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RETROSPECT
The Thoughts of Comrade McGuinness

Geoffrey Kingston

To behave like ‘a blindfolded man catching sparrows’, or ‘a blind man groping for fish’, to be crude and careless, to indulge in verbiage, to rest content with a smattering of knowledge—such is the extremely bad style of work that still exists among many comrades.


There is a case for at least cursory overlap between the thoughts of Chairman Mao and the thoughts of Padraic Pearse McGuinness (1938–2008). ‘Power grows from the barrel of a gun,’ wrote Mao Zedong. Paddy too wrote about power and had a knack for snappy one-liners: ‘If Malcolm Fraser had mislaid his daks in Memphis before the 1983 election he would have romped home.’ (Paddy would reinforce such observations with forceful downward stabs of his index finger.) In-your-face realism was his stock in trade, and ‘comrade’ was his customary form of address. But the similarities end there. The one-liner that best summarises Paddy’s political thought is Lord Acton’s dictum: ‘Power tends to corrupt; absolute power corrupts absolutely.’

Paddy’s secondary education began with several years of boarding at St Ignatius (Riverview). He hated the boarding experience, which seems to be a fairly common reaction. At one point he shared a double desk with Robert Hughes, the art critic. As a young teenager he was useful around the scrum base, notwithstanding his vehement disdain as an adult for anything to do with sport. Paddy completed secondary schooling at Sydney Boys High. His results in economics were excellent, and he won a cadetship in the research department of the Commonwealth (later Reserve) Bank.

Next stop was Sydney University. Paddy studied in the Economics faculty but hung out with the Sydney Push, the famous libertarian group. Some members remained lifelong friends, including Bill Harcourt, Marion Hallwood and Arthur King. The Push has had its critics. Barry Humphries dismissed them as ‘tossspots’, and Anne Coombs argued that women who wanted to build successful careers needed to distance themselves. But Paddy would stick up for the Push. He could be surprisingly puritanical about some things, but not alcohol (unless combined with driving). He argued that the Push struck a chord with strong women. He would stick up in particular for Germaine Greer, his fellow member. He would

1 School of Economics, Australian School of Business, University of New South Wales, g.kingston@unsw.edu.au
2 An anonymous referee lists Ricardo, Wicksell, Arthur Marget and Don Patinkin as formative influences on his economic thought.
describe her as a ‘ratbag’, but in an affectionate sense of the word, synonymous with ‘stirrer’. It takes one to know one.

Paddy’s formal education was completed by a Master of Economics degree from the London School of Economics. His thesis supervisor was Harry G. Johnson, the eminent Canadian trade theorist and policy analyst. Harry Johnson was a staunch free trader. That probably had some bearing on Paddy’s Holy Trinity of economic issues: ‘Comrade, there are three things that are extremely boring and extremely important.’ This trinity consisted of international trade agreements, federal–state financial relations, and superannuation.

Concerning international trade agreements, Paddy knew his economic history; aware in particular of the lack of a single historical instance of a small country that has simultaneously maintained a respectable position on the economic league table and substantial trade barriers over a long period of time. By the same token (if I understood Paddy correctly), if you can package your tariff cuts into a deal with trading partners that helps you to access their markets, then so much the better: hence the importance of trade agreements.

Concerning federal–state financial relations, history shows that federations have tended to prosper. Moreover, federalism helps guard against the man on a white horse, a style of government he abhorred. This particular aversion set Paddy apart from some of his fellow ‘cultural Catholics’.

Consistent with his federalism, Paddy was particularly interested in local government. He pushed the idea of more municipal councils, combined with a degree of centralisation of the equipment and facilities needed for garbage collection and the like. This sort of arrangement would help ratepayers to monitor what their councils were up to, while keeping a lid on costs. For example, the well-heeled residents of Balmain might be happy to pay for garbage collection twice a week, while their Annandale neighbours might settle for collections only once a week, in exchange for lower municipal rates. Garbage trucks for both suburbs could be based and maintained at some umbrella inner-west depot. In 1999 Paddy spearheaded the Balmain Secession Movement. This exercise was a canny pitch to affluent wards of Leichhardt Council located primarily in Balmain. He duly won a seat on the council: ‘Comrade, don’t call me councillor, I prefer to be addressed as alderman.’

Paddy’s point never caught on with either the Labor Party of New South Wales, which seemed to want even bigger municipalities, or the wider electorate.

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3 Paddy described himself to me as a ‘cultural Catholic’ but he was probably being a touch ironic. He was actually a bit further out of the Church’s orbit than this label might suggest. He took particular offence at notions of salvation and an afterlife, which offended his ultra-realism. One influence of the Church that remained strong was on his aesthetic tastes. He loved the cultural legacies of France, Ireland, Italy and Spain. For example, he admired Goya (a ‘cultural Anglican’ might be more drawn to Turner.)
which seemed uninterested. Moreover, he found routine municipal matters to be excruciatingly boring. His stint on Leichhardt Council was disappointing.

Finally, superannuation was important simply because society had grossly under-prepared for the ageing of the baby boomers — never Paddy’s favourite demographic cohort. The economist in him appreciated just how expensive it is to have promised most present and prospective retirees a government pension equal to a quarter of average weekly earnings. Paddy believed that it is the primary responsibility of the individual to take care of himself, insofar as he is able, and not abdicate his sovereignty to the state (that is, the taxpayer). He was personally but quietly generous in giving monetary support and assistance to those who needed it. Whenever the Salvos approached Paddy in the course of a pub collection, you would hear the rustle of a note rather than the clink of a coin.

Paddy recognised the value of international comparisons when assessing candidate economic policies. He tended to regard New Zealand as a source of negative examples: ‘In New Zealand they sit around waiting for their *seamail* copies of *The New Statesman*.’ Ireland, on the other hand, had become a source of positive examples: ‘Its education system wasn’t affected by the 1960s.’ He also approved of Ireland’s distinctive policy of ultra-low business taxes. As someone of Irish descent, he was naturally proud of Ireland’s dramatic rise up the economic league table. But he did not bang on about it. Likewise, though quietly aware of Ireland’s terrible history of exploitation by the English, the Paddy I knew refrained from making a big deal of it. As a young Australian expatriate rattling around in the British Isles, Paddy had found an Ireland still scarred by its historical legacy. He reckoned the after-effects of oppression had left its inhabitants neither kinder nor wiser. Living well would prove to be the best revenge.

I first met Paddy in 1983, by which time he had become editor of the *Australian Financial Review*. We were both delegates at the Conference of Economists in Hobart. Back then he was still very interested in economics, including its academic manifestations. We were standing by the bookstand of Cambridge University Press, and happened to notice a copy of *Macroeconomic Analysis and Stabilization Policy*, by Stephen J. Turnovsky, an eminent theorist from New Zealand who has spent most of his career at universities in the United States. Steve had supervised my PhD at the ANU, in between his US gigs. Paddy had read Steve’s book and was less than impressed — not an uncommon occurrence for one of nature’s sceptics. The book’s shortcomings, he said, were exemplified by the fact that ‘it doesn’t contain a single difference equation’, that being a basic mathematical tool for economic theorising. I bet him $20 that it

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4 ‘Never trust a Pom,’ Paddy would say. This maxim occasionally mutated into ‘never trust a journo’, although he wouldn’t tolerate criticism of that profession by non-journalists.
did in fact contain a difference equation. After roping in Jocelyn Horne as umpire, I opened Steve’s book at page 339, where lo and behold there was a difference equation.\(^5\) I was impressed by the alacrity with which Paddy paid up.

In 1988 I moved from the inner-west of Brisbane to the inner-west of Sydney, Paddy’s stamping ground. I got to know him better. At the pub he would insist on rounds rather than individual purchases. He would also insist on schooners rather than middies for everyone in his circle, disdaining the 10-ounce glass. He never shirked when it was his turn to shout. He could also be sighted on Darling Street, walking along slowly with his nose in a book. Once or twice a year he would exchange his black shirt for a purple one, fitting in perfectly with his informal title of Bishop of Balmain.

Paddy was a compulsive bookworm. In order to avoid getting caught short without a suitable read, he would sometimes wear black cargo pants with pockets big enough to stuff books into. If a paperback was too big to fit he would cut it in half. His tastes were catholic. His current read might be a fashionable pick from the *New York Review of Books* or it might be an obscure ancient Penguin — the white ones with coloured borders, by the likes of Louis MacNeice — which he obtained from second-hand bookstores.

In 1989, by which time Paddy was a columnist for *The Australian*, Paul Keating described him in parliament as a ‘bloated cane-toad’. Negative strokes are better than no strokes. Possessing a strong feline streak, Paddy purred with pleasure that evening. By his side, but distinctly uneasy, was his wife Brigitte, a haughty and handsome Prussian lady. Growing up in East Germany might well make you nervous about being bad-mouthed by a leading politician.

During the last decade of his life Paddy’s became less interested in the latest economic theory or policy debate, even while continuing to stick up for the economic way of thinking.\(^6\) He would ostentatiously throw away the fact-filled Market Wrap section of the *Australian Financial Review*. On the other hand, his interests in politics, history, science, religion, the arts and the law continued undiminished. That was what made him such a good editor of *Quadrant*. Paddy resisted all calls to update the look of *Quadrant*:

*Quadrant* critic: ‘Paddy, *Quadrant* is dowdy. *The Spectator* brought in glossy paper, and colour, and its circulation went up. You might attract more young readers.’

Paddy: ‘Comrade, I don’t want young readers.’

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\(^5\) Difference equations are in fact sparse in the book under discussion. The reason, as Adrian Pagan points out, is that in the 1970s macro theorists preferred differential equations to difference equations.

\(^6\) For example, in 2000 he launched and reviewed *Exasperating Calculators* by William Coleman and Alf Hagger.
Maybe he was right. Maybe *Quadrant* has found its niche as a kind of intellectual and antipodean companion to *The Oldie*, a successful British magazine with self-explanatory title.

Economic think-pieces that once might have appeared in *Quadrant* migrated to *Policy*, currently edited by Andrew Norton. Andrew’s blog entry of 27 January 2008 contains his recollections of Paddy: ‘I found our few conversations awkward.’ In the experience of some of us who knew him, this awkwardness in one-to-one conversation never entirely disappeared, unless Paddy’s companion was either a woman or a trusted male acolyte. Maybe it had something to do with old-fashioned male competitiveness. Or maybe he’d just stop listening at some point if you didn’t make your point well. When he listened, he actually listened, which meant you had to choose your words carefully.

Whenever the group around Paddy expanded in number, he would loosen up. The mug lair took over from the shy man and the one-liners would begin to flow. On one occasion a female fan bearded his circle at the pub: ‘Mr McGuinness, I agree with everything you write.’

Paddy drew himself up: ‘Madam, I don’t agree with everything I write.’

There is no getting around the fact that Paddy was a serious contrarian. He revelled in it. On one occasion, someone in his circle made a detailed case against the work of Manning Clark, the historian. He listened attentively before responding: ‘You bastard! While you were talking I was mentally drafting the case for Manning Clark, and that’s pretty inconvenient at the moment.’

Like Manning Clark, Paddy lost his Christian faith fairly early on. Had he returned to the bosom of the Church it would have been to the faith of his forebears. He was vocal in his disapproval of latter-day happy-clappies. I suspect he was less than impressed by traditional Anglicanism as well. He would sternly recall the appropriation of Catholic property by Henry VIII. He prudently refrained from going into print with these atavistic thoughts.

Paddy passed away on Australia Day, 2008. ‘Where he goes to next will depend on whether the Good Lord has a sense of humour,’ commented my wife Carol. Amen to that.

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7 Different friends appear to have had different experiences. On the one hand, two of Paddy’s friends from 50 years back concur with Andrew Norton and me. On the other hand, an anonymous referee (who was no acolyte) attests to hundreds of easy conversations with him over a 50-year period.
ANALYSIS
Some Sectoral and Global Distributional Issues in Greenhouse Gas Policy Design

John Freebairn

Abstract

This paper argues it will be welfare-improving at a national level to auction tradable greenhouse gas permits, and, at an international level, for first-world countries to bribe third-world countries to join a cooperative solution.

Introduction

The design of policies to reduce greenhouse gas emissions requires an appreciation of the distribution of the benefits and costs of policy interventions to reduce these emissions. This paper argues that a high proportion of the economic costs of taxes or tradable permits to reduce greenhouse gas emissions will be passed forward to consumers as higher product prices. As a consequence, much contemporary policy discussion and lobbying to compensate producers is exaggerated. The paper additionally argues that an understanding of the distributional consequences for first-world and third-world countries is important in designing the necessary global policy response to the global externality.

In order that the analysis can focus on the distributional effects of taxes or tradable permits, this paper takes as given many aspects of the debate about climate change and policy interventions to reduce greenhouse gas emissions. The stock of greenhouse gases is assumed to constitute an externality under current industry structures and policies, and the flow of emissions at zero private cost is a significant market failure requiring policy intervention on a global stage. The favoured form of policy intervention to correct the market failure is a system of tradable permits, but with debate about whether the permits should be auctioned, allocated to current polluters (grandfathered), or allocated on some other formula basis. The comparative economic incidence of the different options for distributing tradable greenhouse-gas permits on consumers, producers and government, and on different countries, is the focus of this paper.

1 John Freebairn is a Professor of Economics at the University of Melbourne. He gratefully acknowledges the helpful comments received on an earlier version from participants at a Monash University (Clayton) seminar, two referees, and William Coleman.

2 Some references include International Panel on Climate Change (2007), Stern (2006), and Jotzo (2007). Critiques of the IPCC and, in particular, the economic issues raised in Stern, include Carter et al. (2006), Nordhaus (2007), Dasgupta (2007), Toll (2006) and Weitzman (2007). Granted the uncertainty on both the science of climate change and the magnitudes of future economic costs, some policy action to restrict greenhouse gas emissions is argued by many at a minimum to be a good insurance policy investment, and that is the position taken by the author.
The paper is in two parts. The first part presents a range of models and supporting empirical evidence to assess the distribution of the benefits and costs of market-based intervention instruments to reduce greenhouse gas emissions on producers, consumers, and the polluted, and the aggregate efficiency gain, either for the globe or for a particular economy. We begin with a partial equilibrium model of a competitive industry greenhouse-gas polluter, and then consider a number of partial equilibrium models where firms exercise market power. The results of these models, together with some related quantitative evidence on the economic incidence of taxes, find that most of the economic incidence of tradable permits, or of emissions taxes, to reduce greenhouse gas emissions will be on consumers. A key policy implication is to auction rather than to gift tradable permits, or to use an emissions tax, and to use much of the government revenue gain to provide lump-sum or income tax compensation to consumers.

The second part of the paper considers some of the distributional issues that challenge the reaching of any global policy agreement which includes third-world or developing countries. A simple game-theory model which uses the costs and benefits of the earlier partial equilibrium model is employed. In the absence of a global government to enforce monitoring and compliance across countries in the way that national governments can for their own citizens and resident businesses, individual countries have an incentive to free ride and to ignore the external costs of their own greenhouse gas emissions, even though a cooperative strategy to reduce global emissions would raise global welfare. If first-world countries, for whatever reasons, have decided on a strategy of reducing their own greenhouse gas emissions, it is shown that it is both welfare-improving and viable for the first-world countries to bribe third-world countries to also adopt a strategy of reducing their emissions. A final section brings together the key policy design messages.

A Competitive Partial Equilibrium Model

Consider for example the case of fossil-fuel-fired electricity or transport. Under business as usual (BAU), producers consider the private costs of fuel and other materials, labour and capital, but not the external costs of pollution, including...
greenhouse gas emissions. Consumers consider the market price of electricity or transport costs, but again not the external costs of pollution. But, the flow of greenhouse gases from each and every country adds to the global stock of these gases, and in time this build-up of the stock induces climate change and adverse effects on future generations. These costs are worldwide, although their relative magnitudes likely will vary from country to country. While some of these costs are likely to fall on the producers and consumers of electricity and transport services, they have much wider impacts.

For simplicity, initially assume a competitive industry so that the supply curve for the good, electricity or transport, is given by a marginal private cost curve, and the demand curve is given by a marginal private benefit curve. Ignoring the complex issues of time and discount rates, the greenhouse gas pollution adds a marginal external cost. From a global society perspective, the marginal social cost is given by the sum of the marginal private cost and the marginal external cost. Clearly, the BAU solution, or the competitive market solution in which the external costs are ignored, results in too much production and consumption of electricity and transport, and too many greenhouse gases emissions, than is socially optimal.

A more formal representation of the foregoing arguments is presented in Figure 1.

**Figure 1: Distributional Effects of a Reduction in Greenhouse Gas Emissions Using a Partial Equilibrium Competitive Product Model**
The horizontal axis shows quantities of the good, $Q_g$, such as electricity and transport services, and the bad good, $Q_b$, greenhouse gases, and the vertical axis shows the price or cost per unit of good. Consider first the base case, or BAU outcome under a competitive market. With the supply curve indicating marginal private cost, $MPC$, and the demand curve indicating marginal private benefit, $MPB$, the market equilibrium, and BAU solution, is quantity $Q_{BAU}$ and price $P$.

By contrast, the social optimum that recognises the external costs of greenhouse gas pollution would equate marginal social cost, $MSC$, equal to $MPC$ plus the marginal external cost, $MEC$, with $MPB$. This would give a smaller level of production and consumption of both the good and bad goods at $Q^*$, and a higher consumer market price of $P^*_c$ and lower producer return of $P^*_p$. The social optimum can be achieved with a tax per unit emission of $P^*_c - P^*_p$, or with a system of tradable permits limited to $OQ^*$. Note that the market price of the permits, or their opportunity return, will equal the emissions tax rate of $P^*_c - P^*_p$. Further, in a mature market this socially efficient outcome will occur whether the permits are auctioned or gifted, and then gifted to different identities under different criteria, with only minor differences due to differences in income effects associated with the different options for allocating the initial property rights.\(^4\)

From Figure 1 we can assess the re-distributional effects of a tradable permit scheme (or tax emission scheme) relative to the BAU base-case scenario.

Consumers of the polluting electricity and transport products in all cases face a higher market price, $P^*_c$ rather than $P$, and lose consumer surplus of area $PP^*_cEC$, equal to a transfer of $PP^*_cEL$ plus $ELC$. Both the price increase and the consumer surplus loss are greater the less elastic is demand relative to supply. In the extreme case of a perfectly elastic supply associated with constant returns to scale production technology and infinitely elastic factor supplies to the industry, all of the emissions tax or scarcity value of tradable permits will be passed forward onto the consumers of the carbon-intensive products as a higher price equal to the tax or market price of the tradable permit. Such a technology seems a close approximation for most of the manufacturing and service industries which generate greenhouse gas emissions, either directly or indirectly through purchased intermediate inputs.

The re-distributional effects of tax and tradable-permit policy interventions to reduce greenhouse gas emissions on producers depend in part on the way in which the permits are allocated, and in part on the relative elasticities of supply and demand for the electricity, transport and other carbon-intensive products. To the extent that producers face a lower net market return, $P^*_p$, rather than $P$, producer surplus is reduced by $P^*_pPCB$, equal to a transfer of $P^*_pPLB$ plus $BLC$.

\(^4\) This result is an application of the Coase theorem; see, for example, Coase (1960).
If the intervention is an emissions tax, or if the tradable permits are auctioned, and in both cases at a tax rate or fee of \( P^p \cdot P^c \), government gains a transfer of revenue from producers and consumers of \( P^p \cdot P^c \cdot E_B \). In this situation, producers lose \( P^p \cdot P^c \cdot E_B \). However, at the other extreme, if the tradable permits are gifted to producers in a grandfather arrangement, producers make a net gain of \( P^p \cdot E_L \) less \( B_L \). Further, if supply is close to perfectly elastic (for the reasons noted above), producers and their shareholder-owners are large net winners and they benefit from the gift of the tradable permits times their market price. Clearly, if some of the permits are gifted and some are auctioned, as seems to be suggested by the Prime Ministerial Task Group on Emissions Trading (2007), the net outcome for producers, and for government, will lie between these two extreme scenario options.

An important result of the foregoing discussion is that the economic incidence of a tradable-permit scheme is bound to be very different from the statutory or first-round incidence. In particular, in the likely case of a highly elastic supply curve for the carbon-intensive products, most of the cost of restraining the production of greenhouse gas emissions will be passed forward to consumers as higher product prices than otherwise. In this case, it is likely that political pressures for compensation for equity will come from households. Compensation might be sought as higher wages than otherwise to maintain real incomes, with the associated threats to igniting a burst of inflation, by gifting the permits to households, or by providing compensating reductions in taxation and increases in social security rates. The latter, of course, require government revenues, and, in turn, this option places a premium on government choosing the options of either an emissions tax or auctioning the permits, rather than gifting them to producers.

The reduction in the production of the greenhouse gas external product, \( Q_b \), in shifting from the BAU output, \( Q_{BAU} \), to the social optimum output, \( Q^* \), in Figure 1 results in a reduction in pollution costs of \( BE_F \). This gain is a type of public good (with properties of non-rival consumption and high costs of exclusion) spread across the globe rather than a gain to the members of a country which introduces the emissions tax or tradable permits. A particular country would gain only a share of \( BE_F \), say \( \alpha \), with \( 0 \leq \alpha \leq 1 \), and other countries free ride on the remaining share \( 1- \alpha \).

