

# Indexation and Australian capital gains taxation

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Broad-based capital gains taxation was introduced in Australia in 1985 as a component of measures to improve efficiency, equity and revenue security by broadening the income base. From September 1985 to November 1999, realized capital gains were subject to normal income tax rates. In 1996/1997, capital gains taxes collected \$2.1 billion, equivalent to 2.3% of total income-tax revenue or about 0.4% of GDP. In 1999, indexation of capital gains was removed and the tax rate halved in what was claimed to be a roughly revenue-neutral package that would stimulate Australian capital markets.

This chapter follows the rise and fall of indexation in the measurement of taxable capital gains in Australia. It describes the processes and reasons for the policy changes, gives details of the operation of capital gains taxation, and comments on the efficiency, equity, simplicity, and revenue outcomes under different policy regimes. The chapter follows a chronological path, beginning in the first section with a discussion of capital gains taxation before 1985. The following two sections deal with the 1985 reforms and their effects. The concluding three sections analyze the 1999 reforms and their expected effects and provide an overall assessment.

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Notes will be found on page 139.

## **Capital gains taxation before 1985**

Prior to 1985, the taxation of capital gains in Australia was very limited, with effectively only two areas of taxation. Under the Income Tax and Assessment Act, Sc 26AAA provided for the taxation of most profits on the sale of property within one year of purchase and Sc 25A provided for taxation of profits made from the sale of property acquired for the purpose of profit-making by sale. This is essentially the taxation regime currently operating in Hong Kong and New Zealand and described in other chapters. In practice, with the exemption of trading stock and for registered dealers and traders, Sc 25A was not effective as taxpayers could easily avoid the “profit-making incentive.” In other words, prior to 1985, most capital gains on property held for more than 12 months were not subject to income taxation or to special capital gains taxation.

Capital gains taxation before 1985 was not without its problems. There were incentives to shift investment returns from “income” to “capital gains” to reduce tax obligations. Numerous legal cases were fought in defining the gray line between investment returns and capital gains. Tax-avoidance schemes based on the surplus-stripping model described by Grubel in Part 1 were developed: the most notorious were dubbed “bottom-of-the-harbour schemes.” The use of such tax avoidance raised serious questions about integrity and general confidence in the total taxation system.

## **The 1985 debate and change**

In 1985, the Labour government responded to community concerns about the need for tax reforms through a Draft White Paper (1985), a Summit on Taxation Reform and, ultimately, a number of policy changes (given in Keating 1985). The Draft White Paper focused on better ways of collecting about the same aggregate revenue while making the system fairer, more conducive to a productive economy, and more secure as a source of revenue.

Three packages of changes were proposed in the Draft White Paper as options for consideration at the Summit on Taxation Reform. Option A consisted of a number of measures for broadening the income base, including a broad-based capital gains tax, a fringe

benefits tax, a national identification scheme, and the removal of several concessions. The additional proceeds from these changes were to be used to fund lower rates of income taxation.

Option B added a 5% retail sales tax (dubbed a broad-based consumption tax) to achieve some rationalization of existing indirect taxes and a small shift in the tax mix towards consumption. Option C proposed measures for broadening the income-tax base and a larger 12.5% retail sales tax to effect a more substantial tax mix change and lower marginal income tax rates.

The government's preferred Option C was taken to the Summit where it was not well received. However, there was considerable support for a package of measures for broadening the income base and for lower tax rates along the lines proposed in Option A. Later in 1985, the government passed a significantly modified income-tax reform package, which included lower income-tax rates and the introduction of the capital gains tax

In 1985, the case for effective and explicit taxation of capital gains rested primarily on the argument that it broadened the income-tax base and moved the entire system to a closer approximation of a comprehensive income tax base. To quote the Draft White Paper: "The case for taxing income in the form of capital gains thus follows from the general case for comprehensiveness in the definition of the income tax base and is similarly grounded in terms of objectives of equity, efficiency and combating tax avoidance" (1985: 77). The Draft White Paper elaborated on each of these public finance objectives. Thus, the capital gains tax would improve vertical equity since the ownership of capital, and the receipt of capital gains, are heavily concentrated among higher income groups. It would improve vertical and horizontal equity by removing the favourable treatment enjoyed under the old regime by people whose income includes capital gains.

