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March 1999

# Tax Treatment of Long-Lived Assets

A Report to the Australian Gas Association



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## Executive Summary

Tax reform is sorely needed in Australia, especially in the area of personal income taxation and the taxation of goods and services. The projected move to a broad based consumption tax has the potential to significantly increase the efficiency of the taxation system and to remove distortions that are limiting Australia's international competitiveness.

There is also a need for reform of the business income tax system to ensure greater consistency of treatment, the provision of an appropriate framework for infrastructure investment and to recognise the full implications of the continuing globalisation of the world economy and the heightened international mobility of capital. A strong case exists for reducing the nominal company tax rate but only in ways that avoid introducing new distortions into the taxation system.

There has been a long-standing dialogue between business and governments about the tax treatment of long-lived assets compared to the tax treatment of short and medium lived assets. The tax depreciation rates introduced on 27 February 1992 went a long way to providing a level playing field between assets with different lifetimes. The associated government statement that announced the tax depreciation changes placed great weight on representations from business about the relatively high effective corporate tax rates on long-lived investments, bringing Australian tax treatment of long-lived assets into line with OECD and Asian countries, and providing an appropriate environment in which the shift of infrastructure investment from the public to the private sector could go ahead efficiently and effectively.

Since the 27 February 1992 tax depreciation rates, a major wave of investment has taken place in the gas industry in both gas transmission pipelines and gas distribution systems. There has also been a substantial shift of ownership of gas infrastructure from the public to the private sector.

The gas industry is forecasting major investments in the sector in the period to 2005—investment could be in the order of \$14 billion. There is also in train a further shift of gas infrastructure from the public to the private sector planned to occur in Victoria by mid 1999. The tax depreciation rates that applied to long-lived assets prior to 27 February 1992 tended to reflect the "physical life" of assets. They did not take into account the effects of a range of recent market factors that have resulted in changes in the revenue profile and the associated profile of effective depreciation of gas pipelines. For example, developments in technology, identification of additional natural gas fields, deregulation of energy markets and an increase in competition between suppliers of different energy sources and the introduction of gas regulation systems, have all had the effect of increasing business risks for operators of gas infrastructure. This can threaten the ability of investors to recover their capital investment many years before the end of the "physical life" of the asset.

In these circumstances, there is a high risk that removing accelerated depreciation tax concessions, as part of a package designed to reduce the nominal rate of company tax to 30 per cent, would have the highly undesirable effect of bringing with it the lack of consistency in the treatment of long-lived assets which occurred under tax depreciation rates prior to 27 February 1992. There will be an adverse impact on future levels of infrastructure investment within the Australian gas industry. The recent developments within the sector are increasing the risks associated with future revenue streams. These risks increase over time. Thus, investors will be looking to recover their capital investment as quickly as possible. This has changed the profile of effective depreciation of such assets in favour of one that assumes a more up-front, or accelerated, return of capital. Unless the tax system recognises this fact, future levels of investment within the gas industry will suffer with adverse effects for economic growth in Australia.

Whilst it is true that the tax regimes in North America and the UK are less generous than the present Australian counterpart as far as depreciation allowances are concerned, it is important to view this in terms of the respective maturity of the different industries. Compared to the gas industries of other industrialised countries, the Australian sector can be described as immature. Australia's gas transmission pipeline network, for example, is relatively undeveloped as it has only been in recent years that the Australian market can no longer be said to be typified by a situation where *one* pipeline has connected *one* source of supply with *one* market. There is a powerful argument that the interconnection and further expansion of the gas pipeline network has only been possible because of the current system of depreciation tax allowances. Consequently, the re-introduction of the tax depreciation rates that existed prior to 27 February 1992 — or the adoption of new estimates by the ATO of the effective life of different asset classes which fail to make adequate allowance for all sources of technology and market risk that may affect the profile of effective depreciation — will hinder the future development of the Australian gas sector, and prevent it from the reaching the maturity of industries in other parts of the world.

### **Summary of Conclusions**

- There is general agreement that the depreciation schedule that existed prior to 27 February 1992 was out of line with best practice in respect of the treatment of long-lived assets.
- The depreciation rates operating before the tax changes of 27 February 1992 did not take into account changes to the revenue stream of assets and the associated profile of effective depreciation.
- There are a number of factors that can lead to a situation where revenue received in the later years of a pipeline's operation may be insufficient to recover capital investment. These factors include technological changes, identification of additional natural gas fields, the deregulation of energy markets and much greater competition between suppliers of different energy sources. As a result, the profile of effective depreciation of gas pipelines should reflect a more up-front, or accelerated, return of capital.

- Since 1992 there has been very considerable infrastructure in gas pipelines and gas distribution infrastructure which has been facilitated by the post 27 February 1992 depreciation rates. In 1997 there was approximately 14,000 kilometers of gas transmission pipelines, an increase of over 40 per cent compared with 1992.
- The Australian gas industry is expected to increase its share of Australia's energy market in future as industry and households realise the economic and environmental benefits of using natural gas. Government reforms are creating a competitive, national gas market that will facilitate this growth.
- The interconnection and development of pipeline infrastructure is essential for the growth of the Australian gas industry. The Australian Gas Association estimates that a further 11,000 kilometres of gas transmission pipelines with an approximate capital value of \$6 billion is currently in prospect. Further major investments in the gas infrastructure are in prospect which could add up to \$14 billion over the period to 2005.
- There has been a rapid move towards the private provision of gas pipeline infrastructure. Before undertaking any investment, private sector operators need to be satisfied that they will earn an acceptable rate of return, which will be influenced by tax arrangements. The rationale for the current system of accelerated depreciation is the risks inherent in building long-lived assets. If tax depreciation rates were to be made less generous, then much investment in gas infrastructure could be jeopardised.
- In a world of mobile capital, it is vital that Australia maintains an international competitive environment for investment. There is therefore a strong case for reducing both nominal and effective rates of tax on companies. However, it would not be sensible to finance a reduction in the nominal company tax rate by removing the accelerated depreciation tax allowance. This will merely return Australia to the situation that used to apply when there was a clear tax discrimination against long-lived assets.
- The impact of accelerated depreciation tax allowances on the economy as whole also needs to be taken into account. By discouraging investment in capital-intensive industries, there is a danger that a move in the tax system away from accelerated depreciation could lead to a reduction in overall economic growth, employment and welfare in Australia

# 1. Introduction

Comprehensive taxation reform is now widely seen as a key to Australia achieving acceptable growth in GDP and jobs as well as strengthening the capacity of government to finance services which are desired by the Australian community. Public attention has tended to focus on reform of the income tax and indirect tax system as it bears on individuals and businesses. However, reform of the business taxation system is also of vital importance to Australia's future.

