

MODELLING PROPOSED TAX REFORM OF EMPLOYEE SHARE OWNERSHIP PLANS

This report was prepared for the Employee
Ownership Group by Econtech Pty Ltd.

14 October 2004

Econtech was commissioned by the Employee Ownership Group to model proposed changes to Employee Share Ownership Plans. This Report sets out Econtech's findings. Econtech makes no representations to, and accepts no liability for, reliance on this work by any person or organisation other than the Employee Ownership Group. Any person, other than the Employee Ownership Group, who uses this work does so at their own risk and agrees to indemnify Econtech for any loss or damage arising from such use.

CANBERRA OFFICE

Econtech
P.O. Box 4129
Kingston ACT 2604
Phone: (02) 6295-0527
Fax: (02) 6295-8513
E-mail: office@econtech.com.au

SYDNEY OFFICE

Econtech
Suite 304, 66 Berry Street
North Sydney NSW 2060
Phone: (02) 9518-4283
Fax: (02) 9518-4638
E-mail: sydney@econtech.com.au

Web-site: www.econtech.com.au



CONTENTS

Executive Summary	i
1. Introduction.....	1
2. Outline of ESOPs and their Taxation Treatment.....	3
3. Modelling Approach	7
4. National Effects – No Difference in Productivity.....	16
5. National Effects – Higher Productivity.....	20
Appendix A: Alternative Tax Exempt Scenario.....	A1

Executive Summary

Proposed ESOP

Econtech has been commissioned by the Employee Ownership Group (EOG) to model a proposed tax reform of a major category of Employee Share Ownership Plans (ESOPs). Under an ESOP, employees acquire shares in their employer's business as part of their remuneration. This report is concerned with ESOPs that apply the taxation treatment specified under Division 13A of the Income Tax Assessment Act (ITAA), which includes both tax exempt and tax deferred ESOPs.

The EOG proposes reform to the taxation of capital gains from shares acquired under Division 13A ESOPs. The proposed new ESOP is designed to replace both the tax deferred and tax exempt plans.

Under an ESOP, employees acquire shares in their employer's business under a personal income tax concession. The difference between the market value of the shares at the time that they are acquired and any consideration paid by employees out of their after-tax incomes represents the "discount" on the shares under Division 13A. Often no consideration is paid, so the "discount" represents the full market value of the shares at the time of acquisition. In any case, the discount forms part of an employee's remuneration and may be subject to personal income tax concessions under one of the two broad ESOPs of Division 13A.

There are a range of ways in which shares can be acquired. Table A below presents the taxation treatment of shares acquired in different ways, including in the usual way as well as under Division 13A ESOPs.

Table A
Tax Treatment of Shares

	Discount	Capital Gains
normal shares	taxable	post-Ralph (50%)
ESOP_exempt	exempt to \$1,000	post-Ralph (50%)
ESOP_deferred	deferred to sale	pre-Ralph (100%)
ESOP_proposed	combination	post-Ralph (50%)

Notes:

1. "Post-Ralph" refers to the usual tax treatment of capital gains that has applied since the Review of Business Tax conducted by John Ralph. Under post-Ralph tax treatment, provided shares are held for longer than 12 months, only 50 per cent of any capital gain that is made on disposal is taxed.
2. "Pre-Ralph" refers to the tax treatment of capital gains that applied before the Review of Business Tax when 100 per cent of any capital gain was taxed.

When shares are acquired in the usual way, individuals do not receive any tax concession. Rather they pay for those shares out of their after-tax incomes. On disposal of those shares they pay tax which, since the Ralph reforms, has been calculated on 50 per cent of any realised capital gain (provided the shares have been held for at least 12 months).

When shares are acquired under Division 13A ESOPs, individuals do receive a tax concession. Specifically, they initially pay for those shares out of their pre-tax incomes, the income tax liability either being not imposed (under the exempt plan) or deferred until

disposal of the shares (under the deferred plan). So on disposal of those shares they pay tax which varies according to the type of ESOP.

The existing exempt plan is only available where the discount received is no more than \$1,000 per year. On disposal of shares acquired under the exempt plan, tax on any realised capital gain is assessed in the usual post-Ralph way.

Under the existing deferred plan, the income tax on acquiring the shares is deferred until disposal of the shares. In addition, 100 per cent of any realised capital gain is taxed on disposal, instead of the usual 50 per cent that has applied post-Ralph. For income tax purposes, the employee is deemed to have disposed of the shares when the restriction on the sale of the shares is lifted and the employee disposes of the shares, the employee leaves the company, or after ten years, whichever comes first¹.

The new ESOP proposed by the EOG, which is designed to replace both existing plans, is referred to as the ‘proposed plan’ in this report. The details of the proposed plan are discussed in *Employee Share Ownership in Australia: The Future*². The main features of the proposed plan are summarised below.

1. For discounts on shares acquired under Division 13A ESOPs in any income year, the first \$1,000 is exempt from personal income tax (pit) (as under the tax exempt plan) and for amounts over \$1,000 pit is deferred until disposal of the shares (as under the tax deferred plan).
2. For capital gains made on disposal of the shares, the standard post-Ralph tax treatment applies, so that only 50 per cent of the gain is taxed (as under the existing tax exempt plan but not the tax deferred plan).
3. The 10-year rule (which applies under the tax deferred plan), under which tax is paid on capital gains after 10 years even if the shares have not been sold, is abolished.
4. There are other more minor changes that are detailed in *Employee Share Ownership in Australia: the Future*, but have not been explicitly modelled.

This report models the effects of the proposed new ESOP. This modelling covers the effects both on the government budget as well as the effects on national income, consumption and saving.

Because the proposed new ESOP involves an extension of existing tax concessions for ESOPs, its direct effect on the government budget would be negative. However, the aim of the proposal is to stimulate extra take-up of ESOPs, and to the extent that this occurs, there will be benefits to both the government budget and the economy generally.

Specifically, the further spread of ESOPs would have favourable effects on private saving and productivity. Private saving will increase to the extent that the extra take-up of ESOPs is financed through reduced consumer spending. Productivity will increase to the extent that companies with ESOP schemes have higher labour productivity than companies without ESOP schemes.

¹ The cessation time for share rights is outlined under Division 13A, Subdivision C, Section 139CB.

² Employee Ownership Group, “Employee share ownership in Australia: the future”.

Higher saving now means greater asset accumulation, supporting higher incomes and living standards in the future. Higher productivity supports higher incomes and living standards now and in the future. Higher incomes in turn generate increased tax revenue, at least partly offsetting the direct cost to the government budget from the extension of ESOP tax concessions. This report models all of these possible direct and indirect effects of the proposed new ESOP.

Modelling Approach

The economic modelling of the proposed ESOP was undertaken in two stages. In the first stage, a purpose-built model was constructed to estimate the direct effects on the government budget, incomes, consumption and saving. In the second stage, these direct effects were fed into an economy-wide model to take into account indirect effects in estimating the effects on the economy generally.

Table B
Estimated ESOP Holdings
(\$ billion at 30 December 2003)

exempt	0.9
deferred (salary sacrifice)	1.1
deferred (loans)	0.2
deferred (rights)	0.3
options	0.9
total	3.4

source: Econtech estimates based on an analysis of a sample of 17 major companies

Table B implies that, at present, \$3.4 billion in shares are held that were issued under ESOP tax concessions. These existing Australian ESOP holdings are low by international standards at only 0.5 per cent of the value of the stock market, and so the potential for expansion would be considerable. The basecase assumption is that the proposed ESOP would double ESOP holdings to just under 1 per cent of the value of the stock market i.e. from around \$3.4 billion to around \$6.8 billion. Further, this addition to ESOP shareholdings is assumed to displace an equal amount of foreign-owned shareholdings in Australian companies.

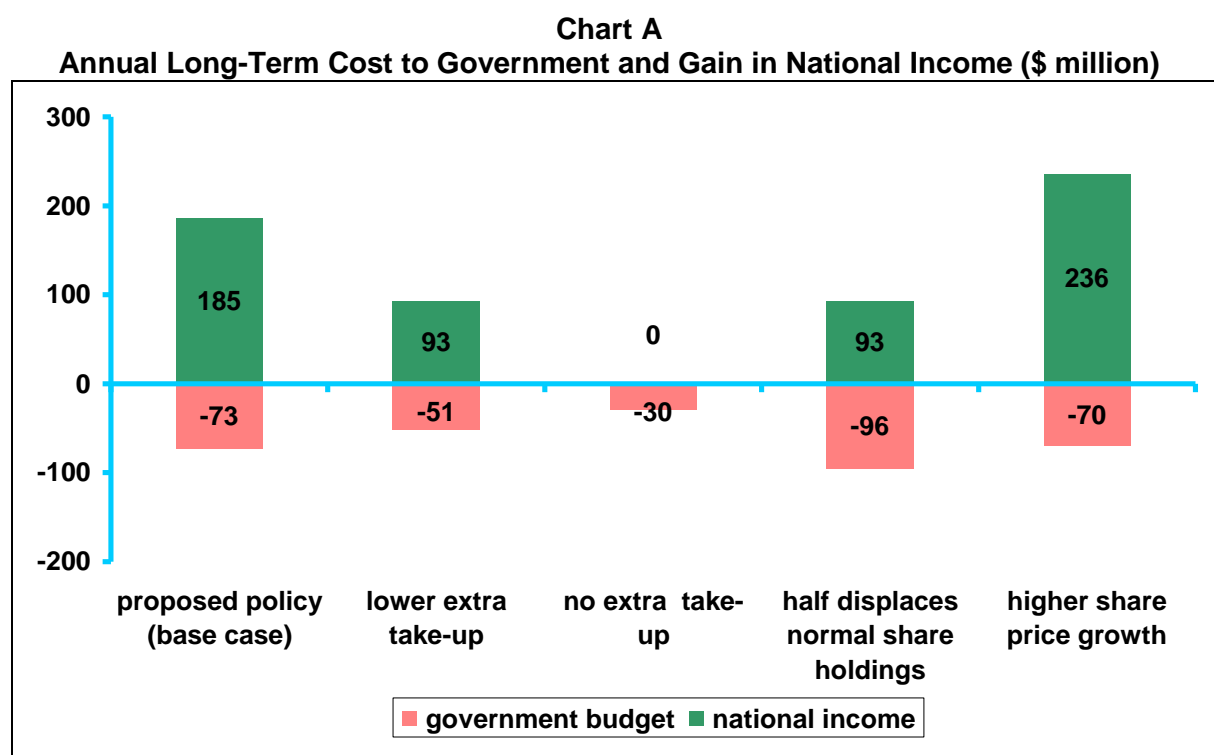
National Effects – Unchanged Productivity

The national effects of the proposed ESOP under the basecase assumptions are summarised in Chart A. The report extensively tests the sensitivity of these results to the various underlying assumptions, as also summarised in Chart A.