The previously existing hybrid tax systems imposed different effective tax rates on different saving and investments. It was, therefore, considered obvious that the new taxation of capital gains would improve efficiency and no explicit arguments were offered to make this case. The greatest source of efficiency gains stemmed from the lower marginal tax rates funded by the measures for broadening the income base, including capital gains.<sup>1</sup> Other important arguments advanced for capital gains taxation were that it would reduce tax

avoidance<sup>2</sup> and secure future revenue by reducing the incentives to convert otherwise taxable income into nontaxable capital gains.

After the decision to tax capital gains had been taken in principle, a number of practical rules about capital gains taxation were debated. The theoretical appeal of taxation of accrued capital gains gave way to a number of practical considerations for a tax only on realized capital gains. Gifts are treated as a realization. The Draft White Paper argued that death should also be deemed as a point of realization. However, the accepted legislation reflected political pressures, especially from the rural and small-business sector, and death was not considered to trigger capital gains and their taxation.

Initially, it was proposed that all assets owned in 1985 should be subject to taxation of capital gains realized upon their sale but the final legislation applied a grandfather clause and made taxable only gains on property acquired after September 19, 1985. Owner-occupied homes, most personal chattels, superannuation paid out to individuals, and the proceeds of life-insurance policies were exempted from the capital gains tax.

Debates over the taxation of nominal rather than real capital gains were resolved by a mixed package of legislation. In the case of assets held for less than 12 months, the nominal gains are taxable. Assets held for more than 12 months are taxed only on real gains and capital additions. Nominal gains are converted into real gains by deflation with the general consumer price index. By contrast, only nominal losses, not real losses, can be used as an offset against real capital gains. Nominal losses can be carried forward. Nominal gains not large enough to be real gains are neither taxable nor deductible.

The final package of taxation of real capital gains and deduction of nominal capital losses represents a political compromise and emerged from the following somewhat contradictory arguments in the Draft White Paper. On the one hand, the Draft White Paper had argued for a comprehensive real-income tax base, including indexation of capital gains and losses, depreciation, interest income and expense, and losses. This argument must be seen in the light of the fact that inflation at the time was around 8% annually. However, the lack of precedents in other countries and the feared practical problems with measuring real interest meant the comprehensive real-income base received little political support. On the other hand, it was seen as a reasonable sugar-coating for the capital-gains-tax pill

that only real capital gains represented an increase in effective purchasing capacity and that, therefore, nominal gains should be deflated by the readily available consumer price index. Government concerns about revenue losses and potential tax-avoidance schemes lay behind arguments to allow only nominal capital losses as a deduction and to quarantine nominal capital losses as deductions only against real capital gains. In the end, the proponents of, and opponents to, the introduction of capital gains taxation were perceived to have had partial wins and losses through the adoption of the compromise that permitted adjustments for inflation on measured net taxable gains.

In 1985 there was a debate about the rate of capital gains taxation. Proposals included a flat rate and both the full and partial inclusion of capital gains in personal, business, or fund incomes at the appropriate statutory marginal income tax rate. In the end, the capital gains tax was applied at statutory marginal income-tax rates, except for the application of an averaging provision under which only one-fifth of a net capital gain was used to assess the marginal tax rate, which was then applied to all of the net capital gain. The use of the marginal income-tax rates was motivated by the consideration that, in combination with the taxation of real capital gains, the distorting effects of inflation were minimized and vertical equity was seen to be served.

In sum, from September 1985 onward, capital gains taxes were applied to a tax base consisting of

- assets acquired after September 1985 (except-owner occupied homes and personal chattels);
- realized gains, with death not being deemed a realization;
- nominal gains for assets held for less than 12 months;
- real gains for assets held for more than 12 months, with acquisition costs and subsequent capital costs indexed according to quarterly movements in the general consumer price index;
- nominal losses deductible against real capital gains.

The resultant base was taxable at the appropriate tax entity's marginal tax rate, with the exception of an averaging provision for individuals.

## **Effects of capital gains taxation, 1985–1999**

The Australian experience with its capital gains tax involving the use of indexation can be considered in terms of its effects on revenue, equity, efficiency, and compliance costs.