Commenting on the critical importance of business tax reform at the Tax Summit organised by the Australian Chamber of Commerce and Industry and the Australian Council of Social Service in Canberra (October 1996), Dr Vince FitzGerald said:

“It is extremely important that as part of the overall reform we set a more internationally competitive business taxation regime. No aspect of reform is more important to Australia's ability to grow—to create rising employment and rising standards of living.

Business tax reform priorities include a lower nominal company income tax rate and full recognition of business expenditure as deductible, so as not to inflate *effective taxation*, and these reforms can be effected while maintaining progressive taxation at the level of the recipient of dividend income. Business also requires relief from the heavy compliance cost of taxes like the fringe benefits tax and sales tax, and generally from the over-taxation of business *inputs*—particularly importantly, inputs to Australia's exports—and uncompetitive treatment of *infrastructure* investment.”

The focus of this report is on the appropriate tax treatment of assets with long operating lives such as gas transmission pipelines, gas distribution systems, gas storage facilities etc. While these assets prior to the *One Nation Statement* of 26 February 1992 had comparatively long lives from the point of view of tax depreciation (natural gas pipelines could be depreciated at 6 per cent per annum which meant they could be written off over a period of about 17 years) after 27 February the lives of these assets for tax depreciation purposes was effectively halved (natural gas pipelines could be depreciated at 13 per cent per annum which meant they could be written off over a period of about 8 years).

The depreciation treatment for tax purposes of long-lived assets was a major feature of the *One Nation Statement* which, among other things, based the decision to make the changes introduced at that time on international comparisons of the Australian tax systems with those of OECD and Asian countries. These comparisons showed that whereas the tax depreciation provisions for short to medium lives assets were broadly similar between Australia and comparator countries, the tax depreciation provisions for longer lived assets were considerably less generous in Australia than elsewhere. The change in the tax depreciation treatment of longer assets introduced in February 1992 was a response by the then Government to representations made by Australian industry that the taxation system was biased against longer lived assets.

A further consideration in the *One Nation* decision was the shift that was then occurring from the bulk of the nation's infrastructure being provided by governments to private sector provision of infrastructure. Business groups at the time made clear to government that the income tax laws were posing an impediment to such increased private investment. The decision to extend and make more generous the depreciation treatment of infrastructure assets was a direct response to these representations.

The Commonwealth Treasury, through the calculation of tax expenditure in its annual *Tax Expenditures Statement*, has shown that it has not accepted that the post 27 February 1992 tax depreciation rates are a longer term feature of the tax system and has taken the view they are in some sense "concessional" compared to the tax depreciation rates which had applied prior to the *One Nation Statement*. No hard evidence has been produced to date to support the judgment that the pre 27 February 1992 tax depreciation rates better reflect the appropriate profile of effective depreciation of assets than do the post 27 February 1992 rates.

In considering what should be the appropriate tax treatment of long-lived assets, it is important to consider the ability of asset owners to recover their capital investment in later years of the operation of the asset. There are a number of factors that mean that future revenue flows from the asset may be insufficient to provide a return on capital. Provided that variable costs are covered, it is still in the interests of infrastructure owners to continue operations. Nevertheless, future levels of investment are only likely to proceed if asset owners are able to recover their capital investment early.

This report identifies the main factors that have resulted in a change to the profile of effective depreciation of assets in favour of one that assumes a more up-front, or accelerated, return of capital. Contributing factors include technological change, resource availability, market demand and competition from alternative end products and, in some cases, regulatory intervention. The report draws on illustrations of assets from the Australian gas industry.

The context for the report is the review of the business taxation system which is being undertaken by Mr John Ralph. That review, as indicated in the Treasurer's press release, is based on the Government's strategy to consult on the extent of reform against the goal of achieving a 30 per cent company tax rate and the prospect for further capital gains tax relief. A requirement of the reform of business investment is that it is revenue neutral. In terms of the outcomes that are seen to flow from the tax review, the Treasurer's press release states that:

"A stable, simpler and more coherent business tax system will provide a basis for more robust invest decisions, improved competitiveness, greater productivity, higher GDP growth and more jobs."

Clearly, in order to lower the company tax rate from the 36 to 30 per cent consistent with the Treasurer's requirement for revenue neutrality, there will need to be changes in business taxation which make existing arrangements in some sense less generous. Having regard to the Treasury *Tax Expenditures Statement*, it is probable that reducing the rates at which assets can be depreciated for taxation purposes will be under close scrutiny. According to the Treasury, about \$1.26 billion would be saved in 1998/99 if the pre 27 February 1992 depreciation rates had applied.

We believe that such a trade-off would be contrary to the objectives of the business income tax review and would take the tax system back to where it was prior to 1992 when there were heavy disincentives against private sector investment in long-lived assets.

## 2. The Gas Industry

### 2.1 Background

The Australian gas industry has evolved to become a significant contributor to the national economy by providing an economic and environmentally efficient fuel source for industry, electricity generation, transport, commerce and households. The Australian gas industry currently achieves annual sales of about \$5.6 billion and at current levels of consumption, the nation's known gas reserves would last between 80 and 100 years.

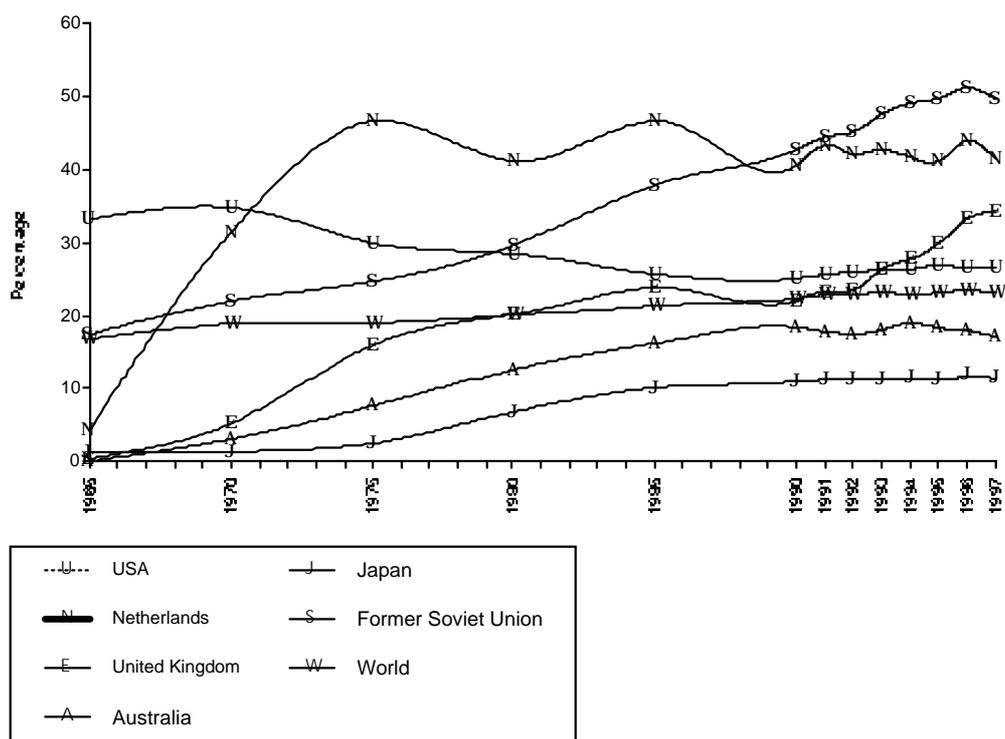
In Australia, the gas industry has to date developed within the States rather than as a national market. Most State markets have been traditionally served by one major pipeline connecting the market to a single basin. This arrangement is partly due to Australia's geography, characterised by a limited number of major population centres on the seaboard but separated from each other by large distances, and partly because of previous State government policies that imposed regulatory barriers to interstate trade in gas so as to ensure that gas reserves were used primarily for economic development within their own jurisdictions.

