Australian Government
Productivity Commission

Industry Policy for a Productive Australia

Gary Banks

Colin Clark Memorial Lecture,
Brisbane, 6 August 2008

ISBN 978-1-74037-261-9

This publication is available in hard copy or PDF format from the Productivity Commission website at www.pc.gov.au. If you require part or all of this publication in a different format, please contact Media and Publications (see below).

Publications Inquiries:
Media and Publications
Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Tel: (03) 9653 2244
Fax: (03) 9653 2303
Email: maps@pc.gov.au

General Inquiries:
Tel: (03) 9653 2100 or (02) 6240 3200

An appropriate citation for this paper is:

Banks, G. 2008, *Industry Policy for a Productive Australia*, Colin Clark Memorial Lecture, Brisbane, 6 August. Productivity Commission, Melbourne.

The Productivity Commission

The Productivity Commission, is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by consideration for the wellbeing of the community as a whole.

Information on the Productivity Commission, its publications and its current work program can be found on the World Wide Web at www.pc.gov.au or by contacting Media and Publications on (03) 9653 2244

Foreword

This paper was presented as the Colin Clark Memorial Lecture for 2008. Keying off a central theme in Professor Clark's work, it examines the evolution of industry policy in Australia from its protectionist beginnings. And it identifies some issues that need to be addressed in making further progress.

I am grateful to Professor John Foster from the University of Queensland for inviting me to be the eighteenth Lecturer to honour this great Australian economist, and to Professor Flavio Menezes for chairing the event. The Lecture took place on 6 August at Customs House, Brisbane with several members of the Clark family attending.

I am also very grateful to a number of colleagues at the Productivity Commission who assisted me in the preparation of this paper. While it draws heavily on the Commission's work, responsibility for the views expressed remain my own.

Gary Banks AO
Chairman
August 2008

Industry policy for a productive Australia[1]

Gary Banks
Chairman, Productivity Commission

I might tolerate theoretically the infant-industry case, but theoretical toleration is unwise; people will soon go beyond it. (Colin Clark, from an interview with Chris Higgins, 1989)

Introduction

I am grateful to have been invited to give this lecture in honour of Colin Clark, one of Australia's foremost economists. Many years ago, I had the pleasure of hearing some lectures from Professor Clark himself, when studying economics at Monash University. I remember being greatly impressed by his casual references to discussions "with Lord Keynes on the steps of the (British) Treasury". More recently, in researching for this lecture, I found that while Clark agreed with Keynes on much, he had opposed the great man on the issue of industry protection. He saw this as Keynes' "real blind spot"; and considered that "he enjoyed being on the popular side" (Higgins 1989).

Clark himself was rarely on the popular side, especially in the protection debate. What's more, he was severe on his fellow academic economists who, he said, "floated happily with the current of popular protectionist sentiment and have avoided the unpleasant task of having to educate public opinion out of its prejudices" (Clark 1962). Clark generally came to his own policy conclusions, based not just on theory, but careful statistical evidence and acute observation of the world as it was. This no doubt led him towards the end of his life to make the observation that I have chosen as the header quotation for this lecture.

It introduces a theme that for me is of wider and continuing relevance. Industry policy measures assume an important place in any government's policy armoury. But where they potentially deliver benefits to particular firms or industries, they are commonly the subject of much lobbying and self-interested claims. Moreover, where selective assistance to industry is involved, it is never costless, although the

[1] Colin Clark Memorial Lecture, University of Queensland, Brisbane, 6 August 2008.

nature and incidence of the costs are often hard for the public to understand. It is therefore crucial that such policies not only have a sound rationale, but are carefully designed and implemented in keeping with it.

If Colin Clark were alive today, he would undoubtedly be impressed with Australia's progress in reducing import barriers. But he might well turn a critical eye to some other forms of industry support and wonder whether they were all justified in the terms just described.

This lecture in his honour provides a timely opportunity to consider these issues. The Australian Government has just received the Bracks Report on the automotive industry and will shortly receive the Green Report on TCF. An interim report from the Cutler Review of innovation policy is imminent. And other relevant industry policy related reviews will also be reporting shortly. How the Government responds to these reports will effectively set the course for industry policy and its contribution to Australia's economic future.

The end of old-style industry (protection) policy

Writing in the early 1960s, Colin Clark was beginning to despair at the prevailing protectionist policy for Australian manufacturing and its deleterious impacts on work incentives and economic performance. He observed:

> Australia in the future — if Australia is to have a future — will have to be more competitive in every way (Clark 1962, p28).

Fast forward to today and, clearly, Australia *did* have a future. Our economy also is more competitive in every way than it was then. However, if we had been making this assessment in the early 1980s, Clark's warning would have remained apposite. For it was only in that decade that the first real steps were taken to reverse the protectionist conception of industry policy that was largely responsible for Australia's secular decline in world economic rankings.

Overturning a policy approach that had delivered, or at least promised, 'protection all round' for several decades was obviously no mean achievement, as the contemporary battle over residual protection for the Automotive and TCF industries reminds us. The story is well told elsewhere and requires little repetition for this audience. Two elements, however, were crucial. One was the systematic generation of information about the costs that import protection inflicted on the wider economy, particularly primary industries — which enfranchised new political constituencies for reform. (By demonstrating that most of the gains from our trade liberalisation accrue to us, this also helped to dispel the myth that our actions should be made contingent on reciprocal reforms by foreign governments.) The second was

political leadership with the wisdom to foster such public information and the courage to act on it.