Under the basecase, Chart A shows a direct cost to the annual budget of the proposed ESOP reform of \$73 million. This can be seen to be made up of two components.

First, from the “no extra take-up” scenario, it can be seen that the simple displacement of the existing exempt and deferred plans with the proposed plan involves an annual budget cost of \$30 million. This means that even if the proposed ESOP did not stimulate extra take-up of ESOPs, there would be an estimated annual cost to the government budget of \$30 million. This is because the proposed ESOP involves greater tax concessions than for the existing two plans taken together.

Second, the expansion of ESOP accounts for the remaining direct cost to the budget of \$43 million. This is because less Australian tax is paid on the extra ESOP holdings under the proposed plan than under the foreign portfolio holdings that they displace.



The proposed plan is estimated to raise annual national income by \$185 million. This represents the annual real return on the additional \$3.4 billion in ESOP shareholdings, net of a small loss in tax collections from reduced foreign-owned shareholdings.

So in the long term the annual direct cost to the Budget of \$73 million is associated with a gain in national income of \$185 million. This represents a gain in national income of \$2.54 for every \$1 in cost to the budget.

National Effects – Higher Productivity

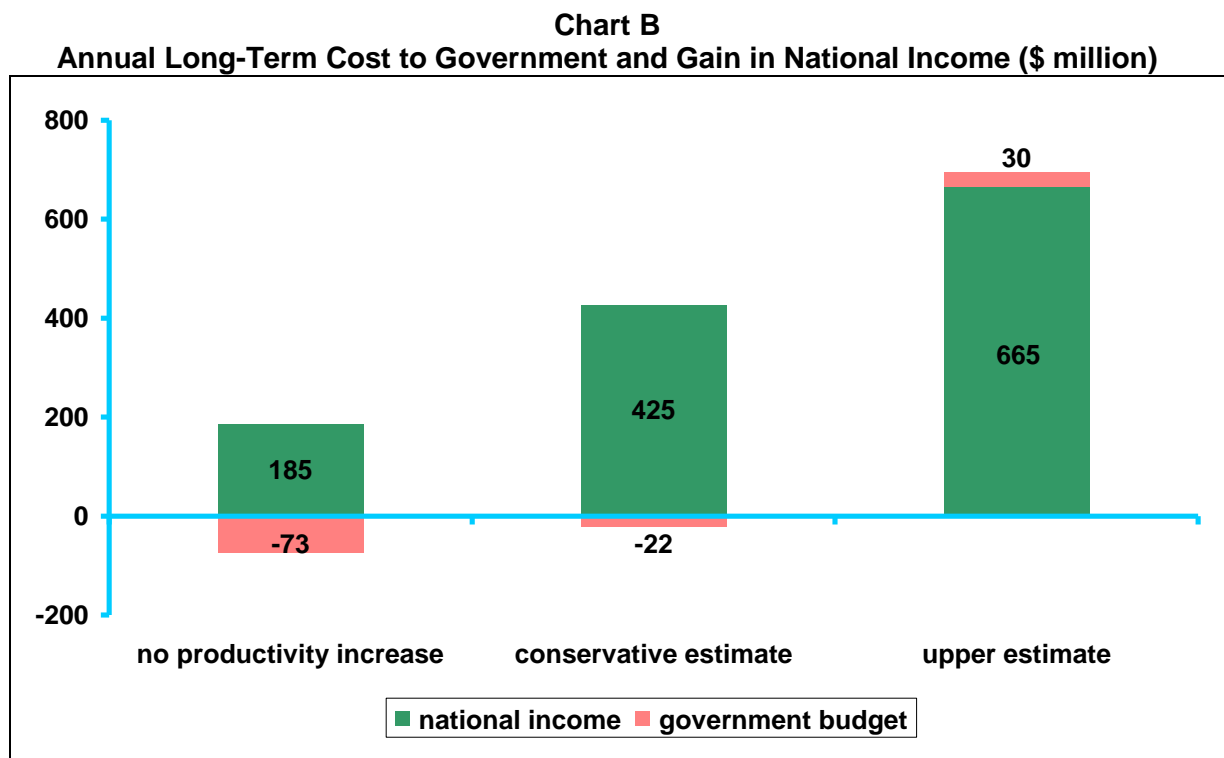
The estimates of the budgetary and national savings impacts of the proposed ESOP, shown in the section above, are likely to be conservative because they do not take into account the positive relationship between ESOPs and productivity. Specifically, a number of studies have shown that productivity is higher in ESOP firms than in comparable non-ESOP firms. The modelling results presented below estimate the impact of these productivity differences on tax collections and national income.

Results for three estimates of the productivity differences between ESOP and non-ESOP firms are presented in this section. The first estimate assumes that there is no productivity difference, and corresponds to the basecase of Chart A. The second estimate is a conservative estimate that assumes the level of productivity is only 3 per cent higher in ESOP firms than in non-ESOP firms. The third estimate is an upper estimate that assumes the level of productivity is 6 per cent higher in ESOP firms than in non-ESOP firms. Both the conservative and upper estimates are based on literature detailing the link between ESOPs and productivity.

All of the productivity scenarios in Chart B are based on the basecase assumption that under the proposed new ESOP, the value of ESOP shareholdings double and the number of ESOP shareholders increases by 200,000.

Chart B shows that there is a substantial increase in annual national income once the higher ESOP productivity has been factored in. For example, the gain in annual national income rises from \$185 million to between \$425 million (conservative estimate) and \$665 million (upper estimate). These enlarged gains in national income reflect the boost to labour productivity among the 200,000 new ESOP shareholders.

Chart B also shows a more positive impact on the annual budget once the higher ESOP productivity has been factored in. The estimated cost to the annual budget is trimmed from \$73 million to \$22 million for the conservative estimate. The chart also shows that under the upper estimate of the productivity gain, the proposed new ESOP is budget positive by \$30 million per year. Tax collections are boosted by the additional income tax collected on the higher labour incomes flowing from the higher productivity of the new ESOP members.



source: Econtech

1. Introduction

Econtech has been commissioned by the Employee Ownership Group (EOG) to model a proposed tax reform of a major category of Employee Share Ownership Plans (ESOPs). Under an ESOP, employees acquire shares in their employer's business as part of their remuneration. This report is concerned with ESOPs that apply the taxation treatment specified under Division 13A of the Income Tax Assessment Act (ITAA), which covers both tax exempt and tax deferred ESOPs.

This report models the effects of a proposed new ESOP. This modelling covers the effects both on the government budget as well as the effects on national saving. ESOPs may affect national saving in two ways. First, they may add to national saving by providing a more attractive avenue for private saving for employees. Second, they may subtract from national savings because the cost to the government budget represents a reduction in public saving. This report models both of these opposing effects and so arrives at an overall estimate of the likely net impact on national saving.

A number of studies have shown that productivity is higher in ESOP firms than in comparable non-ESOP firms. The higher productivity is the result of giving employees financial stakes in their employers' businesses. On this basis, the modelling in this report estimates the impact of the proposed new ESOP under three different assumptions about the productivity differences between ESOP and comparable non-ESOP firms.

Provision for employee share ownership schemes were first introduced in Australia in 1974. After this, there was little change to the legislation governing employee share ownership until the early 1990s. A review of employee share plans was announced in the 1993 Budget. Shortly afterwards (in 1995), Section 26AAC of the Income Tax Assessment Act was replaced with Division 13A.

Division 13A was introduced with two objectives. First, the government sought to reduce the alleged exploitation of ESOPs as tax minimisation schemes. Second, the government sought to encourage the take up of ESOPs for all employees, not only those in management positions³.

In March 1999, the Minister for Employment, Workplace Relations and Small Business requested an Inquiry into employee share ownership in Australian enterprises. The Terms of Reference for the Inquiry were to report on the extent to which employee share ownership schemes had been established and the consequent effects on workplace relations, productivity and the economy.

In 2000, the findings of the Inquiry were submitted to the Standing Committee on Employment, Education and Workplace Relations⁴. Based on its findings, the Inquiry made 45 recommendations to the government. However, most of the recommendations were rejected by the government.

³ "Share Endeavours – Inquiry into employee share ownership in Australian enterprises", House of Representatives, Standing Committee on Employment, Education and Workplace Relations, September 2000, Canberra, page 15.

⁴ "Share Endeavours – Inquiry into employee share ownership in Australian enterprises", House of Representatives, Standing Committee on Employment, Education and Workplace Relations, September 2000, Canberra.

A description of ESOPs, including details of the existing and proposed taxation treatments of ESOPs, are outlined in Section 2. Section 3 then outlines the approach to modelling the existing and proposed ESOPs. Section 4 presents the findings of modelling the budgetary and national saving impacts of replacing the existing plans with the proposed plan. Section 5 presents the impacts of the productivity differences between ESOP and comparable non-ESOP firms on tax collections and national income.

While all care, skill and consideration has been used in the preparation of this report, the scope of this report is based on the advice of the Employee Ownership Group and it is designed to be used only for the specific purpose set out below.

The specific purpose of this report is to examine the effects on the government budget and national saving of proposed tax reforms to Employee Share Ownership Plans.

