X^2-statistic	49.19	0.000	73.92	0.209
Stability:					
Chow breakpoint test (mid sample = 1991:1)	F-statistic	3.64	0.000	3.09	0.002
	L-R statistic	26.15	0.000	36.88	0.000
Specification error:					
Ramsay RESET test (with 4 fitted values)	F-statistics	1.54	0.200	0.11	0.980
	L-R statistic	6.84	0.144	0.52	0.971

Interest margin

Simple model results
(SB fiscal flow variable)
Table 3

			Probability
Normality:			
Jarque-Bera statistic	X^2-statistic	0.10	0.942
Serial Correlation:			
Breusch-Godfrey serial (4 lag terms)	F-statistic	0.71	0.588
Correlation LM Test	X^2-statistic	3.41	0.490
AR Cond. Heteroscedasticity:			
ARCH LM test (4 lag terms)	F-statistic	0.27	0.898
	X^2-statistic	1.16	0.885
Heteroscedasticity:			
White heteroscedasticity test	F-statistic	0.95	0.565
(cross terms)			
	X^2-statistic	35.01	0.467
Stability:			
Chow breakpoint test	F-statistic	0.96	0.477
(mid sample = 1993:1)			
	L-R statistic	9.93	0.269
Specification error:			
Ramsay RESET test	F-statistics	1.10	0.366
(with 4 fitted values)			
	L-R statistic	5.39	0.250

A survey of international fiscal policy issues — current drivers and future challenges

Over the past decade the fiscal positions of many of Australia's major trading partners have changed markedly. This article examines recent fiscal developments in selected economies and the future challenges facing policymakers.

Introduction

Policy makers in many countries responded to the synchronised global downturn in 2001 by relaxing their fiscal stance. In Europe and the US, this followed a period of strong growth and fiscal consolidation. In Japan and emerging East Asia fiscal policy had already been loosened in response to previous downturns.

While a short-run loosening of fiscal policy in response to the downturn may have been appropriate, a period of fiscal consolidation is likely to be necessary in the coming years as many countries face medium-to-long term fiscal challenges.

For developed countries, ageing populations and medical technology are likely to increase pressures for additional government pension and health expenditures. The *Intergenerational Report (2002-03 Budget Paper No. 5)* outlined the longer-term fiscal pressures that Australia could face. The fiscal challenges facing many of the advanced economies are much greater than those facing Australia, particularly for Japan and the European economies.

The countries of emerging East Asia appear to have less pressing demographic constraints, but face other pressures. Public debt ratios have increased significantly in recent years and dealing with unresolved financial sector problems may involve further large costs for governments in the future.

Current and prospective fiscal positions in other countries are relevant to Australia because of our trade and financial linkages with the rest of the world. If other countries fail to address their fiscal challenges Australia may be adversely affected through resultant impacts on world economic growth and

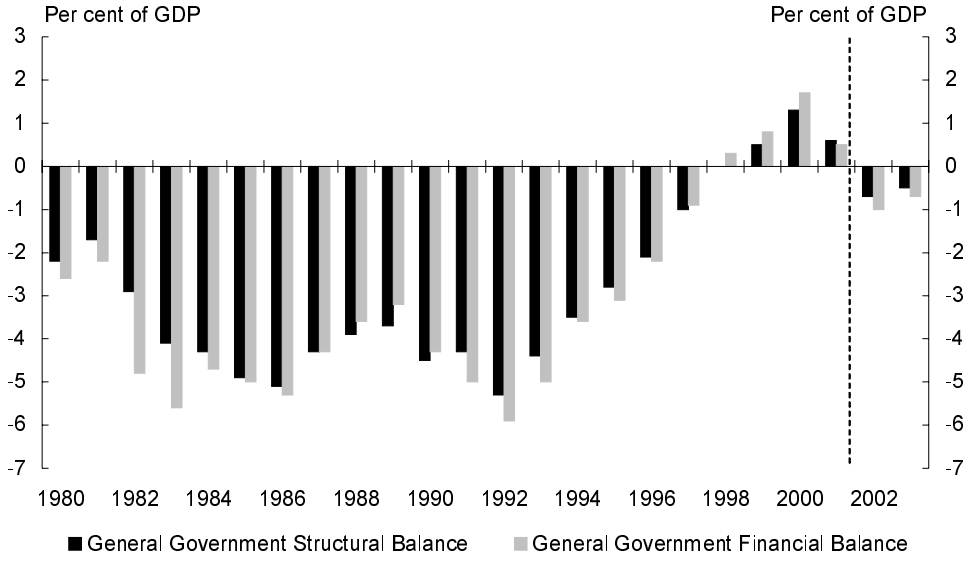
capital markets, although we can advance our prospects in relative terms by maintaining a sound fiscal position ourselves.

Recent fiscal policy developments

The United States and Europe

The global economic slowdown in 2001 was associated with a decline in fiscal balances in the United States and the European Union. This brought to an end a period of substantial fiscal consolidation during the long expansion of the 1990s (Charts 1 and 2).

Chart 1: United States financial and structural balances



Source: OECD Economic Outlook 71.

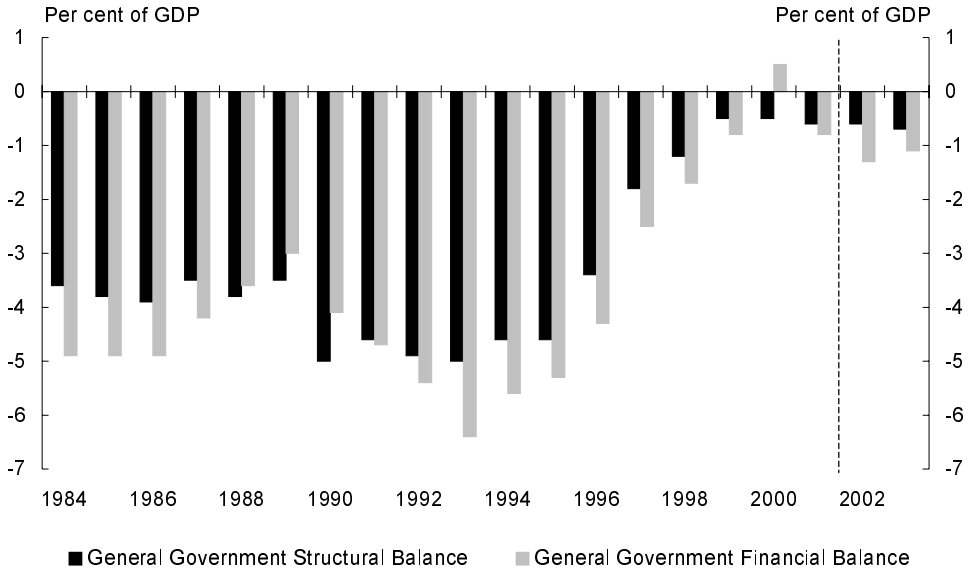
The ***United States*** had moved back into fiscal surplus from 1998 after almost 30 years of budget deficits. This was due to a sustained period of exceptional economic growth, low interest rates, booming equity prices and a post-Cold War reduction in defence spending, which had fallen by around 3 per cent of GDP since the late 1980s.

Discretionary policy changes and the effects of the recession mean that the US is now expected to record deficits in 2002 and 2003. OECD estimates suggest

that most of this fiscal easing has been structural: ie it is due to ongoing factors rather than a temporary effect of the downturn in the economic cycle.[1] Key factors have been the large income tax cuts legislated in June 2001 and the increase in defence and security-related spending following September 11.

The policy easing also has important longer-term effects. The Congressional Budget Office (CBO) estimates that the fiscal cost of discretionary policy changes enacted since January 2001 rises from 1.4 per cent of GDP in 2002 to 2.2 per cent of GDP in 2010. This reflects the rising cost of income tax cuts that are phased in over this period.[2] The CBO projects a return to steadily rising surpluses from 2004, but these are subject to uncertainties that increase further out in the projection period.

Chart 2: European Union financial and structural balances



Source: OECD Economic Outlook 71.

1 *OECD Economic Outlook No. 71, June 2002.* Structural balance estimates by the IMF *(World Economic Outlook, April 2002)* are similar, except where noted otherwise.

2 *The Budget and Economic Outlook: Fiscal Years 2003-2012* (January 2002) and CBO testimony on the President's budget for 2003 (6 March 2002). A sunset clause in the legislation formally rescinds the tax cuts in 2010, as a device to limit the total 10-year cost, but political imperatives may ensure they are extended.

The ***European Union*** (EU) also returned briefly to surplus in 2000, although the OECD estimates that this was due to cyclical factors. The better performers have been the United Kingdom and many of the smaller economies. Germany, France and Italy are estimated to have remained in significant structural deficit. For the bulk of EU members, fiscal consolidation has been driven by the requirements for joining the European Monetary Union (EMU).[3] The Maastricht criteria required EMU members to reduce deficits below 3 per cent of GDP, while the later Stability and Growth Pact committed them to achieving near balance or surplus by 2004.

The OECD estimates suggest that the apparent fiscal easing in the EU in 2001 has been largely cyclical. Of the larger EU economies, only Germany and the UK appear to have had a significant structural easing in 2001, although in some economies there had been some earlier structural easing.

The recent economic slowdown highlighted some tensions in the EMU requirements. With monetary policy ceded to the European Central Bank, fiscal policy is the key instrument for national governments to manage demand to fit their own circumstances. Even a moderate economic slowdown has seen Germany and Portugal threaten to breach the 3 per cent deficit ceiling, and balance by 2004 may be unreachable for some countries. Managing the trade-off between short-term stabilisation needs and the long-term need to ensure fiscal sustainability will be a key challenge for the EMU, especially as structural rigidities continue to impede the Euro area's ability to adjust to cyclical pressures.

OECD estimates indicate that this downturn has been associated with relatively moderate structural deficits in the US and the EU, at around ½ to ¾ of a percentage point of GDP compared to peaks of over 5 per cent of GDP in the early 1990s. The IMF estimates a somewhat larger structural deficit in the US of just over 1 per cent of GDP.

Net general government debt to GDP ratios have fallen in recent years in both the US and the EU (see Chart 3), and have not increased in the current downturn, reflecting a combination of the small size of recent deficits and the relatively mild impact on activity. The net debt picture within Europe varies considerably, with the most progress on debt reduction occurring in the UK and the Scandinavian economies, and significantly less progress in Italy, Germany and France.

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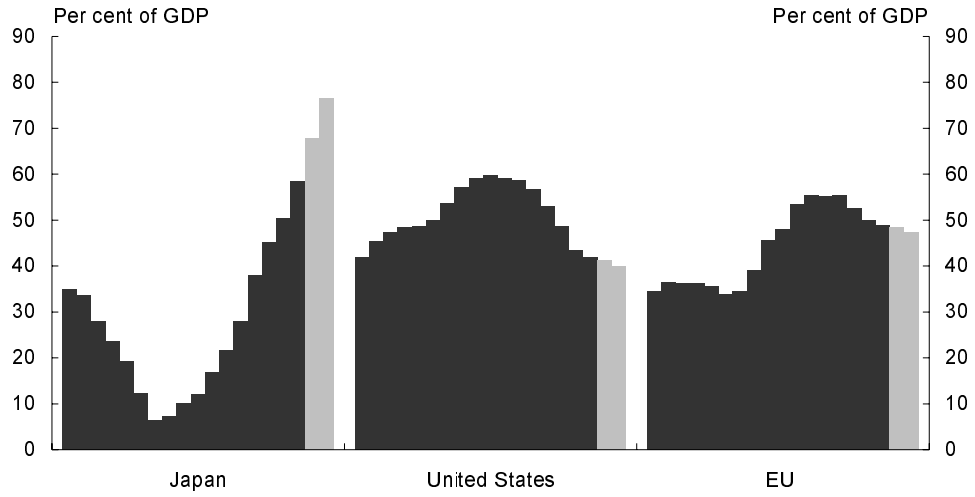
3 The EMU comprises 12 of the 15 EU members. The United Kingdom, Sweden and Denmark remain outside the EMU for the present.