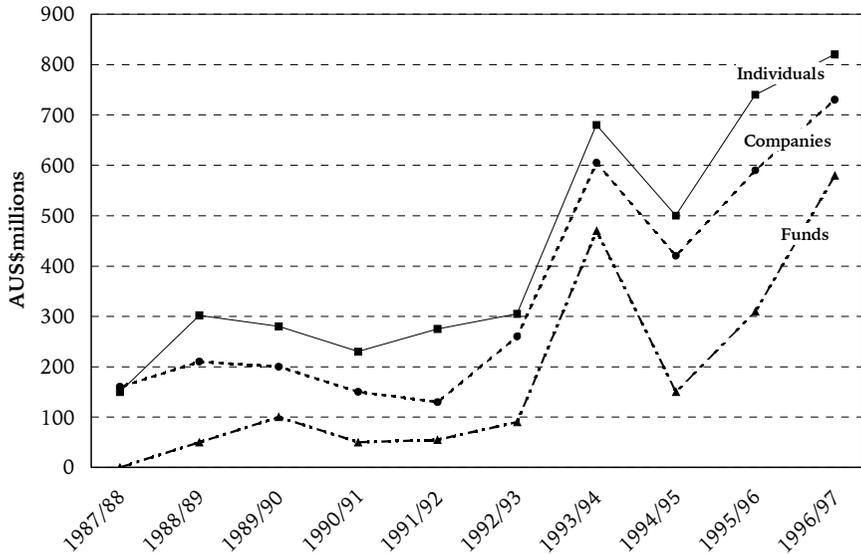
### ***Revenue***

The new capital gains tax was expected to raise more revenue directly and indirectly by eliminating some opportunities for avoiding taxes. Examples of indirect revenue gains included higher income-tax collections on dividend income, which could no longer be reinvested to achieve untaxed capital gains. They also included higher income-tax collections on wage income from the self-employed, who no longer could reinvest it or distribute it through share ownership schemes for employees. No estimates of the additional revenues via these and other indirect effects have been made and reported.

Estimates of the additional direct revenue collection from the capital gains tax, made at the time it was put into effect, were put at a very low \$5 millions in the first year, rising to \$25 millions in the fifth year (Keating 1985). These low revenue estimates reflect primarily the grandfather clauses by which only gains on assets acquired after September 1985 were taxable and, in part, the expected effects of indexation. In fact, these revenue estimates proved to be extremely conservative (figure 1). Table 1 shows that in 1996/1997 some \$2.1 billions were collected in capital gains tax, 2.3% of total income tax receipts or about 0.4% of GDP. Just over \$0.8 billion was collected from individual taxpayers, with 7.0% of individuals paying some capital gains tax. Companies paid \$0.7 billion capital gains taxes and funds (mostly superannuation but also life and general insurance) paid \$0.6 billion. These data suggest that capital gains tax revenues are a small share of total income-tax receipts or of GDP. However, the value and relative size of the capital gains tax revenues may be expected to grow as the effects of the grandfather clauses concessions diminish still further. Even though the revenue of \$2.1 billions from capital gains tax is small, its replacement would require a sizeable general income-tax surcharge or increase in indirect tax rates.

Some indication of the sources of taxable capital gains is provided in table 2. For individuals, gains from the sale of shares, trust distributions, and real estate are quantitatively the most important

Figure 1: Capital Gains Tax Paid, Australia (1987/1988–1996/1997)



Source: Australian Taxation Office 1998: figure 12.1.

Table 1: Payment of capital gains tax in Australia (1996/1997)

	Individuals	Companies	Funds	Total
Share of taxpayers with taxable capital gains (%)	7.0	4.6	25.6	
Taxable capital gains (\$m)	2,899	2,717	3,870	9,486
Capital gains tax paid (\$m)	823	729	582	2,134

Source: Australian Taxation Office 1998: tables 12.1 and 12.3.

Companies and especially funds derive most of their capital gains from several different types of property holdings.

Available data shown in table 3 indicate that the capital gains tax has a highly progressive, first-round incidence for individual taxpayers.<sup>3</sup> On average 7% of individual taxpayers pay some capital gains tax but only 5.2% with taxable incomes of less than \$20,700 do so while 21.8% with incomes above \$100,000 pay the tax. Data for 1998 from the Australian Tax Office concerning the receipt of dividends by the level of personal income also imply that the first-round incidence of capital gains taxation paid by companies is progressive.