Figure 1 can be used to evaluate the net gain for the globe and for particular countries. For the globe there is a net gain of \( E_F \). The global net gain equals

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5 This effect is likely to be non-trivial. The Australian Greenhouse Office estimates Australian annual greenhouse emissions at about 550 million tonnes of CO\(_2\)-e. By way of illustration, if three-quarters of these are subjected to a carbon tax or tradable-permit system, as proposed by the Prime Minister's Task Force on Emissions Trading (2007) at a conservative low rate of $30 per tonne of CO\(_2\)-e, and all of this is passed forward to consumers, consumer outlays increase by $12.4 billion a year, or a little over 2.25 per cent of annual private consumption expenditure.
the reduction in the costs of greenhouse gas-induced climate change, BEFC, less
the reduction in economic (producer and consumer) surplus from the reduced
production and consumption of electricity and transport, BEC. Note that area
\( P^* - P^* - EB \) is re-distributed between producers, consumers and government
depending on the intervention policy instrument and the relative elasticities of
supply and demand. The net gain is the efficiency case for a global strategy to
reduce, but not to eliminate, the production of greenhouse gases.

In the event that a particular country, or group of countries, introduce policies
to reduce greenhouse gas emissions, but others continue with BAU, the
innovating country or countries lose EBC and gain only \( \alpha \) BEFC, with the other
countries free riding with a gain of \((1 - \alpha)\) BEFC. Note that the country or countries
that in isolation introduce policies to reduce greenhouse gases may actually lose,
depending on the relative magnitudes of the aggregate economic surplus loss,
the global benefits of the smaller externality cost, and the share of those benefits
received by the policy initiator. By contrast, the free-riding countries
unambiguously gain. As will be shown later, these cross-country distributional
effects are important considerations for the development of a global policy
strategy to reduce greenhouse gas emissions.

Models with Market Power

In reality, because of the importance of economies of scale, product differentiation
and other considerations, producers in particular industries may have market
power and use this power in determining decisions. This section considers
potential qualifications to the distributional effects of policy interventions to
reduce greenhouse gas emissions reported in the preceding section for a
competitive model if producers use their market power in setting prices and
quantities, and in particular in changing price and quantity decisions in response
to the additional production costs of an emissions tax or a tradable-permit scheme.

While there are many different models of monopoly, oligopoly and
monopolistic competition, they have some common properties which are germane
to our questions. On the assumption that firms seek to maximise profits, they
choose quantities and prices to equate marginal revenue, MR, with marginal
private costs, MPC.

Assume initially that the firm demand curve has a constant elasticity of
demand. A typical firm \( i \) has a MR\(_i\) function

\[
MR_i = P_i (1 - 1/E_i) \]

where, \( P_i \) is price on the firm’s perceived demand curve, and \( E_i \) is the absolute
value of the elasticity of demand perceived by the individual firm \( i \) taking into
account such considerations as the quantity and price-decision reactions of other
firms in the industry. Note that profit-maximising firms choose an output where
demand is elastic, that is $E_i > 1$, so that $MR_i > 0$. Equating (1) to the firm marginal cost, $MC_i$, the firm sets price as a mark-up over marginal cost, with the mark-up given by $E_i/(E_i - 1) > 1$, at

$$P_i = (E_i/(E_i - 1)) MC_i \quad (2)$$

Note from (2) that the competitive model of the previous section is a special case of (2), since as the perceived firm demand elasticity becomes more elastic, and in the extreme perfect competition case $E_i = 0$, the mark-up approaches unity.

More generally, when the perceived firm level demand elasticity $E_i$ is very large, the competitive model assessment of the distributional effects of market measures to reduce greenhouse gas emissions will provide a good approximation. In these cases, $P = MC$, and the industry supply curve is also approximately the MPC shown in Figure 1. In the case of monopolies, often the price is regulated to be close to MC. In most cases of monopolistic competition there are many firms with fairly similar or close substitute product options. In the case of oligopoly industries, for Cournot (or quantity setting) firms the perceived firm elasticity of demand increases with the number of firms, and for Bertrand (or price-setting) firms the price set approaches $MC$ the closer are the firm product substitutes, and for perfect substitutes $P = MC$ as under perfect competition. For many of the major greenhouse gas-emitting industries, there are similar quality products; for example, electricity is electricity. There are a large number of firms with differentiated products, but where some of the different products are close substitutes — for example, motor vehicles — this suggests the competitive model results will be a reasonable approximation of the distributional effects of market-based policy interventions to reduce greenhouse gas emissions.

Suppose instead that greenhouse gas-emitting firms are able to, and in practice do, exercise market power and set prices according to (2); that is the perceived firm demand elasticity $E_i$ is, say, 5 or less elastic. Then, BAU output, including greenhouse gases, will be less than the competitive model, and the initial market price for the good goods will be above the competitive market price. More importantly, using (2) and assuming a constant marginal cost, the effect of a carbon tax or the opportunity cost of a tradable permit, $T$, to reduce greenhouse gas emissions on the consumer or market price $P_c$ will be

$$dP_c/dT = E_i/(E_i - 1) > 1 \quad (3)$$

That is, unlike the competitive model in which 100 per cent of the tax or permit price is passed forward to consumers, here more than 100 per cent of the additional cost is moved forward to consumers.

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6 An upward- (or downward-) sloping MC can be included in the model. In the case of an upward-sloping MC curve, some of the tax burden will be borne by the producer.
Now, rather than assuming, as was done above, that the firm demand curve has a constant elasticity at all price–quantity combinations, suppose instead that we assume a linear demand curve (with demand becoming more elastic at higher prices). In the special case of a monopoly, only a half of any marginal cost increase, including that associated with a greenhouse gas emission-reduction policy, would be passed on to consumers. With a Cournot oligopoly, the price increase enlarges with the number of firms and approaches 100 per cent for many firms (Smale, et al., 2006). In the case of monopolistic competition, Ng (1986) shows that more than 100 per cent of any cost increase will be passed forward to consumers as higher prices. Here, the emissions tax or the opportunity cost of the tradable permit increases both the average and the marginal cost, and the reduction in firm numbers (because of the higher price and less aggregate industry demand), combines to reduce the slope of the firm demand curve at which the new higher equilibrium price is established.

In principle, we can point to a wide range of different models of firm conduct with the use of market power, to differences in the shape of the demand curve facing each firm, and to differences with the shape of firm cost curves. Different combinations result in less than 100 per cent, about 100 per cent and more than 100 per cent of the increased costs to firms of policy interventions to reduce greenhouse gas emissions been passed forward to consumers as higher prices. But, in most cases, with the monopoly with a linear demand curve being the main exception, a cost pass-through of 100 per cent or more is the behavioural response. We now turn to some empirical evidence on the rate of pass-through of higher taxes or tradable-permit costs on greenhouse gas emissions on consumer prices for carbon-intensive products.

Some Empirical Evidence

A study of the EU Emissions Trading Scheme by Sijm et al. (2006) estimated that for the German and Dutch power industries between 60 and 100 per cent of the market price of the permits was passed forward to consumers as higher electricity prices. The cases of less than 100 per cent pass-through were associated with situations where the additional cost reversed the low-cost ranking of different production technologies; in particular, where the former higher-cost gas-fired units, which are less carbon-intensive than coal-fired generators, became the lower-cost and hence the marginal price-setting option, under the additional emissions permit cost.

There are two related sets of empirical evidence for Australia which give insights into the likely economic incidence, and the distributional effects, of a tax on emissions or a tradable-permit system to reduce greenhouse gas emissions. These are studies of tax incidence, and the experience of the GST package of reforms introduced in 2000.
Studies of the distributional effects of Australian indirect taxes, including the petroleum products excise which can be considered in part a selective carbon tax (and also in part a tax to fund road construction and maintenance and perhaps a tax on congestion) and on motor vehicles, assume 100 per cent pass-through to the consumer for both the direct effects and the indirect effects through intermediary inputs. These include studies by ABS (2007), and by Warren and NATSEM (for example, in Warren et al., 2005).

A related practical experience with several messages for the conduct of policy on emission taxes or tradable permits to reduce greenhouse gas emissions is the GST package of reforms introduced in 2000. The reform package involved using revenue from eight of the 10 percentage points of the GST to replace other indirect taxes, including the wholesale sales tax and several state stamp duties, with revenue from the remaining two percentage points, plus some budget surplus, to fund lower income taxation and an increase in social security payment rates. The net incidence of the reform package of indirect taxes on product prices was modelled on the assumption of 100 per cent pass-through to consumers, and the Australian Competition and Consumer Commission (ACCC) used these numbers with effect to monitor business pricing, and that is how the actual numbers evolved. In the spirit of the competitive industry model of Figure 1, the ACCC modelling and monitoring of price changes assumed constant returns to scale production technology and competitive passing forward of net tax (and cost) changes. The actual numbers revealed corresponded almost one to one with the model estimates.

Another important message from the GST reform package is that it included a net increase in indirect taxes, much as would a carbon tax or tradable-permit scheme. This was projected to increase the overall CPI index, by about three per cent. Compensation of households (in fact over-compensation because of the draw on additional budget funds), through a combination of lower income taxation and higher social security payments was argued by the Coalition government to avoid the need for any compensating wage increase, and for an increase in nominal interest rates. In practice, this is what happened. There was a one-quarter blip in the CPI, with no flow-on effects to wages, interest rates and other macroeconomic variables (see, for example, The Treasury, 2003).

Some General Equilibrium Effects

So far, the paper has focused on the partial equilibrium assessment of a single product, and with a key result that the introduction of an emissions tax or a system of tradable permits pushes up the consumer price and reduces the level

7 Dixon and Rimmer (2000) provide a brief description of the application of the MONASH model used by the ACCC, with references to more details of this model, and also to the PRISMOD and MURPHY models which also were consulted.
of production and consumption of the greenhouse gas-emitting product. In a multi-product or general equilibrium model assessment, consideration of the distributional effects of the policy initiatives should look also at the effects of changes in relative prices. In a multi-product and multiple production methods context, some products and production methods gain and others lose, whereas the partial equilibrium model focuses only on the losers.

For consumers, the relative prices of carbon-extensive products will fall relative to the prices of carbon-intensive products. Then, some of the reduction in consumption of electricity, transport and other carbon-intensive products will be offset by increases in consumption and, in turn, increases in production of such carbon-extensive products as clothing, insulated buildings, public transport, and smaller and more fuel-efficient vehicles and household appliances. Businesses similarly will redirect their choice of production methods to expand on the now relatively cheaper lower carbon-intensive methods such as better-designed and better-insulated buildings, renewable rather than fossil-fuel-based energy, and energy-conservation measures. In a dynamic context, the changed relative prices provide larger incentives and rewards for a new set of innovations based on R&D and investment that economise on the now relatively more expensive carbon-intensive products and production processes. Popp (2006) provides a compelling survey of studies showing a significant and quantitatively important response of induced business R&D and innovation towards energy efficiency and less carbon-intensive energy production methods in response to higher energy prices.

From a general equilibrium perspective, market-based policy interventions to reduce greenhouse gas emissions change the mix of production and consumption in what Schumpeter called ‘creative destruction’ with a much smaller, and perhaps even indeterminate, net effect on aggregate employment, investment and output, although one with fewer greenhouse gas emissions.

**A Global Policy Strategy**

There are at least four sets of reasons why it is desirable, if not necessary, for global cooperation in developing a first-best policy strategy to reduce greenhouse gas emissions. Clearly, understanding the distributional effects across different countries of alternative policy intervention options to reduce greenhouse gas emissions is important. First, the pollution externality is of a global nature, and the benefits of reduced pollution have classic public-good characteristics. Second, this public-good characteristic of the pollution-reduction good means that there are incentives for individual countries to free ride with a likely non-cooperative game equilibrium of BAU and excessive global pollution relative to the global first-best solution. Third, many of the carbon-intensive industries are globally footloose. Restricting their activity level in one country induces migration offshore of the pollution-intensive industries, with the result of a very much
smaller net reduction in the global stock of greenhouse gases. Fourth, cost-effectiveness in reducing the stock of global greenhouse gases, and the associated future costs of adverse climate change, are favoured if tradable permits and credit offsets have an integrated global market rather than just a series of autarkic national markets. Given the obvious advantages of global cooperation, this section considers some of the distributional effects, and especially between first-world (or developed) countries and third-world (or developing) countries, that affect the barriers to, and the opportunities for, global cooperation.

Consider first a simple game theoretic model for two countries, or country groupings such as first-world countries, F, and third-world countries, T, with two possible individual-country strategies of business as usual, BAU, and invest in reducing greenhouse gas emissions, ABATE. Table 1 sets out the game and with the pay-off matrix using the BAU-BAU strategy as the base-case strategy with a net payoff for each country of zero. For simplicity, further assume the two sets of countries are similar, since this does not alter the points to be made. If both countries invest in reducing greenhouse gas emissions, each makes a positive gain, roughly area EFC of Figure 1, of, say, +20 for each country. But if one country chooses ABATE while the other chooses BAU, the abating country incurs the costs, roughly area BEC of Figure 1, and receives only a portion $\alpha$ of the reduction in the external costs of reduced climate change, area BEFC, and so makes a net loss of, say, –20, and the BAU player incurs no costs but free rides and receives $1 - \alpha$ of the benefits of reduced global pollution for a net gain of, say, +30. Note that because the ABATE–ABATE strategy maximises global welfare, the ABATE–BAU strategy mix provides a lower aggregate net gain, and in our illustration +10 versus +40. Also, the ABATE–BAU strategy by moving towards the global optimum provides larger aggregate gains than the BAU–BAU strategy mix.

Table 1: Greenhouse Gas Emissions as a Prisoner’s Dilemma Problem

<table>
<thead>
<tr>
<th>First World</th>
<th>Third World</th>
<th>ABATE</th>
<th>BAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABATE</td>
<td>20</td>
<td>20</td>
<td>–20</td>
</tr>
<tr>
<td>BAU</td>
<td>30</td>
<td>–20</td>
<td>0</td>
</tr>
</tbody>
</table>

From Table 1, the global cooperative strategy to maximise welfare involves both sets of countries investing in policies to abate or reduce greenhouse gas emissions, the ABATE–ABATE strategy mix. However, for each individual country, their dominant strategy is to free ride, or to choose BAU, with a Nash
equilibrium of BAU–BAU. This is no more than a variant of the textbook Prisoners’ Dilemma game.

The policy challenge becomes one of establishing a binding global agreement for the ABATE–ABATE strategy.\(^9\) This is an extremely difficult challenge. Unlike national and regional pollution problems where there are national and regional governments with the power to coerce all players to accept the cooperative agreement, there is no such international government. Certainly international agreements, usually under the auspices of such bodies as the UN or the WTO, can be negotiated for such purposes. However, while some regard the Kyoto Protocol of 1997 to have made some progress for the specific case of greenhouse gas emissions, the fact that third-world countries do not have binding agreements, that the US and Australia decided not to join, and that some of the signatory countries seem likely to exceed their targets, and with no effective sanctions, casts doubt on this approach as developed so far. Further, there is no robust global governance structure to ensure the accuracy of monitoring by national governments, or to impose and enforce the payment of penalties on non-conforming nations.\(^{10}\) At the heart of reaching a cooperative agreement is establishing a mutually agreed sense of fairness, or distributional equity, necessary to induce the majority of countries to sign up, and then to meet commitments.

Different proposals for the initial allocation of tradable permits between first-world and third-world countries highlight the challenges to reaching a global consensus. With considerable merit, third-world countries object to the option of grandfathering permit allocations to countries based on their current pollution levels, a strategy at the heart of the Kyoto Protocol and now of the European tradable-permit scheme. Third-world countries argue that the first-world countries have been the principal contributors to the stock of greenhouse gases. This has been a key part of the industrialisation process over the past two centuries which lies behind the much higher per-capita incomes of the first-world countries. They, the third-word countries, have legitimate equity claims to proceed with industrialisation to raise their own incomes, and therefore the first-world countries should bear most of the cost of reducing the further build-up of global greenhouse stocks. Arguably, a fairer allocation of tradable permits would be one based on equal per-capita allocations as argued, for example, by Parikh (2007). The first-world countries look at this option, and its

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\(^{9}\) For a much broader and more comprehensive discussion of experiences and options for achieving a cooperative solution for a wider range of global public goods, including global peace, suppression of pandemics, CFCs and the ozone zone, as well as climate-change mitigation, see, for example, Barrett (2007) and references therein.

\(^{10}\) While some argue that conforming countries could impose trade restrictions against cheating countries, the history of trade restrictions against particular countries is not an impressive one.
associated cost of buying permits from the third-world countries, with much concern.

Suppose that for whatever reason(s), and as is beginning to be the case, that the first-world countries choose to implement policies to reduce their own greenhouse gas emissions (the ABATE strategy of Table 1), what are the minimum and maximum bribes they would offer the third-world countries to induce them to voluntarily also adopt the ABATE strategy, and so achieve the global welfare-maximising ABATE–ABATE outcome? In the first row of Table 1 we can evaluate the minimum subsidy or bribe that the third-world countries require to chose strategy ABATE over BAU, and the maximum subsidy or bribe that the first-world countries would be willing to pay to have the third-world countries choose ABATE over BAU without either set of countries being worse off than the ABATE–BAU outcomes. Represent the benefit to country \( k \), with \( k = F \) or first-world and \( T \) for third-world, for the choice of strategy \( i \) by \( F \) and strategy \( j \) by \( T \), with \( i,j = ABATE \) or BAU, as \( G^k(i,j) \). So as not to be worse off, the minimum bribe required by the third-world countries, \( \text{Bribe}_{\text{min}} \), is

\[
\text{Bribe}_{\text{min}} = G^T(ABATE, BAU) - G^T(ABATE, ABATE) \tag{4}
\]

and the maximum bribe willing to be paid by the first-world countries, \( \text{Bribe}_{\text{max}} \), is

\[
\text{Bribe}_{\text{max}} = G^F(ABATE, ABATE) - G^F(ABATE, BAU) \tag{5}
\]

For the illustrative numerical payoffs in Table 1, \( \text{Bribe}_{\text{min}} = 10 \) and \( \text{Bribe}_{\text{max}} = 40 \). In general, using (4) and (5), together with the fact that the ABATE–ABATE strategy maximises global welfare, and therefore that the ABATE–BAU strategy generates less global welfare, we can conclude that

\[
\text{Bribe}_{\text{max}} > \text{Bribe}_{\text{min}} \tag{6}
\]

This means that it is possible to reach a global Pareto agreement involving a subsidy from the first-world to the third-world countries, and that (4) and (5) set the bands for negotiating the subsidy level to the third-world countries to seek their agreement to invest in reducing greenhouse gas emissions.

In practice, the subsidy to gain third-world country acceptance to participate in a global agreement could take several forms. Direct grants are the simplest and most transparent. Another option is in the initial country-by-country allocation of greenhouse gas emission-permits to provide third-world countries with surplus permits to current pollution (and in effect to move part way towards the per-capita allocation idea). Until their economy and pollution output expands, the third-world countries would gain from the sale of their surplus permits to first-world countries, but a positive price for carbon signals the need for both producers and consumers to reduce carbon use and consumption. The proposal by some first-world countries for them to invest in R&D to reduce the costs of
reducing greenhouse gas emissions, and then to share the results for free or at a subsidised rate with third-world countries — for example, as a key component of the AP6 proposals — will help, but it is unlikely to go far enough to win agreement from many third-world countries.

**Policy Implications**

Most of the final or economic incidence of a system of emission taxes or tradable permits to reduce greenhouse gas emissions will be on consumers, and not producers. This follows from the high elasticity of long-run supply of most products intensive in carbon, and it is supported by studies of the incidence of indirect taxes and the experience of the GST tax reform package of 2000. If we allow for the exercise of firm market power, even more than 100 per cent of the tax or permit price could be passed forward.

The passing forward of most to all of the cost of carbon taxes or tradable permits to consumers as higher prices has at least two key messages for the design of a tradable-permits scheme. First, gifting the permits to producers, including under grandfathering principles, represents a redistribution of national income. A status-quo equity system would auction the permits or turn to a tax on emissions systems, and then return the initial government revenue gains to consumers. Second, because of the consumer price increase and associated increase in the cost of living, there is a compelling case for using the government revenues gained to compensate households via cuts in income taxes and increases in social security payments in an aggregate revenue-neutral package to minimise the prospects of compensating increases in wages and an impetus to inflation.\(^{11}\) This form of compensation would not alter the necessary change in relative prices against carbon-intensive products.

A complete picture of the distributional effects of a tradable emissions or emissions tax scheme to reduce greenhouse gas emissions requires a general equilibrium model assessment. These policy interventions change relative prices. While the production and consumption of carbon-intensive products facing higher relative consumer prices decline, other products facing lower relative consumer prices expand and in the process create new investment and employment opportunities.

In the global context there are incentives for individual countries to free ride and not to invest in policy actions to reduce greenhouse emissions and achieve a cooperative global social optimum. Third-world countries argue, with considerable merit, that they should bear less of the cost burden of reducing global greenhouse gas emissions than first-world countries and, in particular,

\(^{11}\) A detailed study of the likely incidence of a carbon tax in New Zealand across different households (by demographic type and income level) by Creedy and Sleeman (2006) finds that the vertical and family-type incidence of the carbon tax is close to proportional to expenditure.
they object to a system of grandfathered allocations of tradable permits of the form proposed under the Kyoto Protocol. Clearly, global cooperation from the developing countries requires innovative options on an equitable distribution of global permits.

Interestingly, the paper shows that if first-world countries choose to invest in policies to reduce their greenhouse emissions and the third-world countries decline to participate, there is a sizeable win-win opportunity for the first-world countries to subsidise or bribe the third-world countries to join a cooperative global welfare-maximising agreement.