In the 1990s, there has been a dramatic change in government policy, with governments recognising the benefits of promoting competition within the gas industry and encouraging "free and fair trade in natural gas". A number of gas reform measures have been introduced, and a major element in this process has been to eliminate barriers to inter-State trade in gas, and create a truly national gas market.

A comparison with other industrial countries demonstrates that there is clearly a capacity for growth in a national Australian gas market. Figure 2.1 shows that the Australian gas industry remains relatively immature in comparison to other industrial countries. Australia's current primary energy share for gas of approximately 18 per cent compares to the situation in the UK around 1976 and the Netherlands in about 1967. The US market matured earlier, with the gas share of total primary energy usage at over 30 per cent in 1965.

Figure 2.1

**Natural Gas Share of Total Energy Consumption by Country 1965 to 1995**



Source: BP 1998, *BP Statistical Review of World Energy*

**2.2 Recent Development of Pipeline Infrastructure**

Since the tax changes of February 1992, there has been major investment in all aspects of the gas industry in Australia. The most striking investments have taken place in natural gas transmission pipelines linking supply fields generally in remote parts of Australia or offshore to major centres of industry and population. In 1997 the number of kilometres of gas transmission pipelines was approximately 14,000. This represents an increase of over 40 per cent on the 9,800 km of transmission pipeline in 1992, and shows that the One Nation policy measures have had a positive effect.

Additionally, there are now over 65,600 kilometres of natural gas distribution mains supplying over 2.9 million customers in Australian cities and towns (compared with 59,200 km of distribution pipeline in 1992).

The continued investment by the gas industry in gas distribution networks in rural areas stands in contrast to the reduction in services like banking, rail and community infrastructure.

The rapid move towards the private provision of infrastructure has transformed the pipeline industry. Previously, almost all pipelines in Australia were government-owned and developed. However, as foreshadowed in the *One Nation Statement*, there has in recent years been a significant structural change associated with the privatisation of former government owned gas transmission pipelines. The first to be sold was the Moomba to Sydney pipeline. More recently, the Moomba-Adelaide pipeline system was sold to Tenneco Energy South Australia in 1995, the Wang pipeline was sold to CMS Energy Corporation in 1997, and the Dampier Bunbury pipeline was sold to Epic Energy in 1998.

Currently only one gas transmission pipeline system, namely the Victorian transmission pipeline system owned by Transmission Pipelines Australia, remains in public ownership. That situation is expected to change when the Victorian Government has completed the privatisation of the gas distribution and transmission system by May 1999. In addition, in Western Australia, the privatisation of AlintaGas (which is responsible for the distribution of gas from the North West Shelf to residential, business and industrial customers throughout the State) is under active consideration.

The majority of Australian gas distributors are privately owned and the impending privatisation of the three Victorian gas distribution companies will shift the balance further to private ownership.

## **2.2 Prospects for Growth**

The Australian gas industry is striving to increase the use of gas to satisfy 20 per cent of the country's primary energy requirements by the year 2000, and 28 per cent by the year 2030. If the gas industry can increase its role in Australia's energy mix, it will not only deliver economic benefits, but also important environmental benefits.

Natural gas is considered to be one of the cleanest and most efficient energy sources as it produces the lowest emissions of carbon dioxide of any fossil fuel and produces negligible levels of particulate matter. Governments and the community clearly regard the increasing use of natural gas as necessary to meeting the targets of international agreements to reduce greenhouse gas emissions. In this regard, there are positive environmental benefits from increasing use of natural gas that can be shared by the community at large.

Growth objectives can only be achieved in a market such as Australia's if policy settings facilitate continued pipeline development and integration of gas markets. Public policy issues on land access, planning approvals, fiscal regimes — including most notably taxation arrangements for infrastructure projects — and energy sector reform and regulatory processes will have a significant impact on investment decisions and the cost of new gas infrastructure.

Given there remains limited competition between producers *within* individual gas basins (ie, a lack of *intra*-basin competition), further integration of gas pipelines is made all the more necessary if consumers are to realise the full benefits, in terms of greater choice and lower prices, of the reforms undertaken to date. Furthermore, the recent incident at Longford has highlighted the importance of integrated pipeline systems for reasons of security and reliability of supply. There is now considerable work under way to address this issue (such as storage facilities, system enhancement and the construction of new pipelines).

The Australian Gas Association estimates that a further 11,000 kilometres of gas transmission pipelines with an approximate capital value of \$6 billion is now in prospect (Table 2.1). Taking into account all gas infrastructure projects, capital investment requirements of about \$14 billion are involved in the period to 2005.

Table 2.1

**Gas Transmission Pipelines Under Consideration**

Year	Pipeline	Cost	Length	External Diameter	Owner or Operator
		(\$m)	(km)	(mm)	
1997–1998	Dampier to Bunbury enhancement	260	400	762	
1997–1998	Gladstone to Bundaberg	22	176	na	PG&E Australia
1997–1998	Chiltern to Rutherglen	2	14	na	Transmission Pipelines Australia
1998	Intergas Project Stage 1	65	60	457	Transmission Pipelines Australia
1998	Corrie Downs to Cannington	10	95	168	AGL Pipelines
1998	Jondaryan to Warwick	15	190	na	Boral Energy
1998–2002	Berri to Mildura	30	145	na	Envestra
1998–1999	Longford to Wilton	383	742	na	BHP / Westcoast Energy
1998–1999	Injune to Petrie	138	478	na	PG&E Australia
1998–1999	Mt Isa to Century Mine	25	250	168	
1998–1999	Drouin to Bunyip Loop	8	14	762	Transmission Pipelines Australia
1998–1999	Dubbo to Tamworth	na	300	na	AGL Pipelines
1998	Broad Arrow to Cawse Nickel	na	na	na	Centaur Mining and Exploration
1998?	PEPL pipeline to Whim Creek	na	5	na	AGL Pipelines
1998?	Culcairn to Holbrook	na	25	na	Great Southern Energy
1999–2000	Papua New Guinea to Gladstone	2000	1900 <sup>a</sup>	na	AGL/Petronas
1999?	Wollongong to Nowra	na	na	na	Integral Energy
2000–2001	Timor Sea to Darwin	800	485	na	
2000–2001	Mataranka to Century	290	740	610	
2000–2001	Palm Valley to Moomba	250	879	406	
2000–2001	Century to Townsville	210	859	406	
2000–2001	Mataranka to Gove	150	522	324	
2000–2001	Darwin to Mataranka Loop	150	371	610	
2000–2001	Lateral via Century to Mt Isa	78	365	324	
2000–2001	Geelong to Port Campbell	70	153	na	
2001–2002	Dampier to Perth Duplication	1000	1480	na	