The heavy lifting in the progressive dismantling of tariffs from Australia's industry policy apparatus commenced with Labor Governments, but tariff reform soon gained bipartisan support. And while the Howard Government baulked at finishing the job for the general tariff regime (the so-called 'revenue tariff'), it did enact legislation to gradually, but finally, bring assistance to the TCF and automotive industries — those perennial policy infants — into line with average manufacturing levels by 2015.

Labor's continuing commitment to tariff reform, while at the same time seeing a key role for industry policy, was affirmed by the Prime Minister in the following terms, at a press conference following his ascension to the leadership of the Labor Party (Rudd 2006):

> *Rudd*: I'm actually a long term believer in industry policy. …
>
> *Reporter*: Does your belief in industry policy extend to a belief in the usefulness of tariffs and quotas?
>
> *Rudd*: No it doesn't. When I talk about industry policy, I talk about other things. But you will see a clear statement from us in the future. My credentials and terms of support for free trade have been on the public record for more than a decade and you don't change your spots on those sorts of questions.

Our ageing infants

The new Government's position will be further displayed when it responds to the reviews it commissioned of the programs currently in place to phase down tariffs and financial support for the Automotive and TCF sectors.

For the first time in the history of tariff-making in Australia, those policy reviews have not been conducted by the institution originally created for that purpose (my own). However, possibly recognising the potential for such reviews to become too industry-centric, the Government asked the Productivity Commission to model the economy-wide effects of various assistance options identified by those reviews, including maintenance of the current program of reductions.

The Commission's reports have been in the public domain now for some weeks. To ensure that they would not only be robust, but also as useful as possible to policy makers, the Commission went to some lengths to ensure that the model it used was well calibrated and updated for the task, that key parameters and assumptions were subjected to sensitivity tests, and that both the model and preliminary results were

exposed to the scrutiny of expert referees, as well as being discussed at workshops attended by the referees, review secretariats and other relevant officials.

The modelling results indicated that reductions in tariff protection would yield net benefits to the economy (and community) as a whole, despite the additional pressures this would put on production and employment in the two sectors. The projected gains, while not large in economy-wide terms (especially for TCF) were consistently positive, even under quite limiting sensitivity scenarios, and larger for the assistance reduction programs currently in place than for options entailing lesser reductions.

Moreover, in contrast to earlier periods, the (un-modelled) adjustment costs of reform were considered unlikely to make much difference to the projected net gains, given much lower projected unemployment and the scarcity of both skilled and unskilled labour in many parts of the country. The Commission also took into account other relevant economic phenomena which could not be modelled, such as potential technological or environmental spillovers from assistance for particular types of vehicles, and concluded that they would not significantly alter the economy-wide calculus.

An old theory recycled

In a move that would have come as no surprise to Colin Clark, some industry interests have used the theory of the 'scientific tariff' (dating back to the early 1800s) to argue that reducing automotive tariffs would weaken Australia's terms of trade and thereby bring about a welfare loss rather than a gain (AIG 2008). A consultancy hired by the Victorian Government's Industry Department commissioned modelling to demonstrate this (Lateral Economics 2008). And just last week the auto lobby released another modelling exercise that it had commissioned (Econtech 2008).

It is not difficult to generate such a result. As any trade text shows, as you move away from the 'small country' assumption, small tariffs can be shown to generate terms of trade gains larger than the efficiency losses they impose from distorting and curtailing resource use.

But is Australia a large or small country in world markets? The Commission's assessment, like that of most trade specialists, is that Australia's international market power is very limited, particularly in the longer term when buyers and rival suppliers have had time to adjust (PC 2008a). Even if some Australian exporters did have potential to extract price premiums, government intervention to somehow control exports is unlikely to be warranted. For instance, there is no need for

government intervention to assist individual firms to exploit any market power they derive from 'branded' products.

Consequently, the Commission used a larger (less price sensitive) export demand elasticity in its 'standard' simulations than the modelling exercise for Lateral Economics. Our modelling still indicated some terms of trade losses from lower tariffs, but these were outweighed by the income gains from better resource use and expansion of capital induced by lower prices for cars (which for businesses are an important investment good). (The modelling for Lateral Economics did not allow investment to expand, thus securing the dominance of the terms of trade losses, a result that we also obtained in a similar experiment in our own report.)

At any rate, as the Commission observed in its report, the automotive tariff falls well short of being a truly 'optimal tariff', even if it could be demonstrated that control over some exports would yield net gains. In those few instances where controlling otherwise competitively-supplied Australian exports into foreign markets might benefit national income (for instance, where an importing country imposes source-specific quotas), policies to exploit these successfully would need to be very carefully targeted. Tariffs on cars — which tax exports indirectly and indiscriminately by raising costs of inputs and factors of production — simply do not fit the bill.

While modelling can never tell the whole story, no matter how well or fairly it is executed, in the present instances it does not support action to defer or reverse existing legislated reductions in tariffs. This conclusion is based on the gains from our own tariff reductions and is unaffected by whatever does or does not happen in the Doha Round. Indeed, the latest multilateral WTO 'failure' should if anything reinforce the good sense of Australia pressing on with its own reforms. Apart from its international implications, action to the contrary could signal domestically a policy shift on tariffs that could end up undermining our economy's future productivity performance.