The findings in this report are subject to unavoidable statistical variation. While all care has been taken to ensure that the statistical variation is kept to a minimum, care should be taken whenever using this information. Should you require clarification of any material, please contact us.

2. Outline of ESOPs and their Taxation Treatment

This section details the two existing ESOPs and a proposed single replacement ESOP. The existing ESOPs apply the taxation treatment set out in Division 13A of the Income Taxation Assessment Act (ITAA). The proposed new ESOP is designed to replace both forms of existing ESOP currently provided for under Division 13A – the tax deferred and tax exempt plans.

Under an ESOP, employees acquire shares in their employer’s business under a personal income tax concession. The difference between the market value of the shares at the time that they are acquired and any consideration paid by employees out of their after-tax incomes represents the “discount” on the shares under Division 13A. Often no consideration is paid, so the “discount” represents the full market value of the shares at the time of acquisition. In any case, the discount forms part of an employee’s remuneration and may be subject to personal income tax concessions under one of the two broad ESOPs that currently exist under Division 13A.

There are a range of ways in which shares can be acquired. Table 1 below presents the taxation treatment of shares acquired in different ways, including in the usual way as well as under Division 13A ESOPs.

Table 1
Tax Treatment of Shares

	Discount	Capital Gains
normal shares	taxable	post-Ralph (50%)
ESOP_exempt	exempt to \$1,000	post-Ralph (50%)
ESOP_deferred	deferred to sale	pre-Ralph (100%)
ESOP_proposed	combination	post-Ralph (50%)

Notes:

1. “Post-Ralph” refers to the usual tax treatment of capital gains that has applied since the Review of Business Tax conducted by John Ralph. Under post-Ralph tax treatment, provided shares are held for longer than 12 months, only 50 per cent of any capital gain that is made on disposal is taxed.
2. “Pre-Ralph” refers to the tax treatment of capital gains that applied before the Review of Business Tax when 100 per cent of any capital gain was taxed.

When shares are acquired in the usual way, individuals do not receive any tax concession. Rather they pay for those shares out of their after-tax incomes. However, on disposal of those shares after at least 12 months, they pay tax which, since the Ralph reforms, has been calculated on only 50 per cent of any realised capital gain.

Existing Plans

When shares are acquired under Division 13A ESOPs, individuals do receive a tax concession. Specifically, they initially pay for those shares out of their pre-tax incomes, the income tax liability either being not raised (under the exempt plan) or deferred until disposal of the shares (under the deferred plan). So on disposal of those shares they pay tax which varies according to the type of ESOP.

The existing exempt plan is only available where the discount received is no more than \$1,000 per year. On disposal of shares acquired under the exempt plan, tax on any realised capital gain is assessed in the usual post-Ralph way.

Under the existing deferred plan, the income tax on acquiring the shares is deferred until disposal of the shares. In addition, 100 per cent of any realised capital gain is taxed on disposal, instead of the usual 50 per cent that has applied post-Ralph. For income tax purposes, the employee is deemed to have disposed of the shares when the restriction on the sale of the shares is lifted and the employee disposes of the shares, the employee leaves the company, or after ten years, whichever comes first⁵.

According to Division 13A (subdivision C), the following six conditions must be met for shares to be classified as a *qualifying share*, which can be offered under either the tax exempt or tax deferred plans.

1. The share must be acquired by a taxpayer under an employee share scheme.
2. The company offering the share must be the employer of the taxpayer.
3. The share offered must be an ordinary share.
4. At least 75 per cent of permanent employees of the employer must be (or have been) offered the share (or a share in employer's business under another employee share scheme).
5. One employee cannot own more than 5 per cent of shares in the company.
6. One employee cannot own more than 5 per cent of voting shares in the company.

Proposed Plan

The new ESOP proposed by the EOG, which is designed to replace both existing plans, is referred to as the 'proposed plan' in this report. The details of the proposed plan are discussed in *Employee Share Ownership in Australia: The Future*⁶. The main features of the proposed plan are discussed below.

The proposed new ESOP is designed to replace both forms of ESOP currently provided for under Division 13A – the tax deferred and tax exempt plans. It does this by integrating the personal income tax concessions already available under both plans for remuneration taken in the form of shares during an income year. Specifically, for discounts on shares acquired under Division 13A ESOPs in any income year, the first \$1,000 invested is exempt from personal income tax (as under the tax exempt plan). For amounts invested which are over \$1,000 there is a deferral of personal income tax until disposal of the shares (as under the tax deferred plan).

The EOG proposes reform to the taxation of capital gains from shares acquired under Division 13A ESOPs. Under the usual post-Ralph tax treatment of capital gains, provided shares are held for longer than 12 months, only 50 per cent of any capital gain that is made on disposal is taxed.

⁵ The cessation time for share rights is outlined under Division 13A, Subdivision C, Section 139CB.

⁶ Employee Ownership Group, "Employee share ownership in Australia: the future".

Under the proposed reform, capital gains from shares acquired under these ESOPs would be subject to the same tax treatment that applies post-Ralph to shares that are acquired in other ways⁷. This means that under the proposed new ESOP, only 50 per cent of any capital gains made on disposal of shares would be taxed. This can be compared with the tax deferred plan, to which this Ralph reform was not extended. Consequently, the entire capital gain continues to be taxed for shares acquired under tax deferred plans.

As previously mentioned, shares acquired under the tax deferred ESOP are subject to the 10-year rule. Under this rule, income tax is paid on the full value of the shares after 10 years if the shares have not been sold earlier. In many cases this would force the sale of the shares so that the income tax payment can be made. This has the effect of removing employees' financial stakes in their employers' businesses and therefore undermining a key objective of ESOPs. Under the proposed ESOP, the 10-year rule is removed.

The EOG also proposes to amend some of the conditions (listed above) outlined in Division 13A. One such condition is the restriction to offer only ordinary shares (number 3 in above list) under Division 13A ESOPs. Shareholders of ordinary shares receive dividends but have no preferential rights to dividends or capital when a company closes. The restriction to offer only ordinary shares means that companies that do not issue ordinary shares, particularly small companies and domestic subsidiaries of foreign companies, cannot offer Division 13A ESOPs. Under the proposed plan, employers would be able to offer employees any type of equity in the company, as part of the ESOP. By widening the type of equity that can be offered to employees under ESOPs, more employers would be able to offer ESOPs.

A further limitation of the conditions imposed on Division 13A ESOPs is that no one employee can own more than 5 per cent of shares (or voting shares) in a company (numbers 5 and 6 in above list). For small companies, a 5 per cent shareholding may represent an amount of capital that is too small to warrant offering ESOPs within the business. The EOG proposes increasing the 5 per cent limit to 10 per cent⁸. By increasing this limit, the attractiveness of ESOPs to employers would be increased.

This report models the effects of the proposed new ESOP. This modelling covers the effects both on the government budget as well as the effects on national income, consumption and saving.

Because the proposed new ESOP involves an extension of existing tax concessions for ESOPs, its direct effect on the government budget would be negative. However, the aim of the proposal is to stimulate extra take-up of ESOPs, and to the extent that this occurs, there will be benefits to both the government budget and the economy generally.

Specifically, the further spread of ESOPs would have favourable effects on private saving and productivity. Private saving will increase to the extent that the extra take-up of ESOPs is financed through reduced consumer spending. Productivity will increase to the extent that companies with ESOP schemes have higher labour productivity than companies without ESOP schemes.

⁷ However, under the proposed plan, the first \$1,000 invested would be tax exempt.

⁸ Employee Ownership Group, "Employee share ownership in Australia: the future".

Higher saving now means greater asset accumulation, supporting higher incomes and living standards in the future. Higher productivity supports higher incomes and living standards now and in the future. Higher incomes in turn generate increased tax revenue, at least partly offsetting the direct cost to the government budget from the extension of ESOP tax concessions. This report models all of these possible direct and indirect effects of the proposed new ESOP.

3. Modelling Approach

The economic modelling of the proposed ESOP was undertaken in two stages. In the first stage, a purpose-built model was constructed to estimate the direct effects on the government budget and private saving. Estimating the budget impact of the proposed changes involved calculating the difference between the budget outcome under the proposal and the budget outcome under the current legislation. The stimulus to private saving generated from the proposal was also modelled.

In the second stage, these direct effects were fed into an economy-wide model to take into account indirect effects in estimating the effects on the economy generally. This allowed the modelling to take into account indirect effects of the proposed plan on the budget through its effects on the economy.

In the following subsections, the data, assumptions and scenarios used in the modelling are discussed. The data used in the modelling is discussed in Section 3.1. In Section 3.2 the assumptions underlying the modelling are discussed. A range of scenarios were modelled for this study, each of which is outlined in Section 3.3.

3.1 Data

As identified in the recent Inquiry into employee ownership in Australian enterprises, there is limited data available on employee share ownership in Australia. In fact, the Inquiry specifically recommended that further research be conducted on the nature and extent of employee share ownership.

Most information about ESOPs in Australia is based on survey data. In the past, the Australian Bureau of Statistics (ABS) and former Australian Workplace Industrial Relations, (now Department of Employment and Workplace Relations) conducted surveys on ESOPs. The surveys collected information that could be used to estimate the number of companies and employees with ESOPs. However, neither survey collected information about the amount invested in ESOPs. For this study, the amount invested in ESOPs is crucial information to estimate the amount of tax collected.

For this study, the following three sources of information on the value of ESOPs were investigated:

- the ASX 2002 Share Ownership study;
- an investigation undertaken specially for this study by the two major share registries, Computershare and ASX Perpetual, on ESOPs of the ASX100 companies; and
- an analysis by Econtech of the annual Financial Statements of the ASX20 companies.

The ASX 2002 Share Ownership study is a useful source of general information on share ownership. Further, it does ask about the method(s) by which a person has acquired shares, including ESOPs. However, it cannot be used to reliably isolate the value of ESOP holdings from other holdings, let alone split those ESOP holdings into exempt plan holdings and deferred plan holdings as required for this study.