The current fiscal position, however, must be viewed in the context of the longer-term fiscal challenges discussed later in the paper. These challenges are particularly pressing for some of the major EU economies that have made least progress in reducing government debt ratios — while starting from a relatively weaker fiscal position than most other countries — as they now confront large and more imminent fiscal pressures from population ageing.

Chart 3: US, EU and Japan net general government debt 1985-2003



Source: OECD Economic Outlook 71 (EU excluding Ireland and Luxembourg).

East Asia

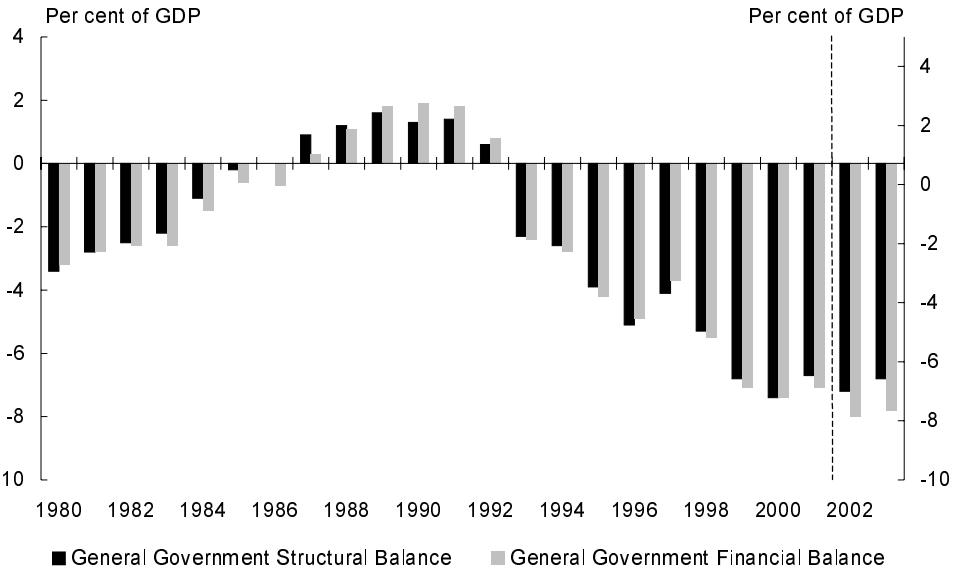
The US and EU experience over the past decade contrasts with that in East Asia, where a number of economies had strong track records of near-balance or surplus budgets until the latter part of the 1990s.

During the last decade, ***Japan*** has used a succession of fiscal stimulus packages to try to spend its way out of a prolonged economic stagnation.

This, and the poor performance of the economy, have led to increasingly large fiscal deficits as a share of GDP (Chart 4). The OECD estimates that current deficits are largely structural, as does the IMF.[4]

While it is widely accepted that Japan's economic growth has been constrained by deep-seated structural problems, it is an open question whether past growth might have been even lower without fiscal expansion. The Hashimoto Government's fiscal consolidation measures in 1997 were followed by recession. That said, it is likely that the effectiveness of fiscal policy has eroded since then. The need for future fiscal repair in Japan has become widely recognised, raising the likelihood that forward-looking households increase their own saving to meet future fiscal demands. Moreover, the perceived failure of past fiscal interventions suggests that confidence effects from new initiatives are likely to be very small.

Chart 4: Japan financial and structural balances



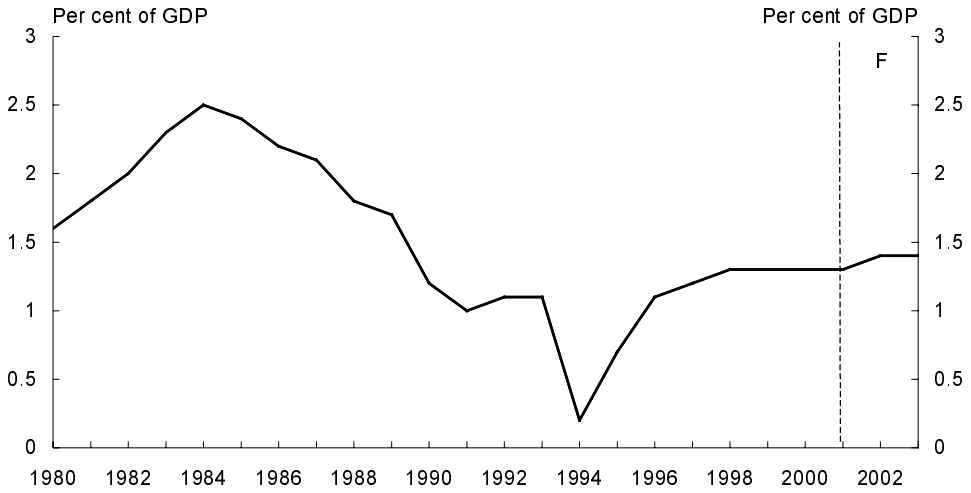
Source: OECD Economic Outlook 71.

4 This may, to some degree, be a product of OECD and IMF structural balance estimation techniques, which are based on estimates of how far the economy is away from its long-term trend. A long period of stagnant growth will pull down the trend estimate, and hence the estimated output gap, even though the economy may have substantial spare capacity.

A combination of fiscal easing and little or no growth in nominal GDP has seen the government debt to GDP ratio in Japan rise sharply in recent years (see Chart 3). Net debt is currently around 60 per cent of GDP but when social security assets are excluded it exceeds 110 per cent of GDP. Prime Minister Koizumi has set reform of government finances as one of his key goals and has limited new bond issuances to 30 trillion yen (6 per cent of current GDP) per year, but on all plausible growth paths this would still entail further increases in the debt / GDP ratio.

Despite ballooning debt levels, servicing costs have remained stable over the last few years (see Chart 5). Debt is almost entirely yen-denominated and domestically held. Japan has a large pool of private savings, and Japanese residents have been willing to hold increased government debt without demanding higher interest rates. Using the official CPI, real interest rates on Japanese long-term bonds remain slightly below US rates. The Japanese government has also been able to roll over debt at lower interest rates: the weighted average interest rate on outstanding government debt is 2¾ per cent but new 10-year bonds now pay less than 1½ per cent. Nonetheless, if present trends continue, one would expect to see risk premiums on government bond rates increase at some point (everything else unchanged). This would raise debt interest costs as a share of GDP.

Chart 5: Japan net debt interest payments

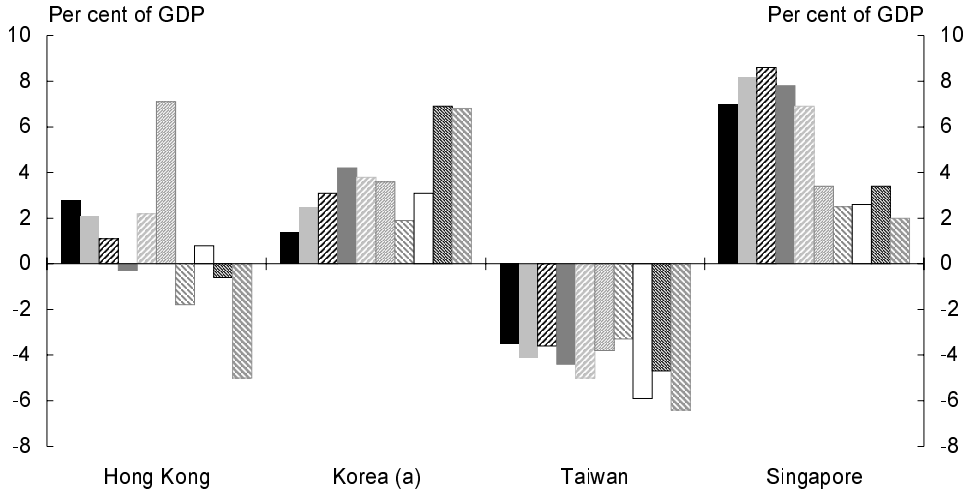


Source: OECD Economic Outlook 71.

Up until 1997, most of the economies in ***emerging East Asia*** had run surplus budgets for a number of years. These economies relaxed their fiscal policy stance following the Asian crisis of 1997-98. The global slowdown in 2001 prompted further fiscal easing (See Charts 6 and 7).[5] These easings reflected automatic stabiliser effects, fiscal stimulus packages and measures to recapitalise the financial sector in some countries.

As a result of an easier fiscal stance and the assumption of financial sector liabilities, public debt to GDP ratios in many East Asian countries have risen sharply over the last five years (see Chart 8). A large proportion of this is external debt, mainly denominated in foreign currencies. The situation varies considerably across the region, with governments in Singapore, Hong Kong and Korea maintaining strong net financial asset positions. But a key medium-term challenge for policy makers in some economies — particularly Indonesia, the Philippines and, to a lesser extent, Thailand — is to reduce vulnerability to external shocks through reductions in debt ratios.

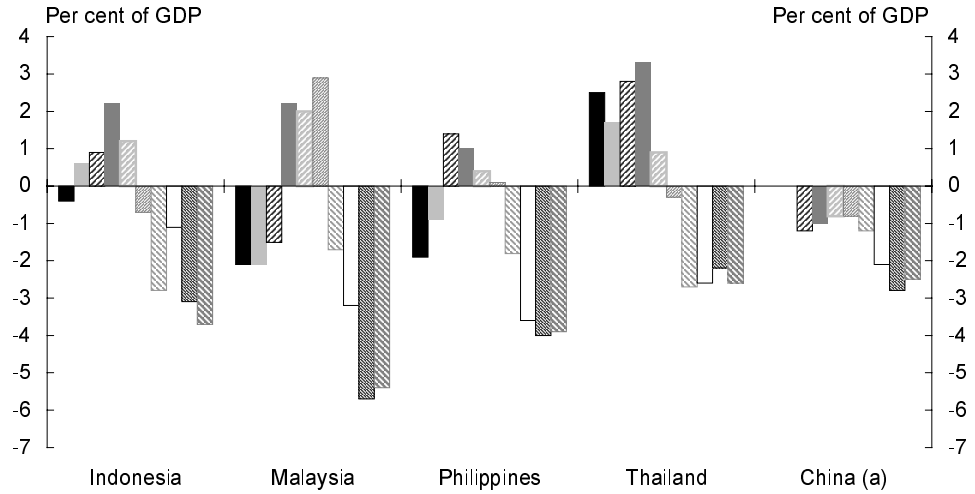
Chart 6: Newly industrialised economies fiscal balance, 1992-2001



Source: Economist Intelligence Unit, OECD (2002).
(a) Data for Korea is for general government only.