The initial incidence of capital gains taxes paid by funds may be close to a proportional tax in its incidence. This conclusion is based on the fact that compulsory superannuation exists for all but the very low wage earners and there is a flat 15% tax rate on fund earnings including capital gains. In sum, the available evidence suggests strongly that the first-round incidence of capital gains taxation is progressive for individuals, companies and trust funds.

The first round (or statutory) incidence of capital gains tax payments will be equal to the final round (or economic) incidence if the tax does not change the pre-tax rates of return on investment. It is well known that Australia is a small country, which is highly integrated into the global capital markets, has few government re-

**Table 2: Sources of capital gains in Australia (1996/1997)**

Source of Capital Gain	Proportion of Total Capital Gain (%)		
	Individuals	Companies	Funds
Shares	38.2	24.7	19.2
Trust distributions	19.9	2.7	1.5
Real estate	13.0	2.5	0.3
Other*	11.6	26.7	23.0
More than one of the above	17.3	43.4	55.9

\* Includes plant and equipment, personal use assets, goodwill on sale of business, and not stated.  
Source: Australian Taxation Office 1998: tables 12.3, 12.4, and 12.5.

**Table 3: Distribution of individual taxpayers with capital gains in Australia (1996/1997)**

Taxable income (\$ per year)	All taxpayers (#)	Taxpayers with capital gains	
		(#)	(%)
0–20,699	2,887,472	151,504	5.2
20,700–37,999	3,211,422	199,848	6.2
38,000–49,999	1,163,857	97,891	8.3
50,000–99,999	899,300	102,891	12.1
100,000+	127,558	27,862	21.8
TOTAL	8,239,609	579,183	7.0

Source: Australian Taxation Office 1998: table 12.2.

restrictions on international capital flows, is a net importer of foreign savings, and has a pervasive system of tax credits for foreign investors. As a result, domestic, risk-adjusted pre-tax rates of return tend to equal such rates in the rest of the world. Under these conditions, the capital gains tax does not change rates of return and the tax unambiguously falls on the domestic owners of the capital.

Table 3 shows that less than 10% of low-income and middle-income taxpayers and around 22% of taxpayers with very high incomes pay capital gains tax. These facts suggest that the capital gains tax has improved considerably horizontal equity on the basis of the comprehensive income benchmark for equity.

It is difficult to assess what effects the introduction of capital gains taxation in 1985 has had on tax neutrality and on efficiency, particularly with respect to the aggregate levels and composition of domestic saving and investment. These difficulties are due to the fact that different tax systems and other concessions affected effective tax rates on savings and investment before and after 1985. Against the benchmark of a comprehensive income tax, the introduction of the capital gains tax was an improvement but it is still distortionary because it is not based on the accrual of gains but on their realization.

Another problem arises in the case of highly levered property investments, which are allowed to deduct from income all nominal debit interest expenses. As Pender and Ross (1993) have argued, in the presence of inflation—even at today's low rates of 2% to 3% but more so at the 8% rate of the 1980s—the inflation adjustment of nominal capital gains results in very low or even negative effective tax rates. In addition, the fact that the capital gains tax is applied only to realized gains at time of sale or gift provides an incentive to lock-in ownership patterns, which involves efficiency losses.

On the other hand, a large proportion of Australian investments is treated as part of the consumption-tax base rather than of the income-tax base. This treatment is applied to owner-occupied homes, about 40% of Australian fixed capital investment, and the increasingly more important items of business investment in research and development and, especially, human capital. Against a consumption-base benchmark, the introduction of capital gains taxation, even with its concessions, introduced too high a level of taxation and associated inefficiencies.

To date, no one has studied the extent to which the 1985 capital gains tax has affected efficiency. Pender and Ross (1993) have shown that the package of 1985 tax changes, including capital gains, the imputation system for companies, superannuation tax changes, and tax rate schedule changes have reduced the variance of effective marginal tax rates on different saving and investment options. However, these findings do not imply that the tax system has become more neutral. To establish this fact it will be necessary to employ computable general equilibrium models and consensus estimates of relevant savings and investment elasticities, a task that is unlikely to be undertaken in the foreseeable future.