References


Capitation and Financial Risk Allocation in New Zealand’s Primary Health Care Sector: The Perverse Consequences of Neglecting Financial Risk Allocation

Bronwyn Howell

Abstract

Using analysis of the management of ‘random’ and ‘controllable’ risk in capitation contracts, this paper critiques the arrangements in the New Zealand Primary Health Care Strategy (NZPHCS) introduced in 2002. Total system costs have undoubtedly risen under the mixed capitation model adopted, relative to fee-for-service. By requiring only those treated to pay all costs not factored into the government’s prospective capitation payments, the burden of unanticipated risk-management costs falls disproportionately on the sickest patients. Rather than resources being allocated on the basis of health need, the sickest individuals bear a disproportionate share of the cost of random demand shocks.

Introduction

There are many mechanisms for paying physicians; some are good and some are bad. The three worst are fee-for-service, capitation and salary.

(Robinson, 2001:149)

Partial or full capitation contracts have become common in primary health care remuneration; for example, in England’s Primary Care Trusts (Keen, Light and Mays, 1999), United States Managed Care schemes (Robinson, 2004; Hagen, 1999) and New Zealand’s Primary Health Care Strategy (King, 2001). Capitation is also used extensively in public sector ‘outcomes-based’ (Honore et al., 2004) and ‘performance-based’ (Martin, 2002) contracting. Reduced emphasis on the consultation as the primary payment determinant is attributed with shifting primary care delivery focus away from interventions in the event of illness towards the promotion and maintenance of wellness (Coster and Gribben, 1999; Cumming, 1999; Malcolm, 1997). Capitation is also attributed with stimulating

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increased equity, targeting high health need, encouraging a team approach to primary health care, and a change in focus towards a care management model as opposed to a model of episodic intervention with a focus on illness (Crampton, Sutton and Foley, 2001).

However, capitation contracts also have significant limitations. Robinson (2001:4) identifies that capitation is inferior to fee-for-service in that it does not recognise the extent of practitioner effort exerted: “Its payment is determined prospectively without regard to the number of services provided, overpaying physicians who stint on care and underpaying those who provide many complex services.” Capitation also performs poorly in regard to risk management, he says, as it is “imperfectly adjusted for the severity of illness of each covered patient. Even a well-adjusted capitation payment rate fails to compensate physicians who treat patients whose condition deteriorates, leading to greater utilization and cost, for reasons independent of the physician’s own actions.”

This paper explores the ways in which the financial consequences of unpredictable events affecting demand for services are allocated under the capitated contracts used in the New Zealand Primary Health Care Strategy (NZPHCS). Section one discusses the general effect that unpredictable events can have upon capitated practitioners’ incomes. Section two then discusses the particular arrangements of the New Zealand capitation contracts introduced in 2002. The perverse effects arising from the New Zealand contracts are illustrated in section three using two recent exogenous events: a strike by junior doctors in the country’s hospitals, and a decision by District Health Boards (DHBs) to remove all individuals on waiting lists for secondary and tertiary (hospital-provided) consultations and procedures for six months or longer back to their primary care providers for ongoing management. Section four concludes.

**Capitation in Primary Health Care Markets**

In a partial capitation contract, the remunerated party’s income comprises a fixed component \( f \) determined by the ex-ante characteristics of the population for whom care responsibility is assumed, and a variable component \( v \) for each unit of output \( q \) (for example, consultations) produced at a cost \( c \) (profit = \( f-q(c-v) \)). In a full capitation contract (\( v = 0 \), equivalent to budget funding of entities or salaried remuneration of individuals), the recipient’s income is invariant to the number of consultations provided. By decoupling remuneration from cost drivers, the higher is \( f \) and the lower is \( v \), the greater the recipient’s reliance upon income from the prospective capitation payment than upon income determined by the number of consultations delivered. The recipient now faces incentives to reduce costs in order to increase profitability — for example, producing fewer consultations or finding cheaper ways of producing them. Behavioural change ensues because undesirable behaviour is no longer rewarded (Milgrom and Roberts, 1992). Health care capitation contracts, as a form of
“supply-side cost sharing” (Ellis and McGuire, 1986), explicitly share financial risk otherwise borne by funders (for example, governments) and insurers with providers.

However, capitation contracts have complex effects on practitioner behaviour, as they share two specific types of financial risk between the purchaser and the provider: ‘controllable’ risk and ‘random’ risk. ‘Controllable’ risk relates to uncertainties of which the expected consequences can be anticipated in the aggregate, although are not predictable in respect of any specific occurrence. Cost consequences can be managed through the use of specific contract terms or institutional forms. Controllable risk is most efficiently managed when those capable of controlling its extent bear the financial costs of undertaking the undesirable actions or accrue the benefits of undertaking desirable actions. The specific controllable risk addressed by primary health care capitation is the provider propensity towards inefficient supplier-induced demand under subsidised fee-for-service remuneration (Zeckhauser, 1970). As providers bear at least some of the cost of their demand-raising choices, under capitation the number of unnecessary consultations reduces. Furthermore, providers are rewarded for engaging in consultation-reducing (and hence cost-reducing) preventative activities (Crampton, Sutton and Foley, 2001).

By contrast, ‘random’ risk relates to those factors for which the practitioner assumes either partial or complete financial responsibility via the risk-sharing contract, but is powerless to control. One such risk is an exogenous event causing an unpredictable and uncontrollable increase in demand for consultations (for example, a localised epidemic) — ‘exogenous’ risk. A second risk relates to differences between ex-ante anticipated demand for care within a population, and actual demand recorded ex post — ‘random demand variation’ risk. The aggregation of individuals’ demand risks into large insurance pools in order to reduce the cost of individual uncertainty by compensating from the pool in the event of the insured event materialising is an example of ‘controllable’ risk, more efficiently managed by an insurer with a diverse portfolio across which to spread the costs than by the risk-averse individual (Arrow, 1963). However, a discrepancy remains between anticipated demand, upon which premia or capitation payments are based, and actual demand which imposes actual costs.

When a large pool (for example, the population) is disaggregated into smaller pools (for example, patient lists), it is most unlikely that demand in each of the small pools will be the population average. At best, without explicit cream-skimming, half the pools will incur more demand than the population average, and half less. The smaller the size of the pool relative to the population, the greater will be the average absolute variation between the pool average upon which costs depend and the population average upon which remuneration is based — that is, the greater the extent of ‘random demand variation’ risk.
Capitation contracts let by large risk-pool managers (insurers and government funders) to a large number of smaller pool managers (service providers) fragment the efficiency-raising aggregate risk pool. The capitation contract transfers not just the amount of ‘controllable’ risk desired to be shared with the practitioner in order to alter the practitioner’s behaviour, but also a share of responsibility for ‘random demand variation’ and ‘exogenous’ risk. The United States Health Care Financing Administration considers capitated primary health care physician groups to be at substantial financial risk from random effects if they have fewer than 25,000 registered patients (Hagen, 1999).

On the one hand, capitation increases efficiency by mitigating the effects of unnecessary supplier-induced costs. On the other hand, by transferring responsibility for managing uncontrollable risk to more risk-averse practitioners, with less scope for diversification and efficient risk management than the funder/insurer (Milgrom and Roberts, 1992), efficiency is reduced. Providers’ incomes now become subject to factors over which they have no control or capacity to anticipate. In effect, providers assume an insurance role which they do not carry under fee-for-service contracts. The overall efficiency of capitation relative to fee-for-service depends upon whether the gains from improved management of ‘controllable’ risk exceed the losses from less efficient ‘random’ risk-management practices.

The effects of ‘random risk sharing’ on provider incomes may be either positive (that is, fewer consultations than anticipated/remunerated are provided) or negative (more consultations than anticipated/remunerated demanded) but, importantly, is beyond the provider’s control. The amount of risk shared is crucial for contract efficiency. The stronger the capitation contract incentive (that is, the higher is $f$ and the lower is $v$), the greater the proportion of ‘random’ risk that is shared, and the more the practitioner’s income comes to depend upon uncontrollable factors. If the ‘random’ effects are large compared to the ability to manage income via the ‘controllable’ factors, then irrespective of the amount of effort exerted pursuing the desired activities, the practitioner’s income becomes essentially a lottery. The incentive to pursue desirable behaviour is ‘crowded out’ by the random effects. Desired activities are not pursued. Rather, the practitioner will exert effort instead in activities that maintain or increase income given the amount of ‘random’ risk assumed (for example, ‘cream-skimming’ using information unknown to the funder to ensure that the patients for whom care management responsibility is assumed are more financially ‘desirable’) (Holmstrom and Milgrom, 1991).

United States evidence suggests that substantial changes in practitioner behaviour have been induced with only very weak capitation incentive contracts (Ma and Riordan, 2002), whereas only about 20 per cent to 25 per cent of the variation in individual demand for health care services can be predicted using
individual characteristics such as age, gender, income, ethnicity and past consumption of care (Robinson, 2004; Newhouse, 1996). These data suggest that there are very real ‘random’ financial risks for practitioners associated with using strong capitation incentives to manage ‘controllable’ risks when risk-adjusted fixed capitation payments are based on only a small range of individual demographic characteristics.

If the uncontrollable and unpredictable events were truly random, then over time, losses incurred by a provider in ‘bad’ years will be cancelled out by ‘profits in ‘good’ years. This is true of ‘exogenous’ risks. However, Howell (2007) posits that primary health care capitation contracts are exposed to serial correlation of profitability between years as a consequence of repeated transacting between a single provider and the same patients with persisting, but unknown (and hence uncompensatable via the prospective payment) risk factors that have ongoing effects upon the demand for care — that is, ‘random demand variation’ risk. The consequence is the emergence of habitually profitable and habitually loss-making practices. The correlation problem is further exacerbated by primary care practices generally being composed of only a small pool of individuals, where the persistent, atypical demand patterns of a few individuals (for example, underpinned by unknown and unknowable genetic predisposition) can have a significant effect on long-term practice profitability.

Correlation factors are less problematic in secondary and tertiary care provision as practitioner interaction with specific individuals tends to be episodic rather than ongoing, and the catchment from which demand derives is generally very much larger than a typical primary practice pool (Scott, 2000; McGuire, 2000). These effects are mitigated only by the recreation of larger pools amongst which to share the risks. If an individual general practitioner serves a group of typically between 1200 and 2000 patients, then based upon the United States evidence above, even with low-strength capitation incentives, financially viable primary care patient pools require the aggregation of the lists of between 12 and 21 practitioners. The greater the capitation incentive strength, the greater the number of practitioner lists required to be merged to counter the effect of ‘random’ risk sharing.

Figure 1 illustrates. Assume it costs an average practice $c$ to deliver an average primary care consultation (including all overheads and a fair return on the human capital and time invested by the practitioner) and that the practice delivers $q$ consultations. Average revenue received per consultation is $f/q+(v-c)$. Under a fee-for-service contract charged at cost ($f=0; v=c$), the practitioner makes no profits and no losses on all consultations delivered (that is, ‘breaks even’ at all values of $q$). The number of consultations delivered, $q$, is determined solely by consultation demand and the practitioner’s willingness to work. Under a capitation contract, however, the practitioner receives $v<c$ for each consultation
delivered. The maximum number of consultations that the practitioner will deliver is \( q = Q \), where the practice ‘breaks even’ financially. If demand arising from the population for which capitation is received results in fewer than \( Q \) consultations being delivered, the practice makes a ‘windfall’ profit. If \( q > Q \), the practice makes a financial loss.

A capitation contract incentivising desirable behaviours looks for providers delivering more than \( Q \) consultations through their own cost-causing choices (that is, ‘controllable risk’) to reduce the number to \( Q \) in order to remain financially viable, or for those with costs higher than \( c \) to reduce them to \( c \). However, the same contract will financially penalise those practitioners with costs \( c \) and not over-producing, where random factors, rather than behavioural choices, lead to more than \( Q \) consultations being delivered. If these practices are to remain financially viable, they must reduce costs below \( c \) (for example, through shorter consultations), ration services (for example, institute waiting lists) or pass the extra costs on in some other way (for example, institute a patient payment \( y \) in addition to the capitation contract payment \( v \), which is typically paid by the insurer or funding body).

Figure 1: Average Revenue Per Consultation: Standard Capitation

The sharper the capitation contract incentive (that is, the lower is \( v \) and the higher is \( f \)), the steeper is the slope of the average revenue curve (Figure 1), the greater the profits and losses, and the greater the additional costs that must be borne by the patients of ‘unprofitable’ practices (\( q > Q \)). Ironically, ‘unprofitable’ practices meeting all ‘controllable’ risk expectations make losses in the first place because their patient base has higher demand (that is, is ‘sicker than average’). Capitation contracts result in sicker-than-average patients bearing more of the consequences of ‘random’ risk sharing, in either lower care quality (shorter consultations, waiting lists) or higher prices (\( y \) charged to them) than the ‘healthier-than-average’ patients of ‘profitable’ practices.
Figure 2 illustrates the effect of ‘unprofitable’ practices being able to charge patients $y$ to recover ‘random’ risk costs. Assume that the ‘most unprofitable’ practitioner not over-producing at cost $c$ must deliver $Q_1$ consultations to meet demand at $f$ and $v$. By charging patients $y$ per consultation to break even, the practice will still produce $Q_1$ consultations (technically, the practice’s average revenue curve moves upward). As primary care practitioners have some market power due to product differentiation arising from patient preferences for the attributes of individual practitioners and repeated transacting between the same individuals (Scott, 2000; Dranove and Satterthwaite, 2000), within bounds such price increases can be undertaken without invoking the loss of large numbers of patients to other practices. However, if one practice can charge a patient fee $y$ without losing patients (or the failure to charge $y$ has no substantial effect upon a given practitioner’s demand), all other ‘profitable’ and ‘less unprofitable’ practices will also be able to charge $y$. ‘Unprofitable’ practices delivering between $Q$ and $Q_1$ consultations now make profits instead of losses, and the ‘profitable’ practices producing fewer than $Q$ consultations make higher profits than before. The total number of consultations produced is higher than anticipated by the capitation contract based upon remuneration from $f$ and $v$ alone.

**Figure 2: Average Revenue Per Consultation: Patient pays $y$**

If practitioners can charge patients $y$, there is no need to engage in cost- and service quality-reducing activities such as rationing or shortening consultations (these actions are commonplace where patient charging is prohibited; for example,
in England’s NHS). However, all patients face an additional financial cost in lieu of the quality reduction that would otherwise be borne by patients of ‘unprofitable’ practices, regardless of whether their practice would have been required to engage in such activities in order to break even. All practices now make profits, with those facing least demand becoming substantially more profitable than if patient charging was prohibited.

Furthermore, the ability to charge patients eliminates the justification for using capitation to alter practitioner behaviour in the first place. If practices can levy charges to cover costs of ‘random’ risk allocation, they can also levy charges to cover the additional costs arising from their ‘controllable’ risk choices. There is no financial penalty from engaging in the delivery of over-many consultations. The number of consultations delivered returns to the level under fee-for-service remuneration, but the total cost of delivering those consultations increases as a consequence of practitioners reaping profits from random demand variation and patient charging that they were unable to appropriate under fee-for-service remuneration. Despite raising the costs of service delivery, the contracts are impotent in constraining practitioner supply. Undesirable practitioner behaviour must now be controlled using costly, overt means such as direct observation or regulation. Ironically, capitation is widely used precisely because it is more cost-effective than monitoring where the desired behaviour is either extremely costly or infeasible to directly observe (such as in third-party purchasing — Milgrom and Roberts, 1992).

Systems enabling patient charging (y) thus result in more costly consultations. They also invoke perverse distributional consequences. The higher costs of risk management are borne only by individuals consuming consultations — that is, the sick. The ‘sicker’ the patient (that is, the more consultations consumed) the greater the contribution towards the higher risk management costs. ‘Healthy’ patients (that is, those consuming no consultations) pay none of the inflated risk-management costs imposed by system design. Patient payment systems thus allocate the higher-than-expected costs in the form of a perfectly risk-rated ‘premium’ per consultation based upon patient health state (or equivalently, as a ‘consumption tax’ imposed on the sick). The ‘well’ are rewarded for their ‘good’ health state by not being required to pay any of the risk-management costs shared with practitioners via capitation contracts and subsequently ‘passed on’ to the sick. Such arrangements are particularly antithetic to the principles of socially motivated insurance schemes, where patient income (via taxation), rather than health state (via patient payments per consultation required), is the preferred metric via which the financial costs of the scheme are allocated.

**The New Zealand Primary Health Care Strategy**

The NZPHCS was introduced in July 2002 (King, 2001). Capitation payments are made to Primary Health Organisations (PHOs), which then contract with primary
care providers to deliver services to patients. Practically all primary care providers are paid via a ‘back-to-back’ contract whereby the capitated ‘GMS/Nurse’ payment is ‘passed through’ by PHOs directly to providers, who are predominantly sole practitioners with lists of between 1200 and 2000 patients (Howell, 2005). Primary objectives of the strategy are to increase the share of government funding from between 30 per cent (Austin, 2004) and 40 per cent (King, 2001) in 2001 to around 80 per cent (Howell, 2007a), and the promotion of preventative care. The capitation formulae are broadly risk-rated, using patient age, gender and past consumption of care characteristics, and average practice ethnicity and income (determined by the deprivation quintile of the geographical area in which the practice is located) characteristics.

Service Providers Set and Charge $v$ plus $y$

The first defining feature of the NZPHCS is that, although the government share of primary-care sector costs is increasing, patients are still required to pay direct to service providers the balance of costs of primary care delivery not covered by the government payments. That is, whilst the government sets and pays $f$, each service provider sets $v$ individually, and the patients pay it. This charging arrangement arises from ‘grandfathering’ through into the NZPHCS the terms of the 1938 agreement between the government and medical practitioners enabling practitioners to charge patients directly for any costs not covered by government subsidies (Ashton, 2005; Howell, 2005). The ‘grandfathering’ makes no distinction between the risk-sharing imposed under capitation and the ‘risk-free’ status of practitioners under fee-for-service.

Section 1 suggests that provider setting of $v$ (and $y$ if losses arise) eliminates any possibility of using capitation to alter provider behaviour. Whilst patient out-of-pocket costs may decrease due to increased government payments, total costs for the same number of consultations delivered will increase as costs of risk management increase. The additional costs will be disproportionately borne by those consuming higher numbers of consultations.

In the three years following the policy’s introduction, government primary care funding increased by 43 per cent (Hefford, Crampton and Foley, 2005). However, the government’s total share of expenditure did not increase by as much as the Minister had expected given the substantial additional injection of government funding (King, 2004). Figure 2 suggests the most likely explanation is that the strategy confers the ability for loss-making providers to ‘pass on’ to patients the costs of both ‘controllable’ and ‘random demand variation’ risk. Evidence that loss-making practices are likely avoiding financial distress by passing on risk-management costs is provided by McAvoy and Coster (2005:11), who report that ‘many GPs have already benefited, reporting improved financial incomes and financial benefits from joining PHOs’. This observation supports the contention that practices previously only ‘breaking even’ under
fee-for-service remuneration are now making windfall profits, and that some may be using the latitude provided by unprofitable providers increasing patient charges to extend the scope of their profitability.

Further indication that the cost of consultations is likely higher under the NZPHCS than under fee-for-service is contained in CBG’s (2004) observation that providers not yet receiving capitation payments for patients were charging less on average for consultations for identical patient groups than those providers receiving capitation subsidies. CBG (2004) finds this observation puzzling, as capitated providers receive, on average, a substantially higher ‘notional averaged treatment subsidy’ per consultation than those providers remaining on fee-for-service payment. Whilst it might be possible to explain the observation by patient self-selection to capitated cover on the basis of higher individual health need, under the NZPHCS it is practitioners, not patients, who select the remuneration form of the benefits paid in respect of their registered patients. Practitioner self-selection to a payment system that, despite receiving higher government payments per patient than previously, still sees them levying patient charges that are higher than those of less-well subsidised fee-for-service practitioners, is quite consistent with Figure 2’s contention that the cost of service delivery is higher under capitation.

Indeed, if those practices likely to become unprofitable under the NZPHCS due to the high demands of their patient base were the ones which rationally refrained from opting into the capitated system, and those with low demands self-selected to capitation because they are able to access profits not available otherwise, the observation would appear to confirm that both ‘profitable’ and ‘unprofitable’ capitated practices are charging additional fees to cover losses imposed upon ‘unprofitable’ practices by the changes in risk allocation. If, perchance, it was high-demand practices that opted disproportionately for capitation (for example, improved cash flows under capitation would reduce costs associated with the collection of bad debts), CBG’s (2004) observation is still consistent with Figure 2. It simply confirms that unprofitable practices delivering more than \( Q \) consultations are forced to increase fees under capitation in order to break even, thereby raising the average fees charged by capitated practices above the level charged by uncapitated practices that face no losses at all for consultations provided beyond \( Q \) as they are remunerated for each consultation at its cost \( c \).