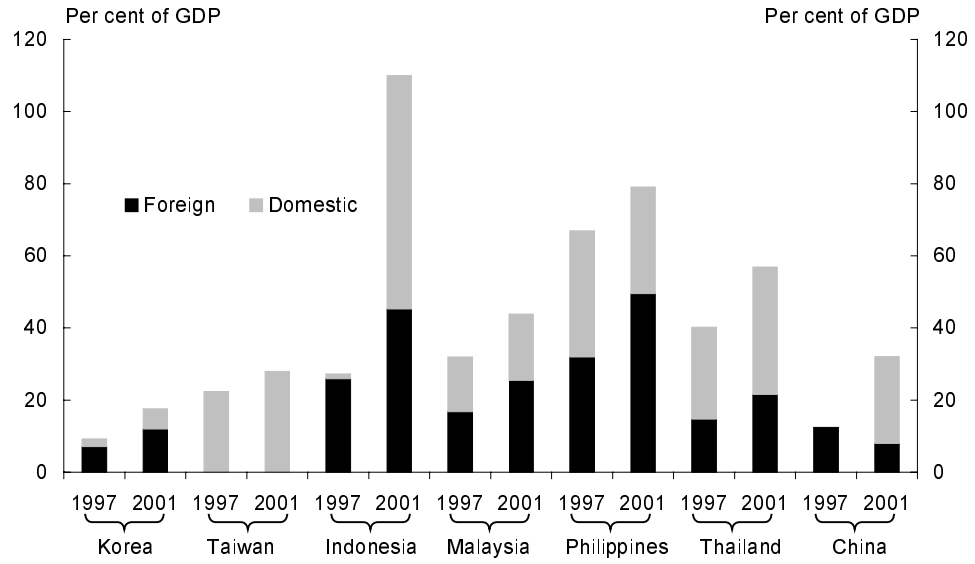
5 Data for the general government sector, which is the standard fiscal measure for OECD economies, are not available for non-OECD Asian economies. In making cross-country comparisons it should be noted that public sector figures include government business enterprises, which are not normally considered in the context of fiscal policy. In addition, public debt data for Asian economies is generally only available on a gross basis, which does not take account of offsetting holdings of financial assets.

Chart 7: Other regional economies fiscal balance, 1992-2001[(a)]



Source: Economist Intelligence Unit.
(a) Data for China is from 1994 onwards.

Chart 8: Emerging East Asia gross public debt[(a)]



Source: CEIC, www.economist.com, ADB (2002), OECD, Lehmann Brothers (2001).
(a) Hong Kong and Singapore have negative public debt from large accumulated surpluses; historical data for the Chinese gross public debt is unavailable; and Korean data is for general government only.

Medium-to-long term fiscal pressures

As noted earlier, current fiscal balance and government debt positions around the world need to be seen in the light of fiscal pressures likely to arise in the medium-to-long term.

This section focuses on two readily identifiable sources of fiscal pressure: the long-term impact of population ageing (in conjunction with rising health care costs) and the contingent liabilities associated with unresolved financial sector problems in East Asia. While the future size of these pressures is uncertain, the underlying factors can be identified. Other sources of fiscal pressure will depend on future developments and changes in voter preferences that are more difficult to clearly identify at this stage — for instance, pressures for higher defence / security-related spending or environmental spending.

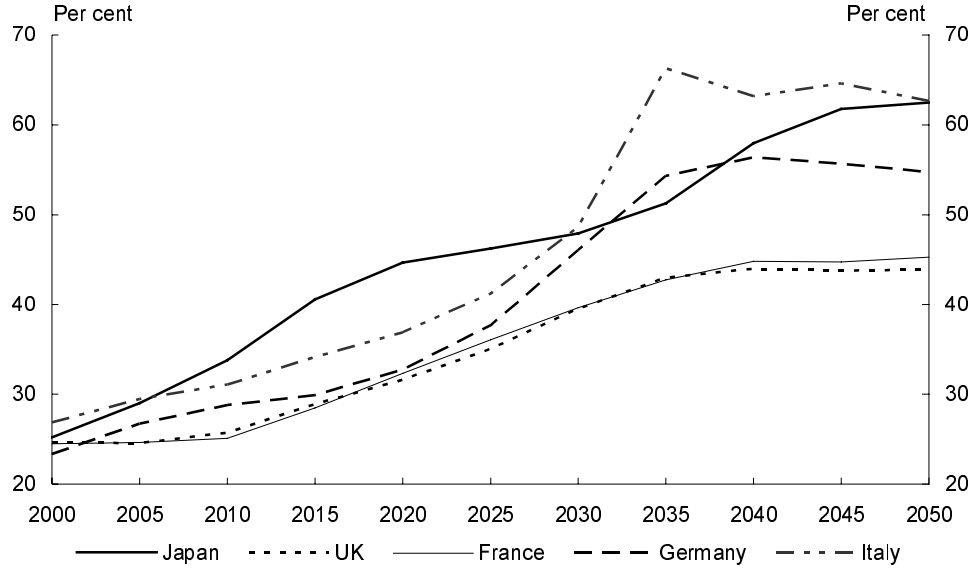
Fiscal pressures may also arise from international tax competition. In the East Asian region, for instance, perceptions of China's rise and its relative attractiveness as an investment destination may create pressure for lower tax rates among ASEAN members seeking foreign direct investment.

Demographic pressures

A major source of fiscal pressure in the longer term, especially in developed economies, will arise from population ageing as a consequence of long-term factors including declining fertility rates, the ageing of the baby-boom generation, and longer life expectancies. While all economies are expected to experience population ageing to some degree, there are substantial differences between groups of economies. Charts 9 to 11 show World Bank projections for aged dependency ratios — the ratios of retirees (aged 65 and over) to workers (aged 15 to 64) — out to 2050.

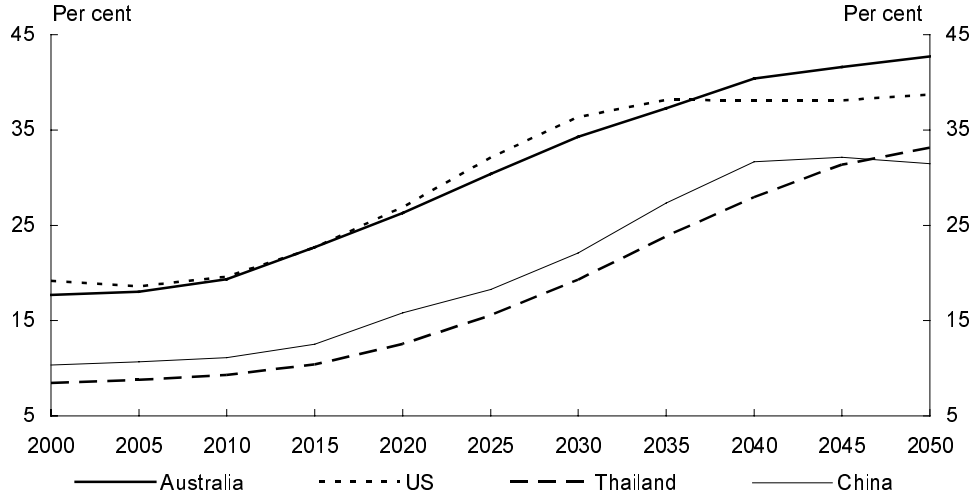
Japan, Italy and Germany appear to face the largest challenges from increasing aged dependency ratios. Not only are the projected increases larger in these countries, but they are already starting to occur. Ratios in other economies do not increase significantly until the next decade. Ratios for emerging East Asian economies are projected to remain at lower *levels* than the developed economies, although the *increase* in the ratio for most is similar to that for the US, the UK and France.

Chart 9: Ratio of retirees to workers (high)



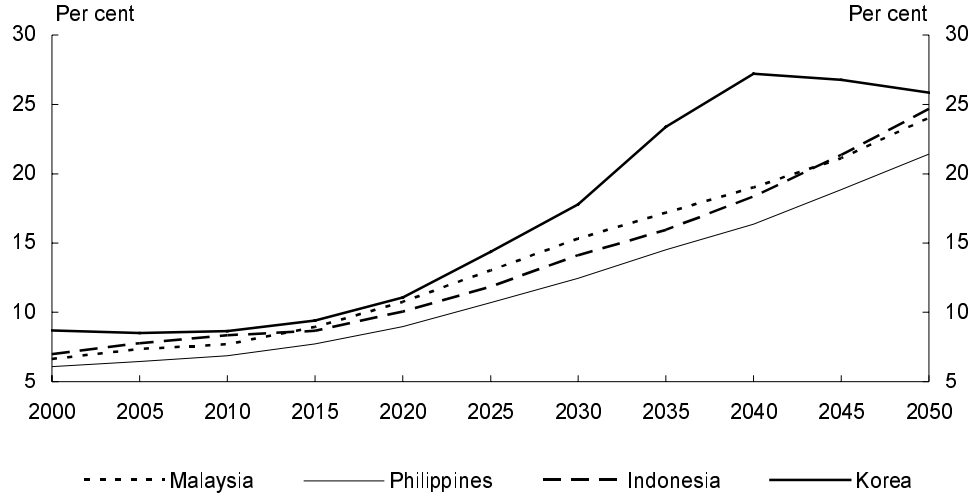
Source: World Bank.

Chart 10: Ratio of retirees to workers (medium)



Source: World Bank.

Chart 11: Ratio of retirees to workers (low)



Source: World Bank.

How these projected demographic trends might translate into fiscal pressures will depend on a range of factors, including the structure of spending programmes, future productivity growth and changes in labour force participation.

The OECD Working Paper *'Fiscal Implications of Ageing: Projections of Age-Related Spending'* compiles projections by OECD economies of age-related spending to 2050.[6] Age-related spending for the average country is projected to rise by around 6 to 7 percentage points of GDP between 2000 and 2050. Part of this fiscal pressure is a result of cost pressures from advances in medical technologies, rather than ageing *per se*. All else equal, the projected spending increase would increase the net debt ratio in the average country by almost 100 per cent of GDP by 2050 if no offsetting action were taken.

These projections could be on the low side, as some of the European economies did not provide projections for categories other than aged pensions. Some faster ageing economies that have already taken steps to make their pension systems sustainable have relatively moderate projected growth in spending. Japan has a projected increase in total age-related spending of 3 per cent of GDP, while Italy projects a peak increase in aged pension spending of

6 *Fiscal Implications of Ageing: Projections of Age-Related Spending*, Economics Department Working Paper No. 305. Age-related spending includes aged pensions, 'early retirement' benefits, health and aged care, education and child / family benefits.