2002– 2003	Intergas Project Stage 2	200	200	na	Transmission Pipelines Australia
Total		6282	10848		

<sup>a</sup> Australian mainland section

Source: AGA Research Paper No 8

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## 2.4 Summary

The underlying objective of the reform process within Australia’s natural gas sector is to remove existing barriers to trade, and facilitate the development of a highly competitive and outward looking national industry. The development of pipeline infrastructure is regarded as an essential element in delivering competition reform to the gas sector through facilitating the growth of an integrated pipeline network, encouraging gas-on-gas competition, and enabling consumers and producers to trade in gas within and between any State and Territory.

Although growing, the Australian gas industry has yet to achieve the levels of maturity found in other industrialised countries. The desire to increase gas consumption reflects its attractiveness as an environmentally and economically efficient fuel. The continuing development of the sector will require further investment in infrastructure, particularly gas pipelines, which the present taxation system encourages. Meanwhile, the development of pipeline infrastructure is regarded as an essential element in delivering competition reform to the gas sector, and therefore will play a pivotal role in expanding choice and lowering gas prices to end-users. The private sector is the dominant owner of gas infrastructure and is expected to be the major source of new investment in the next century.

A number of large foreign corporations specialising in gas transmission have now established operations in Australia. Market opportunities that were never perceived by governments (particularly if they occurred across State borders) are now being exploited by major corporates. Of course, such investments are influenced heavily by the nature of taxation arrangements. Foreign corporations can, to some degree, shrug off unfavourable changes to Australia’s taxation system where a more favourable tax regime operates in their tax domicile. Where this is the case, an increase in the effective company tax rate in Australia can further disadvantage domestic companies relative to foreign-owned entities.

This report is concerned primarily with taxation arrangements for gas infrastructure projects which may have a significant effect on investment decisions and on the cost to end users of new gas infrastructure. It warns that any alterations to existing arrangements could threaten the viability of prospective developments. Furthermore, to avoid retrospective action and ensure the long term viability of existing recently-built pipelines, there is a need to ‘grandfather’ current arrangements, irrespective of the ultimate outcome for new pipelines.

## 3. Tax Principles and Approaches

### 3.1 Tax Principles

There are a number of principles that need to be taken into account in developing a taxation system. The main principles and brief comments on their significance are as follows:

- *Efficiency*

The basic requirement for an efficient taxation system is that it raises a given amount of revenue for the Government while having the least possible effect in terms of distorting pre-tax patterns of production and consumption (the “deadweight loss”). This principle has led in the past to raising revenue by applying taxes to products that are in inelastic demand. Heavy taxation on alcohol, tobacco and petrol products are examples of this approach. As Government’s needs for revenue have increased, there has been a general movement towards broad-based consumption taxes which apply at the same rate to all goods and services in the economy and thus do not alter relative prices.

In the context of tax depreciation, the essential efficiency requirement is that the tax system should apply a consistent approach to assets which reflects their economic lives and hence does not bias investment decisions between short and long-lived assets.

- *Equity*

Whereas efficiency is concerned with avoiding distortions in resource allocation and consumer choice, equity is concerned with ensuring that people in like financial circumstances are treated equally (ie, horizontal equity is maintained) and that people that are better off financially bear more of the tax burden than people that are less well off (ie, vertical equity is maintained). Equity considerations are generally more concerned with income taxes, wealth taxes and taxes on consumption.

- *Simplicity*

It is not costless to raise tax revenue. Accordingly, other things being equal, it is better to raise revenue by way of simple taxes which are easily understood and applied and as a consequence have low costs of compliance and administration rather than complex taxes which require a great deal of specification (i.e. complex legislative requirements).

- *Competitiveness*

In a world in which international trade is important and capital is free to flow across borders, the design of national tax systems has to have regard to the way taxes are levied internationally otherwise the nation’s trading position will be compromised and capital will tend to flow to other more tax friendly jurisdictions.

Given the increased international mobility of investment, there are pressures to reduce all taxes on capital. This implies pressures to reduce the overall level of Government expenditure and to increase the proportion of revenue on comparatively immobile factors such as labour, land and resource.

- *Pro-Investment and Growth*

As well as meeting the tests of static efficiency, both for resource allocation and consumer choice, the tax system also has to have regard to dynamic efficiency and the incentives or disincentives it creates for savings/investment versus current consumption. One of the advantages of an expenditure tax is that it avoids the double taxation of savings and hence is more likely to be pro-investment and growth. High capital gains taxes will almost certainly be at some point a major negative disincentive to investment and growth.

The Review of Business Taxation in their discussion paper, *A Strong Foundation*, has proposed a design framework for the business taxation system which is based on three national objectives:

- optimising economic growth;
- ensuring equity; and
- facilitating simplification.

These objectives are consistent with the tax principles outlined above. In addition, there are other criteria that governments can apply in order to optimise economic outcomes for the community. For instance, governments have an overarching responsibility to ensure the international competitiveness of the Australian industrial sector, and have announced policies that aim to ensure effective environmental outcomes and recognise the energy policy benefits of diversifying into clean fuels like natural gas. Thus, any review of business taxation should take into account the overarching industrial and energy policy objectives of the government.

### **3.2 Need for Taxation Reform**

The Australian taxation system, which has grown in scope and complexity over time as governments have sought to increase revenue, falls short of even achieving a reasonable approximation to the principles of good tax system design. The Government is to be congratulated on the fact it has been prepared to place taxation reform at the top of its priorities. The adoption of a broad based goods and services tax and the replacement of the highly distorting wholesale sales tax plus other indirect taxes is long overdue and will represent a major step forward in improving the efficiency and competitiveness of the Australian taxation system.

It is also highly desirable that there should be reform of the Australian business income tax system which also suffers from a number of drawbacks and in some important respects reduces the international competitiveness of Australian business .