The other two sources of information focus specifically on ESOP values. Reassuringly, they cross-check by producing broadly similar estimates. This study is based on the third source

of information, the Econtech analysis, because it uses publicly-available information and is therefore verifiable by other parties.

Econtech analysed the most recent annual financial statements of the top 20 listed public companies as represented by the ASX20 index. 17 of the 20 financial statements provided information on ESOPs that was detailed enough to be included in the analysis. These 17 companies, which are identified in the notes to Table 2, represent about 44 per cent of the Australian stock market by market capitalisation. This coverage factor of 44 per cent was used to scale up the results from the sample of 17 companies to the full stock market in obtaining the estimates reported in Table 3.1.

Table 2
Estimated Annual Addition to ESOPs
Total share value and discount component under Division 13A
(\$ million in most recent year)

	value	discount
exempt	134	133
deferred (salary sacrifice)	155	154
deferred (loans)	250	25
deferred (rights)	46	46
options	827	124
total	1,411	482

Notes:

1. The 17 companies in the sample are (using ASX codes): AMC, ANZ, AWC, CBA, CML, FGL, NAB, NCP, NCPDP, SGB, TLS, WBC, WES, WFT, WSF, WPL and WOW. This sample of companies represent about 44% of the market capitalisation of the stock market, and so total ESOP values from these companies were divided by 0.44 to estimate the values for the full stock market that are reported in the table.
2. The share value was estimated as the number of shares issued under the particular ESOP in the most recent year, times the share price at 30 December 2003.
3. As implied by the table, the discount value for Division 13A was 100% of the share value for most exempt, deferred (salary sacrifice) and deferred (rights) plans. For deferred (loans) plans, the discount value was estimated at 10% of the share value to take into account that loan plans most commonly involve nil discount but occasionally involve some discount.
4. For option plans, the "value" reported in the table refers to the value of the shares that were issued in the most recent year as a result of ESOP options being exercised, not the value of the options themselves. This share value was calculated as the number of options that were exercised in the most recent year times the share price at 30 December 2003. Under ESOPs options are generally issued for zero consideration, generally have an exercise price about equal to the actual share price at the time of issue, and have a duration of 3 to 10 years. This leads to the rule-of-thumb that the actual value of the option is around 15% of the share value. This rule-of-thumb has been used in the table to convert the share value to the option value to estimate the "discount" for the purposes of Division 13A.

To conduct modelling, the above data on annual additions to ESOP holdings needs to be converted to the outstanding stock of ESOP holdings. In making this conversion, ESOPs are assumed to be held for seven years. In making this assumption, it was recognised that ESOP holdings may be disposed of when changing employers: a 2002 ABS survey of labour mobility found that 40 per cent of employees have already been with their current employer for over five years. However, the modelling results for budget impacts were not sensitive to the assumption about the holding period of the shares. Using a holding period of seven years, the stocks are estimated simply as seven times (the discount component of) the annual additions. These stocks are further converted from millions to billions for Table 3.

Table 3
Estimated ESOP Holdings
(\$ billion at 30 December 2003)

exempt	0.9
deferred (salary sacrifice)	1.1
deferred (loans)	0.2
deferred (rights)	0.3
options	0.9
total	3.4

Table 3 implies that, at present, \$3.4 billion in shares are held that were issued under ESOP tax concessions. This represents just under 0.5 per cent of the stock market by value.

3.2 Modelling Assumptions

Basic Parameters

The basic parameters of the modelling are set out in Table 4. As noted above, ESOPs are assumed to be held for seven years. The other basic parameters in Table 4, which are not specific to ESOPs, are now discussed.

Table 4
Basic Parameters

	units	value
share holding term	years	7
nominal share price growth	% p.a.	4.5%
alternative assumption for nominal share price growth	% p.a.	6.0%
gross dividend yield	% p.a.	5.0%
real economic growth rate	% p.a.	3.0%
inflation rate	% p.a.	2.5%
average marginal cgt rate for domestic shareholders	per cent	21.5%
average marginal pit for domestic shareholders	per cent	41.5%
corporate tax rate	per cent	30%

cg: capital gains tax

pit: personal income tax

Note: capital gains tax and personal income tax include Medicare Levy of 1.5%.

In the modelling, the basecase assumption is that nominal share prices grow at 4.5 per cent per year. This represents the compound average annual growth rate in the All Ordinaries Share Price Index from end-1996 to end-2003. While this is lower than in earlier periods, this can be explained by the Reserve Bank successfully targeting general price inflation at the historically low annual rate of 2.5 per cent together with an apparent structural change to lower real yields that is also seen in the bond market. As indicated in Table 4, the sensitivity of the results is tested by substituting the standard assumption for annual nominal share price growth of 4.5 per cent with a higher alternative assumption of 6.0 per cent, representing a return to earlier trends.

The gross dividend yield is set to 5 per cent. This is close to the gross dividend yield for the ASX20 companies at 30 December 2003 of 5.3 per cent. This dividend yield has been fairly stable historically.

Annual real economic growth is set at 3 per cent. This is consistent with annual growth in the labour force of around 1 per cent and productivity of around 2 per cent. Inflation is set at 2.5 per cent, the middle of the Reserve Bank's range of 2 to 3 per cent.

Average marginal tax rates of ESOP holders are needed to calculate tax paid on income and capital gains. These average marginal tax rates are estimated by applying the personal income tax scale to income distribution data for shareholding individuals from the ASX 2002 Share Ownership study. The average marginal rate of personal income tax rate is estimated at 40 per cent. This is halved to 20 per cent for capital gains that are subject to the post-Ralph treatment. The Medicare Levy of 1.5 percentage points was added to both of these headline marginal tax rates to arrive at effective marginal tax rate of 41.5 per cent for income and 21.5 per cent for normally-taxed capital gains.

The current corporate tax rate is, of course, 30 per cent. Foreign investors in Australian companies do not receive franking credits, and so the Australian corporate tax rate is used to model the Australian tax that is paid out of the dividends that they receive on their Australian shareholdings.

Behavioural Assumptions

The proposed ESOP provides an increased tax concession to Australian employee shareholders, and hence is likely to lead to an expansion of ESOP shareholdings. The extent of the expansion is difficult to estimate with any precision. However, existing Australian ESOP holdings are low by international standards at only 0.5 per cent of the value of the stock market, and so the potential for expansion would be considerable. The basecase assumption is that the proposed ESOP doubles ESOP holdings to just under 1 per cent of the value of the stock market i.e. from around \$3.4 billion to around \$6.8 billion. Under a conservative alternative scenario, an expansion of half this size to \$5.1 billion is assumed.

The proposed ESOP provides potential participants with an enhanced tax concession for saving by acquiring ESOP shares. As such, it can be expected to encourage both share ownership and saving. Thus the basecase assumes that the acquisition of ESOP shares is funded by diverting private income from consumption to saving in the form of acquiring ESOP shares. At the same time it is possible that some ESOP share holdings are instead funded by displacing non-ESOP share holdings. This possibility is considered in an alternative scenario where the acquisition of ESOP share holdings is funded on a 50/50 basis from foregone private consumption and non-ESOP shares.

To the extent that the acquisition of ESOP shares is funded from foregone private consumption, it translates into an expansion in Australian private saving. The associated accumulation of Australian wealth in the form of ESOP shareholdings also ultimately leads to higher national income.

At the same time the modelling makes the conservative assumption that the expansion in ESOP holdings does not translate to an increase in business investment for Australian companies or their total shareholdings. This is on the usual assumption that Australia is

integrated into world capital markets, so that tax concessions directed at foreign shareholders, rather than domestic shareholders, will have the greatest effect on business investment. However, the proposed ESOP may induce some increase in business investment, and because the modelling makes no allowance for this, its estimates of the benefits are likely to be conservative.

With total share holdings in Australian companies assumed to be unchanged, the expansion in ESOP shareholdings can be expected to displace foreign-owned shareholdings. The expansion in ESOPs reduces reliance on foreign funding of Australian investment.

Taxation Assumptions

The various scenarios that are modelled therefore leave total shareholdings in Australian companies unchanged. Instead the scenarios shift the composition of those shareholdings towards the proposed ESOP and away from some of the other categories of shareholdings that are identified in Table 5. The implications of this for the Commonwealth Government Budget therefore depend on the tax treatments of each category of shareholding.

Perhaps paradoxically, the long-term effects on the Budget are clearer than the short-term effects. The short-term effects will be influenced by whether the existing exempt and deferred plans are grandfathered or are converted to the proposed plan. They will also be affected by how quickly individuals and companies respond to the new tax concession. Given these uncertainties, this report focuses exclusively on the long-term effects on the Budget. These ongoing Budget effects, which are best assessed using a so-called “steady state” model, are more important than the transitional Budget effects in assessing the merits of the proposed ESOP.

Using the assumptions already specified in Table 4, it is possible to calculate income tax collections for the different categories of shareholdings on a steady state growth path. Specifically, Table 5 shows the annual Australian tax collected from \$1 that has been invested for each type of shareholding.

There are three components to annual income tax payments for a shareholding: taxes on entry, taxes on holding, and taxes on exit. With an assumed shareholding period of seven years, each year new shares are acquired to the value of one-seventh of the portfolio, while the shares that were acquired seven years previous are sold. The entry, holding and exit taxes are now explained in turn.

Table 5
Annual Tax Associated with \$1 of Shareholding According to Ownership Type (dollars)

	entry	holding	exit	total
foreign portfolio	0.000	0.015	0.000	0.015
normal shares	0.000	0.021	0.008	0.029
ESOP_exempt	-0.059	0.021	0.008	-0.030
ESOP_deferred	-0.059	0.021	0.057	0.018
ESOP_proposed	-0.059	0.021	0.049	0.010

Note: “ESOP_exempt” includes the existing exempt plan and the exempt component of the proposed ESOP.

Under an ESOP, shares can be acquired as a salary sacrifice, so personal income tax revenue is foregone on that salary sacrifice at the time of entry. The amount of revenue foregone is simply the average marginal rate of personal income tax applied to the one-seventh of the portfolio that is acquired each year. Using the data from Table 4, this is calculated as follows: $(1/7) \times 41.5\% = 5.9\%$. So Table 5 reports an annual revenue cost associated with entry to ESOPs of 5.9 cents in the dollar.