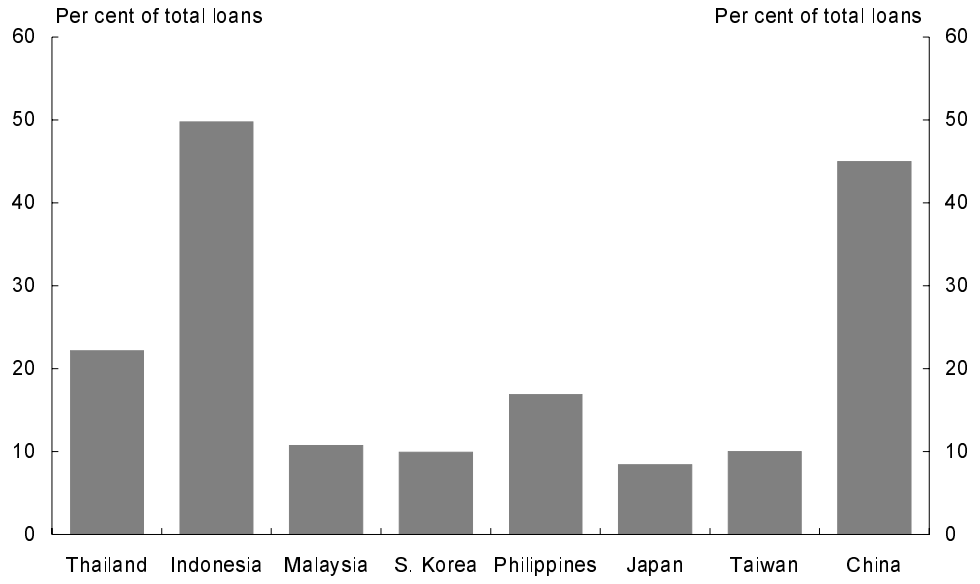
1.7 per cent of GDP. On the other hand, Korea projects an increase in total age-related spending of more than 8 per cent of GDP.

In 'current policy' terms, the direct fiscal implications of population ageing may be less in the less advanced East Asian economies than in the OECD economies. These economies typically have limited government-provided safety nets, relying instead on high private savings and family networks to support those unable to work. This approach has been assisted by relatively young populations and a long period of strong economic growth up until the 1997 crisis. But demands on governments may increase as countries develop, particularly as populations age and if business cycle fluctuations become more prevalent. The Asian crisis experience has already prompted an increased focus on social safety nets in the region.

Financial sector problems in East Asia

In the medium term, resolution of remaining problems in the financial sector represents a potentially large area of future increased liabilities for East Asian economies (see Chart 12). The Japanese government, for example, has set aside 15 trillion yen (3 per cent of GDP) to be injected into the banks if the financial system is faced with a systemic crisis. The emergence of fresh bad loans may mean that greater sums of public money will be required to restore the financial system to health. Life insurance companies in Japan also face potential large losses. As the chart suggests, potential problems may be even larger in some other East Asian economies.

Chart 12: Non-performing loans (including AMCs[a])



Source: ARIC, Philippines Central Bank, IMF
(a) Asset management corporations set up to manage the work-out and disposal of non-performing loans.

Conclusions

Fiscal challenges for other economies

Most of the economies surveyed in the article face important medium-to-long term fiscal challenges, although the nature and size of the challenges varies. Addressing these challenges may require not only fiscal consolidation *per se*, but also structural reforms to increase productivity growth, reduce structural unemployment, promote labour force participation and private provision for retirement, and improve the efficiency of government spending programmes.

The greatest and most pressing challenges arise in ***Japan***. Japanese policy makers face a particularly difficult combination of high and rising government debt, a rapidly ageing population and large unresolved problems in the financial sector. Critically, this is occurring against the background of a decade-long economic stagnation that shows no clear sign of ending. Dealing with the fiscal challenges will be exceedingly difficult unless Japan is able to address its structural economic problems and restart vigorous economic growth.

Many ***European economies*** also face testing longer-term fiscal challenges from future population ageing. Italy already has very high net government debt of over 90 per cent of GDP. Others, such as Germany and France, have more moderate net debt levels (just over 40 per cent of GDP), but made little progress in reducing debt ratios during the last expansion and still have significant structural deficits. Europe's challenge is also made more difficult by structural inefficiencies that limit its future growth potential.

The ***United States*** is in a better position than most of the other major advanced economies, although its net debt ratio is also above 40 per cent. Prospective population ageing is more moderate than in Japan and Europe. The US made more fiscal progress during the 1990s, and its more efficient economy gives it more scope to grow its way out of problems.

That said, there has been a large ongoing structural loosening of US fiscal policy over the past year. Some factors that assisted fiscal consolidation in the 1990s, such as the equity price boom and falling defence spending, are unlikely to be present in the coming decade. A key challenge for the US in these circumstances will be to maintain a political consensus in favour of fiscal discipline, and avoid a repetition of the fiscal problems that developed in the 1980s.

Emerging East Asian economies also face a medium-term fiscal consolidation task to address the deterioration in their fiscal positions over the past five years. Government debt burdens may be further increased by future costs associated with unresolved financial sector problems. The size of the task varies across the region, with less advanced economies such as Indonesia and the Philippines facing the biggest challenges.

Longer-term demographic pressures appear to be less of a challenge for most of these economies, although demands for age-related government spending may rise over time as they further develop. Emerging East Asia has a credible fiscal record and most economies have high potential growth rates, supported by the prospect of continuing growth in their working age populations. If policies conducive to stable growth are pursued then the challenge should be manageable.

Potential implications for Australia

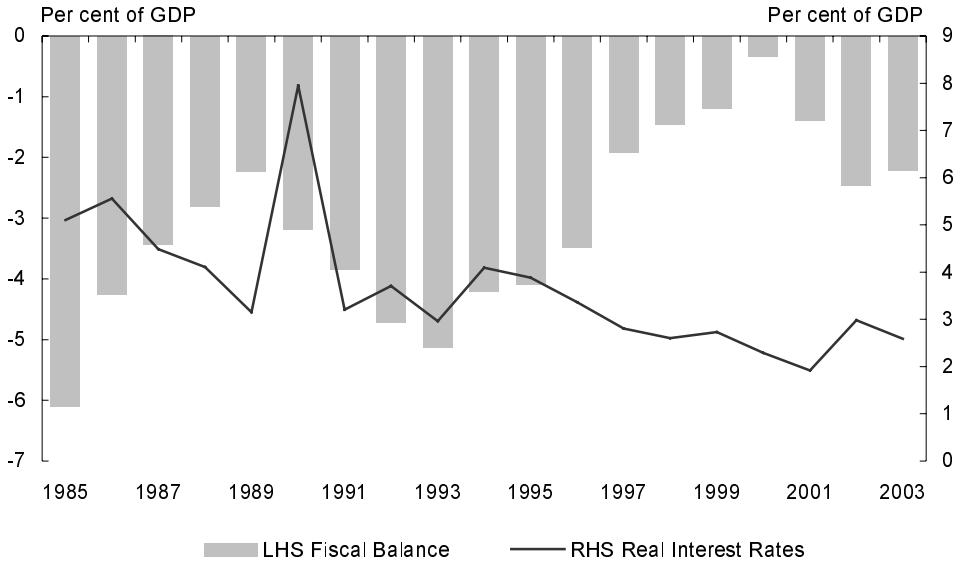
The consequential risk for Australia is that world economic growth will be adversely affected if there is a substantial worldwide increase in government debt ratios over time. Fiscal easing during the recent economic downturns may

have helped support growth in our trading partners, but failure to consolidate as the cycle picks up would adversely affect growth in the medium-to-long term.

Rising government debt ratios would likely mean higher real interest rates. Recent Treasury research (see separate article in this edition of the Roundup) indicates that the Australia-US real interest rate differential is positively related to both the level of government debt in Australia and the budget balance. Risk premiums would increase for those countries with greater debt accumulation, but world interest rates would also tend to rise, barring an offsetting increase in private saving. External growth may also be affected by spending pressures putting upward pressure on tax burdens. High debt ratios could also limit scope to continue to use fiscal policy to moderate economic downturns. Unsustainable debt levels may ultimately help trigger an economic crisis if investors lose confidence in a country's ability to service its debt.

In a highly integrated global financial market, fiscal pressures on global interest rates would ultimately affect Australian interest rates, even if our risk premium remains low. In contrast, fiscal consolidation in most advanced economies has been among the factors putting downward pressure on world interest rates over the past decade (see Chart 13).

Chart 13: G7 fiscal balances and real interest rates[(a)]



Source: OECD Economic Outlook 71.
(a) GDP(PPP)-weighted average of 10 year bond yields deflated by CPI.

Australia's international linkages mean that it cannot entirely escape being affected if fiscal problems emerge in the rest of the world. Nonetheless, it will enhance its relative growth prospects and attractiveness to international investors if it is better able than other economies to limit government debt and spending growth. This would help maintain a low risk premium on interest rates and a competitive tax burden.

Given the potential for adverse impacts on Australia, it is in our interests to participate in constructive dialogue on medium-to-long term fiscal issues in the regional and multilateral forums to which we belong. Irrespective of what other countries do, Australia's best response is to maintain a sound fiscal position itself. As noted in the recent *Intergenerational Report*, the fact that Australia currently has very low government debt, and faces relatively moderate long-term fiscal pressure compared with other OECD countries, indicates that it is well placed to achieve this. Nevertheless, the fiscal pressures projected in the Report are significant, and early action to address these pressures will be important.

Key themes from the Treasury Business Liaison Program[1] May/June 2002

The following article is a summary of findings from the Treasury Business Liaison Program conducted in May and June 2002. Treasury greatly appreciates the commitment of time and effort made by the Australian businesses and industry associations that participate in this program.

Background

Treasury has conducted a formal Business Liaison Program with the business community for nearly a decade, with the information obtained playing an important role in Treasury's regular assessment of the Australian economy and development of economic forecasts.

Treasury conducts business liaison rounds on a regular basis, with each round typically involving between 80 and 100 contacts (approximately 300 on an annual basis) with individual firms and industry groups over a four to six week period. The contact is predominantly via face-to-face meetings and is supplemented by telephone contacts.

Business liaison meetings typically cover developments in a range of key economic variables: sales, production, stocks, investment, employment, costs, prices, wages, exports, imports and profitability. The focus of meetings is on recent trends, the short-term outlook and gaining an understanding of the factors driving these outcomes.

Although the principal focus of business liaison is the economic outlook, it also provides an opportunity to seek feedback from business on broader policy issues. The key policy comments that emerge from the round are drawn to the attention of the Treasurer and relevant officers within Treasury for their consideration.

1 A detailed explanation of the Treasury Business Liaison Program is provided in the Treasury Economic Roundup Spring 2001.

Summary

The May/June 2002 business liaison round comprised a total of approximately 90 interviews with contacts in Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra. Most industry sectors were covered during the business liaison round, with particular emphasis on the mining, agriculture, residential construction, insurance and tourism industries.

The results from the May/June business liaison round indicated that, in broad terms, domestic activity remained quite robust in the June quarter 2002, consistent with ABS statistics and relevant business surveys to date, with business and consumer confidence remaining at healthy levels. Contrary to the overall outlook, the rural economy continues to face many challenges, especially in New South Wales and Queensland.

Looking over the remainder of 2002, indications from business liaison are that the underlying domestic economy is likely to remain quite strong, with healthy consumer demand being partly offset by a modest weakening in the dwelling sector. The employment outlook and hiring intentions were reported as being sound, while inflation and wage pressures appear to remain subdued. That said, these discussions were held prior to the recent increases in uncertainty surrounding the global outlook.

A summary of business conditions described by liaison contacts is provided for the information of readers, noting that it is based on a sample of 90 observations. A full evaluation of the economic outlook necessarily draws on other information as well as business liaison findings.

Sales and production

Strong **retail sales** in the June quarter were attributed to solid consumer confidence and low interest rates, with food and beverages and general merchandise sales particularly solid.