The broadening of Industry Policy

The steadfast commitment to opening Australia's markets over the past 20 years or so has yielded gains much greater than conventional modelling could have projected. Reform is a process, not an event. Reducing tariffs — an umbrella sheltering inefficiencies well beyond the traded goods sector — set in train further 'behind the border' reforms that have in turn brought further substantial benefits to our economy.

In particular, under pressure from increased import competition in their output markets, businesses began to lobby for the reform of government policies and practices that were unduly increasing their production costs, as well as for alternative forms of assistance to enhance their competitiveness. This 'second wave' of reforms included measures to improve the efficiency of government utilities, changes to industrial relations to enable more flexible workplaces, and broad-ranging reforms to remove regulatory impediments and engender greater competition, where appropriate, throughout the economy.

At the same time, there has been an increased emphasis on industry assistance directed at overcoming market failures, notably in the area of R&D. And industry-specific assistance has increasingly been targeted at facilitating adjustment and structural change.

In sum, over the last twenty or so years there has been a move away from the previous narrow and defensive conception of industry policy. Taking its place has been a growing recognition that there is a need to get the economic environment right for all firms, and to facilitate adjustment to market pressures rather than resisting it. As such, industry assistance has come to be recognised as just one facet of industry policy, which itself is increasingly seen as encompassing the broad range of policy-related factors that bear on the performance of industry generally.

Notwithstanding the significant reforms in this period, considerably more needs to be done. Thus we are now embarking on a 'third wave' of reform, extending beyond cost impediments, to also addressing industry's human capital needs and encompassing all jurisdictions (Banks 2008).

Industry assistance nevertheless remains substantial

When the American Everett Dirkson famously said "A billion dollars here and a billion there, and pretty soon you're talkin' real money" he could have been referring to industry policy programs today. Despite the reduction in tariffs, and even with many omissions in coverage, Australian Government assistance to industry was estimated by the Commission to exceed $15 billion last year. State and Territory assistance programs, which are less transparent, would add a few billion on top of that (PC 2008b).

In the early 1960s, when Colin Clark was raising concerns about Australia's future, tariffs accounted for virtually all the assistance received by manufacturing industry. Today, average nominal tariff rates are about a tenth of what they were in the sixties, and tariff assistance accounts for three-quarters of measured (net) assistance to the sector. The other quarter involves various forms of budgetary assistance.

Although strictly comparable estimates are not available, measured budgetary assistance for manufacturing appears to have roughly doubled in real terms since the 1960s. Assistance tied to specific manufacturing industries and businesses has increased at a faster rate than generally available manufacturing assistance. Nevertheless, financial support has not compensated for the loss of tariff assistance, even in the TCF and PMV sectors, which absorb a large share (over 40 per cent) of estimated budgetary assistance to manufacturing. Moreover, more of the industry-specific assistance today is at least notionally tied to the performance of R&D or other activities rather than simply supporting production.

Budgetary assistance outside of manufacturing is also significant, though that to the services sector is proportionately much less than that to other sectors. As for manufacturing, a large component of budgetary assistance to agriculture and services is through generally available R&D and export programs (with drought assistance dominating in the agricultural sector).

Overall then, there has been a shift in emphasis away from industry-specific support to more general measures, aimed at supporting particular activities rather than particular industries. This has been a positive development.

New policy forces and influences

As illustrated by the latest reviews of auto and TCF, ongoing pressures from globalisation and emerging exporters, exacerbated by exchange rate appreciation caused by the mining boom, have been prompting calls for new measures to provide relief against imports or other assistance.

The innovation impetus

In addition, increased recognition of the central importance of innovation to industry productivity and competitiveness has led to a renewed focus on how government can support it. The previous government commissioned a major study on 'Public Support for Science and Innovation' from the Productivity Commission, which included a focus on the rationale for and design of business programs. The new government has commissioned its own separate review of the 'national innovation system', expressing an intention, "to ensure that business has better access to new ideas and new technologies and to bridge the divide between industry and research" (Carr 2008a).

Moreover, the current reviews of automotive and, especially, TCF assistance were designed to link into the wider review of innovation policy, with the enhancement

of the innovation performance of these industries being seen as crucial to their future sustainability.

The greenhouse challenge

Greenhouse policy is another potentially significant new driver of industry assistance. A plethora of budgetary and regulatory initiatives have already been taken with the goal of reducing Australia's emissions, including energy efficiency targets and subsidies for alternative energy sources.

While the need to address the effects of global emissions is now widely accepted, some of these programs seek to achieve reductions in emissions by favouring certain industries, technologies or activities, simultaneously providing de facto industry assistance. This may also make it politically difficult to rationalise those schemes that are rendered redundant by a (well-designed) Emissions Trading Scheme (ETS) (PC 2008c).

Yet, as currently proposed, the ETS looks set to have its own substantial industry assistance component, with hotly debated exemptions and compensation for some industries or enterprises potentially amounting to several billion dollars. Further, some 20 per cent of the revenue from this de facto tax is to be set aside for the promotion of greenhouse-related R&D.