As noted earlier, the business income tax review announced by the Treasurer refers to most of the principles set out above but also imposes some perspectives which could in some circumstances lead to less than optimal outcomes. The three major elements announced by the Treasurer are:

- The achievement of a stabler, simpler and more coherent business tax system that will provide a basis for more robust investment decisions, improved competitiveness, greater productivity, higher GDP growth and more jobs.
- The scope for more consistent treatment of business investments against the goal of achieving a 30 per cent company tax rate and the prospect of further capital gains tax relief.
- The reform of business income tax should be revenue neutral.

### 3.3 Business Tax Approaches

A number of bases are possible for levying taxation. In the past the taxation system was essentially based on the notion that tax should be levied on income whether it be the income of individuals or of businesses. In establishing income for taxation purposes, there is a need to make allowances for costs incurred in earning income. This is a relatively straight forward process as far as individuals are concerned but becomes highly complex when companies are involved as they tend to have major investments in plant and equipment and the question becomes for such assets which have a life beyond one year what proportion of their total cost should be offset against income in any particular year. This problem does not exist in a taxation system based on expenditure rather than income.

The broad tax reform approach being followed by the Government involves a shift towards an expenditure tax (the goods and services tax) and a reduction in reliance on income tax. The counterpart to an expenditure tax for business taxation is a “cash flow” taxation model. Under this approach there would be immediate write off for assets; taxes are paid on the cash returns that flow from them. Such an approach offers the prospect of major administrative simplification. As noted by leading tax expert, Dr John Head:

“Difficult accrual problems, including the determination of realistic depreciation schedules, do not arise; inflation adjustment of the tax base is not required; the need for close and complex integration with the personal income tax system can be avoided; and the thorny problem of achieving a realistic adjustment of the imputed cost of equity capital is easily resolved. Provided a similar cash flow tax regime is applied also to other business forms, a far reaching measure can readily be achieved...”

The comprehensive income tax model which is being applied at present potentially contains a strong anti–investment bias depending upon the way depreciation is handled under the system. It will be only in a situation where depreciation rates truly reflect the economic lives (rather than the physical lives) of different classes of assets that the anti–investment bias will be eliminated. In many ways the comprehensive income tax model is a second best approach. Nevertheless, the Review of Business Taxation in their discussion paper, *A Strong Foundation*, after noting the fact that conversion to cash flow taxation (or schedular income taxation) would entail resolution of a number of substantive design issues, concluded that:

“With these considerations and its reporting timeframe in mind, the Review has interpreted its terms of reference as confining its attention to an income tax base as the relevant operating principle.”

Accordingly, this report is based on the reality that the income tax base for business taxation will continue for the future.

## 4. Tax Treatment of Depreciation

### 4.1 Pre 1992 Tax Depreciation Treatment

Recognising the different lives of assets, the taxation law sets out different rates of depreciation for different classes of assets. The assignment of depreciation rates to assets is conducted at a relatively high level of detail, hence contributing significantly to the complexity and inherent arbitrariness of the business taxation system. The complexities of the current approach to the deductibility of capital expenditure is well illustrated in Figure 3.3 (page 32) of the Review of Business Taxation Discussion Paper, *A Strong Foundation*.

Under the pre 27 February 1992 tax depreciation schedule, gas pipelines could be depreciated at 6 per cent per annum on a prime cost basis and 9 per cent per annum on a diminishing value basis. In effect, the life of gas pipelines for taxation purposes was judged to be between 16 and 17 years. Possible reasons for this lengthy depreciation period were the perceptions that the “physical life” of these assets was long (perhaps over 50 years), that the technology associated with gas pipelines was changing slowly, there were few if any alternative sources of supply and energy markets were highly regulated and only marginally competitive.

### 4.2 *One Nation Statement (26 February, 1992)*

The *One Nation Statement* introduced considerable changes to the depreciation allowances available to capital assets. This was, first, a direct response to representations put by business representatives that the business taxation system in Australia, particularly the depreciation allowances available for long-lived plant and equipment, tended to reinforce the emphasis on short-term returns.

It also represented a response to evidence collected by officials of the tax treatment of businesses in Australia compared to selected OECD and Asian countries. That review showed that depreciation allowances in Australia were not significantly different from other countries on short (5 year) and medium (10 year) life assets, but that on assets with long (20 year) lives the Australian system was less generous. (The then Federal Opposition in its original November 1991 *Fightback!* documents included a promise that, if elected, the Coalition would review depreciation arrangements to help Australian businesses meet “best international practice”.)

Interestingly, there was also recognition that traditionally the bulk of the nation's infrastructure has been provided by governments but that in recent times there has been increased interest by the private sector in investing in infrastructure development. Such greater private sector involvement was seen to be consistent with the drive for greater efficiency. Again it was noted that business groups had expressed concern that the operation of the income tax laws were posing an impediment to increased private investment. The then government's decision to extend and make more generous the depreciation treatment of infrastructure assets reflected an examination of the tax treatment of infrastructure investment.

From 27 February 1992 the depreciation rate for natural gas pipelines was lifted from 6 to 13 per cent per annum on a prime cost basis and 9 to 20 per cent on a diminishing value basis. In essence, the life of natural gas pipelines for tax depreciation purposes was reduced from 16 to 17 years to 7 to 8 years.

It is notable that the then Federal Opposition in its December 1992 document, *Fightback: Fairness in Jobs*, the Coalition proposed some specific measures which generally would have further accelerated depreciation provisions relative to the *One Nation* changes.

### 4.3 Treasury "Tax Expenditures Statement"

Since 1990 the Treasury has been following the practice of providing annual estimates of identified tax expenditures for the year in which the impact on revenue occurs.

The Treasury in its publication treats as a tax expenditure item (i.e. concession) the difference between the "accelerated" depreciation allowances for plant and equipment that have applied since 27 February 1992 compared to the depreciation allowances that applied prior to that date (i.e. the non-concessional rates). According to their calculations, this item resulted in tax expenditure involving deferral of taxation for each of the years from 1993–94 to 2000–01.<sup>1</sup>

Table 4.1

#### Tax Expenditure Associated with Accelerated Depreciation Allowances

1993–94 \$m	1994–95 \$m	1995–96 \$m	1996– 97 \$m	1997–98 \$m	1998–99 \$m	1999–00 \$m	2000–01 \$m
350	640	870	1060	1180	1260	1370	1430

Source: Department of the Treasury, *Tax Expenditures Statement 1996–97*, December 1997, p.51–53

<sup>1</sup> The Review of Business Taxation in their Discussion Paper, *A Strong Foundation*, present revenue costings of selective tax concessions relating to business in 1996–97 based on the *Tax Expenditures Statement 1996–97* (Table 2.1, p23). The estimate of tax expenditure associated with accelerated depreciation allowances is an updated estimate provided by the Australian Tax Office and at \$1,800 million is much larger than the estimate presented in the earlier Treasury document. *Platform for Consultation* estimates the revenue gain from removing accelerated depreciation at \$1,900 million in 2002–03 and \$2,390 million in 2003–04 (Table 39.1, p801).