- There appeared to be no discernible difference in the performance of retail trade on a state by state basis.

Motor vehicle sales and production continued to perform strongly, with manufacturers and car dealers reporting a high level of sales so far in 2002. Although the industry's earlier production estimates for 2002 were revised down significantly following the events of September 11, strong sales to date have resulted in a large upward revision to these estimates. Going forward, the

car industry notes that there is a considerable degree of pent up demand in the market, especially given the current Australian fleet age.

- The release of new and updated models is expected to provide a stimulus for the industry in 2003. Additionally, the clearance of outdated models has accounted for some of the recent strength in passenger vehicle sales.

- The motor vehicle industry and many component manufacturers noted that while overall production levels had been maintained for the year, the adverse impact of industrial disputes on supply chains is a major concern to the industry.

Manufacturing companies exposed to the building construction, mining and automobile industries continue to report strong activity. However, those manufacturers with significant export exposure or competition from imported items were concerned about the appreciation of the Australian dollar in the June quarter. The impact of the higher exchange rate on manufacturing production has so far only been noticed in current margins and is yet to affect actual sales or production. Nevertheless, some contacts noted that a sustained higher exchange rate could impact on sales in 2003.

- Currency hedging appears to be used less aggressively by many manufacturers and exporters following the losses made by many companies in the 1990s.

- Residential building supply manufacturers noted that the June quarter of 2002 was very strong, although some commented that they were involved in the final stages of house construction and hence it would be some time yet before they would be affected by any downturn in the housing sector.

Construction

Contacts in the construction industry indicated that the strength of the **residential** sector in the March quarter 2002 continued, in part, into the June quarter, which was largely attributed to the extension of the First Home Owners Scheme and low interest rates. This pattern was also reflected in the manufacture of building supplies, with sales recovering strongly since September 2001.

The outlook for the next six months was reported to remain quite positive, although there are signs that the new residential construction market is slowing. This view was shared by housing industry associations, agents,

developers and material suppliers. The decline in new residential construction is expected to be marked in 2003, especially in New South Wales, although the fall is not expected to be as sharp as the decline in housing activity in the second half of 2000. The expected decline in 2003 is expected to be ameliorated somewhat by a further increase in spending on alterations and additions, continuing an upward trend already evident.

- Industry contacts noted that the downturn in activity is likely to affect apartments relatively more than houses given the degree of oversupply in Sydney and Melbourne. This is reflected in higher vacancy rates, with inner city apartment rents facing downward pressure.

- Slowing in residential construction is expected across most states, with the notable exception of Queensland. Contacts suggested that the strength in the Queensland market is due in part to interstate migration and changing demographics, resulting in growth in inner city and coastal living, especially around the Gold Coast and Sunshine Coast.

Prospects for the **non-residential** sector were reported by contacts to be quite sound and are expected to improve over the remainder of the year. In particular, engineering construction activity continues to rise, especially within mining and oil/gas related sectors. Transport development also continues to dominate, with rail, road and port authorities experiencing a notable increase in activity, in both the public and private sectors.

Many suppliers of construction materials expect that softness in the residential market will be countered by an increase in non-residential construction, especially with transport and infrastructure development.

Current activity in commercial and office space was reported to be flat, with some limited indication that this might improve over the next 2 to 4 years, although hampered by the current high levels of office vacancies.

- Health, including hospitals, continues to be an area of strong growth and solid potential. However, only moderate activity is expected in construction of retail and shopping centres.

Service industries

A continuing improvement in the **tourism** industry was noted by many contacts, although some tourism operators and related industries are still feeling the effects of the collapse of Ansett and the events of September 11,

especially from key markets such as the United States. Additionally, the global economic downturn has had a considerable impact on both arrivals of overseas visitors and their spending habits, with many tourism operators competing more aggressively for a share of the domestic market.

- Up market hotels, which tend to attract a disproportionately higher US clientele, have been hard hit and are still experiencing high vacancy rates. On the other hand, more moderately priced hotels are faring well, with a high level of domestic business and a reported shift in corporate travel toward lower cost accommodation.

- A number of factors were cited that are expected to assist the industry going forward, including the likely economic recovery in Australia's key overseas markets, the expansion of fleets and routes by the major Australian airlines, and Australia's reputation as a safe destination.

Communication and information technology services are, in parts, still coming to terms with the collapse of the technology investment bubble and the very strong mobile phone market penetration of the 1990s. Investment in telecommunication infrastructure has fallen significantly in the past year and is expected to remain subdued over the medium term. Contacts suggested that any impetus for further investment will likely be the result of a take up in new technology (for example 3G Spectrum), although there is considerable uncertainty surrounding the current demand for such technology.

- Mobile phone sales are expected to weaken from their previous highs, although margins continue to improve in this sector.

An unprecedented series of events in the domestic **insurance** industry, with the collapse of HIH and the September 11 attacks, have resulted in significant increases in premiums across many classes of businesses. Commercial insurance classes, such as public liability, professional indemnity and builder's warranty insurance, have seen significant increases. Further premium rises are expected, although less pronounced than that of the past six months. Contacts indicated that consumer insurance classes, such as home and contents and car insurance, are likely to have premium rises of around 7 to 10 per cent over the coming year.

- Although big business (the majority of contacts) noted that higher insurance costs had only a minor impact on their overall costs, this appears not to be the case for small companies and community organisations.

- A greater degree of self-underwriting or the carrying of a higher excess have enabled firms to reduce the impact of higher insurance premiums.

Agriculture and mining

Grain producers (with the exception of Queensland) have enjoyed favourable prices and higher production over the past couple of years, which has led to a significant rise in farm income. However, dry conditions throughout much of Queensland and New South Wales are expected to have an adverse impact on broad acre crops in 2002-03. Water allocation policies were therefore noted to be a very important issue for farmers.

A continuation of low returns for sugar cane growers is expected in 2002-03 with depressed world sugar prices and an uncertain harvest in prospect. Dry conditions in central and southern parts of Queensland and the impact of orange rust is likely to see lower than expected production next year. Also, competition from low cost producers (for example Brazil) and protectionist policies in the United States will contribute towards lower revenue in the near term.

- The cotton industry is also expecting lower returns next year, with a significant decline in area planted to irrigated cotton and depressed world prices.

The current conditions and outlook for many mining companies are reported to be quite positive in the short term. Production of bulk commodities (coal and iron ore) is high, and in some cases is running at record levels, with exports remaining strong. A gradual pick up in world industrial production is expected to provide a boost to both the production and prices of many base metals, although concerns regarding coal and iron ore prices remain. Aluminium production volumes are expected to remain at their current levels, with the outlook for alumina being reported as quite strong.

- Contacts noted that capital expenditure in the mining and oil / gas industries is expected to rise significantly in 2002-03.

Capital expenditure

The prevailing sentiment on **business investment** was positive.

The mining and petroleum industry noted that there were some significant projects proceeding in the period ahead, with the general outlook for mining investment appearing quite solid.

- Prospects for agricultural investment were reported as being strong this year, reflecting last year's relatively high incomes and the placement of forward orders. Over the medium term, the outlook for agricultural investment appears sound, although investment plans in the short term are likely to be sensitive to developments in seasonal conditions.

Transport infrastructure plans were reported as being on track. Large scale private and public infrastructure plans for roads, ports and rail will provide a momentum for business investment over the next couple of years.

- Reported capital expenditure plans of airlines seems likely to significantly contribute to business investment in 2002-03.

However, contrary to the strong reports in mining and transport, contacts in the manufacturing sector suggested that investment would focus on increasing efficiency rather than increasing capacity.

Employment and wages

Employment demand has been recovering since the December quarter 2001 and is expected to remain reasonably positive in the near term. Contacts indicated that the outlook for employment in the residential construction and related industries remains strong. Abstracting from these sectors, employment intentions were reported to be sound overall. While hiring intentions are modest, no large redundancies were expected by the majority of contacts. Nevertheless, employment in the information and communication technology industries remains subdued, despite the large rationalisation that has already occurred in the industry.

- No major skill shortages were noted by contacts in the majority of industries, with the notable exception of the engineering and construction industry.

Wages are expected to increase moderately in the year ahead. Wage increases were reported to generally be around 3 to 4 per cent per annum, with firms continuing to seek productivity gains to offset wage increases.

- A notable exception to this benign outlook is in the Melbourne construction industry. This has been somewhat reflected in higher costs, with the cost of construction in Melbourne now claimed to be in excess of that in Sydney.

Costs

The main cost pressure noted by firms was rising insurance premiums which were coming up for renewal, although this cost was not expected to have a significant impact on overall profits.

Security costs have increased for some firms, especially those easily identifiable as an American company, and for airports. On the whole, the majority of firms did not view security as a significant rising cost.

Electricity and water charges in some states were on the rise, although much of the increase simply brought prices back in line with their levels of a few years earlier. Telecommunication charges have also risen in some areas. Overall, costs have been moderate and have fallen in many places (for example raw materials).

Prices

Price pressure overall were reported as being restrained. All contacts continue to experience resistance to price increases to cover any higher costs. Their principal focus is on fighting higher costs by improving productivity. The general theme is one of tight revenues and increasing costs putting pressure on margins, although there were reports that some margin repair was occurring in recent months in some industries.

The appreciation of the Australian dollar during the June quarter has also aided some recovery of margins for some businesses through lower imported input costs. Conversely, some firms face fiercer competition from imported goods, requiring them to squeeze margins and reduce prices. Overall, the appreciation of the Australian dollar against the United States dollar in the June quarter appeared to have placed downward pressure on prices.

Statistical appendix

List of charts and tables

Charts

International economy

National accounts

Tables

National accounts

Incomes, Costs and Prices

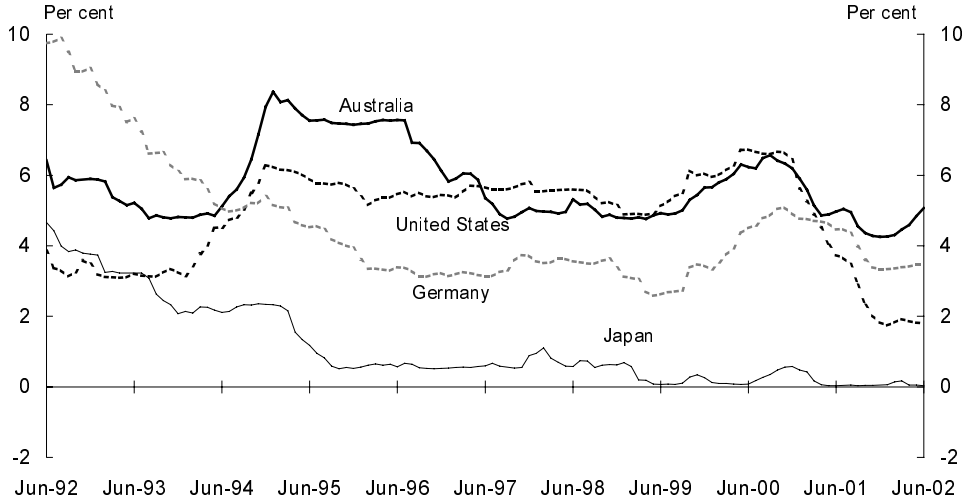
External sector

Key to tables

n.a. not available
n.y.a. not yet available
.. change less than 0.05 per cent

Chart 1: Selected international indicators

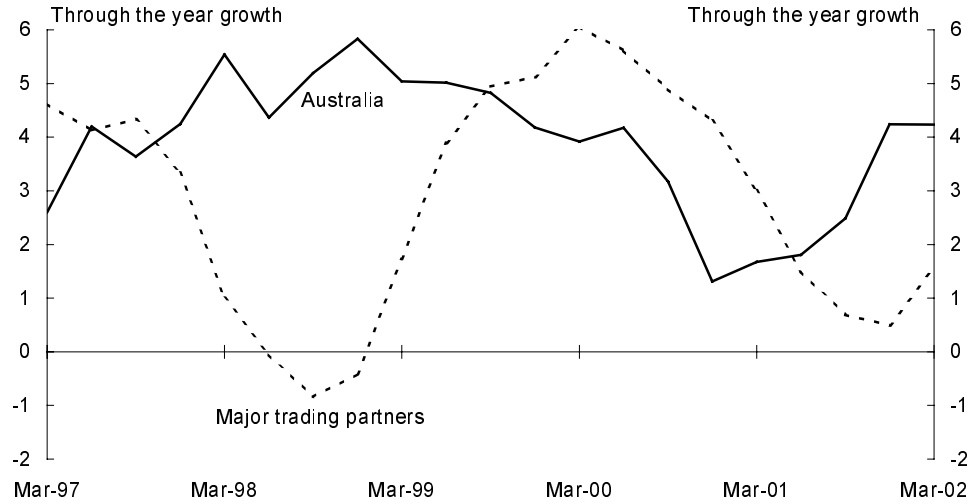
Panel A: Short-term interest rates[(a)]