Even by the high previous benchmark for industry support, this really *is* 'real money'. Indeed, when account is taken of other policies relevant to management of the environment, such as the large subsidies provided to water users, the implicit industry assistance stemming from such policies may, in the future, dominate other measures of business support.

Ensuring a productive outcome

In sum, these emerging influences could potentially see an expansion again in support for particular industries and technologies relative to measures of more general application. It will be important, as it has been in the past, to ensure that any such schemes enhance overall economic performance. Indeed, contemporary pressures and challenges — including labour shortages and capacity constraints, the need to address the effects of an ageing population and climate change itself — have if anything increased the imperative to ensure that any new industry support programs promote efficiency, and to terminate existing programs that do not.

How the government responds and the sort of industry policy that emerges is of considerable importance to Australia's economic future. It is timely therefore to

take stock of the principles that should guide the development and application of industry policy, based on our past experience, what we know about the current environment and future challenges.

The ultimate objective must be *economy-wide* benefits

Devising and assessing any policy obviously requires a clear understanding of what one ultimately wishes to achieve. It is particularly important when assessing policy proposals directed at particular industries or sectors. The reason for this, of course, is that what is good for a particular part of the economy or community need not be good for other parts — and in the case of industry assistance often isn't. Tradeoffs will generally be involved and the community would want some assurance that the benefits of an industry policy initiative will exceed the costs across the economy as a whole.

Even as many people have come to accept that tariffs and other regulatory barriers to competition are not a good idea, they often do not recognise that other forms of support could be (almost) as problematic. It is of course unlikely that anyone would be properly informed about this by the potential recipients, or sometimes even by those government departments most closely involved. That indeed is the original rationale for the Commission's existence. Understandably, it hasn't won the organisation many plaudits for its reports over the years on industry assistance — whether for cars, broadcasting or pigmeat (PC, 2005). There is a natural aversion to having the costs to others of one's favourite support arrangements identified and aired in public!

However governments ultimately are there to serve the wider community, and need such information to do their job. Thus, for example, in its recent auto report, the Commission spelt out that current assistance to that industry placed a burden on consumers and taxpayers of $2 billion each year; that each job thereby 'saved' costs the community some $300,000 annually, and that there would be a net welfare gain of some $0.5 billion each year in perpetuity (equivalent to a much larger figure in NPV terms) from halving its tariff assistance, with gains in the mining sector alone outweighing the auto industry's losses.

This last point is a sore one for those who see manufacturing as deserving of a special place in Australia's economy. The recent mining boom, as in the 1970s, is placing manufacturing and other industries under pressure. In particular, the profitability and even viability of firms in a range of trade-exposed industries have been weakened by the dollar's appreciation. But this is an integral part of the mechanism through which scarce resources in an economy, including skilled

workers, are induced to move from lower value to higher value activities, in response to changing economic circumstances and emerging opportunities.

To this, a common rejoinder is: "what about after the boom finishes? — we can't rely on mining forever". That is doubtless correct, although given our extensive mineral reserves, the sector's demise could take a while. Precipitate actions based on a view that heightened demand for commodities is likely to be short-lived could prevent Australians from reaping fully the higher income benefits from the upswing.

In any case, just as the expansion of mining has seen the (relative) contraction of manufacturing, its ultimate contraction could be expected to favour the competitiveness and growth of non-mining sectors again, irrespective of government assistance. The only remaining question, then, is whether there is a case for government to seek to prevent the loss of industry capacity from legacy investments of the past decades that just might become economically viable in future decades. Few these days would claim that a government would possess the market intelligence and economic foresight necessary to effectively plan an economy in this way.

The 'materialist fallacy'

For all these reasons, the goal should not be to promote any particular industry or sector as an end in itself. This was what our old-style protectionist industry policy was about, which promoted manufacturing at considerable costs to our economy and community. That policy ultimately failed even on its own terms. That said, there are some misconceptions about how Australia's manufacturing sector is faring that could be adding unnecessarily to policy concern.

It is important to recognise that the manufacturing sector, though declining in relative size, is larger today than it was twenty years ago, notwithstanding significant reductions in government support. The secular decline in manufacturing's *share* of GDP is mainly due to the expansion of services; not mining. (Indeed, the *relative* decline is in part a statistical artefact, with activities previously categorised as manufacturing now being contracted externally and classed as services. Examples include various outsourced wholesaling, distribution and IT functions.)

The shift in the structure of economic activity from manufacturing (and agriculture) to services is a common phenomenon internationally. It has been going on in the Western world for some time. Indeed, Colin Clark himself was one of the first to draw attention to the phenomenon, in the 1930s and 40s. It is generally associated

with economic advancement and thus to be celebrated. Meanwhile, the fact that the manufacturing sector has a smaller share of the economy in Australia than in some other OECD countries principally reflects our relatively abundant resource-base.

The key point, though, is that the relative decline of manufacturing has not held back living standards in Australia. On the contrary, once we began to reduce manufacturing protection, and the burden it placed on more efficient and productive activities — within manufacturing itself, as well as other sectors — Australia's exports took off and per capita incomes have risen faster than the average for the OECD, taking us back to 6th in world rankings from 18th in the late 1980s.