**Increasing Incentive Strength Over Time**

The second defining feature of the NZPHCS is that government capitation payments have increased over time in accordance with a set of political priorities determined by government budgets, rather than any systematic consideration of the ability of the capitated entities to manage the amount of risk shared. The first beneficiaries were individuals aged over 65 and under five, and those
patients registered in PHOs where more than 50 per cent of the registered individuals were in the lowest income quintiles or of Maori or Polynesian ethnicity (“Access Practices” — the remainder are termed “Interim Practices”). Over subsequent years, higher subsidies were extended to five–14-year-olds, 15–24-year-olds and 45–64-year-olds. The final group, 26–44-year-olds, received higher subsidies from 1 July 2007. Whilst many of the differences between Access and Interim practice payments have now been reduced, small differences remain for children under 14 across all practices, and substantial differences remain in respect of 25–44-year-old patients of practices not yet deemed to have qualified to receive increased funding.2

Each increase in government funding has been associated with political expectations that increases in the ‘notional averaged treatment subsidy’ embodied in the capitation payment will be directly matched by corresponding reductions in the fees charged by practitioners for subsidy classes receiving more generous government assistance. For example, the Prime Minister stated that the 1 July 2006 capitation increases meant that “700,000 people aged between 45 and 64 would now pay $27 less for doctor visits and $3 for prescriptions — instead of $15 — if they enrolled with a primary health organisation”.3 Capitation payments are routinely referred to as “subsidies to lower the cost of doctors’ visits”.4 This obfuscates the significant changes that have occurred in risk allocation. Despite substantial risk-bearing distinctions, prospective capitation payments appear to be treated as directly equivalent to the risk-free (for the practitioner) ex-post treatment subsidies paid under the preceding system.

Clear expectations exist that some patients will be charged different prices as a consequence of their subsidy class, even when all population groups receive capitation subsidies. For example, there is strong pressure for practitioners not to charge a fee for consultations delivered to children under five years old. It is also expected that individuals with high-use status will pay lower out-of-pocket charges than an otherwise identical patient without high-use status, even though the high-use premium is paid as a capitated sum rather than a per-visit subsidy. DHB and MoH policy material supports the contention that differential approaches to fee-setting based upon the extent of the subsidies received for patients of different classes will prevail in the event of price monitoring and, if necessary, price regulation occurring (DHB, 2006).

The overall effect of the staged rollout is that, over time, the average share of a practitioner’s income that comes from government subsidies (f) increases and the share from patient payments (v) decreases. The capitation incentive strength thus becomes increasingly sharp, as per Figure 1. At each increase, the

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2 http://www.moh.govt.nz/moh.nsf/indexmh/phcs-funding
3 http://www.stuff.co.nz/stuff/0,2106,3719646a7144,00.html
4 http://www.moh.govt.nz/moh.nsf/indexmh/phcs-funding
share of both ‘predictable’ and ‘random’ financial risk that practitioners are required to bear becomes greater. There is no actuarial or cost-benefit evidence provided that it is reasonable to expect providers to efficiently manage either ‘controllable’ or ‘random’ risks of the magnitude shared by the contracts (Howell, 2007a). Monopsony power held by the government purchaser gives service providers few options but to accept the capitation contract terms, as the difference in subsidy extent between the NZPHCS and the alternative regimes is so large that patients will almost certainly defect to other providers if their practitioner does not ‘sign up’ (Howell, 2005). It is therefore highly likely that the NZPHCS arrangements will lead to unanticipated outcomes.

Given the very small size of the patient pools and increasing incentive contract strength, even higher patient charges and increases in practice profitability will occur when subsidy rollout is complete than observed by CBG (2004) and McAvoy and Coster (2005) initially. It has become increasingly more costly with each addition to the subsidised population to deliver the same number of consultations as provided under the fee-for-service regime. The ability to levy charges to maintain practice profitability disincentivises practitioners from undertaking otherwise loss-minimising, efficiency-increasing mergers of their patient lists to manage the increased share of random risk they must now bear. The normal institutional responses that can be expected in capitated systems where the funder sets and pays both f and v are negated by NZPHCS institutional design. Despite the creation of PHOs to aggregate practitioner activity, and the potential to manage random risk more efficiently by list aggregation, the ownership of the patient list, and receipt of capitated patient payments, continues to remain with individual practitioners (Howell, 2005).

**Distributional Implications**

The inevitable consequence of the NZPHCS design is that the higher-than-anticipated costs are being borne only by those consuming consultations — that is, the sick — in proportion to the number of consultations consumed. Those consuming no consultations bear none of the additional costs, but instead benefit from the expectation that a consultation, if required, will cost less out-of-pocket than previously.

The inequity occurs because, whereas in a typical managed care or social insurance system the full anticipated costs of treatment would be collected ex ante from all insured individuals, in New Zealand, only the 80 per cent funded by the government is collected in this manner via taxation. As the government’s payments are fixed, it bears none of the costs of random demand variation. The entity best placed, given its ability to spread costs across a large population, to underwrite individual demand variation risk, has abrogated all risk-management responsibility to very much smaller practitioner entities much less able to spread risk-management costs efficiently. Patient payments now potentially and actually
vary substantially between practices principally because of the varying demands of a small number of individuals registered at the same practice, rather than the non risk-related costs of delivering that care.

That the demands of other patients registered at the same practice has now become a significant determinant of individual cost appears quite antithetic to policy aspirations that costs would be shared in a manner independent of patient health state. Whilst individual health state determines the number of contributions made by an individual towards the additional risk costs, the size of those payments is likely determined by the profitability of the practice at which the patient is registered. Inequity arises even if profitable practices do not take advantage of the ability to raise prices alongside unprofitable ones. If the practice is profitable because average demand is low, and the practitioner is altruistic and opts not to charge a payment \( y \), or even charges a payment \( v \) that is lower than that upon which capitation averages is based, then it is fewer sick patients who will pay lower fees. However, if the practice is unprofitable due to a sicker-than-average patient base, the sicker-than-average patients will face not only the standard capitation payment \( v \), but \( y \) as well. System design makes it inevitable that resources will be allocated inequitably, to the disadvantage of those who are sicker than average.

Illustration by Stylised Examples

This section uses stylised examples based on actual events to illustrate the effects of the allocation of random risk under the NZPHCS. The first example is a strike by hospital junior doctors; the second is a decision by District Health Boards to cull hospital waiting lists by removing all patients who would not be seen by hospital staff within six months. In both cases, unmet hospital demand was referred back to primary care practitioners for management, causing primary care demand to increase, as each patient referred back would require at least one, and possibly more, additional consultations not anticipated in the capitation formula design. Whilst the shocks are exogenous, and ultimately the additional demand could be factored into revised capitation payments, the examples also highlight how different allocation of individuals of different health states amongst practices in the presence of variable practitioner-set patient payments leads to higher payments for the patients of practices with sicker patients facing higher demands.

The examples highlight the fallacy of equating the ‘notional averaged treatment subsidy’ under capitation to the risk-free treatment subsidy under the previous fee-for-service system. Under fee-for-service, practitioners would be indifferent to any demand shock, as each extra consultation delivered would be remunerated at its full cost \( c \). Under capitation, however, a practice incurs the full costs of an additional consultation, but receives no additional government payments. As the capitated patient is charged a fee less than cost \( (v < c) \), the
additional income from the additional consultations will be insufficient to cover their additional, and unanticipated cost. The practice now incurs a deficit in respect of the additional demand. As practitioners can charge patients, it is presumed that the deficit is passed on in higher patient fees \( (\text{patient payment} = v+y) \).

**The Base Case**

A simple numerical example illustrates. Suppose each consultation costs the practice $50, and the patient payment \( (v) \) is initially set at $10. Each additional consultation arising from a DHB referral imposes a $40 deficit on the practice. The more patients referred back by the DHB and the greater the number of consultations required for each patient, the greater the deficit incurred. If the practice is unable to charge the referred patients the full cost of the additional consultations, to break even the additional costs must be levied to all patients via an increased patient payment \( y \). All patients, including those not receiving the additional consultations, now pay the risk premium created by an unpredicted and unpredictable (that is, ‘random’) change in the demand of a small number of patients registered at the practice. As the patient list is the risk pool, prices faced by those patients in the pool whose demand does not change are determined by those whose demand has changed.

Assume now that two practices have otherwise identical costs and patient lists with identical ex-ante characteristics, but one has 10 patients referred back and the other has 20 (that is, its patients are ‘sicker’ but this is not recognised in the capitation formula). The deficit incurred by the second practice is twice that of the first practice. The patients of the second practice, who are sicker on average, will face payment increases twice the size of the first. Patients with identical capitation status now pay different prices depending upon the practice at which they are registered, even though both practices have the same service delivery costs.

**Different Capitation Classes and Patient Charges**

Now consider the effects of the mandatory requirement that individuals for whom higher capitation payments are received when well must also pay commensurately lower patient payments when they seek a primary care consultation. Assume the base-case practice charges nothing to high-capitated patients under five years old and $30 per consultation to low-capitated 25–44-year-old patients. The deficit for each additional DHB-referred under-five consultation is $50 and for each additional 25–44 consultation $20. The higher the proportion of higher-capitated (ex-ante assessed as ‘high needs’ or ‘high political priority’) patients referred back by the DHB, the greater the deficit incurred and the higher the commensurate price increases to all patients of the practice must be. The patients of practices with large numbers of higher-capitated
patients referred back will pay proportionately more, because the practice is obligated to charge the higher-capitated patients lower fees.

The costs of the DHB waiting list cull are unlikely to be trivial. Typically, higher-capitated (and politically favoured) elderly and young people are disproportionately represented in hospital waiting lists. Thus, the probability of a waiting-list patient referred being a high-capitation individual will be substantially higher than the probability of the patient being a low-capitation individual. These individuals are also likely to require multiple additional primary-care consultations in order to continually treat the waiting-list condition and to reassess the eligibility for re-entry into the waiting-list system. These non-trivial additional costs, imposed by DHBs shifting demand and financial risk into the primary sector, will have a non-trivial effect upon the costs paid by all sick individuals seeking primary care.

This example illustrates the fallacy of treating the capitation subsidy as if it is a ‘notional averaged treatment subsidy’ when setting \( v \) for each subsidy group. Patients from two different subsidy categories may each have identical needs for treatment, but requiring each to pay different amounts as each receives a different capitation subsidy confuses the payment of an ex-ante risk-rated insurance premium subsidy with a politically motivated wealth transfer. The former approach compensates the risk manager for the extra costs anticipated in respect of individuals with higher demands, and typically means that no distinction needs to be made between patients of any premium class when treatment is sought ex post. The latter approach echoes the pre-NZPHCS arrangements, when different subsidies were paid for different classes of individual for politically motivated wealth-transfer reasons.

By confusing differences in anticipated demand for care with politically motivated wealth transfers under the NZPHCS, sick patients of practices with greater exposure to unanticipated demand shocks associated with individuals of the more favoured group end up contributing not just to the costs of demand variation in their own payments for health care, but also a portion of politically motivated wealth transfer because the two functions are bundled together in the one patient payment. Such transfers are avoided in typical social insurance systems when the wealth transfer is achieved using a premium subsidy. Less politically favoured groups pay more of the costs of the system by paying a higher premium top-up ex ante (for example, in New Zealand’s workers Accident Compensation (ACC) system, employers pay a premium for employees based upon industry risk characteristics, and the employee’s contribution is paid as a proportion of taxable income). This eliminates any need to adjust payments to achieve wealth transfers when treatment is sought (under the ACC system, there is no difference in patient payments based upon income or subsidy class).
Individuals with equal need of treatment pay equal amounts at the point of service delivery.

To avoid distortions of the kind illustrated in the example, either premium top-ups should be charged ex ante in respect of each individual in accordance with political wealth-transfer motivations and identical payments levied ex post; or identical payments should be levied to all patients ex post and an additional fee-for-service government subsidy paid in respect of each treatment delivered to the member of a politically favoured group, as occurred pre-NZPHCS. Under such arrangements, there is separation and transparency between the consequences of risk-management practices and wealth transfers, and the sick are not required to pay an additional consumption tax on primary health care in order to further political wealth-distribution goals.

Patient List Mix

Assume now that one practice has a high proportion of higher-capitated individuals ‘on the books’ (Practice A), and another practice (Practice I) has a low proportion. Practice A thus receives a higher proportion of its revenue from fixed payments, and it can only charge its patients on average low values of $v$. Practice I receives a lower proportion of its income from fixed payments, and more from patient payments (that is, $v$ is higher). The capitation contract incentive is thus higher for Practice A.

Both practices provide the same number of consultations ($K$) in a given period. The average patient payment $v$ at Practice A is $20 per consultation, and at Practice I $35. Assume also that, as a consequence of the DHB patient referral, each is required to provide an additional 200 consultations in a given period. Practice A incurs a deficit of $200 \times 30 = $6000, and Practice I a deficit of $200 \times 15 = $3000. If each practice spreads the additional costs across all patients, Practice A patients will pay an additional $6000/($K+200), twice the increase faced by Practice I patients, $3000/($K+200). Thus, DHB referral results in the ex-ante assessed ‘higher need’ Practice A patients, who are deemed less able to meet the costs of higher patient payments, and more likely to be dissuaded from seeking primary care by the size of the payment, and ostensibly more likely to need care in the first place, facing higher patient payment increases than the ‘lower priority’ Practice I patients.

This example illustrates numerically the increasing costs of uncontrollable events under sharper incentives. It also illustrates the inequitable consequences of confusing a premium subsidy with a treatment subsidy in the absence of consideration of the locus of residual financial risk-bearing.
Regulatory Intervention in Practice Price Setting

Inevitably, patient payments have become more variable between practices as the proportion of the population eligible for capitation subsidy has increased. Consequently, the likelihood of DHBs invoking their NZPHCS price-regulation powers has increased. However, if prices are regulated as if the patient payment is a risk-free ‘notional averaged treatment subsidy’, practice financial viability may be severely compromised. DHB materials and politicians’ expressed intentions suggest that neither group fully appreciates the extent to which the NCPHCS has shifted substantial amounts of additional random-risk costs onto practices relative to the pre-2002 system. Consequently, fears expressed by practitioners about their fees becoming subject to price regulation by DHBs under the currently voiced understandings\(^5\) are substantiated.

Assume that a naïve regulator, knowing that Practice A receives higher capitation payments, and therefore, in line with treatment benefit pass-through expectations, must charge lower patient out-of-pocket payments than Practice I, is faced with the price rises in the example above. If the regulator presumes that the capitation payment is simply a ‘notional averaged treatment subsidy’, then a price increase of $6000/(K + 200) imposed by Practice A is ‘unreasonable’ given that Practice I with the same demand increase imposes a price increase of only $3000/(K + 200). If the regulator restricts the price increase by Practice A to that imposed by Practice I, then Practice A becomes financially unviable.

Effective regulation of capitated practices requires specialist insurance and risk-management knowledge. Such regulation is problematic even in countries where there is considerable experience in this form of regulation (Hagen, 1999). Given the added complications from the bundling of wealth transfers with patient payments, effective regulation within the NZPHCS would appear to be an extremely complicated, costly and risky endeavour.

Conclusion

Using theory and stylised examples, this paper illustrates the perverse consequences that can arise when the design of capitation contracts does not give due consideration to the consequences of sharing both ‘controllable’ and ‘random’ risk with service providers. The NZPHCS capitation contracts, sharing very large amounts of random risk with very small risk pools, and allowing patient charges to be set by practitioners, negate the rationale for using capitation to induce behavioural changes in providers, increase the cost of providing consultations, and allocate the additional costs disproportionately to those who consume services most. Whilst increased government funding has reduced out-of-pocket costs for patients, relative to its fee-for-service predecessor the

NZPHCS is operating substantially less efficiently. The explanation is likely inadequate consideration in its design given to the optimal allocation of financial risk. Unless consideration is given to the extent that providers are required to act as insurers of patients on their lists, inequitable and over-costly outcomes will persist.

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Understanding Australian Income Inequality: The Proper Role played by Globalisation, De-unionisation and the Terms of Trade

Noel Gaston

Abstract
This paper examines the key determinants of Australia’s income inequality. The main finding is that ‘globalisation’ — broadly-defined — has increased income inequality. However, this impact is not attributable to increased trade openness and falling trade barriers.

Income inequality and the presumed role of globalisation
While the recent increases in income inequality are well-documented, considerable controversy still exists over which factors have been the most important causes of this trend. However, one of the essential claims in the popular writing on globalisation is its supposed impact on inequality. The role played by globalisation on labour market outcomes and income inequality in developed countries has been a particularly fertile ground for research during a time when international trade liberalisation has progressed and concerns about imports from low-skill-abundant, less-developed countries (LDCs) have been prominent.

At the outset, it should be noted that increased earnings dispersion in the developed economies does not appear to have been primarily the result of shifts in employment from manufacturing to services. Even for the countries that witnessed the greatest increases in earnings dispersion, the increased-earnings dispersion phenomenon has been observed within narrowly-defined industries.

1 Globalisation and Development Centre and School of Business, Bond University, Gold Coast, Queensland 4229, Australia. Correspondence: ngaston@bond.edu.au. This paper is partly drawn from a paper (co-authored with Gulasekaran Rajaguru) delivered at a recent conference as well as a forthcoming book on measuring globalisation (co-authored with Axel Dreher and Pim Martens). Comments provided by the editor, William Coleman, as well as two anonymous referees were very helpful. The editor, referees and my various co-authors are absolved of any responsibility for my errors and opinions.

2 As Borland (1999) notes, very little is known about the determinants of the increases in Australian inequality experienced in the last two decades of the last millennium.

3 Some early studies, using a variety of methodologies, found significant labour market effects attributable to increasing import penetration. Borjas and Ramey (1994) found that U.S. earnings inequality (from 1963 to 1988) and the durable goods trade deficit are co-integrated; that is, they have the same long-run trend. Also, Wood (1994) argues that freer trade with LDCs adversely affects low-wage workers in developed economies. As we note in the next section, these ‘negative’ findings are relatively uncommon in the more recent literature.
across the entire economy. On the face of things, the latter observation seems to rule out the more hasty of the trade-related explanations. Trade economists have long argued that the natural framework for thinking about the long-run effect of trade on labour markets, at least from a maintained assumption of competitive markets, is the Stolper-Samuelson theorem and its various generalisations. Simply stated, the implication of the theorem for skilled-labour-abundant developed economies is that a reduction in the relative price of unskilled-labour-intensive goods caused by more liberal trade with LDCs will lower the relative return to unskilled labour in the developed economies. The simplest trade model predicts that increased trade with countries like China and India would worsen the distribution of earnings in developed countries.

The trade-theoretic account of trade shocks as running from commodity-price changes to factor-price changes provides a compelling equilibrium mechanism and some useful rough empirical checks. Nevertheless, the aggregate professional consensus would seem to have settled on the conclusion that trade has a relatively small effect on the skill-premium, but that other factors (especially skill-biased technological change) are more important. Consistent with this consensus, Gaston (1998) finds that the declines in Australian manufacturing employment were barely affected by lower levels of trade protection. Gaston also finds that Australian real earnings were extremely resilient in view of the (then) most recent recession and trade liberalisation. In addition, he finds that the adverse employment developments were, at most, weakly linked to this real wage resistance.

Compounding the problems of inference, it is extremely difficult to unravel the distinct impacts of technical change and international trade on labour market outcomes. For example, globalisation may lower the costs of diffusing new technology and encourage capital for labour as well as skilled for unskilled labour substitution. More speculatively, the rate of technical progress may be an endogenous response to the need to maintain competitiveness in the global marketplace. The same type of argument can also be made about increasing global competition and institutional changes, such as de-unionisation and the decentralisation of wage bargaining, which are both features of many developed economies, including Australia.

4 The surveys of this literature are now almost sufficiently numerous to warrant a survey of their own. Slaughter (2000) is a good survey of work explicitly rooted in the Stolper-Samuelson theorem.
5 While the estimates are generally small (that is, a less than one per cent reduction in employment for each 10 per cent reduction in the effective rate of industry assistance), the effect approximately doubled in the time period after the program of general tariff reductions implemented in 1988.
6 Gaston's findings were confirmed using more disaggregated data and different empirical techniques by Murtough et al. (1998). Borland (1999) reaches a similar conclusion.
Furthermore, since countries with similar standards of living and economic development generally have access to labour and capital of similar quality, it is quite likely that the magnitude and nature of any technical changes will also be similar. In fact, it has been argued that this must also be true for any changes on the demand-side, since European Union countries were also affected by import penetration from countries abundant in unskilled labour (Katz et al., 1995). Given this similarity in aggregate endowment, technology and shocks, it seems quite natural to investigate the institutional forces operating in each country to explain cross-country differences in the trends and structure of earnings dispersion. In the United Kingdom and the United States, de-unionisation has been a significant labour market development, in economies in which structures are already relatively decentralised (Katz, 1993). Naturally, these changes are not independent of growing international competition. During the 1990s, Australia implemented a number of labour market reforms to decentralise its traditionally centralised form of wage bargaining. The argument made by employer groups has been that such changes were inevitable because of the need to maintain international competitiveness (Borland, 1999).

Overall, the widespread concern with globalisation may have emerged as a result of changes that are obscured when standard economics methods are used to study the labour market effects of globalisation. The primary focus of the existing literature has been on the direct effects of globalisation — the direct effects of the flows of goods and factors of production on labour markets — and on not the indirect effects of globalisation. But indirect effects also operate on the labour market, by transforming the structures that support one set of equilibria and inducing change in those equilibria. Because economic and political structures are related, changes in the relationship of a national economy to the global economy can produce profound changes in the political-economic arrangements of a country. In addition to affecting equilibrium wages and employment, such changes could well be unsettling in themselves.

The altered roles of labour unions and the welfare state provide obvious examples of the importance of institutional differences. Part of the support for relatively unskilled workers’ incomes comes from the mutually supporting institutions of unions and welfare state. That is, as a result of labour market institutions, such as labour unions, some workers receive a higher wage than other otherwise identical workers. A common finding is that measures of wage centralisation are generally negatively associated with wage dispersion (for example, Blau and Kahn, 1996). Likewise, higher rates of unionisation and collective bargaining tend to be associated with a lower incidence of low-paid

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employment and less earnings inequality. In fact, the increases in inequality in recent years have coincided with more decentralised wage bargaining and de-unionisation.