(a) Short-term interest rates are monthly averages and are defined as follows: US — 3 month certificates of deposits, Japan — 3-month certificates of deposit, Australia — 90 day bank accepted bills and Germany — 3 month FIBOR.

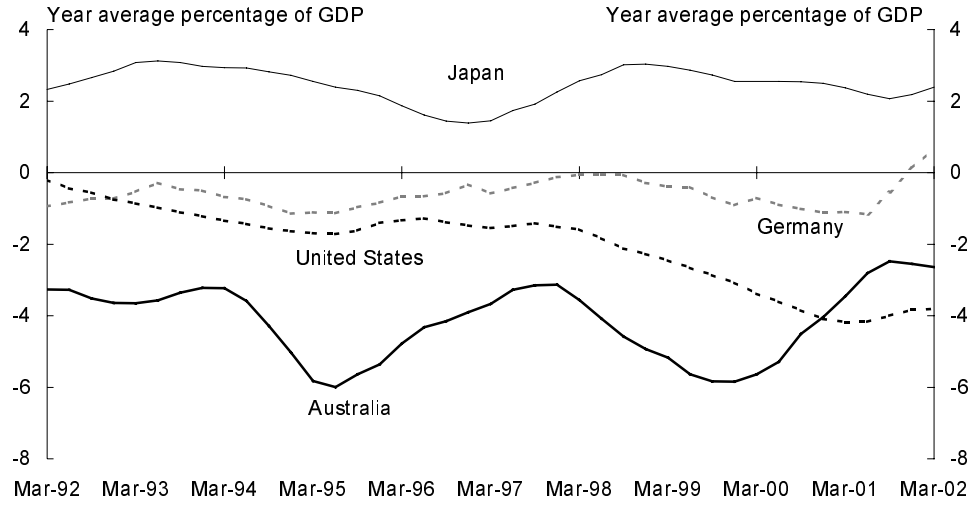
Source: OECD Main Economic Indicators.

Panel B: Real output[(a)]



(a) Seasonally adjusted real GDP growth for each major trading partner is weighted by their respective shares of total Australian merchandise exports averaging from 1998-99 to 2000-01. The major trading partners are composed of the OECD and Asian major trading partners. Major trading partners from the OECD comprise the G7 (US, Japan, Germany, France, UK, Italy and Canada) and New Zealand. Asian major trading partners consist of South Korea, Taiwan, Hong Kong, Singapore, China, Malaysia, Indonesia, Thailand, India and the Philippines.

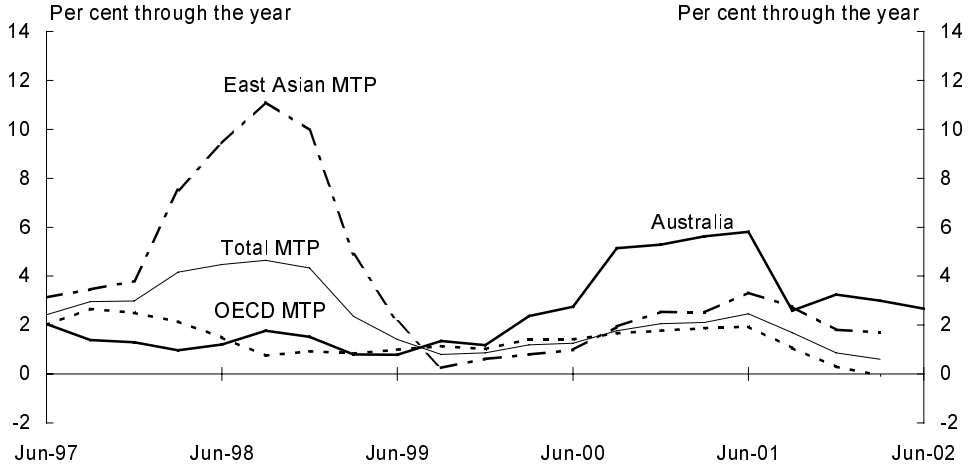
Panel C: Current account balances[(a)]



(a) Data are seasonally adjusted. Germany refers to Western Germany until June 1990, and unified Germany thereafter.

Source: Data are sourced from statistical agencies of respective countries, except for data from Germany which is sourced from the OECD Main Economic Indicators.

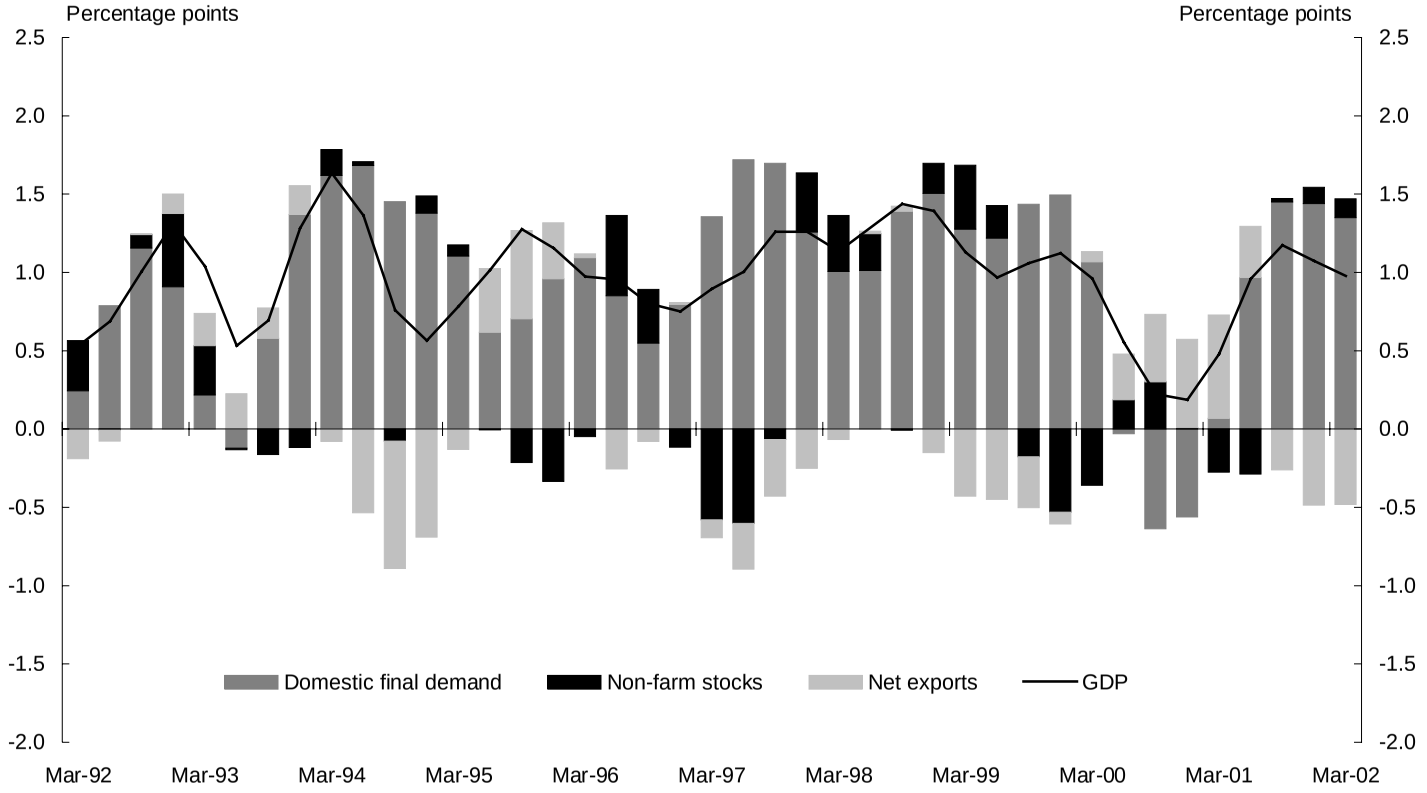
Panel D: Consumer price inflation[(a)]



(a) The aggregate inflation rates are derived from the weighted average of inflation rates of individual trading partners, with the weights being their respective shares of Australian total merchandise trade from 1998-99 to 2000-01.

Source: Major trading partners consist of US, Japan, Germany, UK, New Zealand, Canada, South Korea, Singapore, Indonesia, Taiwan, Hong Kong, France, Italy, India, China, Malaysia, Thailand and the Philippines. Data for US, Japan, Germany, UK, New Zealand, Canada, South Korea, Singapore, Indonesia, Taiwan and Hong Kong are sourced from the ABS All Groups CPI (excluding housing) measure. For the rest of Australia's MTP (France, Italy, China, Malaysia, Thailand and the Philippines), the CPI are sourced from each country's respective all groups CPI series which exclude the effects of mortgage interest rate changes.

Chart 2: Contributions to trend quarterly GDP growth
(Chain volume measures)



Source: ABS Cat. No. 5206.0.