The Treasury in the *Tax Expenditures Statement 1996–97* has a final section Tax Expenditures Involving Deferral (pages 72–74) which deals in particular with the question of accelerated depreciation. In that section, and the example shown in Table C1 of an asset with a nine year effective life, the Treasury clearly recognises that while the accelerated depreciation provisions of the income tax law enables the taxpayer to pay less tax in early years, they pay more tax in subsequent years once the asset has been fully depreciated. If no allowance is made for a discount rate, the cumulative tax expenditures are zero, as is presented in column (9) in Table 4.2. However, if an allowance was to be made for a positive discount rate, the cumulative tax expenditures would be positive.

Table 4.2

**Accelerated Depreciation Tax Expenditures**

(1) Year	Effective life		Accelerated Depreciation				Tax Expenditure	
	(2) Opening Balance	(3) Depreciation	(4) Tax Saving	(5) Opening Balance	(6) Depreciation	(7) Tax Saving	(8) (7) – (4) Cost	(9) Cumulative Cost
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1	10000	833	300	10000	1500	540	240	240
2	9167	1528	550	8500	2550	918	368	608
3	7639	1273	458	5950	1785	643	184	792
4	6366	1061	382	4165	1250	450	68	860
5	5305	884	318	2916	875	315	–3	857
6	4421	737	265	2041	612	220	–45	812
7	3684	614	221	1429	429	154	–67	745
8	3070	512	184	1000	300	108	–76	669
9	2558	426	153	700	210	76	–78	591
10	2132	2132	767	490	490	176	–591	0

Source: Table C1, *Tax Expenditures Statement 1996–97*, Commonwealth Treasury.

The point is that in considering long-lived assets it is not appropriate to take a short term view of the revenue neutrality condition—once a longer term view is taken of revenue neutrality, it is also necessary to take into account differences in the level of investment (and hence the size of the total tax base) that would occur with different provisions for tax depreciation. If socially profitable investment projects do not proceed because the company tax rate reduces the rate of return to investors below acceptable levels, then there is a social cost of the project not proceeding. A better designed tax system would ensure socially optimal projects were undertaken. In essence, the correctness or otherwise of the logic of the Treasury’s approach turns on the fundamental judgment about whether the pre 1992 tax depreciation rates reflect the true profile of economic depreciation of assets or whether they result in taxes on profits being levied on the cost of capital of undepreciated investment.<sup>2</sup>

<sup>2</sup> The Treasury example in the *Tax Expenditures Statement 1996–97* assumes the answer it wants to reach, namely, that tax revenue is lost if the rate of tax depreciation exceed the effective life of an asset. But the real issue in practice, as we argue in Section 5 below, is to determine the true effective life of an asset and the profile of effective depreciation taking account of technology and market risks.

#### 4.4 Who Benefits from Tax Depreciation Provisions?

There is always a question with taxation about who ultimately bears the burden of individual taxes (i.e. what is the incidence of taxation). Similarly there is a question with tax depreciation provisions about who ultimately captures the benefits associated with more rather than less generous provisions.

In the case of gas pipelines the likelihood is that the benefit of tax depreciation provisions will not leak out to third parties. First, the depreciation provisions when combined with other tax allowances and the nominal company tax rate result in an *effective* company tax rate. It is the effective company tax rate which is relevant to determining the rate of return on particular assets. Investment decisions to proceed with a new gas pipeline will only be taken if the expected rate of return on investment sought by investors in such assets are reached—if this is not the case, the investors will look elsewhere.

Secondly, it is only likely that the benefits of tax depreciation provisions will leak out to suppliers of depreciable assets (a possibility identified by the Review of Business Taxation in their Discussion Paper, *A Strong Foundation*) where suppliers of such assets possess a degree of monopoly power. Given the importance of high performance steels in gas pipelines and the fact that such steels are freely available on world markets and highly tradeable, it is unlikely that suppliers of them will be able to extract returns above competitive market prices.

Thirdly, given the pervasive role regulators play in the gas industry, it is unlikely that end customers, even large ones, will be in a position to extract rents from the suppliers of gas and gas transmission services.

Were tax depreciation rates to be made less generous, depending upon the approach taken by the regulators concerned, it is highly likely the burden would be shared between the operators of existing gas pipelines which have not yet been fully written off for tax purposes and final customers. Be that as it may, the key point is that a message has been sent to potential investors in gas pipelines that Australia has adopted a significantly less welcoming investment regime for capital intensive projects.

#### 4.5 Revenue Neutrality?

The qualification of revenue neutrality both imposes a severe constraint on the effectiveness of business tax reform and at the same time is difficult to interpret.

In terms of the first point, some sections of business believe that the tax environment for productive investment in Australia is less favourable than in a number of overseas jurisdictions which, broadly speaking, compete with Australia to attract the footloose investment dollar. This suggests that, in order to improve international competitiveness, the *overall tax burden* on business needs to be reduced. Fiddling around with the tax rate and the various allowances within a revenue neutrality constraint is very much a second order issue which, by definition, will not reduce the average effective rate of tax on investments.

Turning to the second point, it seems likely that the imposition of a revenue neutrality constraint on business tax collections could, in fact, be revenue positive overall. Given that the company tax is basically a withholding tax for domestic taxpayers, any reduction in the statutory rate from 36 per cent to, say, 30 per cent would lead to an increase in personal tax collections under the imputation system. Overall, therefore, tax collections are likely to rise.

## 5. The Profile of Effective Depreciation of Gas Pipelines

### 5.1 Introduction

The appropriate depreciation rate to use for tax purposes in order to ensure that taxes on company profits are not distortionary (ie, they are not levied on the cost of capital of undepreciated investment) should not be based on the “physical life” of pipelines. As is discussed in this chapter, pipeline owners are faced with a number of risks to their revenue streams that may threaten their ability to recover their capital investment many years before the end of the “physical life” of the asset.

This is not to say that, in such situations, the pipeline will become completely obsolete. Basic economic theory dictates that, even if fixed costs are not being covered (ie, there is no return on the capital investment), it is still in the interests of pipeline owners to continue operations provided that revenues are sufficient to cover the variable costs of operation.<sup>3</sup> Rather, in order to encourage *future* investment in assets, it is important that the depreciation rate used for tax purposes recognises the changing profile of effective depreciation of gas pipelines by providing an up-front (or accelerated) return of capital. That is, in view of the risks to the future revenue streams of pipelines, potential investors should be able to recover their capital investment in the early, revenue earning years of operation.

*A Platform for Consultation*, the second Discussion Paper published as part of the Review of Business Taxation, argues that assets should be written off over their “effective life” and hence defines accelerated depreciation as “the allowance of deductions for declines in the value of assets at higher than are expected to occur in practice”.