ESOPs may also be “gifted” to employees, especially under the exempt plan. This raises the issue of whether all ESOP holdings should be viewed as salary sacrifices. However, even “gifted” holdings are likely to reduce pressure for increases in other forms of remuneration, and so can be considered to be similar in effect to a salary sacrifice. There is no salary sacrifice associated with normal share holdings or shares acquired by foreigners, as reflected in the zero cost to the Budget in the “entry” column of Table 5.

Income tax is payable on dividends received each year on holdings of shares. For foreign portfolio investors receiving franked⁹ dividends on their Australian shareholdings, company income tax will have been deducted. Based on the company tax rate and gross dividend yield shown in Table 4, the annual amount of tax on dividends would be 1.5 cents per dollar of foreign shareholding: $30\% \times 5\% = 1.5\%$.

For Australian shareholders, income tax will ultimately be paid based on an individual’s marginal tax rate (with the impact of company tax nullified by franking credits). This means that Australian shareholders pay more Australian tax on Australian-sourced dividends than do foreign shareholders. This is because the average marginal tax rate of 41.5 per cent is higher than the company tax rate of 30 per cent. This is reflected in the “holding” column of Table 5.

Capital gains tax and, if applicable, deferred personal income tax are payable when shares are sold, giving rise to the “exit” taxes shown in Table 5. As noted in Table 4, the modelling assumes that each year shares that were acquired seven years previous are sold. In the steady state, the value of shares acquired seven years ago will equal one-seventh of the current portfolio discounted for seven years of growth in nominal GDP.

The foreign investor is exempt from Australian capital gains tax provided he or she holds less than 10 per cent of the equity in the company. Consequently, Table 5 shows no exit tax for the foreign portfolio investor.

For normal domestic shareholdings, capital gains tax is applied at the capital gains tax rate to the nominal increase in the share value. This also applies to the existing exempt ESOP plan, as well as the exempt component of the proposed plan.

Under the deferred ESOP plan, exit tax is much higher for two reasons. First, the income tax rate rather than the capital gains tax rate is applied to the capital gain. Second, deferred income tax is payable on the original salary sacrifice. Under the proposed ESOP plan, exit tax is less because only the capital gains tax rate is applied to the capital gain, while deferred income tax continues to be payable. This can be seen in the “exit” column of Table 5.

⁹ Franked dividends are dividends paid by an Australian company from profits that have already had Australian tax paid on them.

The total annual tax collected on an ongoing basis from the various ESOPs can be compared. The exempt plan and the exempt component of the proposed plan generate the lowest tax revenue, followed by the non-exempt component of the proposed plan, followed by the deferred plan.

3.3 Scenarios

To estimate the impacts of the proposed plan on the Budget, national income and national saving, a range of scenarios have been modelled. These scenarios, which are motivated below, are as follows.

1. an “**existing**” scenario which refers to the current situation where an exempt and deferred plan exist without the proposed plan
2. a “**proposed (basecase)**” scenario which assumes that the proposed ESOP is introduced and results in a doubling of ESOP share holdings
3. a “**lower take-up**” scenario which assumes that the proposed ESOP is introduced and results in a 50 per cent rise in ESOP share holdings (not 100 per cent as in the basecase scenario)
4. a “**no extra take-up**” scenario which assumes that ESOP holdings remain the same under the proposed ESOP as they are under the existing plans
5. a “**half displaces normal share holdings**” scenario which assumes that half of the additional take-up of ESOP holdings (under the proposed plan) displaces normal share holdings
6. an “**existing under higher share price growth**” scenario which varies the existing policy scenario (i.e. scenario 1) by assuming that the annual growth in share prices is 6 per cent (not 4.5 per cent)
7. a “**proposed under higher share price growth**” scenario which varies the proposed (basecase) scenario (i.e. scenario 2) by assuming that the annual growth in share prices is 6 per cent (not 4.5 per cent)
8. a “**\$2,000 exempt plan**” scenario which, instead of introducing the proposed ESOP, modifies the existing exempt plan to raise the maximum annual investment from \$1,000 to \$2,000

Table 6 below shows the value of share holdings and assumed rate of share price growth for each of the eight scenarios.

Table 6
Scenarios for Shareholding under Proposed ESOP (\$ billion)

	existing policy	proposed policy (base case)	lower extra take- up	no extra take-up	half displaces normal share holdings	existing under higher share price growth	proposed under higher share price growth	\$2,000 exemption
foreign portfolio (dev'n)	0.0	-3.4	-1.7	0.0	-1.7	0.0	-3.4	-0.9
normal shares (dev'n)	0.0	0.0	0.0	0.0	-1.7	0.0	0.0	0.0
ESOP_exempt	0.9	1.9	1.5	1.2	1.9	0.9	1.9	1.9
ESOP_deferred	2.4	0.0	0.0	0.0	0.0	2.4	0.0	2.4
ESOP_proposed	0.0	4.9	3.5	2.1	4.9	0.0	4.9	0.0
nominal share price growth	4.5%	4.5%	4.5%	4.5%	4.5%	6.0%	6.0%	4.5%

Note: "ESOP_exempt" includes the existing exempt plan and the exempt component of the proposed ESOP.

Table 6 shows the various scenarios. The first column refers to the existing policy and is used as a point of reference. It is based on the estimates of existing ESOP shareholdings previously reported in Table 3. It showed total holdings of \$3.4 billion, with an exempt plan component of \$0.9 billion.

The next four columns in Table 6 show alternative scenarios under the proposed plan. These scenarios are now explained in turn.

In the basecase, it is assumed that the proposed plan results in a doubling of ESOP holdings, from \$3.4 billion to \$6.8 billion or from about 0.5 per cent to about 1.0 per cent of the stock market. ESOP holdings would still not be high by international standards. Within the assumed increase, a doubling is assumed for both exempt and non-exempt holdings. Additional Australian ownership of shares reduces reliance on foreign equity, which falls by the amount of the increase in Australian equity.

The “lower take-up” scenario assumes a more modest 50 per cent increase in ESOP holdings, from \$3.4 billion to \$5.1 billion. This scenario is considered to be conservative.

The “no extra take-up” scenario assumes total ESOP holdings are unchanged at \$3.4 billion i.e. the proposed plan merely displaces the existing exempt and deferred plans. This is not considered to be realistic. However, it has been included to make it possible to dissect the effects of the proposed plan into the effects from the displacement of the existing plans and the effects of the extra take-up of ESOPs.

The “half displaces normal share holdings” scenario makes an alternative assumption about the effects of ESOPs on saving behaviour. The other scenarios, including the basecase, assume that ESOPs result in an addition to national wealth. This will occur provided outlays on ESOPs displace consumer spending. In other words, the other scenarios assume that funds which are used to acquire shares in the proposed ESOP would otherwise be used to consume goods and services. An alternative assumption, used in the “half displaces normal share holdings” scenario, is that one half of the additional take-up in ESOP holdings displaces normal share holdings. This means that half of the additional funds used to invest in the proposed ESOP would have been invested in shares in the traditional way. (The other half of additional funds would have been consumed.)

The next pair of scenarios investigates the sensitivity of the basecase results to the assumed rate of increase in share prices. As discussed in Section 3.2, the basecase assumes an annual rate of increase in nominal share prices of 4.5 per cent in line with recent trends, but this alternative analysis uses a higher rate of 6.0 per cent in line with earlier trends.

The final scenario models an alternative reform of ESOP. Instead of introducing the proposed ESOP, the existing exempt plan is modified to raise the maximum annual investment from \$1,000 to \$2,000. This alternative reform of ESOP is discussed in the Appendix to this report.

4. National Effects – Unchanged Productivity

As previously mentioned, the economic modelling of the proposed ESOP was undertaken in two stages. In the first stage, the direct effects on the government budget and private saving were estimated. In the second stage, these direct effects were fed into an economy-wide model to take into account indirect effects in estimating the effects on the economy generally. In this section, the direct and indirect effects are presented in Sections 4.1 and 4.2 respectively. Further, the results presented in this section are conservative because the productivity differences between ESOP and comparable non-ESOP firms have not been taken into account. Instead, impact of the productivity differences between ESOP and comparable non-ESOP firms on tax collection and national income is estimated in Section 5.

4.1 Direct Effects

This section presents the direct effects of the proposed ESOP on the government budget and national income. These annual long-term effects on annual tax collections are shown in Table 7 and on national income in Table 8, while the results are summarised in Chart 1.