It should be clear that globalisation could affect the union bargaining strength and workers’ incentive to unionise, with straightforward implications for equilibrium relative wages. There is now a sizable body of research examining the relationship between the institutional structure of the unionised sector of an economy (that is, the extent and centralisation of organisation) and various measures of macroeconomic performance. Countries with encompassing labour market institutions (that is, large unionised sectors with centralised bargaining) are characterised by: lower wage inequality (Rowthorn, 1992; OECD, 1997); lower unemployment (OECD, 1997); and higher growth (Rowthorn, 1992; Calmfors, 1993). The usual explanation involves the ability of centralised bargaining institutions to internalise negative wage externalities (Calmfors, 1993). That is, where strong sectoral unions pursue wage gains relative to some perceived market wage, resulting in cost-push inflation, reduced employment, lower growth and inter-sectoral inequality, the centralised union recognises these negative externalities and takes them into account in its bargaining. Thus, as unionisation has declined, there is some evidence that wage inequality has increased (Freeman, 1998).

Increased inequality, and real deterioration in the labour market outcomes of unskilled workers, is also directly related to changes in demand for welfare-state provision. For example, it has been observed that despite increases in the dispersion of earned incomes that, in some countries at least, inequality in post-transfer and post-tax income inequality has not grown (Gottschalk and Smeeding, 1997). This suggests that political pressures have been brought to bear on the generosity of public transfers at a time when earned incomes have become more unequally distributed. From a political-economic perspective, the growing inequality of income could be associated with strong compositional effects on the demand for public insurance. In particular, it seems to be the case that the growing size and economic significance of sectors of the economy that pay higher wages for certain types of workers, could result in political pressures that lead to higher levels of transfer payments to disadvantaged workers. This

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8 DiNardo and Lemieux (1997) conclude that the greater de-unionisation of the workforce in the United States relative to Canada can explain much of the difference in male earnings inequality between the two countries.

9 The membership of unions fell in most OECD countries in the 1980s. An associated trend in many of these countries is varying degrees of decentralisation in wage bargaining institutions since the beginning of the 1980s. According to Wallerstein and Western (2000), two crucial longitudinal features of union organisation and the centralisation of wage setting are as follows. First, labour market regulation, unionisation and bargaining centralisation in industrialised countries steadily diverged over the three decades from 1950. Second, there was a convergent pattern of decline in union density and centralised wage setting during the 1980s. Falling unionisation was especially severe in the English-speaking countries (Wallerstein and Western, 2000, pp.357–8).
could result from changes in the identity of the median voter or as an optimal response to increased income risk in an increasingly open economy (Alesina and Rodrik, 1994).

Some scholars argue that the increased mobility of capital not only erodes the tax base, reducing the state’s ability to fund welfare programs, but by shifting taxes onto labour, the capacity of the state to redistribute is reduced (Tanzi, 1995). For example, some European countries, in the face of increased international competition, have tried to reduce the ‘generosity’ of their social programs (Gaston and Nelson, 2004 and Gaston and Rajaguru, 2007a). In ways that are harder to quantify, but seem prima facie plausible, the decreasing cost of the exit option increases the relative power of business in policy-making (Huber and Stephens, 1998). Finally, it has been argued that globalisation increases the general credibility of orthodox (that is, market-oriented) policy advice, thus reducing the plausibility of arguments supporting welfare state expansion and enhancing the credibility of arguments in favour of welfare-state retrenchment (Krugman, 1999). In the popular consciousness, at least, coincident with the recent onset of globalisation has been a move towards privatisation, deregulation, neo-liberalism and ‘economic rationalism’. In the case of Australia, John Quiggin (1999, p.240) argues that ‘Increased inequality is the result of the neoliberal reform program as a whole. The role of globalisation per se has been overstated.’

Finally, it is being increasingly recognised that globalisation has important social and political dimensions in addition to the usual economic dimensions of primary interest to economists. For example, recent research finds that social integration contributed to de-unionisation in OECD countries, while economic globalisation mattered far less (Dreher and Gaston, 2007a). Although largely neglected in the economics literature, both political integration and social integration are likely to be important for income inequality. For example, in the absence of restrictions on capital mobility, a country is more likely to competitively lower taxes or offer subsidies to attract investment, the closer a potential host country’s culture is to that of a source country and the easier it is to exchange information. Lower taxes may also lower social standards and this is one channel through which the social dimension of globalisation may be important for income inequality. On the other hand, political integration may ameliorate a potential ‘race to the bottom’ which may be induced by economic globalisation. Hence, while economic globalisation may increase inequality, political globalisation could actually serve to reduce it.

In the debate about the consequences of globalisation it is important not to take an overly narrow perspective of globalisation as this may severely bias conclusions about the ‘true’ effects, direct and indirect, on labour markets and income inequality. In addition to the more standard supply-and-demand factors,
inequality may be adversely affected by changes in labour market institutions, trade liberalising policies (often bundled with privatisation and deregulation measures as well as changes to social policies; see Lindert and Williamson, 1991) and a variety of non-economic factors which have simultaneously affected many economies.¹⁰

**Some data on Australian income inequality and globalisation**

Some Measures of Inequality.

Figure 1 plots income-inequality data computed by Leigh (2005) using Australian taxation statistics for the period 1970 to 2001.¹¹

**Figure 1: Inequality Among Adult Males in Australia, 1970–2001**

This paper focuses on three measures — *GiniPre* is the Gini coefficient for pre-tax income, *GiniPost* is the Gini coefficient for post-tax income, and *P9050* is the ratio of the income of an individual at the ninetieth percentile divided by the income of an individual at the fiftieth percentile.¹² The reason for using both of the first two measures is to distinguish the impact of the progressivity of the taxation system in possibly neutralising the effects of globalisation. The third measure focuses on the issue of whether individuals at the top of the income

¹⁰ Globalisation is sometimes equated with 'Americanisation'. For example, see Friedman (1999).

¹¹ The inequality data are from Leigh’s Table 1: Inequality Among Male Adults in Australia for the years 1970–2001. Leigh imputes the incomes of non-taxpayers and derives the underlying distribution of income. Leigh shows that the distribution of adult male incomes and the distribution of family incomes are highly correlated for the United States and argues that the same is likely to be true for Australia. Borland (1999) shows that female employees had higher increases in real weekly earnings compared to males. Additionally, while changes in above-median earnings dispersion for males and females are quite similar, male employees had a higher increase in below-median earnings dispersion than female employees.

¹² The Gini coefficient ranges from 0 (perfect equality) to 1 (perfect inequality).
distribution have fared particularly well during the latest wave of globalisation (as argued by Atkinson, 2003, for example).

Notwithstanding their differences, the three measures are highly correlated. Observe that all three measures increased over the 32-year time span — with pre-tax income inequality rising by almost 22 per cent.

A Measure of Globalisation

To assess the extent to which any country is more (or less) globalised at any particular point requires much more than employing data on flows of trade, migration or FDI. When a phenomenon like globalisation encompasses several aspects that, taken together, may have an effect greater than the sum of their constituent parts, it appears logical to assess these effects together. Composite indices provide an excellent way to accomplish this since they provide a single statistic on which comparisons can be based, without the confounding effects of variation at lower levels of aggregation.

The KOF index (Dreher et al., 2007) fits the bill; here it is simply labelled ‘KOF’. The index is derived from 25 variables grouped into six ‘sub-indices’: actual flows of trade and investment; restrictions; variables measuring the degree of political integration; data quantifying the extent of personal contact with people living in foreign countries; data measuring trans-border flows of information; and a proxy for cultural integration.

The sub-index on actual economic flows includes data on trade, FDI and portfolio investment. Trade is measured as the sum of a country’s exports and imports and portfolio investment is the sum of a country’s assets and liabilities (all standardised by GDP). The KOF index includes the sum of gross inflows and outflows of FDI and the stocks of FDI (again, both standardised by GDP). While these variables are standard measures of globalisation, income payments to foreign nationals and capital are included to proxy the extent to which a country employs foreign labour and capital in its production processes.

The second sub-index includes restrictions on trade and capital using hidden import barriers, mean tariff rates, taxes on international trade (as a share of current revenue) and an index of capital controls. Given a certain level of trade, a country with higher revenues from tariffs is less globalised. To proxy restrictions on the capital account, data on 13 different types of capital controls are used.

The KOF has a sub-index on ‘political globalisation’, drawn from the number of embassies and high commissions in each country, the number of international organisations in which a country has membership and the number of United Nations peace missions participated in.
The remaining three sub-indices of the KOF index concern ‘social’
globalisation: one on ‘personal contacts’, another on ‘information flows’, and a
final one on ‘cultural proximity’. The index on personal contacts includes
international telecom traffic and the extent of tourism. Government and workers’
transfers received (and paid) measures the extent to which countries interact,
while the stock of foreign population is included to capture existing interactions
with people from other countries. Finally, the average cost of a phone call to the
United States measures the cost of international interaction.

While personal contact data are meant to capture interactions among people
from different countries, the sub-index on ‘information flows’ measures the
potential flow of ideas and images. It includes the number of internet hosts and
users, telephone mainlines, cable television subscribers, the number of radios
and sales of daily newspapers. ‘Cultural proximity’ is arguably the dimension
of globalisation most difficult to grasp. One indicator is the number of McDonald’s
restaurants located in a country. For many people, the global reach of McDonald’s
is symbolic of globalisation itself.

These dimensions are then combined into an overall index of globalisation
with an objective statistical method. Table 1 reports the weights of the
individual components. As can be seen, economic, political and social
integration obtained roughly equal weights. Table 1 shows that globalisation
has increased dramatically.

A Measure of Unionisation and the Terms of Trade
The ‘terms of trade’ (ToT) is measured in this paper as the ratio of the implicit
price deflator of exports of goods and services to the implicit price deflator of
imports of goods and services. In the case of Australia, rising terms of trade
are predicted to result in a movement of labour and capital from manufacturing
to primary industries. Depending on these structural changes and any
impediments to labour mobility, this could adversely affect the distribution of

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13 Dreher et al. (2007) describe the method in more detail. The annual data are publicly available
14 To construct the indices of globalisation, each variable (in Table 1) is converted into an index
with a zero to 10 scale. Higher values denote greater globalisation. When higher values of the original
variable indicate greater globalisation, the formula \((Vi – Vmin)/(Vmax – Vmin)*10\) is used for
transformation. Conversely, when higher values indicate less globalisation, the formula is \((Vmax – Vi)/(Vmax – Vmin)*10\). The weights for the sub-indices are calculated using principal components
analysis. The base year is 2000. For this year, the analysis partitions the variance of the variables used.
The weights are then determined in a way that maximises the variation of the resulting principal
component, so that the index captures the variation as fully as possible. If possible, the weights
determined for the base year are then used to calculate the indices for each single year back to 1970.
Where no data are available, the weights are re-adjusted. See Dreher et al. (2007) for further details of
the computational method.
15 The terms of trade data are from the Reserve Bank of Australia (which, in turn, are derived from
ABS Cat No 5206.0). The implicit price deflators are indexed with a reference year 2004/05 = 100.
earnings via a straightforward interpretation of the Stolper-Samuelson theorem (Henry, 2006). All other data are from the OECD.\textsuperscript{16}

Table 1: Components of the KOF index of globalisation

<table>
<thead>
<tr>
<th>Indices and Variables</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Economic Globalisation</strong></td>
<td></td>
</tr>
<tr>
<td>i) Actual Flows</td>
<td></td>
</tr>
<tr>
<td>Trade (per cent of GDP)</td>
<td>16%</td>
</tr>
<tr>
<td>FDI, flows (per cent of GDP)</td>
<td>21%</td>
</tr>
<tr>
<td>FDI, stocks (per cent of GDP)</td>
<td>23%</td>
</tr>
<tr>
<td>Portfolio investment (per cent of GDP)</td>
<td>19%</td>
</tr>
<tr>
<td>Income payments to foreign nationals (per cent of GDP)</td>
<td>22%</td>
</tr>
</tbody>
</table>

| ii) Restrictions       |         |
| Hidden import barriers | 24%     |
| Mean tariff rate       | 28%     |
| Taxes on international trade (per cent of current revenue) | 28% |
| Capital account restrictions | 20% |

| **B. Social Globalisation** |         |
| i) Data on Personal Contact |          |
| Outgoing telephone traffic | 14%     |
| Transfers (per cent of GDP) | 8%      |
| International tourism     | 27%     |
| Foreign population (per cent of total population) | 25% |
| International letters (per capita) | 27% |

| ii) Data on Information Flows |         |
| Internet hosts (per 1000 people) | 20% |
| Internet users (per 1000 people) | 24% |
| Cable television (per 1000 people) | 20% |
| Trade in newspapers (per cent of GDP) | 14% |
| Radios (per 1000 people) | 23% |

| iii) Data on Cultural Proximity |         |
| Number of McDonald’s restaurants (per capita) | 40% |
| Number of Ikea outlets (per capita) | 40% |
| Trade in books (per cent of GDP) | 20% |

| **C. Political Globalisation** |         |
| Embassies in country | 35% |
| Membership in international organisations | 36% |
| Participation in U.N. Security Council missions | 29% |

‘Union’ is union membership standardised by the total labour force (that is, expressed as a percentage). As discussed in the previous section, the usual

\textsuperscript{16} The OECD data are from: http://stats.oecd.org/wbos/default.aspx.
prediction is that de-unionisation worsens earnings and income inequality. From Table 2 below, note that the rate of unionisation fell by an astounding 42 per cent. The minimum wage is converted to real terms using the CPI. This measure is included to capture the response of the welfare state to increased global uncertainty. Interestingly, this measure rose strongly over the latter part of the 32-year period. On the face of things, this rise is consistent with the argument made by Rodrik (1998) discussed in the previous section. Finally, ‘Open’ is the usual openness measure; that is, the ratio of total trade (imports plus exports) divided by GDP. It displays extraordinary growth from 1970 to 2001. It is included separately from the broad index of globalisation to focus on growing economic integration in particular. Based on previous research, small effects on the income distribution are anticipated.

Table 2 and Figure 2 present several dimensions of the data used in our econometric analysis.

Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Min.</th>
<th>Max.</th>
<th>Change 1970-2001</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) GiniPost</td>
<td>0.32</td>
<td>0.25</td>
<td>0.38</td>
<td>21.3%</td>
<td>Correlation 1</td>
</tr>
<tr>
<td>2) GiniPre</td>
<td>0.24</td>
<td>0.18</td>
<td>0.30</td>
<td>10.0%</td>
<td>Correlation 2</td>
</tr>
<tr>
<td>3) p9050</td>
<td>1.88</td>
<td>1.70</td>
<td>2.09</td>
<td>16.1%</td>
<td>Correlation 3</td>
</tr>
<tr>
<td>4) KOF</td>
<td>65.1</td>
<td>47.2</td>
<td>80.9</td>
<td>71.5%</td>
<td>Correlation 4</td>
</tr>
<tr>
<td>5) ToT</td>
<td>83.1</td>
<td>71.7</td>
<td>106.5</td>
<td>-11.4%</td>
<td>Correlation 5</td>
</tr>
<tr>
<td>6) Open</td>
<td>33.2</td>
<td>25.4</td>
<td>44.8</td>
<td>61.0%</td>
<td>Correlation 6</td>
</tr>
<tr>
<td>7) Union</td>
<td>34.2</td>
<td>21.4</td>
<td>40.1</td>
<td>-42.1%</td>
<td>Correlation 7</td>
</tr>
<tr>
<td>8) RMW</td>
<td>276.23</td>
<td>221.21</td>
<td>310.01</td>
<td>27.7%</td>
<td>Correlation 8</td>
</tr>
</tbody>
</table>

The decline of union membership during the 1990s is quite stark. The real minimum wage (converted to an index in the figure) displays fluctuations, but is considerably higher at the end of the period compared to the beginning. In contrast, ToT is lower in 2001 compared to 1970 (and predates the most recent minerals-driven increases in the terms of trade). Both trade openness and KOF trend sharply upwards over the entire period.

Time Series Analysis

The formal statistical analysis of each of the inequality measures (KOF, ToT, Open, Union and LRWM) indicates that they are co-integrated with one co-integrating vector. This suggests estimation of a vector error-correction model.

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17 The annual percentage rise in the real minimum wage is actually quite small when considering the effects of compounding and productivity growth in the Australian economy. However, two related points are noteworthy here. First, in 2000 the Australian minimum wage was the second highest in the OECD (Martin and Immervoll, 2007). Secondly, all labour market bargaining models predict that the wages for non-minimum-wage workers are anchored by minimum wages.

18 From Table 1 note that this customary measure of trade openness receives just a 5.76 per cent (that is, 0.36 × 0.16) weight in the overall KOF globalisation index.
to establish the relationship between the variables. All the standardised beta coefficients for the long-run relationships are summarised in Table 3.

Figure 2: Time Series of Covariates, 1970-2001

Table 3: Summary of the long-run relationships: standardised beta coefficients

<table>
<thead>
<tr>
<th></th>
<th>KOF</th>
<th>ToT</th>
<th>OPEN</th>
<th>Union</th>
<th>LRMW</th>
</tr>
</thead>
<tbody>
<tr>
<td>GiniPre</td>
<td>0.52***</td>
<td>-0.51***</td>
<td>0.00</td>
<td>-0.39***</td>
<td>-0.36***</td>
</tr>
<tr>
<td>GiniPost</td>
<td>0.81**</td>
<td>-1.76***</td>
<td>-3.42***</td>
<td>-2.48***</td>
<td>0.26*</td>
</tr>
<tr>
<td>p9050</td>
<td>1.24***</td>
<td>-0.59***</td>
<td>-3.34***</td>
<td>-4.57***</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note: *, ** and *** denote rejection of the null at 10 per cent, 5 per cent and 1 per cent significance levels, respectively.

The results of Table 3 indicate that globalisation, as measured by KOF, unambiguously increases income inequality. (A one standard deviation increase in KOF leads to 0.52 standard deviation increase in GiniPre (pre-tax income inequality), ceteris paribus.) This is in line with the findings of Dreher and Gaston (2007b), who found that globalisation increases income inequality in a panel of OECD countries. The finding mirrors the unease with which non-economists and the public generally view globalisation. While the academic

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19 The optimal lag length of two is determined by the Schwartz criteria. Even though there are just 32 annual observations the long-run relationship in the error correction model uses five degrees of freedom and each short-run equation uses eight degrees of freedom. For technical and estimation details, see Gaston and Rajaguru (2007b).

20 It should be noted that although there is one co-integrating relationship, the causal interpretation is subjective. For example, it was also found that GiniPre, KOF, Union and LRMW affect ToT.

21 Exploring the Dreher and Gaston (2007b) result in greater depth, Dreher et al. (2007) found that it is the social dimension of globalisation that has had the most significant impact on OECD earnings and income inequality.
literature fails to find consistent evidence that traditional measures of economic openness and integration — such as international trade flows and immigration — adversely impact the labour market, this may be attributable to an overly narrow view of globalisation generally adopted by most economists.  

Perhaps a more surprising result of Table 3 is that improving terms of trade and greater trade openness are equity-enhancing for Australia. Of course, Australia is somewhat ‘peculiar’ for a developed economy in that it mainly exports primary commodities and imports manufactured goods. Pope and Selten (2002) have noted the importance of improved terms of trade for Australia’s manufacturing sector. Perhaps for this reason, not only do improved terms of trade boost Australian welfare and income, they also have a beneficial impact on equity.

The results for ‘Union’ are large and significantly negative as well as straightforward to interpret. It’s quite clear that de-unionisation has exacerbated income inequality. The result for the minimum wage varies across the different measures of income inequality. A higher real minimum wage lowers pre-tax income inequality. The impact on post-tax inequality is positive and significant, albeit at just the 10 per cent level. This may indicate that the progressivity of taxes is relatively more important for generating a more equitable income distribution than are increases in the minimum wage, at least for Australia. Unsurprisingly, the minimum wage has no impact on the income distribution for the more wealthy.

**Conclusion**

This paper examined the key determinants of Australia’s income inequality. Surprisingly, particularly given the increases in Australian income inequality over the last quarter-century, little research has been done for Australia. The present paper can therefore be viewed as a preliminary exploration. The findings are intriguing and will hopefully encourage other researchers to further explore the issue. Among the findings is that more trade and improved terms of trade are equity-enhancing. Institutionally, de-unionisation of the labour force is having the anticipated adverse effect on income inequality. On the other hand, the welfare state has responded; rising minimum wages — the anchor upon which low-skilled and semi-skilled workers have their own incomes determined — have reduced income inequality. In addition, the progressivity of the income tax system has served to lessen the impact on low-income workers. The main finding is that globalisation — broadly-defined — has increased income inequality. Notably, the result is not attributable to increased trade openness and falling trade barriers. In fact, quite the opposite is the case. The global

22 The co-integration analysis revealed that $KOF$ is likely to be exogenous (that is, it is highly significant in the three long-run relationships but insignificant in each of the speed of adjustment equations). This contradicts the view by Quiggin (1999) quoted above. On the other hand, the conclusions drawn by Henry and O’Brien (2003) do seem overly sanguine.
environment, and Australia’s role in that environment, is a starkly different and possibly more uncertain one than Australians found ourselves in a quarter-century ago.