This approach, whilst sound in principle, raises very great difficulties in terms of its practical application. The judgement of the effective life of an asset class and the profile of effective depreciation is highly complex as it must take full account of the presence of key technology and market risks, whose impact is likely to be more unpredictable and far reaching with long-lived assets. As the Discussion Paper recognises:

“Long-term investments require higher before-tax rates of return (and hence higher project discount rates) relative to short-term investments because their pay-back periods are longer and hence they are inherently more risky.”

Fundamentally, there are six main sets of factors that can change the *profile* of effective depreciation of an asset in ways that mean that the asset owner will need to recover its capital early so that it is not left with full or partially stranded assets if possible future reductions in supply and/or demand occurs.

<sup>3</sup> Where revenues fall below variable costs, it would no longer be economic to continue operations. Under such extreme circumstances, assets are sometimes said to become “stranded”.

The first factor is the technology used to produce a good or service. In areas where technology is increasing rapidly and has profound effects, existing equipment can become redundant quite quickly. There are many examples of this in areas such information technology and telecommunications technology.

The second factor is the premature termination of the life of the feedstock source to which a particular gas pipeline is linked.

The third factor is the emergence of alternative and much higher quality/lower cost supply sources which cannot be accessed by existing installed transmission equipment operators, putting them at a competitive disadvantage with those that can.

The fourth factor is the emergence of powerful competitors or substitutes in the final product market such as through inter-fuel competition.

The fifth factor is the premature closure of the key customer of a pipeline whose business is pivotal to its commercial viability.

The sixth factor is sovereign risk (regulatory risk) under which interventions by Government change the rules of the game after investments are made. The regulators in place for the gas industry have wide ranging requirements covering matters such as:

- Open access, ring fencing and information disclosure.
- Controls on third party access, pricing and the ability to recover costs.
- Ability to bypass existing pipelines.

All these factors are associated with economic risks that must be taken into account by the investor when making the original investment decision and determining the profile of the recovery of capital costs of installed plant and equipment.

A strong case can be made that in the last decade the likelihood of these kinds of factors coming into play have increased as technological change has expedited, improved exploration techniques have identified alternative supply sources for natural resources, pipeline networks have become interlinked, a more mature upstream industry has emerged and markets and regulatory frameworks have become far more open to competition and hence risk. All these factors are changing the profile of capital recovery sought by investors to place a greater weight on the early years of an asset.

## 5.2 Main Factors Influencing the Profile of Effective Depreciation of Assets in the Gas Industry<sup>4</sup>

### 5.2.1 Technological Change

Over time, technology is continually improving the performance of the infrastructure of the gas industry. Consider the case of natural gas pipelines. Older pipelines such as the Roma–Brisbane pipeline used older and now outdated steel fabrication methods which meant that they were only able to operate at comparatively low pressures. The development of lighter and much higher performance steels means that newer gas pipelines are able to operate at much higher pressures and at lower costs.

There has also been considerable improvements in external coatings and internal linings of pipes which significantly reduce corrosion and hence pipeline maintenance costs.

As well, technological change is also taking place in other areas (eg, metering devices) which have the effect of substantially improving the achieved gas flow from a given pipeline, hence reducing costs.

Finally, there has been substantial reductions made in the cost of installing pipelines through the introduction of much improved pipe laying technologies.

Taken together, there can be very considerable differences in cost and performance between succeeding generations of pipelines and associated systems and equipment. The possibility is created that older pipelines will be bypassed by competing pipelines incorporating radically improved technologies and much lower cost structures. An example of this has occurred in Canada where the decision has been taken by the gas producers concerned to construct an alternative pipeline to the one operated by the Nova Corporation linking gas fields in North West Alberta to the US border.

### 5.2.2 Life of Feedstock Source

The life of a gas pipeline built to link a particular gas field to end customers is not only set by factors relating to the pipeline itself, but also to factors which influence the life of the gas field the pipeline serves. The decision to build a gas pipeline is based, amongst other things, on the expected life of the gas field concerned.

There is always uncertainty surrounding the availability of gas from the Cooper Basin and there are plenty examples around the world of gas fields that have run short of gas many years before their originally protected life. The risk of premature “watering-out” has to be taken into account in determining the revenue profile of a gas pipeline which has only one supply source. In effect, the depreciation profile of a gas pipeline can be set by the life of the gas resources it services rather than its own operating life.

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<sup>4</sup> An enumeration of the risks facing pipeline owners is set out in the International Energy Agency 1994 Report, *Natural Gas Transportation*, pp57–59.

### **5.2.3 *New Sources of Feedstock***

At a time when the amount of proved gas reserves in Australia were limited, the pipeline linking a particular gas field with a major industry or population centre had a *de facto* monopoly as far as the supply of gas was concerned. In recent times, a number of new gas reserves have been identified, some with considerably greater reserves than currently exploited fields, which have the effect of taking the available supply beyond current demand and opening the possibility for competition in particular end markets between companies exploiting different gas fields.

A newer and larger natural gas field would have the advantage of lower fixed costs and lower extraction costs; as well, transmission costs reflecting new technologies would be lower.

When account is taken of ongoing technological improvement of gas pipelines and the potential for exploiting alternative gas reserves to supply a given end market, situations can arise in which an existing gas field and the associated gas transmission pipeline would lose market share.

The continuing development of the pipeline network in Australia will produce similar results. For example, in relation to the Moomba–Sydney pipeline, a significant threat to its market in Sydney is now posed by the Eastern Gas pipeline.

A further possibility could arise in Sydney and the surrounding areas, where gas from coal seam methane, may be preferred to the natural gas feedstock because it is sourced much closer to the city. If other, closer resources can be accessed effectively, there may be implications for natural gas transmission operators.

### **5.2.4 *Market Developments (Intensification of Competition)***

There has always been a degree of competition between alternative energy and fuel sources in satisfying final customer demand whether that be by industry or by households. However, the substantial shift from public to private ownership of energy infrastructure and the related deregulation of markets have resulted in much greater competition between alternative energy and fuel sources.

The combination of technological change and the discovery of newer, lower cost sources of supply of alternative energy sources could result in a significant reduction in demand by industry and households for gas and hence the derived demand for gas transmission pipelines.

### **5.2.5 *Premature Closure of Key Customer***

A particular example of the risks associated with markets developments arises in the case where the revenues of a gas pipeline (or a major spur from a gas pipeline) are underpinned by one large industrial user — for example, a steel mill. In the absence of other significant customers in the vicinity of the steel mill, if the facility were to close prematurely because it was no longer competitive against lower cost steel suppliers, the gas pipeline (or spur line) concerned would face a dramatic decline in revenue.

In effect, this situation is the counterpart of the example considered in 5.2.2 above where a single gas supply source prematurely runs out well prior to its expected life. Both situations bring with them important sources of risk which must be taken into account in determining rates of return and profiles of investment recoupment.