Table 7
Impact on Annual Tax Collections of Proposed Plan
(\$ million, deviations from “existing policy” scenario)

	proposed policy (base case)	lower extra take- up	no extra take-up	half displaces normal share holdings	higher share price growth
type of share holding					
foreign portfolio	-51	-25	0	-25	-51
normal shares	0	0	0	-48	0
ESOP_exempt	-29	-19	-10	-29	-26
ESOP_deferred	-41	-41	-41	-41	-55
ESOP_proposed	47	34	20	47	62
total	-73	-51	-30	-96	-70
% of GDP	-0.010%	-0.01%	0.00%	-0.01%	-0.01%

source: Econtech

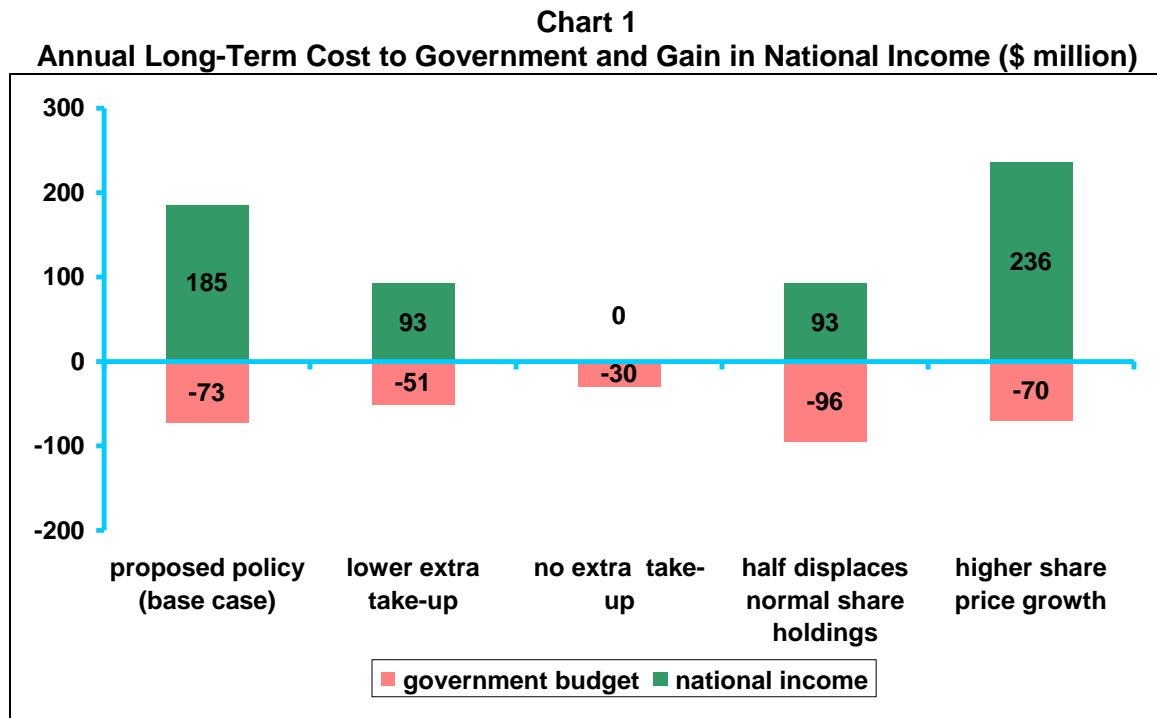
Note: "ESOP_exempt" includes the existing exempt plan and the exempt component of the proposed ESOP.

Table 8
Impact on Annual National Income of the Proposed Plan
(deviations from “existing policy” scenario)

National Income Impacts (\$m)					
consumption	84	42	0	42	135
saving	101	51	0	51	101
income	185	93	0	93	236
National Income (% of GDP)					
consumption	0.01%	0.01%	0.00%	0.01%	0.02%
saving	0.014%	0.01%	0.00%	0.01%	0.01%
income	0.03%	0.01%	0.00%	0.01%	0.03%

source: Econtech

Chart 1 shows that there is a cost to the government budget as well as a gain in national income under all scenarios (except the “no extra take-up” scenario).



source: Econtech

Under the basecase, Chart 1 shows a direct cost to the annual budget of the proposed ESOP reform of \$73 million. This can be seen to be made up of two components.

First, from the “no extra take-up” scenario, it can be seen that the simple displacement of the existing exempt and deferred plans with the proposed plan involves an annual budget cost of \$30 million. This means that even if the proposed ESOP did not stimulate extra take-up of ESOPs, there would be an estimated annual cost to the government budget of \$30 million. This is because the proposed ESOP involves greater tax concessions than for the existing two plans taken together.

Second, the expansion of ESOP accounts for the remaining direct cost to the budget of \$43 million. This is because less Australian tax is paid on the extra ESOP holdings under the proposed plan than under the foreign portfolio holdings that they displace. (Table 5 showed that 1.5 cents of annual Australian tax is associated with \$1 of a foreign-owned shareholding compared to 1.0 cents for the non-exempt component and -3.1 cents for the exempt component of the proposed ESOP.)

The proposed plan is estimated to raise annual national income by \$185 million, as shown in Table 8 and Chart 1. This represents the annual real return on the additional \$3.4 billion in ESOP shareholdings, net of a small loss in tax collections from reduced foreign-owned shareholdings.

The long-term gain in annual national income of \$185 million is divided into a gain in national saving of \$101 million and a gain in national consumption of \$84 million. The additional saving is used to maintain the additional ESOP shareholdings relative to GDP.

The remainder of the gain in national income translates into higher living standards in the form of the increase in annual consumption of \$84 million.

So in the long term the annual direct cost to the Budget of \$73 million is associated with a gain in national income of \$185 million. This represents a gain in national income of \$2.54 for every \$1 in cost to the budget.

The results shown in Chart 1 for the remaining scenarios test the sensitivity of these findings to various assumptions. For example, if the proposed plan induces only a 50 per cent expansion rather than 100 per cent expansion in ESOP holdings (“lower extra take up”), both the cost to the budget and the gain in national income is less. In the highly unlikely event that there is no expansion in ESOP holdings (“no extra take-up”), there would be no gain in national income, but the annual cost to the budget would be as low as \$30 million.

If half of the extra ESOP holdings are financed by displacement of normal shareholdings (“half displaces normal shareholdings”), the effects are less favourable than if all of the extra ESOP shareholdings are financed from foregone consumption. The annual direct cost to the budget reaches \$96 million, as annual tax of 2.8 cents collected on each dollar of normal shareholdings is displaced by lower tax collected on ESOP shareholdings under the proposed plan. The gain in national income shrinks to \$93 million, since the gain in Australian shareholder wealth from the expansion in ESOPs is partly offset by the fall in normal shareholdings.

“Higher share price growth” has a relatively small effect on the cost to the Budget of the proposed plan. Raising the assumed rate of annual growth in share prices from 4.5 per cent to 6.0 per cent trims the annual direct cost to the budget of the proposed plan from \$73 million to \$70 million. However, it boosts the gain in national income from \$185 million to \$236 million, because of the assumed higher rate of return on the additional ESOP shareholdings.

4.2 Economy-wide Effects

These effects on private and public saving shown in Table 8 have been entered into Econtech’s Murphy Model 2 (MM2) to estimate the full effects on the economy, taking into account indirect effects.

MM2 is a quarterly forecasting model of the Australian economy. Its economic forecasts are at the national, industry and state levels, while its demographic forecasts are at the national and state levels. It has a highly respected forecasting track record and is used by Commonwealth and State Governments, industry associations, financial institutions and major companies.

This analysis on the budget makes the standard assumption that in the long-run the government budget must be balanced. This is because a budget deficit is not sustainable in the long-run. Thus, the reduction in tax revenue is expected to be exactly offset by a change in tax revenue from all other sources.

The resulting estimates of the economy-wide impacts of the proposed ESOP are presented in Table 9 below. These figures represent the basecase scenario, where the proposed ESOP is

introduced under standard economic assumptions. These figures show the expected impacts on some economic variables if the proposed ESOP were introduced.

Table 9
Total Economy-wide Impacts of Proposal
(Deviations from base)

	Units	year 1	year 3	year 5	year 7	year 9
GDP	% dev.	-0.03	0.03	0.01	0.08	0.01
Private savings	% of gdp	0.16	0.14	0.09	0.08	0.06
Public savings	% of gdp	-0.09	-0.03	0.00	0.04	-0.01
National savings	% of gdp	0.07	0.11	0.09	0.12	0.06
Current Account Balance	% of gdp	0.03	0.07	0.10	0.05	0.08
National Investment	% of gdp	0.03	0.04	-0.01	0.07	-0.02
90-day bill rate	% p.a.	-0.06	-0.05	-0.08	-0.01	-0.01
10-year bond rate	% p.a.	-0.05	-0.03	-0.02	0.00	0.00

source: MM2 simulation

Table 9 shows that the increase in private savings and reduction in public savings results in a net increase to national savings. Public savings falls in the short-term due to the introduction of the proposed ESOP. However, over the long-term, the effect on public savings fades. This is because the government introduces other tax measures to ensure the budget is balanced.

Part of the gain in national savings finances higher national investment. This supports a gain in GDP varying around 0.02 per cent. The other part of the gain in national saving finances a reduced reliance on foreign funds i.e. an improvement in the current account balance. The gain in the current account balance varies around 0.06 per cent of GDP. Higher national saving also allows a modest lowering of interest rates of up to 8 basis points.

5. National Effects – Higher Productivity

The estimates of the budgetary and national savings impacts of the proposed ESOP presented in earlier sections are likely to be conservative because they do not take into account the positive relationship between ESOPs and productivity. A number of studies have found a positive relationship between ESOPs and productivity. The results of the studies have shown that ESOPs contribute to higher productivity by giving employees financial stakes in their employers' businesses. This section expands on the modelling results presented above to estimate the impact of the new ESOP and related higher labour productivity of ESOP firms on tax collections and national income.

Evidence of the likely magnitude of the different level of productivity between ESOP firms and comparable non-ESOP firms is discussed in more detail in Section 5.1. This evidence is used to calculate three estimates of the productivity differences between ESOP and non-ESOP firms. The first estimate assumes that there is no productivity difference. The second estimate is a conservative estimate, while the third estimate is an upper estimate. The conservative and upper estimates are used to model the impact of the productivity differences between ESOP and comparable non-ESOP firms on tax collections and national income. In this section, the effects of the new ESOP are calculated as the differences between the 'proposed policy (basecase) scenario' and the 'existing scenario'.

5.1 Literature Review

As discussed above, a significant number of studies have found a positive relationship between ESOPs and productivity. First, FitzGerald (1993) analysed the link between ESOPs and productivity in Australia. The paper addressed the role and potential of ESOPs in lifting enterprise performance and raising the level of saving.

For Australia, FitzGerald summarised findings of a 1991 survey undertaken by the Remuneration Planning Corporation that covered over 300 companies and over one million employees. The results of the survey showed that sales per employee (an indicator for productivity) for companies operating ESOPs were 12 per cent higher than the industry median.¹⁰ This lead FitzGerald to conclude that as “has been found repeatedly overseas, surveyed companies operating ESOPs in Australia indeed consistently show up as having significantly higher productivity and higher profitability than otherwise comparable companies.”¹¹

FitzGerald also compared estimates of the productivity differences between ESOP and comparable non-ESOP firms in both the United States and Canada. In America, where ESOPs are less popular with listed companies than with other companies, of the surveyed ESOP companies: 15 per cent believed that operating an ESOP had a strong effect on the productivity of the company; 56 per cent of surveyed companies believed that operating an ESOP had some effect on the productivity of the company; and 17 per cent of surveyed companies believed that operating an ESOP had no effect on the productivity of the company.¹²

¹⁰ FitzGerald, V. “Saving Through the Firm, Employee Share Plans – Context, Role and Implications for Enterprise Performance, Saving and Taxation”, The Allen Consulting Group, 1993.