References


Dreher, A., and N. Gaston 2007a, ‘Has globalisation really had no effect on unions?’, Kyklos 60(2), pp.165–86.


ARGUMENT
No Lessons Learned: A Critique of the Queensland Local Government Reform Commission Final Report

Brian Dollery, Chong Mun Ho and James Alin

Abstract

On 17 April 2007 the Queensland government established a Reform Commission to consider the compulsory amalgamation of local councils. On 27 July 2007 the Commission recommended a program of compulsory amalgamation that would reduce the number of local councils from 157 to 73. These recommendations were passed into law amidst great acrimony in the early hours of 10 August. This paper provides a critical evaluation of the arguments for amalgamation presented by the Commission in the light of the scholarly literature on local government mergers.

Introduction

The new millennium has witnessed a period of severe financial distress in local government in all Australian state and territory jurisdictions, as attested by numerous national and state-based inquiries into the financial sustainability of local councils. Queensland local government has not been immune to these problems. In 2004, the Local Government Association of Queensland (LGAQ) developed a program to deal with financial and other pressures confronting local councils in that state. In order to generate debate, a Discussion Paper entitled Size, Shape and Sustainability of Queensland Local Government was issued on 3 March 2005 and a Special Conference of the LGAQ held in Brisbane in early June 2005. The initial outcome was the Communiqué advocating a ‘comprehensive
reform blueprint’, followed immediately by a ‘ten point Action Plan’. This proposal was formally endorsed by the Queensland Minister for Local Government and Planning. The Action Plan set out a reform program in the form of the Size, Shape and Sustainability (SSS) Review Framework, sustainability indicators, ‘options for change’, ‘Independent Review Facilitators’, and financial arrangements for Queensland government support of $25 million. The mechanics of the reform process were embodied in the Size, Shape and Sustainability: Guidelines Kit (LGAQ 2006). In essence, the SSS process involved cooperation and collaboration between state government agencies and local councils on a scale unrivalled in the history of Australian local government reform.

The SSS review process was still ongoing on 17 April 2007 when the Queensland government suddenly announced that it had forsaken the SSS process in favour of a program of forced amalgamation. In the guise of a Local Government Reform Program, the Queensland government appointed a Local Government Reform Commission to make recommendations on compulsory local council mergers by August 2007 to enable the election of new councils on 15 March 2008. The official rationale for the abandonment of the SSS process was explained in Local Government Reform: A New Chapter for Local Government in Queensland (Department of Local Government, Planning, Sport and Recreation (DLGPS&R)) (2007) and effectively amounted to a claim that local councils had not proceeded with sufficient haste and vigour in pursuing the SSS program. This document has been attacked as deficient in both concept and fact (see Dollery et al. (2007b) and LGAQ (2007)).

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3 The Terms of Reference for the Reform Commission were published under section 159U of the legislation on 19 April 2007 as follows:

‘159U Terms of reference:

‘(1) This section states terms of reference for the reform commission in performing its functions.

‘(2) The reform commission must consider the grouping of like communities of interest to maintain the social fabric and character of communities and areas of the State, and in particular, must consider — (a) review areas established under SSS review processes; and (b) boundaries of areas covered by the regions for which regional planning advisory committees have been established under the Integrated Planning Act 1997.

‘(3) The reform commission’s recommendations must be directed at — (a) consolidating, to the extent practicable, regional natural resource management areas, including for example water catchment areas, and environmental areas, including for example, coastal wetlands; and (b) creating local governments with improved financial sustainability.

‘(4) In making a recommendation for creating a new local government area from 2 or more existing local government areas, the reform commission must give preference, to the extent practicable, to including all of the existing local government areas in the new area rather than parts of the existing areas.

‘(5) The reform commission must identify options for community representation that reflect the diversity of the State’s regions and that promote representation of discrete communities.

‘(6) In making its recommendations for new arrangements, the reform commission must identify any issues requiring further consideration for successfully establishing the new arrangements.’
After a mere two months of deliberations, the Reform Commission released its Final Report entitled Report of the Local Government Reform Commission (State of Queensland [Local Government Reform Commission]) (2007) on 27 July 2007. The Final Report comprised two volumes: Volume 1 set out the arguments for radical structural reform in Queensland, while Volume 2 provided details of the new recommended local government areas developed in the Final Report. The Final Report recommended the number of local councils be compulsorily reduced from 157 to just 73 organisations. When it is noted that no changes at all are proposed to 37 councils, then the extreme nature of the Reform Commission is placed in even greater relief. Some of the more controversial recommendations included the forced amalgamation of the Noosa Shire Council with Maroochy Shire and Caloundra Shire, leading to fears that the new entity would have a ‘development bias’, that would destroy the beauty of the Noosa area, as well as the compulsory merger of Crows Nest, Rosalie, Jondaryan, Millmerran, Pittsworth, Clifton and Cambooya Shires with the large regional Toowoomba City Council, which many felt endangered the continued existence of many small towns surrounding Toowoomba.

The Recommendations of the Reform Commission were passed into law in the Queensland Parliament in the early hours of 10 August 2007 amidst great public controversy and rancour. A most unusual feature of this legislation was the inclusion of stiff monetary penalties to be imposed on elected representatives who attempted to hold referenda to test public opinion on forced mergers in their council jurisdictions.

Given the radical nature of the Queensland compulsory amalgamation program, as well as the haste with which decision-making proceeded, there is an urgent need to evaluate the arguments in favour of forced mergers presented in the Final Report of the Queensland Reform Commission. Accordingly, this paper seeks to assess the substantive arguments presented in the Final Report against the background of developments in contemporary Australian local government and the relevant scholarly literature in the area.

4 The Reform Commission comprised seven members, assisted by administrative staff and analysts from the Queensland government bureaucracy. Commission members were Commission Chairperson Bob Longland (a former Electoral Commissioner for Queensland); Sir Leon Hielcher (Chair of the Queensland Treasury Corporation); Terry Mackenroth (former Deputy Premier of Queensland and a member of the Queensland Parliament from 1977 to 2005); Di McCauley (former Queensland parliamentarian from 1986 to 1998 and former Queensland Minister for Local Government and Planning); Tom Pyne (former President of the Local Government Association of Queensland); and Bob Quinn (former Leader of the Queensland Liberal Party). Administration Commissioner was Kevin Yearbury (former Director-General of the Queensland Department of Local Government and Planning).

3 The attempt by the Queensland government to prevent local referenda has led to controversial involvement by the former federal government to fund local plebiscites on amalgamation, apparently inspired by political motives (Marris 2007). The Queensland government responded by withdrawing the punitive elements in its legislation, but nonetheless still proceeding with the amalgamation program. At the time of writing, plebiscites had been held in numerous local council jurisdictions, with overwhelming public opposition to the structural reform program.
The paper itself is divided into three main parts. Section 2 sets out the case for compulsory amalgamation presented by the Commission in its Final Report, with only some limited critical asides. Section 3 considers the validity of these arguments. The paper ends with some brief concluding remarks in section 4.

**The Reform Commission’s Case for Forced Amalgamation**


Discussion in Chapter 3 is organized under six main headings: ‘analysis’; local government capacity; ‘social, economic and environmental factors’; ‘community of interest’; ‘financial sustainability’; and ‘boundaries’. Under the analysis heading, the Commission simply lists its objectives as set out in its Terms of Reference and outlines the ‘range of data sources’ (p.37) it employed. The latter is significant in the sense that no material is specified dealing with local government reform elsewhere in Australia or indeed abroad. This sets the tone for a highly ‘Queensland-centric’ mode of analysis.

The remaining five headings deal with what we can call ‘substantive’ criteria. The first substantive criterion invoked by the Commission consists of ‘the capacity of local government to deliver services, undertake planning and exercise sound governance’ (p.38). In so doing, the Commission sought to assess how structural reform through amalgamation ‘would improve local government’s ability to deliver services, undertake environmental, social and economic planning, and provide local government with the capacity to better manage risk’ (p.38). The Commission found local councils throughout Queensland are presently ‘struggling’ to meet the demands placed on them and battling to compete for scarce administrative and technical skills in a highly competitive labour market. From this diagnosis, the Commission concluded that ‘stronger more robust local governments’ will better be able to overcome these challenges.

The analysis of local government capacity goes on to consider ‘structural barriers’ that ‘impede’ service provision and effective growth management and development planning. Six illustrative examples are provided: (i) Population growth in areas that cross local council borders should be ‘managed on a regional basis’, such as the Sunshine Coast; (ii) the existence of ‘multiple’ local council planning systems raises the ‘complexity’ of managing regional development, like the Darling Downs; (iii) current boundaries that create ‘artificial’ barriers between communities, such as boundaries that divide single residential areas; (iv) ‘duplication’, and ‘complexity’, such as Townsville/Thuringowa; (v) numerous small councils in a ‘compact’ spatial zone that cannot ‘capture and manage’ economic development, like North Burnett; and (vi) ‘donut’ councils that ‘impede optimal service delivery’. 
A discussion of the ‘costs and benefits’ associated with amalgamation ensues, which forms the central thrust of the case for forced mergers in the Commission’s deliberations. In a candid admission, the Commission concedes that ‘it has not attempted to quantify these costs [of amalgamation] in respect of the recommendations it makes’ (p.38), despite acknowledging that significant costs exist. Instead, the Commission was ‘guided’ by the outcomes of previous Queensland local mergers in the 1990s (Cairns, Ipswich, Mackay, Warwick and Cooloola), despite the fact that no formal assessments have ever been made of the consequences of these amalgamations; the Commission argued that ‘in all cases’, these councils have ‘emerged as stronger administrations’ that ‘better represent their communities’. In addition, the Commission relied on SSS appraisals from four councils (Crows Nest/Rosalie and Goondiwindi/Waggamba). These reviews identified costs attendant on mergers that included a decline in Financial Assistance Grants, ‘disruptions’ to service provision during the implementation of amalgamation, and outlays on ‘integrating council systems’. However, these same SSS reviews predicted various benefits to amalgamation, not least (a) a ‘larger resource base’, better infrastructure management and enhanced capacity; (b) scale economies (that are not identified by service type); (c) unquantified and unspecified ‘savings’ that can ‘fill gaps in middle management’ thereby improving operational efficiency; cost savings from asset ‘rationalisation’; and (d) ‘better planning and infrastructure delivery across growth areas’ (p.39).

From this limited evidence drawn exclusively from Queensland, the Commission felt able to generalize the benefits of structural reform into main four categories: (a) economies of scale; (b) more efficient infrastructure delivery; (c) more skilled staff; and (d) improved financial governance and standards implementation. However, the Commission immediately (and perhaps unwittingly) undercuts these assertions by observing that ‘the costs incurred by, and the benefits which accrue to amalgamated councils will largely be dependent decisions the new local governments make during the implementation phase’, depending on how these new organizations expend the ‘dividends’ derived from amalgamation. It is important to stress that in its evaluation of the costs and benefits of council mergers, the Commission completely ignores any evidence that may be gleaned from Victoria, South Australia and New South Wales, all of which have undergone structural reform over the past two decades, as well as the wealth of material available from abroad.\(^6\)

The second main criterion applied by the Commission consisted of ‘social, economic and environmental factors’, especially in the context of ‘regional communities of interest’. In particular, the Commission identified six main

\(^6\) An anonymous referee observed that ‘as an outsider, it seems almost unbelievable that a government commission could make such sweeping recommendations without apparently even attempting to marshal any evidence’. We concur with this view.
‘challenges’ confronting regional Queensland local government over the next 20 years, as follows: (a) Maintaining the viability of communities in Western Queensland; (b) dealing with the transformation of economic activity away from traditional agriculture in Western Queensland; (c) coping with the problems presented by the rapid increase in mineral extraction and its need for infrastructure; (d) growth management in regional centres; (e) managing ‘tree-change’ and ‘sea-change’ migration flows; and (f) growth management in South East Queensland. While none of these factors are addressed further, the Commission simply observed that it ‘has sought to balance the specific (social, economic and environmental) aspirations of local communities’ (presumably as expressed in submissions to the Commission) ’ with the regional economies it sees emerging over the next 20 to 30 years’ (p. 40). How this was done is left to the imagination of the reader.

The third major criterion resides in ‘community of interest’ as defined in Local Government Regulation 2005, with the proviso that the Commission should try to avoid amalgamating parts of existing areas and instead incorporate whole local government areas together. In its discussion, the Commission went into some detail over the difficulties involved in determining community of interest in practice and noted the ‘passion’ with which people experienced a ‘sense of place’ associated with a current local government area. However, it nonetheless ‘separated the issue of identification with a particular locality, from that of a broader community of interest, apparently on the basis that instances exist in Queensland where ‘distinctive communities continue to thrive within existing local government boundaries’ (p.41). How the Commission has proceeded is not explained.

The fourth main criterion guiding the Commission is ‘financial sustainability’ — the chief motivating force for the amalgamation program according to the DLGPS&R (2007) Local Government Reform: A New Chapter for Local Government in Queensland, which set out the rationale for the whole reform process (Dollery et al. 2007b; LGAQ 2007). It is thus little short of astounding that the Commission ‘has not attempted to define a minimum level of financial sustainability for local government in Queensland’ (p.42). The Commission observed that it relied on the Queensland Treasury Corporation’s (QTC) Financial Sustainability Reviews, which are considered in Chapter 8 of its Final Report, despite the fact that not all councils had undergone QTC scrutiny prior to the Final Report — a matter the Queensland government used to justify abandoning the SSS program!

Two points are relevant in this regard. Firstly, of the 109 councils that had been reviewed by the QTC, 57 councils (52 per cent) were classified as ‘moderate’ in terms of financial sustainability, where moderate implies a ‘high capacity to meet its financial commitments’, and 28 (25.6 per cent) were designated as ‘weak’, where weak means an ‘acceptable capacity to meet its financial commitments’
In other words, in the view of the QTC, these two groups of councils were not perceived as financially unsustainable! Secondly, the definition of financial sustainability in the Australian local government milieu has not only proved to be elusive, as attested by the state-based inquiries in South Australia, New South Wales, Western Australian and Tasmania cited earlier in this paper (see Dollery and Crase 2006), but also too narrow (Dollery et al. 2006a). The Commission seems to have overlooked these definitional difficulties altogether as a consequence of its exclusive use of Queensland literature.

The fifth and final criterion consists of local government boundary considerations to which we have already alluded. The Commission felt bound by its Terms of Reference to make recommendations for amalgamation that involved only whole local government areas rather than parts of local government areas.

A feature of contemporary debate over structural reform in Australian local government is the emphasis placed on alternative models of local government that can be implemented instead of amalgamation in any process of structural reform. For example, the LGAQ (2005, p.15) has composed a taxonomy that distinguishes between four conceptual models: ‘Merger/amalgamation’; ‘significant boundary change’; ‘resource sharing through service agreements’, in which one local authority will undertake specific functions such as waste management for other councils; and ‘resource sharing thorough joint enterprise’, in which municipalities combine their activities in a given service function in order to reap scale economies, such as official record keeping and storing. Similarly, Dollery and Johnson (2005) have proposed a sevenfold typology comprising existing small councils, ad hoc resource-sharing agreements, Regional Organizations of Councils, area integration or joint board models, the virtual local government model, the agency model and amalgamated councils. These theoretical models have been augmented by a growing literature on applied models of local governance, either in operation or under consideration (see Dollery et al. 2007a).

For this reason, the Queensland Reform Commission no doubt felt obliged to at least consider alternatives to forced amalgamation in its deliberations. Three alternative models are discussed in Chapter 4 of the Final Report: the ‘multi-purpose joint local government’ (MPJLG) model advocated by the LGAQ; shared service models; and regional alliances of local councils. On the basis of its deliberations, the Reform Commission apparently felt able to dismiss these three alternatives out of hand. The Commission concluded that:

While MPJLGs, shared services and alliances have been promoted in suggestions as alternatives to amalgamation, the Commission considers that they are inferior options. All the advantages nominated by advocates of these alternatives can be realized by amalgamated councils, with less bureaucracy and administration,
and avoiding the complexity and delays that are an inevitable part of negotiating agreements with multiple councils. These approaches remain valid for use by accountable elected entities which can consider their applicability in addressing particular administrative, service delivery or contracting issues, not as a substitute for structural reform.

This conclusion is noteworthy for two main reasons. Firstly, the Commission did not even attempt to engage with the Australian literature on alternative models of local government, which includes empirical evidence on the actual outcomes of several models already in operation, such as the very successful Riverina Eastern Regional Organisation of Councils in New South Wales (Dollery et al. 2005) and the Walkerville model in South Australia (Dollery and Byrnes 2006), to cite but two examples. Put differently, the Commission is guilty of ‘evidence-free’ policy evaluation. Secondly, most alternatives to amalgamation are premised on the notion of retaining local democracy and local choice while at the same time combining those functions that exhibit significant scale economies, scope economies and other efficiency-enhancing attributes. In other words, the whole thrust of these models is to preserve local autonomy without any trade-offs associated with the size of the organisation. By not even considering local autonomy, local choice, local democracy and local ‘voice’ as a desirable ‘public good’ in its own right, the Commission misses the central objective of these models.

Evaluation of the Arguments for Amalgamation in the Final Report

Structural reform in the guise of enforced local council mergers has a very long history in Australian local government (Vince 1997). In an analysis of the debates that have surrounding various episodes of council consolidation, Dollery et al. (2006b, pp.139–55) have provided a detailed evaluation of both the theoretical and empirical arguments typically advanced for local government amalgamation in Australia. They identified seven main conceptual considerations that have been brought to bear on the problem: ‘Optimum community size’; economies of scale; economies of scope; local government capacity; administration and compliance costs; the ‘coincidence of municipal and natural boundaries’; and public-choice arguments. This taxonomy provides a useful framework for considering the merits or otherwise of the conceptual case for amalgamation presented in the Final Report of the Queensland Reform Commission. We will thus briefly consider each of these factors in turn.

Optimum community size

As we have seen, the Reform Commission placed a good deal of weight on the importance of ‘regional communities of interest’ especially in economic development, planning and other matters with a comparatively large spatial
focus. This demonstrates that the Commission considered the ‘region’ to represent an optimal ‘community size’, rather than smaller local government areas. However, the Commission seems completely unaware that notions of optimum community size are not simply plucked from the air but derive from the theory of fiscal federalism pioneered by Oates (1972) and subsequently refined by legions of economists (Mueller 2003). The theory of fiscal federalism is centrally concerned with the question: which levels of government (national, state or local) should provide specific categories of public goods? The theoretical answer follows from Oates’ (1972) correspondence principle: the size of a government should reflect the area of benefit of the goods it provides to its constituents. Each public good should thus be provided by the smallest (that is, lowest-level) government where there are no spatial externalities affecting adjacent areas.

This principle has direct implications for local government amalgamation. In the first place, Oates (1972) has demonstrated through the decentralisation theorem that if local preferences determine the composition of local service provision, then welfare gains accrue to society because preferences are never spatially uniform. Local service provision should thus be decided at the local level, implying the retention of small local councils, at least insofar as deciding the composition of local services. Secondly, if spillover effects exist contingent on the exercise of local choice, then either subsidies or taxes must compensate neighbouring jurisdictions, or decisions over the services generating externalities should be taken at a higher level of government. Demand-side considerations of this kind are precisely the reason that various alternative models of local government prescribe that services with a regional impact should be decided at the regional level, while supply-side considerations, like scale economies, lead to an analogous conclusion in these models.7

Economies of scale

Economies of scale refer to a decrease in per-unit cost of production as the quantity of output increases. As we have seen, in its Final Report the Commission made frequent appeal to scale economies by arguing that larger amalgamated councils would provide services more cheaply. This claim cannot be sustained for several reasons (Dollery et al. 2006b). Firstly, despite the recent expansion of Australian local government services to include more ‘services to people’ (Dollery et al. 2006c), Australian local councils still have a strong ‘services to property’ orientation in terms of the services they provide. However, despite the relatively narrow range of service provision, Australian municipalities

7 In addition to these arguments, we are indebted to an anonymous referee for pointing out that the Commission also ignored the empirical literature on the relationship between governmental decentralisation and economic growth, which suggests that decentralised local government boosts local economic growth. See, for instance, Brueckner (2006), Akai and Sakata (2002), Lin and Lui (2000) and Stansel (2005).
nonetheless deliver an extensive range of services. Because these services are produced using entirely different processes, there is no a priori reason for different services to display the same cost characteristics. It follows that while council mergers will secure scale economies for some services, they will also capture diseconomies of scale in other services. Sancton (2000, p.74) has summarised this argument by observing that ‘there is no functionally optimal size for municipal governments because different municipal activities have quite different optimal areas’.

Secondly, it is well known that scale economies are not relevant if service provision can be separated from service production through the ‘purchaser-provider split’, since scale economies only occur during the production phase (Oakerson 1999). Thus local councils too small to achieve scale economies can still reap these cost advantages by outsourcing to private firms, Regional Organizations of Councils, area integration models, and the like. In other words, council size need bear no relationship to scale economies.

Thirdly, in its adoption of the ‘big is beautiful’ perspective of local councils, the Commission alludes to the cost ‘dividends’ attendant upon scale economies in the proposed new larger councils. The Commission thus implicitly endorsed inter alia the findings of Stephen Soul (2000) in his influential doctoral thesis, which examined the effect of council size (as measured by population) on gross expenditure per capita, and concluded that increasing population yields a lower level of gross expenditure per capita up to a council size somewhere between 100,000 and 316,000 people, at which point ‘scale diseconomies’ begin. But the theoretical basis of this study has been shown to be badly flawed on the basis of pioneering work by Boyne (1995) ignored by Soul (2000) (Dollery et al. 2006b). In essence, Boyne (1995) has demonstrated that council size (as proxied by population) bears no relationship to scale economies, since population is linked to numerous other variables affecting expenditure.