There is a high cost of administering the complex income and capital gains tax system of Australia. Many individuals, companies, and funds seek extensive professional tax advice. Evans et al. (1997) have estimated social compliance costs to be 5.6% of revenue from individuals and 15.8% of revenue collected from companies. This study did not estimate compliance costs for the capital gains component alone, presumably because of a lack of relevant basic data. Important costs incurred by the payers of capital gains taxes involve the recording of capital cost items eligible for deduction and of the value of capital items at the time of acquisition and sale. Waincymer (1993), for example, documents the many areas of uncertainty and difficulty in the measurement of net taxable capital gains.

The indexing of capital gains for inflation to determine real capital gains is a trivial and low-cost exercise once the data on acquisition costs and sales values are known. The Australian Taxation Office provides taxpayers with a table of the general consumer price index along with instructions on how it has to be used. For this reason, high compliance costs associated with the measurement of real capital gains as opposed to nominal capital gains has not been a part of any discussions about changes to the Australian system of capital gains taxation.

## **Changes in 1999**

The *Review of Business Taxation* (Ralph et al. 1999) of July 1999 recommended the phasing out of indexation for the measurement of capital gains for taxation, along with partial exclusion of gains from taxation

and the cessation of averaging provisions. These proposals were accepted by the government for implementation as of October 1999.

Under the new provisions, the indexation of capital gains was frozen at the end of the September quarter, 1999 and in the future nominal rather than real capital gains became taxable. The indexation was replaced by the provision that 50% of nominal gains for individual taxpayers and 33.3% for superannuation funds were deducted from nominal gains and the remainder was taxable at the appropriate marginal rate of taxation. Companies did not receive such a concession and all of their nominal capital gains were taxable.

Other measures in the package of capital gains tax reforms were the scrapping of the averaging provisions, a zero tax rate on capital assets held by small business proprietors for more than 15 years, script-for-script rollover-takeover relief, and a zero rate for non-resident exempt investors. The change in the mix of concessions and the projected increase in the turnover of assets subject to capital gains taxation were estimated to be approximately revenue neutral.

Stated reasons for the 1999 changes to the taxation of capital gains included improving the rewards for risk and innovation, a better allocation of the nation's resources, improved equity, and greater conformity with the taxation of capital gains in other countries, all within the constraint of a revenue neutral package. To quote the *Review*:

The Review's recommendations for capital gains taxation are designed to enliven and invigorate the Australian equities markets, to stimulate greater participation by individuals, and to achieve a better allocation of the nation's capital resources. (Ralph et al. 1999: 598).

Though indexation provides a significant reduction in effective rate for many taxpayers, this is probably not well recognized, especially among foreign investors. Indeed the perception has been that the Australian tax system imposes tax at full income tax rates. Such perceptions are not easily corrected and a change in the form of concession or something more akin to the types of concessions available abroad would, in the Review's judgement, be more effective in attracting investors to Australian assets. (Ralph et al. 1999: 600).

Australia's averaging provisions were identified early as contributing little to those aims while reducing revenue substantially ... This (practice) results in considerable inequity. (Ralph et al. 1999: 599).

Very few quantitative or qualitative arguments were provided to support the claims that the new tax code would result in more and better quality investments and greater equity.

### **Effects of 1999 changes**

Some understanding of the effects upon revenue, efficiency, and equity of the changes to capital gains taxation can be obtained from comparing concessions provided before and after the 1999 reforms. The real capital gains system of the 1985 to 1999 period applied the statutory income rate,  $t$ , to the real capital gain measured as the gross asset price increase,  $g$ , less the increase in the CPI,  $p$ . That is, revenue collected is given by

$$t(g - p) \tag{1}$$

By contrast, under the system after 1999, a proportion  $z$ , where  $z = 0.5$  for individuals and  $z = 0.67$  for superannuation funds, of the gross asset price increase,  $g$ , is taxed at the statutory income tax rate,  $t$ , so that revenue collected is

$$t z g \tag{2}$$

Equating (1) and (2) for individuals with  $z = 0.5$ , the pre-1999 and the post-1999 systems collect the same revenue and have the same effective tax rates, if the asset-price growth rate is double the inflation rate. Or, the new system collects more capital gains tax, if the inflation rate accounts for more than a half of the growth rate of asset prices. For superannuation funds, with  $z = 0.67$ , the new system collects less capital gains tax if the nominal asset growth rate is at least treble the inflation rate.