Other problematic pretexts

Just as maintaining particular industries or sectors should not be an end in itself, so there are other problematic pretexts for government assistance that give status to economic activities that are means to ends, not ends in themselves.

Exporting is a prime example, and currently the subject of a policy review encompassing consideration of support programs such as the Export Market Development Grants. Exporting obviously brings benefits — and in recent years has contributed greatly to income growth in Australia flowing from rising world mineral prices. However, the production, marketing and delivery of goods and services for export all employ resources and thus have opportunity costs. For Australia to gain from any particular exporting activity, the benefit received needs to exceed the value that could have obtained by using the embodied resources to supply the domestic market. Hence it cannot be presumed that additions to exports, particularly if induced artificially by assistance, will yield a net payoff to the community.

Sometimes assistance is seen as addressing the 'problem' of trade imbalances in particular sectors or product categories. But such imbalances are simply a manifestation of the gains from trade. We need to specialise in what we do well and import what we don't. Industry policy should complement trade policy in supporting this effective use of our scarce resources, not resist it.

In a similar vein, nor should the goal of industry policy be merely to achieve an expansion in small business, large business, jobs (in particular sectors) or even innovation. The objective should be to enhance the performance of the Australian economy, so as to enable living standards and community well being to realise their potential, given the resources available to us and their alternative uses. What those industry policies that target particular industries, activities or groups need to demonstrate is how they can achieve this.

What policy rationales *meet* the economy-wide objective?

The fact is that there is a limited range of circumstances in which assistance to industry has the potential to yield a pay-off to the wider community, beyond that to the beneficiaries. However, these circumstances are important and deserve abundant policy attention. At the same time, as Clark warned in the passage at the beginning of this lecture, there is a risk of taking such theoretical rationales too far. It is thus important to understand them and not over-extend them. And, of course, poor policy design can lead to bad outcomes even when an intrinsic case for government intervention exists.

The key efficiency-related rationales for government intervention involve various forms of 'market failure', where private agents responding to market signals are led to make the 'wrong' investment or production decisions, detracting from economic welfare. Technically-speaking, market failure can arise where there are spillovers, public goods, information deficiencies or asymmetries, or where cognitive limitations detract from appropriate decision making. Most of these have given rise to industry policy interventions at one time or another.

Market failures are pervasive, but in order for them to become a rationale for intervention ('policy relevant') they need to be substantial and amenable to government action, without giving rise to even larger costs (an issue to which I will return).

Innovation in perspective

Spillovers provide the core rationale for a major strand of industry policy directed at R&D or, more broadly, innovation. The latter is becoming the predominant focus of industry policy. Industry departments now typically have 'innovation' in their title and most governments have a Minister with responsibility for promoting it. Indeed, when announcing the Australian Government's 'National Innovation System review', the Commonwealth Minister observed: "In today's economy, innovation policy *is* industry policy" (Carr 2008c). A similar emphasis is evident in the UK and within other OECD countries.

This contemporary prism for viewing industry policy is a welcome development, as it reinforces the importance of adopting a broad approach. Innovation is sometimes seen as synonymous with technological advances. But it is far wider than that, encompassing changes to all facets of an enterprise's operations, its relationships with its workers, its suppliers and its customers. According to survey data, only 30 per cent of what the ABS defines as 'major innovating firms' actually undertake R&D (PC 2007a).

The evidence suggests that the keys to encouraging innovation are not government assistance, but rather competitive markets that provide strong incentives for firms to innovate, combined with a regulatory environment for doing business that readily allows them to do so (OECD 2007). These are precisely what the microeconomic reforms of the past two decades have been directed at. In particular, lowering tariffs and other barriers to foreign goods and capital has not only heightened competitive pressures, it has been a conduit for greater exposure of local firms to new ideas from abroad. Thus, reflecting briefly again on the current policy reviews of the automotive and TCF industries, it would run counter to the identified need to enhance innovation and productivity in these industries for the brakes to be applied to tariff reform (regardless of what might be done with other forms of assistance).

It follows that, for much of the innovation that needs to take place within Australian firms, there is no market failure that needs addressing (or can sensibly be addressed), once government's regulatory failures have been rectified. This is important to emphasise, since not all government regulatory failures *have* been rectified and there is always the danger of new regulatory obstacles emerging or past reforms being reversed.

Spillovers can inhibit R&D

This is not to deny the case for some 'reinforcing' industry support for innovation based on clear market failures and, in particular, spillovers related to research activity. Often research undertaken by businesses, as well as that in universities and public sector research agencies, generates ideas that can be used, mimicked or adapted cheaply by firms or others without payment to the originator. In such cases, public support to encourage innovative activity that would not otherwise proceed because the private returns to the originator are too low, has the potential to enhance community well-being.

As noted, much government support is predicated on such spillovers, as well as on the need for public research to underpin public sector activities. In 2006-07, government direct and indirect support for business R&D alone amounted to nearly $2 billion, or one quarter of measured assistance, and a further $4 billion went to research conducted within universities and other public sector bodies.

With spillovers assuming greater significance under an innovation policy approach to industry policy, it is important to have greater clarity about the concept than has sometimes been the case to date. For example, spillovers are very different from multiplier effects that simply reflect (priced) linkages between different sectors of the economy and which do not provide a justification for government support even where the beneficiaries are research rich activities. And, as the Commission argued

in its report on public support for science and innovation, the spillovers arising from research activity in universities and public sector research organisations are often likely to be higher than for business R&D, much of which involves incremental, catch-up research.