### **5.2.6 Regulatory Intervention**

As well as creating a more competitive market for energy sources in Australia as a result of the shift from public to private ownership of key parts of the infrastructure and the process of deregulation, there has been greater weight given to both national and state based regulators who have the power to regulate prices and third party access conditions in areas where natural monopolies are present. Especially during the period where the regulators are establishing the principles they will use and building up case history, it is necessary for investors to make allowance for regulatory risks in determining whether particular investments will proceed.

### **5.2.7 Summary**

Examination of the six factors identified above shows that investors in the gas industry are facing a very different market and supply environment than they were in the early 1990s. The developments taking place in the Australian gas sector are contributing to the changing profile of effective depreciation of pipelines in favour of one which assumes a more up-front, or accelerated, return of capital. In other words, investors in pipelines are now facing risks that require them to recover capital early if their investment is to proceed.

This conclusion is not altered when allowance is made for the fact that operators of gas pipelines have open to them various strategies aimed at mitigating the sources of risk which have been discussed above. These generally involve contractual arrangements with “foundation customers” and owners of the gas resource involved. The gradual maturing of the market and the emergence of more alternatives and greater competition is tending to place downward pressure on the length of the contracts which the end customers are willing to enter into. In any event, contracts may have *force majeure* clauses in them which reduce the effective comfort to pipeline investors.

## 6. Conclusions

An important characteristic of a well defined business tax system is consistency of treatment between short and long-lived assets. Prior to the changes introduced on 27 February 1992 there was general agreement within the business community that the then operating depreciation schedule was out of line with best international practice in respect of its treatment of long-lived assets—the depreciation rates for long-lived assets operating at that time bore a much closer relationship to the “physical life” of assets rather than to their true profiles of effective depreciation, taking account of all relevant market factors.

The statement issued by the then government on 26 February 1992 reported work by officials which demonstrated that whereas depreciation rates for shorter lived assets were broadly in line with practice in other OECD countries and Asian countries, the depreciation rates for long-lived assets tended to be considerably less generous in Australia than elsewhere.

Further, the 26 February 1992 statement drew attention to the emerging trend to shift infrastructure from public to private ownership and argued that the changed depreciation rates for long-lived assets were in part designed to support this process.

Since 1992 there has been very considerable investment in gas pipelines and gas distribution infrastructure which has been facilitated by the post 27 February 1992 depreciation rates. Further major investments in the gas infrastructure are in prospect which could add up to \$14 billion over the period to 2005.

There is a very considerable risk that a substantial part of these nationally important investments could be placed in jeopardy by fundamentally altering the basis of depreciation of long-lived assets to restore the pre 27 February 1992 depreciation schedule. Such an action would disregard the major factors identified in this paper which act to change the profile of effective depreciation in favour of one that assumes a more up-front, or accelerated, return on capital, namely:

- technological change;
- life of feedstock source;
- the development of alternative feedstock supply sources;
- changes in market demand associated with competing fuel and energy sources;
- premature closure of key customer; and
- the actions of regulatory authorities.

It might be argued that to a degree the post 27 February 1992 tax depreciation rates represented an adjustment to take account of inflation. There is some historical precedent for this view given the introduction under the Fraser Government of 5/3 depreciation—at the time this policy was seen to be associated with adjusting for inflation. The 5/3 depreciation provisions were eliminated in 1988. With inflation rates now at an annual rate of 2 per cent, inflation has only a limited effect in taxing the real cost of capital rather than profits. Nevertheless, it cannot be assumed that inflation rates will remain at current low levels in the longer term. Inflation rates of 3–4 per cent per annum when combined with the pre 27 February 1992 tax depreciation rates could still give rise to significant distortions.

Irrespective of the view that is taken with respect to potential future rates of inflation, the case for retaining the post 27 February 1992 tax depreciation rates as they relate to longer lived assets is that given the developments that have occurred in terms of technology, feedstock supply and market demand and competition realities, these depreciation rates are far better indicators of the true profile of effective depreciation of assets than are the pre 27 February 1992 rates.

In a world of mobile, capital there is a strong case for reducing both nominal and effective rates of tax on companies. However, it would not be sensible to seek to finance a reduction in the nominal company tax rate by removing the accelerated depreciation tax allowance. This will merely return Australia to the situation that used to apply when there was a clear tax discrimination against long-lived assets — a situation that threatens future investment in gas pipeline infrastructure.

Accelerated depreciation provides significant benefits to capital-intensive industries, and can be justified for investments in assets that are inherently riskier than other investments. By encouraging investment in such industries, accelerated depreciation can have a major impact on the overall Australian economy. There is a real danger, therefore, that the ending of accelerated depreciation tax allowances on long-lived assets will not only rebound on investment within the Australian gas sector — but lead to a reduction in economic growth, employment and welfare in the Australia as a whole.

## References

Benge, M., *Taxes Accelerated Depreciation and Investment Decisions* in J. G. Head, ed, *Fightback: An Economic Assessment*, Australian Tax Research Foundation, Sydney, 1993.

Costello, P., *The Australian Taxation System in Need of Reform*, 1998.

Costello, P., *Business Income Tax Consultation*, Press Release No. 81, 14 August 1998.

Costello, P., *Review of Business Taxation*, Press Release No. 104, 27 October 1998.

Department of the Treasury, *Tax Expenditures Statement 1996–97*, Canberra, December 1997.

Head, J. G., *Imputation in the Context of Taxation Reform* in Bureau of Industry Economics, *Dividend Imputation: Policy Forum September 1993*, Occasional Paper No. 17, Canberra 1993.

FitzGerald, V., *The Competing Tax Packages: Implications for Business and Investment*, paper presented to ATAX Business Tax Forum, Sydney, 15 September 1998.

FitzGerald, V., *Reform of Australia's Taxation System: Priorities and Directions*, CEDA Information Paper No. 46, October 1996.

International Energy Agency, *Natural Gas Transportation: Organisation and Regulation*, Paris, 1994.

Keating, P. J., *One Nation Statement: Statement by the Prime Minister*, Canberra, 26 February 1992.

Productivity Commission, *Stocktake of Progress in Microeconomic Reform*, June 1996.

Review of Business Taxation, *A Strong Foundation: Discussion Paper 1, Establishing Objectives, Principles and Processing*, November 1998.

Review of Business Taxation, *A Platform for Consultation: Discussion Paper 2, Building on a Strong Foundation*, February 1999.

The Australian Gas Association, *Gas Supply and Demand Survey 1997*, May 1997.

The Australian Gas Association, *Gas Transmission Pipelines: Development and Economics*, AGA Research Paper No.8, February 1998.

The Australian Gas Association, *Gas Distribution and Retailing: Responding to New Opportunities*, AGA Research Paper No.9. June 1998.

The Australian Gas Association, *Gas Statistics Australia 1998*, September 1998.