Table 1: Components of Gross Domestic Product (chain volume measures)

	Final domestic demand								
	Household consumption	Private investment in dwellings	Private business fixed investment	Private final demand	Public final demand	Domestic final demand	Exports	Imports	GDP
Year	(Percentage change on preceding year)								
1998-99	5.1	7.6	1.6	4.6	6.7	5.1	2.0	4.8	5.3
1999-00	4.1	13.7	6.8	5.3	4.7	5.2	9.3	12.5	4.3
2000-01	2.4	-20.6	-5.8	-0.8	2.1	-0.1	7.0	-1.4	2.0
Quarter	(Percentage change on preceding quarter - Trend)								
2001 Mar	0.8	-5.6	-1.9	0.1	0.0	0.1	0.9	-2.2	0.5
Jun	0.9	6.0	-0.4	1.1	0.5	1.0	0.1	-1.5	1.0
Sep	0.9	8.8	1.6	1.6	0.9	1.5	-0.6	0.6	1.2
Dec	1.1	7.3	2.4	1.7	0.4	1.4	-0.6	1.8	1.1
2002 Mar	1.2	5.9	2.2	1.7	0.0	1.3	-0.2	2.1	1.0
Quarter	(Percentage change on preceding quarter - Seasonally adjusted)								
2001 Mar	1.5	-0.1	1.2	1.4	0.2	1.2	0.3	-2.2	0.9
Jun	0.7	2.3	-3.2	0.3	0.2	0.3	1.1	-0.9	1.0
Sep	0.6	13.4	4.1	2.1	-0.7	1.5	-1.3	-1.3	1.1
Dec	1.2	5.6	3.5	1.8	3.8	2.3	-3.5	3.9	1.2
2002 Mar	1.4	4.3	-0.8	1.4	-2.7	0.4	4.0	2.2	0.9
Quarter	(Percentage change on a year earlier - Trend)								
2001 Mar	2.2	-27.8	-5.0	-1.4	-0.4	-1.1	4.9	-4.3	1.4
Jun	2.8	-22.0	-4.9	-0.3	0.2	-0.2	2.8	-6.3	1.9
Sep	3.4	-5.4	-2.5	2.1	1.4	1.9	1.0	-4.9	2.8
Dec	3.8	16.7	1.6	4.6	1.9	4.0	-0.3	-1.3	3.7
2002 Mar	4.1	30.9	5.9	6.3	1.9	5.3	-1.4	3.0	4.2

Source: ABS Cat. No. 5206.0.

Table 2: Contributions to change in Gross Domestic Product (chain volume measures)

	Final domestic demand						Change in inventories			
	Household consumption	Private investment in dwellings	Private business fixed investment	Private final demand	Public final demand	Total final demand	Private non-farm	Farm & public authority	Net exports	GDP
Year	(Contribution to change in GDP)									
1998-99	2.7	1.0	1.1	5.0	0.5	5.7	0.8	0.0	-3.0	4.0
1999-00	2.9	-0.2	0.0	2.3	1.3	3.4	0.5	-0.1	-0.2	3.7
2000-01	0.4	-0.5	-1.5	-1.5	0.4	-1.6	-1.6	0.0	2.5	-0.1
Quarter	(Contribution to change in GDP - Trend)									
2000 Dec	-0.2	-0.1	-0.4	-0.7	-0.1	-0.9	-0.3	0.0	0.7	-0.2
2001 Mar	0.0	-0.1	-0.4	-0.5	0.3	-0.4	-0.2	-0.1	0.8	-0.2
Jun	0.2	-0.1	-0.4	-0.2	0.4	0.1	-0.3	-0.1	0.5	-0.3
Sep	0.4	0.0	-0.3	0.1	0.2	0.3	-0.2	0.1	0.0	-0.1
Dec	0.5	0.1	-0.2	0.4	-0.2	0.2	0.2	0.1	-0.2	0.4
2002 Mar	0.5	0.1	-0.1	0.4	-0.2	0.2	0.3	0.1	-0.2	0.5
Quarter	(Contribution to change in GDP - Seasonally adjusted)									
2000 Dec	-0.2	-0.1	-0.5	-0.9	-0.3	-1.4	0.9	-0.2	1.0	0.6
2001 Mar	-0.2	0.0	-0.5	-0.6	0.8	0.2	-0.3	-0.1	0.8	-0.5
Jun	0.3	-0.1	-0.4	-0.2	-0.1	-0.3	-0.7	-0.4	0.7	-0.5
Sep	0.6	-0.1	-0.3	0.4	0.5	0.8	-0.3	0.3	-0.2	0.0
Dec	0.1	0.2	-0.3	-0.1	-0.2	-0.3	0.7	0.2	-0.3	0.3
2002 Mar	0.8	0.1	0.1	1.0	-0.5	0.4	0.2	-0.1	0.0	1.0

Source: ABS Cat. No. 5206.0.

Table 3: Gross value-added by industry (chain volume measures)

	Agriculture, forestry & fishing	Mining	Manu-fact-uring	Electr-icity, gas & water	Cons-truction	Whole-sale trade	Retail trade	Accomm-odation, cafes & restaurants	Transport & storage	Commun-ication services	Finance & insurance services	Property & business services	Gov. administ-ration & defence	Edu-cation	Health & community services	Cultural & recre-ational services	Personal & other services
Year	(Percentage change on preceding year)																
1998-99	4.8	0.5	3.9	1.4	7.2	4.2	5.3	7.8	1.8	10.4	12.7	10.0	4.5	2.0	2.6	2.4	4.0
1999-00	6.9	10.4	2.8	2.8	6.2	6.2	4.4	6.6	3.9	10.5	2.8	4.8	0.2	1.6	2.4	3.8	9.6
2000-01	-1.0	5.5	0.3	2.9	-17.4	0.3	0.8	2.9	1.4	8.2	4.6	9.7	2.9	1.8	7.2	12.3	3.1
Quarter	(Change on previous quarter - Trend)																
2000 Dec	1.4	1.0	-1.4	0.2	-8.5	-0.7	0.4	0.9	0.2	1.2	1.5	2.6	0.8	0.5	3.6	0.1	1.6
2001 Mar	3.5	0.5	-0.6	-0.6	-2.6	-0.3	0.8	1.9	0.9	1.4	1.3	1.9	0.5	0.4	3.8	-1.4	1.7
Jun	0.5	-0.3	0.8	-0.6	4.4	0.4	1.3	2.0	1.1	1.5	1.3	1.5	0.2	0.4	2.4	-0.1	1.3
Sep	-2.2	-0.5	1.7	0.1	4.8	1.3	1.5	0.7	0.8	1.5	1.2	1.0	-0.1	0.4	0.6	1.8	1.5
Dec	-0.9	0.1	1.5	0.5	3.1	1.7	1.7	-0.4	0.7	1.5	1.0	0.4	-0.2	0.4	0.1	0.5	1.8
2002 Mar	1.2	0.7	1.0	0.6	1.9	2.0	1.6	-0.8	0.8	1.7	0.9	-0.1	-0.1	0.4	0.1	0.1	1.8
Quarter	(Change on previous quarter - Seasonally adjusted)																
2000 Dec	2.1	0.9	-1.5	-0.5	-9.7	-2.3	1.0	-0.1	-0.7	-1.0	0.5	1.6	0.1	0.5	3.7	-10.1	3.9
2001 Mar	8.9	2.2	-2.2	0.8	0.6	1.3	1.4	2.6	1.5	2.6	1.9	1.4	2.0	0.4	5.9	1.0	0.3
Jun	0.2	-0.9	3.5	-2.2	5.3	0.3	0.7	1.6	2.2	2.0	0.6	2.3	-1.5	0.4	1.4	1.2	1.9
Sep	-7.1	-2.4	0.0	-0.1	4.2	-0.3	1.5	2.7	-0.5	1.2	2.0	1.0	1.6	0.4	-0.5	2.6	0.3
Dec	-0.7	1.9	2.5	2.7	3.7	3.7	1.7	-3.1	0.3	0.3	0.5	0.3	-1.5	0.4	1.4	-0.7	3.5
2002 Mar	7.5	1.0	0.6	-1.4	0.1	1.4	2.0	0.2	2.5	3.5	0.8	-0.6	0.4	0.4	-0.7	0.1	1.0
Quarter	(Change on year earlier - Trend)																
2000 Dec	-2.4	7.1	1.2	4.2	-18.3	0.6	0.3	1.7	0.8	8.8	4.2	9.7	3.3	1.8	5.5	13.8	1.8
2001 Mar	1.5	4.4	-1.6	1.9	-21.2	-1.5	0.8	3.2	1.0	7.0	5.2	10.3	3.3	1.8	9.3	8.1	3.4
Jun	4.1	2.2	-1.9	-0.2	-14.7	-1.4	2.4	5.0	1.9	5.8	5.6	9.2	2.7	1.8	11.8	2.3	5.1
Sep	3.2	0.6	0.4	-1.0	-2.5	0.7	4.1	5.5	2.9	5.7	5.4	7.2	1.5	1.8	10.7	0.4	6.2
Dec	0.8	-0.2	3.4	-0.7	9.9	3.1	5.4	4.2	3.5	6.1	4.9	4.8	0.5	1.7	7.0	0.8	6.5
2002 Mar	-1.4	0.0	5.1	0.5	14.8	5.5	6.1	1.4	3.4	6.4	4.4	2.8	-0.1	1.6	3.2	2.4	6.6

Source: ABS Cat. No. 5206.0.

Table 4: Real household income[(a)]

	Non-farm employees	Non-farm average earnings	Non-farm compensation employees	Gross mixed income	Household income	Household disposable income
Year	(Percentage change on preceding year)					
1998-99	2.7	3.2	5.9	4.4	5.5	5.4
1999-00	2.2	1.7	3.9	6.1	4.5	4.0
2000-01	2.7	-0.7	2.0	1.4	3.1	5.1
Quarter	(Percentage change on preceding quarter - Seasonally adjusted)					
2001 Mar	0.1	0.1	0.2	2.1	0.0	-0.2
Jun	-0.4	1.4	1.0	1.5	1.4	2.3
Sep	0.7	0.4	1.1	3.7	0.2	-0.4
Dec	-0.2	0.4	0.2	1.3	0.9	1.9
2002 Mar	1.1	-0.7	0.3	2.5	-0.3	-0.7
Quarter	(Percentage change on year earlier - Seasonally adjusted)					
2001 Mar	2.4	-1.4	1.0	-0.7	1.9	3.3
Jun	0.8	0.4	1.2	0.0	2.2	5.2
Sep	0.8	1.7	2.5	3.9	1.7	1.1
Dec	0.2	2.3	2.5	8.9	2.5	3.6
2002 Mar	1.2	1.5	2.7	9.2	2.3	3.1

(a) Deflated by the implicit price deflator for private final consumption expenditure.
Source: ABS Cat. Nos. 5204.0 and 5206.0.

Table 5: Wages, labour costs and company income

	Average weekly earnings (survey basis)			Unit labour costs		Factor shares	
	Full-time adult ordinary time earnings[a]	All persons total earnings[a]	Non-farm average earnings (national accounts basis)[a]	Nominal[b]	Real[c]	Wage share[d]	Profit share[e]
Year	(Percentage change on preceding year)				(Index)	(per cent)	(per cent)
1998-99	3.7	2.4	4.0	0.5	96.5	55.0	22.8
1999-00	3.3	2.2	3.1	1.2	95.7	54.4	23.4
2000-01	5.3	5.5	3.9	3.9	96.0	54.6	23.2
Quarter	(Percentage change on preceding quarter - Seasonally adjusted)						
2001 Mar	1.0	1.9	1.7	1.3	96.2	54.7	23.3
Jun	1.8	1.0	1.1	-0.2	96.5	54.8	22.8
Sep	1.6	1.3	0.3	-0.9	95.9	54.6	22.7
Dec	1.1	0.7	0.4	-1.0	94.5	53.9	23.7
2002 Mar	1.5	1.1	0.4	1.5	95.0	53.7	23.8
Quarter	(Percentage change on year earlier - Seasonally adjusted)						
2001 Mar	4.6	5.6	4.2	4.3			
Jun	5.3	4.4	5.1	4.3			
Sep	5.1	4.0	3.6	1.5			
Dec	5.7	4.9	3.6	-0.8			
2002 Mar	6.2	4.1	3.7	0.7			

(a) All numbers derived from seasonally adjusted data.
(b) Ratio of nominal hourly labour costs (non-farm compensation of employees, plus payroll tax and fringe benefits tax less employment subsidies, per hour worked by non-farm wage and salary earners) to average hourly productivity (real gross non-farm product per hour worked by all employed persons).
(c) Nominal unit labour costs as defined in footnote (a) deflated by the derived implicit price deflator for gross non-farm product. (Base for index: 1998-99 = 100.0).
Compensation of employees as a share of total factor income.
Gross operating surplus of corporations as a share of total factor income.
Sources: ABS Cat. Nos. 5204.0, 5206.0 and 6302.0.