A faster changing and more tangled web?

Governments will also have to confront the argument that new industry policies are required to address the changing nature of innovation and the 'new world order' brought about by globalisation and climate change.

In many respects, this is old wine in new bottles. For example, globalisation can be seen as an extension of the development of national markets. Similarly, stripped of their particular contexts, the underlying difficulties facing SMEs in a more globalised world are little different from those confronting their counterparts 30 years ago.

However, innovation is increasing rapidly. According to those who try to put numbers on these things (Kurzweil 2003), the contribution of innovation to economic growth in the whole of the 20th century would take just 20 years at today's rate of progress. And, with 'growth in growth', the rate of progress will only increase. Whether or not innovation really is expanding exponentially, it is clear that the heightened pace of change will put a premium on business flexibility and adaptability.

As well, innovation models are evolving. Gone are the days when most business innovation was conducted within the walls of the company seeking to improve its production processes or bring a new product to the market. New technologies, as distinct from their specific applications, are increasingly being bought and sold, leading to new forms of pricing knowledge. Also, potential users of an innovation are much more likely to involve themselves in its development rather than waiting for it to be brought to market.

It is not clear that such changes will significantly alter the basic menu of market-failure related industry support, but they could alter its composition. For example, industry extension support might be focussed more heavily on helping businesses to leverage finance off intellectual property and on dealing with information asymmetries impeding the uptake of more fuel efficient technologies. There may also be a case for shifting the balance of R&D support more towards promoting collaboration and clustering/networking, rather than paying individual firms for R&D activity, most of which they would have undertaken anyway.

The growing pace and evolving nature of innovation, and its role in responding to the challenges of climate change, may also create pressures for 'enhancements' to government procurement processes. In several overseas countries, the use of government procurement as a vehicle for promoting innovation seems to be building a head of steam. It was also mentioned in the Australian Government's policy platform in the lead up to the election.

Improving procurement processes is an intrinsically worthwhile policy goal, as the problems experienced in the defence area in particular exemplify. More specifically, a concern to ensure that procurement decisions are based on whole-of-life costings and do not rule out the use of innovative, but risky, technologies in appropriate circumstances is consistent with getting value for money for consumers. But it can clearly be a slippery slope, if promoting innovative technology becomes a goal in itself for the procurement process, with de facto industry protection being a not unlikely outcome. Those of us old enough to remember the 'offsets' arrangements and their many problems and costs (IC 1989) would not want a case of 'back to the future'.

The environment-innovation interface

The growing intersection of environmental policy and innovation/industry policy has great political appeal, but can lead to confusion about ends and means. It is important to separate genuine rationales for government intervention from convenient environmental pretexts for supporting particular industries or activities. For example, as noted, the implementation of an effective ETS would generate a market-based price for carbon emissions that should render many pre-existing emission-reduction schemes redundant. Stripped of this environmental rationale, schemes such as the MRET would simply become very costly industry support vehicles (PC 2008c).

That said, the emerging price signals may not bring forth sufficient innovation in adaptive or low emissions technologies due to spillovers or other market failures, warranting supplementary measures. However, such measures would need to take account of the (extensive) existing support for R&D and be targeted at areas where market failures are likely to loom large — such as in basic or strategic research, rather than commercialisation of existing technologies or in picking green technology 'winners'. For example, the $500 million Green Car Innovation Fund would be unlikely to yield significant innovation or greenhouse benefits if it were all allocated on a similar basis to the first $35 million instalment (PC 2008a).

Other rationales

Industry policy has traditionally also had some justification on 'second best' grounds, in compensating industry for excessive costs or other impediments to their performance associated with various government policies. Support for agriculture under the 'protection all round' policies of the McEwan era had an element of tariff compensation. Indeed, tariff policy itself commenced as a rough *quid pro quo* for regulation that raised the unit costs of labour (not only through higher arbitrated wages, but also constraints on work arrangements).

Second best rationales are harder to find these days than in the past, following the extensive reforms under the NCP and successive waves of industrial relations reforms since the late 1980s. Moreover, as Australia's microeconomic reform record demonstrates, distortions are generally best tackled directly, rather than being compensated for. Indeed, compensation can weaken industry pressure for governments to undertake such reforms.

There is also the problem of designing effective policies on second-best grounds that would be effective. The doyen of the economics profession, Professor Harry Johnson, once put it this way:

> The fundamental problem is that, as with all second-best arguments, determination of the conditions under which second-best policy actually leads to an improvement of social welfare requires detailed theoretical and empirical investigation by a first-best economist. Unfortunately, policy is generally formulated by fourth-best economists and administered by third-best economists; it is therefore very unlikely that a second-best welfare optimum will result from policies based on second-best arguments (Johnson 1970).

One aspect of today's policy environment does appear to provide a genuine rationale for industry policy intervention on 'second best' grounds. Specifically, the asymmetry in the treatment of profits and losses under Australia's corporate tax system can inhibit relatively risky investments, at some cost to the economy. Since it does not seem feasible to address this problem through ('first best') changes to tax law without significant risk of abuse, alternative assistance arrangements may be justifiable (PC 2007a).