From the point of view of individual investors, the new taxation rules lower the effective tax rate on capital gains relative to that under the preceding regime, if during the holding period of an asset, the cumulative rate of inflation is less than 50% of the cumulative

nominal increase in the asset value. Investors lose if inflation accounts for greater than 50% of the gain. This fact implies that the possible future return of high inflation rates will result in higher government revenues, effective tax rates, and more serious economic distortions than did the pre-1999 system.

Then, the new capital gains tax system favours investment options with relatively large gains over those with small gains and it favours investment in assets earning capital gains in periods of low inflation versus periods of moderate and high inflation. The tax preference for risky investments with large potential gains might be interpreted as an incentive for innovation in, say, information technology and biotechnology ventures rather than in more conservative ventures like real estate and retailing companies. Whether there are market-failure arguments for such tax biases is undeveloped in the *Review* and uncertain more generally.

In justification of the new tax rule, the *Review* argued that investors base their decisions to buy and sell only, or primarily, on the nominal rate of taxation for capital gains. Since, under the new rules, this rate effectively is halved for individuals (and reduced by one third for superannuation funds), the *Review* suggests that investors will consider the new rules as having produced a lower rate and that, therefore, it will reduce the magnitude of the lock-in effect and other inefficiencies that accompany the capital gains tax. I view this position as highly tenuous since it assumes that investors' motives are irrational when it comes to weighting the tax implications of their decisions. The best that can be said about the new rules is that they lower the effective rate of taxation if inflation rates remain low and do not exceed 50% of the nominal capital gain over the expected holding period for the majority of investors.

Table 4 shows the projected static and dynamic effects of the 1999 reforms on capital gains tax revenues in 2001/2002 and 2004/2005 from individuals, superannuation funds, and other entities. For individuals and superannuation funds, the static effects are shown in the first three lines of each section. Under the assumption that investors do not change their behaviour, these three lines show the change in revenue due to the freezing of indexation, the abolishment of averaging, and the exclusion of a portion of capital gains from taxation (50% for individuals and 33.3% for superannuation funds). The dynamic effects of the reforms are shown in the fourth

**Table 4: Projected revenue gains and losses of 1999 capital gains tax reforms, Australia (2001/2002 and 2004/2005) (\$millions)**

	2001/2002	2004/2005
<b>Individuals</b>		
Freezing indexation (static)	230	490
Abolishing averaging (static)	290	390
50% exclusion (static)	-820	-1,180
Revenue from extra realizations	530	400
Net Effect	230	100
<b>Superannuation Funds</b>		
Freezing indexation (static)	250	520
33.3% exclusion (static)	-350	-620
Revenue from extra realizations	50	30
Net Effect	-50	-70
<b>Other Entities</b>		
Freezing indexation (static)	40	70

A “-” denotes a revenue loss. Static assumes no quantity behavioural references. Key assumptions include: 8% growth in tax base to 2002/2003, then 6%; 2.5% inflation. Extra realizations assumes an elasticity of 1.7 with respect to the effective tax rate for 2001/2002 and then 0.9 for 2004/2005.

Source: Ralph et al. (1999): table 24.10

line of the sections for individuals and superannuation funds. They represent estimates of changes in revenues made under the assumption that the new tax rules induce investors to turn over their asset holdings more frequently.

Table 4 shows that the freezing of indexation is estimated to cost revenue of about \$500 million in 2001/2002 and over \$1 billion by 2004/2005. These estimates assume a 2.5% inflation rate, which is the mid-point of the Reserve Bank’s inflation target band. The abolition of averaging is projected to increase revenue by \$290 million in 2001/2002 and \$390 million in 2004/2005. Projected revenue losses of the exclusion of a portion of nominal capital gains from taxation are estimated to reduce revenue by \$1,170 million in

2001/2002 and \$1,800 million in 2004/2005. On this static scenario assessment, individuals and superannuation funds would pay less capital gains tax, or the effective capital gains tax rate falls. Companies are projected to pay more capital gains tax.

The revenue projections in table 4 include also an increase in revenue from projected extra realizations, or more frequent sales, of property subject to capital gains taxation.<sup>5</sup> Higher revenue gains of \$580 million for 2001/2002 compared to \$430 million for 2004/2005 follow from the assumption of an initial surge and subsequent slowdown in such realizations. Combining the static and dynamic effects results in projected aggregate capital gains tax revenue to be increased by a small amount.