¹¹ FitzGerald, V. op cit

¹² FitzGerald, V. op cit

For Canada, FitzGerald used findings of a survey undertaken by the Toronto Stock Exchange (TSE) that estimated the impact of ESOPs on the productivity of Canadian companies. In 1989, the TSE compared the productivity of listed companies that offered ESOPs to the productivity of listed companies that did not offer ESOPs. Specifically, the TSE estimated that compared to non ESOP companies in the same sector, listed ESOP companies had 23 per cent higher productivity.¹³

Jones and Kato (1995) analysed the effects of ESOPs on employee productivity in Japanese firms by estimating production functions using new panel data. The study estimated and then compared the gains in employee productivity derived from the bonus payment system and ESOPs in Japan. The main findings of the study are “that: (i) firms enjoy a 4-5 per cent increase in productivity by introducing an ESOP; and (ii) the productivity effects of an ESOP does not appear immediately following its introduction, but rather it takes 3-4 years for the firm to begin reaping the gain.”¹⁴

Kruse (2002) estimated a similar increase in productivity from ESOPs in the United States. Kruse estimated that productivity “improves by an extra 4%–5% on average in the year an ESOP is adopted, and the higher productivity level is maintained in subsequent years. This one-time jump is more than twice the average annual productivity growth of the U.S. economy over the past 20 years.”¹⁵

This positive productivity effect is supported by Bernstein, Blasi and Kruse (2003). It was estimated that ESOPs “improve a company’s productivity level by about 4 percentage points, compared to firms that don’t adopt such practices.”¹⁶

Quarrey and Rosen (1986) also estimated the link between ESOPs of productivity in the United States in two separate studies. In the 1986 study, which was the first study to show a link between employee ownership and company performance, it was estimated that ESOP companies had sales growth rates 3.4 per cent higher in the post-ESOP period than would have been expected based on pre-ESOP performance.¹⁷

Finally, Blasi, Kruse and Sesil (2001) presented a discussion paper at the United Nations University that summarised the main conclusions of 32 studies that analysed the link between employee ownership and firm performance. Of these studies, 29 were originally reviewed in Kruse and Blasi (1997)¹⁸. The majority of these studies relate to the US, but there are also studies from the UK, Canada, New Zealand (NZ) and Australia. It was estimated that the average estimated productivity difference between ESOP and non-ESOP

¹³ FitzGerald, V. op cit

¹⁴ Jones, D. and Kato, T. “The Productivity Effect of Employee Stock Ownership Plans and Bonuses: Evidence from Japan”, *American Economic Review*, Volume 85 No. 3, 1985.

¹⁵ Kruse, D. “Research Evidence on the Prevalence and Effects of Employee Ownership”, *The Journal of Employee Ownership Law and Finance*, Volume 14/4, 2002.

¹⁶ Bernstein, A. Blasi, J. and Kruse, D. “In the Company of Owners: The Truth about Stock Options (and Why Every Employee Should Have Them)”, 2003.

¹⁷ Quarrey, M. and Rosen, C. ‘Performance of Employee-owned Small Companies: a Preliminary Study’, *Journal of Small Business Management*, pp 58-63, 1986.

¹⁸ Kruse, D. and Blasi, L. “Employee Ownership, Employee Attitudes and Firm Performance: A Review of the Evidence” in Lewin, D. Mitchell, D and Zaidi, M. (ed), *The Human Resource Management Handbook*, 1997.

firms is 6.2 per cent, and the average estimated increase in productivity following adoption is 4.4 per cent, compared to the increase among similar firms in the same period.¹⁹

5.2 Estimates of the Productivity Differences

There is sufficient literature to support a positive relationship between ESOPs and higher productivity. Because of the range of estimates of the higher level of productivity, three estimates of the productivity difference between ESOP and comparable non-ESOP firms are used in the modelling of the results in this section as follows.

- No productivity estimate – for this scenario, it is assumed that there is no productivity difference between ESOP and non-ESOP firms. The results are the same as the results for the basecase outlined in Section 4.
- Conservative estimate – based on the available evidence, the level of productivity is estimated to be 3 per cent higher in ESOP firms than in comparable non-ESOP firms. Several of the studies discussed above reported that the average estimated productivity is 4 to 5 per cent higher in ESOP firms than in non-ESOP firms. So on this basis, 3 per cent is a conservative estimate.
- Upper estimate – based on the available evidence, the level of productivity is estimated to be 6 per cent higher in ESOP firms than in comparable non-ESOP firms. This estimate of the productivity difference is similar to the estimate in Blasi, Kruse and Sesil (2001), which was based on studies of the productivity difference between ESOP and non-ESOP firms in the US, UK, Canada, NZ and Australia.

This section presents the impacts on the government budget and national income of the productivity difference between ESOP and comparable non-ESOP firms. Importantly, the productivity of the ESOP firms that are currently operating in Australia is already higher than non-ESOP firms. For example, the productivity difference between ESOP and non-ESOP firms is estimated to be between 3 and 6 per cent. Therefore, it is the new ESOP holders that will achieve a higher productivity by working for an ESOP firm than working for a non-ESOP firm.

Table 10
Productivity Scenarios for Shareholding

	existing policy	conservative estimate	upper estimate
foreign portfolio (dev'n)	-3.4	-3.4	-3.4
normal shares (dev'n)	0.0	0.0	0.0
ESOP_exempt	1.9	1.9	1.9
ESOP_deferred	0.0	0.0	0.0
ESOP_proposed	4.9	0.0	4.9
nominal share price growth	4.5%	4.5%	4.5%
productivity premium	0.0%	3.0%	6.0%
extra ESOP holders (000s)	200	200	200
average wage (\$000s)	40	40	40

Note: "ESOP_exempt" includes the existing exempt plan and the exempt component of the proposed ESOP.

¹⁹ Blasi, J. Kruse, D. and Sesil, K. "Sharing Ownership via Employee Stock Ownership", United Nations University, Discussion Paper No. 2001/25, 2001.

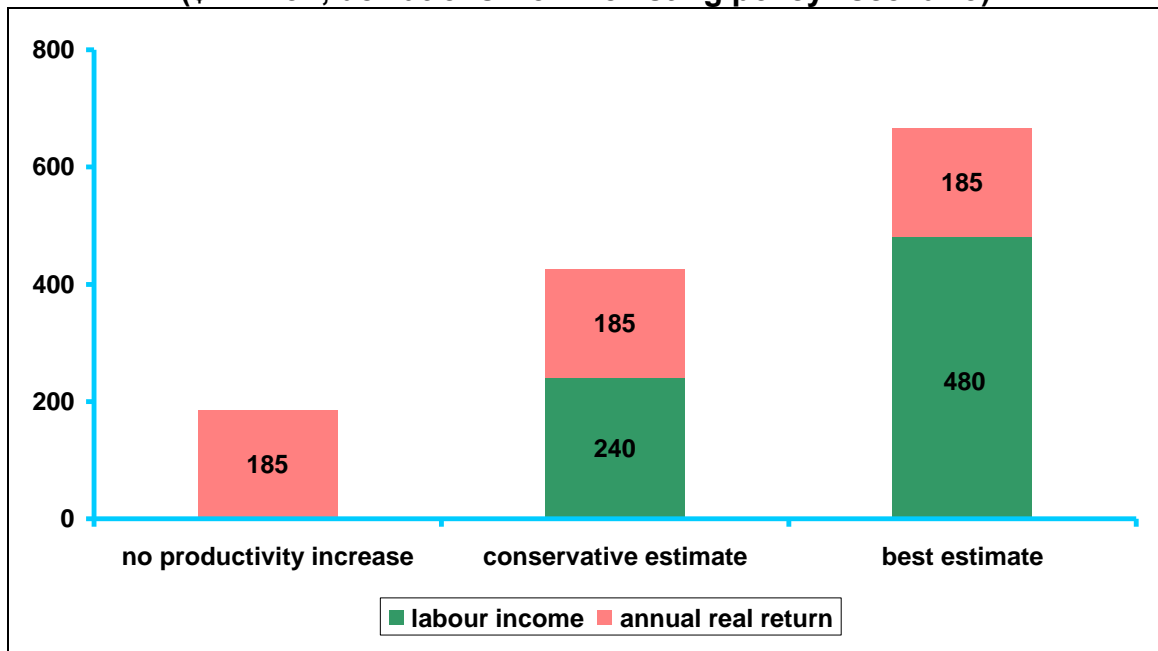
As discussed above, in the basecase, it is assumed that the proposed new ESOP results in doubling of ESOP holdings. Further, it is assumed that this doubling of ESOP shareholdings translates into an extra 200,000 ESOP members in Australia, as shown in Table 10. As discussed above, the productivity of these new members will be higher when working for an ESOP firm than when working for a comparable non-ESOP firm and this productivity difference is the mechanism for boosting the government budget and national income, as discussed in more detail below.

5.3 Direct Effects

This section presents the direct effects of the proposed ESOP and estimated productivity differences between ESOP and non-ESOP firms on the government budget and national income. In this section, the results for the new ESOP in the tables and charts are calculated as the differences between the ‘proposed policy (basecase)’ scenario and the ‘existing’ scenario. Further, the tables and charts compare the impact of the new ESOP using three different assumptions about the estimated productivity differences between ESOP and comparable non-ESOP firms.

Chart 2 and Table 11 show the results for the ‘proposed policy (basecase)’ scenario under the three alternative assumptions about ESOP productivity. All of the productivity scenarios in the chart and table are based on the basecase assumption that under the proposed new ESOP, the value of ESOP shareholdings double and the number of ESOP shareholders increases by 200,000.