A more active ongoing rationale for certain industry policy measures is *distributional*. Such considerations most obviously arise in cases where government decisions lead to a loss of pre-existing 'property rights', where an element of compensation may be called for. The assistance arrangements put in place for dairy farmers, following the abolition of quotas as part of the deregulation of their industry in 2000, are a case in point.

But again, reminding us of Colin Clark's insight, we find this theoretical justification being pushed to the limits. Thus, in the context of the current debate about ETS, there is the prospect that some more highly emission-intensive businesses will in some way be compensated for the impacts on their profitability and shareholder value. 'Sovereign risk' considerations are clearly relevant where major policy changes come out of the blue. But the prospect that government action might one day be taken to address greenhouse gas emissions is hardly news — the Commission (IC 1991) conducted the first inquiry into the costs and benefits of doing this, in the lead-up to the 'Rio Earth Summit' almost two decades ago. Moreover, depending on how such compensation is paid, it could delay the adjustments in economic activity that the ETS is designed to drive.

The bigger issue that lies behind this, though, is the extent and timing of action by Australia to tax greenhouse emissions. There is much to be said for starting with very low effective prices for carbon until major global emitters also take action (PC 2008c), but to signal to business that future prices are likely to climb steeply. This would provide clear guidance for businesses making long-lived investment decisions, reduce adjustment costs and smooth the distributional implications. It would also provide a transition period in which government can learn about the most effective institutional approaches without posing too many risks for business.

Ensuring a payoff: policy design and review are crucial

Having a sound rationale is a necessary condition for industry policy interventions to yield a net payoff for the economy. But it is not a sufficient condition. Intervention brings its own costs and problems, which need to be taken into account in making a judgement about what specific policy approaches should be followed.

I used the term 'judgement', because even the most rigorous policy evaluation won't always provide a definitive answer. Lack of certainty about the exact outcome should not preclude some policy experimentation, provided there is a subsequent (robust) review of the outcomes.

That said, once in place, policy measures which deliver assistance to particular industries or activities can create de facto entitlements, with pressures for their retention which can be politically difficult to overcome. This can be seen in the ETS debate, where the renewable energy industry is strongly advocating the maintenance of direct support measures even under effective economy-wide pricing of carbon.

The difficulty in reversing policy measures is exacerbated by the understandable reticence of governments to 'admit' that a new policy has not produced the hoped-for outcomes. This is no doubt partly a reflection of the keenness of political

opponents and the media to label such outcomes as 'failures'. A more constructive approach would recognise that some policy experiments of this type are worthwhile. Just as business doesn't expect to hit pay-dirt with each new product developed or innovative process trialled, nor should we expect a 100 per cent strike rate from policy-makers, even though taxpayers' money is involved.

Some key design features

That said, there are a number of features that are central to effective industry policy design which, if met, would significantly limit the risk of policy misfires. These have been detailed by the Commission elsewhere (PC 2008b; 2007b).

The most fundamental, though it should be self-evident, is the need to target measures at the problem. I say "should" because it is surprising how often this doesn't happen. Even where there is a genuine rationale for intervention, policy measures often fail to achieve a positive result because either the problem is poorly defined, or the measure does not adequately address it, or both.

Where a program is targeted at increasing a particular activity — such as R&D, investment, staff training or the use of energy-saving technologies — another critical hurdle for program designers is to ensure that the scheme really does add to the total amount of the targeted activity that is undertaken, rather than simply transferring public funds to the businesses for little or no public benefit.

The key risk here is that some firms will get to pocket assistance for things that, on commercial grounds, they would have done anyway. This has been a well known problem with the basic R&D tax concession (PC 2007a). But there are other documented instances. For example:

- around half of the subsidies for R&D and value added activity under the (former) Pharmaceutical Industry Investment Program (PIIP) were estimated to have represented a 'free lunch' for the recipients (PC 2003); and
- two thirds of Export Market Development Grants (EMDG) recipients surveyed by the CIE indicated that the scheme had little or no influence on their export marketing.

The project-by-project selection and tailoring of assistance provides no guarantee against such wastage either. With subsidies in the offing, applicants have obvious incentives to seek to hoodwink administrators as to their real intentions, or hold out for larger incentives than they really need. There is also a risk that some firms will alter their reporting practices in order to qualify for assistance. A celebrated example of this was the attempts by firms to have non-R&D activity passed off as

genuine R&D in the syndicated R&D programs of the 1990s, with such 'other' R&D expenditure amounting to close to half of total R&D claims.

Of course, some payments for things that would have happened anyway are inevitable. The challenge is to design schemes in a way that achieves a sufficient rate of inducement to yield a net social benefit, remembering that this also can give rise to additional costs through increased program complexity and monitoring of firms. (Also there is a risk of 'crowding out' some of the targeted activity already being undertaken by other firms).

Properly reviewing the outcomes

Withholding policy initiatives in the face of uncertainty would amount to policy paralysis. However, the fact that a degree of uncertainty is inevitable, and that circumstances will often change over time, make it imperative that industry policy initiatives are periodically reviewed. In practice, this has not been seen as an integral feature of industry policy (or, indeed, of most policy areas). Reviews tend to be partial, spasmodic and often not very rigorous.