Finally, the Commission apparently takes for granted that substantial scale economies exist in Australian local government. This presumption is unwarranted and ignores both Australian empirical evidence on economies of scale in local government (see, for instance, Byrnes and Dollery 2002) as well as empirical evidence abroad (see, for example, Bish 1971; 2000; Boyne 1998a; Duncombe and Yinger 1993; Hirsch 1968; and Rouse and Putterill 2005), which points to the fact that scale economies cease for many municipal functions for populations above 50,000 residents and many labour-intensive services exhibit diseconomies of scale. With regard to Australian local government, Byrnes and Dollery (2002, p.405) conclude that ‘the lack of rigorous evidence of significant economies of scale in municipal service provision casts considerable doubt on using this as the basis for amalgamations’.
Economies of scope

The Commission makes no reference at all to scope economies. Given the complete neglect of the literature outside of Queensland in the Final Report, this omission is unsurprising. However, given the potential significance of scope economies, this oversight is most unfortunate.

Scope economies arise where production functions facilitate the joint production of two or more services simultaneously. Under increasing returns to scope, joint production by one organization generates more output than separate production by two different organizations using the same quantity of input. Within Australian local government service provision, then, it is possible to identify four potential sources of scope economies and diseconomies in local council services: decreasing returns to inputs; jointness in inputs; jointness in outputs; and interactions between the processes of service provision. According to (Dollery and Fleming 2006), the most likely source of scope economies in Australian local government derives from jointness in inputs, which occurs where one input can be used in the production of more than one service. Municipal administrative functions, where the same functions can be used in more than one sphere of activity, are easy to identify. For instance, in the event of council amalgamation or council resource-sharing, centralized administrative inputs can be used to support various activities, thereby reducing costs. Despite the promise offered by scope economies, no empirical studies have yet investigated the phenomenon in the Australian local government context (Dollery and Fleming 2006).

Local government capacity

As we have seen, in its Final Report the Commission set great store on enhanced local council capacity as a positive consequence of its forced amalgamation recommendations. In particular, the Commission (State of Queensland 2007, p.39) held that local government capacity could be expected to improve in four main areas: better asset and infrastructure management; increased ability to ‘attract and retain quality staff in key positions’; superior ‘risk management and compliance with financial and other reporting requirements’; and improved growth management. While no conceptual or empirical evidence at all is presented in support of this claim, we contend that this assertion seems reasonable, especially in the context of small remote and rural councils.

In Australian Local Government Economics, Dollery et al. (2006b, pp.145–6) consider precisely the same argument:

A proposition sometimes advanced in the Australian debate over amalgamation is that larger councils tend to possess greater levels of administrative and other expertise, in part due to the fact that their size permits the employment of specialist skills that cannot be acquired readily
by smaller municipalities. Given the increasing burden placed on Australian local government by its state and federal counterparts, through cost shifting and other activities, it is held that this confers a significant advantage on larger municipal units because it enables them to accomplish a wider and more complex range of tasks in a more efficient manner.

While adding the caveat that no empirical work has been undertaken on the issue in Australia, Dollery et al. (2006b, p.146) nonetheless argue that ‘there seems to be considerable merit in this argument’ since ‘small regional and rural councils do struggle in terms of expertise and cannot always use consultants in an effective and prudent way’. However, they add that many alternative models to amalgamation can achieve the same outcomes since they too can ‘pool their resources to acquire the skills in question, at no greater cost than to single and larger councils’.

Administration and compliance costs

Dollery et al. (2006b, p.148) observed that:

An additional argument often put forward in support of local government amalgamation is that larger consolidated councils economize on their direct costs of administration and the compliance costs imposed on individuals who participate in the municipal political process, [where] administrative costs include the compensation paid to elected and appointed officials and staff and the overheads (buildings, supplies, utilities, etc.) required to support those officials [and] compliance costs include the costs incurred by municipal voters to keep informed on issues and candidate positions and the potential cash and time of registering an opinion by participating in hearings, meetings, voting, and other activities.

In a nutshell, the argument holds that fewer local councils results in lower administration and compliance costs. This argument is analogous to claiming that scale economies exist in both administration and compliance.

With respect to administration costs, in its dismissal of alternatives to amalgamation in Chapter 4, the Commission asserted that large amalgamated councils would involve ‘less administration and bureaucracy’ and avoid ‘complexity and delays’ inevitable in cooperative arrangements between smaller councils. It did not address a comparison of administrative costs between consolidated councils and existing councils for non-shared functions. This is unfortunate because in the public administration literature a wealth of evidence exists that larger bureaucracies are less effective since (a) longer administrative hierarchies inhibit the efficacious transformation of policy decisions into policy action and (b) decision-making is further removed from situational knowledge and thus is less well informed (Hood 2000). The Commission also ignored a second
possibility: reduced oversight costs incurred by the Queensland DLGPS&R arising from far fewer local councils.

Coincidence of municipal and natural boundaries
The recent debate in New South Wales over council mergers in that state witnessed the development of an argument in favour of much larger local government areas that has come to be called ‘eco-civic regionalisation’ (Brunckhorst and Reeve 2006). In essence, this view is based on the notion that while ‘ecology is forever’, human settlement is transitory and therefore regional management strategies should ensure that ecologically homogeneous geographic areas should form the basis for the design of local government areas, rather than current and future patterns of human settlement.

In section 3.3 of Chapter 3 of its Final Report, the Reform Commission outlined the factors it took into account in determining the boundaries of local government areas, which included ‘environmental’ factors and ‘community of interest’. These issues were considered exclusively in terms of human factors, such as economic development, growth management, mineral extraction, population migration, and the like, with the single exception of forestry as a potential ‘greenhouse sink’. In other words, the Commission did not incorporate eco-civic regionalisation into its deliberations at all. This is fortunate since the extreme notion of eco-civic regionalisation not only completely ignores the costs of the massive restructuring it would entail, but cannot demonstrate why state government agencies cannot adequately manage environmental issues (Dollery and Crase 2004).

Public-choice arguments
The final category in the Dollery et al. (2006b) classification involves public-choice considerations. These arguments have been articulated by numerous scholars of local government, perhaps most notably Bailey (1999) and Boyne (1998a). In effect, they amount to a conceptual rebuttal of the notion that ‘big is beautiful’ by maintaining that large councils are less accountable and transparent and more complex than their smaller counterparts and thus less easily monitored by voters, who have less contact with elected representatives. It is also argued that smaller municipalities are much closer to constituents and thereby better informed than large councils. A second empirical string to the public-choice bow is that ‘bigger is not better’, since considerable evidence has demonstrated that small councils deliver services more cheaply (see, for example, Boyne 1992; 1998b).

As we have seen, the Final Report adopts precisely the opposite view to these public-choice considerations at both the conceptual ‘big is beautiful’ level and the empirical ‘bigger is better’ level. Apart from the fact that the authors of the Final Report cite no literature outside of Queensland, this can also perhaps be
partially explained by the fact that the public-choice perspective examines local government effectiveness from a citizen’s perspective rather than an organisational perspective.

**Concluding Remarks**

Following our analysis of the case presented by the Reform Commission in favour of drastic forced amalgamation in Queensland local government, what general conclusions can be drawn from the discussion? Three observations appear pertinent. In the first place, the analysis conducted in the *Final Report* falls in line with similar official reports prepared in other Australian states over a long period of time that invariably recommend compulsory mergers (Dollery et al. 2007b). Indeed, as we have seen, most of the arguments used by the Commission fit easily into the typology developed in Dollery et al. (2006b). We are thus obliged to reach the bleak conclusion that the Reform Commission seems to have learned nothing from the hard-won experience of other Australian states with structural reform.

A second feature of the *Final Report* resides in the fact that it completely ignores Australian and international literature on structural reform, as exemplified by the fact that no research undertaken outside of Queensland is even considered in the *Final Report*. It is as if Queensland exists in a separate dimension of the universe.

A third conclusion, intimately related to our first two observations, is that no empirical evidence is adduced to support the rosy view the Commission holds of amalgamation as a means of improving the effectiveness of local councils. Even a cursory recognition of developments in other Australian states would have obliged the Commission to take a much more dispassionate view. After all, the recent state-based inquiries into the financial sustainability of local councils in South Australia (2005), New South Wales (2006), Western Australia (2006) and Tasmania (2007), as well as the PWC (2006) National Financial Sustainability Study of Local Government, were all unanimous that structural reform most certainly did not represent a ‘magic bullet’ that could cure the financial ills of Australian local government. Indeed, the PWC found that local government both in states that had undergone large-scale amalgamation, like Victoria, South Australia and New South Wales, and states that had not experienced structural reform, like Western Australia and Queensland, continued to experience financial problems. In particular, local infrastructure across Australia was in such a parlous condition that only the injection of billions of dollars — far beyond the financial capacity of local government in all states and certainly light years away from savings attendant upon forced mergers in even the most optimistic — could remedy the situation. If structural reform in other states failed to remove financial unsustainability, why should it be expected to succeed in Queensland?
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The Biggest Loser: Education and Skilled Immigration in Australia

Peter E. Robertson1

Abstract
Recent studies indicate that skilled immigration is most likely to achieve only small net welfare gains. Nevertheless, the distributional impact of skilled immigration is potentially large, despite the lack of attention paid it. The paper argues that the recent expansion of skilled immigrants may have led to a crowding out of domestic demand for education. Consequently, the expansion of skilled immigration may have contributed to the ‘big squeeze’ in Australian universities, rather than easing the mismatch problems in the labour market.

Introduction
There has been a dramatic shift in the composition of immigrant flows to Australia over the last two decades. Between 1990 and 1995 Australia halved its intake of permanent migrants from 120,000 per year to around 60,000. From 2000, however, the intake accelerated to an annual inflow of 140,000 immigrants in 2006. Significantly, nearly all of this expansion was due to people entering under the skilled-migrant category, with little change in the family-reunion category (Productivity Commission 2006). This rapid change in migrant selection policies towards skilled visas implies an increase in the average skill level of immigrants. In particular, as shown by Birrell et al (2006), there has been a dramatic increase in the net inflow of 'Professionals', particularly building and engineering professionals and teachers.

What are the benefits of this change in composition of migrants toward skilled visas? The aim of this paper is to provide a brief survey of economic perspectives of the costs and benefits of importing skilled labour, focusing, in particular, on the recent study by the Productivity Commission (2006) and the ensuing debate. I will argue that there has been insufficient attention given to the distributive consequences of immigration and, in particular, to the effects of skilled migration on the domestic education sector.

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Why has Skilled Immigration Increased?

The expansion of migrant intakes under the skilled-visa class evolved from initial policy reforms in 1999 that aimed to reduce immigration numbers but increase the skilled-visa intake. According to the former Minister of Immigration and Multicultural Affairs, Philip Ruddock, the focus on skilled visas would help ensure that immigration was in the national interest (see Ruddock 1999, 2000). As discussed above, the skill intake increased quite dramatically in subsequent years — returning total immigrant flows to the pre-1991 recession levels. During her term as Minister for Immigration and Multicultural Affairs (October 2003 to January 2007), Amanda Vanstone justified this expansion as a solution to a ‘skills shortage’ (DIMA 2006). Likewise the Treasury (2007), in its Intergenerational Report, cites skilled migration as a net benefit to Australia as well as a source of offsetting population ageing.

It is easy to be sceptical about these explanations. As argued by Gittens (2006), the notion of a ‘skills shortage’ is difficult to reconcile with the basic workings of a market. To the extent that there are acknowledged shortages in some professions, such as health, this seems to be due to government policy — specifically a failure to maintain spending in high-cost education sectors (Birrell and Rhapson 2006; Norton 2007). Moreover a so-called skills shortage may, in fact, simply be one side of a general skills mismatch which, according to Miller (2007), is prevalent in the Australian labour market. Skilled immigration may have little effect on the shortage if similar skills mismatches exist within the immigrant labour force.

Nor, according to Guest and McDonald (2002), is increased immigration an appropriate response to population ageing. Their numerical simulations suggest that, due mainly to productivity growth, living standards will increase 84 per cent over the next 50 years under the status quo immigration plan. Of this growth, only five per cent is attributed to immigration. Thus any realistic policy change in immigration is likely to have an effect on living standards which is some fraction of this already small number. Guest and McDonald (2002) therefore conclude that future levels of per-capita consumption are approximately independent of immigration policy. That is, the effects of ageing are long-term effects and over the relevant time horizon they will be dwarfed by productivity growth.

An alternative view of the skilled migrant expansion, expressed recently by Birrell (2003), is that it is a response to lobby groups that favour immigration, particularly real estate, property development and construction sectors. According to Betts and Gilding (2006) these groups did increase their lobbying

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2 In a counterfactual experiment, in which immigration is set to zero, they find that living standards increase 79 per cent. The difference is 5 percentage points or 6 per cent of the 84 percentage points.
activities during the lull in the late 1990s, and they suggest that the increase in immigration was then a direct response to this lobbying.\(^3\)

As discussed further below, an attractive aspect of the interest-group theory is that it squares with the standard economic model of immigration. As observed by the Reserve Bank of Australia (2007), however, the pattern of immigration in Australia is pro-cyclical. Hence, given the former government’s stated focus on skilled immigrants, the recent expansion of skilled-visa entrants might be simply understood as typical expansion in terms of numbers. This does not necessarily contradict Birrell’s (2003) interest-group theory but may help in understanding the direction of the changes in total migrant flows over the last decade.

**The Effects of Increasing the Skilled Migrant Intake**

Overall, then, the reasons for the expansion of skilled migrants is unclear. Perhaps because of this, in 2006 the government asked the Productivity Commission (PC) to undertake an economic analysis of the consequences of further expanding the skilled-visa intake by 50 per cent over the next 20 years.

Two economic modelling investigations were commissioned under the rubric of this inquiry. The Centre of Policy Studies (CoPS) was contracted by the PC to implement much of the economic modelling for the PC’s report (Giesecke and Meagher, 2006). Further, the Department of Immigration and Multicultural Affairs (DIMA) commissioned Econtech (2006) to prepare a submission to the Productivity Commission’s report.

The CoPS MONASH model simulations, published in PC (2006), concluded that a 50 per cent increase in the skilled-migrant intake would increase per-capita output by 0.71 per cent after 20 years. Of this increase only 0.27 per cent is attributed to the higher average skill levels of the migrants. Much of remainder comes about largely as a result of higher employment and participation rates of immigrants.\(^4\)

The PC’s study has not been without its critics. In particular, the results partly reflect a negative terms-of-trade effect which Clarke (2007) argues is implausible. The issue is whether the world demand curve faced by Australian exporters is significantly downward-sloping. The MONASH model assumes it is and the fall in world prices as a negative effect on GNP per person. As Gieseke (2007) points out, the assumption of a downward-sloping demand curve for

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\(^3\) Betts and Gilding (2006) offer evidence of the pro-growth lobby, among which includes the fact that from January 2001 to October 2006 The Australian ran 18 pro-immigration editorials and only one opposed to immigration.

\(^4\) There are also a number of issues that arise with measuring the skills of immigrants. For a discussion of the assumption underlying skill measurement in the PC’s report, see Cuxson and Giesecke (2006).
exports is standard in applied policy models and is backed up by econometric evidence.\(^5\)

By contrast, the Econtech (2006) study found a 1.1 per cent increase in consumption per capita after 20 years. Though somewhat larger than the increase in per capita GNP found by the PC (2006), the terms-of-trade effects are very similar, with a slightly larger deterioration being reported by Econtech (2006). Moreover, as pointed out by the Productivity Commission (2006 Appendix J), a large fraction of these differences is caused by differences in the experiment design. In particular, Econtech (2006) assumes no re-emigration flows of the immigrants. Allowing for this would, according to the PC, reduce their estimate to approximately a 0.9 per cent increase in GNP per capita.\(^6\) Given this correction, one could argue that, in terms of overall modelling, the long-run results of the two studies are remarkably similar.

The medium-run results of the two studies are less similar, however. Econtech (2006) criticised the PC (2006) for its assumptions regarding the extent to which investors respond to changes in the rental rate on capital. If investors adjust quickly, as Econtech (2006) argues, this tends to raise the long-term economic gains to migration significantly, as more capital accumulates over a given finite horizon. Thus if the Econtech (2006) and Productivity Commission results are compared at 10 years, rather than 20, there is a much larger difference.

The problem is, these differences in the time profile of gains from immigration reflect differences in assumptions regarding adjustment cost parameters. Unfortunately there exist no reliable empirical estimates for these parameters. To this uncertainty we must also add uncertainty over urban congestion costs and benefits, related external environmental costs, economies of scale, and possible impacts on the global supply of skilled workers. Again these issues have dynamic impacts of which we have very little empirical knowledge. Recognition of these possibilities only serves to increase the uncertainty of medium-to-long-run impacts.

Finally, it may well be argued that even a gain of 0.7–0.9 per cent of GNP after 20 years is a fairly small dividend to a 50 per cent expansion of an already large skilled-migrant program. Moreover, both the PC (2006) and Econtech (2006) studies show that the net benefits from skilled immigration are negative for the first five years (Econtech 2006, Chart 5.1). Thus both studies suggest that the

\(^5\) It should be noted that in addition to average export prices falling the average domestic price index for consumer goods also falls (PC 2006 Figure 8.3). This has a positive effect on real incomes. One criticism of the terms-of-trade result is that it may be overstated if expansions of exports include quality upgrades. For a discussion of this point, see the report by Rod Tyres in PC 2006 Chapter I.3.

\(^6\) Econtech (2006) does not report GNP or GDP results. In terms of consumption per capita, the values reported in PC (2006) Table G.1 imply an increase in consumption per capita which is about 88 per cent as large as GNP per capita. That is a re-migration-adjusted value of approximately 0.8 per cent after 21 years.
overall gains from skilled immigration are very small in the short term and the modest medium-to-long-term results must be regarded as highly uncertain.\footnote{There are several other potential considerations. First, it is worth noting that a strong ethical case can be made for family-based migration. Studies such as Hamilton and Whalley (1984) and Walmsley and Winters (2006) show, however, that the gains to the immigrants, and hence the world welfare gains, from immigration are very large. This essentially ethical argument for immigration does not necessarily apply for skilled immigrants, however, because of the standard ‘brain drain’ arguments. See also the discussion in Clarke (2006). Second, within particular occupations and at particular times in history there are also likely to be important knowledge spillovers associated with immigration. But this would seem less relevant in the current age of low communication costs. Finally, as noted by Birrell (2006), current flows of skilled migration serve to offset the outflow of skilled labour.}

**Winners and Losers.**

What is surprising about the skilled-immigration debate in Australia is how little attention has been given to the distributional impacts. Despite the small (possible negative) impacts of skilled migration, economic theory indicates that these aggregate effects may disguise large changes in income between different groups.

Borjas (1995) neatly illustrates this point using the ‘textbook’ Berry and Soligo (1969) model.\footnote{This partial-equilibrium model assumed that factors are fixed in supply, are domestically owned and exhibit diminishing returns. It assumed further that there are no domestic distortions, and there is a perfectly elastic supply of immigrants. See also Clarke and Ng (1993) for a discussion of these issues and an Australian context.} According to Borjas (1995), the presence of these immigrants in the United States (approximately 10 per cent of the US labour force) reduces average wages relatively to what they might be otherwise by a number equal to 1.9 per cent of GDP and raises the returns to capital by 2.0 per cent of GDP. Though these are large redistributions, the net gain is the difference between these numbers, which is just 0.1 per cent of GDP.\footnote{In a model with heterogeneous labour, some types of labour may gain and others may lose depending on the degree of substitutability between the different types. See also, for example, Gang and Rivera-Batiz (1994), Borjas (2003) and Ottaviano Peri (2006).} Thus the presence of immigrants in the United States represents a transfer of 1.9 per cent of GDP from labour to capital.

The real point of Borjas’ analysis is not about the United States but is, rather, a general point about the relative magnitudes of the impacts of immigration: the net benefits will always be small relative to the size of the transfers. Irrespective of the overall national gains, immigration clearly brings about large gains to some groups within the economy.

Although the PC (2006) does not focus on distributional impacts, its study contains considerable information on the impacts across industries and occupations. Skilled-immigrant visas mostly consist of professional categories. Thus it is unsurprising that the PC (2006) found that an expansion of the skilled-visa immigration intake would have a substantial dampening effect on the wage growth of *Professionals*. It finds that salaries of professionals would
be 10 per cent lower than they would otherwise have been after 20 years and similar figures hold at much finer levels of occupational disaggregation.\textsuperscript{10} The sector which gains the most from the immigration intake is 'Construction' and, in particular, within that broad sector, 'Residential Building', 'Ceramics', 'Plaster', and 'Cement' all experience substantial increases in demand.\textsuperscript{11}

Thus the PC (2006) identifies a number of groups which are threatened by increases in skilled immigration and those which may stand to benefit.\textsuperscript{12} The study generally confirms that workers with substitutable skills will lose, while owners of complementary factors, land and capital, will tend to benefit. However, it also shows that the magnitude of these distributional effects on some groups is large relative to the overall gains in GDP per worker.