Chart 2
Annual Long-Term Gain in National Income of Proposed Policy
(\$ million, deviations from “existing policy” scenario)



source: Econtech

A comparison of the results in Chart 2 shows that there is a substantial increase in annual national income once the higher ESOP productivity has been factored in. For example, the chart shows that gain in national income rises from \$185 million to between \$425 million (conservative estimate) and \$665 million (upper estimate).

Chart 2 shows that these enlarged gains in national income reflect the boost to labour productivity among the 200,000 new ESOP shareholders. For example, the conservative estimate of the productivity difference of 3 per cent translates into an annual gain in labour income for the 200,000 new members of \$240 million. Further, the upper estimate of the productivity difference of 6 per cent doubles the annual gain in labour income for the new ESOP members to \$480 million. There is no gain in labour income under the no productivity increase assumption. This is because the productivity of the new ESOP members is the same regardless of whether the employees are working in an ESOP firm or non-ESOP firm. Chart 2 also shows that the other part of the gain in national income represents the annual return on the additional \$3.4 billion in ESOP shareholdings, net of a small loss in tax collections from reduced foreign-owned shareholdings.

At the same time, Table 11 shows a more positive impact on the annual budget once the higher ESOP productivity has been factored in. The table shows that the estimated cost to the annual budget is trimmed from \$73 million to \$22 million for the conservative estimate. The table also shows that the upper estimate of the productivity gain, the proposed new ESOP is budget positive by \$30 million per year.

Table 11
Impact on Annual Tax Collections of Proposed Policy (basecase)
(\$ million, deviations from “existing policy” scenario)

	no productivity increase	conservative estimate	upper estimate
type of share holding			
foreign portfolio	-51	-51	-51
normal shares	0	0	0
ESOP_exempt	-29	-29	-29
ESOP_deferred	-41	-41	-41
ESOP_proposed	47	47	47
labour income tax	0	52	103
total	-73	-22	30
% of GDP	-0.010%	-0.003%	0.004%

The gain in tax collections represents the additional income tax collected on the higher labour incomes flowing from the higher productivity of the new ESOP members. For example, the productivity of the new ESOP members is assumed to be higher than it would have been whilst working for a non-ESOP firm. This higher labour productivity translates into higher labour income and therefore more income tax is collected. Table 11 shows that the annual increase in income tax is \$52 million for the conservative estimate and \$103 million for the upper estimate of the productivity differences between ESOP and non-ESOP firms.

In the long-term, the conservative estimate of the productivity difference, the annual direct cost to the Budget of \$22 million is associated with a gain in national income of \$425 million. In contrast, the upper estimate of the higher productivity is budget positive by \$30 million each year and raises annual national income by \$665 million.

5.4 Economy-wide Effects

As before, the effects on private and public saving shown in Chart 2 have been entered into MM2 to estimate the full effects on the economy, taking into account indirect effects. The

resulting estimates of the economy-wide impacts for the basecase scenario are presented in Table 12 below. The table compares the expected impacts on some economic variables of the proposed ESOP under the three different assumptions regarding the estimated productivity differences between ESOP and non-ESOP firms.

A comparison of the results in Table 12 shows that there are moderate changes in the economic variables under both the conservative and upper estimates of the productivity difference between ESOP and non-ESOP firms. For example, the increase in net national savings varies around 0.10 per cent of GDP for the conservative estimate and around 0.11 per cent of GDP for the upper estimate, both small increases on the estimate of around 0.09 per cent of GDP where there is no difference in productivity.

Table 12
Total Economy-wide Impacts of Proposal
(Deviations from base)

	Units	year 1	year 3	year 5	year 7	year 9
<i>No productivity increase:</i>						
GDP	% dev.	-0.03	0.03	0.01	0.08	0.01
Private savings	% of gdp	0.16	0.14	0.09	0.08	0.06
Public savings	% of gdp	-0.09	-0.03	0.00	0.04	-0.01
National savings	% of gdp	0.07	0.11	0.09	0.12	0.06
Current Account Balance	% of gdp	0.03	0.07	0.10	0.05	0.08
National Investment	% of gdp	0.03	0.04	-0.01	0.07	-0.02
90-day bill rate	% p.a.	-0.06	-0.05	-0.08	-0.01	-0.01
10-year bond rate	% p.a.	-0.05	-0.03	-0.02	0.00	0.00
<i>Conservative estimate:</i>						
GDP	% dev.	-0.01	0.07	0.08	0.16	0.09
Private savings	% of gdp	0.16	0.14	0.10	0.09	0.08
Public savings	% of gdp	-0.08	-0.02	0.01	0.04	-0.01
National savings	% of gdp	0.08	0.12	0.11	0.13	0.06
Current Account Balance	% of gdp	0.03	0.06	0.10	0.05	0.08
National Investment	% of gdp	0.05	0.06	0.01	0.08	-0.01
90-day bill rate	% p.a.	-0.06	-0.04	-0.10	-0.02	-0.01
10-year bond rate	% p.a.	-0.05	-0.04	-0.03	0.00	0.00
<i>Upper estimate:</i>						
GDP	% dev.	0.00	0.12	0.15	0.23	0.17
Private savings	% of gdp	0.16	0.14	0.11	0.11	0.09
Public savings	% of gdp	-0.08	-0.01	0.02	0.04	-0.02
National savings	% of gdp	0.08	0.13	0.13	0.14	0.07
Current Account Balance	% of gdp	0.02	0.05	0.11	0.05	0.08
National Investment	% of gdp	0.06	0.08	0.02	0.09	0.00
90-day bill rate	% p.a.	-0.06	-0.03	-0.12	-0.03	-0.02
10-year bond rate	% p.a.	-0.05	-0.04	-0.03	0.00	0.00

source: MM2 simulation

As discussed previously, part of the gain in net national savings finances higher national investment. For example, the conservative estimate boosts national investment by around 0.05 per cent of GDP while the upper estimate boosts national investment by around 0.06 per cent of GDP. These gains support an increase in GDP of around 0.08 per cent for the conservative estimate and around 0.15 per cent for the upper estimate, up from around 0.02 per cent under the assumption of no productivity difference.

Under the assumption of no productivity difference, the higher national saving also allows a modest lowering of interest rates of up to 8 basis points. The conservative estimate of the productivity difference increases the cut in interest by up to 10 basis points while the upper estimate increases the cut in interest rates by up to 12 basis points.

Appendix A: Alternative Tax Exempt Scenario

The maximum annual investment permitted under the existing exempt plan is \$1,000 per year. This invested amount is exempt from personal income tax. This appendix considers the effect of an “alternative policy” of raising the amount annual amount from \$1,000 to \$2,000. This is modelled as an alternative to the proposed plan. That is, the modelling in the Appendix does not incorporate the proposed plan but rather only models an increase in the maximum amount for the exempt plan.

There are four groups of potential ESOP investing employees that may be affected by raising the exemption level. The potential impact on total ESOP holdings for each group is discussed below.

1. *ESOP investors currently investing less than \$1,000 per year.* This group of employees are unlikely to change the amount they invest if the exemption was raised to \$2,000.
2. *ESOP investors currently investing \$1,000 per year.* Some employees in this group are likely to increase their annual investment from \$1,000 to \$2,000, thereby raising the total value of their share holdings.
3. *ESOP investors currently using the tax deferred plan.* Some employees with investments in the deferred plan may shift to the alternative exempt plan. For example, an employee who invests \$2,500 per year under the deferred plan may switch to the alternative exempt plan and invest \$2,000 due to the more favourable tax conditions. The shift from deferred to the alternative exempt plan is expected to be small.
4. *Employees not currently investing in an ESOP.* Some employees without shares acquired through ESOPs may be encouraged to invest in the alternative exempt plan. The shift is likely to be small.

Taking the possible responses of these various groups into account, it has been assumed that doubling the maximum amount for the exempt plan would lead to a doubling of shareholdings under the exempt plan, while leaving other ESOP shareholdings unaffected. This assumption can be seen in Table A1, where an expansion in exempt plan holdings of \$0.9 billion displaces the same amount of foreign-owned shareholdings.

Table A1
Shareholding under Different Scenarios (\$ billion)

	existing policy	proposed policy (base case)	\$2,000 exemption
foreign portfolio (dev'n)	0.0	-3.4	-0.9
normal shares (dev'n)	0.0	0.0	0.0
ESOP_exempt	0.9	1.9	1.9
ESOP_deferred	2.4	0.0	2.4
ESOP_proposed	0.0	4.9	0.0
nominal share price growth	4.5%	4.5%	4.5%

Tables A2 and A3 compare the effects of the “alternative policy” of doubling the maximum amount for the exempt plan with the “proposed policy”.

Table A2 shows that the annual long-term cost to budget is \$43 million under the alternative policy compared with \$73 million under the proposed policy. However, Table A3 shows that this lower cost to the Budget is associated with a more than proportionately lower gain in national income. The estimated long-term gain in annual national income shrinks from \$185 million to \$93 million. So the alternative plan is less effective than the proposed plan in raising national income relative to the Budget cost.

Table A2
Impact on Annual Tax Collections of Proposed and Alternative Plans
(\$ million, deviations from “existing policy” scenario)

	proposed policy (base case)	\$2,000 exemption
type of share holding		
foreign portfolio	-51	-14
normal shares	0	0
ESOP_exempt	-29	-29
ESOP_deferred	-41	0
ESOP_proposed	47	0
total	-73	-43
% of GDP	-0.01%	-0.01%

Note: "ESOP_exempt" includes the existing exempt plan and the exempt component of the proposed ESOP.

Table A3
Impact on Annual National Income of the Proposed and Alternative Plans
(deviations from “existing policy” scenario)

National Income Impacts (\$m)		
consumption	84	42
saving	101	51
income	185	93
National Income (% of GDP)		
consumption	0.01%	0.01%
saving	0.014%	0.007%
income	0.03%	0.01%