They are not assisted where the rationale for action or the program's goals have not been well specified, since there are then no clear benchmarks against which outcomes can be measured. The EMDG scheme is one where the fundamental rationale for the scheme appears never to have been satisfactorily resolved, making it difficult to target assistance under the scheme and to evaluate it. Programs should make explicit provision at the outset for progressive evaluation and review, including ensuring that the data needed for assessment purposes are generated as a by-product of the programs, if not otherwise attainable.

For reviews of major programs, with significant distributional and efficiency implications, it is highly desirable that those conducting the review (including their secretariats) be independent of the program administrator and key stakeholders. This approach may not be favoured by governments on issues where they have a strong sense of the policy direction they want to take and would find contrary recommendations inconvenient. But reviews that are generally accepted as being independent and rigorous have two compensating political advantages (apart from the relative robustness of their findings and recommendations). One is that they are more likely to be 'parsimonious', leaving governments more room to bring political calculations into play. And, secondly, they can strengthen government's hand in dealing with industry interests inclined to want too much, by providing credible public evidence of the costs.

Summing up

Australia's approach to industry policy has evolved considerably from the protectionist regime that so concerned Colin Clark, and our economic performance has been much the better for it. With strong pressures emerging for new industry policy initiatives, it is important that these too undergo rigorous evaluation. As the Minister for Innovation has observed:

> It's easy to assemble a shopping list of initiatives…, but not quite so easy to produce a program of support which is both affordable and internally coherent (Carr 2008b).

Translating this insight into good policy requires governments to be active in areas where there are genuine market failures that intervention has good prospects of correcting. It requires careful attention to the design of programs up front, and evaluation after the fact. And it requires that governments rebuff any claims for assistance that, while couched as being in the interests of the economy or environment, result principally in transfers from taxpayers to the recipients, with little or no public benefit. These requirements can be technically demanding and politically challenging. But they are integral to achieving the productivity performance that this country must aspire to if it is to meet the challenges that lie ahead.

References

AIG (Australian Industry Group) 2008, *Driving on Innovation and Competitiveness.* Submission to the Review of the Australian Automotive Industry, Sydney.

Banks, G. 2000, *Productive R&D Assistance*, Presentation to Melbourne Institute Public Economics Forum, Old Parliament House, Canberra, November.

—— 2007, *Great Expectations: Management (and other) Lessons from the Regulation Taskforce*, Address to the L21 Public Sector Leadership Conference, Sydney, May.

—— 2008 *Riding the Third Wave: some challenges in national reform*, Productivity Commission, Melbourne, March.

Carr, K. (Minister for Industry, Innovation, Science and Research) 2008a, *Innovation future for Australian Industry*, Media release 21 November 2007.

—— 2008b, Innovation: industry's call to action, Address to the Australian Industry Group, Brisbane, 1 May.

—— 2008c, *Government announces review of national innovation system*, Media release 22 January 2008.

Clark, C. 1957, *The Conditions of Economic Progress*, 3rd ed., Macmillan & Co, London.

—— 1962, 'Economic growth', in Wilkes, J. (ed), *Economic Growth in Australia* (Papers read at the 28th Summer School of the Australian Institute of Political Science, Canberra, 27–29 January 1962), Angus & Robertson, Sydney.

Econtech 2008, *Economy-wide Impacts of Future Assistance Options for Australia's Automotive Industry*, Canberra.

Higgins, C. 1989, 'Colin Clark: an interview', *The Economic Record*, vol. 65, no. 3, pp. 296–310.

IAC (Industries Assistance Commission) 1989, *Annual Report 1988-89*, Canberra.

IC (Industry Commission) 1991, *Costs and Benefits of Reducing Greenhouse Gas Emissions*, Report no. 15.

Johnson, H.G. (1970), 'The efficiency and welfare implications of the international corporation' in McDougall, I.A. and Snape, R.H. (eds), *Studies in International Economics*, North-Holland, Amsterdam.

Kurzweil, R and Meyer, C. 2003, 'Understanding the Accelerating Rate of Change', *Originally published in Perspectives on Business Innovation.* www.kurzweilai.net/articles/art0563.html (accessed July 2008), May 2003.

Lateral Economics 2008, *Should We Cut Automotive Tariffs?*, Melbourne, June.

PC (Productivity Commission) 2003, *Evaluation of the Pharmaceutical Industry Investment Program*, Research Report, Canberra.

——2005, *From Industry Assistance to Productivity: 30 years of 'the Commission',* Melbourne.

—— 2007a, *Public Support for Science and Innovation*, Research Report, Canberra.

—— 2007b, *Trade & Assistance Review 2005-06*, Annual Report Series, Canberra.

—— 2008a, *Modelling Economy-wide Effects of Future Automotive Assistance*, Melbourne.

—— 2008b, *Trade & Assistance Review 2006-07*, Annual Report Series, Canberra.

—— 2008c, *What Role for Policies to Supplement an Emissions Trading Scheme?*: Productivity Commission Submission to the Garnaut Climate Change Review, May.

Rudd, K. 2006, Transcript of Press Conference – New Labour leadership team, Parliament House, Canberra, 4 December 2006.

OECD (Organisation for Economic Co-operation and Development) 2007, *Innovation and Growth: Rationale for an Innovation Strategy*, Paris.