**Education: The Biggest Loser?**

This distributional analysis of the PC, however, ignores the effects of immigration on domestic skill-supply decisions. For example, the PC (2006) finds that a 50 per cent expansion of skilled immigration causes a reduction of 13 per cent in the salaries of Medical Practitioners, relative to the base case. An expectation of this slower growth in salaries should reduce the demand for medical degrees, with negative consequences for the size of the education sector.\textsuperscript{13}

In thinking about the issue of investment decisions, it is useful to consider a familiar textbook Ramsey growth model.\textsuperscript{14} In this model, there are two factors: capital and labour. There is also a unique steady state in which the capital–labour ratio is fixed. A one-off increase in the capital stock puts the economy on a transition path that leads back to the steady state. Along this path, consumption is higher than the steady-state level and investment is lower. An analogous argument in a model with human capital and labour suggests that a one-off increase in skilled immigrants would result in transition with higher consumption but lower human capital investment. Hence we have a 'crowding-out' of education through skilled immigration.

\textsuperscript{10} More detailed occupational results are reported by Giesecke and Meagher (2006) and Cuxson and Giesecke (2006). The former report, for example, that the wages and salaries of Natural and Physical Science Professionals would be 14 per cent lower with the expansion of skilled migration. Likewise, Medical Practitioners are 13 per cent lower, Teachers are 10 per cent lower and Nurses are 8.8 per cent lower. Broadly, the implied fall in the return to postgraduate degrees is 7 per cent.

\textsuperscript{11} Indeed, its results show that whether immigration is biased towards skilled migrants or just a mix of skill and family visa, it is these same sectors which benefit the most.

\textsuperscript{12} These results reflect both the assumed composition of the qualifications of immigrants under the points system and also the relatively specialised skills of these groups that leave them with limited alternatives for substituting into other occupations.

\textsuperscript{13} The possibility of a crowding out of the domestic education sector has been acknowledged by Chapman and Withers (2002) and Corden (2003). Neither study, however, gives it much credence. A rare empirical study is Baker and Wooden (1992). They investigate, but dismiss, the proposition that immigration acts as a deterrent to employer-sponsored training programs for domestic workers in Australia.

\textsuperscript{14} For example, see Barro and Sala-i-Martin (1995).
A similar intuition lies behind the theoretical results of Shea and Woodfield (1996), who consider the steady-state effects of skilled migration on skilled and unskilled wages. The intuition is also similar to the mechanism that underlies recent simulation results presented by Harris and Robertson (2007). They solve the perfect foresight path for education decisions under the scenario of a temporary expansion of the skilled-migrant intake. According to their estimates, a temporary increase of 20,000 immigrants per year over 15 years (which accords roughly with the increase in migrants between 1999–2005 whose stated occupations was 'Professionals') results in an 8 per cent fall in student enrolments in the short run. Though many caveats would apply to this figure, nevertheless it contrasts sharply with the modelling studies discussed above.

These considerations potentially reverse the earlier conclusions about the distributive effects of skilled migration. With a fixed supply of skilled labour, the burden of adjustment falls upon the wages and salaries of skilled workers. Recognising that incoming workers can substitute away from education, however, changes this story. In this case, skilled workers need not experience slower wages and salary growth to accommodate the increased supply of migrants. Rather, the burden of adjustment falls mainly on the education sector.

**So what?**

Crowding out of higher education is not necessarily undesirable. Education is expensive and skilled immigration allows us to achieve the same level of skills in the economy at lower costs and the saving of taxes or fees allows an increase in consumption. Nevertheless, it may be bad for the Australian higher education sector. Moreover it represents a potentially unforeseen distributional impact of the current skilled-visa-based immigration policy.

This leads me to two policy-related questions. First, there is the looming question — if skilled immigration crowds out domestic education, what is the optimal balance? Or, to put it more dramatically, why bother subsidising domestic education if we can import skilled labour?

Education policy was a major theme of the 2007 election and is seen as a crucial part of the current government’s policy-reform agenda. Education policy in Australia has always recognised the existence of potential external benefits of having good-quality higher education institutions — particularly spillovers from research. If one accepts that there are significant positive externalities,

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15 Because, Shea and Woodfield (1996) find, fewer people become educated, this raises the supply of unskilled labour and tends to reduce wages of unskilled workers, not skilled workers. These findings are somewhat similar to a reversal of the ‘Brain Drain’ literature, such as Bhagwati and Hamada (1974) and McCulloch and Yellen (1977), which finds that outflows of skilled workers induce an increase in demand for education in the source country.

16 The possibility of crowding out was discussed by the PC during the course of Its investigation, and is mentioned briefly in PC (2006), but is given little importance.
then it follows that the effects of skilled immigration on higher education may be socially undesirable. Unfortunately, it is not clear that the government ever considered these potential consequences for domestic students and domestic higher education. Certainly they were not part of the policy modelling analyses by DIMA or the PC. Hence there would seem to be room for improvement in the coordination of education and immigration policies.

It is doubtful, however, that planned migration and education can be efficiently coordinated under the current public higher education system. It is, at best, only partially true that the higher education sector responds to market incentives. Inflexible funding rules will protect institutions from the consequences of changes in the labour market, including skilled-immigration programs. The inflexibility will impose a cost, however, by generating a mismatch between student demands and courses available.

Indeed, Norton (2007) and Birrell, Edwards and Dobson (2007) provide some evidence that this type of mismatch exists in Australian higher education. These authors blame quantity constraints on the number of subsidised places in undergraduate programs for a graduate shortage in Australia. More generally, Corden (2005) discusses the big squeeze on higher education in Australia. Somewhat ironically this is perhaps what ‘should’ happen given the increase in skilled immigration.

Thus, in addition to a careful reconsideration of how much skilled immigration is desirable, two courses of action are required. First, coordination problems may be reduced through the types of reforms suggested by Corden (2005) and Norton (2007), who call for some deregulation of the education system. Specifically the provision of education services needs to be able to respond to changes in the labour market and to government immigration policy shocks. Second, a clearly specified immigration policy that avoids surprises would also be desirable in order to reduce planning costs and uncertainty for higher education institutions and students.

17 By good planning or good luck for the higher education sector, the expansion of offshore immigrants has been accompanied by the creation of onshore immigration, under which foreign students can apply for immigration. This is likely to have sustainably eased the burden of adjustment on universities.

18 Birrell and Rhapson (2006) argue further that the skilled-immigration policy is responsible — at least indirectly — by allowing the mismatches in certain sectors to persist.

19 Specifically, Corden (2005) calls for fewer constraints on full-fee-paying domestic students, the removal of limits to fees and the removal of micro management though ‘performance indicator’-based tied grant systems. The cap on domestic full-fee-paying students was subsequently removed in the 2007 Budget. Others, such as Karmel (2001), have emphasised the need for student-scholarship rather than institution-based funding.
References


Declan Trott\(^1\)

*One Economics, Many Recipes* is a collection of nine essays by Dani Rodrik that has something to annoy almost everyone.

He seeks the answer to one of the oldest and most important problems in economics: how to make poor countries rich? Like most old and important problems in economics (Does the distribution of incomes reflect productivity? Do high wages cause unemployment?), it has proven divisive, unanswerable, yet endlessly fascinating.

The first three essays lay out Rodrik’s interpretation of the post-World War 2 growth experience, and the ‘growth diagnostics’ framework that he proposes in response. Many countries have experienced episodes of accelerated growth at some time. Most of these accelerations have come after fairly minor, yet diverse, policy changes, while comprehensive reforms have had generally disappointing results. Principles like security of property, sound money, incentives for innovation, and links with the world economy are important everywhere, but they may be achieved in many different ways. For example, the Chinese expedient of forcing entrepreneurs into partnership with local government in township and village enterprises was an unconventional way of preventing expropriation, but probably more effective than trying to introduce full private-property rights backed by an independent judiciary overnight.

Rodrik argues that development is fundamentally about the introduction of new products and new methods of production. This may fail to happen because the returns to such innovation are too low, or because the cost of finance is too high. Following one path down his decision tree, the returns to innovation may be low because of poor infrastructure, lack of human capital, or unfavourable geography. Or, the returns may be high but not appropriable by the innovator, due to government or market failure. All of this may seem perfectly obvious; and perfectly useless. Yet Rodrik argues that each of these potential problems will produce a different set of symptoms if it is really the binding constraint on the economy. A shortage of finance will reveal itself with high interest rates or current account deficits, a shortage of human capital with a high skill premium, and so on. Hopefully, diagnosis will then allow treatment with well-targeted

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reforms. This requires extensive local knowledge, but if it is done right, small changes can have big payoffs.

The rest of the book suggests how such reforms might be designed and implemented. Rodrik pays by far the most attention to the ‘market failure’ branch of the tree, either because he thinks it is the most important, or has received too little attention elsewhere. It is generally accepted that if innovation is under-rewarded by the market, it is necessary to offer some extra inducement. This is the reasoning behind intellectual property and government-funded R&D. These are not always appropriate instruments for developing countries, however, since their problem is not so much expanding the frontier of new knowledge, but getting to that frontier by importing ideas and technology from elsewhere. This process is vulnerable to many kinds of market failure, so that it is hard for new industries to be established without some kind of government support. Industrial policy is not about ‘picking winners’ or comprehensive planning, but encouraging experiments with new types of economic activity. Many will fail, but even a few successes can amply repay the costs of failure. Developing countries still have plenty of room for this type of policy, although relaxing international rules on export subsidies would be helpful. The exact form of the intervention is not as important as the process: it is necessary to have a close enough relationship between government and business to identify promising opportunities and encourage entrepreneurs to take them up, but at the same time preserve enough independence to withdraw support from the failures so they do not become a permanent drain.

This is a self-confessedly modest program. Yet it contradicts everyone currently making a noise on the subject: assorted protesters such as Joseph Stiglitz and Ha-Joon Chang (because it does not demonise the IMF, World Bank, and WTO); heterodox economists such as Erik Reinert (because it asserts the value of neoclassical theory); neoclassical economists at the IMF, World Bank and WTO (because it advocates industrial policy and deprecates both the old Washington Consensus and the new ‘augmented’ version); Jeffery Sachs and Bono (because it denies the importance of poverty traps and barely mentions foreign aid); and William Easterly and Greg Clark (because it offers, if not a one-size-fits-all solution, at least some concrete advice on how to engineer growth).

It is no small achievement to disagree with so many luminaries and still receive back-cover endorsements from three Nobel laureates. He is very convincing arguing against the ‘laundry lists’ of comprehensive reforms that have been advocated by international institutions, whether the first generation of privatisation and liberalisation, or the more ambitious second generation focused on institution building. Trying to bring everything at once up to world’s best practice is beyond the capability of even the best governments. But without
detailed local knowledge, anything short of this can easily miss the most important problems in an economy, if it does not make things worse. The case against a generalised poverty trap is equally strong: spurts of growth lasting several years are relatively common, while sustained growth over decades is rare.

This very fact, however, points to a weakness, or gap, in the book. If lighting the fire is relatively easy compared to keeping it going, why spend so much time focusing on ignition techniques? For the long run, Rodrik's only specific advice is to actively diversify the industrial base, and build institutions of conflict management, which he links with democracy. There is a more general recommendation to use the time bought by growth accelerations to gradually implement more ambitious institutional reforms, but this is rather vague. Is this just the standard ‘laundry list’ implemented more slowly? Then what becomes of the ‘many recipes’? Or is the long run, from a policy point of view, just a series of short runs — life is one binding constraint after another? In this case, growth diagnostics offers no way to identify and fix constraints before they start to bind, which is what he seems to be recommending. How can you avoid Argentina's long decline, or Japan's stagnation, or the East Asian financial meltdown, except with hindsight? It is surely too much to expect answers to all of these questions — indeed, they only become relevant with short-run success — but they could have been faced more squarely.

Short-run success is, of course, not to be disparaged. It would be nice to have a reliable method of making poor countries rich, but failing that (which we have been), significantly raising the number of growth accelerations would be a great start. With this more limited goal in mind, Rodrik's advice seems sensible, although I am sceptical of his emphasis on ‘cost discovery’ as a justification for industry policy. He argues that those entrepreneurs who introduced garment manufacturing to Bangladesh and soccer balls to Pakistan were revealing new information about what was profitable in those countries, which could then be copied by others. This treats manufacturing as some exotic crop that will only grow under particular conditions of soil and climate, as if it was not equally likely that Pakistan would have ended up making shirts and Bangladesh balls. Rodrik's own summary of the evidence concludes that ‘managerial and labour turnover’ is the key mechanism by which innovations spread, which points to a ‘learning by doing’ or ‘human capital’ interpretation. He mentions these only briefly, which is strange, as he has argued elsewhere that the widely accepted economic case for government involvement in education is similar to the case for industry policy. I would go further and say that they are practically identical.

This is, however, splitting hairs. Specifying the exact market failure is far less important than recognising that a particular activity (in this case, innovation) is likely to be undersupplied by profit-seeking enterprise. First-best intervention
is usually impractical, if not impossible, so there is no one-to-one mapping from diagnosis to policy. It is a great strength of the book that it does not offer such precise, pre-packaged answers, even in a country-specific form but, rather, hints as to the right questions to ask as part of an open-ended policy-making process.

Supposing that growth diagnostics is widely adopted (the World Bank has already shown interest), will it prove more successful than previous development fads? While it requires a great deal of intelligence, knowledge and judgment (or failing that, luck), expecting to get rich without these is surely a pipe dream. At least its inherent conservatism, with the emphasis on detailed local knowledge and targeted intervention, should minimise the potential for damage.

Steve Harrison¹

This book’s painstaking analysis arises from the author’s many years of involvement in forest policy in government agencies and through her own doctoral research. The book is crammed with information about the personalities and policies in the evolution of forestry nationally and in the Australian states. It pinpoints the many agencies and personalities involved in contentious forestry issues, particularly since the 1960s. It brings together the relationship between the many inquiries into logging of native forests: the National Forest Policy Statement, the Resource Assessment Commission inquiry into the Australian timber industry, Regional Forest Agreements, and the Productivity Commission forestry inquiry. And it sheds valuable insights into the role that forest policies have played in politics, including the downfalls of Paul Keating, Mark Latham, and West Australia Premier Charles Court.

Dr Ajani makes clear her personal views about the forest industry: ‘My biases show throughout the book. I personally favour processing over exporting raw materials. I also privilege the environment, a loser in Australia’s two centuries of fabulous wealth creation’ (p.5). Elsewhere in the book, Ajani notes her involvement with key protagonists in the environmental movement, and her confrontations with government bureaucrats. The view is strongly and repeatedly advanced that plantations can meet all of Australia’s forest-product needs, and there is no need for continued logging of native forests for woodchip production. It is argued convincingly that forest policy in Australia is irrational and fails to recognise the current realities of the industry. The arguments presented certainly challenge the reader with a pro-logging stance on native forests to defend their case.

The focus is on forestry in New South Wales, Victoria and Tasmania — the states which are still engaged in logging native forests for woodchip export — and on the federal government’s support for this highly profitable but wasteful and destructive activity. It is noted that there has never been woodchip exporting from Queensland, and that the Court government put a stop to this activity in Western Australia.

Following a short introduction, the book is launched with a chapter titled ‘Keating’s Grenade’. After a fiasco concerning what new areas of native forest should be protected, the then Prime Minister Paul Keating declared that

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native-forest woodchip exports not covered by a regional forest agreement would be cut by 20 per cent per year to nil in 2000. After having battled to gain control of the forestry scene nationally, the federal government extracted itself (to the extent possible) from involvement in forest regulation, handing control back to the states through RFAs. Keating saw forestry as facing intractable problems, and a no-win area for the federal government.

The rest of the book is divided into four sections: softwood plantations; political alliances; ‘multiple abuse’; and hardwood plantations as the future of forestry.

In Part 1, the decision in the 1960s to promote government-owned plantations of exotic softwood (with first plantings were nearly a century earlier) to secure a future timber supply for construction and woodchip in Australia is examined in detail.

In Part 2, it is explained why the trade union movement aligned itself with the forest industry (for job security), and the state forest services (interested in maintaining their territory). The environmental movement was seen as the common enemy by each of these stakeholder groups, which did not understand or accept that softwood and hardwood plantation could serve the industry’s purpose just as well as native forests.

Part 3 severely criticises the Resource Assessment Commission investigation into forest management, and the Industry Commission inquiry into value adding. With reference to the RAC view that plantations would make slow progress in replacing native forests as a timber source, it asks: ‘How could the Commission get it so wrong?’ (p.160).

Instead of rolling up its sleeves and engaging in thoughtful forest-industry policy work, the Industry Commission presented its trademark ‘off the rack’ economically rational free-market recommendations … It wanted export controls on unprocessed wood abolished and public plantations privatized … both recommendations were made in ignorance of the stockpile reality, which itself was a symptom of state government irrationalism. (p.172)

Reaching agreement on forecasts for future timber supply and demand has proved impossible, with ‘inflated projections of future wood consumption’ (p.196) to promote the picture of forthcoming shortage and the need for accelerated planting, in the face of increasing use of substitutes for wood-based products. While researchers have noted the difficulty in obtaining information from timber processors, it is demonstrated that other forestry stakeholders are equally unwilling to share information. Various research consultancies — for example, by the ANU, and the forest school at Melbourne University — have
involved non-disclosure clauses, such that it has not been possible to validate the conclusions drawn.

In Part 4, it is argues that no other Australian industry has surpassed, over a three-decade period, the native-forest chip exporters’ financial result. Apparently, woodchip exporters rarely report their profit result, masking this information by integrating it with profits of other business activities. The arguments that woodchipping takes place to make use of sawlog industry waste is shown to be specious, in that 80 to 90 per cent of the hardwood logging from native forests is for chiplogs. The National Forest Policy Statement is viewed as ‘a political document riddled with incoherence and contradictions’ (p.230). The author observes that:

The forest industry … has predicted a global wood shortage for decades, but the price trends keep denying its arrival … The point of the smoke-and-mirrors forest industry behaviour is to create expectations of future wood shortages to keep public resources available for logging and encourage … planting more trees. (p.251)

The resulting lower log prices increases forest industry competitiveness against substitute products. Ajani concludes that Australia does not have a wood shortage but, rather, a shortage of processing investment.

The final chapter summarises the implications for future forest policy. Logging of native forests will be consigned to history and — as Ajani persuasively advocates — government, industry and the union movement will have to update their thinking to embrace the new reality. It is concluded that commodity wood production should be shifted to plantations, and that further processing of plantation resources should take place in Australia.

What The Forest Wars does well is to sound an alarm at the high rate of logging of native forests for woodchip, with very large profits to the timber companies, little sharing of the resource rents to the wider community, unnecessary market competition for plantation hardwoods, and loss of large areas of native forest in New South Wales, Victoria and Tasmania. Certainly, the large volumes of hardwood plantation timber now becoming available from managed investment schemes (viewed as tax-minimisation schemes) can make possible ‘virtually the end of native forest logging’. (p.309)

What the book does less well is to argue that sustainable logging of native forests is not possible, except perhaps for minor speciality logging (surely a form of high-grading!), in part due to competitive pressures to increase the logging rate. This argument fails to recognise the role of state forest agencies in tree marking for sawlogs from State Forests, which has been increasingly based on good science. It is implied that wisdom lies with the environmental movement, but not with government agencies. Carbon sequestration benefits are advanced
as an argument for not logging native forests, without acknowledging that protected native forests make little if any net contribution to carbon sequestration. In the battle for hearts and minds, the political power of residents in large cities to impose conservation decisions over native forests will progressively gain ascendancy over the lobbying power of politicians in marginal rural electorates to maintain logging of native forests.

The argument for further wood-processing in Australia must also be viewed with caution, in that it fails to recognise the nature of comparative advantage and the benefits of trade. In that the hourly wage rate in Australia approximates the weekly wage rate in China, and Australia is not a leader in wood-processing technology, there are limits to the extent to which taxpayer support for domestic value-adding is justified.

This book provides a wealth of information about the history and evolution of forest policy in Australia, by a writer who has a long history of interest and involvement in forest policy. While forestry may be about growing trees, this book brings out to a remarkable degree that forestry is also very much about people. There is room for disagreement over some issues, but the book must surely be essential reading for anyone with an interest in forest policy in Australia — in the timber industry, government agencies, research institutions, and the trade union movement.

Declan Trott

It is likely that anyone who writes a whole book about inequality will think it a problem, and want to do something about it. Complaining about this would be foolish, as long as the data and arguments are presented competently and honestly.

Competence and honesty are not a problem here. Stillwell and Jordan present an exhaustive description of Australian incomes and wealth, the rich, the poor, and geography and gender inequalities. There are no big surprises, but a comprehensive and up-to-date summary of the available data, its strengths, and its weaknesses (such as the tendency of the BRW rich list to miss old family fortunes). I must admit that I do not see the trend to increasing inequality in this data as clearly as they do. Equivalised household incomes have been bouncing around in a fairly narrow range for the last decade, as has the wages share of income since the winding back of the Whitlam and Fraser wage breakouts. While the profits share has been rising more consistently and is now at a record high, this has eaten into rent and interest as much as wages.

Their recommendations are equally unsurprising: more progressive taxation and regulated wage setting. Of course right-wing ‘think’ tanks are in ‘denial’ about inequality, and women’s lower earnings are a result of ‘patriarchal ideology. Inequality is also linked to Clive Hamilton’s ‘affluenza’ — the failure of economic growth to bring happiness — since materialistic aspirations will be greater in a more unequal society. Strangely, the index has entries for the Labor party and government, but not the Liberals.

This book falls firmly into the ‘worthy but dull’ category. If you want a handbook on inequality in Australia, *Who Gets What?* is fine, if a little long and burdened with editorials. If you want your beliefs challenged, look elsewhere.

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