The redistributive effects of the 1999 capital gains tax reforms are likely to be mixed. Removal of the averaging provisions was promoted by the *Review* to end some tax avoidance schemes used by the better off, thereby improving vertical and horizontal equity. But, at the same time, some taxpayers with low or medium incomes will also be losers if they have infrequent “lumpy” capital gains and are not involved in sophisticated tax-avoidance schemes. Following from the tax-payment comparisons shown in equations (1) and (2) above, the reforms will lower tax burdens for those investing in high-return and more risky property investments relative to those with investments in assets that are less risky and realize lower average capital gains. It is debatable that these patterns of tax redistribution accord with general equity goals.

## **Conclusions**

From 1985 to 1999, Australian income taxation included the taxation of real capital gains made on property held for more than 12 months. The adjustment from nominal to real gains was accomplished through deflation of the nominal gains using the quarterly general consumer price index. However, only nominal capital losses were deductible, and proposals in the 1985 Draft White Paper for a comprehensive real income-tax base received little political support. By the 1990s, when the effects of grandfather clauses began to wane, the capital gains tax had become a useful but relatively small revenue earner. Its incidence was progressive. However, it is not

clear whether the capital gains tax improved or worsened tax neutrality and efficiency since Australia's taxation base rests partly on consumption and partly on income.

In 1999, following recommendations of the Review of Business Taxation, the indexation of capital gains was frozen. The new taxation of nominal gains, combined with the termination of existing averaging provisions, would have resulted in large revenue gains. To compensate for these gains, the new rules allowed individual taxpayers to exclude 50% of their nominal gains from taxable income. For superannuation funds, the exclusion rates was set at 33.3%. Companies had to pay capital gains on the full amount of their nominal gains.

The stated objectives of these reforms of the capital gains tax were to encourage innovation, promote domestic and overseas investment in Australian business, and achieve greater equity. It is not clear that these objectives of the reform will be achieved since their attainment depends on questionable assumptions about the rationality of investors, especially that they do not understand the benefits of indexing and put great weight on the fact that only one half of their nominal capital gains are taxable.

In fact, the practical administration and compliance costs of indexing capital gains in Australia were trivial, especially relative to the formidable work and cost involved in measuring nominal capital gains by considering the cost of purchases initially and during the holding period in relation to the realized value of the assets. It required very little effort to apply to these nominal gains the quarterly values of the consumer price index, which the tax authorities provided free of charge to all taxpayers in printed as well as electronic form.

## Notes

- 1 Formally, the static allocative efficiency costs, or deadweight costs, of taxation of a particular economic activity are given by  $DWC/R = n\epsilon t^2/(n + \epsilon)$ , where  $DWC$  is the deadweight cost,  $R$  is revenue of the activity (or price  $\times$  quantity),  $n$  is the (absolute) elasticity of demand,  $\epsilon$  is the elasticity of supply, and  $t$  is the proportional tax rate as a share of price. Now, the deadweight cost rises more than proportionally with increases in the tax rate; for activities with similar supply and demand elasticities, a similar tax rate across activities minimizes deadweight costs; and the deadweight loss is greater the more elastic is demand or supply. In addition to the static allocative efficiency costs of taxation, there may be costs of lobbying to reduce particular taxes or to retain tax concessions and preferences.
- 2 The chapters by Grubel, Oliver, and Yuen and Hsu provide examples of some of the tax-avoidance arrangements.
- 3 Grubel (2000) argues that the data in table 3 provide a misleading picture of the vertical-equity effects of capital gains taxation on the grounds that the lumpy and infrequent payment of capital gains tax by individuals artificially inflates the number of high-income taxpayers paying capital gains tax. This point is valid in the Canadian context but in Australia the effect is mitigated by the existing averaging procedures. Ralph et al. (1999) argue that income splitting among family members and strategic choosing of when to take capital gains are used as tax avoidance by many high-income taxpayers. Finally, in Australia only 38.5% of capital gains tax revenue is paid by individuals, with the rest paid by companies and funds on behalf of their individual owners.
- 4 See note 1 for a more formal statement of the reasoning behind these arguments.
- 5 The projected gains of higher rates of turnover of assets subject to capital gains seems to take account of the effect of the exclusion conditions lowering the effective tax rate, but it ignores the increase in effective tax rates associated with removal of indexation and averaging. That is, the projected dynamic revenue efficiency gains seem to be overly optimistic.

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