Table 6: Prices

	Consumer price index[a]		Implicit price deflators[b]	
	All groups	All groups excl housing	Gross non-farm product	Household final consumption expenditure
Year	(Percentage change on preceding year)			
1997-98	0.0	1.2	1.5	1.7
1998-99	1.2	1.2	0.4	0.8
1999-00	2.4	2.0	2.0	1.4
2000-01	6.0	5.4	4.3	4.6
2000-01	2.9	2.9	na	na
Quarter	(Percentage change on preceding quarter)			
2000 Mar	0.9	0.9	1.4	0.8
Jun	0.8	0.8	0.9	0.7
Sep	3.7	3.1	1.9	2.6
Dec	0.3	0.4	0.2	0.6
2001 Mar	1.1	1.2	1.3	0.9
Jun	0.8	1.0	0.7	0.7
Sep	0.3	0.0	-0.5	0.0
Dec	0.9	1.0	0.4	0.4
2002 Mar	0.9	0.9	1.2	1.1
Jun	0.7	0.7	na	na
Quarter	(Percentage change on a year earlier)			
2000 Mar	2.8	2.4	2.1	1.3
Jun	3.2	2.7	3.3	1.9
Sep	6.1	5.1	4.7	4.4
Dec	5.8	5.3	4.5	4.8
2001 Mar	6.0	5.6	4.3	4.9
Jun	6.0	5.8	4.0	5.0
Sep	2.5	2.6	1.6	2.3
Dec	3.1	3.2	1.8	2.1
2002 Mar	2.9	3.0	1.7	2.2
Jun	2.8	2.7	na	na

(a) Based on the weighted average of eight capital cities consumer price index.
(b) Quarterly figures are derived from seasonally adjusted data.
Sources: ABS Cat. Nos. 6401.0 and 5206.0.

Table 7: Labour market

	ANZ Bank job advertisements series	Employed persons			Unemployment		Participation rate
		Full-time	Part-time	Total	Rate (per cent)	Persons ('000)	(per cent)
Year[(a)]	(Percentage change on preceding year)						
1998-99	15.2	1.6	3.7	2.2	7.4	691.7	63.1
1999-00	15.7	2.5	3.4	2.7	6.6	634.5	63.4
2000-01	-22.5	1.5	3.8	2.1	6.4	625.5	63.7
2001-02	-12.1	-0.6	5.8	1.1	6.6	656.8	63.7
Quarter[(a)]	(Percentage change on preceding quarter - Seasonally adjusted)						
2001 Sep	-0.1	-0.6	1.8	0.1	6.8	669.2	63.7
Dec	-1.9	0.2	0.5	0.3	6.9	676.6	63.7
2002 Mar	6.3	0.8	1.6	1.0	6.6	655.8	63.9
Jun	7.0	-0.2	0.9	0.1	6.3	629.3	63.6
Quarter[(a)]	(Percentage change on a year earlier - Seasonally adjusted)						
2001 Sep	-25.1	-1.5	5.3	0.3			
Dec	-20.1	-1.1	6.2	0.9			
2002 Mar	-7.6	0.0	6.8	1.8			
Jun	11.5	0.3	4.9	1.5			
Month	(Percentage change on preceding month - Seasonally adjusted)						
2001 Jul	1.0	-1.1	2.4	-0.2	6.9	673.8	63.6
Aug	0.5	1.0	-0.2	0.7	6.8	671.3	63.9
Sep	-1.1	0.7	-3.3	-0.4	6.7	662.6	63.5
Oct	-1.9	-0.8	2.9	0.2	7.0	693.6	63.8
Nov	0.0	0.2	-0.1	0.1	6.8	670.9	63.6
Dec	1.4	0.0	0.3	0.1	6.7	665.3	63.6
2002 Jan	12.5	0.8	0.5	0.7	7.0	692.5	64.1
Feb	-5.4	-0.3	1.7	0.2	6.6	652.5	63.9
Mar	-8.8	0.5	-0.6	0.2	6.3	622.3	63.8
Apr	23.6	-0.8	0.4	-0.5	6.3	621.6	63.4
May	-8.2	1.1	-1.2	0.5	6.3	622.5	63.6
Jun	-1.8	-1.0	3.1	0.1	6.5	643.9	63.7

(a) All figures refer to period averages.
Sources: ANZ Bank and ABS Cat. No. 6202.0.

Table 8: Current account

					Current account balance		Net income balance		Volume of		
	Balance on merchandise trade	Balance on goods & services	Net income balance	Net current transfers		Percentage of GDP	Percentage of current account balance	Percentage of GDP	Exports of goods & services	Imports of goods & services	Terms of trade[(a)]
Year		($ million)			($ million)	(per cent)	(per cent)	(per cent)	($ million)		
1998-99	-12644	-14428	-18189	-749	-33366	-5.6	54.5	-3.1	115258	-124752	95.9
1999-00	-12955	-14351	-19346	218	-33479	-5.3	57.8	-3.1	125971	-140323	100.0
2000-01	102	774	-19750	32	-18944	-2.8	104.3	-2.9	134807	-138295	103.1
Quarter					(Seasonally adjusted)						
2000 Dec	-654	-667	-4943	-77	-5687	-3.4	86.9	-3.0	33387	-34798	102.4
2001 Mar	947	561	-5240	73	-4606	-2.7	113.8	-3.1	33483	-34048	103.2
Jun	1784	1600	-5203	28	-3575	-2.1	145.5	-3.0	33853	-33733	103.8
Sep	2068	1965	-4983	25	-2993	-1.7	166.5	-2.9	33413	-33294	104.9
Dec	-835	-1249	-5139	-85	-6473	-3.7	79.4	-2.9	32235	-34605	103.9
2002 Mar	183	110	-5662	28	-5524	-3.1	102.5	-3.1	33519	-35350	105.8
Month					(Seasonally adjusted)						
2001 Jul	939	1018									
Aug	136	33									
Sep	491	375									
Oct	386	220									
Nov	-124	-295									
Dec	-251	-307									
2002 Jan	-165	-207									
Feb	-535	-606									
Mar	-2	-110									
Apr	-116	-318									
May	-475	-597									
Jun	-870	-1087									

(a) The ratio of the implicit price deflator for exports of goods and services to the implicit price deflator for imports of goods and services, 1998-99 = 100, calculated on a National Accounts basis.

Sources: ABS Cat. Nos. 5368.0, 5302.0 and 5206.0.

Table 9: Australia's external liabilities

	Public sector gross debt	Private sector gross debt	Total gross debt	Net debt	Net external liabilities
	(Levels of Australian foreign liabilities)				
As at end	($A million)				
1999 Jun	75279	277335	352615	225577	325371
2000 Jun	63445	346468	409913	272071	342144
2001 Jun	72012	420275	492287	319881	397930
2000 Dec	67460	397410	464870	303157	379290
2001 Mar	71746	447972	519717	334421	396996
Jun	72012	420275	492287	319881	397930
Sep	74584	440543	515128	328646	411867
Dec	70531	432494	503025	325914	411275
2002 Mar	n.y.a.	n.y.a.	n.y.a.	332010	420884
As at end	(Percentage of GDP)				
1999 Jun	12.7	46.9	59.6	38.1	55.0
2000 Jun	10.1	55.1	65.1	43.2	54.4
2001 Jun	10.7	62.5	73.2	47.6	59.2
2000 Dec	10.3	60.8	71.2	46.4	58.1
2001 Mar	10.8	67.6	78.4	50.5	59.9
Jun	10.7	62.5	73.2	47.6	59.2
Sep	11.0	64.8	75.8	48.3	60.6
Dec	10.2	62.5	72.7	47.1	59.5
2002 Mar	n.y.a.	n.y.a.	n.y.a.	47.3	59.9

Source: ABS Cat. Nos. 5302.0 and 5206.0.

Table 10: Australia's income flows

	Public sector gross debt	Private sector gross debt	Total gross debt	Net debt	Net external liabilities
	(Gross and net interest payable, and net investment income)				
Year ended	($A million)				
1999 Jun	3513	9956	13469	10347	18132
2000 Jun	3434	12921	16355	12841	19209
2001 Jun	3117	15566	18683	14478	19581
Quarter ended					
2000 Dec	829	3718	4547	3468	4454
2001 Mar	695	4275	4970	3842	5100
Jun	784	3954	4738	3696	5036
Sep	782	3844	4626	3629	5484
Dec	770	3595	4365	3377	4845
2002 Mar	n.y.a.	n.y.a.	n.y.a.	3500	5328
Year ended	(Percentage of exports of goods and services)				
1999 Jun	3.1	8.9	12.0	9.2	16.2
2000 Jun	2.7	10.3	13.0	10.2	15.2
2001 Jun	2.0	10.2	12.2	9.5	12.8
Quarter ended					
2000 Dec	2.1	9.4	11.5	8.8	11.3
2001 Mar	1.9	11.5	13.3	10.3	13.7
Jun	2.0	10.1	12.2	9.5	12.9
Sep	2.0	9.7	11.7	9.2	13.8
Dec	2.0	9.4	11.4	8.8	12.6
2002 Mar	n.y.a.	n.y.a.	n.y.a.	9.4	14.3

Source: ABS Cat. No. 5302.0.

Table 11: Selected economic indicators

	Inventories to total sales[a]	Imports to domestic sales[a]	Saving ratio[b]	Nominal exchange rates		Real exchange rate
				USD / AUD[c]	Trade weighted index[c]	Export weighted index[d]
Year						
1998-99	0.870	0.362	2.8	0.6276	56.0	100.6
1999-00	0.880	0.386	2.3	0.6290	55.2	100.0
2000-01	0.879	0.416	4.9	0.5379	50.3	95.2
Quarter						
2000 Dec	0.892	0.431	5.0	0.5320	49.6	92.9
2001 Mar	0.878	0.406	3.2	0.5321	50.0	95.3
Jun	0.874	0.415	4.9	0.5127	49.6	95.3
Sep	0.865	0.394	3.6	0.5138	49.3	94.4
Dec	0.845	0.394	4.2	0.5123	49.6	94.5
2002 Mar	0.837	0.388	2.1	0.5181	51.0	99.1

(a) ABS National Accounts measure. All numbers derived from seasonally adjusted data.
(b) Ratio of household saving to household disposable income derived from seasonally adjusted data.
(c) Exchange rates refer to the period average.
(d) Treasury estimate using GDP deflators.
Sources: ABS Cat. Nos. 5206.0, 5302.0.

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